Digital assets

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Response: Digital assets Call for evidence

Response ID is ANON-KA1W-577N-5

This submission was produced to assist the Law COMmision in its deliberations. The author is a technologist who has worked in this space and in particular achieving a cohesive binding between the physical and digital worlds. The results of 20 years of R&D are embedded in my book, the short paper is an extract from the more detailed analysis contained within:
A New World Order Post Coronavirus
Rewiring Financial Markets for Good.
Google Books
https://lnkd.in/gNVhiMC
Paper Back
https://lnkd.in/gU2YrVf

Introduction
The legal issues regarding digital instruments have been discussed and the treatment standardized at an international level by the IFRIC as part of the global IFRIS.

IFRIC Committee1 View
1. The Committee concluded that a holding of cryptocurrency is not a financial asset2.
2. The Committee concluded that cryptocurrencies are not cash.
3. The Committee concluded that cryptocurrencies are non-monetary intangible assets.

A digital asset does not give rise to a contract, between the holder and another party. Cryptocurrencies are neither physical assets nor monetary assets based on the IAS 38 definition. Additionally IAS 39 is not applicable as no contractual relationship is created that results in a financial asset for one party and a financial liability for another.

Having determined it is not possible to classify digital assets as holdings as either cash or cash equivalents; financial instruments; or investment property, we are left with just three remaining classification categories – property, plant and equipment; intangible assets; or inventories. The classification category of property, plant and equipment can instantly be discounted for the

1 The IFRS Interpretations Committee (Interpretations Committee) is the interpretative body of the International Accounting Standards Board (Board).

2 Cryptocurrencies are not financial instruments under U.S. GAAP because they do not represent cash or a contract establishing a right or obligation to deliver or receive cash or another financial instrument. Cryptocurrencies are not financial assets as they lack physical substance. ” Jan 2019, BDO (USA).
same reason as investment property above – namely that IAS 16 ‘Property, Plant and
Equipment’ defines the category in terms of “tangible items” and digital assets do not have
physical form. We can concentrate solely then on the intangible assets and inventories
classifications. The current consensus in the industry is they represent intangible assets, which
are subject to ‘chose in action’ if and only when a contract can be formed between the parties to
any digital asset transaction, and this is impossible when there exist anonymous parties to a
transaction.

Any discussions reading any digital object or data must be based upon the reality of a digital
world namely:

1. Digital data is infinite and hence cannot be scarce.
2. Digital data can be infinitely copied without any ability to detect a single copy.
3. Digital data cannot exist as tangible property

These two foundational differences between a digital and physical world have a significant
impact on any ability to in fact create a digital form of an asset.
Within my book there is a complete chapter on the global framework for Digital Assets, which
cannot be duplicated herein, hence only the salient points are included for consideration.

The technology perspective of digital Assets

All the committee needs to know about digital assets today is that all forms in existence are no
more than a number, that’s a number as a “Big Integer” and all are represented as a series of
digits. Each asset cannot exist as anything more than a Big Integer (this is commonly known
within the digital assets world as a the private key, there must always exist a secondary
BigInteger known as the Public Key).
Hence the supply of digital assets is bound by the Elliptical Curve within which the boundary of
Big Integers exists, and in most frameworks today this is 2 to the power of 256 possible
numbers. This fact has significant implications on the ability of society to value a digital asset.
As it is proven to be not scarce, and can be infinitely copied without any loss of fidelity or ability
to detect any copy from the original.

The committee needs to fully understand this reality, and that many of the proposed digital
assets platforms potentially represent fraudulent claims which seek to convincing the average
man-on-the-street investors to investing in Bitcoin by intentionally obfuscating what it really is,
just a number, into some super-sophisticated investment by throwing out the technical verbiage
that surrounds cryptocurrencies, such as Blockchain technology, peer-to-peer without banks,
single source of truth, or my personal favourite ‘digital gold’.
Digital Bearer Asset, the objective

While physical goods are protected by a long history of private property rights, digital assets are, to date, essentially unknowable. In accordance with the Coase Theorem, the establishment of property rights for real property and intellectual property has decreased negative externalities and fuelled the major socio-economic revolutions of the modern world, this is the same objective for digital assets.

*The word “property” is often used to refer to something that belongs to another… “property” does not refer to a thing; it is a description of a legal relationship with a thing. It refers to a degree of power that is recognised in law as power permissibly exercised over the thing. The concept of “property” may be elusive. Usually it is treated as a “bundle of rights”. – High Court Australia*

Ownership of digital goods is not the same as ownership of physical goods. The underlying causes of this difference are complex, and unwinding the mess requires a return to the history of the property and its first principles so that we may gain a clearer view of the specific problems plaguing the digital environment.

Historically, Western economic progress has been pushed forward by two all-encompassing legal frameworks: private property and intellectual property. In England, the property did not have a legal definition until the 17th century when the term entered popular parlance in reference to land ownership. Monarchs awarded selected individuals by granting them a title (e.g., “Duke,” “Earl,” “Lord”) which carried with it ownership rights to a specific parcel of land. Starting in the 12th century, certain commoners undertook the radical enterprise of enclosing portions of land from the larger commons. Such acts were gradually recognized as a commoner’s assertion of an exclusionary right to ownership of the land. Parliament sanctioned large-scale land reform in 1801, thereby ushering in the British Agricultural Revolution and unleashing a powerful new catalyst in the form of individual private property rights for land ownership.

The evolution of intellectual property followed a similar trajectory. As with land, the English tended to view knowledge as a kind of commons. In the same way that monarchs had awarded gifts of land titles to friends of the Crown, patents and copyrights emerged in the form of royally sanctioned monopolies. Patents conferred exclusive monopolies over specific markets or commodities, such as starch and salt. Copyrights conveyed the exclusive right of publishers to print and censor literary works. Parliament stepped in again to transform copyright protections from private legal privilege into a public law grant that was vested in individual authors rather than in publishers.

The term property does not describe a thing itself but a legal relationship with a thing; it is a way of describing a power recognised in law as permissibly exercised over the thing. The fundamental proprietary relationship is ownership: the owner of a thing is, broadly, entitled to control and enjoy it to the exclusion of anyone else. However, ownership is just one kind of
property right: property is a comprehensive term and can be used to describe many different kinds of relationship between a person and a thing. There is no general or comprehensive definition of property in statute or case law. Courts tend to approach the issue on a case-by-case basis, considering whether particular things are property for particular purposes.

In essence before a right or an interest could be admitted into the category of property, it must be definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability. Certainty, exclusivity, control and assignability have also been identified in case law as characteristic of property rights.

Within the proprietary solution which was developed (evolved) over the last 20 years, we have created a new form of “digital tangible property” which aligns with the legal definition of ‘tangible property and has guaranteed ability to change its ownership solely via an observable change in "possession" with legal finality. This allows a “digital bearer asset” to be transferred solely via ‘chose in possession’.

The technologies and legal arguments to support this result are proprietary, and has taken over 20 years of R&D to achieve, hence we can state that the objective of the committee, should it wish to fully understand the issues, is a non trivial task from either the legal or technology perspective. In fact it is trivial to prove that it is impossible within any time bound domain.

The key understanding for the committee is that when an in presence transfer of physical property exchange is moved into a digital world the originator and recipient are in fact separated in “space time”. There is a complete description of the “space time” solution to the provably impossible, time domain problem in my book. The solution to transfer digital assets though space time and achieve legal finality (a single agreed state of possession), is described in the chapter “The Proof of Time” protocol, as it is in excess of 30 pages it cannot be reproduced in this submission, but is publicly available, even if the implementation is proprietary. The chapter has sufficient information to allow an independent solution to be developed by anyone skilled in the art. Our original Australian 2000 patent (identified in the book) on the communication protocol (Inter-ledger protocol) was placed in the public domain in 2020 to allow anyone to use it royalty free. All blockchains today have already copied this patent since 2009 in any case.

Summary

The committee has taken on an “impossible task” given the time constraints, as the historical legal framework which underpins all wealth today (tangible property) cannot be messed with and still support historical value to reside in any existing form of tangible property enforced via the rule of law. Intangible property cannot be made to exist as tangible property, and being subject to ‘chose in possession’ this would destroy the historical value of all property.
The solution is complex as is the understanding of the legal and technology principles which must be used to achieve a fully consistent and complementary result which does not destroy existing property (asset) based value.

A solution exists today, using the existing legal framework without change, we have a fully working and observable solution which can be proven to transfer digital assets with legal finality via ‘chose in possession’ via legally codified “digital tangible property”. This solution requires zero changes to any law or historical presidents, or definition of assets or property and fully aligns with the IFRS global standards, and can operate within every legal jurisdiction on the planet today.

In conclusion, there is nothing for the law commission to do, the current law is sufficient and fit for purpose given the selection of the appropriate technologies.

Regards
Charles Moore
Director VillaegMall Pty Ltd
Question 1.
What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales? Please explain your answer and provide examples. [2.23]

Logically there is a case for treating digital assets like Bitcoin as a form of documentary intangible in the nature of a negotiable bearer bond. On this analysis control of the electronic key would be equivalent to possession of the underlying asset.

In practice, however, it might be simpler to treat digital assets as intangibles, of the same nature as (say) EU pollution permits, or EU milk quotas were treated pre-Brexit. In contrast to documents such as e-bills of lading, there is in my view no pressing commercial need (for example, rules relating to transfer and endorsement, or a practice of making such assets the subject of a common-law pledge) to make them possessable.

It’s worth noting that, at least with such things as Bitcoin, this would not entirely exclude possessory remedies. In so far as a USB stick containing the codes necessary to access a Bitcoin wallet were converted, there would be no reason why the damages should not reflect the fact that this was not only a flash drive but a super-valuable one.

Note: in my view, a great many of the difficulties in this and later questions might be averted by a simple statutory provision, stating that (a) digital assets were to be treated as personal property of an intangible nature, but (b) such assets should not by virtue of anything in that provision be regarded as things in action.

Question 2.
Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? [2.36]

In view of my answer to Question 1, I would regard transfer as more analogous to intangible transfer (or possibly electronic funds transfer: cf R v Preddy [1996] AC 815). I see no reason to apply the Sale of Goods Act provisions to digital assets; a more apt analogy, if one needed one, might be the Policies of Assurance Act 1869.
Note: many of the problems relating to transfer might be avoided by a provision that unless
the nature of the digital asset or the context demanded otherwise, any person could
transfer their interest in a digital asset by an instrument signed physically or electronically
by them and transmitted physically or electronically to the transferee.

Question 3.
Are there practical circumstances in which it would be useful to distinguish, or to
separate, the ownership and the possession of a digital asset, particularly in
relation
to transfers?
If so:
(1) For cryptoassets, could these circumstances arise both on-chain (reflected by
modifying a ledger or blockchain) or only off-chain (where value moves or a
transaction occurs without modification to the relevant ledger or blockchain)?
(2) Do other technical or practical solutions (for example smart contracts, multi-
signature, escrow arrangements, Layer 2 applications or “mixing”) or market
practice make these distinctions less important?
Please explain your answer and provide examples. [2.37]

For the reasons given in answer to Question 1, I take the view that any attempt to separate
owners and possessors of digital assets would enormously complicate matters to little
measurable advantage. In so far as it was desired to separate ownership and control, a
trust could be used and would in my view be a simpler and neater solution.

Question 4.
How do you typically characterise an on-chain transfer of a cryptoasset?
Please explain your answer and provide examples. [2.42]

Under the present law, I think the UKJT must be right: although it may be possible to think
of some kind of digital asset that is so close to a thing in action as to be transferable in the
same way, in the vast majority of cases an on-chain transfer technically involves the
destruction of the old asset and the simultaneous creation of a new one in the transferee.

Whether this should continue to be the case is another matter. In my own view it should
not. Businesspeople, unlike lawyers, think in terms of the transfer of an existing asset, and
there is much to be said for a legislative statement that any transaction under which A
ceases to be entitled to a given asset and B becomes entitled to an equivalent asset
should be treated in law as a transfer of the asset from A to B. Such a provision would
certainly avoid argument about the application to Bitcoin and the like of, say, s.127 of the
Insolvency Act 1986 (dispositions of a company’s property after the onset of insolvency).
See too the reference in ss.599-602 of the Companies Act 2006 to agreements for the
transfer of company assets, where a similar comment applies.

Question 5.
In what circumstances (if any) are digital assets analogous to “goods”, as currently
defined under the Sale of Goods Act 1979? In what circumstances are digital assets
not analogous to “goods”?
What would be the practical consequences of characterising digital assets as
“goods” for these purposes?
Please explain your answer and provide examples. We would also be interested in respondents’ views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

It seems pretty clear that digital assets would not be classified as “goods” within the Sale of Goods Act 1979, not being “personal chattels” (nor yet within the Consumer Rights Act 2015, s.2, not being “tangible moveables”). A number of provisions of the Sale of Goods Act would be incongruous in connection with them: 12(2)(b) (“quiet possession”), 14(2B)(b) (“appearance and finish”), 18 (“deliverable state”, “weigh or measure”), 24 and 25 (seller and buyer in possession), 29 (delivery), 32 (delivery to a carrier), 35 (acceptance and delivery), 36 (delivery and rejection), 44 (stoppage in transit).

Are they “digital content” as defined in the Consumer Rights Act 2015, s.2? The answer is possibly Yes; “data which are produced and supplied in digital form” is about as wide a formulation as one can get, even though clearly digital assets weren’t in the mind of the draftsman at the time. If it were felt that there was a consumer protection problem in connection with such assets, however, it would do no harm to make the matter clear by an amendment to the 2015 Act.

**Question 6**

2.52 What practical or legal difficulties or problems (if any) do you encounter with the application of the “nemo dat” principle in respect of a transfer of a digital asset?

(1) Do you encounter or anticipate the same practical or legal difficulties or problems in respect of on-chain transfers and off-chain transfers?

(2) Do different digital assets or digital assets that perform different functions give rise to different practical or legal difficulties or problems?

(3) Would the ability to possess a digital asset affect the application of the “nemo dat” principle?

(4) What else could be done to alleviate these practical or legal difficulties or problems?

Please explain your answer and provide examples.

I do not see many difficulties applying nemo dat to digital assets. The principle already applies not only to goods but also to intangibles: a person not entitled to a debt can purport to assign it, but (subject to the rule in *Dearle v Hall*, which no sane jurist would extend a millimetre past its present ambit) can pass no better right to it than he has. Assuming digital assets are non-possessable, they would similarly not be transferable by anyone not entitled to them. One advantage of saying legislatively that they were not to be regarded as things in action would be to exclude *Dearle v Hall* entirely from them too. I see no objection to such a rule.

Were such assets possessable then the sale of goods exceptions to nemo dat would apply, such as seller and buyer in possession: I see no advantage whatever in this, and a good deal of complexity and confusion.

If it were thought desirable to assimilate Bitcoin and other digital assets used as media of exchange to money, there would be something to be said for applying to it the negotiability of money. The result would be that if (for example) A unlawfully hacked B’s Bitcoin account...
to pay C for goods supplied in all innocence by C to A, then C would obtain good title to
the Bitcoin. I personally am attracted by this idea; if fiat currencies such as Euros, dollars
or yuan are money and therefore negotiable, the fact that the fiat does not come from a
state should arguably make no difference. This I understand is the approach in Wyoming:
see Laws of Wyoming, 34-29-102 (available online at

Question 7.
How do you typically characterise the relationship between a digital asset token and
the underlying tokenised asset?
(1) What are the practical consequences of this characterisation for the purposes
of transfers of either the digital asset token or the underlying tokenised asset
which it represents?
(2) Does the current legal characterisation of a transfer give rise to practical or
legal difficulties or problems?
(3) Would the ability to possess a digital asset token help to clarify this analysis?
(4) What else could be done to alleviate these practical or legal difficulties or
problems?
Please explain your answer and provide examples. [2.58]

No comment.

Question 8.
If a digital asset were possessable, are there practical circumstances in which
bailment of digital assets could arise?
(1) Do you think bailment of a digital asset would be a useful or practical
concept?
(2) Do other technical or practical solutions or market practice make bailment of
digital assets less important?
Please explain your answer and provide examples. [2.64]

As explained above, I don’t think digital assets should be possessable. But if they were ...

Could a bailment arise? The answer must in theory be Yes: for example, in the context of a
common law pledge, or where (doer example) an owner O went abroad for a time and left
the means of access to a digital asset in the hands of a friend or relative B to operate on
his behalf.

Would bailment of a digital asset be a useful or practical concept? No.

Question 9.
How is security over digital assets granted or taken in practice?
(1) Do you consider mortgages and charges to be effective methods of taking
security over digital assets?
(2) If a digital asset were possessable, are there practical circumstances in which
the creation of possessory security over a digital asset might be used?
(3) Do other technical or practical solutions or market practice, including the
creation of quasi-security, make the ability to take possessory security over a
digital asset less important?
Please explain your answer and provide examples. [2.71]

I have no knowledge of market practice as regards fixed security or quasi-security over
digital assets: it may be that such practice is still in the process of being established. But
clearly such assets would on principle be caught by (for instance) a general all-monies
floating charge over a company's undertaking. I have no knowledge as to whether any
bank would be happy with a pledge over a digital asset.

Question 10.
If a digital asset were possessable, are there practical circumstances in which
conversion of a digital asset could arise?
(1) Do you think conversion would provide a useful or practical claim in this
context?
(2) Do other technical or practical solutions or market practice mean that the
applicability of conversion to digital assets is less important to stakeholders
and market participants?
Please explain your answer and provide examples. 2.76

As explained above, I don't think digital assets should be possessable. But if they were ...

Conversion would certainly be a possible claim: for instance, if A, authorised by B to
handle B's digital assets, used them for his own purposes and transferred them to C.
Unless the digital asset concerned was Bitcoin or something similar and a money-
negotiability rule applied, if the asset was transferred by C to D, D to E, E to F, etc, B
would also have a strict liability claim against C, D, E and so on. This does not seem to me
attractive: the strict liability in conversion of a non-possessor through whose hands goods
have passed is a blot on English law and most certainly ought not to be extended at all.

This might cause one problem: if A hacks B's account and causes B's digital asset to be
transferred to C, who had no right to hold on to the asset, what cause of action would B
have against C, if not conversion (which is what he has in the case of chattels)? A
prudential solution would be a specific cause of action allowing a court to direct a person in
control of a digital asset to transfer it, or the benefit of it, to the person actually entitled.

Questions 11-12

No comment.

Andrew Tettenborn
20 July 2021
Response to the Law Commission of England and Wales Call for Evidence on Digital Assets (July 2021)

This response is provided by a working group of the Centre for Commercial Law at the University of Aberdeen.

General Comments

We welcome this call for evidence and appreciate the opportunity provided to stakeholders to express views to assist with law reform proposals in this area. We note that the Centre for Commercial Law responded to the UK Government Consultation and Call for Evidence on UK Regulatory Approach to Cryptoassets and Stablecoins (see https://www.abdn.ac.uk/law/research/public-policy-stakeholder-engagement-1109.php#panel1114) and is responding also to the Law Commission Consultation on Digital Assets: Electronic Trade Documents.

We agree that there is a pressing need for law reform in the UK in this area to provide legal certainty and predictability regarding the legal status of digital assets and to facilitate innovation by appropriate legal frameworks in the UK, which is a leading country in the global financial sector and aspires to be amongst the most innovative economies. In this respect, we emphasise the importance of law reform across the three jurisdictions of the UK and a level of uniformity to be achieved among them. We note that this consultation and the consultation on electronic trade documents limit their scope to England and Wales. However, we consider that some of the law reform proposals in both consultations have a UK-wide impact and therefore would have a knock-on effect in the jurisdictions of the UK beyond England and Wales. Regarding Scotland, some of the acts being considered for reform in this consultation (eg the Sale of Goods Act 1979) and in the consultation on electronic trade documents (eg the Bills of Exchange Act 1882 and the Carriage of Goods by Sea Act 1992) are applicable in Scotland. In addition, some areas, notably insolvency, require consideration of Scots law implications. Furthermore, depending on where the situs of a digital asset is, there might be cases where the law of England and Wales and law of Scotland are both relevant and therefore give rise to intra-UK conflict of laws situations. Based on these considerations, we think that it would be very useful for the Law Commission for England and Wales to engage with the Scottish Law Commission and promote close cooperation in the scope of work under both consultations.

Question 1. What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales? Please explain your answer and provide examples.

We think that some of these implications would relate to the link between possession and ownership while others would mainly relate to the notion of possession itself.

In terms of the implications relating to the link between possession and ownership, there is currently legal uncertainty whether persons, who have digital assets, own these assets. If digital assets were to be possessable, it should also be recognised by law that they could be owned and provided with protection via legal remedies. Legal certainty and protection might otherwise not be achieved in all cases if digital assets were deemed to be not possessable but rather could only be claimed by action, particularly in the absence of a central point of authority to which such a claim could be made. For example, a person who holds money in a bank account has only a thing in action and therefore has a right to claim against the bank over the amount in his
bank account. However, for example in the case of Bitcoin, underpinned by a permissionless blockchain, there is no central point of authority against which the person has a right to claim over Bitcoins in his digital wallet as it is a pseudonymous peer-to-peer system. Therefore, the law should remedy that, at least to some extent.

In terms of the implications relating to the notion of possession itself, there are legal provisions or legal concepts which specifically use or refer to the notion of possession. One example of this is the Insolvency Act 1986, s 236, which makes provision for the examination of a person inter alia “known or suspected to have in his possession any property of the company…” (emphasis added). Possession is relevant to the creation of certain types of security. In addition, the appropriate method of debt enforcement action (in Scotland, referred to as diligence) is linked to possession and specific remedies (eg possessory remedies) are other examples. Therefore, if digital assets were possessable, it would have certain legal and practical implications regarding these provisions and concepts.

The call for evidence paper seems to consider options for digital assets under the traditional division of “chooses in possession” and “chooses in action”. However, they do not easily fit into this division since they share several characteristics of chose in possession (such as transferability and storage) whilst being intangible (on this point, see eg Financial Markets Law Committee Paper on Fintech: Issues of Legal Complexity. June 2018, http://fmlc.org/wp-content/uploads/2018/06/FinTech_bound.pdf, pp.21-22; Joanna Perkins and Jennifer Enwezor, “The Legal Aspects of Virtual Currencies” (2016) 10 Journal of International Banking and Financial Law 569, p.570). We note that this makes a case for an argument for traditional categories of English common law to be extended to recognise “virtual choses in possession” as a new form of property referring to intangible property with the essential characteristic of choses in possession (on this point, see Financial Markets Law Committee Paper and Perkins and Enwezor cited above; see also the speech on ‘Financial Technology: Opportunities and Challenges to Law and Regulation’of Lord Hodge, Justice of the UK Supreme Court, 26 October 2018, https://www.supremecourt.uk/docs/speech-181026.pdf, p.15). We therefore raise for consideration, as part of this law reform, the option of creating a third category with a more specialised regime for digital assets. This could draw on existing rules and concepts as appropriate but create bespoke rules where necessary to recognise the specific characteristics of (different types of) digital assets. Such an approach would help to integrate digital assets with broader property law while also creating a regime that accommodates the particular issues pertinent to digital assets.

**Question 2.** Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? Please explain your answer and provide examples.

Bitcoin, as the first cryptoasset, was introduced as a purely peer-to-peer version of electronic cash that would allow online payments to be sent directly from one party to another without going through a financial institution. In that respect, we think that a transfer of a digital asset involving those characteristics would be more analogous to a transfer of a thing in possession. Yet the intangible nature of digital assets is more akin to a thing in action than a thing in possession. In any event, we note that the current digital asset landscape is continuously being evolved and diversified and therefore there might be digital assets for which both of these analogies could be potentially applicable. The answer to this question would likely depend on the type of the asset in question and the technology underpinning it.
Question 3. Are there practical circumstances in which it would be useful to distinguish, or to separate, the ownership and the possession of a digital asset, particularly in relation to transfers? If so: (1) For cryptoassets, could these circumstances arise both on-chain (reflected by modifying a ledger or blockchain) or only off-chain (where value moves or a transaction occurs without modification to the relevant ledger or blockchain)? (2) Do other technical or practical solutions (for example smart contracts, multisignature, escrow arrangements, Layer 2 applications or “mixing”) or market practice make these distinctions less important? Please explain your answer and provide examples.

The distinction between ownership and possession is a well-recognised distinction for other types of property and certain rights arise based on this distinction. We therefore think that this distinction should also be applied for digital assets. This distinction would be needed particularly in the following circumstances: where third party intermediaries (eg digital asset wallet providers) are used by asset holders to access and manage their assets; where a digital asset is subject to deposit, trust, lien or other security; where digital assets are being lent to someone else; or where ownership is disputed (eg in cases where an asset is stolen).

(1) We think that it would be logical for this distinction to be applied to both on-chain and off-chain situations.

(2) We have no particular comment on this sub-question.

Question 4. How do you typically characterise an on-chain transfer of a cryptoasset? Please explain your answer and provide examples.

We think that an on-chain transfer of a cryptoasset is to be typically characterised as a transfer of (the same) cryptoasset, notwithstanding the fact that new data is being used or created in this process. We think that what is newly created in an on-chain transfer is the data facilitating the transfer, not the asset itself.

If the law would treat an on-chain transfer as creating “new” cryptoasset, that would bring unnecessary complications regarding the ownership of an asset each time it is being transferred on-chain. This would be undesirable. One example of this could be seen in the application of the provisions for recovering property disposed of by a debtor prior to insolvency or indeed for any vindicatory action to recover specific property.

Under the existing law, an on-chain transfer might be seen as creating new property if it is interpreted by a very strict analogy to the delivery of a tangible object, but we think that law reform could address that.

Question 5. In what circumstances (if any) are digital assets analogous to “goods”, as currently defined under the Sale of Goods Act 1979? In what circumstances are digital assets not analogous to “goods”? What would be the practical consequences of characterising digital assets as “goods” for these purposes? Please explain your answer and provide examples. We would also be interested in respondents’ views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

We think that digital assets are not analogous to “goods” for the purposes of the Sale of Goods Act (SGA) 1979. They currently do not fit into the definition of goods in the Act. They cannot be considered as personal chattels as they do not satisfy the tangibility criterion for this purpose.
Regarding cryptoassets used for payment purposes and seen as an equivalent of peer-to-peer electronic cash and also almost definitely for central bank digital currencies, they are more analogous to money (rather than goods) as they are a means of payment for goods for the purposes of the SGA. The fact that they are currently not considered as legal tender should not change their character as a means of payment.

If digital assets were to be characterised as goods for the purposes of the SGA, we think that a number of aspects of the scheme for goods in the Act could not be applied to them directly as they are not physical objects.

We think that this analogy could probably be applied to the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015 in a similar way. For example, the Consumer Rights Act defines ‘goods’ in Article 2(8) as “any tangible moveable items, but that includes water, gas and electricity if and only if they are put up for supply in a limited volume or set quantity.” Digital assets would not typically fit into this definition. However, peculiarities of these two Acts would require further consideration. For example, the Consumer Rights Act applies to contracts for the supply of digital content and defines ‘digital content’ in Article 2(9) as “data which are produced and supplied in digital form”, which might be relevant to discussions around characterisation of tokenised assets. However, the scheme of this Act treats a contract for the supply of digital content different than a contract for the supply of goods or the supply of services.

Question 6. What practical or legal difficulties or problems (if any) do you encounter with the application of the “nemo dat” principle in respect of a transfer of a digital asset? (1) Do you encounter or anticipate the same practical or legal difficulties or problems in respect of on-chain transfers and off-chain transfers? (2) Do different digital assets or digital assets that perform different functions give rise to different practical or legal difficulties or problems? (3) Would the ability to possess a digital asset affect the application of the “nemo dat” principle? (4) What else could be done to alleviate these practical or legal difficulties or problems? Please explain your answer and provide examples.

We are not in a position to answer this question based on practical experience. However, we think that legal or practical difficulties may arise in terms of proving ownership depending on the type of digital assets, and they could be alleviated by providing specific statutory rules for digital assets. Consideration also needs to be given to a number of other issues, including the extent to which rules such as those for sellers or buyers in possession after sale, in terms of ss 24 and 25 of the Sale of Goods Act 1979, should apply to digital assets.

Question 7. How do you typically characterise the relationship between a digital asset token and the underlying tokenised asset? (1) What are the practical consequences of this characterisation for the purposes of transfers of either the digital asset token or the underlying tokenised asset which it represents? (2) Does the current legal characterisation of a transfer give rise to practical or legal difficulties or problems? (3) Would the ability to possess a digital asset token help to clarify this analysis? (4) What else could be done to alleviate these practical or legal difficulties or problems? Please explain your answer and provide examples.

We think that this is a question of what has been transferred (eg the token or the underlying asset) and the extent to which the tokenised asset is represented by the token. Legal or practical
difficulties might arise for example in the context of insolvency where there may be issues as to what exactly is included in the insolvency estate.

These problems could be alleviated by providing specific statutory rules for digital assets which would set out circumstances when the transfer of the token would lead to the transfer of the asset.

**Question 8. If a digital asset were possessable, are there practical circumstances in which bailment of digital assets could arise?** (1) Do you think bailment of a digital asset would be a useful or practical concept? (2) Do other technical or practical solutions or market practice make bailment of digital assets less important? Please explain your answer and provide examples.

If a digital asset were possessable, there might be practical circumstances in which bailment of digital assets arise, for example, in the context of the use of third party intermediaries (eg digital asset wallet providers) and security rights (eg pledge as a form of bailment).

(1) We think that bailment of a digital asset would be a useful and practical concept, and if possession of digital assets is allowed by law reform, bailment of these assets should exist. As already noted, the utilisation of existing concepts to digital assets is helpful to integrate such assets into the existing law of property and will help to resolve issues in future. The application of “digital bailment” is one such example of this.

(2) We have no particular comment on this sub-question.

**Question 9. How is security over digital assets granted or taken in practice?** (1) Do you consider mortgages and charges to be effective methods of taking security over digital assets? (2) If a digital asset were possessable, are there practical circumstances in which the creation of possessory security over a digital asset might be used? (3) Do other technical or practical solutions or market practice, including the creation of quasi-security, make the ability to take possessory security over a digital asset less important? Please explain your answer and provide examples.

We are not in a position to answer this question based on practical experience.

(1) Under the existing law of England and Wales, it seems that mortgages and charges can be used for taking security over digital assets. (Mortgages do not apply in Scotland and although at present security could be taken in the form of a floating charge, such a charge cannot be granted by all debtors.) The characterisation of a charge as fixed or floating may give rise to particular issues. Although concerns around difficulties in exercising control over a digital asset might reduce the efficacy of taking a mortgage or charge over digital assets, it could probably be addressed by technological solutions.

(2) We think that if possession of digital assets would be allowed by law reform, the creation of possessory security over a digital asset would make sense. If possessory security is to be allowed, it might be helpful to also clarify whether an “assignment” for security purposes will be permissible as an alternative (as this is a form of transaction used for intangible property). Of course, the requirements for transferring digital assets could determine this and it may be that a transaction in such terms would be characterised as eg a mortgage, assuming relevant transfer requirements were met. (From the perspective of Scots law, which as noted above does not allow mortgages, it would be useful to know if an assignation in security of such property is to be considered permissible as a means of taking security over digital assets.)
would be possible, but we appreciate that this is not a question for the Law Commission of England and Wales.)

(2) We have no particular comment on this sub-question.

Question 10. If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise? (1) Do you think conversion would provide a useful or practical claim in this context? (2) Do other technical or practical solutions or market practice mean that the applicability of conversion to digital assets is less important to stakeholders and market participants? Please explain your answer and provide examples.

If a digital asset were possessable, there might be practical circumstances in which conversion of a digital asset could arise, for example, where a digital asset is stolen.

(1) It seems logical to us for conversion to be available as a remedy for unlawful interference in this kind of cases. Again, applying rules that are relevant for other assets is advisable here.

(2) We have no particular comment on this sub-question.

Question 11. We welcome comments on the aspects of the Liechtenstein Blockchain Act and the Wyoming Blockchain Laws relevant to the questions in this call for evidence. What other jurisdictions, if any, should we consider and why?

We think that it would be useful to consider the following jurisdictions or projects (and the Law Commission should continue to monitor developments elsewhere in future):

- United States of America (USA): The work of the Joint Committee of the Uniform Commercial Code and Emerging Technologies of the American Law Institute and the Uniform Law Commission (https://www.uniformlaws.org/committees/community-home?CommunityKey=cb5f9e0b-7185-4a33-9e4c-1f79ba560c71) reflects the latest US approach and has made considerable progress in this area.

- Switzerland: The Swiss Act to Adopt Federal Law to Developments of Distributed Ledger Technology, entered into force in two phases, and provided significant amendments to different statutes across different fields. Some of the main aspects of the Act include regulating the transfer of rights on the blockchain by means of digital registers, introducing a new category of ledger-based securities to the Code of Obligations, and providing special provisions for the segregation of cryptoassets held in custody by a third party in bankruptcy proceedings.

- European Union (EU): A legal and regulatory framework for blockchain is a part of the EU’s blockchain strategy, including current proposals for digital Euro and for a Regulation on Markets in Crypto-assets (MiCA) governing the issuance, trading and storing of cryptoassets falling into its scope. Although the Law Commission’s current law reform proposal has a different scope and focus, it would be useful to monitor developments in the EU in this area.

- International Institute for the Unification of Private Law (UNIDROIT): The UNIDROIT is working on developing a legal instrument containing principles and legislative guidance in the area of private law and digital assets (see https://www.unidroit.org/work-in-progress/digital-assets-and-private-law). A number of key international institutions whose work is relevant to this area (including the United Nations Commission for International Trade Law (UNCITRAL) and the Hague Conference on Private International Law (HCCH)) are participating as observers in
their Working Group. A guidance document on Digital Assets and Private Law is expected to be adopted by early 2022.

- International Academy of Comparative Law (IACL): One of the topics that the IACL selected for its 2022 General Congress is “Cryptocurrencies: the impossible domestic law regime?” (see https://aidc-iacl.org/wp-content/uploads/2021/05/ASUNCION-Topics-List-As-of-Feb-6.pdf). For this purpose, Special National Rapporteurs have been appointed from 24 countries to prepare a national report on different aspects of cryptocurrencies, including private law aspects, for their respective jurisdiction (see https://aidc-iacl.org/snr/). This project would be useful to consider in order to have a comparative approach on the issue.

- Hague Conference on Private International Law: The HCCH is working on private international law implications of the digital economy, including DLT and its applications including digital assets). The mandate for the work is to monitor developments with a view towards identifying topics for further study (see https://assets.hcch.net/docs/f787749d-9512-4a9e-ad4a-cbc585bddd2e.pdf and https://assets.hcch.net/docs/8bdc7071-c324-4660-96bc-86efba6214f2.pdf). Digital assets, given their cross-border nature, give rise to conflict of laws/private international law issues. As a HCCH member, the UK’s cooperation and coordination with the HCCH regarding conflict of laws/private international law issues in this area is important for law reform particularly given the proposal of the Law Commission to take forward a separate project on private international law and emerging technologies as part of their 14th programme of law reform.

**Question 12. We welcome suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of our digital assets project. For each issue, we would be grateful for the following information: (1) a summary of the problem or potential problem. (2) an explanation of and evidence of the effect of the problem or potential problem in practice. (3) suggested solutions to the problem or potential problem, and any evidence of the costs and benefits of the solution.**

Issues relating to third-party intermediaries: For example, in cases where a person opens an account with a third party intermediary (eg digital asset wallet provider), would that third party have any ownership or possession rights over crypto assets registered in the wallet?

Issues relating to insolvency: These would include whether digital assets are part of the insolvent estate and how they are to be treated; the mechanics and effect of vesting, where relevant; the nature of the assets, which may in turn be relevant to the officeholder’s powers to recover, manage and realise the assets and to obtain information about them; valuation; the operation of the provisions on challengeable transactions; the determination of whether a valid security exists over the asset; the interpretation of specific provisions such as s 236 of the Insolvency Act 1986, referred to above; and the implications for a distribution in specie.

Issues relating to debt enforcement: This includes what type of debt enforcement method(s) can be used for such assets; how and against whom debt enforcement against digital assets should take place; and whether existing debt enforcement processes and rights would need to be adapted to accommodate such assets.

Issues relating to conflict of laws/private international law issues: Digital assets, given their cross-border nature, give rise to conflict of laws/private international law issues. For the nature of the problem, key issues that arise in this context, and potential solutions, see the HCCH documents cited above in our response to Question 11.
**Digital Assets Call for Evidence**

I respond to this call as an individual. I am Professor of Business Law at the University of Leeds and have written generally on personal property law, being author of *The Principles of Personal Property Law* (2nd edn Hart Oxford 2017). In this response I provide comments on some but not all of your consultation questions. Paragraph references are to the Call for Evidence.

As I have suggested earlier – and in my response to your separate electronic trade documents consultation – I think the criteria for possessability in that consultation (and at para 2.19) will/should apply here. They certainly apply quite neatly to crypto-currencies such as bitcoin. In line with this *B2C2 v Quoine Pte Ltd* [2020] SGCA(I) 02/ [2019] SGHC(I) 02 recognised a bitcoin could be held on trust; it is stable, permanent, identifiable and definable. I would add a requirement of separability to this. Information is, I think, a “thing” in the sense it is definable but it is not separable in that if I tell you my confidential information (in confidence) I still know it. Just because I tell you my secret prune juice recipe it is not deleted magically from my brain. That rather neatly makes bitcoin a thing in possession; I do not think it credible to categorise these digital assets as choses in action. Even if there were to be recognised a tertium quid between things in action and in possession that is not too problematic. The fact that patents are statutorily defined as being not a thing in action appears to have no practical implications. Whether it is necessary in analytical terms to introduce possessability in order to allow a transfer of ownership is I think doubtful. Ownership could be transferred through an irrevocable assignment to another person – coupled with the transfer of the private key. With a bitcoin for example once the transaction has been verified it cannot be reversed and the transferee is accepted on the ledger as the owner and without use of the private key it cannot be retransferred. Talk of possession does not really help much; nor does it help much to say that bitcoin or other digital assets are goods. In fact it may make the analysis more difficult.

The Sale of Goods Act says that property passes when it is intended to pass, but if that is so, property in a bitcoin could pass despite no conveyance/proof of work/passage of the private key. If we are entitled to look at the ledger and assume that the person accepted as the “owner” is the owner then this creates a problem as a second sale (by the seller) which is carried through could lead to the buyer being subject to a conversion claim unless the seller-in possession provisions apply. That analysis is complex because for section 24 Sale of Goods Act 1979 to apply the seller must be in possession; possession and ownership are then split. However, for the buyer to have recourse to conversion he must be in possession – albeit without the visibility of being recognised on the ledger. It is hard to see how he can be in the type of control required for possession (if the requirements in the trade documents consultation are carried over) without being on the ledger. But if that is right what action does the buyer have against the second buyer? Reversionary injury would be a possibility, but this seems rather convoluted. Or can the second purchaser always take advantage of section 24? A simpler analysis would seem to be that property does not pass until the private key has been transferred and the transaction verified. It produces the same result and avoids “off-ledger” title transfers and convoluted legal analyses. This would also avoid the difficulties inherent in an owner transferring possession (but not ownership) to a mercantile agent via a transfer on the ledger and therefore being susceptible to losing title under section 2 Factors Act 1889, but if he transfers possession (but
not ownership) to someone else he is not so susceptible. Once we have accepted that the legal owner of the digital asset might be off-ledger this is surely a live possibility. In each case the position of the buyer is the same – he should be entitled to believe the ledger and deal with the person in apparent ownership. In cases of mixing it might make sense to talk of a legal tenancy in common in the sense that the transferee has a right to a certain proportion of the fungible digital assets mixed up, but again talk of possession may add little to this.

I worry – and this also scratches at the back of my mind with electronic trade documents, but the imperatives may be different there – that possession, and the potential for splitting it from ownership, will therefore confuse as much as it helps. It may be useful to be able to use conversion to protect title to bitcoins (if eg the private key were stolen or the Exchange hacked). It is not obvious what other action would be used – the economic torts used to protect at least some choses in action would seem inappropriate. It may be that for some digital assets there would be protection via intellectual property law (and I do not pretend to knowledge of this) but it may be that gaps remain and conversion could fill the gap. However – and you will detect the theme here – that seems to me to depend critically on the claimant being able to readily prove his right. In turn that means being able to rely on any record or ledger. The policy of upholding the record means that it is less clear to me that being able to bail or pledge bitcoins or other digital assets produces outcomes/legal analyses that would not be more easily and better achieved by way of a trust structure. I worry in effect that a bailment where the bailor (but not bailee) stands outside of the DLT creates a situation more analogous to a registration scheme where you are entitled to assume that the registered party has ownership and therefore that a third party claiming off-register ownership should in general not be assisted against a purchaser. His rights are equitable and therefore more easily “gotten rid of” by means of bona fide purchase. A similar analogy would be with bank accounts where the bank is entitled to assume the debt is owed to the person whose name is on the account (a situation arguably undermined to some degree by FC Jones v Jones [1997] Ch 159). Equally I am not sure that in policy terms there is much advantage to being able to pledge a digital asset as opposed to charging it – what practical benefit does a lender get from being a pledgee that he does not from being a chargee? I suspect that in most cases there would therefore be little commercial appetite on the part of banks to become a pledgee as opposed to chargee. First impressions lead me to suspect (although I will admit a lack of familiarity with the technology) that this analysis will also hold true for layer 2 applications where only the final result is recorded. The simplest analysis of this is that “off-chain transactions and functions” are simply mechanics to get you from recorded position A to recorded position B and it can be seen as one composite transaction.

There is a caveat of course to all of this which is that if fraud or hacking means that party A loses his position as the party recorded as owner he should be able to get an order for retransfer. Rectification is, I suspect, somewhat inappropriate for an open permissionless DLT, but an order for retransfer would have the same effect. The original (now dispossessed owner) would seem to be in the same position as the claimants in Armstrong v Winnington [2012] EWHC 10, [2012] 3 WLR 835. where the hackers stole carbon credits, re-registered themselves as owners and sold them on. We either say there is a legal power to re-vest title or that there is a trust, but in either case it seems bona fide purchase should apply. There seems little practical difference here. At the risk of belabouring matters, my ultimate
point is: if there is a record/ledger or register, the record is paramount and possession a red herring. Off-ledger rights should be purely equitable in character.

If there is no ledger/record or register, possession may be more important and this might be true of purely digital artworks or assets in virtual worlds such as Second Life. If I buy a Second Life asset and my avatar then lends it to your avatar we could see that in terms of bailment or custody which could lead to conversion if you then refuse to hand the asset back.

Duncan Sheehan
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Digital Assets: Call for Evidence

Joint comments from Professor Louise Gullifer, University of Cambridge
and Professor David Fox, University of Edinburgh

Question 1
What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales?

We suggest that it is first necessary to settle the question whether, and by what criteria, digital assets are property before going on to consider whether they are possessable.

It would be helpful to resolve the ambiguity that remains after the publication of the UKJT “Legal Statement”. The Legal Statement waives between categorising them as things in action (taking that term broadly to mean any personal property that is not a thing in possession) and recognising that they belong to a third category of personal property which is neither thing in action or thing in possession. The dicta of the High Court in AA v Persons Unknown [2020] 4 WLR 35 at [55] have not completely resolved that uncertainty. It would also be good to lay to rest the lingering authority of Colonial Bank v Whinney (1885) LR 30 261, adopted (1886) LR 11 App Cas 426. The reasoning in that case turned on the interpretation of the bankruptcy statutes then in force. It been taken out of context and used as authority for a proposition that it not meant to support. It would also bring the civil law of property into line with the definition of “property” applied in criminal law of theft. Section 5 of the Theft Act 1968 defines “property” as including “money and all other property, real or personal, including things in action and other intangible property” (emphasis added).

For reasons we have given elsewhere, we would suggest that it is analytically tidier to recognise a third category of personal property rather than to treat digital assets as varieties of thing in action (see D Fox, ch 6 in D Fox and S Green, Cryptocurrencies in Public Law and Private Law (2019), paras 6.28-6.43). We would suggest that the three criteria in para 2.19 of the “Call for Evidence” for recognising whether an asset should be possessable (or could be the subject of control, see below) might also provide a foundation for treating it as property in the law. The criteria speak to whether the asset might, on an extended view, be regarded as a specific thing which might be made the subject of an exclusive proprietary entitlement.

We would suggest however that as a definition of property it would be necessary to add the criterion that the asset be rivalrous. That is to say, it should be impossible to copy the asset. The asset would have to be of a kind that meant two people could not use it simultaneously without causing interference to each other.

We acknowledge the difficulties of recognising that digital assets belong to a third category of personal property. Although digital assets are intangible, they show many of the characteristics of things in possession when we come to explain the transfer of rights in them. We see the attractions in developing a definition of digital possession (or control) that might apply to
digital assets. The main attraction is that it would explain the derivative transfer of ownership in those assets. A transfer explanation based on delivery of possession (or control) could apply to them, in an analogous way as it does for other more traditional categories of things in possession.

We would, however, suggest that serious consideration is given to using the concept of factual control as the defining concept rather than that of possession. We suggest that the concept used for the following purposes needs to be a factual one. The purposes are (a) as part of the criteria for whether an asset constitutes property, (b) as a necessary (but not sufficient) requirement for transfer and (c) as prima facie evidence of title. Control could be more appropriate here.

Our concern is that possession has a highly specialised meaning that has developed to govern its use in transactions involving natural persons and tangible assets such as land or goods. Much of the law has developed in relation to situations where tangibles are not in the actual physical control of the person who is claiming to be in possession of them or who is claiming to sue on a possession-based title (e.g., someone who has temporarily lost something). To accommodate these, the common law has developed subtly different grades of possession (such as actual vs. constructive possession and factual vs. legal possession) to explain the incidence of rights between the parties and the world at large. It may well be that such accretions are not necessary or desirable for the law relating to digital assets. If the main reason for relying on possession in digital asset transactions is only to explain how rights can be transferred then a concept of control would be the more direct and natural way to achieve that end.

Another, related reason informs our view. The determination of possession in law depends as much on the intentions of the parties to the transaction as it does on the fact of exclusive control asserted over the asset in question. Our concern is that many digital transactions are entirely automated in their operation. They execute in the way their programmers designed them to. To search for an element of human intentionality, which may be what a notion of possession would require, risks introducing an unreal human element to what is often an automatic process.

We acknowledge the advantage of using a concept of digital possession to explain the transfer of property in electronic trade documents. The reason is that the proposed electronic regime is modelled directly on existing transactions with tangible documents. The delivery of the documents is the key concept in explaining how title in them is transferred. But this reason would not necessarily support the use of possession to explain the holding and transfer of other kinds of digital asset that were never intended as functional equivalents of documentary intangibles. There is a point where the extension of existing legal concepts to new technological forms ceases to be an exercise in analogy and instead becomes an exercise in fiction. We suggest that the factual concept of control better describes a holder’s powers over these very different kinds of asset.

Another potential issue with the use of ‘possession’ is the argument (made in paras 2.38 – 2.41) that the ‘thing’ received in a transfer is not the same as the ‘thing’ sent. If this is correct, the concept of possession (which relates to tangibles which can be transferred without losing their identity) seems inappropriate. On the view we express below (q.4), that what is transferred is the exclusive power to make effective transactions, this issue does not arise. However, one could argue that control is a better concept to apply to an exclusive power than possession.
Another point concerns multi-sig arrangements. It is, of course, possible to have shared possession, but this is usually where one party is in actual possession and another has constructive possession. In a multi-sig arrangement, depending on how it is set up, more than one party may have full actual control. It would not be impossible to conceptualise this as shared actual possession, but this point would need to be worked out.

Question 2

Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different kinds of digital assets?

In terms of explaining the transfer of ownership, the transfer of a digital asset is more analogous to a thing in possession. In terms however of the technical process of making the transfer on the blockchain, it is more analogous to the transfer of bank money. We have explained the foundation for our view in D Fox, ch 6 in D Fox and S Green, Cryptocurrencies in Public Law and Private Law (2019), paras 6.18-6.19).

We think however that the precise legal explanation for transfer would depend on the kind of digital asset concerned. A purely endogenous token, such a bitcoin, would be transferable by analogy with the delivery of a thing in possession. The same explanation would not apply so readily to an exogenous token that represented a legal right to enforce performance of a corresponding obligation (eg, a security token). The benefit of a legal right is not generally transferable by delivery unless mercantile custom has recognised its status as a documentary intangible. (We return to this point in our answers to question 7.)

Question 3

Are there practical circumstances in which it would be useful to distinguish, or to separate, the ownership and possession of a digital asset, particularly in relation to transfers?

We think that it is useful to distinguish between the ownership and possession or control of a digital asset. The blockchain may record a person as having the practical power to transact with the asset, and in this sense be in possession of it. But that person is not necessarily the owner of the asset in law. This goes to the fundamental point that the state of transactions recorded on the blockchain should not be taken as a definitive record of the legal state of ownership of the asset. Nor should it be treated as sufficient to constitute a person as the owner of the asset. That view would entirely exclude the operation of the ordinary rules of property law on the derivative acquisition of ownership.

It should also be remembered that there are very many instances where ownership and possession of tangible assets are separated. This is because the transfer of ownership in a sale contract is a matter for the intention of the parties. We suggest that this rule should not apply to digital assets, and that it would be more appropriate for transfer of possession or control to be a necessary condition for the transfer of legal ownership.
Moreover, there are a number of ways in which intermediaries can be involved in the holding of digital assets. We suggest that in one model, both control and full ownership are transferred to the intermediary (as in Quoine). In another model, control and legal ownership are transferred to the intermediary, who becomes a trustee for the client (by express or implied declaration of trust) (Cryptopia). In this situation, beneficial ownership could be transferred from client A to client B off-chain, which is how, we understand, many exchanges operate. In other situations, neither control nor any form of ownership is transferred to the intermediary (for example, provision of wallet services).

**Question 4**

**How do you typically characterise an on-chain transfer of a cryptoasset?**

We agree that it is difficult to characterise the transfer of a cryptoasset in exactly the same way as the transfer of a thing in possession. As noted in the “Call for Evidence”, para 2.38, the proceeds of the transfer is represented by a different and longer chain of digital signatures. Seen purely as data, the proceeds of the asset can be seen as a different thing from the original asset at the transferor’s public key.

We do not think that this technical explanation rules out applying a conventional property explanation to the transfer of the asset. The usual rules governing the acquisition of rights by derivative transfer would still apply. We suggest two reasons for this view.

First, the familiar rules of tracing and substitution of assets would apply to the transaction even if the asset were analysed as distinct things at the transferor’s and transferee’s side of the transaction. If there were some defect in the transaction (such as fraud) then the transferor would have an enforceable title against the traceable proceeds of the transfer. The system rules would identify the asset at the transferee’s public key as the substitute obtained in exchange for the extinction of the asset at the transferor’s public key (see further D Fox, ch 6 in D Fox and S Green, Cryptocurrencies in Public Law and Private Law (2019), paras 6.53-6.55).

Secondly, we might conceptualise the asset which is the subject of the transfer as analytically separate from the blockchain data that record it. The asset may consist in a person’s exclusive power to make effective transactions according to the rules of the system. The blockchain data simply record and enable that transactional power. The programming features which protect the exclusivity of this power are the means of protecting the value represented in the asset.

Viewed in this way, we might conceptualise the transferee as acquiring the same transactional power that once vested in the transferor. It would then be easier to explain the transaction as a typical derivative transfer of ownership in a thing that was the same at either side of the transaction. (We return to this explanation in our answers to question 7 since it may inform our understanding of digital tokens and underlying tokenised assets.)
Question 5

In what circumstances are digital assets analogous to “goods”, as currently defined in the Sale of Goods Act 1979?

We strongly doubt whether it would be legally correct or practically appropriate to treat digital assets as “goods” or analogous to “goods” within the meaning of the Sale of Goods Act 1979.

Fundamentally, a digital asset is not a “good”. The argument can be made that digital assets have some status as things in the law but this is not enough to bring them within the more specialised understanding of “personal chattel” that would bring the regime in the Act into play.

Even putting this to one side, we think that the regime of implied terms and the rules for passing of property in the Act would make a poor fit with digital assets, so poor in fact that they confirm our view that the Act can only have been intended to apply to tangible goods.

Many of the implied terms provided in the Sale of Goods Act 1979 would be inappropriate in any sale and transfer of a digital asset. We can see advantages in enacting a much more bespoke regime of non-excludable duties to be imposed on the business seller of a digital asset to a consumer buyer, but the content of the duties would need to better reflect the nature of the asset and of the transaction. A similar, but more flexible regime, could also apply to B2B transactions. Some of the remedies available for breach under the Sale of Goods Act are also, as they stand, not appropriate for contracts of sale of digital assets. For example, it is difficult to see how a buyer could reject a digital asset if the seller was not willing to accept a retransfer of the asset. There could also be problems in rejecting assets which included embedded smart contracts. If it is thought desirable to add to the existing law, which gives a buyer normal contractual remedies plus remedies for misrepresentation, the new regime would need to be bespoke rather than a mere application of the wording of the Sale of Goods Act.

The effect of sections 17 and 18, rule 1 of the Act is that property in goods can pass when the contract of sale is formed. This rule would be inappropriate for any sale of a digital asset. The great advantage of making transactions with digital assets on a blockchain is that any change in ledger state generally corresponds to a change in the legal title to the asset. A regime that allowed property in the asset to pass by contract alone would undermine the transparency of the ledger. It would open to the door to off-chain transfers of legal title.

This is not to say that the Sale of Goods Act would have no relevance at all to transaction with digital assets. Some digital assets can be used like money. An agreement to transfer a car in return for bitcoin is arguably a sale of goods. The point is however that the bitcoin is not a “good” in this transaction: it is the monetary price paid in return for the good, which is the car.
Question 6

What practical difficulties or problems (if any) do you encounter with the application of the nemo dat principle in respect of a transfer of digital assets?

Our view is that the nemo dat principle should generally apply to transfers of digital assets. That is to say, we do not think that the mere recording of transaction on the ledger should be sufficient to confer on the transferee an indefeasible title to the asset. The transaction ledger is legally neutral and cannot of itself confer a title on the transferee regardless of the general rules of property law. To repeat our point made above, we do not think that the newly-created data recording the transaction at the transferee’s public key is sufficient to exclude the ordinary principles of derivative acquisition of title (see Questions 2, 4 above).

The practical problem is that on our view the digital ledger would not always represent an accurate or complete record of the state of the parties’ title to the asset. We take each problem in turn.

The problem of accuracy is that the ledger may record a transaction which is technically complete but which is legally defeasible. The transferee may, for example, have procured the transfer to himself or herself by a transaction which was void or voidable according to general property law rules.

The problem of completeness is that state of the ledger may not indicate the effect of off-chain dealings with the asset. The recorded holder of the asset may for example hold it subject to a trust or a security interest.

Neither of these problems is peculiar to digital assets. They would figure also with corporeal chattels transferable by delivery. The holder’s possession of the property satisfies the need for publicity in completing a property transfer transaction. It also creates a default presumption of legal (and beneficial) title in the holder. The effect is to shift the burden of proof on to a competing party who sought to challenge the holder’s title.

We think that an analogous principle would apply to the ledger records of digital asset transfers. The state of the ledger record should create an evidential presumption of title in the holder. It would tend to displace the risk that the ledger may not be wholly accurate in indicating the legal efficacy of transactions between the parties. It would at least place an evidential burden on to the party who wanted to challenge the legal efficacy of the transaction. (See D Fox, ch 6 in D Fox and S Green, Cryptocurrencies in Public Law and Private Law (2019), paras 6.6.50-6.52).

A theory of digital possession would go some way to support this presumption of title from the ledger record of the digital asset. Use of the term “possession” to explain the holder’s control over the asset would suggest the analogy with the familiar presumption of title from possession of goods.

We would suggest however that the presumption of title would operate without resorting to an extended concept of digital possession. It would also work if control rather than possession were used as evidence of title. Even without relying on the language of presumptions, the state of the ledger still serves as circumstantial evidence of the holder’s title to the asset. Title could be inferred from control. The great majority of transactions made on the ledger would be legally effective to transfer title to the recorded holder in control of the asset. Their collective
effect would be to support an inference that the transaction in question was legally effective too.

We also expect that some exceptions to the *nemo dat* rule might apply to digital assets.

First are those exceptions that would apply from the characterisation of digital assets as property in the general law. We would expect for example that a right of proprietary rescission or to enforce an equitable interest in the asset would generally be extinguished when the legal title in the asset was transferred to a good faith purchaser for value without notice.

Secondly, it may be appropriate for the law to develop a more general good faith acquisition rule depending on the function and nature of the digital asset in question. An asset which the parties treated as money should benefit from the common law rule of good faith acquisition for value. The same might be true of tokenised securities which benefit from a good faith acquisition rule in the current transfer regimes that apply to them. Tokenised securities should benefit from the same *nemo dat* exceptions that would apply to them in non-tokenised form.

**Question 7**

**How do you typically characterise the relationship between a digital asset token and the underlying tokenised asset?**

In our view, there are a number of possible analyses.

1. A statute provides for the relationship. This could either be on the ‘container’ lines of the Lichtenstein statute, or the blockchain can serve as a statutory register (as is the case for share registers in Delaware, for example). The effect of an entry on the register is whatever effect the statute provides for. The ‘register’ analysis, whereby the blockchain merely serves as a record of other off-chain transactions, could be limited to these specific statutory situations (see the discussion later on in the response to this question).

2. The parties agree that the relationship is that of a documentary intangible, and statute provides that a digital record can be such a documentary intangible. This would be the position if the proposals in the consultation paper on electronic trade documents were enacted.

3. The blockchain record of transactions relating to the token is evidence of ownership of the underlying tokenised asset. How strong the evidence would be would depend on the arrangement between the parties and the nature of the asset. Two examples follow.
   a. If, for example, the tokenised asset was a bond, the terms of the bond could provide that interest and capital was only payable to the person who controlled the digital asset token. Providing that this provision was enforceable under the applicable law, the tokenised bond could not be successfully transferred to any person except the person who controlled the token, and if the token was transferred, this would (if an effective transfer) transfer all the rights under the bond.
   b. If, however, the tokenised asset was a tangible asset, it would be much more difficult to structure the transaction to make it legally impossible for the tokenised asset to be transferred except by transfer of the token. This is because
ownership in tangible movables can be transferred by the intention of the parties, and any restriction on transfer cannot bind a transferee who is not party to that restriction.\textsuperscript{1} It is possible, however, to make it commercially very unlikely that anyone would accept a transfer of a tangible linked to a token, for example, by the tangible being in the custody of a custodian who was instructed only to deliver the tangible to the person who controlled the digital token. Someone could buy the tangible without being the transferee of the token, but would not be able to take delivery of the tangible, so would be unlikely to enter into this transaction.

A related point is whether a token related to an underlying asset has any existence in itself other than as a record of a transaction involving the underlying asset. Are there two assets or just one? This point is most significant in relation to the analysis in 3. above (but could also explain conceptually the ‘container’ approach adopted by Lichtenstein).

Our tentative view is that it is better to recognise two distinct assets. In taking this view we draw upon the reasoning we developed in explaining the nature of a digital asset (see our answer to question 4). A digital asset may be best conceptualised as an exclusive power to make valid transactions on the system. A system may also be designed so that that asset is linked to an underlying off-chain asset. In that case, its value derives not just from the possibility that it can be the subject of an exchange with another person but from the fact that it allows the holder to access the value represented by the underlying asset. The digital asset can be a subject of property that exists independently of the underlying asset. But its practical value in exchange is contingent upon its relationship with the underlying asset.

**Question 8**

**Bailment**

Whether digital assets could (or should) be the subject of bailment depends not only on whether digital assets can be possessed, but on whether bailment is itself a useful concept. It is certainly the case that there are situations where an intermediary has control of a digital asset for a client in a situation that could be said to be one of custody. As explained above, sometimes the intermediary will have control and full ownership of that asset. However, if that is not intended by the parties (expressly or on a true interpretation of the contract between them) then there needs to be an analysis which (a) enables the client to claim the asset in the insolvency of the intermediary and (b) imposes some duties on the intermediary which cannot be entirely excluded by the contract between the parties. We consider that the best English law analysis for these purposes is one of trust, and this has been confirmed by the NZ court in the *Cryptopia* case. This is partly because the principles whereby intangibles are held on trust have been fully developed under English law, particularly in the context of intermediated securities, and partly because the non-excludable duties under a trust are particularly appropriate to the situation of custody in relation to digital assets. Many digital assets are held by exchanges and custodians in omnibus accounts, and the principles of trust in relation to such accounts are also well developed. Bailment would be another possible analysis, but given that the existing law relates

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\textsuperscript{1} It should be noted that that many tokenisations involving tangible assets are actually effected by the transfer of the asset to a SPV, and what is tokenised are the shares of the SPV.
only the tangible assets, it is not as appropriate to apply by analogy to digital assets, even if such assets were possessable.

The trust analysis would also have the advantage of bringing into play the equitable rules of tracing in the event that the custodian of the assets misapplied them in breach of its instructions. Those rules would allow the beneficiary of the relationship to follow the asset through mixtures. If however the beneficiary of a bailment relationship were forced to stand on his or her legal title to the misapplied assets, then he or she would have to overcome the traditional rule that the common law rules of tracing do not allow money to be followed through mixtures. (We assume here that some digital assets, such as cryptocurrencies, might be treated as money for the purposes of the rule.) There are even dicta in *Agip (Africa) Ltd v Jackson* [1990] 1 Ch 265 that hold that asset tracing is impossible at law unless the claimant tracks a tangible asset from holder to holder. These dicta may be questionable in principle. They are however an obstacle that could be easily avoided by analysing the custodianship relationship as a trust in equity rather than as a bailment at law.

**Question 9**

**Security over digital assets**

**Mortgage and Charge**

Once it is accepted that digital assets are property, there seems to be no problem with non-possessory security being taken over it. Under English law, this would be a mortgage (legal or equitable) or a charge (fixed or floating). If the grantor is a company these security interests would be registrable in the company charges register. Subject to the question of whether digital assets can be seen as goods (and see the points made about this above) the Bills of Sale Acts would not apply to creation of a security interest over a digital asset by a non-corporate business or a consumer. This seems a good thing: it is hard to see who it would benefit anyone to have a requirement of registration in a register that was effectively non-searchable, and it would be expected that, as in the realm of chattels, quasi-security devices would develop to avoid this requirement.

**Repos**

In any event, it is likely that the market will develop quasi-security devices. This is particularly likely in relation to tokenised securities. In the current securities market, the repo (sale and repurchase) is a standard device used for raising finance. It would be odd if the same device was not available in relation to tokenised securities. The difference between a repo and a (legal) mortgage would be in the intention of the parties as documented in the agreement, rather than in what actually happened on the blockchain. In both cases the digital assets would be transferred into the control of the counterparty. In the case of a repo, that transfer would also transfer absolute and unqualified ownership. The transferee would be free to transfer the securities transferred to it, and would be under a personal obligation to acquire securities in order to fulfil the obligation to transfer ‘equivalent securities’ to the original transferor at a later date. If the transferee became insolvent before fulfilling that obligation, the transferor would be an unsecured creditor. Since there is likely to be a close-out netting agreement, the
transferor would only be unsecured as to the surplus value of equivalent securities over the amount of the repurchase price.

In the case of a legal mortgage, transfer of control to the digital assets would also transfer legal title to the transferee, but this would be subject to an equitable right to redeem on the part of the transferor on payment of the secured obligation. If the transferee became insolvent before the securities were redeemed, it would hold any surplus on trust for the transferor, who would therefore not be an unsecured creditor.

The repo structure could be used more widely than just for tokenised securities. Its main drawback is that the transferor is exposed to the credit risk of the transferee, and this is why the use of such devices has been severely limited by regulation in relation to retail investors in relation to securities.

**Lien**

There are, in our view, two important outstanding issues, which are linked. The first is whether it should be possible to take a pledge or lien over digital asset. If it were possible to possess digital assets, it would, in theory, be possible to take a pledge over them. A possessory lien only arises at law in particular situations, many of which would not arise in the digital assets context (although there is a possibility of extending the ‘warehouseman’s lien’ concept to a custodian of digital assets). However, a lien could, in theory, be created by contract. The difference between a pledge or lien is that the pledge carries with it a right of sale of the collateral, while a lien does not. In this light, it is difficult to see, in a digital assets context, why a custodian would wish to create a lien rather than a pledge to secure fees payable to it by its client, although, perhaps, it might be desirable to do so in a very illiquid market, or perhaps in the case of a NFT which might be of great personal or sentimental value to the client.

**Pledge**

Would there be any benefit in taking a pledge rather than a charge over digital assets? The chief ‘benefit’ would be that a pledge does not have to be registered in the company charges register. This, of course, is a benefit to the secured creditor but not necessarily to the wider world since the pledge is less easily discoverable than a charge. If a third party wished to know whether a legal person had created a security interest over its digital asset, the question would be whether the transfer of that asset into the control of the secured creditor would give sufficient publicity. If the digital asset is no longer associated with the public key of the grantor of the security interest (and is now associated with the public key of the secured creditor), then arguably there is sufficient publicity. It should be noted that this situation is identical (in its factual attributes) to the legal mortgage, which, if created by a company, would require registration. If the pledge could be created by a transfer of control in a different way (eg by giving the pledgee exclusive control of the private key) then it is harder to see that this would produce sufficient publicity.

**Special statutory rules**

The second (linked) issue is whether special rules should apply to security interests over digital assets in relation to registration, in the way that they do to security interests over certain financial assets under the Financial Collateral Arrangements (No. 2) Regulations. The exemption from registration was introduced (by the EU) to give a level playing field across EU
states and to enable market transactions to operate quickly and efficiently. Fixed security interests over securities were not registrable under English law anyway until 2013, so the change only applied to floating charges, to the extent that they fell within the FCARs. One major criterion for a security interest to fall within the FCARs is that the secured creditor must have ‘possession or control’ of the collateral. The concept of control, as defined by the FCARs and the courts, has caused a great deal of difficulty, and is certainly not analogous to the concept of factual control we suggest as a suitable concept for digital assets.

In relation to some digital assets, such as tokenised securities, it is strongly arguable that the FCARs will apply to security interests in such assets. It would be problematic if the token was seen as a separate asset from the linked securities, so that a security interest over the token attracted a different regime from a security interest over the securities. However, this does raise the question of how the requirement of ‘possession or control’ applies to digital assets. Factual control is not sufficient under the FCARs: legal control is required. Therefore, it would not be enough for the digital asset merely to be transferred to the control of the collateral taker if, for example, that collateral taker held the asset on trust for the collateral provider and was obliged to comply with the instructions of the collateral provider (Gray v. GTP Group). There is, therefore, an argument that the position would be easier if a token representing a security could be possessed. However, this argument will have to be weighed against other counter-arguments when deciding whether the optimal concept is possession or factual control.

It is reasonably clear that the FCARs will not apply to all digital assets. It is unlikely that crypto-currencies (endogenous digital assets) fall within the definition of ‘cash’ in the FCARs, as they are probably not ‘money’ and are not necessarily ‘credited to an account’ since they can be held directly by control of the private key. ‘Utility tokens’ are also unlikely to fall within the FCARs, as are tokens representing tangible assets unless they are, in reality, shares or debt securities. In this case, consideration would need to be given to whether factual control of the digital asset would be sufficient to ‘perfect’ a security interest over that asset, so that registration was not required. It should be noted that this is the current view of the UNIDROIT working group on digital assets, which is preparing private law legal principles in relation to digital assets.

There seem to us to be two policy questions here. First, does factual control/possession give sufficient publicity of a security interest over that asset? Second, are there imperative market based reasons for exempting a security interest created by transferring control to the secured creditor from registration, even if the answer to the first question is no?

If the answer to either question is ‘yes’ then the method by which the policy can be given effect to is either by enabling a pledge to be taken over digital assets, or by specific legislation to exempt security interests over digital assets from a registration requirement if control is transferred to the secured creditor. If the latter route is taken, the relationship between such legislation and the FCARs would need to be considered carefully.

It should also be pointed out that the FCARs provide for the disapplication of other formalities under English law and also for the disapplication of various insolvency provisions in relation to security interests falling within their scope. Whether these disapplications should apply to

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2 This would be if a structure described in footnote 1 were used.
digital assets which do not fall within the definition of ‘financial collateral’ is a separate question from that relating to registration.

**Question 10**

**If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise?**

We note here a few incidental points about the possible conversion of a digital asset.

The first is to say that we do not regard the decision of the House of Lords in *OBG v Allan* [2008] 1 AC 1 as an absolute obstacle to recognising that a digital asset may be the subject of an action in conversion. The decision is distinguishable on its facts. The assets in that case were entirely different from the digital assets in question here. They were debt claims enforceable by the administrator of an insolvent company. It would have confounded the fundamental legal division between things which are the subject of ownership and possession on the one hand and the benefit of personal rights to performance on the other if the House of Lords had extended the action of conversion to the unauthorised release of a debt. There were also good reasons of practical policy why an administrator called in to oversee an insolvent company should not be exposed to the blunt regime of strict liability that liability in conversion would have entailed.

Our second point is to play down the practical relevance that conversion might have in any situation where a claimant sought to recover a misapplied digital asset or its value. Conversion might only be the action of last resort.

If an asset were misapplied when it was being held for the claimant on a custodianship or agency arrangement, then the claimant’s first recourse would be to sue the custodian or agent for breach of trust or contract. A money claim against the person holding the asset might in many cases satisfy the claimant’s purely financial interest in the asset.

If however the claimant wanted to recover the asset *in specie* then equitable claims founded on proprietary tracing or rescission would often be available to him or her. We accept that blockchain transactions may not be reversible in a technical sense. They are however reversible in law. Since many digital assets are practically alike and interchangeable in their features, an order for return of an asset or the rescission of a transfer transaction may give the claimant something that is practically indistinguishable from the original asset he or she lost.

Conversion might only have a residual place in cases where a digital asset was misappropriated. It would matter if the claimant were left with no choice but to sue the hacker or fraudster who misappropriated it (assuming that person was identifiable, solvent and within jurisdiction). It might also apply in cases where the claimant wanted to sue a solvent subsequent transferee of the asset. In that case, however, the strict nature of the transferee’s liability might put the justice of the conversion regime into question. We see advantages in making equitable actions the default method of recovering misapplied digital assets. They would give remote transferees of the asset the benefit of the good faith purchase for value without notice defence. This would have the effect of securing title to transferable digital assets. I would also incentivise good practice among the reputable digital asset exchanges who handle them and who might otherwise be exposed to a regime of strict liability.
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STEP Response: Law Society Call for Evidence on Digital Assets

About Us

STEP is the worldwide professional association for those advising families across generations. We help people understand the issues families face in this area and promote best practice, professional integrity and education to our members.

Today we have over 22,000 members in over 100 countries and over 8,000 members in the UK. Our membership comprises a range of professions, including lawyers, accountants and other specialists. Our members help families plan for their futures: from drafting a will or advising family businesses, guiding international families with cross border interests, and protecting vulnerable family members.

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STEP welcomes the opportunity to submit comments on this consultation as part of your call for evidence in the first step in the Law Commission's digital assets project.

Response

Question 1. What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales?

1. The determination of the ownership of a cryptoasset can be problematic. The essential indicium of ownership of an exchange token like bitcoin is knowledge of the private key associated with a public address to which a transfer has been recorded on the blockchain.

2. Without possession, holding a cryptoasset is binary: it is either owned or not and it is necessary in certain situations and relationships to construct a somewhat artificial trust arrangement. For instance, Alice has one bitcoin and she reveals the relevant private key to her husband, Bob, whom she has appointed as the executor of her will, so that he can deal with the bitcoin after her death. With the knowledge of the key, Bob is able to transfer the bitcoin and can be considered an owner. If the bitcoin was capable of being possessed and knowledge of the private key were an indicium of possession, rather than of ownership:

   2.1. Possession would be shared between all persons with knowledge of the private key;
2.2. The possessor with an intention of assuming ownership is an owner, with all rights and remedies of an owner except as against someone with a better title, namely Alice;

2.3. It would be artificial to say in every case that Bob holds the bitcoin on trust for Alice, or even that Bob and Alice hold it as trustees together. Each of them separately controls the holding. It may be that Alice's intention was to create a trust but, if that was not the case, then there is no valid express trust. (See "the three certainties" in Knight v Knight, (1840) 3 Beav 148, at 172; and per Lord Sales at para [48] in Pleshakov v Sky Stream [2021] UKPC 15). There may however be a resulting trust, in which Alice and Bob are both legal owners, holding the legal title undivided as joint tenants, and hold together on trust for Alice as the beneficial owner, so long as there was no evidence that Alice intended to make a gift, or a presumption of advancement. This would be analogous to if for instance Alice had put money into a bank account in joint names with herself and Bob, without evidence of the intention to make a gift, or a presumption of advancement (e.g. Musson v Bonner [2010] WTLR 1369).

3. If property is stolen, the thief does not own the thing that he has stolen and cannot confer ownership on another unless the transaction falls within certain specified exceptions.

3.1. If David steals and takes away a painting from Eric, David will have actual possession, or possession in fact, of the painting and, if he intends to exercise sole dominion, he will also have legal possession. His possession will be good against the world except anyone setting up a better title, such as Eric (see Costello v Chief Constable of Derbyshire Constabulary [2001] 1 WLR 1437)

3.2. Instead of a painting, David might steal one bitcoin from Eric by tricking him into disclosing the private key and transferring it to his own wallet. If a cryptoasset were capable of being possessed, Eric would have legal possession of the bitcoin, which would be good against the whole world except David. Depending on the nature of the cryptoasset, David would be able to make a claim against Eric and follow the bitcoin into Eric's wallet (if no new cryptoasset is created on a transfer) or to trace his cryptoasset into the new one created by the transfer to Eric's wallet (if a new cryptoasset is created on a transfer) (see per Lord Millett in Foskett v McKeown [2001] 1 AC 102, at 127)

4. Smart contracts present a unique problem for this question. Take, for instance, a decentralised application (dApp) comprising a shopping app on the web that links to a smart contract deployed to the Ethereum blockchain that processes the purchase of cinema tickets. This could follow the following process:

4.1. The purchaser instructs the web app that he wants to purchase one cinema ticket and instructs his wallet (for instance Metamask) to connect to the contract;

4.2. The wallet sends the required quantity of ETH to the contract account;
4.3. The contract checks information supplied by an oracle as to the number of seats remaining in the cinema;

4.4. If a seat is available, the contract transfers the ETH to the cinema account and instructs the part of the dApp running on the web to send an electronic ticket to the purchaser’s email address;

4.5. If there are no tickets, the contract returns the ETH to the purchaser’s wallet.

5. Once the purchaser has transferred the ETH to the contract account, the questions to be answered are:

5.1. Does he still own the ETH?

5.2. If so, is it charged with the payment of the purchase price in the event that there is an available ticket?

5.3. If not, is it owned by the cinema, but beneficially, with an obligation to return it to the purchaser if there are no tickets?

5.4. Or should it be said that the purchaser owns the ETH but the cinema has possession of it while it is held in escrow pending the decision to sell (even if that is for a fraction of a second)?

6. If, instead of the smart contract having been deployed by the cinema, it was deployed by a ticket agency, during the escrow period does the agency hold beneficially, as agent for the purchaser or the cinema, or as stakeholder and, if any of those, does the agency own the ETH or does he merely have possession?

7. There are similar considerations, for instance, where someone applies for a DAO token. In the original DAO, the applicant transferred ETH to the DOA account and received a DAO token (representing membership) in return. The ETH that was deposited by all the members was to be used for funding projects and the profits would be distributed amongst the members. If any member did not agree with a project that was approved by a majority of the members, he was able to remove his ETH from the DAO and cease to be a member. The DAO may well have been a partnership under English law and the fund in the DAO account would have been partnership property (ss 1 and 20 Partnership Act 1890). Was it owned by all of the members on trust for the partnership? An alternative is that there was no partnership, the ownership of the contribution by the member remained with him, as certified by his DAO tokens, and in the possession of all the members pending distribution (s 2 Partnership Act 1890).

**Question 2.** Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer?
8. A cryptocurrency or exchange token, such as bitcoin, is more analogous to a thing in possession. It exists as a consequence of the code that is running for the operation of the associated blockchain. In the Bitcoin system, the code defines a unit, which is named (off-chain) a satoshi and all operations on that unit take place on-chain. Computer programs, such as wallets and blockchain explorers, read the blockchain and analyse the number of unspent satoshi associated with a specified public address, convert that quantity into bitcoin and display that number for the user. In the case of a wallet, the user can set up a transfer of those satoshi to another public address.

9. In Colonial Bank v Whinney, Fry LJ, whose dissenting judgment was approved in the House of Lords, said:

“What, then, is the character of a share in a company? Is it in its nature a chose in possession, or a chose in action? Such a share is, in my opinion, the right to receive certain benefits from a corporation, and to do certain acts as a member of that corporation; and if those benefits be withheld or those acts be obstructed, the only remedy of the owner of the share is by action. Of the share itself, in my view, there can be no occupation or enjoyment; though of the fruits arising from it there may be occupation, enjoyment, and manual possession. Such a share appears to me to be closely akin to a debt, which is one of the most familiar of money in the case of the debt, or the right to the dividends or other accruing benefits in the case of the share; but an action is the only means of obtaining the money itself or the other benefits in specie, the right to which is called in one case a debt and in the other case a share.”

9.1. No action, or proceedings, are required to obtain or enjoy a bitcoin, just as there is no need for an action to obtain or enjoy a £20 note;

9.2. The bitcoin itself can be enjoyed, just like the £20 note;

9.3. No rights or obligations affect the existence of the tokens

10. As to other tokens, it depends on the way that they are created and how they are designed to be implemented:

10.1. A token that is designed to be transferred to a smart contract account, so as to activate the smart contract, can be compared to a token that is inserted into a car washing machine to start the washing cycle. There are no rights or obligations attached to the token, but its presence triggers an operation encoded into the system. It is analogous to a thing in possession.

10.2. A token that is designed to be unique and attached to some other item, such as a non-fungible token that is offered with the benefit of copyright rights or a licence over a digital work of art, is also analogous to a thing in possession. The NFT itself needs no action to be obtained or enjoyed. The rights attached to the NFT, however, can constitute a thing in action. This will be the case even if the token and the associated item are both hosted on a blockchain.

(1885) 30 CH D 261
(1886) 11 App Cas 426
(1885) 30 CH D 261, at 286

11. See per Fry LJ at page 286: ‘“Property in chattels personal,” says Blackstone, “may be either in possession; which is where a man hath not only the right to enjoy, but hath the actual enjoyment of, the thing; or else it is in action; where a man hath only a bare right, without any occupation or enjoyment” …’

12. Normally, the associated item will be stored on some external computer, whether that is the computer of the owner of the copyright, his agent or a decentralised storage service like the IPFS. Cost can be a deterrent to storage on a blockchain.

**Question 7. How do you typically characterise the relationship between a digital asset token and the underlying tokenised asset?**

13. The answer will depend on the type of token.

14. **Utility tokens:** the original purchaser of a utility token would likely have entered into a contact with the vendor in which the purchaser became contractually entitled to certain rights from the vendor. Presumably the contract, properly drafted, would permit assignment of the benefit by the purchaser. Transfer of the token would not in and of itself be a legal assignment of the rights under the contract (not being in writing, and lacking notice to the vendor as required by s 136 Law of Property Act 1925) but there does not seem any reason why this could not be assigned in equity. In practice this may be sufficient. It is perhaps not ideal that under this analysis the original purchaser still holds the legal rights on trust for whoever may hold the token (and therefore the benefit in equity) for as long as the token exists, and it would be neater if the law allowed for a legal assignment of rights by means of the transfer of an associated token. Possession of a digital asset token is not likely to make a difference in this regard.

15. **Security tokens:** where security tokens are issued to represent a share of ownership of some asset, this seems like it must be dealing with the equitable ownership of the asset as a tenancy-in-common. Someone must have legal ownership, and hold it on trust for the token holders. Equitable co-owners are in general free to assign their equitable interest, and a transfer of a token would clearly indicate such an assignment. However, issues could arise depending on the nature of the underlying asset, if the law imposes specific restrictions on equitable assignment. For example, if the asset represented by the security tokens was land, then s 53 Law of Property Act 1925 would prohibit assignment except in writing. It would be helpful if the law was to permit the assignment of a token to comply with s 53. Otherwise, subsequent purchasers of a security token may not have acquired the legal rights in the underlying asset that they believe themselves to have.

16. Alternatively, the correct analysis may be one of partnership law (see the answer to Question 1 above.)
17. Other NFTs: as seen in some recent cases connected with digital art, the ‘digital asset’ represented by the token may not be any kind of legal or equitable right at all. In such cases, there is no underlying asset for the law to concern itself with; the only legal issue is the token itself, which can be treated like a sui generis cryptocurrency with only a single token in circulation, whereby the token is itself the asset with value only by virtue of what someone will pay for it.

**Question 11. We welcome comments on the aspects of the Liechtenstein Blockchain Act and the Wyoming Blockchain Laws relevant to the questions in this call for evidence. What other jurisdictions, if any, should we consider and why?**

18. We can provide examples of how certain US jurisdictions have handled issues around cryptoassets.

19. **Wyoming:** Digital Assets-existing law¹, effective 1 July 2019. This law establishes the legal nature of digital assets within existing law by dividing these assets into three categories of intangible personal property and classifying these assets within the Uniform Commercial Code (UCC) as follows: (i) Digital consumer assets (UCC: general intangibles); (ii) Digital securities (UCC: securities and investment property); and (iii) Virtual currency (UCC: money). The law further provides that a transferee of a digital asset takes the asset free of any security interest two years after the transferee takes the asset for value and does not have actual notice of an adverse claim. Authorizes banks to voluntarily provide custodial services for digital assets as provided by this Act, consistent with the Securities and Exchange Commission’s qualified custodian requirements. Clarifies a number of existing legal issues relating to the application of the SEC’s qualified custodian requirements in the context of digital assets, including the nature of the custodial relationship and treatment of the assets, exclusive control of an asset, consumer protection, as well as ancillary and subsidiary proceeds derived from these assets.

20. Here is an excerpt of that statute: 34 29 102. Classification of digital assets as property; applicability to Uniform Commercial Code.

20.1. Digital assets are classified in the following manner:

20.1.1. Digital consumer assets are intangible personal property and shall be considered general intangibles, as defined in W.S. 34.1 9 102(a)(xlill), only for the purposes of article 9 of the Uniform Commercial Code, title 34.1, Wyoming statutes;

20.1.2. Digital securities are intangible personal property and shall be considered securities, as defined in W.S. 34.1 8 102(a)(xv), and investment property, as defined in W.S. 34.1 9 102(a)(xlil), only for the purposes of articles 8 and 9 of the Uniform Commercial Code, title 34.1, Wyoming statutes;

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¹SF0125 - Digital assets-existing law- [https://www.wyoleg.gov/Legislation/2019/sf0125](https://www.wyoleg.gov/Legislation/2019/sf0125)
20.1.3. Virtual currency is intangible personal property and shall be considered
money, notwithstanding W.S. 34.1 1 201(b) (xxiv), only for the purposes of
article 9 of the Uniform Commercial Code, title 34.1, Wyoming statutes.

21. **Wyoming**: SB 39, which adopts the Digital Identity Act, passed the House on 29 March
2021 and was signed by the governor on 01 April 2021. This bill establishes when the
acts of a digital identity are attributable to the natural person or organization to
demonstrate action taken or certain rights. The new law takes effect on 01 July 2021.

22. **Wyoming**: SF 0038², which amends business entity laws to provide for the formation
and management of LLCs as decentralized autonomous organizations using blockchain
and smart contracts, passed on 21 April 2021, and takes effect on 01 July 2021. This
new law applies many constructs of traditional corporate law to DAOs, including
formation specifics, governance agreements, and member rights, etc. It treats DAOs as
LLC’s to avoid some of the liability issues stemming from general partnerships.

23. **Texas**: The Governor signed HB 4474³ into law on 15 June 2021, which addresses
virtual currency matters. The bill creates a new UCC Article 12 that will (i) define “virtual
currency”; (ii) specify the conditions under which a person has control of virtual currency;
and (iii) clarify the rights of a purchaser of virtual currency. The new law takes effect on
01 September 2021.

24. **Arkansas**: The governor signed HB 1926⁴ on 30 April 2021 to define “virtual currency”
and clarify what constitutes control of virtual currency for purposes of the Uniform
Commercial Code (UCC). The bill adds new UCC “Chapter 11 – Virtual Currency of
Arkansas”⁵ to existing law. The new law takes effect on the 91st day after the legislature
adjourns.

25. The Texas and Arkansas laws that address control of virtual currency and how virtual
currency can be transferred are very similar to Wyoming, and also apply the construct of
an adverse claim, which is defined as a claimant that has a property interest in a virtual
currency or a right to payment evidenced by the virtual currency. If the purchaser is
aware of an adverse claim or is aware of facts sufficient to indicate that there is a
significant probability that an adverse claims exists and deliberately avoids information
that would establish the existence of the claim, they are deemed to have notice of the
claim. There are a lot of other states with similar pending legislation.

26. In connection with these US laws, in the hypothetical situation in Wyoming where wife
gave her husband a copy of the private keys for her cryptocurrency because she
appointed husband as the executor of her estate, one can view the husband holding the
private keys as analogous to a custodian for his wife and not as a joint owner of the
cryptocurrency. During wife’s life, if husband tried to abscond with the cryptocurrency,
wife would have an adverse claim against husband, as it is a violation of the rights of the
claimant for another person to transfer or otherwise deal with the virtual currency as

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⁵ Chapter 11 – Virtual Currency of Arkansas - [legiscan.com](https://legiscan.com/WY/text/SF0038/2021)
husband clearly has notice of wife’s interest in it. Further, at wife’s death, husband is a fiduciary of wife’s estate and would have a duty to include the crypto in the administration of wife’s estate, it is deemed to be intangible personal property, and then transfer it to the beneficiaries of the estate. If husband violated these responsibilities, during wife’s life or at her death, he will be legally accountable in the same manner as if he misappropriated traditional assets.

Question 12. We welcome suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of our digital assets project

27. We welcome the Law Commission’s interest in this issue. However, we believe that there is a serious need for a more wide-ranging examination of how the English and Welsh legal system is accommodating the astonishing growth in digital assets in recent years. In particular we focus here on two issues with these new type of assets: succession and location.

28. There are very substantial financial consequences to how the law engages in this area. Cryptoassets have come from nowhere to become a substantial part of the world economy. But perhaps more critically, they also offer new ways for individuals and businesses to interact with real world physical property and legal rights and obligations which are represented by digital tokens in the digital world. This so-called tokenisation of the physical world could potentially allow for more efficient and straightforward dealings with rights as well as deeper fractionalisation of assets. If our law is able to provide legal certainty and suitable flexibility, we have the opportunity to build on our existing reputation to become the jurisdiction of choice for the token economy. We need to consider a potential future which does appear to be unfolding, a future where we may have private keys that control all sorts of assets, not just crypto but also your right to transfer real estate, shares in companies and almost anything that has been digitised or tokenised.

29. The determination of the ownership of a crypto or digitised asset can be problematic. The essential indicium of ownership of an exchange token like bitcoin is knowledge of the private key associated with a public address to which a transfer has been recorded on the blockchain.

30. Digitisation of real world assets has slowly been happening over the years, but is now accelerating. Land could be considered a digital asset already (its legal title recorded on a digital land registry) and financial instruments like stocks and bonds are digital also (recorded on digital records at a bank) so this is very wide reaching. Crypto is just at the extreme end of the digital asset scale, being fully digital. 2021 will be remembered as the year of the Non-Fungible Token (NFT) purportedly giving the holders of such NFTs legal title to other digital or real world assets.

31. We believe that as part of the law keeping up with this that some sort of legal clarification is required around how a token truly reflects and interacts with the real-world underlying asset. It might well be that the token itself is just seen as a contract (rather than perhaps
a security which in some instances they might be) pertaining to the real physical asset, rather than being an asset or evidence of title (like a deed) itself. Are these transactions binding on the physical assets or are their transactions in the legal “real” world ineffective until traditional real world formalities are completed? In advance of legislation being issued, more frequent legal statements are useful to clarify matters from the legal world’s perspective to guide in the right direction the development of this digital world alongside the physical.

32. For us and our members, of principal concern is how heirs can successfully – legally and practically speaking – receive good title to these often-valuable assets.

33. Beyond that, however, digital assets more broadly have become an integral part of people’s lives, and the law has some catching up to do. Individuals generate huge volumes of digital content, such as photographs, videos, documents and many other varieties, as well as purchasing digital media, or particular rights to it, and this content may be stored by them on their own devices or in the cloud. They enter into contracts with businesses around the world in the form of service agreements with a multitude of online service providers, in many cases without having any awareness of the terms of those contracts. They live their lives online, both publicly and privately, and in so doing provide a great deal of personal data to these service providers. The law needs to stay up to date in order to ensure that, so far as possible, individuals enjoy the same rights and freedoms to control their digital lives as they do for their life offline.

34. An issue frequently encountered by STEP members is dealing with a person’s digital affairs after they have died, or lost the capacity to manage this for themselves. The family of a deceased person may require access to files stored in the cloud because (in a world where physical photograph albums and video tapes are becoming less common) these are of immense sentimental value. In other cases, it may be important that material online is controlled in order to protect the privacy of a deceased or incapacitated person, or the third parties with whom they corresponded. Sometimes access to digital records may be required in order to be able to properly identify and safeguard a person’s more financially-valuable property.

35. Wherever possible, STEP members working in this field will help their clients to prepare their digital legacy to pass in accordance with their wishes. However, planning for the future is hindered by the fact that what happens in the event of a user’s death or incapacity, and the options (if any) available to a user, is usually dependant on the terms of service imposed by the service provider. Some provide choices to nominate who should receive access to certain data; others simply provide for the service to terminate on death; others still do not address the issue at all. Even where a user may want to plan for the future, it is impractical for their advisor to advise on the separate terms of every service the user may be signed up to, and often where advice is given, it may not offer the solution that the user would prefer.

36. We believe that this can only be addressed by legislation. Action is being taken in other jurisdictions: for example, various states in the United States of America have implemented the Uniform Fiduciary Access to Digital Assets Act and/or the Revised Uniform Fiduciary Access to Digital Assets Act.
37. A legislative solution would need to balance the interests of those left behind (personal representatives, family friends) in obtaining access to digital records against the right to privacy of a deceased/incapacitated person and third parties with whom they have been communicating. We believe that this is best achieved by empowering the user to choose, on a case-by-case basis, whether or not to grant someone access to a particular online service if they die or no longer have the capacity to access it themselves.

38. A second issue, which requires urgent legislative clarification, concerns how to determine where cryptoassets are situated. This is a very significant question as the location of assets has relevance both in terms of taxation as well as in determining which jurisdiction’s law applies to the succession of an asset on the owner’s death.

39. There has been professional and academic debate on this issue. One view (for instance, Leigh Sagar in *The Digital Estate*) is that the cryptoasset is located wherever its private key is located. A person who owns a cryptoasset (or rather, if the law is changed, a person who possesses a cryptoasset) does so because they have within their control knowledge of the private key, which is the only way that the particular cryptoasset can be dealt with. Given the typical length and complexity of a private key, it is very unlikely that this could be memorised by a person, and therefore it would typically be recorded externally in some way. This could for instance be printed on a sheet of paper stored in a private safe or a secure bank deposit box, saved in the local memory of a personal computer, recorded on a disk or memory stick, or held by a separate party such as an exchange on its own servers.

40. An alternative view (such as advanced by Professor Andrew Dickinson in *Cryptocurrencies in Public and Private Law* (edited by David Fox and Sarah Green)) is that cryptoassets have no inherent location and so should be governed in accordance with the law of the jurisdiction in which the individual or corporation participating in the cryptoasset system is resident. In the case of an individual storing their private key in their own private wallet, this would be the beneficial owner’s residence, but in the case where the cryptoassets are held on an exchange, pooled with the cryptoassets held on behalf of all other owners, this would be the residence of the exchange. This was the approach taken by an English Court in *Ion Science Limited v Persons Unknown* (2020, unreported).

41. However, HMRC have in their recent cryptoassets manual (CRYPTO22600) taken a separate view, stating that they will treat cryptoassets as being located wherever the beneficial owner is resident. While this may suit HMRC’s purposes, there does not seem to be any basis for such a position in the law as it currently stands, or by analogy to any existing legal principle.

42. There is a clear need for this question to be resolved, as it is liable to result in disputes both between potential beneficiaries of a deceased person’s cryptoassets, and between HMRC and taxpayers who disagree with HMRC’s arbitrary position. The Law Commission’s review is the perfect opportunity to recommend straightforward legislation that would clarify the position in whatever way is considered most effective, rather than waiting indefinitely for this to be resolved by the Court by interpretation of the current law.
43. Where there is no statutory provision (for example in relation to inheritance tax), we would endorse Professor Dickinson's suggestion that the location of the cryptocurrency should be determined by identifying the place of residence with which the participation in the cryptocurrency system is most closely connected. This would mean that, if a non-UK resident custodian, such as an exchange, holds cryptoassets in a pool and controls the relevant private keys, and a share of that pool is held on a bare trust for a UK resident, the location of the cryptoassets would be in the jurisdiction where the custodian is resident.

**Conclusion**

44. STEP, and in particular its Digital Assets Global Special Interest Group that brings together thought leaders in this field, will be happy to assist the Law Commission further in addressing these points or any others relevant to its expertise.
Response to Law Commission Call for Evidence on Digital Assets
July 2021

The Association for Financial Markets in Europe (AFME) welcomes the opportunity to comment on the Law Commission’s Call for Evidence on Digital Assets. AFME represents a broad array of European and global participants in the wholesale financial markets. Its members comprise pan-EU and global banks as well as key regional banks, brokers, law firms, investors and other financial market participants. We advocate stable, competitive, sustainable European financial markets that support economic growth and benefit society.


AFME is registered on the EU Transparency Register, registration number 65110063986-76.

This response has been prepared by members of the AFME Post Trade Division Legal Committee.

Executive Summary

The AFME Post Trade Division Legal Committee shares the view that the growing use of digital assets and distributed ledger technology underpinning many digital assets has the potential to transform securities markets for the better. In certain use cases it may be desirable for end investors to enjoy their ownership rights directly in such digital assets with their holdings and transactional activity recorded “on-chain”. However, we also believe it is important to emphasise that the business models and practices of various cryptocurrency exchanges, custodians and other service providers frequently also rely on “off-chain” electronic books and records practices that resemble existing market practices and the equitable chains of ownership that commonly exist in the UK in respect of dematerialised securities (including immobilised and registered securities). In these scenarios the custodian may be listed on the ledger as the person holding the asset and the natural characterisation is that it holds such asset on trust for the investor as beneficiary. This approach ensures that the assets do not appear on the custodian’s balance sheet and would be returned to the investor if the custodian were to fall insolvent.

It is AFME’s view that financial intermediaries will continue to play an essential role providing the convenience, expertise and accountability demanded by end investors and regulatory authorities. Consequently equitable chains of ownership as recorded on the books and records of intermediaries are likely to remain a crucial element of digital assets infrastructure, at least in the foreseeable future, as traditional financial institutions seek to integrate crypto-asset offerings and provide their clients with interconnectivity with traditional financial products and infrastructure (such as money recorded in bank accounts or dematerialised securities recorded in their electronic books and records).

In this context AFME Post-Trade Division Legal Committee supports targeted statutory interventions that:

1. promote legal certainty relating to the treatment of digital assets as property where such ambiguity exists such as in relation to certain cryptocurrencies that are neither a chose in possession nor a chose in action (e.g. Bitcoin and Ether);
2. provides market participants with sufficient flexibility and legal certainty to achieve their commercial intentions with respect to any transactions, transfers and encumbrances in respect of all digital assets whether this activity occurs in an on-chain or off-chain environment; and

3. permit market participants to take effective security interests (including custodial liens i.e. right of retention) that do not rely upon unduly rigid definitions of possession and/or control. It is important that these concepts should be sensitive to the highly automated and programmable nature of modern electronic financial markets (e.g. noting the expanding use of automated collateral management services and smart contracts).

Treatment of Digital Assets as Property

The treatment of digital assets as property is, in our view, an essential issue to be addressed under English law. The issues that have been raised in the context of technological innovations, such as digital tokens and ledgers, are very close to those which emerged following the dematerialisation of securities in the UK. The approach taken will be relevant to the resolution of outstanding problems for intermediated securities holdings. We note that there are many different models being developed for the exchange of digital assets; so, rather than replying to each of the questions in the Call for Evidence, we have prepared these comments drawing directly on our experiences relating to dematerialised securities as a class of digital assets.¹

The essential problem is the tension between old rules and new tools. The leading cases on the forms of property recognised by English law were decided at a time when even the use of electricity was still in its infancy. The decision in Colonial Bank v Whinney,² for example, came only three years after the first Electric Lighting Act in the UK. It was L.J. Fry’s dissent in that case, later approved by the House of Lords, that gave us the classic statement:

All personal things are either in possession or action. The law knows no tertium quid between the two.

This division of personal property into things in action or possession has long been problematic for the common law. The main issue is that different claims and remedies evolved for each category. It was the case, for example, that things in action could not be the subject of conversion; however, this was because the action had its origins in trover, which required the loss of property—and things in action cannot be lost. In recent times, we have seen this logic applied in the appellate courts to a claim to detain electronic databases through lien, leading to results that clearly confounded commercial expectations.³ Although courts in other jurisdictions have attempted to catch up with the development of technology, the English courts have been reluctant to adapt.

Given the historical antipathy of the common law to forms of property which do not fit into the categories of things in action and things in possession, we agree that there is a need to address the property law status of digital assets. We also agree that this is a matter to be addressed by Parliament, rather than incrementally through litigation. We are concerned, however, that addressing the status of digital assets through parliamentary fiat will not be sufficiently sensitive; and that the application of the existing body of law to novel

¹ We note section 1.5 of the Digital Assets Call for Evidence where the Law Commission states: “we use the term “digital assets” in a broad sense to cover assets that are represented digitally or electronically, including cryptoassets”. We consider this description to potentially extend to electronic book-entry securities in addition to cryptoassets. We see many parallel issues with these asset classes and believe that these have the potential to converge as cryptoassets are incorporated into existing financial product offerings relying on both “on-chain” and “off-chain” activity.
² 30 Ch D 261, 285 (1885), per Fry, L.J.
³ Your Response Ltd v Datateam Business Media Ltd [2014] EWCA Civ 281 (CA).
assets needs to be considered more carefully. In particular, the characteristics of different cryptoassets may resemble a variety of different types of financial instruments including dematerialised securities (e.g. immobilised and registered securities). As a starting point, we believe that the existing body of law should continue to apply to the characterisation of such assets whether these have been issued as traditional securities or in the form of digital tokens, in each case, except to extent that limited statutory intervention is necessary to achieve the goals described in 1-3 of the Executive Summary above. The exception to this restrained approach relates solely to decentralised digital tokens that are neither liabilities of any individual or institution nor backed by any authority (e.g. Bitcoin, Ethereum). Here we consider that more novel statutory intervention is necessary to provide market participants with complete confidence that English law recognises such assets as part of a broader class of intangible property, which are neither a thing in possession nor a thing in action (in the narrow sense of the term as a right of property that can be enforced by court litigation or action). The market plainly attributes extrinsic value to such assets and treats them as property.

To illustrate one of the problems involved in relocating the boundary between pure information and property, think of a situation involving a simple blockchain model, which records entries in a distributed ledger. In this example, it is possible for the same systems to be used to record moves in a game of chess or the transfer of security tokens. The existence of a record, by itself, would not evidence the existence of property; otherwise, there would be property in both the record of the chess move and the security token. Extending the example, it could be possible for a record on the blockchain to be symbolic of an off-chain security (which may be physical or incorporeal) or be the security itself, which raises further challenges in determining what property is relevant to the analysis.

The fact that a person has control over an entry in the blockchain and can transfer that control to another person (e.g., through the disclosure of a password or private key) does not mean that the entry represents property, either. In order for the entry to be property, the controlling person must be able to assert rights with respect to the entry as against the world. The fact that there is a technical means to prevent others from doing something with the entry (i.e., the need for a password or private key) does not mean that there is a right to exclude others from doing so. The password or private key is sometimes compared to the key to a locked room, but that example is only relevant to a discussion about the indicia of possession. If there is nothing in the room that is recognisable as property, then questions of possession do not arise.

What has to be resolved is when property can be found on the basis of an electronic record. On behalf of member firms dealing in trillions of pounds of intermediated securities, which are evidenced through electronic records and are sometimes only in electronic form, we believe that the priority should be to resolve the outstanding legal questions for these assets. The conclusions that are reached will provide a model that can be used to guide the way for the treatment of novel assets. There already has been a concerted attempt, as evidenced by the Giovannini Reports in the EU and the advice of the Legal Certainty Group, along with other initiatives, to address the problem of ownership of book-entry securities. As the Legal Certainty Group noted, summarising the Giovannini approach:

*The report recommended that there should be a legal framework such that, whenever securities have been entered into a book-entry system, it should be the electronic securities accounts within that system that establish ownership of those securities. There would then, it advised, be a legal identity between ownership and the record of ownership.*

This emphasis on the effect of book-entry accounts took the analysis only so far forward in the EU. However, it represented an attempt to establish legal certainty for buyers and sellers, which should be recognisable to those searching for an innovative framework for blockchain technology and other novel arrangements. The
The difference between a blockchain entry and an entry in the books and records of a securities intermediary lies mainly in the way that data is created and stored; otherwise, the common issue is one of lists. When the list represents value or ownership rights that are attributable to a particular person or group, it can be called an account; and what is recorded in an account is essential as evidence of rights to or interests in the referenced object.

It is, however, only evidence. Whether an entry is made in a book, in a spreadsheet, in a proprietary database, or a distributed ledger, the result is the same. There is evidence of an entitlement, but the legal rules determine its status and meaning.

We note that, in the United States, there is an attempt to settle rules for the transfer of "controllable electronic records," though this initiative does not extend to "investment property." It is expressly noted in the draft of Article 12 of the UCC that law other than the article covers securities (or "securities entitlements," in the American vernacular); however, as an overarching rule, "a qualified purchaser acquires its rights in the controllable electronic record and any account or payment intangible that is included in the benefit of the controllable electronic record free of any adverse claim." The purpose of this provision is to give protection to the transferee of rights in the record that have been transferred to them. A similar provision addresses certain associated rights.

The US approach abstracts questions of property from the existence of a record. Although it might be attractive to follow the US approach in Article 12, it is necessary to look more closely at Article 8, which deals definitively with securities entitlements. In the post-trade markets, transfers within an intermediary’s records, or between an intermediary and a CSD, are really of securities or securities entitlements, rather than controllable electronic records.

**Intermediated Securities**

Since the dematerialisation of securities began, issues have arisen with the application of rules designed for physical financial instruments to their electronic representations. There are, for example, in various jurisdictions, different rules about the point in time when a security comes into existence (e.g., at the point of entry into a CSD or when created in the register of the issuer). The approach in England is markedly different to that of a number of other state; and, while the UK was a member of the EU, there were a number of efforts to harmonise rules to overcome some of the effects of these differences. AFME played a key role in these initiatives, and we continue to support standardisation of outcomes while accepting differences of approach.

The English regime, based upon common law rules that evolved centuries ago, has long been problematic for global custodians dealing with modern securities systems. For example, the custodian's lien, a self-help remedy that is part of the law merchant, has been challenged on the basis that it cannot apply to intangible property. The common law has not adapted fully to the electronification of securities, with the result that there is considerable uncertainty about the whether such a remedy is still available. If it cannot be relied upon, as it was in the days when ink and paper were the preferred tools for recording entitlements, then the alternatives provided through the inherited *acquis communautaire* (e.g., through the Financial Collateral Regulations) or company security law in the UK (e.g., charges which are not exempted under the Financial

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5 Indeed, it is for this reason that the U.S. abandoned English-law inherited concepts in this area and beginning in the 1980s moved to UCC Art. 8 in respect of "securities entitlements" representing a "bundle of rights" (a sui generis concept) consisting of both rights in rem and rights in personam. By and large, with periodic review and additional reforms, UCC Art. 8 has successfully supported U.S. – and foreign - capital markets activities (a non-U.S. security can be held in a U.S. custody account under UCC Art. 8), including in financial crises. Concerns that emerged (e.g., fraud risk and issues emerging during insolvencies of large securities intermediaries) were more suitably addressed in regulatory law and market practice. One lingering concern, however, relates to shareholder rights (e.g., proxy voting); UCC Art. 8 is currently under review for the purpose of determining whether any improvements can or should be made in this respect.
Collateral Regulations) are burdensome and impractical for fast-moving markets. The Financial Markets Law Committee (FMLC) has written papers arguing that the definitions of "possession" and "control" in the Financial Collateral Arrangements (No.2) Regulations 2003 give rise to serious issues of legal uncertainty and material difficulties in practice. AFME believes these issues will be exacerbated as financial firms continue to expand their use of digital assets and deploy emerging technologies including distributed ledger technology. Statutory intervention may be necessary to ensure that these concepts are sufficiently flexible to accommodate the highly automated and programmable nature of modern electronic financial markets (e.g. automated collateral management services and smart contracts).

The nature of the property connected to a security is at the core of this problem. It is beyond challenge that a bond issued by a company in the United Kingdom, for example, represents property. The investor who has paid to purchase the security is commonly understood to be its owner. The reality, however, is that, if the investor has appointed an intermediary to hold the security for their account, and if the security is represented through an account entry at a depository, then the evidence of the investor’s ownership might be in the books and records of the intermediary, and not the register of the CSD or any register maintained by or for the issuer of the security.

In the UK, the practice for shares is that registrars maintain such records separately from the records of the central securities depository. Under the Uncertificated Securities Regulations 2001, the register must be reconciled to the records of the CSD, but a transfer is effective based upon settlement in the books of the CSD. In other countries, it is more common for CSDs to perform the registry function. Under either model, a record is kept of claims to the securities. If there is a direct holding system, then the end investors will be recorded in the operator register and intermediaries will be permissioned to give instructions on their behalf with respect to it (e.g., by buying and selling the relevant security or instructing on a corporate action such as a rights offering). If there is an intermediated securities system, then an intermediary or their delegate (which is sometimes a specialised nominee company) typically will be named on the register, rather than the investor. The intermediary will maintain their own books and records, in order to evidence the beneficial ownership of the security. In some cases, only the intermediary will see the transfer of securities between end investors, as transactions between the customers require only an update to the books and records of the intermediary, while the total holdings in its nominee’s accounts remain constant. The fungible nature of securities and the primary importance of the intermediary’s account records to allocate holdings which they control support an efficiency gain through settlement internalisation; i.e., changes only in the books and records of the intermediary. At present, none of these changes affect whether there is property, but they do affect who can deal with it.

This point has been the subject of extensive analysis and debate in the EU context. The policy imperative has been to put investors in as close a position as possible to the one they would have as a registered owner. The challenge is that the end investor, in an intermediated holdings arrangement, has no ability to instruct the registrar or CSD (as appropriate) to transfer “their” securities. The registrar sees only an intermediary in their books and records. The CSD knows only the intermediary, who is also their participant or contractually connected to a participant. In order for a transfer order to be effected, the investor will need to deliver settlement instructions to the intermediary. The responsibility of the intermediary, thereafter, is to act on the instructions and to provide a transfer order to the registrar or depository.

The nature of the relationship between the end investor and the intermediary is governed, in the first place, by contract. The intermediary’s services include maintaining holdings records for the account of the end investor and acting on settlement instructions, when the end investor has cause to require delivery of

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securities or to receive them. The obligation to act on instructions is set out in the intermediary’s contract for services with the end investor. It is clear that the intermediary does not have a property interest in the securities, other than that which they hold for the account of the end investor. The securities do not form part of the assets of the intermediary, and are to be ringfenced in the case of their insolvency. Although the intermediary may be recorded as the owner of the securities, they hold whatever right, title or interest they have in the assets solely for and on behalf of the end investor.

This raises a question the law has not answered definitively: is the intermediary a trustee, a bare trustee, a bailee, a commercial agent, or another, sui generis, category of agent? The difference between them rests on the challenge of addressing problems of possession when applied to intangible property, using English common law rules. Apart from bailment, all of these possible arrangements involve the separation of legal and equitable interests, so that a similar result can be obtained if questions arise about entitlements to the property as between the investor and the intermediary. The problem of possession is, therefore, core to the entire analysis.

Constructive Possession and Legal Objects

Whether an entitlement to a digital asset is recorded directly on-chain or off-chain in the books and records of intermediaries as an intangible asset the natural characterisation is that the intangible asset is capable of control rather than possession. Perhaps the simplest way to overcome concerns about the possession of intangibles would be to implement legislation that recognises constructive possession of book-entry (or, if you prefer, tokenised) securities. In our view, such constructive possession could only be based on the concept of control. If the courts have hesitated to recognise it, then Parliament should act. This approach would have the benefit of solving the matter of the custodian’s lien, because the custodian would be able to rely upon rules based upon possession to give effect to their self-help remedy, provided that this does not adversely affect the equitable chains of ownership and encumbrances commonly employed by intermediaries in relation to dematerialised securities (and some intermediated crypto-asset business models). A narrow approach that achieves this outcome would be welcome and would help to overcome one of the most serious contradictions left outstanding following the dematerialisation of securities.

We do have concerns, however, that treating securities as goods, or applying the rules of bailment to them or other intangibles more broadly, could lead to confusion and unexpected consequences. This is because the rules that were developed to deal with physical objects do not apply readily to intangibles. In an abstract way, there should be no bar to a category of legal objects which do not have physical form but are capable of constructive possession; but it seems to us that it would be safest to move step-by-step, beginning with dematerialised securities and then working towards other legal objects. Rather than declaring, by Parliamentary fiat, that dematerialised securities are goods or capable of bailment, the best route would be to examine what it will mean for different branches of the law to treat them as being capable of constructive possession based on the concept of control. It might be necessary to exclude the effects of rules which have been created with physical objects in mind, but those rules will need to be identified and addressed where they might otherwise create further problems.

On Chain Transfers of Cryptocurrencies

We agree that on-chain transfer of certain cryptocurrencies involves the destruction and creation of a new piece of property (with new information parameters). We note that there may be circumstances where this characterisation can be a positive thing in the context of financial markets provided that something of equivalent characteristics and value is provided to the recipient. In our view this is similar to fungible
securities and the concept of transferring or returning equivalent securities. In circumstances where individually traceable assets are tainted by fraud there are risks that a financial market can grind to a halt. A notable example of this involved a series of frauds involving EU emissions allowances in 2010 and 2011. In response the European Commission was forced to implement measures to avoid further disruption to the markets by ensuring that EUAs became fully fungible and non-disclosure of the individual serial numbers. In the context of cryptocurrencies, the destruction and creation of a new piece of property may have the advantage of minimising market disruption caused by the tainting of specific assets by fraud. Similarly, this may increase the relevance of equitable claims for unjust enrichment in order to provide an appropriate remedy to the injured party.

**Governing Law Considerations**

We have focused in this paper on the law of England and Wales, however, we would be remiss not to flag governing law considerations relating to digital assets. We agree with the analysis in this regard of the UK Jurisdiction Task force in its "Legal Statement" of November 2019, which recommended (at Section 1.2.3, paragraph 99) the adoption of factors establishing physical contacts with the England and Wales (e.g., "whether there is any centralised control in England and Wales") that are very likely to give rise to application of property rights under English law: we see no reason why this analysis could not be applied to tokenised securities held over a permissioned DLT system, by way of example.

We also call attention to the Jurisdiction Task Force’s following observation (at paragraph 95):

> Some permissioned cryptoassets have some sort of central control in a particular country. So the proprietary aspects of dealings in them might sensibly be said to be governed by the laws of that country. And that will very likely be the case where, for example, a distributed ledger is merely a record of ownership of property in conventional ‘real world’ assets which can be said to have a particular location [where] permissioned cryptoassets have some sort of central control in a particular country they may be sensibly be said to be governed by the laws of that country.

We agree with the Task Force that questions around cross-border holdings and dispositions of these kinds of cryptoassets raise “complex issues that will best be resolved by legislation, most likely following international cooperation” (see paragraph 99). Accordingly, we urge the Government to support the creation of an international convention to address these cross-border governing law issues.

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1.2.1 “Custody pledges” (security interests)

In providing securities settlement services, banks and other service providers can provide credit in relation to the trading activity of their clients. A bank or settlement agent may agree with the client to provide the necessary funds for settlement, and to receive a contractual security interest over the incoming purchased securities as a risk-mitigant. In this way, the bank or settlement agent can be protected with security over an asset of approximately equal value to the price which it has agreed to lend. This type of arrangement is referred to in this Report as a “custody pledge”. As a vital component of the post-trade market, the FCD ought in principle to give clear support to custody pledges and other protected financial collateral arrangements. Despite this, in cross-border settings several shortcomings can be identified:

- Lack of clarity as to the "possession" or "control" test: Article 1(5) FCD states that the Directive applies to financial collateral, once "it has been provided". However, FCD lacks rules on the "provision" of collateral. Recital 9 of the FCD merely provides that "the only perfection requirement which national law may impose in respect of financial collateral should be that the financial collateral is delivered, transferred, held, registered or otherwise designated so as to be in the possession or under the control [emphasis added] of the collateral taker [...]". Therefore, the FCD seems to rely on a “possession” or “control” test for the perfection of financial collateral arrangements. However, it does not specify what is involved in taking ‘possession’ of financial collateral (is it sufficient for the collateral to be in the collateral-taker’s account at the CSD? Is it sufficient to be “earmarked” in the collateral provider’s account?) or “control” (is it sufficient that the collateral-taker has a legal right to refuse a request from the collateral-taker to withdraw collateral?). The CJEU ruling in the case Private Equity Insurance Group v Swedbank does not provide sufficient clarity as regards the “possession” or “control” test under the FCD.

- Ambiguity in insolvency laws as to whether collateral provided after the opening of insolvency proceedings is covered by FCD protections: Article 8(2) FCD requires Member States to safeguard financial collateral that has been provided on the day of, but after the moment of the commencement of insolvency or reorganisation proceedings, is enforceable and binding on third parties if the collateral taker proves that he was not aware, nor should have been aware, of the commencement of such proceedings. However, it is not clear which steps and events are protected by Article 8(2) FCD: Is it sufficient that the collateral taker was unaware of the opening of insolvency proceedings at the time the collateral agreement is concluded (transaction)? Or must he be unaware of the opening of the proceedings at the moment of the delivery, transfer, holding, registering etc. of financial collateral so as to be in the "possession" or under the "control" of the collateral-taker?

- Legal uncertainty as to the applicable law to book entry security collateral. The conflict of laws rule of Article 9(1) FCD points to the law of the place of the "relevant account". A fundamental problem is that an account itself, strictly speaking, has no location; their location is to be determined with reference to other factors. In any case, the connecting factor of Article 9(1) FCD is unclear and has not been interpreted uniformly across Member States. This can result in legal uncertainty in an important case, commonly encountered in post-trade collateral arrangements: where a financial intermediary, such as a clearing member or a custodian providing settlement services, receives securities from its client into an account provided by the intermediary. Depending on the jurisdiction, the question of the identification of the relevant account can lead to different possible answers: (i) the accounts of the collateral taker on the intermediary’s books; (ii) the account where the intermediary’s entitlement to the securities is recorded (such as the next intermediary in a custody chain or the CSD or another set of books) or (iii) the account of the collateral provider. The end investor needs to agree either in individual case or in generalised manner with the custodian as to the conditions under which the assets may be used as collateral.
Appendix 2: EPTF Barrier 19 (former Giovannini Barrier 13) (PAGE 85)

1.1 Legal uncertainty as to the clients’ ownership rights in book entry securities and the end investor’s legal position

The current EU legal framework fails to establish legal certainty with regards to ownership rights of end investors in securities held through an intermediary. In addition, there are no harmonised EU rules on the legal position of the end investor in book entry securities. Across the EU, Member States have developed legal mechanisms which are intended to ensure that an end investor enjoys in rem "ownership" of securities, notwithstanding that a chain of intermediaries may separate the end investor from the issuer. These mechanisms work reasonably well within each Member State. But the mechanisms differ from each other, and can come into conflict if the chain of intermediaries crosses borders. The lack of harmonised rules on the end investors’ legal position in cross-border settings constitutes a barrier to the CMU. The barrier can be illustrated by the following example, which includes an issuer in one Member State, the end investor in a second Member State and a cross-border custody chain involving an intermediary in a third Member state. It may occur that the account agreement between the end investor and its bank is governed by French law which confers a right in rem on the end investor but the account agreement between the bank of the end investor and another bank acting as custody bank in the UK is governed by English law which may consider the person registered in the issuer’s register to be the “legal owner” of the security. If the intermediary’s Member State considers that the requirements under local law for recognition of end investors have not been satisfied, and treats the intermediary as the “owner” of a security in the insolvency of the intermediary, the outcome would be unjust and contrary to the expectations of all parties.
Good afternoon,

On behalf of Euroclear UK & Ireland Limited (EUI), please find below our response to the above mentioned Call for Evidence.

EUI fully supports the work of the Law Commission Digital Assets Project to ensure that digital assets are given consistent recognition and protection, and we appreciate the opportunity to respond to the Call for Evidence on the ways in which digital assets are used, treated and dealt with by market participants as well as the potential consequences of such assets being ‘possessable’.

EUI is a recognised Central Securities Depository (CSD) in the UK. As a CSD, EUI operates the CREST system that allows dematerialised securities to be held and transferred in a highly secure way on behalf of investors. The primary assets held are UK equities and Gilts, to a total of more than £5.6tr assets held by over 150 direct clients on behalf of millions of end investors distributed in the UK and internationally. Settlement is available in central bank money in GBP, EUR and USD.

The legal basis and protections for investors who hold dematerialised securities in the CREST system are based on a mature framework. Specifically, securities are held and transferred pursuant to the Uncertificated Securities Regulations 2001.

Having read the Call for Evidence and engaged a number of stakeholders over the potential for digital assets, we request that the existing legal framework for uncertificated securities be considered as part of the analysis to ensure any digital asset with common characteristics to the dematerialised securities held in the CREST system is treated equally from a UK law perspective. Equal treatment will in our view, ensure against legal uncertainty and risk to the holding and transfer of digital assets and thus the functioning and development of both existing and new markets in such assets.

Please let me know if you would like to discuss any aspect of our response to the Call for Evidence or require anything further. We look forward to your publication of a consultation paper on digital assets and to responding to your proposals for law reform.

Kind Regards
Response: Law Commission Call for Evidence on Digital Assets

July 2021

www.fmlc.org
Note that Members act in a purely personal capacity. The names of the institutions that they ordinarily represent are given for information purposes only.
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1. INTRODUCTION AND BACKGROUND

1.1. The role of the Financial Markets Law Committee (the “FMLC” or the “Committee”) is to identify issues of legal uncertainty or misunderstanding, present and future, affecting the wholesale financial markets which might give rise to material risks and to consider how such issues should be addressed.

1.2. The Law Commission has undertaken to review the law of England and Wales and consider reforms to ensure that the law can accommodate digital assets (the “Digital Assets Project”). As a first step, the Law Commission has issued a Call for Evidence (the “Call for Evidence”).\(^2\) The Digital Assets Project builds on the Legal Statement on the Status of Cryptoassets and Smart Contracts published in 2019 by the U.K. Jurisdiction Taskforce of the LawTech Delivery Panel (the “UKJT”) which concluded that virtual currencies have all the characteristics of property and any novel features—such as cryptographic authentication, decentralisation and rule by consensus—do not disqualify them from such categorisation.\(^3\) The Digital Assets Project goes on to ask respondents to consider the implications of possible law reform. The Call for Evidence aims to identify how digital assets are used, treated, and dealt with by market participants; how the law might accommodate digital assets now, and in the future; and where the law might be inhibiting particular use cases, innovation, or development. The responses to the Call for Evidence will be used to inform future proposals for law reform.

1.3. The FMLC has previously considered the legal characterisation of digital assets. In a report published in 2016 (the “2016 Report”), the FMLC considered how to allocate virtual currencies to the traditional categories of property and personal rights developed by the common law (explored in further detail below).\(^4\) Building on the 2016 Report, the FMLC has considered issues of legal uncertainty surrounding exchange tokens and the legal characterisation of initial coin offerings.\(^5\)

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\(^2\) Law Commission, Digital Assets Call for Evidence (30 April 2021), available at: https://www.lawcom.gov.uk/project/digital-assets/#digital-assets-call-for-evidence

\(^3\) UKJT, Legal Statement on cryptoassets and smart contracts (November 2019), available at: https://technation.io/lawtechukpanel/


1.4. This paper responds to the questions posed in the Call for Evidence.

2. NOMENCLATURE

2.1. It might be useful to consider, as a preliminary issue, the meaning and scope of the term “digital asset”. The Call for Evidence does not define the term “digital asset”, remarking that it uses the term broadly “to cover assets that are represented digitally or electronically, including cryptoassets”. Without refinement, the term “digital asset” is an umbrella term that, as noted by the Law Commission, extends to a wide array of items of value, including social media accounts, online bank accounts, photography, software applications, databases, logos, illustrations, animations, audio-visual media, presentations, spreadsheets, cryptocurrencies and DLT tokens, digital paintings, electronic documents, electronic mail, and websites. The term “digital asset” includes established and innovative technology, as well as established technology being used in wholly new ways for novel purposes.

2.2. The purpose and form of a digital asset will inform, to some extent, its treatment under English law. Any reflections on how digital assets may be dealt with under English law need to take into consideration the complex components of any particular asset. Given this, the Law Commission’s decision not to define the term “digital asset” in the Call for Evidence may give rise to unintentional legal complexities and ambiguities. Some forms of digital assets, for example, are already protected by existing laws and regulations, including intellectual property law and certain pieces of financial services legislation. For example, the much-debated question of whether digital assets are possessable is redundant in relation to online bank accounts held with U.K. banks supervised by the Prudential Regulation Authority and backed by the Financial Services Compensation Scheme. It could therefore be misleading to suggest that the law of England and Wales does not provide certainty on the legal status of “digital assets” as a whole. Rather, the degree of legal certainty depends on the nature of the digital asset itself. The term is also so broad so as potentially include dematerialised securities, such as dematerialised shares.

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6 Paragraphs 1.5 and 1.20 of the Call for Evidence, see footnote 2.


8 A wider approach has been adopted by other commentators. Business Telegraph defines digital assets as “anything that exists in binary data which is self-contained, uniquely identifiable, and has a value or ability to use”. (See Business Telegraph, What are Digital Assets?—Securities.io (5 March 2020), available at: https://www.businesstelegraph.co.uk/what-are-digital-assets-securities-io/) The American advocacy group, the Chamber of Digital Commerce, uses the term in a far narrower context: “…the term “digital asset” refers to an asset that is issued
that any law reform which is not more specific could cause conflict with the existing legislative framework governing securities, increasing uncertainty.9

2.3. By contrast, the UKJT Legal Statement on Cryptoassets and Smart Contracts (the “Legal Statement”) is narrowly focused on a sub-class of digital assets—i.e., cryptoassets—that possess the following attributes: (a) intangibility; (b) cryptographic authentication; (c) use of a distributed transaction ledger; (d) decentralisation; and (e) rule by consensus.10 These distinctive component parts describe the value arc enjoyed by the user; if any one feature were missing, this value arc would change significantly. The UKJT further observes that cryptoassets:

…can in that respect be contrasted with other digital assets, such as databases or digital photographs or computer programmes…11

Upon reviewing the existing body of case law on personal property, the UKJT concludes “cryptoassets are therefore to be treated in principle as property”.12

The Call for Evidence is based heavily on the UKJT’s Legal Statement.13 It is important, however, to note that the UKJT’s analysis was restricted to cryptoassets, distributed ledger technology, and smart contracts, which form, as described above, a small subset of the larger group of digital assets.

2.4. It would seem to follow that, insofar as a digital asset’s technical features, or combination of technical features, are unique, each technical feature or combination of factors carries implications for the asset’s legal and proprietary status. For example, one could view a Bitcoin created within a peer-to-peer, permissionless system as a part of a collectivised or co-operative ownership: its value derives from every transaction that came before it, and the legitimacy of its "block" determines the viability of all the

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9 For example, securities would be subject to regulation under Directive 2014/65/EU on markets in financial instruments (“MiFID II”). Financial instruments covered by MiFID II are also subject to Regulation (EU) No 909/2014 on improving securities settlement in the European Union and on central securities depositories (“CSDR”) and Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (“EMIR”).

10 See footnote 3.

11 Paragraph 61 of the Legal Statement, see footnote 3.

12 Paragraph 15(d) of the Legal Statement, see footnote 3.

13 Paragraphs 1.17 to 1.20 of the Call for Evidence, see footnote 2.
transactions that follow it (if any). No one individual or entity controls the platform, yet all participants, and the processes they perform, are co-dependent. To abstract technology, or the lack of it, from this undertaking could potentially confuse the existing state of the law, as well as stakeholders and market participants. Extrapolating the UKJT’s narrow conclusion to digital assets in the broadest sense of the term is therefore likely to give rise to impractical consequences, including legal uncertainty for financial markets participants as well as creators and consumers of digital assets.\textsuperscript{14}

2.5. Given this risk, for the purposes of this paper, the term “digital asset” has been used to refer solely to what have come to be known as “cryptoassets” in the sense used by the Legal Statement. In the FMLC’s view, the truly novel legal questions which are best addressed by the Call for Evidence relate to such cryptoassets rather than digital assets in the broadest sense. The latter have generally been assimilated to existing legal concepts and/or been the subject of existing legislation whereas the former lay genuine claim to be \textit{sui generis} as outlined in paragraph 5.3 below. That said, there is still a wide variety of types of asset within this sub-category and there have been a number of attempts by regulators to define and classify them.

\textit{The FCA}

2.6. The Financial Conduct Authority (“FCA”) classifies tokens into regulated and unregulated tokens. Within the ambit of regulated tokens are: (a) security tokens, which are tokens that amount to Specified Investments under the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (the “RAO”), and may also be deemed transferable securities or other financial instruments under Directive 2014/65/EU on markets in financial instruments (“MiFID II”); and (b) E-money tokens which are tokens that meet the definition of e-money under the Electronic Money Regulations 2011.

2.7. Unregulated tokens by comparison are tokens which are neither security tokens nor e-money tokens. This includes (a) utility tokens which can be redeemed for access to a specific product or service that is typically provided using a Distributed Ledger Technology (“DLT”) platform; and (b) exchange tokens such as Bitcoin and Litecoin.

\textsuperscript{14} It is also possible that this conflation between a legal rationale for cryptoassets and digital assets more broadly stems from the proximity of the Law Commission’s electronic trade documents project. The FMLC observes that while electronic trade documents are a class of digital asset, there are analytically distinct from those digital assets that possess all of the characteristics listed by the UKJT.

which are decentralised and designed to be used primarily as a medium of exchange.

**HM Treasury**

2.8. In HM Treasury’s consultation and call for evidence on cryptoassets and stablecoins the term “token” is used interchangeably with “cryptoasset”.\(^{15}\) HM Treasury largely follows the classification of tokens set out by the FCA although it recognises the need for a new category of regulated tokens: stable tokens. The regulated category of stable tokens would refer to tokens which stabilise their value by reference to one or more assets, such as fiat currency or a commodity and could therefore be reliably used as a store of value. In defining stable tokens, HM Treasury recognised that whilst stable tokens are typically underpinned by DLT, they could also be underpinned by other types of technology. On this basis the definition aims to be neutral to the technology underpinning its use.

**E.U. Proposal for a Markets in Cryptoassets Regulation**

2.9. The E.U.’s Proposal for a Regulation on Markets in Cryptoassets (“MiCA”) introduces 28 cryptoasset related definitions. MiCA defines cryptoassets as

a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology

**Basel Committee on Banking Supervision**

2.10. The Basel Committee issued a Consultative Document on the prudential treatment of cryptoasset exposures.\(^{16}\) The Consultative Document proposed a classification system that divides cryptoassets into three broad categories: (a) tokenised traditional assets such as derivatives; (b) cryptoassets with a stabilisation mechanism/underlying traditional assets; and (c) cryptoassets that do not fall within (a) or (b) such as Bitcoin.

**Financial Action Task Force**

2.11. Cryptoassets (or “virtual assets”, as they are referred to by the Financial Action Task Force (“FATF”)) are defined as any digital representation of value that can be digitally

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\(^{16}\) Basel Committee on Banking Supervision, Consultative Document: Prudential treatment of cryptoasset exposures, (June 2021), available at: [https://www.bis.org/bcbs/publ/d519.pdf](https://www.bis.org/bcbs/publ/d519.pdf)
traded transferred or used for payments but does not include digital representation of fiat currencies.

2.12. The FMLC recommends that the Law Commission take into consideration the definitions proposed by these authorities but that it should seek to create narrower, more focused definitions of cryptoassets when recommending legal reform. This is integral to providing market participants with the legal certainty that the markets require. All-encompassing wording such as that found in MiCA, which refers to “…or similar technology”, can be confusing. It is important that the Law Commission clearly and accurately defines the subject of its examination and recommendation even if that should result in comparatively narrow definitions. The FMLC considered the risk of technology outpacing the legislative definition of cryptoassets, if a narrower range of definitions were adopted. It concluded, however, that the risk of legal uncertainties owing to wide, inaccurate definitions is greater and that, ultimately, the definitions could be reviewed and updated if necessary in the future.

2.13. Turning, again, to the subject of this paper, it is important to note that digital assets which are “cryptoassets” may range from those used as a means of payment to those which may be redeemed for access to a specific product, service or right that is typically provided using a DLT platform, or those representing fungible and tradable assets or utilities that reside on their own DLT systems, or those recording ownership of a digital item. Within this range of cryptoassets, the legal analysis will also differ when considering a digital asset which: (1) only exists in digital form and has no real-world counterpart (for example, a bitcoin) (herein referred to as a “Digital Only Asset”); (2) is a direct digital representation of a "real-world" asset (for example, a 1:1 digital asset representing a single company share) (herein referred to as a “Real-world Digital Asset”); or (3) is a digital asset which is referable to a real-world asset but is not a 1:1 representation of that asset (such as a 1/100th fractionalised ownership share in a painting) (herein referred to as a “Referable Digital Asset”). In particular, for the latter two categories, in addition to the legal framework applicable to digital assets, it will be

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17 Part of the FMLC’s response to the European Commission’s Consultation on MiCA considered the classification of cryptoassets based on their function, including how the underlying technology may affect the resulting characteristics. The response also considered whether a cryptoasset is the asset or is merely evidence of a legal right or claim to an asset and analysis of means of holding and transfer of cryptoassets. See FMLC, Response to European Commission Consultation: Framework for Markets in Cryptoassets (17 March 2020), available at: http://fmlc.org/wp-content/uploads/2020/03/FMLC_UP_11706611_v_1_Part-I-Response-to-EC-Consultation-on-regulating-cryptoassets-taxonomy.pdf

18 Blockchain is a specific application of a technology known as Distributed Ledger Technology (“DLT”)—a virtual system that relies on peer-to-peer networking, distributed data storage, and cryptography. For that purpose, this paper consistently refers to DLT.
necessary to consider whether any proprietary or contractual interest in the underlying real-world asset is valid, binding and enforceable against third parties. In the case of Real-world Digital Assets, it will normally be important for the rights and obligations attaching to both the underlying asset and the related cryptoasset to be identical or at least substantially similar so that the two interests can move “hand in hand”. This is particularly the case when the underlying asset—such as securities—is itself subject to its own legal regime or legal requirements. In this case, it is important that any new regime for digital assets does not overcome or somehow replace those existing legal requirements simply as a result of the underlying asset being tokenised. In contrast, Referable Digital Assets will essentially represent divisible interests in a single underlying asset (such as a share), which may not have been envisaged to be divisible, and where there is no such expectation of equivalent rights and obligations as between the real-world asset and its digital representation.

2.14. Finally, it is also important to reference or otherwise distinguish between the different elements which together may either comprise a digital asset or, more likely, are required to access, transfer or otherwise control a digital asset. As a high-level summary, current cryptoasset technologies typically require some combination of the following elements: a wallet (which itself can be desktop, hardware, online or just a piece of paper); a wallet address; a public key; and a private key. Each element is addressed in more detail below.

**Wallet**

2.15. A wallet is a means of holding the collection of addresses and information necessary to receive, access or transfer digital assets. It is important to note that the wallet itself does not hold the digital assets (for example, if a wallet is lost or destroyed, but the information contained in it is accessible by other means, the digital asset can still be accessed and transferred by the owner), but the wallet is the primary means of storing the information necessary to control and deal with the underlying asset. The wallet also stores a separate log of all incoming and outgoing transactions. Every transaction linked to a wallet address will be stored by the wallet to give users an overview of their
spending and receiving habits.

**Wallet address**

2.16. The wallet address is a randomly generated set of alphanumeric characters, often (but not always) a one-time link generated by a wallet. The wallet address is used to send or receive digital assets and can be freely shared with third parties for these purposes. Both the public and private key are needed to create a wallet address.

**Public key**

2.17. The public key is used to ensure that a person who is the owner of a wallet address can receive funds. This can cause some confusion as it is sometimes assumed that a wallet address and the public key are the same. That is not the case, although they are mathematically related. A wallet address is a hashed version of the relevant public key.\(^{20}\)

**Private key**

2.18. Finally, there is a private key, which is normally the most critical element required to own, possess, or transfer digital assets. In the same way as the public key and the wallet address, the private key is a randomly-generated alphanumeric string used to verify access to and control or transfer the relevant digital asset. A private key is always mathematically related to the wallet address and public key but is thought to be impracticable to reverse engineer using current technologies due to the nature of encryption.

3. **A THIRD CATEGORY OF PROPERTY**

3.1. Some background comment on the understanding of “property” under common law may help to frame the analysis below. Personal property has traditionally been divided into two broad categories—(1) things in possession and (2) things in action—with the assumption that all things must fall within one or other of the two categories.\(^{21}\) As the Law Commission acknowledges in its related consultation on electronic trade documents, it was logical in the past for the law to assume that only physical or tangible

\(^{20}\) A hash is similar to a one-way algorithm which encodes a message in an output of predetermined and unvarying size.

\(^{21}\) This was considered in *Colonial Bank v Whinney* (1885) 30 Ch D 261 at 285, referring to Sir William Blackstone, Commentaries on the Laws of England (vol 2) p 389. Fry LJ said: “All personal things are either in possession or action. The law knows no tertium quid [“third thing”] between the two”.

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things could be possessed. The UKJT Legal Statement concluded that a cryptoasset cannot be a "thing in possession"—because it is intangible and cannot be physically possessed—and does not easily sit within the definition of a "thing in action"—a term generally used to mean a right of property that can be enforced by way of legal action, but which has also been used more broadly as a catch-all for any property that is not a thing in possession. Developments in technology may have already moved beyond this traditional assumption and therefore, as the UKJT concluded, cryptoassets are not precluded from being treated as property even if they are not characterised as a thing in possession or a thing in action on a narrow definition.

3.2. The Call for Evidence recognises that uncertainty remains as to whether a third category of property, separate from a thing in possession and a thing in action exists and, if it does, how that category should be defined. As mentioned above, the FMLC’s 2016 Report considered this question in relation to cryptocurrencies. It concluded that, if a choice must be made as to whether cryptocurrencies are a thing in possession or a thing in action, the legal uncertainty arising if virtual currencies are classified as things in action is likely on balance to be greater than if they are acknowledged to share the essential characteristics of things in possession. However, given that some digital assets, at least, share certain characteristics of both intangible property and things in possession, the 2016 Report suggested there is an argument for acknowledging the new reality of the digital world and extending the traditional legal categories to a third type of property. The 2016 Report proposed recognising a kind of hybrid: “virtual choses in possession”; that is, intangible property with the essential characteristics of things in possession.

3.3. That a digital asset cannot be categorised within the existing common law understanding of property as a thing in possession or a thing in action should not, however, preclude it from being treated as property and enjoying property rights under English Law. To address this, the FMLC proposes the creation of a third category of personal property which addresses the distinct attributes of digital assets (the “Third Category”). A more detailed look at this proposal is set out in the answer to question two, below.

3.4. The parameters around and characterisation of the Third Category, for the purposes of

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23 See footnote 3.

24 FMLC considers that its views on this question in its 2016 Report in relation to cryptocurrencies (see footnote 4) apply equally to the broader class of digital assets as defined in this paper.
this paper, have yet to be set and potentially open fundamental questions that would need considerable exploration. A key consideration is the pace of change and technological advancement. To accommodate this, any change in the law should not only be technology-neutral but should assume that the technological means of creating, storing, and transferring digital assets will continue to develop beyond current concepts. Any change in the law around digital assets therefore needs to be designed to remain "fit for purpose".

4. **QUESTION ONE**

4.1. Question one of the Call for Evidence asks what the legal or practical implications would be if digital assets were possessable under the law of England and Wales. As it is generally and increasingly accepted that digital assets constitute property under English law, the potential classification of digital assets as a thing in possession would go to the precise nature of that property, not to the essential question of whether digital assets are property at all. The classification of digital assets as possessable would embed the treatment of digital assets as personal property under English law. However, careful consideration would need to be given to some of the practical issues outlined in this paper.

4.2. Even if the Law Commission concludes that Digital Only Assets, such as cryptocurrencies, should not be considered possessable, the FMLC considers that it could significantly reduce legal uncertainty if Real-world Digital Assets were classified as possessable, in the same way as the underlying real-world tangible asset to which the digital asset refers. This would avoid a situation in which the Real-world Digital Asset could be subject to a different regime in respect of (for example) transfer by delivery or be the subject of a possessory lien, whereas the digital representation would have to be the subject of a legal or equitable assignment for an effective transfer to take place and could not be the subject of a lien. There is also a clear and direct link between the Real-

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26 As discussed above, this is set out in the UKJT Legal Statement (see footnote 3) and subsequently approved/adopted by the English courts in a limited number of cases: AA v Persons Unknown [2019] EWHC 3556 (Comm), [2020] 4 WLR 35 (High Court of England and Wales), Robertson v Persons Unknown (15 July 2019, unreported) (High Court of England and Wales) and Ion Science Ltd and Duncan Johns v Persons Unknown (21 December 2020, unreported) (High Court of England and Wales).
world Digital Asset and the underlying real-world asset which makes the arguments in favour of treating such assets as possessable even stronger.

4.3. Nevertheless, the consequences of digital assets being characterised as possessable/personal property should not be underestimated. The general range of issues that could be implicated include:

a) availability of security rights over digital assets;

b) rights relating to succession and inheritance of digital assets;

c) impact on limitation;

d) tax consequences; and

e) accounting treatment – including depreciation.

**Elements of digital asset technologies**

4.4. As explained in paragraphs 2.14 to 2.18, current digital asset technologies typically require some combination of a wallet, a wallet address, a public key and a private key. The question arises whether any of these elements is an essential aspect of a possessable digital asset. Each of these elements has a different role in the creation, storage or transfer of digital assets, and each can be separately characterised as possessable in its own right. For example, a person may have physical possession of a hardware wallet, which is plainly recognised as property. If the user cannot access the digital asset (the code or bytes accessible via the wallet) without the physical wallet, there appears to be a strong argument that the relevant digital asset cannot be separated from the physical form of the wallet and should be considered possessable in that particular case. Other wallets may be virtual only; the determination of their possessability should turn on fundamental characteristics of ownership rights and control, independent of rights attaching to a physical wallet. The wallet address is one step further removed as a storage space for the wallet, which is no longer a physical asset but a dematerialised “signature”. In the same way, a public key is part of an encrypted address and may be held/possessed by any number of people whereas the private key is presumably

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28 This notwithstanding, the Committee acknowledges that, even in this case, it is normal to have recovery mechanisms for hardware wallets (typically a backup recovery code or “seed phrase”) which allow the wallet to be reconstituted (although typically this requires the wallet to be reconstituted on a similar physical device).
possessed only by the “owner/holder” of the asset. Even in this situation, the use of “multi-signature” wallets can require the creation and use of two or more private keys to sign and approve a transaction and/or multiple cryptographic signatures to access the relevant wallet, as discussed below, so that the possession of a single private key may still not be determinative of ownership or control of the relevant asset.

4.5. Each of the elements is a typical part of holding, owning, transferring or otherwise controlling digital assets, and each element is capable of taking multiple physical forms as well as digital-only forms. Any change in the law relating to the nature of digital assets will need to be drafted in such a way as to take account of these (potentially independently possessable) elements but in a way that is also sufficiently independent of the definitions of each element identified below.

**Control**

4.6. Control of each of these elements is an observable fact which may indicate or evidence the owner of a digital asset, but control is not necessarily determinative of ownership—keys may be stolen, wallets may be hacked, etc. It is important that the definition of a “digital asset” is not limited in practice to the approach taken by current technological systems. In addition, it will be critical that elements that are needed to control the digital asset (such as the private key, the wallet, or the wallet address) are not conflated with the underlying digital asset itself.

4.7. The complexity of drafting a law which separates an underlying digital asset from the possessable elements needed to create, hold or transfer such assets in a technology-neutral way should be balanced against the potential benefits of such a law. Stakeholders have raised the growing market for crypto-custody services, whereby a party may offer various kinds of storage arrangements for digital assets and/or one or more private keys as a service to customers. These crypto-custody services are useful to market participants that do not have the technical capability or infrastructure to hold digital assets directly and, further, can provide an added layer of security against theft or the diversion of digital assets.

4.8. Even in this niche (but growing) market, the traditional financial market concept of “holding assets” in the context of custody or “possessability” may need to be reconsidered and redefined for digital assets. The FCA’s regulatory regime for the safe

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29 The UKJT observes at paragraph 28 that “Knowledge of the private key confers practical control over the asset”, see footnote 3.
custody of assets, set out in the Client Assets Sourcebook ("CASS"), is designed to ensure that a regulated firm must introduce adequate organisational arrangements to minimise the risk of the loss or diminution of clients' safe custody assets, or the rights in connection with those safe custody assets, as a result of the misuse of the assets, fraud, poor administration, inadequate record-keeping or negligence when held by the firm. Some of those CASS principles are very relevant to digital assets; in particular, the risk of fraud or theft has led to the development of so-called cold storage solutions which are entirely offline and disconnected from the internet, limiting the risk of a wallet hack, but others are far less relevant. There is also a generally accepted structure for safe custody of different classes of financial assets, whereas stakeholders report the structure of crypto-custody implementations to be more varied.

4.9. Where a digital asset is placed with a crypto-custody service, typically the ownership of the asset does not typically change but all of the above elements may—the wallet, wallet address and public key may all be moved to the custody and control of a crypto-custody provider (and the private key will also often be within the control of the crypto-custody provider). In this situation, the owner of the asset is protected by contract but in practice has limited non-contractual control of the asset. The Committee notes that the German implementation of Directive (EU) 2018/843 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives (known as the "Fifth Money Laundering Directive") has defined crypto-custody as:

the safekeeping, administration and safeguarding of crypto assets or private cryptographic keys used to hold, store or transfer crypto assets for others. (emphasis added)

4.10. In addition, the advice on cryptoassets the European Securities and Markets Authority ("ESMA") published in January 2019 states that:

having control of private keys on behalf of clients could be the equivalent to custody/safekeeping services, and the existing [regulatory] requirements should apply to the providers of those

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31 BAFIN, Guidance notice – guidelines concerning the statutory definition of crypto custody business (section 1 (1a) sentence 2 no. 6 of the German Banking Act (Kreditwesengesetz – KWG), (2 March 2020), available at: https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Merkblatt/mb_200302_kryptoverwahrgeschaeft_en.html
Both of these guidance notes effectively equate custody of digital assets to the holding and storage of private keys. The FMLC would caution that this approach may reflect current practices in the non-institutional markets, but crypto-custody solutions are rapidly developing and, in particular, there are increasing number of services which allow owners to retain private keys and/or require multiple approvals (for example, from custody provider and asset owner) before assets are transferred or moved out of custody. This emerging complexity is an additional reason why the control of the elements cited above is a relevant factor in establishing ownership but not determinative (on a case-by-case basis).

**Legal and practical consequences of classifying digital assets as "possessable"**

4.11. Turning to the Law Commission's main question, the Call for Evidence document already addresses a number of specific legal/practical consequences of classifying digital assets by statute as “possessable”. The FMLC has set out below some further general comments on the legal and practical impact, and on those specific issues (such as creation of security interests and conversion) which will follow.

4.12. The issue of whether a particular digital asset is a thing in possession or a thing in action typically arises in the context of taking security over the asset, or within crypto-trading and crypto-storage projects—when digital assets are held by and potentially controlled by third parties to the owner—and when considering insolvency risk. As discussed further below, an example of a project where the classification of a relevant asset would be material would be the taking of security over a digital-only artwork or digital asset representing a real-world artwork. There are certain types of English law security interests which are typically only created over things in possession because they involve the transfer of physical possession of the asset, which is seen as impossible to do with a thing in action. In particular, an English law pledge involves the actual or constructive delivery of possession of a physical asset as security until payment. While ownership remains with the pledgor, the pledge confers a power of sale (in the event of default) for the pledgee. In a similar way, a lien (whether a legal or statutory lien) arises out of a creditor's right to retain possession of a debtor's property until the debt has been repaid. Such liens provide a passive right to retain the property, and deprive the debtor of it, but

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do not give the creditor the right to sell the property and use the proceeds of sale to pay the outstanding debt.

4.13. An exception to the general position that a pledge or lien can only be taken over a thing in possession exists. It is possible for a pledge or lien to be created over a thing in action which is represented by a document which, if transferred, transfers title to the asset—for example, a bearer bond or promissory note. The Court of Appeal has considered whether it is possible for a possessory lien to be created over an intangible asset such as a database in *Your Response Ltd v Datateam Business Media Ltd.* In concluding that it could not, the Appeal judges rejected four arguments in support of the extension of the scope of a possessory lien to the content of databases, including an argument that such intangible assets should be considered as a “third class of thing” (labelled, an “intangible chose in possession”) in just the same way as the UKJT—and the FMLC’s 2016 Report—has suggested. In his judgment, Moore-Bick LJ acknowledged that an extension of the law of possessory liens to intangible objects would be a matter for Parliament. This decision, in combination with the risk that a higher court might not follow the approach of current case law in relation to digital assets—and the Legal Statement in considering digital assets as “property”—weighs in favour of a change in the law to make the position clear.

4.14. One potential consequence of a reclassification of digital assets as possessable is that it would be legally possible to pledge or subject such assets to a lien. Practical issues would still arise in terms of establishing a sufficient process to deliver the asset to the creditor and perfect the pledge or lien, but these issues could be overcome from a technical perspective and on a case-by-case basis. Other practical issues remain—including considerations around what elements (listed in paragraph 2.14) a holder would have to “possess” in order to be able to grant a possessory lien over a digital asset. It is possible that the answer as to the key component underlying the grant of such a lien differs, depending upon the nature of the digital asset.


34 This position may be distinguished from *Armstrong DLW GmbH v Winnington Networks Ltd* [2012] EWHC 10 (Ch), [2013] Ch 156 [58], [94] (Stephen Morris QC) where it was noted:

An EU emissions allowance could be intangible personal property (not necessarily a chose in action and not a chose in possession), in respect of which a proprietary claim may be brought.

35 The FMLC 2016 Report also suggested that it might be useful to understand virtual currencies as “virtual choses in possession”, i.e., intangible property with the essential characteristics of choses in possession. See footnote 4 and further analysis set out in section three and the response to question two, below.
4.15. Granting security interests over digital assets is likely to be the most important (and difficult) issue for market participants raised in the Call for Evidence. While it is possible for other forms of English law security to be created over digital assets, including mortgages and legal or equitable charges, these forms of security may not be available or suitable for all types of digital asset. More detail is given in relation to this point below in the response to question nine of the Call for Evidence.

4.16. A change in the law expressly to provide that digital assets are “possessable”, therefore, could provide an incremental further benefit in terms of certainty and confidence in the treatment of such assets under English law. The market for developing and engaging in digital asset businesses is inherently cross-border and, subject to the form of asset, not required to be located in the local jurisdiction where the digital assets are made available. The classification of digital assets as "possessable" under English law would provide more certainty and confidence in the treatment of such assets for market participants. As digital asset classes develop and become more common—and in the event digital asset systems become the primary means of transacting in a particular asset class—the classification of such assets as possessable is likely to become more important.

4.17. As noted above, there are other potential consequences of the characterisation of digital assets as possessable, including their treatment under tax, inheritance and criminal law. Each of these aspects will need to be thought through carefully so as to avoid unintended consequences.

5. QUESTION TWO

5.1. Question two of the Call for Evidence considers whether the transfer of a digital asset is more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money, and whether a different analysis should apply for different types of digital assets (including the various subsets of digital assets) or methods of transfer. In order to address the inability for digital assets to be easily categorised as a thing in possession or a thing in action, as explained in section three above, the FMLC proposes the creation of a Third Category of personal property which addresses the distinct attributes of digital assets.

5.2. Despite this analysis of digital assets as a Third Category of property separate from both things in action and things in possession, the introduction of a legal concept analogous
to possession applying to digital assets would allow them to be treated analogously to things in possession where, and to the extent, appropriate. While those digital assets that are controlled by an individual entity or group, by virtue of a contractual arrangement to which all affected are party,\textsuperscript{36} may be analysed using traditional contractual concepts, different analysis is needed for Digital-Only Assets that are subject to a cryptographically secure decentralised consensus mechanism.\textsuperscript{37} In this context, a transfer of a thing in possession provides a closer analogy than a transfer of a thing in action.

\textbf{5.3.} The key distinction is not between assets that are tangible and assets that are intangible, but between assets that have a purely legal existence and assets that have an existence independent of any law. The concept of possession applied to a thing in possession is a means of accommodating the non-legal facts that apply to it: for instance, that it is \textit{somewhere} in the world and \textit{somebody} has it. A similar concept is needed for digital assets. It may be noted that no legal rule can on its own create or destroy a digital asset independent of the underlying facts; no court decision can say that it has ceased to exist. Contrast this with an online bank account—which may seem superficially similar to a cryptocurrency account. A court can hold that a balance in a bank account is zero—that is, the debt owed by the bank should cease to exist—irrespective of any password or bank security. The debt owed by the bank is a thing in action which the court can extinguish. If the bank fails to change its records, then its records are wrong. However, if a digital asset provider records an account on its DLT system, then that digital asset exists on the DLT system and no court decision can destroy it—although courts might decide, for instance, who legally owns it.

\textbf{5.4.} Similarly, a transfer of possession of a physical object can be accomplished by moving it from one person to another person. The courts have considered this in numerous contexts so as to allow for the fundamental reality that physical objects can move from place to place. Things in action can move from one place only to the extent that the law specifically allows it. Absent compliance with a legal rule, a thing in action cannot be transferred, irrespective of any facts in the real world. By contract, a digital asset can be moved from one account, address or wallet to another account, address or wallet, irrespective of legal rights. Whether this is characterised in law as a deletion followed by the creation of a new asset or a transfer (discussed below in the response to question

\textsuperscript{36} Hyperledger Fabric is an example of a private DLT system where all participants are known and permissioned.

\textsuperscript{37} The “consensus mechanism” is the method of authenticating and validating a value or transaction on a DLT system without the need to trust or rely on a central authority.
four), legal rules must accommodate the reality that a change in account balances has taken place. Dwelling on whether a digital asset has moved or been deleted and recreated misses the point—the law must cater for the fact that a digital asset is in a different place, however it got there and whether or not its identity is the same. Whether a digital asset has moved or been replaced is a factual question. It is the fact that a digital asset can move or be replaced, without legal intervention, which suggests it should be seen as analogous to a thing in possession rather than a thing in action.

5.5. The consequences that flow from this treatment of digital assets affect security, bailment and insolvency, amongst other areas; these are dealt with further below. Generally speaking, the FMLC’s proposal of a Third Category of property needs to be considered in respect of not only Digital Only Assets, but also when creating Real-world Digital Assets or Referable Digital Assets where the underlying asset may be categorised as a thing in possession (or as a thing in action). An example may be when tokenising interests in shares which are held via a central security depository. In particular, the Committee would suggest that the Law Commission should specifically consider the potential impact of its proposals on existing legal and regulatory regimes that may already apply to the underlying asset in respect of Real-world Digital Assets, as this seems to us to have the greatest risk of unforeseen consequences and/or impacts on existing legal requirements.

6. **QUESTION THREE**

6.1. Question three of the Call for Evidence asks whether there are practical circumstances in which it would be useful to distinguish, or to separate, the ownership and the possession of a digital asset, particularly in relation to transfers; whether such circumstances arise on-chain and/or off chain for digital assets; and whether other technical or practical solutions or market practice make these distinctions less important.

6.2. To be things in possession, digital assets need to be capable of being possessed. Corporeal objects satisfy the core criteria which are hallmarks of possession: one or more persons have the ability to hold, transfer and destroy them to the exclusion of others. Digital assets do not, however, have a physical manifestation. They are intangible and incorporeal: a digital asset’s existence in any meaningful sense is evidenced by the combination of its public and private keys.

6.3. Arguments against treating digital assets as things in possession include that they consist
solely of information—digital assets are essentially just unique bits of data recorded on a specific DLT protocol (used by nodes to establish communication with one another). Bitcoins, for example, are essentially rewards for operating nodes on the Bitcoin DLT that have helped to ensure the accuracy and permanence of the record of all transactions on that DLT system.

6.4. Even if digital assets were “merely” information, however, they are qualitatively different from other generic forms of information which can easily be shared among many people, forgotten, or corrupted. Data on DLT systems is distinguishable in its immutability and permanence, as well as often carrying a high degree of reliability and transparency. These characteristics make DLT data in the form of digital assets susceptible to differential treatment for legal purposes. Of particular relevance to their legal characterisation is that DLT data in the form of digital assets is typically controlled to the exclusion of others by the holder(s) of the private key for the digital asset. Digital assets can be sold and (in some cases) destroyed, characteristics already considered indicative of ownership at law. Unlike cash in the form of coins and notes, digital assets are not readily accessible. Rather, as with bank money, combinations of public and private information are required for access.39

6.5. Many crypto-custodians offer similar services: the public key is a bit like bank account details; and gives one “view access” to the “wallet” (in this instance the updated record of all transactions related to the digital assets associated with the relevant public key). To access the wallet for transactional purposes, a pair of keys—both a public and a private key—is needed. The keys depend on public key cryptography. The public and the private key are linked, so it is possible to create public keys from the private key, but not vice versa. The private key functions like a digital signature. To control digital assets, the holder needs access to the private key for those specific digital assets.

6.6. Practice varies hugely in relation to private keys. “Hot wallets” refer to keys stored online. These are susceptible to hacking and generally not considered secure. “Cold wallets” are offline digital records. Some custodians offer old fashioned solutions to

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38 The immutability and permanence of the data recorded by most DLT protocols is probabilistic rather than absolute. For example, Bitcoin is vulnerable in circumstances where a group of miners who control more than 50% of the network's mining hash rate coordinate to invalidate or orphan a chain of recorded blocks, forcing miners back to a point where they have to start again from a specific block height. The risk of 50.1% of miners colluding maliciously is limited in practical terms by the actual distribution of hashing power and in economic terms by the incentives shared by all miners. Twice in the past, in 2010 and 2013, bitcoin has been “rolled back” in this manner to resolve disputes in the developer community.

39 In the case of bank money, this would be a combination of the bank and account details, as well as the customer’s PIN.
digital assets and store the private key information in traditional vaults—like those used by banks for gold, accessible only through multiple keys made available to different individuals within an institutional customer.

6.7. Private keys are not necessarily single pieces of information or data. In recent years, crypto-custodians and others have sharded or split keys so as to achieve greater levels of security. For example, crypto-custodians may offer multiparty computation so each private key is split in three parts: one held by the customer, another by the custodian and the third by an independent third party, all held in cold wallets. Two of the three components of the private key are needed to effect a transaction. Normally one of these will be the customer’s key, but where the customer has lost their key, that of the independent third party.

6.8. If the digital asset embodies a form of chose in possession, a proprietary right, and if parties can enforce rights in relation to it, it is necessary to establish rules governing which governing law and jurisdiction will apply. For things in possession, this is usually the place of the thing—the lex situs. This concept is difficult to apply in the case of completely decentralised systems. Unlike bank accounts, which do not exist in a single location in any physical sense but for legal purposes can be said to be located where the bank branch is established, wallets on decentralised systems are not records associated with a single administrating entity/bank. Wallets exist as collections of data on the DLT system and are accessible via the nodes of that system from anywhere in the world. Some crypto-custody providers have sought to remedy this issue contractually by providing expressly in legal agreements with their customers that digital assets, their associated private keys and other assets will be treated as being located in a particular jurisdiction.

6.9. The FMLC suggests that where a digital asset is not associated with an identifiable obligor, the law could deem the digital asset to be located in the place from where it is controlled. As stated above, control is usually exercised by the person who has possession of the private key: without the private key, no transactions—buying, selling or (in the case of some permissioned systems, burning/destroying)—are possible.

6.10. Some custodians provide that they are to retain possession and ownership of the keys, but that the customer, as owner of the digital asset, is the only person able to have direct

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use of, and control of the keys; this is then assured by issuing another, cryptographically assured, key to the customer to direct application of the private key. In this way, the customer is exercising those control rights usually associated with ownership and possession of the private key.

6.11. The legal basis on which crypto-custodians hold digital assets and keys for customers may be one of the following two models:

a) often, under English law crypto-custody agreements, digital assets and keys are held by the wallet provider on trust for their customers. The wallet provider has possession and legal title; the customer has beneficial title. In this capacity, the trustee owes duties to the customer under the Trustee Act 2000; or

b) another variation builds on the way shares are commonly held in England, under which the custodian holds the digital asset and the associated private key as nominee or bare trustee for customers, so that customers again retain only an equitable interest. What is different in this context from intermediated securities holding is that the custodian itself does not, unlike in the case of shares, have rights against an issuer.

To avoid the costs of fees associated with on-chain transactions, some crypto-exchanges have adopted the bare trustee model. The custodian would hold the public and private keys, and therefore the digital asset, as nominee for its customer. If customers want to trade with others on the exchange, settlement is effected by the provider holding for another customer. The provider changes its records, rather than effecting a transaction on the DLT system.

6.12. In this context, circumstances arise in which ownership must be split from possession and control. One situation which may arise in practice, wherein possession and ownership may need to be separated, concerns coins held in a wallet by a custodian. While it is plain that possession of the digital assets lies with the custodian, to determine ownership one might need to consider other aspects of the custodian’s services. If the digital assets in the wallet are considered separate from any other digital assets held by the custodian for itself or for other customers, and if the custodian—either owing to lack of access to the private key or inability to apply the private key without direction from the customer—was unable to alienate the digital assets, then the custodian’s customer is likely to be considered to have ownership of the digital assets.

6.13. In summary, therefore, the separation of possession from ownership—particularly in
relation to the private key through which all actions (including transfers) in relation to
digital assets can be effected—would be useful. A further concept, that of control of the
private key and thus of all actions in relation to the digital asset, should also be
recognised.

7. QUESTION FOUR

7.1. Question four of the Call for Evidence asks how an on-chain transfer of a digital asset is
typically characterised. The UKJT characterises the transfer of a digital asset as
involving the creation of a new asset in the hands of the transferee rather than the
transfer of the same asset. The Legal Statement states:

…the transferor typically brings into existence a new cryptoasset, with
a new pair of data parameters: a new or modified public parameter
and a new private key.\(^{41}\)

While it is possible that this accurately describes the technological sequence of events, it
is not necessary—and in the view of the FMLC is unhelpful—to consider a transfer of
an asset in such terms from a legal perspective. Indeed, the UKJT recognises, later in
the Legal Statement, that data should not be considered as constituting the digital asset
but rather as being:

…the record of it and the key to dealing in it. Thus, the commercial
value of a cryptoasset is not in the recorded data itself but in the fact
that the person possessing that data is able to effect and authenticate
dealings in the cryptoasset in accordance with the rules of the
system.\(^ {42}\)

7.2. In a lecture given to the Insolvency Lawyers’ Association on 17 October 2019, Mr
Justice Zacaroli stated that, in his view, “Bitcoin is an entirely imaginary thing” and it
is that imaginary thing “that is the subject matter of the transfer”.\(^ {43}\) On the basis that a
digital asset is best understood as an “ideational construct”, any attributable value rests


\(^{42}\) UKJT Legal Statement, paragraph 60 (footnote 3).

on consensus building amongst a network of participants and the broader economy. The FMLC would suggest that it is the “ideational construct”, or its perceived economic value—and not the data—that is being transferred between parties. In the same way that English law does not currently regard a new entry in the register of members in a U.K. company as entailing the creation of a new data string, it should not do so for the transfer of digital assets.

7.3. There are a number of reasons for adopting an understanding of digital assets as an “ideational construct” with a perceived economic value, including:

a) this is what market participants believe and intend to be happening;

b) it avoids the risk of unintended consequences, which may flow from the UKJT’s “destruction-creation” analysis, from a tax and financial regulatory perspective as well as questions as to how that analysis could be compatible with the concept of taking security over a digital asset or the theft of a digital asset;\[80\]

c) it could be more easily applicable to a variety of technological contexts, possibly even as the technology develops in the future; and

d) it could apply to the different types of cryptocurrencies, crypto-collectibles, stablecoins and other digital assets identified in paragraph 2.41 of the Call for Evidence.

8. QUESTION FIVE

8.1. Question five of the Call for Evidence concerns the practical consequences of characterising digital assets as “goods” under the Sale of Goods Act 1979 as well as views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

8.2. Section 61(1) of the Sale of Goods Act 1979 defines goods as “all personal chattels other than things in action and money”. The 2016 Report considered whether virtual currencies might constitute “goods” for the purposes of sale of goods legislation and identified a risk that anything deemed to be a “virtual chose in possession”—

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intangible/incorporeal and yet somehow capable of being held “in possession”, without (at least, in the case of cryptocurrencies) qualifying as money—would naturally fall to be classified as “goods” in England but not in Scotland. The 2016 Report concluded that this question is primarily one of consumer policy, rather than legal classification, and may be dealt with accordingly by statutory amendment.45

8.3. There are, however, a number of practical issues which arise should digital assets be classified as goods. The legal regime which underlies such classification may be incompatible with the nature of certain digital assets. One instance of this is the result of the volatility of certain digital assets which makes adherence to the Sale of Goods Act difficult. For example, section 6 of the Sale of Goods Act 1979 provides:

Where there is a contract for the sale of specific goods, and the goods without the knowledge of the seller have perished at the time when the contract is made, the contract is void.

8.4. “Perished” has previously been interpreted to mean “damaged so that they no longer fit the contract description”.46 The difficulties around determining when a digital asset has perished are apparent. For example, the volatility of digital assets, including the possibility that the price of a digital asset may suddenly plummet, means that classifying them as “goods” may give rise to disagreement and disruption around whether the loss in value may be interpreted as “perishment”. Perhaps a better example to demonstrate the uncertainties is by considering whether the loss of a private key could be interpreted as causing the digital asset to have “perished” for the purposes of the Sale of Goods Act. As described above, knowledge of the private key is critical to be able to access or transfer the digital asset. Loss of the private key of a crypto-wallet means that access to all the associated data and financial assets in the wallet are also permanently lost. In this context, it is possible that a court takes the view that the private key is an essential element of the digital asset and its loss or destruction could be considered perishment. Alternatively, it is arguable that the key is not part of the digital asset, such that the key being lost or destroyed will not be considered perishment, as the digital asset itself is still intact (though it may be incapable of transfer). Even if digital assets are to be considered “goods” under the Sale of Goods Act, consequent uncertainties exist around the manner in which courts interpret the legislation.

45 Annex II of the 2016 Report considers whether computer software is goods or services, see footnote 4.

46 Gooch, G. and Williams, M. ‘A Dictionary of Law Enforcement’ (Oxford University Press 2014)
8.5. Another uncertainty is evident by considering section 9 of the Sale of Goods Act, which provides stipulations in relation to the price to be paid by the buyer, and which would be difficult to apply given the frequent fluctuations in the price of various digital assets. Similarly, section 14 of the Sale of Goods Act implies in a contract for sale of goods a term that the goods are of satisfactory quality. Digital assets, however, are often not benchmarked by their “quality” but instead by their monetary value. The reasons for the exclusion of “money” in the definitions of goods under the Sale of Goods Act are also likely to be true for some types of digital assets: for example, those which can be used for payment—i.e., “cryptocurrencies”—do not have additive value, only monetary value (in which case, it is analogous with money and therefore not caught by the definition of “goods”). Similar issues arise under the Supply of Goods and Services Act 1982.

8.6. Under the Consumer Rights Act 2015, goods are defined as “tangible moveable items”, which would disqualify digital assets. The Act contains, however, a separate definition for “digital content”—data produced and supplied in digital form—and created protection for digital rights which it recognised as being neither goods nor services. Contracts for the supply of digital content are expressly included in the Consumer Rights Act 2015, where digital content is defined “as data which are produced and supplied in digital form”. As explored above, however, digital assets are more akin to things in possession, placing them in contrast to the rights extended to digital content. If the conceptualisation of digital assets under English law coalesces around a Third Category of property, then it would be feasible for consumer protection around digital assets to be provided in a way similar to the protection created for digital rights, with the least risk of unintended consequences, by statutory amendment of the Consumer Rights Act 2015.

9. QUESTION SIX

9.1. Question six of the Call for Evidence asks about practical or legal difficulties or problems that may be encountered in relation to the transfer of title to a digital asset. Under English law, title transfers are guided by the general principle of “nemo dat quod non habet” or “no one can give what they do not have” (the “nemo dat principle”). The Call for Evidence contemplates that the impact of the nemo dat principle may be different across different digital asset classes and functions. This seems to accurately reflect the experiences of stakeholders who have observed to the FMLC that the application of the nemo dat principle varies considerably depending on the type of digital asset, including
Digital-only Assets and Real-world Digital Assets.

9.2. Typically, *nemo dat* issues are seen as limited in practice for Real-world Digital Assets because the transfer of the digital asset is linked to the underlying physical asset and the chain of title can be established by reference to the physical asset. The risk of improper or incomplete transfer of title of the digital asset is equal to that which arises in relation to the transfer of the underlying asset—albeit the mechanism required to manage control of a digital asset will be different from that of a physical asset. Practically, such issues do not generally arise as the two assets—one physical, one digital—can be said to "travel together".

9.3. In some respects, the same analysis will apply in respect of Referable Digital Assets. The chain of title in the underlying asset can generally be established and/or risk assessed by reference to the nature of the underlying asset and, although there is an additional risk represented by the transfer of the partial ownership, given the current niche applications of this ownership structure, the risks are seen as limited and manageable. This is the case whether the transactions are fully on-chain or partly on-chain and partly off-chain.

9.4. In contrast, transfers of Digital Only Assets appear to raise more material *nemo dat* issues, for both technical and practical reasons. Cryptocurrencies which have achieved status as a medium of exchange within a significant user community have a good claim to be regarded as money.\(^{47}\) Although some would consider current cryptocurrency iterations as more a store of value, the future development of Central Bank Digital Currencies ("**CBDCs**") will likely also raise this issue. Cryptocurrencies are not, however, legal tender in the U.K. and do not obviously fall within the category of documentary intangibles (such as money) which are exempt from the *nemo dat* principle. This raises a number of practical issues for parties that either use exchanges to change fiat currency into cryptocurrency or engage in trading of cryptocurrencies for value. Such transactions are normally undertaken using a third party, such as a digital assets exchange or trading platform, which will normally execute transactions from a pool of assets under their control, without reference to the individual owners of those assets. Current exchanges and trading platforms treat digital assets as fungible, notwithstanding the fact that individual holdings of cryptocurrency are traceable, and each holder needs to be reviewed for anti-money laundering and related purposes. This exposes exchange

\(^{47}\) See the 2016 Report at 14–15, footnote 4.
and trading platform users to the risk that they could be allocated cryptocurrency in a legitimate transaction, which could subsequently be subject to challenge under the *nemo dat* principle due to activities taking place further up the chain, even as a *bona fide* purchaser for value of the relevant assets.  

9.5. There are exemptions from the *nemo dat* principle, and it may be important to consider whether they may apply to digital assets. One such exemption becomes relevant if digital assets can be classified as negotiable instruments. While the Call for Evidence is concerned with a wider set of assets than just cryptocurrencies, it may be useful to note the FMLC’s 2016 Report concluded that cryptocurrencies should not be understood as negotiable instruments, even by distant analogy with other financial innovations, such as vouchers and in-game “bank notes”, which more closely resemble documentary intangibles. The 2016 Report raised two issues against using negotiable instruments as an analogy in an attempt to understand the legal nature of cryptocurrencies. First, it highlighted an objection to shoe-horning modern technology into concepts defined by Victorian legislation (i.e., the Bills of Exchange Act 1882) as retrogressive and, without amendment, precluded by the legislation itself. Second, there are a number of defining features shared by all negotiable instruments which are not, or not necessarily, replicated in cryptocurrencies. Further, negotiable instruments are, by virtue of section 83 of the Bills of Exchange Act 1882, to be executed in writing and signed by the obligor. Not only are the concepts of writing and signature not applicable to cryptocurrencies but units may be wholly anonymised.

9.6. Another category of negotiable instruments is that of transferable securities as defined under Directive 2014/65/EU on markets in financial instruments (“MiFID II”) as onshored in the U.K. by the Markets in Financial Instruments (Amendment) (EU Exit) Regulations 2018. To be a "transferable security", a digital asset must fulfil the following requirements:

a) the digital asset must belong to a class of securities—to form a class, digital assets must be fungible with one another, issued by the same issuer, show similarities

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48 Which may bring the discussion back to *Re London Wine (Shippers)* [1986] PCC 121 and whether “ownership” is identified when the assets are held “in bulk”.

49 See Martin Hobza, “ICOs, Cryptoassets and MiFID II: Are Tokens Transferable Securities?”, Charles University in Prague Faculty of Law Research Paper No. 2020/III/1 (November 2020), available at: https://www.researchgate.net/publication/345807153_ICOs_Cryptoassets_and_MiFID_II_Are_Tokens_Transferable_Securities

50 Per Article 4(1)(44) of MiFID II.
and give access to the same rights to the same group of investors;

b) the class of securities must be capable of being negotiated on the capital markets—this is not always clear. Generally, the abstract possibility of the digital asset being traded could be considered sufficient for it to be "capable of being traded", even if there is not yet a specific market for the product or there is a temporary lock-up. Moreover, the term "capital markets" may be broad enough to include any place where buying and selling interests meet (including an online exchange); and

c) the digital asset must not be a payment instrument—examples of a payment instrument include a cheque or bill of exchange.

9.7. The analysis above raises the possibility that certain kinds of digital assets will have characteristics of negotiable instruments and may therefore be considered by analogy as exempt from the nemo dat principle, but this characterisation cannot be applied to all such assets. The risks of an "unfair" application of the nemo dat principle appear to be greatest in respect of Digital Only Assets for the reasons set out above.

9.8. The Committee also notes the analysis of the UKJT on this issue (see paragraph 47 of the Legal Statement) and, in particular, their conclusion that the nemo dat principle will not apply to cryptoassets, because (on each transfer) they are a newly created thing. While the simplicity of this approach is attractive, as noted above, the nemo dat principle is capable of broad and more flexible application. The UKJT’s analysis on this point seems to be driven by consideration of Digital Only Assets, without necessarily considering Real-world or Referable Digital Assets and the differences that may arise as a result. Even in the case of Digital Only Assets, for the purposes of the criminal law, it is possible in some cases (such as Bitcoin) to trace through from a tainted address to all other unspent transaction outputs derived from those tainted funds, and it is difficult to see why the nemo dat principle should not apply in that situation.

10. QUESTION SEVEN

10.1. Question seven of the Call for Evidence is concerned with what was referred to earlier as Real-world Digital Assets, in particular, how the characterisation of the relationship between a digital asset and the underlying tokenised asset may affect transfers of either the digital asset or the underlying tokenised asset. Unlike cryptocurrencies, such as
Bitcoin or Ether, which are the “native asset” of a DLT system, a “token” is computer code bestowed with a distinctive asset reference and unique digital properties, as determined by the issuer, built onto an existing DLT system. The token may be encoded with certain legal rights, depending on the smart contract that generated it. The properties of a token depend in part on design choices and features of the underlying software; several projects have been established to attempt to define and classify tokens. For example, the Blockchain Research Institute states that tokens share five common characteristics. First, the token must be valuable (for example, measurable by reference to a global standard such as the US dollar or with reference to a Bitcoin or Ethereum DLT or another cryptocurrency exchange. Second, tokens are representative in the sense that they stand for the holder’s claims to an asset, resource, or right. Finally, tokens must be digital, distinct, and authentic. 51

10.2. The common threads running through the technical, commercial and industry definitions of “token” are the concepts of ownership and representation of a thing of value, and transferability. Token ownership does not, however, automatically include the concept of token possession suggesting that tokens both in customary usage and in conception are perceived as binary: you either own one, or you do not. This view is consistent with that of the UKJT. Whilst stating that digital assets have all the “indicia” of being property and therefore being owned, the UKJT stopped short of hypothesising on whether, as a class of intangibles, they are capable of being possessed.

10.3. Question 7(1) of the Call for Evidence asks if this characterisation has any impact on the transfers of tokens or of the underlying asset. Transfers of tokens follow the same stages involved in the transfers of traditional securities, involving the creation, distribution, trading, settlement, clearing, custody, and storage of tokenised assets through DLT. Tokens may affect or disrupt the existing techniques and processes supported by financial markets infrastructure if they are substituted for traditional means of payment or for the assets themselves. Specifically, the transfers of tokens on DLT may not require the current infrastructure of third-party intermediaries, thereby streamlining costs and processes. The trading of tokens on the secondary market offers several other benefits. For example, valuable assets can remain securely in storage yet be transferred quickly and easily through its tokenised equivalent. An indisputable “proof of provenance” can be easily and cheaply provided by the DLT.

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10.4. Question 7(2) of the Call for Evidence asks whether the current legal characterisation of a transfer gives rise to practical or legal difficulties. If it is accepted that a digital asset is a form of property and that, within that “bucket” of property, Real-world Digital Assets and Referable Digital Assets are characterised as being relatable to real-world assets, then the current legal characterisation of a legal or equitable transfer of property as applied to these sub-classes needs further exploration. First, however, it is essential to consider how the market standard digital token is created and operates. Multi-layered and complex, it transcends any traditional conception of financial instruments by being at once co-dependent on a particular community and technological environment, whilst also self-executing.

10.5. As discussed above, digital assets as a class typically have attributes of a wallet, wallet address, public key, and private key. The prerequisite technical feature is the distributed ledger itself, a public infrastructure that provides a distributed record of transactions in which each wallet address is assigned to each token. These are the external technical features of a digital asset. But for a digital token or simply “token” in particular, there are two additional equally important characteristics that collectively form the composite asset. One is the technical set of characteristics that are innate in the digital token itself, which might be described as “internal” technical features: cryptographic tokens represent a set of rules, encoded in a smart contract or “token contract”. The other is the identifiably original features of a token which reside in the ecosystem in which the token was created and in which it exists: the “ecosystem features”.

10.6. Regarding the first, it is impossible to write about tokens without discussing the Ethereum Request for Comments 20 (“ERC-20”). The Ethereum Request for Comments ("ERCs") are technical documents used by Ethereum smart contract developers that define a mandatory set of rules to implement tokens for the Ethereum ecosystem. These documents are typically created by developers and include protocol specifications and contract descriptions. First proposed by Fabian Vogelsteller in November 2015, the ERC-20 is a token standard implementing an application programming interface (“API”) for tokens within smart contracts. If a smart contract implements the stipulated functions and events, it can be called an ERC-20 token contract.

10.7. Once deployed, the ERC-20 token contract embeds a property that makes each token exactly the same in type and value as another token. As the most widely used fungible token standard, the ERC-20 not only facilitated the widespread creation of tokens but also has ensured interoperability of tokens within the Ethereum ecosystem of
decentralized applications.\textsuperscript{52} For non-fungible tokens, which are by definition individually unique, a comparable industry standard was designed (ERC-721).

10.8. Whilst other token creation standards now exist in addition to ERC-20, the majority of tokens have been built on top of the community-run Ethereum DLT network.\textsuperscript{53} For many commentators, the key differentiator between “tokens” is that these are built onto an existing DLT whereas cryptocurrencies are “native” to a DLT. The final component of a token is the ecosystem in which it resides. The ERCs and standards-setting are examples of the wider Ethereum ecosystem. Located on the application layer within this Ethereum ecosystem are dApp and DAO token communities that are self-governing. The characteristics of an “ecosystem” have been defined as:

…alignment structure of a multilateral set of partners for a defined period of time, who pursue a common goal, and by the active shaping of relationships, create a common added value for all actors by a focal value proposition.\textsuperscript{54}

10.9. The nature of these ecosystems is less relevant here, other than to note that these self-governing DLT communities exert significant influence over the threshold behaviours of their members. Without these behavioural incentives, consensus building, could not be achieved. Thus, behavioural engineering is as essential to the operation and performance of the token ecosystem as the DLT infrastructure itself. The above analysis underlines the inherent complexity of tokenisation and digital assets more generally. No single set of factors, whether external technical features, (such as, the distributed ledger, wallet, public key, etc.), internal technical features (for example, token contract design, white paper product specifications, etc.) or ecosystem rules of engagement and consensus-based mechanisms, is separable from the others.

10.10. Within the virtual domain, the current legal characterisation of a transfer—including legal, or equitable assignment or novation—appears largely irrelevant to token communities. From before the point of creation, the digital asset token is intended for


transfer and programmed for transfer, based on the notional relationship between the
token and the asset or value it represents. Like the token itself is stacked within multiple
outer protocol layers, such as the white paper, the ERCs, the token community, the
Ethereum ecosystem, and so forth. These largely self-sufficient and self-regulating
organised systems have proved extremely adaptive and efficient in solving technological
and security challenges, and the business use cases are proliferating. Within these purely
virtual peer-to-peer parameters in which innovation thrives, “established mercantile
usage” appears to have taken root and any intervention by law bodies has not been a
limiting factor in development except in isolated cases of regulatory intervention.

10.11. The picture shifts with the introduction of more “friction” into the token economies,
either in the form of intermediaries, creditors, agents, custodians and other third parties.
In those circumstances, possessability and the exact legal classification of a digital asset
becomes more pressing, and these questions are dealt with elsewhere in this paper.

10.12. As alluded to above, a tokenised asset is in many cases not virtual but physical in the
form of Real-world Digital Assets and Referable Digital Assets. In such cases, these
digital assets must be considered not only in their virtual context but also in a physical
world governed by established law. Like the law of a foreign jurisdiction, questions arise
as to which “law” or custom has precedence and how any conflicts should be dealt with.
Also, more practical concerns, such as: how a purchaser of a Real-world Digital Asset
could extinguish the token if so desired; whether the token and physical object can be
transferred separately, or only together; how a would-be purchaser of a physical object
could be assured that a physical object was not tokenised or, if it were, that the token
was subsumed in passing of title to the physical object; whether competing claims (token
versus physical possession) could arise; and similar. It is at this juncture where legal
uncertainty is most apparent.

10.13. Question 7(3) of the Call for Evidence asks whether the ability to possess a digital asset
would help to clarify this analysis. As outlined in our response to question two above,
the Committee considers that it would so help, particularly in the case of Real-world
Digital Assets and Referable Digital Assets.

10.14. Whilst assigning the legal attribute of possessability to Real-world Digital Assets and
Referable Digital Assets, the functionality of legal possessability is likely to be of more
immediate practical value. This would appear to involve some technical means of
linking the token with the underlying physical asset (which is possessable) which would
serve, in turn, to integrate the “legal” framework with the tenets of the English law.
Whether smart contracts can embed tokens with “possessability” features will be a question for technologists and the markets.

11. **QUESTION EIGHT**

11.1. Question eight of the Call for Evidence asks in what practical circumstances, were a digital asset possessable, would bailment arise. A “bailment” occurs when one person is voluntarily in possession of a tangible thing that belongs to (is owned by) another, usually for a specific purpose. Commonly, bailment arises where physical goods are delivered in contemplation of a service—a textbook example being goods delivered to a repairer, or cleaner or transporter of the goods. With the exception of staking, it is hard to imagine a useful or practical application where this sort of bailment would apply to digital assets. Staking arrangements give rise to novel questions of law and legal uncertainties. Staking occurs when digital asset owners in a DLT system perform the service of validating transactions alongside locking some of their assets in the protocol, for an agreed period of time. The locked assets are used achieve consensus and ensure honest validation. In return for their participation, these “validators” are rewarded with new digital assets from the network but a DLT system may decrease (“slash”) a validator’s stake for dishonest or malicious behaviour. To avoid dealing with the requirements that DLT systems place on validators, owners of the digital assets may opt to delegate their digital assets to a validator running a staking pool, who in turn will share the rewards with their delegators. This arrangement is typically set up and administered by smart contracts automatically but the underlying legal relationship might be best characterised as one of bailment. In the event of a loss of digital assets after a slashing event, how would responsibility be allocated—i.e., does the answer differ depending on the validator’s level of fault (negligence vs. gross negligence vs. recklessness) or on the type of slashing event (double-signing vs. downtime)?

11.2. Other types of staking exist, some of which may require the use of legal contracts. For example, in custodial liquidity staking, a custodian (like a traditional cryptocurrency exchange) will hold tokens on behalf of a staker. A legal agreement which defines the parties’ respective rights and obligations as part of that relationship must be established, and the custodian must define therein the type of custody arrangement—whether a trust, bailment, escrow, etc.—which will apply to the staking tokens entrusted to the exchange. Other legal definitional questions also arise, including whether the digital assets subject to staking are transferable legal instruments or a mere certificate of deposit.
from the custodian.

11.3. A bailment could also be used to constitute a pledge, where possession of the asset by the pledgee is set up to secure some obligation entirely unrelated to the asset—for example, an unrelated debt obligation. If this “possession” were deemed feasible for digital assets then it would, in theory at least, allow borrowers to pledge digital assets as collateral. A contractual lien would also be possible. Moreover, possessory security can have a number of advantages over other forms of security, such as charges. For instance, possessory security is generally agreed to fall outside the scope of the charge registration rules for U.K. companies (although the Companies Act 2006 is silent on this point). It might also be relevant to consider the multiple advantages that would flow from a pledge over a digital asset constituting a "security financial collateral arrangement" under the Financial Collateral Arrangement (No. 2) Regulations 2003. However, finance market participants (outside specialist units) are generally unfamiliar with security over digital assets and, as noted in the Call for Evidence, the UKJT Legal Statement concluded that “because a cryptoasset cannot be possessed, neither can it be the object of a bailment”.

11.4. The feasibility of "possession" (and hence bailment) is going to require technical solutions. Financial institutions are also likely to look to either a legislative structure or some well-formed market guidance in order to get comfortable with it. A practical hurdle that arises is that many things that may be construed as a "digital asset" are not readily identifiable or monetizable. In many cases, the digital asset is a ledger or accounting statement arising via participation in a network. To quote an example from a recent article:

Thus, when, in everyday terms, we speak of Alice as owning 64.36 Bitcoin, in technical terms this means Alice has a legitimate expectation that, until she decides to spend any of her bitcoin, the Bitcoin blockchain continues to record that 64.36 bitcoin are attributed to public addresses to which Alice is entitled. The essential point is, however, that the blockchain does not attribute 64.36 bitcoin to Alice, but to one or several pseudo-anonymous public addresses participating in the Bitcoin network as an attribute of a node. There is nothing to confirm that Alice is entitled to the bitcoin attributed to

55 See paragraphs 17 and 87-88 of the Legal Statement, footnote 3.

56 Paragraphs 24-34 of the Legal Statement may provide a better understanding of this point, see footnote 3.
the relevant public addresses, nor whether she has the direct means to
control those Bitcoin through access to the corresponding private
keys.57

The introduction of legislative framework might provide a resolution to this problem in
limited contexts. Its use could be significantly limited, however, from a conflict of laws
perspective since the situs of digital assets is difficult to ascertain (see paragraph 6.8
above).

11.5. Question 8 of the Call for Evidence also asks about "other technical or practical
solutions" which might make the debate about bailment redundant. If parties want to
grant or take security over a digital asset, if may be possible for a mortgage or equitable
charge to be created over it without the need for possession, but there could still be
technical hurdles to overcome.58 As noted in the Call for Evidence (at paragraph 2.69),
much depends on whether the difficulties in exercising control over a digital asset reduce
the efficacy of taking a mortgage or charge over digital assets.

11.6. For the vast majority of Bitcoin owners, participation in the network is typically
intermediated by cryptoasset exchanges through an exchange-hosted wallet. Bitcoin
trading, for instance, is largely carried out through an intermediary company (for
example, Coinbase or Gemini). If the “owner” of some Bitcoin wanted to put up
collateral, it might be easier for the collateral giver to assign its contractual rights against
that intermediary/custodian. In this sort of context, the assignment (by way of security)
of contractual rights might be more readily acceptable to a financier than trying to
engineer “possession” of a digital asset. A similar approach is adopted when a chargor
grants security over securities (shares, bonds, etc) held in a clearing system. However,
it is probably not that simple, because of the nature of the trading wallets and the way
trades occur in practice (many trades occur “off chain”). In addition, owing to the
different standards governing each platform, it would not be appropriate to equate, for
example, bitcoin trading on a platform with bond trading via Euroclear. As explained
by Amy Held:

The consequent risks to exchange users thus mirror those recognised
in the context of omnibus securities accounts: the absence of any
requirement that exchanges maintain sufficient 'balances' of

58 See paragraphs 103-106 of the Legal Statement, footnote 3.
cryptoassets, termed here as 'participation values', attributable to their public addresses in the blockchain network to cover the sum of their users' entitlements. In the case of shortfalls, the strength of users' ownership rights in 'their' cryptoassets will depend on, not only a consideration of cryptoassets per se as property, but analyses of the exchanges' own practices in submitting signed transactions to the other nodes in the crypto network, and the agreements between the exchange and the user as matter of law.59

Another aspect to consider is the governing law of these platforms.60

11.7. The Call for Evidence refers (at paragraph 2.63) to Wyoming Blockchain Laws, which provide that digital assets held by qualified custodian intermediaries are held in a bailment relationship. This approach might be helpful in considering security over digital assets but it is unlikely to be a solution which is capable of being deployed simultaneously in multiple jurisdictions. It could therefore give rise to a range of conflict of laws issues and would require a financier to accept the risks and costs of an additional cross-border element in the relevant finance transaction. Finally, a solution focused on the “rights against the intermediary” may only be possible where the digital assets in question are considered fungible in the same way as shares or bonds. It is unlikely to be appropriate for other types of digital assets, such as smart contracts, non-fungible tokens or crypto-collectibles.

12. QUESTION NINE

12.1. Question nine of the Call for Evidence asks about how security over digital assets is granted or taken in practice. There is no standard method of taking security over digital assets. The four forms of consensual security in English law are underpinned by

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60 Amy Held (ibid), for example, includes an analysis of the contractual arrangements in the UK for Coinbase and in the US for Gemini. In the UK, an account with Coinbase is governed by a User Agreement which comprises an Agreement with each of Coinbase UK Ltd and CB Payments Ltd. CB Payments provides services in respect of E-Money, which is typically purchased with fiat currency in a standard bank transfer. Coinbase UK, on the other hand, provides Digital Currency services through a Digital Currency Wallet, which enables users to store, track, transfer, and manage balances of certain supported Digital Currencies. Similar to Coinbase, a Gemini account comprises a number of sub-accounts: one or more of a "Fiat Account" that reflects its fiat currency balance; and a "Digital Asset Account" that reflects its Digital Asset balance. Gemini Trust Company LLC (Gemini) is a fiduciary under §100 of the New York Banking Law in respect of both Fiat and Digital Asset Accounts.
ownership, possession or control of the asset by the security taker, but the nature of
digital assets means that it may be difficult to achieve any of these based on existing law
and techniques. Where digital assets are held on an exchange or by a custodian, it is
expected that security would be taken over the claims of the "owner" against the
exchange operator. Such security is common in respect of other tradeable assets, and
existing practices should be applicable to digital assets. Question nine also asks whether
respondents consider mortgages and charges to be effective methods of taking security
over digital assets.

**Mortgage**

12.2. In the case of a mortgage, equitable or legal title to the asset will need to be transferred
to the mortgagee. The issues raised by the nemo dat rule as discussed in the response to
question six may inhibit the creation of an effective mortgage. The multiple components
of a digital asset mean that multiple transfers of title may be needed in order to ensure
that the security is complete, unless there is legal recognition of the "package" of assets
that constitutes a single digital asset (see paragraph 2.14 in respect of the elements of a
digital asset). This approach has been taken in the context of intellectual property, where
section 30(1) of the Patent Act 1977 and section 22 of the Trade Marks Act 1994 define
the nature of patents and trademarks respectively as personal property in order to
establish how transfers and mortgages of those assets can be effected in an enforceable
manner.

12.3. Problems may arise for a mortgagor in ensuring their interest in the asset is adequately
notified to third parties in order to prevent unlawful transfers of the mortgaged assets by
the mortgagee. Mortgages of other classes of asset typically allow the mortgagor to
retain some control over the asset (for example, chattel mortgages) or have their interest
recorded on a public register (for example, real property).

**Charge**

12.4. As the charge is a construct of an agreement between the chargee and the chargor, it
affords a more flexible means of creating security over digital assets, provided that the
asset can be adequately defined to enable the attachment of the security. Problems may
arise, however, in ensuring that third parties are on notice as to the existence of the
charge, as discussed below.

**Pledge/Lien**
12.5. As noted in previous answers and in particular paragraphs 4.12 to 4.16, the nature of digital assets means possessory security is not feasible at present. If, however, a Third Category of possessable property was adopted for digital assets, these types of security would be available. Thought will then need to be given to determining how one possession, ownership and control are ascertained, as discussed in previous sections above.

Statutory security interests

12.6. Legislation has been used to create distinct security interests under English law. For example, the Law of Property Act 1925 created the charge by way of legal mortgage, and The Financial Collateral Arrangements (No.2) Regulations 2003 created the concept of a security financial collateral arrangement. The definition of security financial collateral arrangement makes it clear that such arrangements can extend beyond the forms of English law consensual security. A similar approach could be followed in the case of digital assets.

Perfection and Priority

12.7. A significant issue for security takers is how they preserve priority of security over digital assets. In this regard, a mortgage is perhaps the most effective security, with the mortgagee being recognised as the owner of the digital asset, preventing further interests in the asset from being created by the mortgagee. A registration system for digital assets similar to that proposed by the Secured Transaction Law Reform Project would ensure that third parties are on notice as to the existence of security interests.61

Situs of the digital asset and conflict of laws concerns

12.8. A significant issue in taking security over digital assets is that elements of the asset may exist simultaneously in multiple jurisdictions in circumstances where no single element is dispositive of its situs for conflicts of laws purposes. A general conflict of law principle is that lex situs will determine the governing law applicable to security over an asset. Foreign jurisdictions may refuse to recognise English law security over a digital asset or treat the asset in a manner that prevents the security from being enforced.

12.9. One way in which this uncertainty may be mitigated is by establishing an international

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registry of third-party interests in digital assets with a single enforcement regime upheld by all states. In the case of aircraft assets, for example, this is achieved through the Cape Town Convention on International Interests in Mobile Equipment 2001 and the supporting International Registry of Mobile Assets, which ensures that signatory states uphold security interests recorded in the Registry irrespective of competing local law.

12.10. The FMLC does not underestimate the significance of the challenge in creating an international registry of third-party interests in digital assets, not least because the aviation sector is narrower than the universe of digital assets, which is continuing to evolve. Such a registry could be a DLT-based registry that could interact with other DLT systems and act as a single source of truth for security interests. An international approach also appears to be in line with HM Treasury's wider policy proposals, which recognise the importance of global regulatory standards.\footnote{See, for example, paragraph 2.4 of HM Treasury's consultation and call for evidence on the UK regulatory approach to cryptoassets and stablecoins, January 2021, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/950206/HM_Treasury_Cryptoasset_and_Stablecoin_consultation.pdf}

12.11. If an international approach is not on the agenda, then a national registry—similar to, for example, the Land Registry—could add legal certainty and transparency. This could be developed by industry in a similar way to how Open Banking standards were formed and developed, albeit with the force of the Competition and Markets Authority's Order behind them.

12.12. A public-private partnership with statutory footings could be an ideal option, possibly supported/incentivised by HM Treasury through the British Business Bank or similar body in a similar way to how the European Investment Bank is supporting and incentivising the innovation in European capital markets.

**Possessory security over a digital asset**

12.13. Question nine of the Call for Evidence also asks whether there are practical circumstances in which the creation of possessory security over a digital asset might be used if the digital asset were possesable. To the extent that a simple means of granting security analogous to pawning could be created, it could create a means for borrowers to access a wider pool of potential lenders and remove complexity from taking security. However, the burdens that possessory security place on both the security beneficiary, through its duty of care while the asset is in its possession, and the security provider, in terms of ceasing to have the asset available to it, may make it an unattractive option.
Other technical or practical solutions or market practice

12.14. Question nine of the Call for Evidence also asks if other technical or practical solutions or market practice, including the creation of quasi-security, make the ability to take possessory security over a digital asset less important. The flexibility of the equitable charge means that, if there were suitable means of imposing actual or constructive notice of the charge on third parties, this may remove the need for the creation of a mechanism for possessory security to arise. Flawed asset arrangements or repo transactions could perform the function of possessory security—although the attractiveness of these would depend on tax treatment and the ease of transferability of the relevant digital assets.

Overall, rather than deeming digital assets to be possessory and applying existing security principles to them, ideally it would be better to create a specific class of digital asset security together with a unilateral registration regime to provide security providers with more flexibility in dealing with assets than requiring transfer of possession or title to a third party for the duration of the security period.

13. QUESTION 11

13.1. Question 11 of the Call for Evidence welcomes comments on the aspects of the Liechtenstein Blockchain Act and the Wyoming Blockchain Laws relevant to the questions in this Call for Evidence. It also asks for suggestions of other jurisdictions the Law Commission should consider.

Wyoming

Categorisation of Digital Assets

13.2. Inspiration for the Third Category, as proposed in section three and the response to question two above, may be drawn from U.S. State of Wyoming’s treatment of digital assets. The U.S. State of Wyoming enacted Senate File SF0125 (“SF0125”), which has three elements relevant to this submission: (1) created a set of definitions for digital assets; (2) identified digital assets as enjoying property rights; and (3) outlined how
perfection and priority of security operates.\(^{63}\)

**Definitions**

13.3. SF0125 recognises digital assets as having property rights. The legislation categorises digital assets into three mutually exclusive subclasses:

a) digital securities: which are treated as securities and investment property;

b) virtual currencies: which are treated as money; and

c) digital consumer assets: which are treated as “general intangibles”.

The term “general intangibles” is a term which has long existed in Wyoming’s commercial code.\(^{64}\) Any asset which falls within one of these three categories is defined as “intangible personal property”, which is a term used in Wyoming’s 2011 tax law.\(^{65}\)

**Perfection of Security, Ownership and Control**

13.4. Under SF0125, perfection of security in a digital asset may be achieved through the newly established concept of “control”.\(^{66}\) Before a secured party can take control of a

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\(^{64}\) The term “general intangibles”, in Wyoming’s commercial code, means:

any personal property, including things in action, other than accounts, chattel paper, commercial tort claims, deposit accounts, documents, goods, instruments, investment property, letter-of-credit rights, letters of credit, money and oil, gas or other minerals before extraction.

The term includes payment intangibles and software.


\(^{65}\) The term “intangible personal property” has come from Wyoming’s 2011 tax law, and means:

personal property that lacks mass and cannot be seen, felt, weighed, measured or otherwise perceived by the senses; property that has no physical existence beyond merely representational. Intangible property’s value lies chiefly in what it represents, and its existence may be evidenced by a document.

See Wyoming State, enacted Senate File SF0031, available at: https://www.wyoleg.gov/Legislation/2006/SF0031

\(^{66}\) In this context, “control” of a digital asset means:

a secured party, agent, custodian, fiduciary, or trustee of the party has the exclusive legal authority to conduct a transaction relating to a digital asset including by means of a private key or the use of a multi-signature arrangement authorized by the secured party.

See SF0125 (footnote 52)
digital asset, it must enter into a control agreement with the debtor. “Control” of a
digital asset is equivalent to “possession” and signifies priority of interest, which may be
pledged by written agreement, and for which a financing statement may be filed with
the state.

13.5. As well as creating a comprehensive property classification of digital assets, SF0125
integrates with existing Wyoming commercial laws. The FMLC would strongly
recommend that, were a Third Category of property to be recognised under English law,
the framework around it must not be created in a vacuum, removed from existing
legislation. For the Third Category to be effective, it must work both with and within
the existing legal framework.

Bailment

13.6. With reference to issues considered in the response to question eight above, Wyoming’s
SF0125 is unique in that it enables custody of digital assets via bailment. SF0125
establishes an opt-in regime which allows banks to provide custodial services. SF0125
states that digital assets held in custody are not depository liabilities or assets of the bank.
The bank maintains control and custody of the digital asset under bailment. The concept
of bailment is more nuanced than expressed in SF0125, as recognised in a letter from
the State of Wyoming Department of Audit Division of Banking, which stated that
the law surrounding custody, particularly for digital assets, “is not fully developed”.67
Although digital assets themselves may not be subject to bailment, it may nonetheless
be taken over the underlying asset. When drafting U.K. legislation, regard should be
given to the unique features of digital assets examined in the preceding sections of this
paper, such as the delineation between the conceptualisation, possession and ownership
of private keys, the underlying assets and wallets.

Liechtenstein

Characterisation

13.7. As explored in the response to question seven above, there is confusion surrounding the
different types of assets that can be represented by a token, the difference between the
digital asset tokens and the underlying asset and the rights attributed therein. The
Liechtenstein Blockchain Act incorporates a treatment of digital assets which helps

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67 State of Wyoming Department of Audit Division of Banking, Two Ocean Trust No-Action Letter (23 October 2020),
available at: https://docs.google.com/viewer?a=v&pid=sites&srcid=d3ivLmdvdxiYW5raW5nGd4OjU2MDk2ZGQyYjg1ZDUzYTc
resolve this confusion. As set out in the Call for Evidence, the Liechtenstein Blockchain Act introduced the “Token Container Model”, whereby a token can represent “claims or rights of memberships against a person, right to property or other absolute or relative rights”, meaning that nearly any right or asset can be packaged into a token. This includes “real” assets such as real property, shares, bonds and access rights and money; but the container can also be “empty” and include digital codes and digital assets. Creating a container for a right or asset allows for the separation of (a) the right and the asset and (b) the token technically running on a DLT-based system. The container model allows binding transfers of the underlying rights, whether that is a right to real or digital assets.

Practical application

13.8. Liechtenstein’s regulators have recognised the gap between the online and the offline world and addressed it by creating, under the Liechtenstein Blockchain Act, roles such as that of “Physical Validator”, which ensures that the physical object and associated rights to be tokenised actually exist. For example, if an individual were to invest in a token representing a fraction of a painting, it would be the role of the Physical Validator to guarantee the ownership rights to that fraction. Furthermore, the Liechtenstein Blockchain Act provides guidelines in the event that a user holding a token embodying a right loses access to their token, such as the loss or theft of a private key, as well as authorising mechanisms for the burning of tokens that are rendered invalid.68

14. QUESTION 12

14.1. Question 12 of the Call for Evidence seeks suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of the Digital Assets Project. Certain issues of legal uncertainty which arise in this context are set out below. Given the remit of the FMLC, the issues considered have arisen in the context of financial market transactions and financial market infrastructures. The implications of any changes in law in these areas on matters outside financial markets should be considered further, especially given the breadth of the definition of digital assets used in the Call for Evidence.

Settlement risk

14.2. In financial markets, settlement broadly refers to the process of delivering securities from seller to buyer to complete a trade. Payment usually passes in the opposite direction in a settlement process known as delivery versus payment (or “DvP”). In legal terms, settlement refers to the point in time at which title to the underlying property passes from seller to buyer. Until settlement occurs, the buyer of securities has a contractual right to have the securities delivered to them from the seller in consideration for the payment and receipt of the purchase price. Since this contractual right is a personal right, the buyer’s rights to the securities are at risk of the seller's insolvency or other causes of non-delivery, even if the buyer has paid for them. Settlement turns these personal rights into proprietary rights and therefore protects the buyer from the risk of default of the seller or other counterparties.

14.3. Settlement risk exists outside financial markets, but it is more acute in financial markets, especially with intra-day trading, netting between multiple participants and interaction between different payment and security settlement systems, where property can change hands multiple times a day. Settlement can (now) be done in real time, as with payment systems operating real-time gross settlement systems, or it can take a few days to occur. The longer the settlement period, the greater the risk of settlement failures. To address this risk, financial markets often require a central counterparty to sit in the middle of each trade—the central counterparty is buyer to every seller, and seller to every buyer. By intermediating in this way, settlement risk passes to, and is contained within, the central counterparty (i.e. a centralised body) on whom regulatory and legal obligations are imposed to ensure the stability and soundness of financial markets. Markets for digital assets exhibit many of the features of traditional financial markets and, therefore, settlement risk has to be considered in these markets, but the existing law dealing with financial markets and digital assets representing or resembling financial instruments or securities poses a number of barriers to further innovation due to legal uncertainties.

14.4. In the U.K., financial market settlement is dealt with through various pieces of legislation affecting payment systems and security settlement systems. For present purposes, this paper will focus on the U.K. version of Regulation (EU) No 909/2014 on improving securities settlement in the European Union and on central securities depositories (the "CSDR") as “onshored” by the Central Securities Depositories (Amendment) (EU Exit) Regulations 2018 (the "U.K. CSDR") and the Financial Markets and Insolvency Settlement Finality Regulations 1999 (the "SFRs"), which
implemented the Directive 98/26/EC on settlement finality in payment and securities settlement systems into U.K. law (this Directive and the SFRs are referred to together as the "SFD").

14.5. The SFD seeks to reduce systemic risk associated with participation in payment and security settlement systems, particularly the risk linked to the insolvency of a participant in such a system. The SFD applies to systems which are designated. Designation occurs by application to the relevant authority; although, there are instances when a designating authority may require designation, particularly where a system could be systemically important.

14.6. The CSDR aims to:

Harmonize certain aspects of the settlement cycle, settlement discipline and provide a set of common requirements for [central securities depositories] operating securities settlement systems in order to enhance cross border settlement in the EU.

The U.K. CSDR requires the participation of a Central Securities Depository ("CSD") in two situations: (i) where transferable securities are listed on an in-scope trading venue; or (ii) where the DLT system is a security settlement system within the scope of the SFD.

14.7. The current settlement regimes for financial markets create legal uncertainty for new forms of digital assets, even where these represent tokenised forms of traditional securities. The FMLC has previously considered issues of legal uncertainty in the context of DLT and settlement. The FMLC previously observed that the SFD excludes natural persons from the list of persons authorised to take part in a designated system. This means that DLT implementations which provide for direct access to retail “customers” are unlikely to qualify for designation. A lack of designation means that transactions remain subject to the insolvency and other risks noted above, which settlement legislation seeks to remove or mitigate. This is more likely to be an issue for DLT implementations that reach a level of systemic importance or risk. It also supports a conclusion that the SFD is more likely to be compatible with a centralised and

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70 Ibid at paragraph 142.

71 See footnote 40.
permissioned system than a decentralised and permissionless one. While the SFD and issues concerning settlement finality may be better suited to centralised, permissioned DLT systems, any legislative steps to regulate digital assets may need to distinguish between the different DLT systems, because prohibiting decentralised, permissionless networks could stifle some innovations. Clarity in scope and the use of consistent taxonomy will be vital in these areas.

14.8. ESMA’s Advice on Initial Coin Offerings and Cryptoassets also highlighted various issues for DLT platforms that qualify as a securities settlement system. For example:

a) the scope of the current regime will not apply to all digital assets, so consideration needs to be given to whether a broader range of digital assets and DLT platforms need, or would benefit from, the certainty that settlement legislation offers;

b) any securities settlement system must be operated by a system operator who is responsible for the operations of the system. ESMA correctly notes that it can be difficult to identify such an operator in the case of decentralised DLT platforms. If settlement laws are extended to a wider class of digital assets and/or DLT platforms, consideration will need to be given to how one identifies such an operator;

c) designation as a securities settlement system requires the appointment of a CSD, which must comply with specific governance and organisational requirements to comply with the requirements of the CSDR. The role of miners under the CSDR is another area that ESMA rightly points out needs to be considered, given the novel role they play in the settlement process; and

d) the potential issues in relation to settlement finality and DvP in a DLT system. In particular, how to define and achieve settlement finality with DLT from an operational and legal perspective. ESMA notes that this needs to take into account the different “consensus” validation methods within, and still emerging in, DLT systems and the risk of “forks” to the concept of finality and irrevocability. Consideration also needs to be given to how DvP is achieved, notably when the payment leg is off-chain. Any legislation in this area needs to future-proof against the possibility of CBDCs and private, permissioned DLT

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72 See footnote 69.
systems interoperating with one another so as not stifle current thinking and innovation.

14.9. The concept of settlement finality has also been widely discussed in relation to the use of digital assets and DLT in financial markets, including by the FMLC. Settlement finality refers to the point in time at which a transaction is deemed to be final and irrevocable, even in the event of insolvency proceedings against participants in the system. Settlement finality protects both parties from transactions being unwound if one party become insolvent intra-day. This certainty adds to users’ confidence in payment and securities settlement systems and, in turn, adds to the stability of such systems. The international framework for Financial Market Infrastructures (“FMIIs”) provided by the Principles for Financial Market Infrastructures established by the Committee on Payment and Settlement Systems (now the Committee of Payments and Market Infrastructures (“CPMI”)) and the International Organization of Securities Commissions (“IOSCO”) (the “CPMI-IOSCO Principles”) also includes settlement finality as one of its core principles for FMIIs. The CPMI-IOSCO Principles are intended to:

- enhance safety and efficiency in payment, clearing, settlement, and recording arrangements, and more broadly, to limit systemic risk and foster transparency and financial stability.

If settlement finality is not ensured in any proposed legislation concerning digital assets, then issues of legal uncertainty in this area may remain. Settlement finality may not be necessary in all DLT implementations, but its benefits to FMIIs are clear and any new legislation should address settlement finality within DLT implementations used in financial market infrastructure, both in the traditional sense and in the context of any new financial market infrastructure that could emerge as a result of the innovations in

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74 The CPMI-IOSCO Principles are available at: https://www.bis.org/cpmi/publ/d101a.pdf

Principle 8 on Settlement finality (page 64) states:

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Operators of multilateral systems of participating institutions used for clearing, settling, or recording payments, securities, derivatives, or other financial transactions, regardless of the legal structure or technological foundation of that system.

75 Ibid at paragraph 1.15.
digital assets.

14.10. It should be noted that some DLT systems cannot offer settlement finality in the way required by the SFRs. This is true of the Bitcoin DLT system and its proof-of-work consensus protocol, whereby there is never absolute certainty of settlement (or settlement finality) but, rather, an ever-reducing likelihood of the transaction being unwound as each block is added to the chain until it becomes a negligible risk. The position above in relation to Bitcoin’s DLT system is not true of all DLT systems. It should be technically possible to create a DLT system that meets the requirements of the SFRs, albeit this is most likely at present to be a permissioned, centralised system. As such, settlement finality should not be an absolute barrier to digital asset adoption, but legal uncertainties remain with regard to the current scope of the regime when applied to DLT systems and digital assets (especially those that are not securities), and whether a similar regime offering finality or irrevocability would be desirable in DLT systems and for digital assets that sit outside the traditional financial markets, given the similarities some of them have with traditional financial markets.

14.11. It has been argued that the introduction of CBDCs and continued innovations in DLT systems could even eliminate the need for the complexity around settlement finality.\textsuperscript{76} According to The Whitechapel Think Tank:

The immutable nature of DLT gives rise to embedded settlement finality at the point of exchange – with no further oversight or set-aside of funds in cash collateral accounts required. In other words, the use of DLT in a retail CBDC system offers “atomic settlement”: irrevocable, final, and real-time settlement of retail transactions, using central bank-backed digital fiat currency, and eliminating credit risk between the instigator and the beneficiary of the relevant payment. The existing tripartite process of payment, clearing and settlement would be collapsed into one simple, trustable and assured digital process.\textsuperscript{77}

14.12. If, or when, atomic settlement using CBDCs becomes a tried and tested reality, it may no longer be necessary for such prescriptive rules on settlement of digital asset


\textsuperscript{77} \textit{Ibid.}
transactions which make use of CBDCs. If digital assets legislation is to be truly future-proofed, thought will need to be given to issues such as these further advances in technology. If settlement laws are to be expanded to a wider class of digital assets and amended to apply to tokenised financial markets, it is more likely that a mandatory centralised system will be more achievable than a truly decentralised model. The Law Commission will also, no doubt, consider the European Commission’s proposal for a DLT Pilot Regime when considering a regime for the U.K.  

**Insolvency**

14.13. What happens on the insolvency of holders of digital assets or a DLT system is another issue that requires consideration in any law relating to digital assets. The UKJT set out in its Legal Statement that it had no doubt that digital assets could fall within the very wide definition of property in s. 436(1) of the Insolvency Act 1986. The High Court judgment in *AA v Persons Unknown* supports this view. A number of cases outside the U.K. have considered digital assets to form part of insolvent estates, bringing them within the powers of insolvency practitioners.

14.14. The areas of legal uncertainty relating to insolvency seem to relate more to the categorisation of digital assets as property, money, commodities, debt claims, etc. and to practical issues relating to digital assets—for example, how one obtains control of a digital asset or the private key, how one can trace real life holders etc—rather than material issues with insolvency law itself.

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79 See footnote 3.

80 [2019] EWHC 3556 (Comm)


82 See, for example, Insolvency Lawyers’ Association, Crypto-currencies and Insolvency Lecture delivered by Mr Justice Zacaroli to the Insolvency Lawyers’ Association on 17 October 2019, available at: https://www.ilauk.com/docs/ILA_AZ_Talk_Crypto-currencies_and_insolvency.pdf and Corporate Rescue and Insolvency, *Dealing with crypto-assets in a downturn: Lessons from London and other jurisdictions* (1 June 2020), 3 CRI 90, which concludes:

Much remains to be settled in the public eye, but the UK’s insolvency legislation, together with the pragmatism of the UK courts, would appear to place this jurisdiction in a prime position to deal with the likely convergence of crypto-assets and corporate failure. The focus now appears to rest more on the practical issues of how to identify, take control of and realise crypto-assets.
14.15. Some of the issues of uncertainty concern:

a) What it means to be the “owner” of a digital asset, including whether it is the person who controls the private key. The issue of control is discussed in more detail above. The Law Commission’s paper on electronic trade documents puts forward the notion that possession (of property) is linked not only to tangible things, but also to factual control. If this notion is adopted for digital assets, then consideration needs to be given to how this interacts with the notion of public/private key encryption. For example, if the private key is known by more than one person, the digital asset can be factually controlled by more than one person; does this amount to a form of shared or joint ownership, or is there only one ‘owner’ and, if so, how is this determined?

b) How do you locate or trace the owner in a decentralised system where owners’ real-world identities are not stored? This may be possible by tracing the transaction on the DLT system, but it takes time and requires expert input, which could delay and add to the cost of insolvencies. Even where you can trace the asset, you may still need the private key to regain control of it.

c) Many digital assets can now be traded on exchanges, put up as collateral in staking programmes or lent in decentralised finance (“DeFi”) transactions. All these various uses of digital assets mean that they could be subject to other proprietary claims from third parties at any time; for example, are they held on trust or have they been assigned?

d) There are also questions of value. Given the volatility of some digital assets, would an insolvency practitioner have to ascertain the value of the digital assets in terms of real-world assets, the date on which any digital asset is sold, the impact of increases in value, whether the digital asset can be distributed or if it has to be converted into fiat currency?

**Section 53(1)(c) and section 136 of the Law of Property Act 1925**

14.16. Paragraphs 2.53 and 2.54 of the Call for Evidence explain the transfer of “tokenised” assets, noting that digital asset platforms or systems (including those that use DLT) are convenient for trading those tokens, and that parties operate with an expectation that when the tokens transfer on the system, so does the title to the digital or physical things

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83 See footnote 14.
represented by the token or the legal rights in that thing.

14.17. There are many legal structures that can be relied on in order to tokenise assets. These range from creating a contractual right to the delivery of the underlying asset—or benefits obtained under it—in favour of the token holder, recognising an equitable right of redemption similar to a security interest of the underlying asset in favour of the token holder and/or recognising a beneficial (equitable) interest in the underlying asset though an express or implied trust on behalf of the token holder similar to how "depositary receipts" are normally structured in the financial markets. In many cases, a combination of contractual and beneficial ownership rights may be created in order to tokenise assets. This is particularly true in the context of tokenising securities.

14.18. However, under section 53(1)(c) and section 136 of the Law of Property Act 1925, an equitable interest (which an intermediary's customer has) and certain contractual rights must be transferred/assigned in compliance with certain written formalities. Section 53(1)(c) states:

a disposition of an equitable interest or trust subsisting at the time of the disposition, must be in writing signed by the person disposing of the same, or by his agent thereunto lawfully authorised in writing or by will

Section 136(1) states:

(1) Any absolute assignment by writing under the hand of the assignor (not purporting to be by way of charge only) of any debt or other legal thing in action, of which express notice in writing has been given to the debtor, trustee or other person from whom the assignor would have been entitled to claim such debt or thing in action, is effectual in law (subject to equities having priority over the right of the assignee) to pass and transfer from the date of such notice:

a) the legal right to such debt or thing in action;

b) all legal and other remedies for the same; and

c) the power to give a good discharge for the same without the concurrence of the assignor:

d) Provided that, if the debtor, trustee or other person liable in
respect of such debt or thing in action has notice

e) that the assignment is disputed by the assignor or any person claiming under him; or

f) of any other opposing or conflicting claims to such debt or thing in action;

g) he may, if he thinks fit, either call upon the persons making claim thereto to interplead concerning the same, or pay the debt or other thing in action into court under the provisions of the Trustee Act, 1925

14.19. Whilst it remains unclear exactly how the property law analysis of tokens will operate, it is likely that English courts may characterise wallet providers and similar services as trusts. If this approach is taken, then the transfer of a token held within such a wallet is very likely to be characterised as a transfer of an equitable interest in the trust property. This creates the risk that English law may refuse to recognise the transfer for want of formality. The mere risk that this outcome could be reached will operate as a significant disincentive to use English law to govern legal relations in respect of tokens.

14.20. In the context of intermediated securities, there are arguments which may support the conclusion that these sections of the Law of Property Act 1925 would not apply as a matter of law to transfers of intermediated securities. However, this remains a source of uncertainty and has not been addressed fully by the courts. In the context of tokenised assets, the sections in the Law of Property Act 1925 exacerbate legal uncertainty and in practice can be a contributing factor to avoid English law when considering the creation of tokenised trading platforms.

14.21. The Call for Evidence, at paragraph 2.39, refers to the UKJT observation that:

[an on-chain transaction] is not really analogous to the delivery of a tangible object or the assignment of a legal right, where the same thing passes, unchanged, from one person to another. Instead, the transferor typically brings into existence a new cryptoasset, with a new pair of data parameters: a new or modified public parameter and

84 Some cite obiter comments of Hildyard J. in SL Claimants v Tesco PLC [2019] EWHC 2858 (Ch.) at [116] to support this.
a new private key.

This factual description of on-chain transactions has been relied on to suggest that sections 53(1)(c) and 136(1) of the Law of Property Act 1925 can be ignored in respect of transfers of digital assets representing underlying assets because the digital assets (or interests in the underlying assets) are not transferred at all. Instead, they are extinguished and new ones are created. This line of argument may be based on the idea that there is a novation, not a transfer, of digital assets—similar to *R v Preddy*, although *Preddy* concerned payments between deposit accounts (i.e. debts owed), not property rights. In the response to question four above, the FMLC rejects this line of argument.

14.22. This analysis creates many practical problems, including in the context of theft (by hacking) or wrongful acquisition, and raises difficult questions, such as how security can be created over an asset which will change on purported transfer. There is legislative power to disapply section 53(1)(c) and section 136 of the Law of Property Act 1925 under section 8 of the Electronic Communications Act 2000, and such general disapplication should be made in favour of electronic transfers of tokenised assets or at least in favour of securities transfers (including in tokenised form or not). There is a precedent for this in Regulation 38(5) of the Uncertificated Securities Regulations 2001 (SI 2001/3755).

15. **CONCLUSION**

15.1. There is considerable legal uncertainty surrounding digital assets and the FMLC welcomes the Law Commission’s Digital Assets Project and the prospect of law reform which can help to provide legal certainty and predictability for digital assets. In the Committee’s view, attempting to reform the law in a way that addresses “digital assets” in the “very broad sense” identified in paragraph 1.20 of the Call for Evidence is likely to prove impracticable and to give rise to more uncertainty rather than less.

15.2. The need for law reform is most acute in respect of the narrower category of digital assets, as defined in this paper, since both the technologies underpinning these and the means by which they are being used in practice are novel and are not assimilated readily with other assets familiar to law and practice.

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85 [1996] Crim LR 726
On the overriding question of whether the law needs to recognise digital assets as capable of being in possession, the Committee’s view is that it does. This should be done in a manner which is sensitive to those features of digital assets which are distinct. For this reason, the FMLC has proposed the recognition of a Third Category of property recognising digital assets as both intangible and yet capable of possession.
Note that Members act in a purely personal capacity. The names of the institutions that they ordinarily represent are given for information purposes only.
Law Society of England and Wales response to the Law Commission Call for Evidence on digital assets, and Consultation on electronic trade documents

30 July 2021

1. This paper sets out the views of the Law Society of England and Wales on the Law Commission’s Call for Evidence on Digital Assets (the “Call”), and the Consultation Paper titled “Digital assets: electronic trade documents” (the “Consultation”), both published in April 2021.

2. The Law Society is the independent professional body for solicitors in England and Wales. We are run by our members, and our role is to be the voice of solicitors, to drive excellence in the profession and to safeguard the rule of law.

3. The Law Society welcomes the opportunity to respond to the Law Commission’s Call and Consultation. We note the Commission intends to publish a consultation paper proposing law reform in respect of the possessability of digital assets at the end of 2021, and to publish final recommendations and draft legislation in respect of electronic trade documents in early 2022.

4. We commend the Law Commission’s activity and work in these areas, building on the earlier call for evidence on smart contracts. The Society views these as increasingly important areas of focus for our members and our clients. We would like to see the laws of England and Wales provide certainty to businesses and allow innovation in these areas to flourish.

5. Our response is structured to reflect our analysis of the main issues raised by the Call and Consultation in turn. We have offered, for the most part, feedback applicable to groups of the questions posed within the Call and Consultation. Accordingly, we have not used the Commission’s response template, but grouped our feedback to match the relevant section headings of the Call and Consultation and, where possible, made clear references to the relevant question numbering used.
DIGITAL ASSETS CALL FOR EVIDENCE

Scope – Definition of Digital Assets

6 Paragraph 1.5 of the Call for Evidence states that: **At this stage, we use the term “digital assets” in a broad sense to cover assets that are represented digitally or electronically, including cryptoassets.** We suggest this is too broad, risks confusion and is likely to result in unintended consequences.

7 We recommend that the Law Commission adopts a specific definition of “digital assets”, or provides characteristics to help define its scope, in a manner that is technology neutral.

8 This is important because digital assets as used in the Call is an umbrella term that might be extended to a wide array of items with some digital aspect to them. For example: social media accounts, online bank accounts, photography, software applications, databases, logos, illustrations, animations, audiovisual media, presentations, spreadsheets, cryptocurrencies and blockchain tokens, digital paintings, electronic documents, electronic mails, and websites. It is our view that the law of England and Wales provides certainty on the legal status of a number of these items. That is not the case in respect of cryptoassets.

9 Accordingly, our view is that the questions raised in the Call are best restricted at the current time to cryptoassets, in order to avoid unintended application. The definition should exclude electronic trade documentation on the basis that while such documentation might in some cases meet the characteristics for a cryptoasset, it might also simply be a digital representation of a promise or set of promises rather than inherently digital (i.e. their digital nature might not be instrumental to their value).

Current Law – Possession

10 We agree that digital assets do not fall into the category of “things in possession” as personal property, and are better thought of as “things in action”, should “all things [need to] fall within one or other of the two categories”. Noting paragraph 2.14 of the Call for Evidence, we support, however, the creation of a new third category of property that is a digital asset (narrowly defined per our discussion above), allowing for a clearly defined legal position (and therefore rights) in respect of such digital assets.

11 Our view is that the current law regarding possession is both convoluted and nuanced in its application. We understand the need to weigh up the options of either adopting a bold, more blank sheet of paper approach (e.g. through the creation of a new third form of personal property), versus smaller incremental steps that build gradually on current law and legal constructs. With regard to the latter approach, our view is that there are

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1 See What Are "Digital Assets"? By Betsy Simmons Hannibal, Attorney

Law Society of England and Wales response to the Law Commission’s Call for Evidence on digital assets and Consultation on electronic trade documents, 30 July 2021
significant issues arising from the incremental approach to law reform in this area, which have resulted in increasing forum shopping between jurisdictions. We strongly advocate the bold approach, with a focus on intended outcomes.

12. We note paragraph 2.17 of the Call links to the Consultation Paper on Electronic Trade Documents and the Law Commission’s proposal for a concept of possession which would apply to electronic trade documents. In considering Question 1 of the Call, we recommend that the Law Commission should consider extending the legal framework to allow digital assets (in our narrow sense as detailed above) to be possessable, especially if the three criteria set out in paragraph 2.19 are met.

13. The Society’s view is that it is crucial that cryptoassets are considered in two separate categories: fungible and non-fungible. In respect of the former, it may be possible to continue the application of the current legal framework (both in respect of the consideration of possession and other areas). We do not believe this is sensible for non-fungible tokens given they are identifiable, transferable and have possession-like functionality. In this case, it is critical to create a third form of ownership which is neither possessory nor title based but applies an analysis of control.

Ownership and Transfer

14. The Law Society’s view is that there is merit in drawing a distinction between the possession and ownership of a digital asset, noting that in many cases, the owner would also be the person in possession of a digital asset. Ownership is primarily reflected through on-chain records, whereas possession can be practically transferred off-chain.

15. We would warn against an outcome whereby ownership is conclusively proven by holding a private key. If the possession of the private key equates to ownership, this raises issues as to the legal title of the cryptoasset transferring to a malicious actor with access to the private key. The holding of the private key should instead be regarded as a strong indication of ownership, but the question of ownership will need to evaluated on a case by case basis.

16. Regarding transfer (Question 2), we regard the transfer of a digital asset to be more analogous to the transfer of a thing in action, such as bank money – rather than a thing in possession. Notwithstanding this, we see merit in allowing differing types of digital assets that may differ in their transfer mechanisms. This would be similar to securities which can, for example, take bearer or registered form.

17. Paragraph 2.40 of the Call asks respondents whether an on-chain transfer ought to be treated as creating “new” property (and accordingly, Question 4 of the Call seeks views on the characterisation of the on-chain transfer of a cryptoasset). We do not believe an on-chain transfer creates “new” property, rather it creates metadata that, in certain circumstances, records changes to ownership of property – and is therefore a modification or derivative of existing property rather than new property.
18. We note that the UK Jurisdiction Taskforce’s legal statement\(^2\) makes clear that an “on-chain” transfer is not strictly a transfer: the asset “spent” by the transferor is a different asset to that received by the transferee on the basis that the property of the transferor is consumed or destroyed (the spent cryptoasset cannot be spent again) and an entirely new cryptoasset is created that can in turn be spent by the transferee (paragraph 45). We consider that this view of the transfer creating “new property” during a transfer is complex and non-intuitive and therefore not helpful to the application of the legal analysis.

**Classification for the Purposes of the Sale of Goods**

19. Our view is that digital assets in the sense in which we have described them are not analogous to goods as currently defined under the Sale of Goods Act 1979, which excludes analogous items such as shares, securities, debts, bills of exchange etc.

20. Nevertheless, the Law Society is of the view that there should be defined legal rights and protections in place for purchasers of digital assets. We dismiss the view that these are areas with which the law should not interfere due to the technological protections seemingly in place. Additionally, while the nature of distributed ledger technology (such as its immutability) means that enforcement of legal rights can be challenging, this should not mean such legal rights are not afforded or constructed in a more amenable manner – especially in a consumer context. We consider that the increasing use and understanding of cryptoassets by unsophisticated users, and the number of malicious actors operating cryptoasset schemes, necessitates this protection.

**Bailment, Security and Conversion & Security Interests**

21. We see no reason why digital assets should not be subject to possessory legal interests and claims, e.g. bailment, possessory security interests and wrongful interference with property (conversion).

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Law Society of England and Wales response to the Law Commission’s Call for Evidence on digital assets and Consultation on electronic trade documents, 30 July 2021
22. The Law Society recognises that the nature of digital assets makes them susceptible to money laundering and terrorist financing. We therefore believe that all digital tokens, whether in or outside the purview of the Financial Conduct Authority, should be subject to legislation for combatting money laundering and terrorist financing. Issuers of tokens should be subject to licensing requirements and platforms facilitating secondary trading of such tokens should require approval or recognition as authorised exchanges/market operators.

23. We also recommend that the payments framework include rules to address money laundering and terrorism financing risks relating to the dealing or exchange of cryptocurrencies for fiat or other digital assets, with intermediaries being required to put in place policies, procedures and controls to address such risks (e.g. customer due diligence, monitoring of transactions, screening, reporting of suspicious transactions and the keeping of adequate records).

24. We understand our view in this regard runs counter to the cultural origins of distributed ledger technology and the move away from a centralised authority. While the design of cryptoassets may create practical obstacles to regulatory oversight and intervention, we believe that the money laundering and terrorist financing possibilities of distributed ledger technology should be firmly addressed. This is particularly of concern given the ease with which ransomware attacks have multiplied recently due to the ability to demand payment in unregulated digital assets. As a result, these attacks are increasing in frequency and sophistication.
Our Response

25. We recognise that the consultation paper focuses on areas of international trade finance. This is a highly technical area, and accordingly we recognise that there are inevitably going to be a number of technical legal issues that require attention. We do not believe these to be insurmountable but rather require input from relevant trade and international associations and trade actors. We have focussed our comments on some high-level concerns relating to the legal framework and we look forward to commenting further on the detail of the Law Commission’s recommendations in this area in due course.

26. We note that the Consultation does not refer to the extent of litigation/commercial disputes in relation to paper trade documents. We would assume that where such disputes arise, the analysis will often focus on the form, nature and function of the documents. Accordingly, s.1(3)(b) of the draft bill is crucial to the success of the proposed law reform (noting that the change from paper to electronic form, effectively acknowledged in section s.1(3)(a), is the fundamental aspect of the proposed changes).

27. The Society commends the simplicity of the draft Bill in seeking to allow for electronic trade documents to have the same effect as paper form trade documents.

28. We note the work and experience of the Government of Singapore in facilitating the use of electronic trade documents. In particular, we recognise the challenges they have faced:

   a. Lack of marketing and promotion in respect of their digitalisation efforts

   b. Difficulties overcoming the traditional mindset that hard copy documents are more reliable

   c. The absence of a conducive ecosystem in that the remaining parts of the trade process are yet to adapt digitalisation and therefore there are greater costs for electronic documentation.

29. Based on this experience, we hope that the government will recognise the need for marketing and promotional activities in considering the reform of this area. The Law Society suggests that the following key benefits of electronic trade documents are actively detailed, in addition to the specific changes to the legal framework through the proposed Bill:

   a. Faster transmission – electronic trade documents will reduce the lead time for hard copy documents to be sent to the respective parties. It will overcome delays from difficulty in obtaining wet ink signatures through the physical unavailability of signatories;

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b. Increased accuracy – with the information on trade documentation becoming electronic, there is less need for manual and error prone review and extraction of key information from paper documents, which would now be in a native data-friendly form;

c. Reduced risk of fraud and forgery – technology will enable greater controls to prevent forgery (which is always a risk on paper-based documents); and,

d. Easier storage and retrieval – digital documents can be stored and located more easily than their paper counterparts.

30. The Law Society offers advice and support to its members in adapting to new technologies in the provision of legal services and overcoming reluctance towards new ways of working where that exists. We also emphasise the importance of engagement with trade bodies in delivering the marketing and promotional activities needed in order for the changes to the legal framework to successfully provide the business and efficiency savings they ought to.
Response to the Law Commission’s Consultation on Electronic Trade Documents (the “ETD CP”) and Call for Evidence on Digital Assets (the “DA CfE”) each dated April 2021 and collectively referred to as the “Papers”.

We are pleased to have the opportunity to contribute to the Law Commission’s work on electronic trade documents and digital assets. The matters considered in the Papers are of great significance. Ultimately, they will set the course for digital innovation under English law and determine the role that English law plays in the global digital economy going forward. As a result, we have spent a considerable amount of time considering, and discussing with market participants, the issues raised in the Papers, which are highly complex. In this regard, the Law Commission’s efforts in summarising the existing law and presenting the relevant issues has been incredibly valuable. After much thought, the conclusions we have reached in discussion with other market participants take a slightly different direction to that proposed by the Law Commission. Our key conclusions are as follows.

• We fully support the Law Commission’s ultimate objectives as well as its desire to adopt the least interventionist approach. (See paragraph 1.1 below).

• We consider it helpful to distinguish between different types of digital assets¹ in order to reach meaningful conclusions as to the relevant challenges and solutions. In our view, it is really digital assets that amount to property² (which we refer to later in this paper as Virtual Assets for ease of clarity) that give rise to novel considerations from a private law perspective. However, defining the boundaries between such digital assets on the one hand and “digital assets” that amount to mere records or registers (which do not amount to property) on the other is often not straightforward in practice. (See paragraph 1.2 below).

• We see the potential for considerable uncertainty around how the concepts associated with possession would apply in relation to many digital asset arrangements. This includes challenges in identifying what is being possessed and delivered and who is in possession. Ironically, we consider the concepts of control that the Law Commission has proposed to be more suitable for registered assets than for this new class of digital assets that amount to property. (See paragraph 1.3 below).

• We also consider that an alternative approach that treats all digital assets as registered assets would not be helpful. (See paragraph 1.4 below).

• We have concerns on the drafting of the proposed Bill. These are set out below. (See paragraph 1.5 below).

• From our perspective, it would be more natural and less interventionist to categorise digital assets that amount to property as another form of intangible property. We acknowledge that there is currently some

¹ In this response document, we use the term “digital assets” in the broad sense described in paragraph 1.5 of the DA CP.

² We refer loosely throughout this paper to an object or other asset as “amounting to property”, to increase the readability of this response. We acknowledge, however, that this is imprecise, the correct assessment being whether there is something with regard to which the law would recognise the exercise of proprietary rights by one person as against others.
uncertainty as to whether the common law recognises a category of property that is neither a thing in action nor a thing in possession and suggest that this may benefit from targeted intervention. (See paragraph 1.6 below).

- We acknowledge that if digital assets that amount to property are not categorised as things in possession, this will place a greater reliance on legal structuring including through multipartite contractual frameworks and legal stapling mechanisms. We acknowledge that there are some areas of legal uncertainty that could potentially hinder such arrangements but suggest that these are actually quite narrow in practice and may not be the primary cause of the lack of developments in the market. In particular, we recognise that it may be helpful to have some form of intervention to clarify: (i) that certain digital assets may be characterised as a form of property that is neither a thing in action nor a thing in possession, (ii) that transfers of digital assets may be effected other than by way of assignment or novation; (iii) that it is possible to have a proprietary interest in respect of digital assets that amount to property which falls short of legal ownership, including for the purposes of taking security and (iv) the means by which other property (such as things in action or property interests in things in possession) may be attached to digital assets. However, in our view, these areas of residual legal uncertainty ought not to hinder market developments in practice. (See paragraph 1.7 below).

- We identify a number of matters that we believe would benefit from some further legal clarification (see the bullet point above). This clarification could be achieved through (i) the development of the common law through court decisions, (ii) a legal statement, similar to the UKJT Legal Statement; and (iii) if necessary, targeted statutory intervention in relation to the identified areas of concern. (See paragraph Error! Reference source not found. below).

We expand on these key conclusions in section 1 below. Our responses to the specific questions raised in the ETD CP and DA CfE are set out in sections 0 and 3, respectively.

1 **Overarching issues**

1.1 **Objectives**

Our understanding from the Papers is that the Law Commission’s ultimate objectives are:

(i) to enable international trade to develop digital solutions with a treatment equivalent under English law to those based on paper documents of trade. That would in turn allow the law of England and Wales and its jurisdiction to retain its status as the law of choice in global commerce in this domain\(^3\); and

(ii) to provide certainty as to the legal status of digital assets under English law, which would in turn incentivise the use of the law and jurisdiction of England and Wales in transactions concerning those assets.\(^4\)

We are very supportive of these objectives. Equally, we agree wholeheartedly with the Law Commission’s desire to adopt the least interventionist approach\(^5\).

In seeking to fulfil these objectives, the Law Commission is proposing to provide a statutory solution to the so-called “possession problem” – i.e. the problem that the current law in England and Wales does not recognise the possibility of possessing intangible assets. We understand that the Law

\(^3\) ETD CP, paragraph 1.6
\(^4\) DA CfE, paragraph 1.2
\(^5\) As referred to in ETD CP, paragraph 2.56, in the context of solving the possession problem.
Commission is initially looking to solve this issue in the context of electronic trade documents. Any such solution would need to be consistent for comparable assets, and it may therefore be the case that, having solved the “possession problem” in the context of electronic trade documents, it may then be necessary for the Law Commission to propose a similar solution in the context of digital assets more broadly in order to avoid arbitrary distinctions in the law.

The majority of our comments in this response document relate to whether or not it is necessary or desirable to seek to solve the possession problem at all, or in the manner suggested, in order to fulfil the Law Commission’s ultimate objectives, and whether there is a less interventionist solution that could meet the same objectives.

1.2 **Distinguishing different types of digital asset**

In order to put the remainder of this response into context, we believe that it is most helpful to set out our understanding of certain key features of different types of digital asset and deployments of technologies (including digital ledger technology) and how relatively subtle differences in the way in which digital asset arrangements and related technologies are deployed or implemented can have a very material impact on the legal characterisation and consequences of those arrangements.

1.2.1 **Technology neutrality**

The Law Commission has sought to define the concepts of “electronic trade documents” and “digital assets” in broad, technology-neutral terms, with the idea of providing a list of criteria or features of those implementations of technology which are apt to benefit from the proposed regime. We understand and agree with the rationale for providing technology-neutral legislative solutions, particularly to ensure that they are future-proof and do not favour one technology over another.

However, in our view, it is extremely difficult to reach any meaningful conclusions, or provide clear legal solutions or guidance, without clearly identifying and distinguishing between different possible outcomes of the application or use of particular technological solutions. Therefore, although we agree that the legal treatment should be technologically neutral, that is on the assumption that different technologies achieve the same outcome. To the extent that they do not or, indeed, to the extent that the same technology may be used to achieve different outcomes, then we believe that the legal treatment may need to reflect these different outcomes. Without doing this, it is very easy to fall into the trap of, on the one hand, making over-generalisations (such as adopting a broad definition of digital assets that does not distinguish between outcomes) and, on the other, failing to tailor proposals to different potential outcomes (such as (i) a deployment of DLT that creates an identifiable Virtual Asset (as defined below) and (ii) a deployment of DLT that amounts, in legal terms, to a mere record or register).

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6 For example, the only definition of “digital assets” in the DA CIE is “assets that are represented digitally or electronically, including cryptoassets”. The ETD CP does not define “electronic trade documents” up front but provides a definition in the proposed bill which refers to a list of technology-neutral criteria.

7 The DA CIE defines “digital assets” extremely broadly and yet seems to equate them with native cryptoassets in much of its analysis, making it difficult to determine what is meant by the term “digital asset” when used in different contexts; the discussion in paragraphs 2.29 – 2.36 in relation to transfer provides one example of this.

8 The ETD CP proposes to exclude bare legal rights from qualifying for protection under its proposed Bill, and yet does not distinguish accurately between those digital assets that attach legal rights and those digital assets that reflect bare legal rights.
In our view, whether or not a digital asset is capable of amounting to property is, and should be, key in determining its legal treatment. Below, we highlight some relevant considerations in this regard.

1.2.2 What is capable of amounting to property?

The test set out by Lord Wilberforce in *National Provincial Bank v Ainsworth*\(^9\) as to whether some thing can be admitted into the category of property turns on whether that thing (i) is definable, (ii) is identifiable by third parties; (iii) is capable in its nature of assumption by third parties; and (iv) has some degree of permanence or stability (the "*Ainsworth test*"). Among other things, these criteria imply that the very existence of the thing itself cannot depend on the will or act of another person,\(^10\) and that the holder must be able to control the thing, to the exclusion of all other persons.\(^11\) To put it another way:

"Property" is not about enjoyment of access but about control over access. "Property" is the power-relation constituted by the state’s endorsement of private claims to regulate the access of strangers to the benefits of particular resources. If, in respect of a given claimant and a given resource, the exercise of such regulatory control is physically impracticable or legally abortive or morally or socially undesirable, we say that such a claimant can assert no "property" in that resource and for that matter can lose no "property" in it either. Herein lies an important key to the "propertiness" of property."\(^12\)

The UKJT Legal Statement (and subsequent court endorsements of it) has provided some legal certainty that Native Cryptos that meet the Defining Features of Cryptos (each as defined below) meet the *Ainsworth test* and so are capable of amounting to property. However, it is equally possible that other types of digital assets could meet the *Ainsworth test* through some other route. We refer to all digital assets that meet the *Ainsworth test* (including, but not limited to, Native Cryptos and Stapled Cryptos, as defined below) as "Virtual Assets".

As discussed below, there are a number of challenges in defining the boundaries between Virtual Assets on the one hand and mere records or registers on the other.

1.2.3 Native Cryptos

By “Native Cryptos” we mean the types of digital assets (of which Virtual Assets are a subset) to which the main conclusions of the UKJT Legal Statement apply\(^14\). The UKJT Legal Statement did not provide an exhaustive definition of native cryptoassets but discussed a number of features associated with them. These include that they have no

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\(^9\) *National Provincial Bank v Ainsworth* [1965] AC 1175

\(^10\) Note that this is not to say that a thing that has clearly come into existence fails to amount to property because it is liable to destruction, for example, in the hands of a third party; rather, the question is whether the thing exists at all from the perspective of the recognition of property rights, if it cannot be controlled by a purported owner because by its nature it is subject to the whim of a third party.

\(^11\) Note, however, our discussion in paragraph 1.2.5(iii), where we query whether there is a case for revisiting this implication arising from the criteria.

\(^12\) Exclusivity and control were specifically identified as characteristics of property in *Fairstar Heavy Transport NV v Adkins* [2013] EWCA Civ 886. However, they are, in our view, implicit under the *Ainsworth test*.

\(^13\) K. Gray, “Property In Thin Air” (1991) 50 Cambridge LJ 252 – 307. This article also provides a very compelling critique of the *Ainsworth test*.

\(^14\) As described in the paragraphs 24 – 32 of the UKJT Legal Statement and referred to in paragraph 33 as the “the native or on-chain asset”.
manifestation or feature other than as a digital record on a distributed ledger (i.e. they do not represent any legal rights or interests), that the rules governing dealings in them are established by the informal consensus of participants, rather than by contract or in some other legally binding way, and that the consensus rules determine which version of the distributed ledger is definitive.\textsuperscript{15}

According to the UKJT Legal Statement, Native Cryptos are able to meet the \textit{Ainsworth} test on the basis that they are identified as the combination of (i) the public data parameter (containing or referencing encoded information about the asset, such as its ownership, value and transaction history); (ii) the private data parameter (the private key); and (iii) the system rules which ensure that the data can be “spent” (i.e. rendered inert) only once (and, therefore, to the exclusion of others).\textsuperscript{16} Without all three of these components (which we will refer to as the “\textbf{Defining Features of Cryptos}”), it would appear that a putative Native Cryptoasset would not be capable of meeting the \textit{Ainsworth} test. Moreover, as Native Cryptos (as we have defined them, by reference to the UKJT Legal Statement definition) do not represent any legal rights, if a purported Native Crypto does not exhibit all of the Defining Features of Cryptos, then the arrangement will not amount to property and not create, evidence or constitute \textit{any} legally enforceable rights or property interests (though of course, the same technology may be deployed in different contexts to create, evidence or constitute exogenous rights).

It is worth highlighting a point of subtlety that is often missed, which is that arrangements that exhibit the Defining Features of Cryptos in one context (and are therefore Native Cryptos) may be used as components of a wider arrangement to create a record or register in circumstances in which the relevant records do not meet the Defining Features of Cryptos. For example, a registrar could agree with users that it will keep a record or register of certain transactions (and maintain control over the record or register over and above the beneficiaries of the records) and yet it could use Native Cryptos as the basis, or a component, of that record or register.\textsuperscript{17} In this context, the Native Cryptos may meet the Defining Features of Cryptos and therefore amount to property in the hands of the record keeper or registrar, but any person whose entitlement is being recorded by the registrar would have no claim over the Native Cryptos themselves (as those Native Cryptos are used by the registrar in a principal capacity). So, it would be possible for the registrar of a securities issuance to use a distributed ledger where the entries on the ledger have all of the hallmarks of the Defining Features of Cryptos, but where the registrar uses that system solely as a principal in discharge of its obligations as registrar (for example, as a replacement to an Excel spreadsheet). That would not negate the characteristics of the Native Cryptos as qualifying as property; simply, they would be property to which the holders of the securities would have no entitlement.\textsuperscript{18}

\textsuperscript{15} As discussed in paragraphs 24 - 34 of the UKJT Legal Statement
\textsuperscript{16} UKJT Legal Statement, paragraphs 28, 49 and 65.
\textsuperscript{17} A loose analogy might be something like a digital abacus, where the Native Cryptos are used as the beads by the registrar as principal.
\textsuperscript{18} Any more so than they would have a claim over the individual beads of an abacus in the hypothetical example of a registrar that used an abacus as a register.
### 1.2.4 Stapled Cryptos

By “Stapled Cryptos” we mean Native Cryptos to which a legal right or proprietary interest has been attached (or “stapled”) by way of some legal mechanism\(^\text{19}\). Stapled Cryptos were not the focus of the UKJT Legal Statement, but they are very much the focus of commercial use cases, and as such warrant very careful and precise consideration.

Broadly speaking, we consider electronic trade documents of the nature contemplated in the Law Commission’s proposed Bill to fall within this category. Documentary intangibles themselves (i.e. in paper form) involve the stapling of legal rights or proprietary interests to a piece of paper (through the writing of the legal terms onto the piece of paper, and the associated legal fiction that any claim is “bound up” in the piece of paper) and the clear suggestion of the ETD CP is that electronic trade documents involve the stapling of legal rights or proprietary interests to Native Cryptos. If such rights or interests are attached to a Native Crypto, this would, under our definition, be a form of Stapled Crypto. For this reason, we think it is helpful to consider documentary intangibles and their electronic equivalents within the context of Stapled Cryptos more broadly.

One might ask “what does stapling entail”? In short, it encompasses any legal act that can attach a right or proprietary interest to a Virtual Asset. In the context of a CBDC, for example, one would expect this to be achieved through legislation. In a multilateral arrangement, it would be capable of being achieved through contractual consensus and, where proprietary interests are involved, the immobilisation of the asset (such as in a warehouse or with a carrier) and an attornment of the person in actual possession of the immobilised goods as bailee. Outside a multilateral arrangement, it could be through a deed (whether a deed poll or through the creation of a trust), the use of the Contracts (Rights of Third Parties) Act 1999 and/or an open offer capable of assumption or an agreement to a future “novation” through the application of the principle established in *Carlill v Carbolic Smoke Company*\(^\text{20}\). In the context of some types of Virtual Asset (see e.g. paragraph 1.3.2), it may be possible to incorporate a unique digital file containing an unalterable image of the legal act or to reference such a digital file elsewhere on a distributed ledger (in each case, akin to writing on paper). It may also be helpful for there to be some intervention to clarify how such stapling may be achieved.

In order for a Stapled Crypto to arise, by our definition, the Defining Features of Cryptos must be present. If they are not, the arrangement will amount to a mere record or register which may (if appropriately structured) evidence the transfer of legal rights (that we understand to be “bare legal rights” as used in the ETD CP and DACIE) or property interests. This will have important implications under the existing law as well as under the Law Commission’s proposed Bill (from which bare legal rights are proposed to be excluded\(^\text{21}\), as discussed further in paragraph 1.5(i) below).

In certain circumstances, it can be difficult to determine whether the Defining Features of Cryptos have been met. This is the case where, as noted above, legal rights or proprietary interests are stapled to Native Cryptos through a multilateral contractual framework to which the participants in a system agree to adhere as a condition of their participation. In this

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\(^{19}\) Referred to in paragraph 33 of the UKJT Legal Statement as “tethered, exogenous or off-chain”.

\(^{20}\) *Carlill v Carbolic Smoke Company* (1893), CA. “A person may validly and effectively offer to contract with any person who cares to fulfil such conditions as are specified in that offer”.

\(^{21}\) ETD CP, paragraph 5.58
scenario, the methodology for the transfer of the rights / interests may be woven into the fabric of the system through the contractual framework and there may not appear to be any digital asset that is distinct from the rights or interests that the system purports to transfer. In particular, since the public and private data parameters are objectively ascertainable facts, it is necessary carefully to analyse the third component of the Defining Features of Crypto (i.e. the system rules in accordance with which those parameters fall to be interpreted) in order to determine whether they are limited merely to any system protocol, or whether they extend to a contract between the system participants (and, if so, what the content of that contract is).

In analysing such an arrangement, great care is needed to determine whether a right or property interest has been, or is, (i) stapled to a Native Crypto, (ii) evidenced by a mere record or register that incorporates a Native Crypto (see paragraphs 1.2.3 and 1.2.5) or (iii) evidenced by a mere record or register (operated by way of a distributed ledger). Only in example (i) will there be a Stapled Crypto. It should be noted that if the Law Commission proposals are not intended to extend to bare legal rights (i.e. where there is no Native Crypto in the hands of the system participants), then they would (and should clearly) not extend to examples (ii) and (iii).

1.2.5 Property vs mere register

A lot, therefore, turns on whether or not the arrangements in question exhibit the Defining Features of Cryptos and yet, in practice, there may be considerable complexity in determining whether they do. Moreover, in some cases the arrangements may clearly not exhibit the Defining Features of Cryptos and yet they may otherwise meet the Ainsworth test. Where the boundaries fall remains subject to debate, particularly in respect of arrangements involving a central operator (noting, again, that a central operator may operate a system that meets the Defining Features of Cryptos in a variety of ways).

Below we discuss four key parameters which we consider to be of relevance in distinguishing between a system involving Native Cryptos and a mere register.

Underlying each of those parameters is the key question of whether there is a resource access to which the law can meaningfully regulate control over; in particular, whether it is physically impracticable or legally abortive to attempt to regulate such access with regard to any system operator itself.

(i) Existence independent of any person. In our view, it goes to the heart of both the Defining Features of Cryptos and the Ainsworth test whether or not there is something identifiable that is independent of any obligor (and, perhaps to a lesser extent, any person) under the arrangement.

If the system is fully controlled or controllable by an obligor, or single registrar, for example it would be impossible to conclude that the system protocol provides the holder of the relevant public and private data parameters with the unique ability to spend the relevant record (or control it, to the exclusion of others), since the controlling obligor or registrar could change that state of affairs whenever incentivised to do so (or potentially, at will – even if in breach of contract). If there is a legal remedy against improper exercise of that control, that legal remedy will be a thing in action, but will not elevate the records or entries in the system to the status of property.

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In other words, any attempt by the law to recognise control by the participants in the system over components in the system that might recognise their entitlement should fail where the actual control of the single operator cannot be precluded. Contrast a decentralised protocol, where the technology achieves a meaningful detachment from any individual validator (or, indeed, groups of validators).

It is interesting to consider how this principle applies if there is a central system operator responsible for administering the system, who may or may not be party to a multipartite contractual agreement with the participants. This could potentially render the records incapable of amounting to property (on the basis that the system is not independent of any person). However, in our view, whilst that may often be the case\(^\text{22}\), it need not always be. The precise role of the central operator in administering the system will need to be considered, as discussed further in points (ii) to (iv) below.

(ii) **Issuance of public and private keys.** The UKJT Legal Statement notes that "the commercial value of a cryptoasset is... in the fact that the person possessing [the public and private data parameters] is able to effect and authenticate dealings in the cryptoasset in accordance with the system rules".\(^\text{23}\) It is therefore relevant whether the purported holder of the asset is in fact able to control (whether directly on its own or together with others or indirectly through one or more others) the private key. Moreover, control of the private key goes to the heart of whether the holder is able to control the relevant record to the exclusion of all others for the purpose of the *Ainsworth* test.

Under some arrangements, all public and private keys may be created by and for the operator, acting in a principal capacity (and not in any way for or on behalf of the system participants). We would not consider such arrangements to be capable of giving rise, in the hands of the system participants, to any asset meeting the **Defining Features of Cryptos** or the *Ainsworth* test (although, as noted, it may do in the hands of the system operator). It is worth emphasising that this could include an arrangement that involves records that would constitute Native Cryptos in another context (for example, if the private keys were held directly by the users), as discussed in paragraph 1.2.3 above. On the other hand, one might expect that if the keys are issued and controlled on behalf of the participants (even if the participant does not have knowledge of the relevant private key), the arrangement could be capable of giving rise in the hands of those participants to an asset satisfying both tests.

(iii) **Validation and consensus.** If a central operator has a degree of discretion as to which transactions are validated and when they are added to the ledger, it may be difficult to conclude that the user has the unique ability to spend or control the record. The greater the discretion given to the operator, the greater the risk that the **Defining Features of Cryptos** / the *Ainsworth* test will be incapable of being satisfied. On the other hand, if an arrangement involves a central operator with no powers to interfere

\(^{22}\) Indeed, there are currently many commercial arrangements in which messaging systems or trading venues are the golden source of record of things in action entered into between two or more parties, where such records do not currently enjoy the status of having a legal existence that is separate from the things in action that they record. In other words, the arrangement constitutes a mere record or register and does not give rise to separate property rights.

\(^{23}\) UKJT Legal Statement, paragraph 60
with the validation or consensus mechanisms (for example, because this is conducted exclusively on a decentralised basis, and the operator’s role is to police “whitelisting” criteria applicable to participants on the network and block or remove any that do not meet those criteria), this could contribute to satisfying the Defining Features of Cryptos / the Ainsworth test. Exactly where the boundaries lie remains subject to some uncertainty.

Consider, for example, a system under which the participants agree, pursuant to a multilateral contractual framework, that a record will be maintained by a highly trusted third party. The contractual framework provides that the entries on the record (to which legal rights or proprietary interests may have been attached) can be controlled, and fully divested, only by the party from time to time shown on the record as the holder of that entry. The trusted third party is contractually obliged to maintain the record in accordance with an agreed set of system rules (rather than the system rules being implemented automatically through a process of distributed validation and consensus). Do the relevant records under this arrangement meet the Ainsworth test? It is not entirely clear, given that it is not merely the system protocol that provides the user with the ability to control the record, but also the legal arrangements, which are vulnerable to breach.

However, in our view there could be a strong policy case for clarifying that the Ainsworth test is capable of being satisfied in relation to a third party record if certain conditions are met to ensure the trusted third party can generally be relied upon not to breach its obligations. These may include that: (i) the contract sets out the terms on which the record is managed in a manner that is distinct from the rights attaching to the entry; and (ii) the trusted third party is not acting for any obligor under the rights attaching to the entry.

This type of arrangement is also not necessarily any less reliable, and in fact in many cases may be more reliable, than the system protocol in respect of a Native Crypto such as Bitcoin or Ethereum. For example, many public blockchains remain vulnerable to events such as a “51% attack” (where participants conspire to take over the majority of the network’s computing power in order to manipulate consensus) or a hard fork (which causes a permanent divergence in consensus on the blockchain). On the other hand, many trusted third parties in the financial markets have extensive experience in maintaining records and registers and sophisticated business continuity plans in place to ensure that their systems are resilient.

Despite the preceding two paragraphs, in our view some form of intervention would be required to confer a proprietary status on records and registers of this nature, and such intervention appears to be beyond the scope of the proposals in the Law Commission Papers. It may be worth reconsidering this, although we acknowledge that this would be a significant expansion of the scope of the Law Commission’s remit in this area. We note that the MLETR and many implementations of national

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24 It should be noted that in Armstrong v Winnington [2012] EWHC 10, [2013] Ch 156 the court placed significant emphasis on the fact that the register of the EU carbon emission allowances was statutory to distinguish the reasoning from an analysis involving a non-statutory database, record or register. The distinction between a statutory register and a commercial one operated under a private law arrangement subject to sophisticated business continuity plans in place to ensure resilience is a very fine one.
laws that recognise electronic records as having the status of property do extend to records and registers.

(iv) **Rectification.** Similarly, if a central operator has the ability to rectify or otherwise amend the records or register, it may be difficult to conclude that the user has the unique ability to spend or control the record or that the records are definable or permanent. Any ability to rectify or amend would arguably fall foul of the Defining Features of Cryptos. However, again there may be good grounds on which to conclude that the Ainsworth test is capable of being met if there are controls (including practical limitations and legal controls) in place to limit the powers and discretion of a central operator (for example, if a contractual framework provides that the operator is only able to rectify or amend the record or register pursuant to a court order or in accordance with agreed rules). Again, we believe that some form of intervention would be required to confer a proprietary status on such records or registers or confer additional legal remedies in respect of the entries on them.

### 1.2.6 Negotiability

Native Cryptos are treated by the market as *de facto* negotiable in the sense that: (i) it is not possible in practice to make enquiries as to whether a transferor has good title to the Native Cryptos it purports to transfer; (ii) as the records represent spending capacity within a system protocol (which, as a matter of fact, can be used by the private key holder) rather than rights against any person or legal interests, it is impossible in practice to deprive the holder of the right to use the spending capacity; and (iii) there is no means of rectifying the register.

The UKJT Legal Statement articulated an insightful legal theory to reflect this reality – i.e. that, since each transaction involves the destruction of one digital asset and the creation of a new one\(^\text{25}\), each on-chain recipient takes a fresh legal title to new digital assets.

We are aware that there is some divergence of views on this point in the market and academia. One strand of that divergence is based on the concept that bitcoin (and similar Native Cryptos) are entirely fictional substances, i.e. mere ideational constructs, and transfers operate as a transfer of the fictional substance, with transaction data merely the means of transfer. In the words of Warmke:

> "a bitcoin transaction describes a transfer of bitcoin without *being* that transfer of bitcoin.\(^\text{26}\)

While that is true, we respectfully disagree with the conclusion (i.e. that it must therefore follow that the legal treatment of transfers should take no account of the transaction data recorded on chain). It is true that bitcoin is a fictional substance, and that transactions describe a transfer of the fictional substance; however, to limit the inquiry there is both perilous and incomplete.

It is perilous because it leaves the legal treatment on complex matters subject to the vagaries of potentially divergent ideas in people’s minds. Crucially, it is not a given that the concept (i.e. the “ideational construct”) of “bitcoin” is unitary in the minds of all persons that transact in bitcoin. For example, if two materially identical court cases fell to two different

\(^{25}\) As described in the UKJT Legal Statement, paragraph 45

\(^{26}\) Craig Warmke “What is Bitcoin?”, available at https://philpapers.org/archive/WARWIB.pdf
judges, it should not be acceptable that each judge would determine the case based on the ideational construct in that judge’s mind. This could have very practical consequences, for example, if one judge had in mind a concept of individually identifiable “coins”, each with a separate hallmark or unique identifier, while another had in mind a concept of coins with no individually distinguishable feature or unique identifier.

In fact, while bitcoin (and other Native Cryptos) are ideational constructs, we are able to determine certain features of those ideational constructs objectively by reference to the relevant protocol. Thus, even if bitcoin is an entirely fictional ideational construct, we know that bitcoin is divisible into units no smaller than a satoshi. We know this because the best evidence available – the protocol – only records transfers in units at least as large as a satoshi.

What then of negotiability? We know (again by reference to the best evidence available - the protocol) that transfers operate through one set of transaction data being rendered “inert”, and another set of transaction data becoming active, at the public address of the transferee (and, if there is a residue, at the public address of the transferor). We might debate the significance of that; what is clear, however, is that each individual bitcoin (or, indeed, satoshi) has no hallmark or unique identifier within a UTXO. Therefore, legal title cannot be followed through a series of transactions, other than in very limited circumstances.

It may be the case that a transferee takes subject to a third party’s beneficial interest; however, any such interest is subject to being overreached as against a bona fide third party transferee of the legal title for value without notice of that beneficial interest. Therefore, quasi-negotiability can be achieved, through the mechanism described above.

Crucially, however, it is not – and cannot be – the case that our understanding of the features of Native Cryptos proceeds without reference to the best evidence we have available of their characteristics (i.e. the protocol and evidence of transfers). As we discuss in paragraph 1.3.2, this in fact has a central importance in determining the correct legal treatment.

Additionally, an alternative theory for on-chain transfers of Native Cryptos would need to develop an equivalent concept to (quasi-)negotiability for Native Cryptos to reflect that the fact that, as a practical matter, Native Cryptos are de facto negotiable. A legal theory to the effect that title to a Native Crypto must be derived from a record or from evidence other than on the blockchain would not reflect the reality of the cryptoasset market.

Whilst Stapled Cryptos can benefit from the same legal theory in relation to transfers as Native Cryptos (as they encompass Native Cryptos by their nature), they also raise further issues since the legal rights or interests attached to them have the potential to become “unstuck”. If, for example, a Stapled Crypto to which a thing in action had been attached was wrongfully taken by a rogue actor, depending on the stapling mechanism used, the counterparty to the thing in action could potentially refuse to acknowledge the transfer and thus deprive the rogue actor of the relevant rights. In this sense, the underlying Native Crypto could, in the hands of the rogue actor, become unstuck from the rights that were originally attached to it. If the rogue actor then sought to transfer the asset to a third party, that third party might acquire fresh title to a new underlying Native Crypto but it would not get the benefit of the relevant legal rights. This is somewhat akin to how a documentary intangible that does not have negotiable status (such as a document of title) may become unstuck

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27 i.e. that the person(s) from time to time having the ability to spend the cryptoasset would not be treated as having a proprietary interest in it.
from the rights or interests purported to be attached to it. As discussed in paragraph 1.7 below, however, if transfers of Stapled Cryptoassets are analysed as a destruction of one digital asset and the creation of a new one, there are certain legal structuring techniques that can be used to achieve a form of quasi-negotiability. See our further discussion in paragraph 1.3.4.

1.3 Concerns around categorising digital assets as things in possession

1.3.1 Potential advantages of possession model

As noted above, the Law Commission’s proposals seek to allow electronic trade documents and digital assets to be made capable of a type of legal possession. There are various potential advantages to treating Native Cryptos and Stapled Cryptos as things in possession. For example, Native Cryptos share many of the hallmarks of things in possession including that: (i) they can be “lost”; (ii) unlike traditional things in action, there is no other party to them (i.e. they exist independently of any other person), so that they can be dealt with without reference to a third party and no other party is responsible for the performance of any obligations under them; (iii) unlike traditional things in action, they are not well suited to transfer by way of legal assignment or novation (as discussed further in paragraph 1.7(iii) below); (iv) remedies such as conversion, which are only available in relation to things in possession, may seem intuitively suitable remedies in relation to Native Cryptos; and (v) unlike traditional things in action, they may be more suited to being capable of being subject to proprietary interests that fall short of outright legal ownership (as discussed further in paragraph 1.7(iii) below).

However, there are also a number of conceptual difficulties in treating digital assets as things in possession, as explored in the following paragraphs.

1.3.2 What is being possessed and delivered?

The concept of possession, which has long been embedded in many existing rules of law, typically assumes that there is a continuous “thing” which is capable of being physically possessed and delivered on transfer. It can often be challenging to pinpoint exactly what that thing is in the context of digital assets.

As we discuss in paragraph 1.2.6, it is crucial to understand that, even if a Native Crypto is an ideational construct, what happens on chain is relevant to our understanding of the features – and therefore the legal treatment – of that Native Crypto.

Consider, for example, what happens in practice on the transfer of the following types of token:

(i) **UTXO model (e.g. Bitcoin).** Under this model, the records on the ledger are unspent transaction outputs (“UTXO”), which represent value that may be spent by the private key holder in respect of that UTXO. UTXO is represented by a unique string of data. When an UTXO is spent, that string of data is destroyed and a new string of data in respect of a new UTXO is created. There is nothing continuous that passes from sender to recipient, other than (arguably) units of a fictional construct.

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28 Given that a Native Crypto exists in the combination of the public and private data components, interpreted in accordance with the protocol, if any of those elements is compromised or becomes irrecoverable, the associated value may be irretrievably lost.

29 For example, as pointed out in the ETD CP (p. 25), the law on bearer documents provides that the obligation is owed to whoever is in possession of the document and that transfer is effected by delivery of the document to another party.
It is, however, possible to trace to a degree which UTXO(s) have been destroyed in the process of creating new UTXO(s), but we understand this is limited once UTXOs are combined as part of a new transaction. Importantly, however, there is no means of identifying within a UTXO individual units of bitcoin (for example), or of controlling those units individually (as opposed to at the level of UTXO). This matters because it informs not only our understanding of the mechanics of transactions, but the very “stuff” of bitcoin itself: bitcoin (and each satoshi) has no hallmark within a UTXO. The consequence is that it is possible to control bitcoin only in bulk i.e. within a UTXO (except where there is a UTXO relating to a single bitcoin or satoshi). This materially affects the appropriate legal analysis.

(ii) **Account based exchange token model (e.g. Ethereum).** Under this model, the ledger records account information, including aggregate balances, as well as individual transactions. Unlike with the UTXO model, the sender cannot choose which transaction outputs to consume for a particular transaction. Instead the constructed transaction will reference the account as a whole. Upon a transfer, the sender’s account balance will be reduced and the recipient’s account balance increased by a corresponding value. Importantly, once the transferred value is recorded to the recipient’s account’s address, that value will be indistinguishable from any other value within the same account. In other words, if Alice and Bob each send 10 ETH to Carol, and Carol in turn sends 5 ETH to Dave, it may not be possible to tell whether Dave’s 5 ETH originated from Alice or Bob (much like with a bank transfer).

(iii) **ERC20 token (i.e. the standard used in many decentralised finance applications).** Under this model, the sender will reference a token contract as its destination, rather than the recipient’s address. The transaction transferring the token will change the state of the token contract (by adding the recipient’s address to the mapping of who “owns” what) rather than changing the state of the recipient’s address directly. As per the account-based model, the value represented under the smart contract mapping will be indistinguishable from other value attributed to the same recipient. In contrast to that model, there is nothing that is delivered directly to the recipient’s address upon a transaction.

(iv) **ERC721 token (i.e. the standard used for non-fungible tokens (NFTs)).** Under this model, a smart contract is used to map a unique identifier (representing the asset) to the address of the “owner”. Upon a transfer, the address mapped to the unique identifier is updated from the sender’s address to the recipient’s address. Like the ERC20 model, there is nothing that is delivered directly to the recipient’s address. Unlike that model, however, the unique identifier remains a constant throughout a chain of transactions.

Whilst it might be possible to shoehorn these types of arrangements (some more easily than others) into the possession model, in many cases there may be considerable uncertainty around how the concepts traditionally associated with possession would apply. In the case of documentary intangibles, this also includes uncertainties as to what constitutes the “document”.

Consider, for example, a scenario in which a hash of a document is mapped to an ERC721 token, and a transfer is effected by updating the address under the relevant smart contract. Firstly, in what sense can a person be considered to have possession of the document,
when it is locked in a smart contract, the functioning of which he or she does not control? Furthermore, if the sender creates an instruction to initiate a transfer, but there is a malfunction which results in the smart contract failing to reflect the address of the recipient, should the document be considered to have been delivered? At what point is delivery deemed to have occurred? In addition, if the law requires certain details to be included “in the document” (for example, a signature), how should the term “document” be construed in determining whether such requirements have been met? If the process for signing the transaction is external to the thing considered to be the document, could this requirement be considered to have been met? Existing case law will not provide any guidance on these points.

The proposed Bill does not seek to address these concerns and simply states that “[t]he person who has control of an electronic trade document is the person who has possession of it for the purposes of any statutory provision or rule of law”. This is understandable given how broadly the concepts relating to possession and documents are used in existing law. However, it also illustrates the potential for unforeseen difficulties in application. Whilst in some situations there may be a common sense answer, there is likely to remain a degree of uncertainty as to how legal requirements will be interpreted by a court in the context of contentious matters. Many of the concerns above reflect the fact that none of the Bill, the ETD CP and the DA CfE consider in any detail how rights or property interests will, in practice be stapled to digital assets, leading to some uncertainty in this regard (see paragraph 1.2.4).

1.3.3 Who is in possession?

As acknowledged in paragraph 5.128 of the ETD CP, there are likely to be considerable practical difficulties in assessing who is in possession of an electronic trade document by reference to the private key holder alone, given that private keys can be known by multiple competing parties simultaneously (and are not capable of possession). This is also relevant in relation to Native Cryptos and Stapled Cryptos more broadly.

The solution proposed in the ETD CP is that “the person (natural or legal) named or otherwise identified on the system is still likely to be regarded as being in possession of the document and that custody or knowledge of the private key does not change that”. This implies that the system (i) will record the identity of each holder; (ii) will include some kind of identification verification process to check that only that person can transfer the asset; and (iii) will regard the registered holder as the person in possession.

In the context of electronic trade documents and many other Stapled Cryptos, we agree that some form of identification verification process is likely to be desirable as, without it, the system would be highly vulnerable to fraud, which is likely to deter commercial parties from wanting to participate. Whilst physical documents are capable of being stolen, private keys are potentially much more vulnerable to this risk due to the possibility of cyberattacks which may be carried out remotely from anywhere in the world. However, we do have some concerns with the Law Commission’s proposals as a wholesale solution (particularly if a similar solution were to be applied to Native Cryptos or Stapled Cryptos more broadly).

First, if title is constituted by an entry on a register, rather than the holder’s ability to control the record by virtue of the private key, this may interfere with the Defining Features of Native Cryptos and prevent the records from constituting Virtual Assets, as discussed in paragraph 1.2.5 above. The risk is heightened if registration is subject to a verification process, particularly if that is carried out by an intermediary rather than through an automated
decentralised process. Whether or not the record amounts to a Virtual Asset or a mere register has a fundamental bearing on its legal treatment (including potentially under the proposed Bill), for the reasons discussed in paragraph 1.2 above.

Secondly, this does not address the question as to who would be considered to be in possession of a Native Crypto in an open permissionless environment, where the identities of holders are not recorded. If a private key is misapplied or “stolen” in that context, there would be a period, albeit temporary (before the document is transferred and a new private key is created) where multiple persons could be considered to be in control of the document (with an intention to possess). Moreover, if the Law Commission is looking to provide one unifying solution for digital assets, it would be odd if the means of determining who is in possession differed between Native Crypto and Stapled Crypto arrangements.

1.3.4 Negotiability

As discussed above, treating digital assets as things in possession requires one to conceptualise transfers as the delivery of one continuous thing from sender to recipient. Analysing transfers in this way means that the legal theory that each on-chain transfer creates new property with a new title (as discussed in paragraph 1.2.6 above) would not apply, and transferees will acquire title subject to any defects or equities in the title of the transferor. In relation to Native Cryptos, this would not reflect the realities of the market (as discussed in paragraph 1.2.6 above). In relation to Stapled Cryptos, this could mean that entitlement to the rights evidenced by them will, over time, diverge from the digital asset to which they are stapled, rendering the digital record of no practical value.

Concerns around treating digital assets as registered assets

Whilst we have concerns around the possession model, we also do not subscribe to the view that all digital assets should be treated as registered assets, for reasons that overlap with those outlined in paragraph 1.3.3 above.

First, as discussed in paragraphs 1.3 and 1.2.5 above, if title is constituted by an entry on a register rather than the holder’s ability to control the record by virtue of the private key, this may undermine the possibility of the records qualifying as Virtual Assets and thus constituting property, as discussed in paragraph 1.2.5.

Secondly, there is no general law on registered assets. At common law, the role of the register is best analysed as a necessary but insufficient condition to transfer (i.e. no registration, no passing of title; but mere registration does not imply that title passes). Registered assets do not automatically benefit from any kind of negotiable status outside the context of a specific statutory regime. This could potentially be problematic for the reasons outlined in paragraphs 1.2.6 and 1.3.4 above.

There is also no doctrine of relative title that applies in relation to registered assets, unlike in relation to possession (as discussed in paragraph 1.3.3 above). Similarly, the legal mechanism for transfers

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30 Acknowledging that private keys, not being property, cannot be stolen.
31 Although this is an existing issue for documentary intangibles in paper form, we understand that market practice relating to them is to obtain evidence of title before accepting them, which is a practice that is unlikely to survive digitisation as there must be a significant risk that the market will assume that digitisation has elevated the electronic trade document to the status of a truly negotiable digital instrument.
32 For example the regime provided for in respect of shares under The Companies Act and Uncertificated Securities Regulations and the regime provided for in respect of land under The Land Registration Act.
of registered assets under the common law is assignment or novation which, as explained in paragraphs 1.3.1 above and 1.7(iii) below, is not suitable for digital assets.

To address all these concerns in a wholesale manner (i.e. for all digital assets including ETDs) would require broad statutory intervention significantly beyond the scope of the Bill. This is likely to present many difficulties and create a high risk of unintended consequences, although we acknowledge that there may be a case for the development of a statutory regime in relation to digital assets that are not Virtual Assets (i.e. that do not amount to property) – see paragraph 1.2.5(iii).

1.5 Other concerns around the proposed Bill

In addition to the concerns we have raised in relation to the possession model generally, we have a few specific concerns in relation to the formulation of the proposed Bill.

(i) **Mere registers vs Virtual Assets.** The Papers propose to carve out “bare legal rights” from the scope of the Bill.\(^\text{33}\) We understand this to mean that rights recorded on mere records or registers, as opposed to stapled to Virtual Assets would be outside the scope of the Bill. We agree with the logic of this proposal. If there is no asset that is capable of amounting to property, it follows that there is no asset capable of being subject to a possessory type interest. However, this exclusion is not clear from the text of the draft Bill. If a mere register is used to evidence rights or interests akin to those typically evidenced in a trade document, the records under that register could potentially qualify as electronic trade documents if a person is, by virtue of being able to instruct the registrar to transfer the asset, considered to have “control” of the asset. As discussed below, the meaning of the term “control” is not clear.

(ii) **Meaning of control.** The definition of control (which refers to the ability to use the document and transfer or otherwise dispose of it) leaves much room for interpretation. The Papers propose that the concept of control should be limited to factual control (as opposed to legal control)\(^\text{34}\), but that is not clear from the text. As noted above, a person could, by virtue of being able to instruct a registrar to transfer an asset, be considered to have “control” of the asset under this definition if registered assets are in scope of the Bill. As noted elsewhere, there is a case for recognising legal control as amounting to control. As discussed in paragraph 1.2.5 above, we consider it conceptually possible (although not within currently accepted legal principles) for an arrangement that utilises legal controls to give rise to a Virtual Asset (which might then benefit from the proposed treatment under the Bill). Currently, such an arrangement is considered to give rise to a mere record or register and there will be no Virtual Asset that is capable of “possession”, as discussed in paragraph 1.5(i) above. Defining the boundaries between Virtual Assets and mere registers may be extremely challenging in practice, for the reasons discussed in paragraph 1.2.5 above.

(iii) **No more than one person has control.** There are considerable difficulties in requiring only one person to have control, when private keys (which are generally used to control digital assets) are capable of being shared by multiple persons simultaneously. If the mere possibility that a private key may be shared would result in a digital asset ceasing to qualify as being capable of exclusive control, then this would exclude many potential deployments of blockchain on DLT. If such mere possibility would not have this result (so that some identified person is considered to have control), then it seems that the concerns outlined in

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\(^{33}\) ETD CP, paragraph 5.47 and DA CfE, paragraph 2.19

\(^{34}\) ETD CP, paragraph 5.87
paragraph 1.3.3 (in relation to treating a registered holder as the person in possession) apply. In addition, the draft Bill does not cater for arrangements under which electronic trade documents are intended to be controlled by multiple persons, for example through a multi-sig wallet. In this case, it may be that no single person has positive control (in the sense that they can effect a transaction unilaterally) whilst multiple persons have negative control (in that they can exclude others from effecting a transaction). In any case, this type of arrangement would appear not to satisfy the requirements under the draft Bill.

(iv) **Negotiability status.** The draft Bill applies to a broad range of electronic trade documents, many of which do not have negotiable status in paper form, and does not seek to amend their status as to negotiability. There is a clear logic to this (i.e. that the electronic form should be treated in the same way as its paper equivalent). However, if electronic trade documents under this regime are to be capable of being traded on public blockchains, among pseudonymous participants and with no form of permissioning, it is likely that entitlement to the rights evidenced by them will, over time, become unattached from the underlying Virtual Asset, rendering the digital record of limited practical value, as discussed in paragraphs 1.2.6 and 1.3.4 above. Given that, in many cases, the market will expect Virtual Assets to have negotiable status, we recommend further consideration of this.

(v) **Evolution through common law.** The current draft Bill is limited to certain categories of electronic trade document and does not include other similar documents that could potentially benefit from similar treatment, such as bearer securities. Furthermore, the Bill only allows new types of document to be added to the list by way of statutory instrument. This excludes the possibility of the market evolving through the law merchant, which has been an incredibly useful and flexible tool for the adaptation of English law in the past.

(vi) **Electronic trade documents vs Stapled Cryptos.** As noted in paragraph 1.2 above, we consider electronic documentary intangibles to be a subset of Stapled Cryptos. Allowing for other types of Stapled Cryptos to have a status equivalent to that of a documentary intangible and/or negotiable instrument through recognition under the common law would be beneficial to new markets and innovation. We are concerned that any limitation of this regime to certain statutorily prescribed instruments is therefore detrimental to innovation.

1.6 **A third category of property**

The Law Commission’s proposals to allow electronic trade documents and digital assets to be made capable of possession appear to be based, at least in part, on the premise that, under English law, all property is categorised either as a thing in action or as a thing in possession. This, as highlighted in the ETD CP, derives from a statement of Fry LJ (approved by the House of Lords on appeal) in *Colonial Bank v Whinney*\(^{35}\), which has been followed in subsequent cases, including *Your Response v Datateam*\(^{36}\). Given the choice between these two categories, it is understandable that the Law Commission would favour possession (for the reasons outlined in paragraph 1.3.1 above). Increasingly, however, it is clear that the courts are willing to recognise a residual category of intangible property. This includes certain property rights recognised by statute (such as patents\(^{37}\)).

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\(^{35}\) *Colonial Bank v Whinney* (1886) 11 App Cas 426 (HL). Fry LJ said: “All personal things are either in possession or in action. The law knows no tertium quid [third thing] between the two.”

\(^{36}\) *Your Response v Datateam Business Media* [2014] EWCA Civ 281, [2015] QB 41

\(^{37}\) Pursuant to the Patents Act 1977
but also other intangibles such as carbon trading allowances, waste management licences, milk quotas, goodwill and possibly also a right to a personalised car registration number.

What is perhaps less clear is whether that residual category falls within the broader category of “things in action”. On this point, we agree with the conclusion of the UKJT Legal Statement, which states: “If a cryptoasset does not embody a legally-enforceable right or obligation then it is neither necessary nor useful to classify it as a thing in action. If it is necessary to classify it at all, then a cryptoasset is best treated as being another, third, kind of property, as the court was prepared to do with the EU carbon emission allowances in Armstrong v Winnington”. The High Court of England and Wales has similarly concluded that cryptoassets were neither things in possession nor things in action, but nonetheless a form of property (though this did not create a binding precedent).

Even in Your Response v Datateam (in which the argument that there was a third category of property was rejected), Moore-Bick LJ acknowledged that there was a powerful case for reconsidering the dichotomy between things in possession and things in action (though they were not able to do so on the facts of that case). The conclusions of Your Response can also be distinguished on the grounds that unlike Native Cryptos, the subject matter of that case – a database - was found not to meet the Ainsworth test. There do, therefore, seem to be good grounds to suggest that the common law is likely to move in this direction. However, we acknowledge that there remains some legal uncertainty on this point, and this may be an area for targeted intervention.

A key challenge with such a categorisation is that it may then be necessary for the courts to develop separate remedies for this third category, although we agree with the conclusion of the UKJT in this regard that “the remedies which the law will provide in any particular circumstances follow on from an analysis of the relevant legal rights, and can be developed as necessary over time in appropriate cases”. Thus, the absence of defined jurisprudence relating to remedies for such an asset class should not operate as a deterrent to its recognition.

In addition, given that there is a growing category of intangibles that are not neatly categorised as either things in possession or things in action, we suggest that it would be more helpful to develop a general solution (i.e. a third category of property capable of accommodating intangibles other than things in action) rather than developing a narrower approach that only accommodates certain types of digital asset.

1.7 Reliance on private multipartite contractual frameworks and legal stapling mechanisms

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39 Re Celtic Extraction Ltd
40 Swift v Dairywise Farms Ltd
41 Templeton Insurance Ltd v Thomas; JSC BTA Bank v Abyzov
42 Goel v Pick
43 As outlined in paragraphs 68 – 69 of the UKJT Legal Statement
44 UKJT Legal Statement, paragraph 86
47 As discussed in paragraphs 59 – 65 of the UKJT Legal Statement.
48 There is also a risk that if digital assets are considered not to fall within the category of things in action, they may constitute “goods” for the purpose of s61(1) of the Sales of Goods Act 1979 (which, in our view, cannot be the right outcome). That issue may need to be addressed by statute.
49 UKJT Legal Statement, paragraph 10
If digital assets are not treated as things in possession, the market may need to rely more heavily on legal structuring to facilitate their transfer. In the ETD CP\textsuperscript{50}, the Law Commission acknowledges that multipartite contractual frameworks can already be used to facilitate paperless trading solutions but highlights a number of shortcomings of this approach. These are raised in the context of electronic trade documents but could be of relevance in respect of Stapled Cryptos more broadly. We discuss each of the Law Commission’s concerns in turn below.

(i) **Need for a common rulebook.** The first concern is that this requires all parties to sign up to a multilateral contractual framework, which increases the complexity and cost of transacting. In our view, however, this requirement may not pose a significant additional burden in practice. As a starting point it is worth noting that a multilateral contractual arrangement may arise between parties that agree to be bound by a common rulebook, even where the parties do not know the identity of one another when they agree to be bound by the rules.\textsuperscript{51} In other words, adherence to a multilateral contractual framework may simply be made a condition of participation in the system (as discussed in paragraph 1.2.4 above). This would, of course, require the system to be subject to a degree of permissioning – i.e. the relevant digital assets (to which the relevant rights or interests are attached) could not move freely across an open network. However, in our view this is likely to be necessary in any case (at least in respect of electronic trade documents).

As discussed in paragraph 1.3.3 above, in order to ensure that any electronic trading platform is trusted by market participants, we expect that at the very least it will need to provide some form of identification verification process to minimise the risks associated with the theft of private keys. This will require participants in the system to provide their identification information as a condition for participation in the system. In addition, it would be prudent to anticipate that an electronic system for the transfer of high value electronic trade documents or digital assets would be subject to anti-money laundering / know-your-customer type onboarding and monitoring requirements, which would likely require some form of overarching governance and rulebook. If these features are required, it would be a simple extension to require participants to be bound by the rules of the system.

Furthermore, multilateral rulebooks may be desirable to the participants for other reasons - for example to set out the roles and responsibilities of the parties and who assumes responsibility if something goes wrong, including if there is a malfunction or a hacking, for example. Commercial parties will generally be unwilling to bear uncertain risks. That said, we acknowledge that there could potentially be some scenarios in which markets would like to be able to trade Stapled Cryptos in a permissionless context.

(ii) **Parties acquire mere personal rights against their counterparties.** The Papers also suggest that one of the shortcomings of multipartite contractual frameworks is that the parties cannot acquire proprietary rights enforceable against third parties who are not party to the contractual framework. In our view, this is an oversimplification of the law. It is correct that a contractual arrangement cannot bind third parties and cannot prevent third parties from acquiring proprietary interests in contravention of the contractual arrangement. It is, however, possible for a multilateral contractual arrangement to provide for the transfer of proprietary interests between participants (which will be effective against third parties) and, where the proprietary interests are in property that has been immobilised in connection with

\textsuperscript{50} Paragraphs 2.36 – 2.44

\textsuperscript{51} The Satanita [1897] AC 59
the contractual arrangement, for the arrangement to include legal and practical protections to prevent transfers to third parties outside the system to the detriment of participants in the system. Broadly speaking, we believe that careful legal structuring should permit the stapling of proprietary interests (both things in action and things in possession) to Native Cryptos within a permissioned system without the necessity of statutory intervention.\(^{52}\)

(iii) **Legal uncertainties.** The ETD CP notes that the legal validity and consequences of these contractual frameworks are untested in courts and so relatively uncertain, as compared with the well-settled position in relation to paper trade documents. We see four key uncertainties worth considering, as outlined below.

(a) **Transfers.** The Law Commission Papers make the case that a key benefit of treating digital assets as things in possession is that it would simplify transfer processes. We do not entirely agree with this given the potential for new uncertainties, as discussed in paragraph 1.3 above. However, we do acknowledge that transfers may be an area where there remains some legal uncertainty that ought to be addressed.

The UKJT Legal Statement accepted in principle that transfers of Native Cryptos could take place either on-chain or off-chain through an appropriately drafted agreement.\(^{53}\) It also noted that “some of the methods of assumption and assignment may be novel”\(^{54}\). There remains, however, some uncertainty as to the precise legal mechanism by which transfers take place, both on- and off-chain.

As discussed in paragraph 1.6 above, the key issue is that it remains unclear whether Native Cryptos will be treated by the courts as things in action. The legal processes for transferring things in action (i.e. assignment and novation) have evolved on the basis that there is a counterparty against whom notice can be served or with whom a new contract can be formed. Whilst it may be possible to effect an equitable assignment, this will not be ideal or suitable in all cases. Therefore, it would be helpful to have some form of legal clarification that transfers of Native Cryptos may be effected other than by way of assignment or novation. This certainly seems to be the suggestion of the UKJT Legal Statement, which (as discussed in paragraph 1.2.6 above) suggests that an on-chain transfer involves the destruction of one digital asset and the creation of a new one.

The UKJT Legal Statement did not discuss transfers of Stapled Cryptos. In relation to these, our expectation is that, legal structuring techniques could be used to ensure that the stapled rights effectively move with the underlying Native Crypto (even if the transfer is analysed as a destruction and creation of value rather than the delivery of a continuous thing, as noted above). See paragraph 1.2.4.

(b) **Negotiability.** As touched on in paragraphs 1.2.6, 1.3.4 and 1.5 above, if transfers of Native Cryptos are analysed as a destruction of one asset and the creation of another, the issue of negotiability will not arise in respect of on-chain transactions (because each on-chain transferee takes a fresh title to the new asset). The issue

\(^{52}\) In the case of Native Cryptos stapled to possessory interests in goods, this may mean that the custodian or carrier of the relevant goods needs to be party to the multipartite agreement, but this can be achieved through an accession to a set of rules applicable to such parties. It should be noted that, as is the case today with paper documents of title, the stapling of possessory interests in goods may not be fully negotiable. Neither the Bill, nor the ETD CP, include a proposal to the contrary.

\(^{53}\) UKJT Legal Statement, paragraphs 46 and 48

\(^{54}\) UKJT Legal Statement, paragraph 51
of negotiability (or quasi-negotiability) could, however, be relevant in various circumstances, for example: (i) in relation to off-chain transactions; (ii) if transfers are reanalysed as the delivery of a continuous thing (as the Law Commission is proposing to do); (iii) where, even if on-chain transfers confer this form of negotiability, a proprietary interest that is stapled to the Native Crypto is determined not to be negotiable (as is the case with documents of title, which are not considered to permit a holder to transfer a better title than the holder has to a good faith purchaser for value); (iv) in respect of systems that involve transfers of bare legal rights or interests, rather than Stapled Cryptos; or (v) in relation to other types of Virtual Assets (in relation to which transfers cannot be conceptualised as giving rise to a fresh title).

There is some uncertainty as to whether a digital asset could be capable of acquiring the status of a true negotiable instrument under the law merchant given the nature of the technology. That category of negotiable instruments relies on evidence of a mercantile practice of the relevant instrument “passing by delivery from hand to hand”\(^{55}\). Even if there is a statutory intervention (as the Law Commission has proposed) to provide that certain types of digital assets may be treated as things in possession, the uncertainty as to whether there is in fact any instrument that can be seen to be “passing by delivery from hand to hand” may remain in doubt, for the reasons outlined in paragraph 1.3.2 above. On the other hand, it would be a relatively straightforward step for a court to extrapolate the concept of “hand to hand” in a pre-digital environment to a digital transfer in a digital environment and to recognise the existing market practice of regarding Native Cryptos as \textit{de facto} negotiable.

Even if a document is not a negotiable instrument at common law, it is our expectation that some form of quasi-negotiability could be provided for within a permissioned system, with careful legal structuring. For example, the circumstances of an instrument’s transfer can give rise to an estoppel against the transferor preventing the denial of the holder’s title.\(^{56}\) Similarly, an estoppel by representation in the terms of an instrument can bind the obligor not to raise equities against a subsequent holder.\(^{57}\) As previously noted, the Uncertificated Securities Regulations 2001 are an example of statutory recognition of a form of negotiability for a system of registration.\(^{58}\)

(c) \textbf{Concurrent interests.} As alluded to in paragraph 1.4 above, there is some uncertainty as to whether it is possible for more than one person to have concurrent legal (as opposed to equitable) interests in a Virtual Asset. That is not possible for a thing in action in the narrow sense (since legal title rests with the person with the right to sue on the claim). Allowing Virtual Assets to be treated as things in possession could provide a route for establishing relative title through possessory

\(^{55}\) Bechuanaland (above). See also Goodwin \textit{v} Robarts (1875) L.R. 10 Ex. 337.

\(^{56}\) Colonial Bank \textit{v} Cody (1890) 15 App. Cas. 267; \textit{Re Ottos Kopje Diamond Mines Ltd} [1893] 1 Ch. 618.

\(^{57}\) Crouch \textit{v} Credit Foncier of England Ltd (1873) L.R. 8 Q.B. 374.

\(^{58}\) Note: the theory that the USRs achieve the equivalence of negotiability has been criticised on the basis that achieving equivalence with a negotiable instrument was ultra vires under the USRs, given that the empowering primary legislation (the Companies Act 1989, s.207) provided that rights were to be altered as little as possible. Consequently, the USRs could achieve that transfers proceeded to registration without challenge but may not exclude the rights of a third party to bring a tracing claim once that registration was complete.
interests\textsuperscript{59} (although it is unclear that the Bill would achieve this, as discussed in paragraph 1.3.3 above). We agree that this would be useful – for example, to allow parties to create proprietary interests that fall short of legal ownership, without needing to resort to an equitable interest such as a trust. This would be particularly useful in relation to security interests. Security interests over things in action generally take effect as a charge or equitable assignment that is perfected by giving notice to the obligor (which as discussed above, is often not possible in the case of Virtual Assets). This can create practical difficulties, since charges and equitable assignments are registerable and registration may not always be feasible in the circumstances, for example in the context of high frequency transactions. Given this, it may be useful to clarify that it is possible to create legal interests in Virtual Assets that fall short of outright ownership and it is possible to take security over a Virtual Asset other than by way of a charge or equitable assignment.

(d) Remedies. The Law Commission makes the case that the law of England and Wales’ primary means of protecting interests in personal property is through the tort of conversion, which is available only in respect of things in possession\textsuperscript{60}. There are a few points we would highlight here. First, in the context of a multipartite contractual framework, there is much more freedom to provide for tailored remedies through contract. These will also include proprietary remedies where a multilateral arrangement permits transfers of proprietary interests. Secondly, in the case of a permissionless environment, where parties are often acting in a pseudonymous capacity and value can be dissipated very quickly, the tort of conversion may be of limited use when it comes to recovering assets. Thirdly, where it is possible to identify parties against whom a claim may be brought, if the remedy of conversion were not available, we expect that there are other remedies that the courts will be able to rely on in the event the relevant assets are traceable - for example, equitable doctrines such as unjust enrichment (as discussed in paragraph 1.6 above). In summary, we do not see this as an issue that is incapable of being overcome.

For the reasons outlined above, we consider that it should be possible to develop effective paperless trade solutions with careful legal structuring utilising a multipartite contractual framework, subject to a few areas in relation to which statutory intervention would be helpful (as discussed above). This analysis will also extend to arrangements involving other types of Stapled Cryptos.

1.8 Conclusion

Creating an overarching solution for the transfer of all types of digital assets outside the context of a contractual framework will require broad statutory intervention, which is likely to be extremely difficult in practice and risk creating new legal uncertainties and other unintended consequences. This would not, in our view, be the least interventionist approach.

In our view, the development of paperless trading solutions and other digital asset platforms is already broadly achievable through careful legal structuring.

There are a few areas in relation to which specific legal uncertainties remain, in particular:

\textsuperscript{59} As discussed in paragraph 2.14 of the ETD CP.

\textsuperscript{60} See, for example, ETD CP, paragraph 3.16 and footnote 22
(i) whether Virtual Assets may be categorised as a form of property other than as a thing in action or a thing in possession;

(ii) whether it is possible to effect a transfer of a Virtual Asset other than by way of an assignment or novation;

(iii) whether it is possible to create a legal proprietary interest in a Virtual Asset that falls short of legal ownership (i.e. whether it is possible to have relative title to certain Virtual Assets), including for the purposes of taking security; and

(iv) whether the legal methods by which “stapling” of rights or proprietary interests to digital assets might be extended, and certain formalities may be disapplied or deemed satisfied, in certain contexts relating to the transfers of digital assets.

We have also suggested that the Law Commission may wish to consider broader recognition of certain electronic records that do not, under current law, constitute independent property. A number of our market participant consultees who have seen a draft of this paper have expressed some reservations around the suggestion, in particular if such an intervention were to have an impact on existing arrangements, which would run a very significant risk of the impact of unintended consequences. We therefore suggest that any expansion of the current legal framework is made on a permissive or elective basis, so that systems wishing to rely on a new legal framework would need to reference it specifically in order for it to apply. This would reduce significantly the scope for unintended consequences.

In reality, however, in relation to the items listed above, we do not expect the residual uncertainties that we have highlighted to hold the market back. Indeed, there remain a number of legal uncertainties in relation to intermediated securities market, as the Law Commission has pointed out, and this has not prevented that market from thriving. Indeed, a number of market participants have suggested that the extent of legal uncertainty may, on occasions, been unhelpfully overstated.

In order to send a signal to the global market that English law does already support digital asset innovation and thus promote the use of English law, it could be helpful to have an authoritative legal statement, akin to the UKJT Legal Statement, that supports the analysis above. In addition, it may be helpful to have statutory clarifications in relation to the uncertainties identified above.

In the future, there could also be demand for one or more specific statutory regimes to provide an overarching framework in respect of specific types of registered digital assets.

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61 Such as the requirement under section 53(1)(c) of the Law of Property Act 1925 that the disposition of an equitable interest must be in writing.

62 We do not believe that introducing a change on the basis that it is only to have a prospective effect would adequately address this concern because it might accidentally capture new legal arrangements entered into as a result of an existing contractual arrangement.

63 We also suggest that any broader intervention considers the knock-on impact on the intermediated securities market, noting the many parallels between that market and the digital asset market.

64 Law Commission, Scoping Paper: Intermediated securities: who owns your shares? (November 2020)
## 2 ETD CP

### Consultation Question 1.

| 2.1 | We invite consultees’ views on the advantages and disadvantages associated with using private contractual frameworks to facilitate the use of electronic trade documents, compared with using electronic documents recognised in law as being equivalent to paper documents. |

**Paragraph 2.44**

As discussed in paragraph 1.6 above, in our view, the key disadvantages of relying on a contractual framework are that: (i) this does not allow for electronic trade documents to be traded in an open, permissionless DLT environment; and (ii) there remain certain legal uncertainties, in particular regarding the legal mechanisms for transfer and for granting proprietary interests that fall short of legal ownership (for example, for the purpose of creating security interests).

In relation to point (i), we consider that some degree of permissioning is likely to be desirable to commercial parties in the context of electronic trade documents, including for identification verification purposes and perhaps also to allocate liability, as discussed in paragraphs 1.6 and 1.4(i) above.

In relation to point (ii), we acknowledge that there do remain certain legal uncertainties. However, in our view, these would be better addressed through targeted statutory intervention, as discussed in paragraphs 1.6 and 1.8 above.

Paragraph 2.42 of the ETD CP suggests that the more complex legal arrangements embedded in a multilateral agreement "is likely a significant part of the explanation for the persistence of paper trade documentation in spite of the available contractual workarounds." Feedback that we have received is that there are significant change management obstacles to the implementation of any new system or process in a decentralised market that are not related to legal issues and that the roll out of electronic trade documents would also likely face similar change management obstacles. We do not therefore believe that legal obstacles are a major impediment to the roll out of private contractual frameworks.

An additional material benefit of the use of a contractual framework is that it allows the parties to choose in a manner that clearly binds all participants a legal system to apply to the arrangement and include within that an arrangement the submission of parties to specified courts or arbitrations having jurisdiction to hear disputes.

### Consultation Question 2.

<table>
<thead>
<tr>
<th>2.2</th>
<th>We provisionally propose that our reforms cover only the following categories of document:</th>
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<tbody>
<tr>
<td>2.2.1</td>
<td>bills of exchange;</td>
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<tr>
<td>2.2.2</td>
<td>promissory notes;</td>
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<tr>
<td>2.2.3</td>
<td>bills of lading;</td>
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<tr>
<td>2.2.4</td>
<td>ship’s delivery orders;</td>
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<tr>
<td>2.2.5</td>
<td>warehouse receipts;</td>
</tr>
<tr>
<td>2.2.6</td>
<td>marine insurance policies; and</td>
</tr>
<tr>
<td>2.2.7</td>
<td>cargo insurance certificates.</td>
</tr>
</tbody>
</table>

Do consultees agree?
Consultation Question 2.
If not, we invite consultees to suggest categories of document that should be added to or removed from this list, and to explain why.

Paragraph 3.85

For the reasons provided at the front of this response, we are not sure that the framing of the Bill is necessary to achieve the objectives of the Consultation and its aims could be achieved by narrower intervention. The multilateral framework approach that we have suggested could apply to a broad range of instruments and things in action, although, in practical terms, only things in action that comprise unilateral, one-way obligations could be stapled to a Native Crypto. Consistent with our earlier comments, we see two issues with the chosen list of instruments:

- firstly, that they do not have the same legal status in relation to the rights that they represent, with bills of exchange being negotiable instruments, bills of lading constituting documents of title that are not negotiable in the full sense and warehouse receipts sometimes constituting a document of title and sometimes not; and
- secondly, as discussed in paragraph 1.4(iii) above, we consider the framing of the bill which only allows new documents to be added by means of statutory instrument and excludes the possibility of evolution through the law merchant, to be overly rigid and run the risk of stifling innovation.

Consultation Question 3.
2.3 We provisionally propose that sea waybills and air waybills need not and should not be included. Do consultees agree?

Paragraph 3.86

See our response to question 2.2 above.

Consultation Question 4.
2.4 We provisionally propose that bearer bonds and other documents of title including banker’s drafts, certificates of deposit payable to bearer, bearer scrip certificates exchangeable for shares, mate’s receipts, traveller’s cheques, and dividend warrants need not and should not be included. Do consultees agree?

Paragraph 3.87

See our response to question 2.2 above.

Consultation Question 5.
2.5 We provisionally propose that the Secretary of State should have the power to add, remove, or amend an entry in the list of documents described in Consultation Question 1 by regulations made by statutory instrument. Do consultees agree?

Paragraph 3.88

We agree that it is helpful to allow for the list of documents to evolve over time, including through statutory instruments. However, in our view, allowing for evolution through the law merchant is equally, if not more, important, as discussed in response to question 2.2 above.

Consultation Question 6.
2.6 We provisionally propose that the group of documents covered by our proposed reforms should be referred to as “trade documents” in the draft Bill. Do consultees agree?
Consultation Question 6.

If not, what alternative label would consultees propose, and why?

Paragraph 3.94

No comment, given our responses above.

Consultation Question 7.

2.7 We provisionally propose that each individual trade document in the draft Bill need not and should not be defined. Do consultees agree? If not, please give reasons.

Paragraph 3.96

No comment, given our responses above.

Consultation Question 8.

2.8 We provisionally propose to include ship’s delivery orders and warehouse receipts in our list of trade documents, without an express restriction to those that have been made out to order. Do consultees consider that this will cause problems? Please explain why.

Paragraph 3.99

No comment, given our responses above.

Consultation Question 9.

2.9 We provisionally propose that bare legal rights should be excluded from the scope of our proposals for the possession of electronic trade documents. Do consultees agree?

Paragraph 5.58

We understand the rationale for concluding that bare legal rights should not be capable of possession, in the sense that there is nothing to possess. However, distinguishing between bare legal rights on the one hand and stapled cryptoassets on the other hand may be highly complex in practice, and the ETD CP does not address this issue in any detail. We discuss some of the complexities in paragraphs 1.2(ii) and 1.4(i) above.

We note that many of the policy reasons in the Consultation that support the proposals in the consultation would seem to be equally supportive of a secure arrangement that is based on a system of records maintained by an independent third party. At present, such an arrangement would not constitute or give rise to an independent “thing” that would be recognised as property under English law that is capable of existing separately from the property rights that it records or evidences. There does therefore appear to be an equally strong case for recognising such a system and we note that the MLETR does extend to such arrangements.

Consultation Question 10.

2.10 We provisionally propose that, in order for an electronic trade document to be capable of possession, the nature of the document must not support concurrent control by multiple parties at one time. Do consultees agree?

Paragraph 5.72

As discussed in response to question 2.2 above, it will not always be clear what is meant by the term “document” in the context of an electronic trade document platform.
We agree that if an electronic document is to be treated as capable of possession then, at a minimum, the relevant platform will need to find a solution to address the “double-spend” problem (i.e. the possibility of inconsistent transfers of the same cryptoasset to different recipients). However, we have various concerns around the framing of both this question and the proposed bill. In particular:

- Private keys to cryptoassets can be shared by multiple persons concurrently (either with or without the consent of the rightful owner). What measures would a system need to deploy to ensure that only the rightful owner can exercise control? Would this necessitate some kind of identification verification process? This is hinted at in paragraph 5.94 of the ETD CP, but it is not clear what the Law Commission’s expectations are. If an identification verification process is required, that implies that the documents will only be capable of transfer within a closed, permissioned network. If the mere possibility that a private key may be shared would result in a digital asset ceasing to qualify as being capable of exclusive control, then this would exclude many potential deployments of blockchain on DLT. If such mere possibility would not have this result, then we query how exclusive control can be demonstrated in practice outside a closed system.

- The requirements do not seem to cater for multi-sig wallet arrangements, under which multiple (separate) persons have negative control over the asset and no single person has positive control over the asset.

These issues are discussed further in paragraph 1.4(i) above. In our view, there would need to be more clarity around how this type of requirement can be met in practice in order to avoid stifling innovation.

### Consultation Question 11

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<th>Consultation Question 11.</th>
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<td>2.11</td>
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<td>8.1.1</td>
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<tr>
<td>8.1.2</td>
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<tr>
<td>Do consultees agree?</td>
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</table>

We refer to our analysis in paragraph 1.5 relating to control. As a general point, our analysis in the main body of our response is premised on the basis that control as a concept need not be defined if an approach of minimal intervention is taken, as outlined in the main body of our response.

Attempting to define control in the manner suggested in the question above does not consider the doctrine of constructive possession and how this or an analogue of it might be used to confer proprietary interests in Native Cryptos that fall short of legal ownership. As outlined above in paragraph 1.7(iii)(c)) (Concurrent interests), this is an area in which some form of legal intervention would be welcomed. However, we note that the difficulty in defining control (and which we have experienced in practical applications of systems subject to the UCC) is such that it may be best left to the courts to develop this as a concept after there is some clarification to the law confirming that it is possible to have some form of property interest in Native Cryptos that falls short of legal title. Such a property interest may have many of the hallmarks of possession (including the ability to hold it constructively), but it may be appropriate to call it something else.

In addition, the analysis is also subject to the concerns noted above in relation to knowledge of a private key being shared widely, multi-sig wallets or sharded keys (which operate similarly to multi-sig wallets).
There are also other types of arrangement that the ETD CP does not consider, such as the effect of locking a digital asset in a smart contract whereby the private key is generated by and retained within the smart contract and incapable of retrieval.

It may be helpful to specify in any intervention that control should not be limited to exclusive control and that it may extend to other arrangements that would capture the locking of Virtual Assets into smart contracts.

Consultation Question 12.
2.12 We provisionally propose that, in order for an electronic trade document to be capable of possession, “the system” on which the document is held must ensure that no more than one person can control the document at any one time. Do consultees agree?

Paragraph 5.95

See our response to questions 2.10 and 2.11 above.

Consultation Question 13.
2.13 We invite consultees’ views on whether there could be a situation in which multiple parties could have equal claim to “possession” of an electronic trade document in such a way that they would not be “one person” for the purposes of the law.

Paragraph 5.96

See our response to questions 2.10 and 2.11 above.

Consultation Question 14.
2.14 We provisionally propose that, in order for an electronic document to be capable of possession, transfer of the document must transfer control of the document to the transferee, and the transferor must lose control of it as a consequence. Do consultees agree?

Paragraph 5.103

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

Consultation Question 15.
2.15 We invite consultees’ views on how existing systems, or those in development, ensure that the transferor of an electronic document can no longer control the document after it is transferred.

Paragraph 5.104

With respect to electronic documents that are Native Cryptos, we understand that it is the combination of the system rules which ensure that the data can be “spent” (i.e. rendered inert) only once (and, therefore, to the exclusion of others) and the public/private data parameters (the combination of which we refer to as the “Defining Features of Cryptos”). For other types of electronic document which do not exhibit the Defining Features of Cryptos, arrangements to ensure that a transferor no longer controls a document after its transfer may rely on other methods, including the supervision of a central operator or contractual obligations.
Consultation Question 16.

2.16 We invite consultees’ views on whether the ability to retain a copy of an electronic trade document after transfer or other disposal of the electronic trade document could lead to problems in practice.

Paragraph 5.109

With respect to electronic trade documents which are Native Cryptos, this should not be a problem with respect to determining who has control of the relevant document unless the party who retains such a copy also retains the ability to “spend” the relevant data comprising the document (which it might if, for example, the transferor has access to the relevant private data parameter). For other types of electronic trade document, we would assume that the ability to “spend” the document would also pass along with the transfer of the document, and as such the analysis should be similar.

Once a Virtual Asset has been spent, the related data will remain on the blockchain. This may include an ability to see and/or hear any data files that are linked to that spent data. Such a file is mere data and therefore not capable of constituting property, so there should be no objection to multiple copies being in existence. It is the method of stapling the embedded legal rights that creates the ability to identify the unique person entitled to the right through the act of spending (which might constitute a surrender of the virtual document to the person obliged under it to honour it upon presentation). In the case of digital assets that are not Virtual Assets, they will record the person entitled to the benefit of the document and there is no objection to copies of the document being made available to the world for so long as arrangements remain in place to identify the person uniquely able to benefit from the document.

Consultation Question 17.

2.17 We invite consultees’ views on whether the processability of electronic trade documents should depend on any other factors or criteria. If so, please explain the reasons for your additional criteria.

Paragraph 5.111

No comment.

Consultation Question 18.

2.18 We provisionally propose that:

8.1.3 the person who is able to control an electronic trade document is the person in possession of it; and

8.1.4 possession of an electronic trade document is transferred from one person to another when the transferee gains control of that electronic trade document.

Do consultees agree? If not, please explain why not.

Paragraph 5.115

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

Consultation Question 19.

2.19 We provisionally propose that there is no need to make explicit in legislation that the requirement of intention to possess applies to electronic trade documents. Do consultees agree?

Paragraph 5.129
Please see our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession. If some form of intermediate property interest is recognised in Virtual Assets, it would be helpful if some form of intention to exercise this property interest is required for it to arise. This would help address areas of uncertainty relating to airdrops and whether a person that receives an airdrop is automatically the owner or whether that person should exercise or demonstrate some manifestation of intention (no matter how small) to acquire some form of legal entitlement to the airdropped Virtual Asset. We have considered this issue in the context of custodians of Virtual Assets and felt that it would be helpful to require some form of intention so as to prevent a recipient from automatically acquiring some form of property interest in airdropped Virtual Assets.

**Consultation Question 20.**

2.20 We invite consultees’ views on what circumstances there could be a debate about which of one or more parties is in possession of an electronic trade document held on a system of the type envisaged by our proposals.

**Paragraph 5.130**

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 21.**

2.21 We provisionally propose that electronic trade documents should not be subject to an explicit statutory requirement for integrity. Do consultees agree?

**Paragraph 6.13**

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 22.**

2.22 We provisionally propose not to impose an express statutory reliability requirement. Do consultees agree? Please give reasons.

If consultees disagree:

8.1.5 When should a party be required to prove that their electronic document is reliable?

8.1.6 Do consultees think our proposals should include an accreditation process? If so, in what form?

**Paragraph 6.28**

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 23.**

2.23 We provisionally propose that there should be a statutory requirement that electronic trade documents must contain the same information as would be required to be contained in a paper equivalent. Do consultees agree?

**Paragraph 6.33**
Please see our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession. We are not convinced that it should be necessary to include precisely the same information as would be required to be contained in a paper equivalent.

**Consultation Question 24.**

2.24 We do not consider there to be a need to introduce an express statutory provision on writing in electronic trade documents, because the law already considers electronic displays to be capable of constituting “writing”. Do consultees agree? Please give reasons.

Paragraph 6.43

We agree with this, for the reasons you outline and given our general submissions in relation to the legislative proposal in the main body of our response.

**Consultation Question 25.**

2.25 We do not consider there to be a need to introduce an express statutory provision on signing electronic trade documents. Do consultees agree? Please give reasons.

Paragraph 6.49

We agree that there is no need to introduce the above, although please note our general submissions in relation to the legislative proposal in the main body of our response.

**Consultation Question 26.**

2.26 We do not consider there to be a need to introduce an express statutory provision on the accessibility of information contained in electronic documents. Do consultees agree? Please give reasons.

Paragraph 6.53

We agree that there is no need to introduce the above, although please note our general submissions in relation to the legislative proposal in the main body of our response.

**Consultation Question 27.**

2.27 We provisionally propose that legislation should explicitly allow for indorsement of electronic documents. Do consultees agree? Please give reasons.

Paragraph 6.60

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 28.**

2.28 We seek consultees’ views on whether there is any need for electronic trade documents to be capable of being issued in sets.

Paragraph 6.62

Please see our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession. We cannot see any benefit of enabling electronic trade documents to be capable of being issued in sets. It seems to increase significantly the risk of double spending.
Consultation Question 29.

2.29 We provisionally propose that no further provision is required in legislation to address the following in respect of electronic trade documents:
   8.1.7 timing of delivery;
   8.1.8 timing of transfer;
   8.1.9 rejection; and
   8.1.10 amendment.
Do consultees agree?

Paragraph 6.75

We agree that the above need not be addressed as part of a legislative proposal, although please note our general submissions in relation to the legislative proposal in the main body of our response.

Consultation Question 30.

2.30 We seek consultees' views on how amendment or rectification of an electronic trade document is achieved under existing systems and those in development.

Paragraph 6.76

Amendments and rectifications of electronic trade documents would require the involvement of a central operator of the relevant system in order to be effective, so this will depend on what the system rules contemplate. If Native Cryptos are involved in the system, it may not be possible to amend/rectify the associated electronic trade document to the extent that the amendment/rectification must take place on the associated distributed ledger. It is likely that such a document would need to be "spent" in favour of its obligor, to ensure its retirement, which would then issue a new, revised electronic trade document. For a digital asset that is not a Virtual Asset, the system should provide for a means of revision.

Consultation Question 31.

2.31 We seek consultees' views on whether the phrase "so far as practicable" should be included in clause 2(2)(c). If yes, please give examples where such a qualification would be required.

Paragraph 6.80

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

Consultation Question 32.

2.32 We seek consultees' views on what security interests are typically taken over trade documents at the moment

Paragraph 6.102

Please see our general submissions in the main body of our response. If, as we suggest, the law is clarified to permit another form of ownership interest in Virtual Assets, then it would equally be possible for a relationship that is similar to bailment, a pledge or a lien to arise in connection with a Virtual Asset. We believe that this would be helpful. See also our response to Q 2.33.
Consultation Question 33.

2.33 We provisionally propose that an electronic trade document should be capable of being the subject of possessory concepts including bailment, conversion, pledges, and liens, and that this should be provided for in legislation. Do consultees agree? 

Paragraph 6.110

We disagree, noting that as a general point we do not think it should be possible for electronic documents to be capable of possession. We do however think that there would be benefit in the law recognising that Virtual Assts (that is, a sub-category of digital assets that satisfy the Ainsworth test) may be subject to some form of legal proprietary interest that falls short of legal ownership, so that it is possible to have relative title to certain Virtual Assets (see paragraph 1.7(iii)(c)) (Concurrent interests).

Consultation Question 34.

2.34 We provisionally propose that existing rules and practices can accommodate the discharge, surrender or accomplishment of electronic trade documents, and that no specific legislative provision is needed. Do consultees agree? 

Paragraph 6.114

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

Consultation Question 35.

2.35 We provisionally propose that provision should be made to allow for a change of medium for trade documents from electronic to paper, or from paper to electronic. Do consultees agree? 

Paragraph 6.125

Please see our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession. Any exchange would likely be effected through the same means by which an amendment is achieved. Please see our response to Q 2.30.

Consultation Question 36.

2.36 We seek consultees’ views on whether the draft Bill should contain a requirement that the issuer of a trade document must allow the person in possession to change the document’s medium.

Paragraph 6.128

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

Consultation Question 37.

2.37 We seek consultees’ views on whether the electronic trade documents that satisfy the requirements of our draft Bill will also satisfy the requirements of the MLETR. To the extent that consultees consider our provisional proposals to be incompatible with the MLETR or other international approaches, please explain this and the consequences to which it could give rise.

Paragraph 6.136
No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 38.**

2.38 We provisionally propose that the Law Commission should consider the private international law aspects of digital assets, including electronic trade documents, as part of a separate project. Do consultees agree?  

Paragraph 6.148

Yes, we do agree, and note that we agree with the conclusions of the UKJT on private international law aspects of digital assets that ultimately "these complex issues will best be resolved by legislation, most likely following international cooperation."65

**Consultation Question 39.**

2.39 We provisionally propose that the word “issue” describes the process by which a trade document (where relevant) becomes a document of title. Do consultees agree?  

Paragraph 6.162

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 40.**

2.40 We provisionally propose that the change of medium of a trade document issued before the Act comes into force should not be permitted. Do consultees agree?  

Paragraph 6.165

No comment, noting our general submissions in the main body of our response on the merits of legislating so that electronic trade documents can be capable of possession.

**Consultation Question 41.**

2.41 We provisionally propose that our proposals do not create any additional risk that documents which are not intended to be documentary intangibles will become so by virtue of the draft Bill. Do consultees agree?  

Paragraph 6.175

We agree with this, although please refer to our commentary in the main body of our response in relation to broader concerns in relation to treating digital assets (including digital documents) as things in possession.

**Consultation Question 42.**

2.42 We seek consultees’ views on what, in their experience, is the average number of paper documents required in a single trade transaction, compared to our current assumption of 40.  

Paragraph 7.19

No comment.

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65 UKJT Legal Statement, paragraph 99.
Consultation Question 43.

2.43 We seek consultees’ views on whether our estimate of the global total number of paper trade documents used in container shipping is accurate.

Paragraph 7.20

No comment.

Consultation Question 44.

2.44 We seek consultees’ views on whether the average number of documents required in a trade transaction varies between sectors. If so, please give details.

Paragraph 7.21

No comment.

Consultation Question 45.

2.45 We seek consultees’ views, if they are able to give an estimate, on the percentage of trade and shipping documentation which is under the law of England and Wales.

Paragraph 7.23

No comment.

Consultation Question 46.

2.46 We seek consultees’ views on how quickly the industry would move to electronic trade documents if these provisional proposals came into force in 2022. If possible, we request that consultees say what percentage of documentation might be issued and used in electronic form:

8.1.11 by 2030; and
8.1.12 by 2050.

Paragraph 7.28

No comment.

Consultation Question 47.

2.47 We seek consultees’ views on how much money, or what percentage of the cost of a transaction, do consultees estimate could be saved per transaction by transitioning to electronic documents.

Paragraph 7.37

No comment.

Consultation Question 48.

2.48 We seek consultees’ views on the efficiency gains of a transition to electronic trade documents. Please provide evidence or data if possible.

Paragraph 7.48

No comment.
Consultation Question 49.

2.49 We provisionally propose that electronic trade documents will reduce the risk of fraud compared to paper trade documents. Do consultees agree?  

Paragraph 7.53

No comment.

Consultation Question 50.

2.50 We provisionally propose that electronic trade documents will enhance the transparency of supply chains. Do consultees agree? Please provide examples or evidence if possible.  

Paragraph 7.57

No comment.

Consultation Question 51.

2.51 We provisionally propose that there will be environmental benefits from a transition to electronic trade documents. Do consultees agree? Please provide examples or data if possible.  

Paragraph 7.61

No comment.

Consultation Question 52.

2.52 We seek consultees' views on what impact is foreseen for ultimate end-users of goods. Please provide quantitative evidence if possible.  

Paragraph 7.65

No comment.

Consultation Question 53.

2.53 We seek consultees' views on if there are any potential positive impacts of our proposals that have not been identified above.  

Paragraph 7.66

No comment.

Consultation Question 54.

2.54 We seek consultees' views on whether it is anticipated that transition costs will be a brake on the uptake of electronic trade documents.  

Paragraph 7.72

No comment.

Consultation Question 55.

2.55 We seek consultees' views on factors that may affect the willingness of financers of trade transactions to adopt electronic trade documents.  

Paragraph 7.78
No comment.

**Consultation Question 56.**

2.56 We seek consultees' views on the average energy consumption per transaction for proposed electronic trade document platforms.

*Paragraph 7.84*

No comment.

**Consultation Question 57.**

2.57 We seek consultees' views on how the energy consumption of DLT can be minimised.

*Paragraph 7.85*

No comment.

**Consultation Question 58.**

2.58 We seek consultees' views on whether there are any other potential negative impacts of our proposals that have not been identified above.

*Paragraph 7.86*

None other than those outlined in the main body of our response.
Call for Evidence 1.

3.1 What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales? Please explain your answer and provide examples.

Paragraph 2.23

Please refer to our commentary in the main body of our response in relation to concerns in relation to treating digital assets as things in possession. In particular, a definition of possession by reference to exclusive control seems fraught with difficulty. As noted, we agree that there would be benefit in the law recognising that Virtual Assts (that is, a sub-category of digital assets that satisfy the Ainsworth test) may be subject to some form of legal proprietary interest that falls short of legal ownership, so that it is possible to have relative title to certain Virtual Assets (see paragraph 1.7(iii)(c)) (Concurrent interests).

Call for Evidence 2.

3.2 Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? Please explain your answer and provide examples.

Paragraph 2.36

We consider a transfer of a Virtual Asset to bear hallmarks of both transfers of a thing in possession, in that a transfer does not need to be perfected by notification to another person, and transfers of a thing in action, in that a transfer cannot be effected physically. For on-chain transfers, we agree with the UKJT in analysing such transfers as a destruction of an asset and its replacement by a new asset, which bears a resemblance to transfers of cash (between different bank accounts). Our analysis in the main body of our response is limited to Native Cryptos and Stapled Cryptos (as each is defined). In our view such digital assets are not transferred by assignment, novation or delivery, but through a legal mechanism not yet fully articulated. We do not believe that this lack of clarity affects the development of arrangements involving the transfer of digital assets and note in paragraph 1.8 that there are a number of parallels between this lack of clarity and the several legal uncertainties in relation to the intermediated securities market (the development of which has not been held back by such uncertainties).

Call for Evidence 3.

3.3 Are there practical circumstances in which it would be useful to distinguish, or to separate, the ownership and the possession of a digital asset, particularly in relation to transfers? If so:

(1) For cryptoassets, could these circumstances arise both on-chain (reflected by modifying a ledger or blockchain) or only off-chain (where value moves or a transaction occurs without modification to the relevant ledger or blockchain)?

(2) Do other technical or practical solutions (for example smart contracts, multisignature, escrow arrangements, Layer 2 applications or “mixing”) or market practice make these distinctions less important?

Please explain your answer and provide examples.
As noted above, we believe that it would be useful to distinguish between, or to separate, the ownership of a Virtual Asset and another form of proprietary interest in a Virtual Asset. This would allow a person to have a legal property interest that falls short of legal ownership, so that such an asset could be “held” by one person for the benefit of another other than by way of trust. It could also permit the creating of security-like arrangements other than charges and mortgages. Such an arrangement would likely arise off-chain and would likely be defeated by the overreaching effect of an on-chain transfer (see paragraph 1.2.6), but could bear many similarities to a bailment arrangement. Such an arrangement could also be created following an on-chain transfer, but would ultimately arise off-chain.

The possibility of such assets being locked in a smart contract or subject to other forms of escrow arrangement also places strain on a conventional possessory concept, but does not render it less desirable for there to be some form of recognition of another form of proprietary interest in a Virtual Asset.

Call for Evidence 4.

3.4 How do you typically characterise an on-chain transfer of a cryptoasset? Please explain your answer and provide examples.

Paragraph 2.42

We characterise an on-chain transfer of a Native Crypto as a destruction of an asset and its replacement by a new asset. Please refer to paragraph 1.2.6 for our reasoning and paragraph 1.2.1 for an expression of our concern that adopting a technologically neutral approach should not justify ignoring the way that the technology is utilised or implemented. We acknowledge that certain Virtual Assets that are uniquely identifiable by a unique identifier (e.g. an ERC721 token) may not be characterised in quite the same way and that transfers of them may operate differently to transfers of other Native Cryptos.

Call for Evidence 5.

3.5 In what circumstances (if any) are digital assets analogous to “goods”, as currently defined under the Sale of Goods Act 1979? In what circumstances are digital assets not analogous to “goods”? What would be the practical consequences of characterising digital assets as “goods” for these purposes? Please explain your answer and provide examples. We would also be interested in respondents’ views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

Paragraph 2.49

We do not believe that Virtual Assets (i) are analogous to, or (ii) should be characterised as, “goods” under the Sale of Goods Act 1979. See footnote 48. A number of provisions of the Sale of Goods Act 1979 would not be appropriate for Virtual Assets. Likewise, we do not believe that such assets should fall within the scope of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

Call for Evidence 6.

3.6 What practical or legal difficulties or problems (if any) do you encounter with the application of the “nemo dat” principle in respect of a transfer of a digital asset?

(1) Do you encounter or anticipate the same practical or legal difficulties or problems in respect of on-chain transfers and off-chain transfers?

(2) Do different digital assets or digital assets that perform different functions give rise to different practical or legal difficulties or problems?
We consider the “nemo dat” principle in paragraphs 1.2.6, 1.3.4, 1.5(iii) and 1.7(iii)(b) above. In response to the specific questions:

1. We consider that it is important that on-chain transfers be recognised as (quasi-)negotiable for the reasons given (i.e. that they result in the destruction of a Native Crypto upon its being spent). We do not perceive there to be a similar concern for off-chain transfers.

2. Certain Virtual Assets that are uniquely identifiable by a unique identifier (e.g. an ERC721 token) may not present the same “in principle” concerns in relation to the “nemo dat” principle and, indeed, transfers of them may operate differently to transfers of other Native Cryptos.

3. We do not think that the ability to possess a digital asset (in relation to which we have expressed our concerns) or for that matter, some other form of proprietary interest in a Virtual Asset, should affect the application of the “nemo dat” principle in the way we believe that it should apply to Virtual Assets.

4. Please see our reasoning above.

Please see our discussion in paragraphs 1.2.3 and 1.2.4 in relation to Native Cryptos and Stapled Cryptos. We believe that it is of utmost importance to recognise the difference between a Native Crypto and any right or interest that is “stapled” to it. In response to the specific questions:

1. This will depend upon the method of stapling and the particular legal arrangements that are used to achieve it. It may not be possible to staple a proprietary interest in a thing in possession to a Native Crypto to defeat the “nemo dat” principle, although it may be possible to achieve this, or a near equivalent to this, within a closed system through appropriate legal structuring.

2. Although the method of legal transfer of a Native Crypto is unclear, we do not believe that this should prevent legally effective stapling as described above.

3. We do not believe that the ability to possess a digital asset token would help to clarify whether or not a right or asset may be stapled to a Native Crypto.

4. We have suggested in paragraph 1.8(iv) that there may be merit in formally recognising additional methods of stapling rights or interests to Native Cryptos and disapplying certain formalities in the
context of transfers of digital assets. These provisions could equally be extended to digital assets that do not amount to Virtual Assets but that constitute mere records.

Call for Evidence 8.

<table>
<thead>
<tr>
<th>3.8</th>
<th>If a digital asset were possessable, are there practical circumstances in which bailment of digital assets could arise?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Do you think bailment of a digital asset would be a useful or practical concept?</td>
</tr>
<tr>
<td>(2)</td>
<td>Do other technical or practical solutions or market practice make bailment of digital assets less important?</td>
</tr>
</tbody>
</table>

Please explain your answer and provide examples.

Paragraph 2.64

If digital assets were possessable (which we do not recommend), there are many practical circumstances in which a bailment of digital assets could arise, for example through the creation of a custody arrangement based on a bailment relationship. Equally, if, as we suggest, the law is clarified to permit another form of ownership interest in Virtual Assets, then it would equally be possible for a relationship that is similar to bailment, a pledge or a lien to arise in connection with a Virtual Asset. In this respect, we believe that another form of ownership interest in Virtual Assets could prove practically helpful, particularly if the concept were to be based more on concepts applicable to Virtual Assets and the manner in which they may be immobilised in smart contracts and otherwise subject to different or shared forms on control. This would facilitate the legal recognition of such arrangements.

Call for Evidence 9.

<table>
<thead>
<tr>
<th>3.9</th>
<th>How is security over digital assets granted or taken in practice?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Do you consider mortgages and charges to be effective methods of taking security over digital assets?</td>
</tr>
<tr>
<td>(2)</td>
<td>If a digital asset were possessable, are there practical circumstances in which the creation of possessory security over a digital asset might be used?</td>
</tr>
<tr>
<td>(3)</td>
<td>Do other technical or practical solutions or market practice, including the creation of quasi-security, make the ability to take possessory security over a digital asset less important?</td>
</tr>
</tbody>
</table>

Please explain your answer and provide examples.

Paragraph 2.71

In practice, security over Virtual Assets is created through the use of a mortgage or charge. In addition, arrangements equivalent to a title transfer arrangement are also used. In response to the specific questions:

(1) A mortgage under which the mortgagee takes “title” to the Virtual Asset will be effective, but will expose the mortgagor to the practical risk of misappropriation by the mortgagee. A charge under which the chargor remains in effective control of the digital asset may be effective to create a charge but will expose the chargor to misapplication of the Virtual Asset by the chargor, so it is customary to immobilise the Virtual Asset with a custodian under a triparty arrangement. A title transfer arrangement exposes the transferee to the credit exposure of the transferee.

(2) Yes. Although see our response to question 8 above.

(3) No. See our response to question 8 above.

Call for Evidence 10.

<table>
<thead>
<tr>
<th>3.10</th>
<th>If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Do you think conversion would provide a useful or practical claim in this context?</td>
</tr>
</tbody>
</table>
Call for Evidence 10.

(2) Do other technical or practical solutions or market practice mean that the applicability of conversion to digital assets is less important to stakeholders and market participants?
Please explain your answer and provide examples.

Paragraph 2.76

Yes. If digital assets were possessable, there are practical circumstances in which conversion of a digital asset could arise. As noted in paragraph 1.6 above, however, we agree with the conclusion of the UKJT in the regard that “the remedies which the law will provide in any particular circumstances follow on from an analysis of the relevant legal rights, and can be developed as necessary over time in appropriate cases”. Thus, the absence of defined jurisprudence relating to remedies for such an asset class should not operate as a deterrent to its recognition.

Call for Evidence 11.

3.11 We welcome comments on the aspects of the Liechtenstein Blockchain Act and the Wyoming Blockchain Laws relevant to the questions in this call for evidence. What other jurisdictions, if any, should we consider and why?

Paragraph 2.79

We have no comment on the particular legislation, other than to note that the facilitation of practices to tokenise all manner of things, particularly interests in things in possession is vulnerable to all kinds of abuses and potential risks for the unwary investor, particularly in circumstances where there are insufficient controls to ensure that the thing that is tokenised is effectively immobilised in a secure, reliable and verifiable custody arrangement to ensure that the tokenisation accurately reflects an interest in the thing that is claimed to be tokenised. Care should be taken to ensure that such things are not facilitated without appropriate protections being in place.

Call for Evidence 12.

3.12 We welcome suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of our digital assets project. For each issue, we would be grateful for the following information:

(1) a summary of the problem or potential problem.
(2) an explanation of and evidence of the effect of the problem or potential problem in practice.
(3) suggested solutions to the problem or potential problem, and any evidence of the costs and benefits of the solution.

Paragraph 2.82

Please see our discussion above. We should note that our discussion does not address conflicts of laws considerations, which are particularly challenging for Virtual Assets (and, in particular, Native Cryptos). In this respect, we note that multilateral arrangements offer benefits whereby the parties may agree to be bound by a single legal system and to submit to the jurisdiction of the courts of that system.
We would welcome further discussion on any of these matters.

Yours sincerely,

Linklaters LLP
Response to call for evidence on digital assets

Question 1

We consider that certain cryptoassets should be subject to a concept of possession (or something analogous – see What sort of property is a cryptoasset? (2021) JIBFL 83 where we suggest ‘command’ as the term for the species of possession applicable to cryptoassets). Digital assets that fall into this category are those that do not merely represent or evidence ownership of a physical asset and that are subject to a cryptographically secure decentralised consensus mechanism such as a permissionless blockchain. Although we recognise that ‘digital assets’ is used as an intentionally broad term in order to avoid definitional debates, here and in the other answers we are generally addressing cryptoassets in this narrow category. In practice, the requirements for possessability set out in this call for evidence and the call for evidence on electronic trade documents would have the effect of restricting attention largely to this category (and we assume that is the intention). But definitional issues, including technology-dependent questions, might still arise at some later point.

Allowing these cryptoassets to be possessable would have the following implications:

- It would remove uncertainty around the status of cryptoassets as property
- It would allow a clear separation of ownership and possession, as is required for:
  
  o Custody arrangements and bailment: a large proportion of cryptoassets are held in on- and off-chain wallets and similar storage, the exact legal status of which is uncertain until the possessory nature of cryptoassets is established;
  
  o Creation of security: uncertainty about which categories of security apply to cryptoassets are a severe impediment to its development and use in a variety of transactions – determination of the applicable categories would be largely resolved if it were clear whether and how cryptoassets could be possessed;

  o Dispute resolution: questions as to the effect of fraud, breach of fiduciary duty, theft and similar concepts depend on the possessory nature of cryptoassets; this will also help determine applicable remedies; and

  o Conflicts of law: although this is outside the scope of the current consultation, determination of the possessory nature of cryptoassets is a key conceptual building block in determining the conflicts of law rules that will apply to cryptoassets.

Allowing cryptoassets to be possessable would also create new complexities which the law would have to resolve. For instance, possession of physical objects may include a mental element – consider, for instance, criminal liability associated with possession of an object that may be physically passed to someone before they have a chance to see what they are receiving. Similar ideas may be needed for cryptoassets. Proceeding again by example, consider a private key emailed to another person. Are they in possession of the cryptoassets when they receive the email? Or when they know what blockchain the private key relates to? Or when they have downloaded software to use the private key? This question arises in the context of making cryptocurrency legal tender, which has been mooted by some countries (and El Salvador has already done so). A consequence of being legal tender is that the currency must be accepted as payment for goods and services. A movable physical object such as a coin can always...
be offered as payment by physically presenting it to the payee. It is not yet clear exactly what corresponds to this for transfer of possession of a cryptoasset.

These complexities are not a reason to deny cryptoassets the ability to be possessed. They arise naturally from certain fact-situations and the concept of possession can be used to determine sensible legal results in each case, as is done with possession of physical objects.

Above all, applying possession (or an analogous concept) to cryptoassets is a matter of principle with great implications for the development of English common law. It allows common fact-situations to be dealt with in a pragmatic and principled way and for the law to develop in line with the technology and the situation in the real world.

**Question 2**

The comments below address cryptoassets that do not merely represent or evidence ownership of physical assets and that are subject to a cryptographically secure decentralised consensus mechanism (see the discussion in our answer to Question 1). Other cryptoassets or digital assets that are controlled by an individual entity or group by virtue of a contractual arrangement to which all affected are party may be analysed using traditional contractual concepts. In many cases, they will represent choses in action and modes of transfer may be analysed accordingly.

Turning specifically to this sub-category of cryptoassets, we consider that a transfer of a thing in possession provides a closer analogy than a transfer of a chose in action. Cryptoassets have unique attributes that separate them from choses in action and traditional physical choses in possession, but the mediation of the legal concept of possession or something analogous (we have suggested ‘command’ as the appropriate term) would allow treatment consistent with choses in possession.

The key distinction is not between assets that are tangible and assets that are intangible, but between assets that have a purely legal existence and assets that have an existence independent of any law. The concept of possession applied to a chose in possession is a means of accommodating the non-legal facts that apply to it: for instance, that it is somewhere in the world and somebody has it. A similar concept is needed for cryptoassets. To see this, note that no legal rule can on its own create or destroy a cryptoasset independent of the underlying facts; no court decision can say that it has ceased to exist. Contrast this with an online bank account – which may seem superficially similar to a cryptocurrency account. There is nothing to stop a court holding that a balance in a bank account is zero; that is, the debt owed by the bank should cease to exist. This works irrespective of any password or bank security. The debt owed by the bank is a chose in action and the court can extinguish it. If the bank fails to change its records, then its records are wrong. But if a cryptocurrency account records an account on its blockchain, then that cryptocurrency exists and no court decision can destroy it (although courts might decide, for instance, who legally owns it).

Transfer works similarly. A transfer of possession of a physical object can be accomplished by moving it from one person to another person – the numerous glosses placed on this by the law must allow for the fundamental reality that physical objects can move from place to place. Choses in action can move from place only to the extent that the law specifically allows it. Absent compliance with a legal rule, a chose in action cannot be transferred, irrespective of any facts in the real world.

Our views on transfer are further set out in *What sort of property is a cryptoasset?* (2021) JIBFL 83, as follows:

"...*a cryptoasset can be moved from one account to another account, irrespective of legal rights. Whether this is characterised in law as a deletion followed by the creation of a new asset or a transfer, legal rules need to cater for the physical reality that the change in account balances has taken place. That is similar to TIP [things in possession], where questions of legal possession, ownership and so on must in some way be reconciled with the physical location of the asset. Dwelling on whether a cryptoasset has moved or been deleted and recreated misses the point – the law must cater for the fact..."
that a cryptoasset is in a different place, however it got there and whether or not its identity is the same. In fact, rather than trying to use transference as a legal concept to characterise property, we should recognise that it is a factual concept. To illustrate: if it ever became possible to teleport a physical object, it would not be the role of the law to decide whether the object had moved or whether it had disappeared and been replaced by a new object. That would be a factual, perhaps a scientific, question. The role of the law would simply be to incorporate those facts into its legal rules. In the same way, deciding whether a cryptoasset has moved or been replaced is a factual question. It is the fact that a cryptoasset can move or be replaced, without legal intervention, that suggests it is better seen as a type of TIP [thing in possession] than a TIA [thing in action]."

An advantage of assimilating cryptoassets to choses in possession is that the existing law applying to security, insolvency, bailment and similar areas can be extended to cryptoassets. This could be a key advantage in the future development of cryptoassets in English law.

**Question 3**

The situations set out in Question 1, such as custody and security, are examples where separation of ownership and possession are relevant.

We consider that the novel analysis of cryptoassets applies only to on-chain transactions. Off-chain transactions can be dealt with using existing principles of contractual and trust law. This is similar to the separation in capital markets between relationships arising directly from holding the underlying securities and relationships between market participants mediated by securities accounts and other contractual documentation. The arrangements for clearing, settlement and deposit of the underlying security itself only concern a small subset of market participants – most interact not with the securities themselves but only contractual rights against other market participants. Equally, off-chain arrangements between cryptocurrency exchanges and their customers, for instance, can be analysed as standard contractual arrangements and, in some cases, customers may have only contractual rights against the exchange.

Technical and practical arrangements (multisig, mixing and those mentioned in the question) do not obviate this analysis – they make it more important in determining the effect of each of these arrangements. For instance, for a multisig arrangement involving a customer and an exchange, it will be necessary to determine whether both ownership and possession are held by the exchange, so that it is dealing with a pooled trust account, or whether it has only possession of the customer’s assets as a bailee or whether some other situation applies. Separation of ownership and possession is crucial to develop accurate and flexible analyses of these arrangements.

**Question 4**

As per the answer to Question 2, we would point out that the UKJT analysis is incomplete. Unlike the transfer of a chose in action, which is inherently a legal process and where, therefore, the legal analysis determines whether something has actually ‘moved’, the transfer of a cryptoasset is a physical process that actually occurs in the real world. Analysing this process in terms of low-level coding details is not necessarily helpful, especially as these will differ between technologies. There is no contradiction between the view that a single asset with continuous existence is moving and the creation and destruction of private keys, accounts, etc. that brings this about (see further the discussion in our answer to Question 2).

We note that if the view is taken that a cryptoasset is essentially immobile and is associated with a particular individual, who has the power only to destroy it, then it would not be necessary or appropriate to import concepts of possession to deal with its legal aspects.

**Question 5**

[no answer]

**Question 6**
The main practical difficulty is the traceability and non-fungibility of cryptoassets, which is a novel feature distinct from other real world assets. Although banknotes, for instance, have individual serial numbers, they are generally treated as fungible because those numbers are not recorded in respect of individual transactions. Cryptoassets are generally traceable through every transaction.

In many cases, application of the principle will enhance the rule of law – preventing theft and fraud from leading to transfers of ownership and hindering money laundering. But its practical effects are still to be fully worked out. These effects may apply both to on- and off-chain transfers.

Allowing separation of ownership and possession will naturally tend to widen the scope of the nemo dat principle for cryptoassets. One way to alleviate resulting difficulties would be to widen the common law and statutory exceptions to specific situations that may otherwise create hardship.

**Question 7**

We regard digital asset tokens as evidencing or recording the ownership of a bundle of legal rights. Accordingly, they are not subject to the same considerations as cryptoassets and we do not see a clear need for attributing possessory or similar qualities to them.

The main legal issue that we have encountered with tokens of this type is a mismatch between legal rights over the underlying physical asset and the rights as recorded in the token. This mismatch cannot be avoided by any technological means (although it can be restricted by statute, as for electronic trade documents). For instance, a token may be properly transferred from A to B, with all protocols fully observed and both A and B fully participating in the transfer. But if A was subject to undue influence in making the transfer and it is subsequently rescinded by the Courts, then A will be the legal owner of the underlying asset, notwithstanding that B owns the token.

Resolving mismatches with reality will not be eased by attributing possessory qualities to tokens recording ownership of physical assets.

**Question 8**

Bailment may become important for cryptoassets. The arrangements for custody and escrow of digital assets are still being developed and bailment could provide a practical solution in many cases.

**Question 9**

In practice, due to the legal uncertainties around cryptoassets, transfer of the cryptoasset itself is used to effect security (this might be characterised as an absolute transfer of the cryptoasset subject to contractual obligations to transfer it back in certain circumstances or it might be characterised as a legal mortgage). Attribution of possession or an analogous concept to cryptoassets will enable a more nuanced approach to security, although grant of effective security will always be limited by the underlying nature of cryptoassets. Absolute transfer and forms of quasi-security do not solve all the needs of the markets, as shown by the fact that existing forms of security are widely used. Examples of areas where security may have an advantage over current workarounds are: treatment of assets on insolvency; cost of creation and enforcement; flexibility in enforcement; removing need for intermediaries.

**Question 10**

[no answer]

**Question 11**

[no answer]

**Question 12**

[no answer]
Response to Consultation on Electronic Trade Documents

The following responses are from our Trade Finance Practice. This practice is probably the largest specialist trade finance practice of any firm worldwide. Our comments of greatest significance can be found in the ‘International Issues’ section below.

Comment – paragraph 1.9

The assertion at the end of the paragraph is not true. The manual checking of compliance is typically of less than 10 documents, typically three, and these are typically very short – bills of lading are a couple of pages and invoices are a page, likewise quality certificates.

Question 1

Establishment of a legal framework is preferable to a merely contractual framework. However both suffer from limitations discussed further in our answers below. Electronic bills of lading have been available for some time, but take up has not been significant. LME warrants are not ‘documents of title’ in the legal sense, but achieve the same thing. Our analysis in both is that the underlying contractual matrix replicates adequately the legal position. At one seminar we asked a bank with a significant shipping practice why they weren’t used and the response was ‘because the Chinese don’t use them’. Contrast the LME where the system operates well. See comments on international questions, below.

Question 2

Our view is that removing any doubt that a document may be validly issued in electronic form is a principle of general application, however the key ones from our perspective are those that obtain a certain status by operation of law. Hence BLs, BOEs (and promissory notes). While beyond the scope of this consultation, we recommend review of the law as English law is too restrictive re documents of title – contrast the UCC. There is no reason why a warehouse receipt exhibiting the correct matters should not be a document of title, for example an LME warrant.

Note that the documents in (6) and (7) represent insurances – the policy should continue to exist if the document is lost or destroyed. As such, they operate differently to eg bills of exchange. That said, we have no objection to the law giving equal status to the electronic version.

Question 3

We are indifferent.

Question 4

To the extent that Banker’s drafts are bills of exchange, they should be included. Otherwise we are indifferent.

Question 5

We strongly agree, assuming the Secretary of State is advised by practitioners active in the trade finance world.

Question 7

We are not sure that this certainly is the case with all documents – eg warehouse receipts and insurance certificates. On balance, we agree.

Question 8

We are indifferent.
The ability for documents to be held to order, or indorsed in blank, is important in the trade finance world. Some banks do not wish to be names on bills of lading, fearful of potential liability (eg for environmental matters) but are happy to take possession of the documents (which does not transfer title to the goods) with the ability for the documents to be transferred to a third party on enforcement.

Comment – paragraph 4.44

The phrase ‘it may be left to the courts to determine’ is one that tends to mean that the activity will not be carried out – banks require certainty, and if there is doubt as to the effectiveness of a law in respect of a certain type of document, they will simply not accept them.

Question 14

We had considered whether the practice of trust receipts was negatively impacted by this. Does that concept of ‘control’ mean that the trust constituted by the trust receipt is no longer effective. We concluded that this was not an issue where the difference between physical control and electronic control should make any difference, though if there was any doubt in this, it would impact take up.

Question 23

We query how you will do this if you do not define what the paper equivalent is. Other than bills of exchange and promissory notes, is there a ‘requirement’ as to the contents of these instruments?

Question 27

We agree.

Comment – paragraphs 6.65

The description is imprecise. A CIF contract is a contract of sale and it is concluded by the delivery of goods. Delivery of documents does not discharge that obligation, though it is likely that documents trigger the payment process. The case cited makes this clear – see the use of ‘and’ in the extract. CIF has no meaning at law, it is a commonly used Incoterm, same as FOB.

Comment – paragraph 6.71

It is important to understand that documents in the possession of the bank are held to the order of the presenter until they are accepted. That is, the bank must pay or return the documents if they are not complying. We believe that this will be maintained under the proposals, but it is critical.

Comment – paragraph 6.96

The bill of lading does not confer title. The contract of sale does that. The bill of lading gives the holder the ability to pass title to a third party. This may be a technical distinction, but is an important one.

Question 32

Security is typically taken by way of possessory pledge. Sometimes there may be a floating charge (if the possession for a pledge is not achieved) though this has drawbacks. Occasionally security is taken as a fixed charge, sometimes in the form of a transfer of title by way of security.

International issues

We believe that further work is needed on the conflict of laws analysis.

The law and practice of trade has developed over many years and, because of its international nature, legal systems have tended to converge. Possessory security over bills of lading is recognised pretty
much universally, and bills of exchange are likewise subject to common rules, whether under common law or convention.

Running through this is practicality – legal systems have recognised the manner in which trade occurs. In the context of goods this is reflected by the maxim ‘possession is nine tenths of the law’: essentially laws around the world recognise control of the physical thing as conferring rights to deal with it. It’s a realistic approach – a warehouser will not allow goods to leave unless its bill is paid, and there is little point in the law reaching any other conclusion and hoping to work in practice.

The only entity that can sanction lawful force to seize goods is the local court. As such, the location of the documents representing those goods is of less importance. What is critical is the ability to claim, seize, injunct or take other proceedings in respect of the goods. The consultation focuses on the law of the place of the instrument. Will a jurisdiction that does not recognise electronic bills of lading give effect to such an instrument because it was issued in England and meets the requirement of English law? We doubt it. If not, banks will potentially not fund based on it.

Clause 6.139 of the consultation states that ‘an English court will consider the formal validity of a bill of exchange to be determined by the law of the country in which that bill is issued’. However, in the absence of the new law, would English law recognise an electronic bill of exchange meeting the parameters set out in the new law had it been issued elsewhere, in a place that had passed such a law? We doubt it; we consider it likely that the English court would not treat that as a bill of exchange at all as it would not meet the definition in the Bills of Exchange Act 1882.

This point is of most importance in the context of goods. If a bill of lading issued electronically under the new law, unless the law of the place of the goods recognises it as a document of title, the bank’s pledge may not be effective. As such, recognition is critical. Currently, most if not all systems of law recognise a physical bill of lading as a document of title that supports a pledge.

Paragraph 6.134 discusses differentiation in a number of jurisdictions, such as the USA, Germany, South Korea, Japan and China. These are major exporting and importing countries and we suspect for every bill of lading issued in England, thousands are issued in China.

Consideration therefore needs to be given to whether instruments issued under the English law meet the requirements of other laws – the more the better. The converse is also true - practically, exporters will follow their law in issuing electronic documents: if these also meet the requirements of English law, that is a significant advantage, particularly for the dispute resolution of trading matters before the English courts.

Question 6.130 states that the proposals are likely to be more permissive than the MLETR: we think the more important question is whether documents issued taking advantage of the provisions of the new law will meet the requirements of the MLETR (or other regime). If they are issued under a more permissive regime, then might they not meet the requirements of a more restrictive regime? If not, and if that regime is critical for the reasons set out above eg the location of the goods, then they will be of little use.
Response to Law Commission, “Digital Assets - Call for Evidence”

Authors: the Cloud Legal Project at the Centre for Commercial Law Studies, Queen Mary University of London

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1. Introduction

   In this document, we respond to the Call for Evidence regarding digital assets of the Law Commission for England and Wales (‘Law Commission’). Our response is based on research undertaken with generous financial support from Microsoft Corporation as part of the Cloud Legal Project at Queen Mary University of London and as part of the Microsoft Cloud Computing Research Centre, a collaboration between the Cloud Legal Project and the Cambridge Computer Lab at the University of Cambridge.
2. Below, we first provide our general observations on the Law Commission’s proposed approach to possession of digital assets. We then respond to four of the specific questions set out in the Call for Evidence, namely: Questions 1, 2, 10, and 12. We make five specific recommendations. We encourage the Law Commission to:

(1) clarify how its proposals will apply to different types of digital assets. This clarification is necessary in order to fully assess the implications of the Law Commission’s proposals. That will, in turn, assist in the determination of whether the proposed reforms would make the law fairer, more modern, simpler, and more cost-effective;

(2) consider whether possession and the related proprietary remedies are a good fit for digital assets;

(3) consider how to account for the different ways in which digital assets are transferred;

(4) consider the implications of its proposals, in light of cases from other common law jurisdiction in which courts applied the tort of conversion to digital assets; and,

(5) include succession law within the scope of its law reform project, since survey evidence indicates that digital assets present a growing problem for trust and estate practitioners.

2. Possession of digital assets

3. The Law Commission does not define ‘digital assets’ in its call for evidence, other than to say that they are “represented digitally or electronically” and include crypto-assets, as an “important sub-set”. This is intentional, as part of a technology-neutral approach.¹

4. Nonetheless, in the interests of clarity, we provide our working definition of a ‘digital asset’. For the purposes of this response, we define a digital asset broadly as an object:

- that is intangible;
- that exists in a persistent and stable form in ‘cyberspace’, that is: at the logical - or software - layer of a computer system;² and,

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¹ Call for Evidence, paras 120-121.
² We distinguish between three layers of a computer system: (i) the physical layer, made up of the physical IT infrastructure, such as mobile devices, personal computers, and cloud servers; (ii) the logical layer, made up of the software programs that together form the virtual environment within which a digital asset exists as a virtual object; and (iii) the content layer, which refers to the purpose of the digital asset as something that an individual user can consume or enjoy. For more information on our ‘layered’ analysis of digital assets, see J.D. Michels and C. Millard,
that can be controlled by an individual at the logical layer so as to exclude others, including through security measures like encryption or password protection.

5. We focus our response on five types of digital assets which have led to property-related legal proceedings in practice, as listed below. The list is based on the court cases we have identified during our research that involved a property-law-related question applied to a digital asset. The cases are listed in Annex 1.

Table 1: List of digital asset types

<table>
<thead>
<tr>
<th>#</th>
<th>Asset type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Crypto-assets, such as Bitcoin</td>
</tr>
<tr>
<td>2</td>
<td>Carbon credits or European Allowances to emit CO2 (‘EUAs’);</td>
</tr>
<tr>
<td>3</td>
<td>Domain names</td>
</tr>
<tr>
<td>4</td>
<td>Digital files (e.g. documents, databases, still images, video or sound recordings)</td>
</tr>
<tr>
<td>5</td>
<td>Emails</td>
</tr>
</tbody>
</table>

6. Although case law on the property status of crypto-assets is emerging, it remains uncertain whether English law recognises property rights in relation to other types of digital assets – and how such assets should be categorised (i.e. as things in possession, as things in action, or – possibly – as another, third category of property). The recognition of property rights – and their characterization - has practical implications, since it determines the applicability of proprietary remedies, such as the tort of conversion. We therefore support the Law Commission’s efforts to clarify how English property law applies to digital assets. We further see some merit in the proposed approach of extending the concept of possession to digital assets, based on technology-neutral principles that can be applied to digital assets broadly. For ease of reference, we refer to this extended concept of possession as ‘digital possession’. As set out in Section 2.1, we believe this approach to be conceptually sound, as it maintains a distinction between ‘things’ and ‘rights’.

7. That said, in our view, any reform of English property law should, at least, provide legal certainty as to the property status of the above-mentioned five types of digital assets. In particular, it should be clear whether under

the proposed approach, each type of digital asset will attract a property right.

8. However, the proposed criteria for possession create significant uncertainty for some digital asset types due to questions as to whether the proposed criteria for possession are met. This might leave holders of such assets in the current state of legal limbo, with ongoing uncertainty as to whether such assets would attract a property right at all. More specifically, what does the Law Commission’s proposed approach mean for those types of digital assets that do not meet the proposed criteria for possession? Is the proposed approach of ‘digital possession’ intended to be exhaustive of the kinds of digital assets that can attract a property right? Or is the proposal for ‘digital possession’ merely one way in which a digital asset could attract a property right that could exist alongside – for instance - property rights in a third category of other intangible property?

- Recommendation 1: We encourage the Law Commission to: (i) state clearly how its proposed criteria should be interpreted and applied to utility tokens, carbon credits, domain names, digital files, and emails – as discussed below; and (ii) to address the property status of any types of digital assets that do not meet the criteria for digital possession, including whether they could constitute a third kind of other intangible property.

2.1 Digital assets are ‘things’ not ‘rights’

9. Personal property is divided into two broad categories: (1) things in possession and (2) things in action. A “thing in possession” is any tangible object that can be physically possessed. Things in action are rights that can be asserted only by taking legal action. There is still uncertainty as to whether a third category of property - beyond things in possession and things in action - exists and, if it does, how that category should be defined. How then should digital assets be characterised under English property law? They are neither tangible things, nor do they necessarily represent a legal right to anything or against anyone. For example, a Bitcoin is not associated with a particular legal right, or related duties held by other parties.3 We see three options for recognising property rights in digital assets: (1) expanding the notion of possession to include ‘digital possession’, per the Law Commission’s proposal; (2) expanding the notion of things in action; or (3) recognizing digital assets as a third category of

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10. Some argue that ‘things in action’ is the appropriate category for all types of intangible property. On this view, the law could recognise a right to a digital asset, which right would then qualify as a thing in action. For example, Low and Teo suggest that a Bitcoin could be conceived as the legal right of the holder to have the Bitcoin “locked to their chosen [...] address on the blockchain”, so that they can exercise exclusive control. This right could qualify as a thing in action. This analysis would suggest that (rights to) digital assets are best classified as things in action.

11. In contrast, we argue that the law should treat digital assets as ‘virtual things’, not as rights. It would be clearer for property law to distinguish between (1) property rights that stem from legally enforceable rights such as debts, shares, contractual obligations, and intellectual property; and (2) property rights in virtual objects that exist at the logical layer of a computer system. Though both are intangible, the former are creatures of the legal system, while the latter are creatures of technology. In our view, maintaining the distinction between ‘things’ and ‘rights’ is key to the clarity of property law. As Ben MacFarlane has observed:

"You do not need to be a lawyer to see the clear difference between (a) a piece of land, or a bike; and (b) A’s right that Z bank pay him the sum credited to his bank account. In fact, you need to be a lawyer to think that (a) and (b) could ever be seen as the same."

12. We would argue for a similar distinction between a bank account and a Bitcoin: the former is a legal right against a bank; while the latter is a virtual thing created by technology. This analysis is consistent with the proposal for recognizing digital assets as ‘things in possession’, since this treats digital assets as ‘things’, rather than as ‘rights’. It would also support recognizing digital assets as a third category of property - which, on balance, might be our preferred approach, for the reasons set out below in Section 3.

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4 See e.g. L. Chambers and C. Buckingham, “Intangible Property and Proprietary Restitution in the High Court”, [2013] LMCLQ 296, 299, 304.
2.2 The proposed criteria for possession leave significant areas of uncertainty

13. The three proposed criteria for possession of digital assets are that the asset (i) exist independently of both persons and the legal system; (ii) is capable of exclusive control (i.e. does not support concurrent assertions of occupation or use) – also referred to as ‘rivalrous’; and (iii) is divestible (i.e. the thing must be fully divested on transfer).

14. In our view, crypto-currency units like Bitcoin clearly meet these criteria. As noted above, Bitcoin is not associated with a particular legal right, meaning it (i) exists independently of the legal system. Further, the underlying blockchain technology means that a Bitcoin is both (ii) rivalrous and (iii) divestible. We can foresee two possible counter-arguments. First, there could be a metaphysical discussion about whether any digital asset truly ‘exists’, or whether it is merely a technological fiction, whose condition depends entirely on the underlying hardware. As noted above, in our view, digital assets exist at the logical or software layer of computer systems, where a user interface allows people to perceive and interact with such assets in a stable form. This interaction includes exercising control over the asset so as to exclude others from it. To pretend that digital assets do not ‘exist’ in a relevant sense fails to acknowledge their importance to 21st century commercial practices, as well as to consumers’ daily lives.

15. Second, it could be argued that a Bitcoin is a registry entry, and a registry entry is not itself a thing – but only a record of rights. On this view, Bitcoins themselves are purely ideational or abstract constructs. We could agree with this argument if the registry of Bitcoin ownership were recorded on paper, such as a tangible ledger account book. In that case, the only thing that exists is the book, which contains registry entries that record the abstract Bitcoin. However, in our view, this changes when the registry exists in digital form, in a software environment that gives each

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10 See e.g. K. Low & E. Teo “Bitcoins and other cryptocurrencies as property?” (2017) Law, Innovation and Technology, 9:2, 525 arguing: “Registration systems typically serve as records of rights. They do not normally represent the rights themselves. Thus, in the context of carbon credits for which an electronic register exists, it is simply wrong to claim that a carbon credit ‘exists only in electronic form.’ It is the inconclusive record that exists in electronic form. Carbon credits are intangible and have no form whatsoever.”
Bitcoin-holder exclusive control over the entries that reflect their holdings. Private keys give holders the exclusive ability to transfer their Bitcoins, by submitting changes to the registry. As a result, unlike entries in a paper registry, Bitcoins exist as virtual things that can be subject to exclusive control at the logical layer of the Bitcoin system.

2.2.1 The requirement for “an existence independent of the legal system”

16. It is unclear how the requirement that a digital asset exist ‘independently of the legal system’ will apply to digital assets that embody or represent a legal right.\textsuperscript{11} Three examples are carbon credits; certain blockchain tokens such as utility or security tokens; and domain names.

17. First, consider carbon credits, also referred to as EUAs. Under the EU Emissions Trading Scheme (‘ETS’) legislation, every EU company that emits carbon dioxide must participate in the ETS. Each company is credited with EUAs at the start of each year, which is recorded on the electronic registry, maintained by the national registrar. The registrar issues the representatives of companies and traders a username and password required to access the system and transfer the EUAs. The registrar implements trades by changing database entries representing the credits associated with the relevant accounts. In other words, at the logical layer, EUAs are virtual things (i.e. password-protected registry entries) subject to the exclusive control of companies and traders through password-protected accounts. But at the content layer, the registry entries are associated with a legal right to emit an amount of CO2 under the ETS legislation. In sum, the carbon credits, the associated rights, and the registry system were created by legislation. So, do carbon credits exist ‘independently of the legal system’?

18. Second, a similar question can be asked in relation to blockchain tokens that embody or represent a contractual right against the issuer. For example, in some Initial Coin Offerings (ICOs), the tokens represent a contractual right against the issuing company, for instance to receive future products or services (also referred to as a ‘utility’ token). At the logical layer, the ICO token is a virtual thing (such as an ERC-20 token on the Ethereum blockchain), that represents a legal right. Do such tokens exist ‘independently of the legal system”? These ICO tokens are often traded in exactly the same way as cryptocurrencies, and their valuation in these trades depends, like Bitcoin, on market sentiment rather than the value of the contractual right against the issuing company. Conceptually, both types of crypto-assets meet the Law Commission’s criteria (when

\textsuperscript{11} For an explanation of the ‘layers’ of a computer system, see footnote 2, above.
being traded), but ICO tokens might be excluded because they represent a contractual right.

19. Third, a similar issue can be asked in relation to domain names. Domain names are recorded on registries, which are maintained by private companies who act as registrars (such as GoDaddy). Registrars are accredited by the regulatory authority that oversees a particular top-level domain (‘TLD’). For example, Nominet UK is the authority for the ‘.uk’ TLD. When a person, typically a company, pays a registrar to register a domain name, the registrant enters into a contract directly with the relevant regulatory authority. Under the contract, the registrant has the right to transfer the domain name by submitting a request to the relevant authority. To do so, they must use their user identification code and password. The authority then amends the registry. Thus, a domain name is a virtual thing (in this case a password-protected registry entry) with associated legal rights under contract. So, do domain names exist ‘independently of the legal system’?

20. In sum, it is unclear how the Law Commission’s proposed approach will apply to digital assets that embody or represent a legal right. If such assets do not exist ‘independently of the legal system’, then they cannot be subject to ‘digital possession’. As a result, they would not qualify for a property right as things-in-possession. This might be intentional, since digital assets that embody or represent a legal right could perhaps qualify as things in action (or at least, the legal rights that the assets represent could). If that is the Law Commission’s intention, it would be worth clarifying that, and considering the legal implications. As noted above, we caution against categorizing digital assets as things in action, since that goes against the distinction between ‘things’ and ‘rights’. Digital assets can embody or represent legal rights, but they are not the rights themselves – instead, they function more like proof of the right (akin to digital ‘documentary intangibles’). Furthermore, categorizing some digital assets as things in possession, and others as things in action might also lead to some strange distinctions in practice. This is because digital assets which are things in action could not be subject to bailment or the tort of conversion. For instance, imagine a customer stores Bitcoins and utility tokens in a Coinbase crypto-currency wallet. Coinbase might then be a bailor of Bitcoins as a digital thing in possession, but not of the utility tokens – and be subject to the tort of conversion if it interfered with

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12 For the Nominet contract that applies to individuals who register ‘.uk’ domains, see https://media.nominet.uk/wp-content/uploads/2020/04/Terms-and-Conditions-of-Domain-Name-Registration-24-04-2020-v1.pdf.
13 See e.g. https://www.nominet.uk/transferring-your-domain-name/.
customer’s Bitcoins, but not if it interfered with customers’ utility tokens.\textsuperscript{14}

\textbf{2.2.2 The requirements of rivalry and divestibility}

21. It is unclear how the requirement that a digital asset be rivalrous and fully divested upon transfer will apply to digital assets that contain information at the content layer of a computer system, such as digital files and emails. Information itself is non-rivalrous. Any number of people can use it at the same time, without impeding each other’s use. But what about a digital file that contains information, like a Word document? Such a digital file can be copied any number of times to different physical carriers, with each copy being of the same quality as the original. So is the digital file ‘capable of exclusive control’ – or does it ‘support concurrent assertions of occupation or use’?

22. On the one hand, technically, each ‘copy’ of a file is itself a distinct digital file (with its own storage location), and so a separate virtual object, which can typically only be enjoyed by one person at a time. This suggests each ‘copy’ of a file could be ‘capable of exclusive control’. On the other hand, any number of people can easily access identical (copies of) digital files and benefit from the information they contain, without diminishing another person’s use. For example, consider Edwards-Stuart J’s reasoning in the \textit{Fairstar} case.\textsuperscript{15} The Judge determined that it would be ‘quite impractical and unrealistic’ for a property right to exist in emails, since an email could be forwarded to any number of recipients. In that case, who would own the email: the sender or the recipients?\textsuperscript{16} In our view, each copy of an email should be considered a separate digital asset. This would mean that each recipient owns the copy of the email received in their inbox (as with a paper letter), while the sender owns the copy of the email stored in their sent folder. Each copy of the email is arguably rivalrous, since it is subject to exclusive technical control through the password-protected email account. That said, the information contained within the email is non-rivalrous, and the email could be copied any number of times – meaning it is uncertain whether it would meet the Law Commission’s criteria for digital possession. Some argue that the absence of rivalry makes digital files a poor fit for property rights. As Cutts puts it: “digital

\begin{itemize}
\item \textsuperscript{14} Although an action for proprietary restitution might be available in respect of things in action, see Armstrong DLW GmbH \textit{v} Winnington Networks Ltd, [2012] EWHC 10 (Ch), [2013] Ch 156.
\item \textsuperscript{15} \textit{Fairstar Heavy Transport \textit{v} Adkins \textit{&} Anor}, [2012] EWHC 2952 (TCC).
\item \textsuperscript{16} Ibid [61-68]: “For example, suppose that a supplier of components loses his database of e-mails when his server unexpectedly crashes. If he had a proprietary right in the content of all e-mails sent to and received by him from each of his customers, would he have the right to demand access to the copies of those e-mails on those customers' servers in order to enable him to reconstitute his database?”.
\end{itemize}
information can be shared and used at will, without that proliferation affecting each user’s enjoyment. Prima facie, then, the law of property has no place in the digital sphere”. In this respect, digital files differ from other types digital assets discussed above, since crypto-currencies, domain names, and carbon credits all exist as unique registry entries that cannot be duplicated.

23. Further, it is unclear how the requirement that a digital asset be fully divested upon transfer will apply to digital files. Unlike mere information, which cannot be removed from a person’s mind, a digital file can be removed from a person’s carrier device, by issuing a delete command through the device’s operating system (‘OS’), after transfer. However, there are two important technical caveats. First, deleting the digital file is a separate step which the transferor must undertake after the transfer. Delivery of a tangible object directly separates the transferor from the object, since only one person can have exclusive physical control at any given time. In contrast, digital files are separable by choice of the transferor: the transferor can choose to delete the file after transfer, or to keep it. Second, when a person issues a command to delete a file through their OS, the associated data are typically not removed directly from the carrier. Instead, the ‘pointers’ which allow the OS to locate the stored fragments comprising the file are deleted. The data are then overwitten, if at all, over time by fresh data. Admittedly, most users likely lack the skill to retrieve a file after it has been deleted at the logical layer. That said, an experienced data recovery expert should be able to recover a deleted file – and guides and software tools are available online. Ultimately, the file will be completely irretrievable once the data have been overwritten.

24. Given the above, it is unclear how the Law Commission’s proposed approach will apply to digital files and emails. If such assets are not considered rivalrous and divestible, then they cannot be subject to ‘digital possession’. As a result, they would not qualify for a property right as things-in-possession. Yet unlike digital assets that represent or embody a legal right, digital files would not qualify as a thing in action either – although they could possibly attract a property under a third category of

property. As a result, their property status remains unclear. We would encourage the Law Commission to clarify this point – and to consider the legal implications. For example, if digital files do not qualify as property, a cloud customer could not rely on a proprietary remedy to seek the return of customer data stored on the provider’s servers, if the provider refused the customer access. Further, if digital files such as photographs and emails do not qualify as property, then they would not form part of the estate of a deceased person on death, as detailed below in our response to Question 12.

3. Responses to Questions from the Call for Evidence

3.1 Legal and practical implications of digital possession

Question 1. What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales?

3.1.1 The concept of possession and facilitating trade

25. We recognise that digital possession may bring advantages in terms of facilitating trade. In the case of documents of title, such as bills of lading, a substantial range of commercial transactions has developed which rely on the concept of possession. The most obvious is the pledge of a bill of lading as security for an advance of funds. If a digitised version of such a document were also capable of possession these commercial transactions could be expected to continue without any need for further legal change. It may therefore be helpful to introduce digital possession as a simple way of preventing the need to reinvent those transactions.

26. That said, in those cases (such as documents of title) where important commercial transactions are based on the concept of possession, the paper documents are merely a proxy for the underlying physical asset. Dealings based on possession of the paper documents were devised because the underlying asset was still in transit, and thus in the possession of a third party. For many types of digital asset there is no underlying physical asset which is in the possession of a third party. As a result, for many digital assets, the concept of possession may not be necessary to facilitate trade, since the same could be achieved under contract. In those cases, a simple transfer of title of the digital asset (assuming the asset attracted a property right) could be combined with a contractual agreement to re-

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transfer title once the transferor’s obligation to the transferee (such as repayment of a loan) was discharged. Alternatively, a simple transfer of practical control over the digital asset could be combined with a contractual agreement to re-transfer control, once the transferor’s obligation was discharged. That should achieve the same commercial effects without creating new legal uncertainties around remedies based on possession, as discussed below in Section 3.1.2.

27. In sum, it may be possible to functionally replicate commercial transactions based on possession, by a simple transfer of ownership of, or practical control over, the digital asset coupled with an appropriate contract. Indeed, the most efficient way of producing functional equivalence when a transaction is digitised is usually to reconceptualise the transaction. As an example, European banks created the bank transfer as a functional equivalent to the cheque – this was easy to achieve using digital technologies and could scale up to the massive bank transfer systems now in operation. By contrast, US banks tried to replicate the cheque digitally, at one point even creating digital facsimile images of cheques and exchanging and clearing them as for physical cheques. The inefficiency of that approach is obvious.

3.1.2 The concept of possession and proprietary remedies

28. Extending the concept of possession to digital assets would lead to the applicability of proprietary remedies based on possession, including the torts of trespass to goods and of conversion. Recognising digital possession therefore creates the possibility that a third party who prevents the disposal of a digital asset might be guilty of trespass or conversion. For example, imagine person A owns a laptop, which person B uses to trade in Bitcoin. B stores their digital wallet (including private keys) on the laptop. A and B then have a temporary falling out, during which time A refuses to let B use the laptop. This prevents B from trading the Bitcoin, which subsequently drops in value. Would B have a claim against A for the resulting loss under trespass? Alternatively, what if A accidentally deleted the digital wallet? Would B have a claim of conversion against A for the full value of the Bitcoin?

29. There is a more general concern that the strict liability associated with the tort of conversion is not appropriate for digital assets. Cutts warns that “it is generally much easier to destroy or otherwise to interfere with digital assets accidentally than it is […] for physical assets”. According to Lord Hoffmann, conversion’s strict liability reflected a rule that persons

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deal with tangible property “at their peril”.\textsuperscript{23} In other words, people (should) know not to interfere with other people’s physical objects. It is not clear that similar norms (should) apply to digital assets. It may be more appropriate if the remedies which applied to digital assets made an exception for cases of accidental or good faith interference.\textsuperscript{24} This analysis cautions against extending possession and the associated proprietary remedies directly to digital assets. Instead, it may be better to recognise digital assets as a third category of property, subject to distinct \textit{sui generis} remedies.

- **Recommendation 2:** We encourage the Law Commission to consider: (i) the need for a concept of ‘digital possession’ to facilitate trade, in light of possible alternative solutions under contract; and (ii) whether proprietary remedies based on possession are appropriate for digital assets, including in particular the strict liability associated with the tort of conversion.

### 3.2 The transfer of digital assets

| Question 2. Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? |

30. In our view, the transfer of a digital asset differs depending on the type of asset. Some assets are recorded though entries on a registry, which is maintained by a third-party registrar. This is the case for carbon credits and domain names. Transfer of such digital assets typically requires the transferor to authenticate themselves (e.g. by providing a username and password) and then submit an instruction to the registrar to carry out the transfer. The registrar gives effect to the transfer, by adjusting the entries on the registry accordingly. In contrast, transfer of a physical asset is normally complete once possession is handed over (with the appropriate intention to transfer ownership). In this respect, transfers of this type of digital asset differ from the transfer of a physical asset, and might be seen as more analogous to a bank transfer, where the transaction is incomplete until that acknowledgment has been made. Yet there are also important differences with a bank transfer. For digital assets the third party merely confirms the communications, i.e. provides evidence that the transfer has

\textsuperscript{23} \textit{OBG v Allan} at [95] citing \textit{Fowler v Hollins} (1872) LR 7 QB 616, 639.

occurred. By contrast, a bank transfer requires the third party to acknowledge a legal obligation, in the form of a debt, to the transferee, without which the transfer has not taken place. This extinguishes the original debt owed to the transferor and creates a new ‘asset’ in the form of a debt owed to the transferee.

31. Other digital assets, such as digital files and emails, are not recorded on a third-party registry. Instead, holders of such digital assets can transfer them directly, without submitting a request to a registrar. This more closely resembles the transfer of a thing in possession. However, there are also important differences. First, as noted above, the transferor of a digital file retains the original copy of the digital file – and must undertake an additional step to delete the file after the transfer. Second, a person cannot transfer their digital file to another person’s device. Instead, a file transfer at the logical layer leads to a second digital file being created on the recipient’s device. Suppose Alice uses a file transfer protocol to send a digital file to Bob. Alice’s computer sends the instructions required to recreate the file, by sending a string of packets containing ones and zeros to Bob’s computer, typically via a series of internet routers. The ones and zeros are expressed by modulating a signal, such as a beam of light across a fibre optic cable or electromagnetic waves in the case of wireless networks. Bob’s computer receives the instructions and reassembles the file by storing ones and zeros on its backing store. This creates a second file with identical content on Bob’s computer, with a new file location and access path. Thus, a digital transfer results in the creation of a second, separate file on the recipient’s device.

- **Recommendation 3:** We encourage the Law Commission to consider whether the concept of digital possession is a good fit for digital assets, given the differences between how such assets are transferred and how physical assets are transferred.

### 3.3 Conversion of digital assets

**Question 10.** If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise?

32. Courts in other common law jurisdictions have applied the tort of conversion to digital assets. These cases illustrate three sets of practical circumstances in which conversion of a digital asset could arise.

33. First, for digital assets which are recorded on a registry, conversion may arise when a third-party fraudulently instructs the registrar to implement a transfer. For example, in *Kremen v. Cohen*, the Court of Appeals for the
Ninth Circuit applied the tort of conversion to the domain name “sex.com”. Kremen had registered the domain. Cohen then misled the domain registrar, Network Solutions, into re-assigning the domain name to him. Kremen sued both Cohen and Network Solutions to recover the domain name, citing the tort of conversion. The Court concluded that under the law of the State of California, the tort of conversion applied to domain names as a form of intangible property. The English case of *Armstrong v. Winnington*, also involved a third-party fraudulently instructing the registrar to transfer carbon credits to a different account.

34. Second, conversion may also arise in disputes between employees and directors, on the one hand, and companies, on the other, as to whether certain digital assets belong to the company or to the individual. For example, an employee might sue a company for return of personal digital assets. Thus, in *Thyroff v Nationwide*, the Court of Appeals of the State of New York applied the tort of conversion to electronic computer records. Thyroff had acted as an insurance agent for Nationwide Mutual Insurance (‘Nationwide’). Nationwide had leased Thyroff a computer system, which he used for entering business data, as well as for personal use. When Nationwide terminated the agency agreement, it repossessed the computer. Thyroff sued to recover the files he had stored on the computer, citing the tort of conversion. The Court concluded that the electronic records that Nationwide had taken possession of could be subject to a claim of conversion.

35. Conversely, a company might also sue an employee/director for return of business digital assets. In *Canivate Growing Systems Ltd v. Brazier*, the Supreme Court of British Columbia applied the tort of conversion to a domain name. Brazier, the founder of the Canivate company, had registered the company’s domain name (canivate.com) personally. The company used the domain for its website and email addresses. After the parties had a falling out, Brazier interfered with the company’s use of the domain and refused to transfer it to the company. The court applied the tort of conversion to the domain name and ordered that it be transferred to the company. The English case of *Fairstar v Adkins* similarly involved a company seeking return of a business asset, namely business emails which a former director had forwarded to and stored in his personal email account.

36. Third, conversion of digital files may arise when person A’s digital files are subject to the exclusive control of person B, for instance because the files are stored on a physical device which is possessed by person B. In *Henderson v Walker*, the New Zealand High Court applied the tort of conversion to digital files.\(^{30}\) The case concerned a liquidator who seized a laptop from the director of an insolvent company. The director sued for the return of his personal files stored on the laptop, under the tort of conversion. The court found that digital files could be subject to the tort of conversion. Similarly, the English case of *Your Response v Business Media* concerned a company seeking the return of a digital file (namely, a database of subscriber information), from a data manager who refused to let the company access the file.\(^{31}\)

37. This analysis suggests that disputes over access to digital assets can arise in different circumstances and involve different types of assets, including domain names, digital files, and emails. The availability of appropriate proprietary remedies might help resolve such disputes in a manner that recognizes the importance of digital assets to modern life.

- **Recommendation 4:** We encourage the Law Commission to consider the kinds of cases in which other common law courts have applied the tort of conversion to digital assets and assess whether its proposed approach would lead to justifiable outcomes, should similar cases arise under English law.

### 3.4 Other relevant areas of the law

**Question 12.** We welcome suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of our digital assets project.

38. Succession law will be affected by the Law Commission’s proposals for digital assets and should be included in the scope of the project. Issues of succession are closely linked to property rights, since digital assets that do not attract a property right will not form part of a deceased person’s estate. Indeed, legal disputes centred on the question of ‘what happens to your digital assets when you die?’ have generated both media attention\(^ {32}\)

\(^{30}\) *Henderson v Walker* [2019] NZHC 2184.


\(^{32}\) See e.g. the coverage of the Rachel Thompson v. Apple case in The Times, [https://www.thetimes.co.uk/article/widow-wins-long-battle-for-iphone-family-photos-h7mv9bw7t](https://www.thetimes.co.uk/article/widow-wins-long-battle-for-iphone-family-photos-h7mv9bw7t).
and academic interest,\(^{33}\) with contentious cases even reaching appellate courts in several jurisdictions.\(^{34}\)

39. We recently conducted a survey that shows that digital assets present a growing problem under succession law. We worked with The Society for Trust and Estate Practitioners (‘STEP’),\(^ {35}\) to survey their members and ask them about their experiences dealing with digital assets.\(^ {36}\) We aim to publish a full report of our findings and methodology in September 2021. We found that advising on digital assets has become a common feature of modern estate practice. Nearly 60% of respondents had dealt with questions from clients about digital assets; while 20% dealt with digital assets on at least a monthly basis. More than 90% of respondents thought that client questions about digital assets would increase in future, with over 60% predicting a large increase.

40. We further found that various types of assets are relevant to succession law. While crypto-currencies may generate the most media headlines, estate practitioners reported that they were only the third-most-asked-about digital asset (45% of respondents who had been asked about digital assets, had been asked about crypto-currencies). The most-asked-about digital assets were social media accounts (54%) and email accounts (48%), followed by cloud storage services (44%). These findings suggest that while crypto-currencies have the most monetary value, people attach great emotional value to the documents, photographs, and videos they store on social media, email, and cloud storage services.

41. However, digital assets give rise to serious challenges under succession law. Nearly a quarter of respondents stated that their clients had faced difficulties when trying to obtain access to the digital assets of a deceased person. Such problems seemed to stem, at least in part, from the fact that digital assets are often stored and managed by a third party, such as a social media, email, or cloud service provider. For ease of reference, we refer to such digital assets as stored ‘in the cloud’ (i.e. on a third-party


\(^{34}\) See e.g. in the US: Ajemian v Yahoo, 84 N.E.3d 766 (Mass. 2017); in Germany: BGH, Urteil vom 12. Juli 2018 - III ZR 183/17 juris;

\(^{35}\) STEP is a global professional body for advisers who specialise in inheritance and succession planning.

\(^{36}\) The survey had 507 respondents. Around half of the respondents were legal professionals; the remainder were mainly trustees, tax advisors, and wealth/investment managers. 40% of respondents were from the UK and Ireland; the remainder were from around the world, including Canada, Continental Europe, Asia, the US, and Australasia.
service provider’s servers). More than half of respondents stated that
there was not a straightforward process for accessing digital assets stored
in the cloud in their jurisdiction. The problem appeared to relate, at least
partly, to the lack of clarity around digital assets under property law. 67% of
respondents cited a lack of clarity regarding property rights in digital
assets as one of the major obstacles to obtaining access to digital assets
stored in the cloud.

42. Finally, we asked respondents for their views on what needs to change in
the future to ensure effective estate planning and estate administration
for digital assets. More than 220 respondents provided qualitative
feedback. The most common theme in their responses was the need for
legal reform (raised by 30% of responses), including clear rules in relation
to property rights and rights of access by personal representatives. Taken
 sammen, these findings show that the question of digital assets under
succession law merits serious attention. They also highlight the concerns
we have raised above about whether certain types of digital assets, such as
digital files and emails, meet the proposed requirements for ‘digital
possession’. If not, then the Law Commission should clearly address their
property status – including whether they fall under a third category of
other property (at least in the context of succession law). If such digital
assets cannot attract a property right under English law, then the Law
Commission should consider proposing a sui generis regime to support
post-mortem access to digital assets. More than 40 States in the US have
implemented a version of a model law dealing with fiduciary access to
digital assets. A similar uniform act exists in Canada. English law has,
so far, been left behind.

43. Admittedly, the question of digital assets under succession law is not
solely determined by property rights, since the use of a cloud service is
also covered by a contract. This was reflected in our survey, with just over
40% of respondents pointing to restrictive standard contracts and terms of
service as an obstacle. That said, clarity of property rights is fundamental,
since it determines whether succession law applies to digital assets at all.
Moreover, in 2019 we found that the contracts for 85% of cloud services
commonly used by UK consumers did not specifically address what
happens to customer accounts or customer data after the customer dies.

37 Uniform Law Commission, ‘Fiduciary Access to Digital Assets Act, Revised’,
https://www.uniformlaws.org/viewdocument/final-act-no-comments-33?CommunityKey=f7237fc4-
74c2-4728-81c6-b39a91edf22&tab=librarydocuments.
38 Uniform Law Conference of Canada, ‘Uniform Access to Digital Assets By Fiduciary Act’
This suggests that most cloud providers have not engaged fully with their role as intermediaries under succession law. Hopefully, clarity in terms of property rights and default rules under succession law would encourage cloud providers to develop better legal and technical solutions.

- **Recommendation 5:** We encourage the Law Commission to consider the legal implications of its proposal for succession law in the light of our survey findings and ensure that its proposed approach will provide a property and succession law that is fit for the 21st century.
### ANNEX 1: Table of property-related cases

*Table 2: Cases that involved digital assets in the context of property law in common law jurisdictions (by jurisdiction, chronologically)*

<table>
<thead>
<tr>
<th>#</th>
<th>Case name, year</th>
<th>Court</th>
<th>Asset</th>
<th>Legal context</th>
<th>Factual context</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Armstrong v. Winnington[^40] 2012</td>
<td>High Court</td>
<td>Carbon credits</td>
<td>Property law: Claim for restitution</td>
<td>Third party obtained control unlawfully</td>
</tr>
<tr>
<td>2</td>
<td>Fairstar v. Adkins[^41] 2013</td>
<td>Court of Appeal (‘CoA’)</td>
<td>Emails</td>
<td>Property law: Claim for restitution</td>
<td>Former CEO refused company access to emails</td>
</tr>
<tr>
<td>4</td>
<td>Elena Vorotyntseva v Money[^43] 2018</td>
<td>High Court</td>
<td>Bitcoin and Ether</td>
<td>Property law: proprietary injunction</td>
<td>Trading platform allgedly misappropriated customer crypto-assets</td>
</tr>
<tr>
<td>5</td>
<td>AA v. Persons Unknown[^44] 2019</td>
<td>High Court</td>
<td>Bitcoin</td>
<td>Property law: Interim injunction</td>
<td>Third party obtained control unlawfully</td>
</tr>
<tr>
<td>6</td>
<td>Hanger Holdings v. Perlake[^45] 2021</td>
<td>High Court</td>
<td>Domain name</td>
<td>Contractual dispute</td>
<td>Company refused to return domain name under contract</td>
</tr>
</tbody>
</table>

### States in the United States of America

<table>
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<tr>
<th>#</th>
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</thead>
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<tr>
<td>9</td>
<td>Ajemian v. Yahoo[^49] 2017</td>
<td>Supreme Court of Massachusetts</td>
<td>Emails</td>
<td>Succession law</td>
<td>Yahoo refused heirs access to deceased’s emails</td>
</tr>
</tbody>
</table>

[^43]: Elena Vorotyntseva v Money-4 [2018] EWHC 2596 (Ch).
[^47]: The Ninth Circuit Court of Appeals has jurisdiction over appellate reviews from various district courts, including those of the State of California.
### New Zealand

<table>
<thead>
<tr>
<th>Case</th>
<th>Decision Year</th>
<th>Court/Location</th>
<th>Digital Files</th>
<th>Law Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Dixon v. R.</td>
<td>2015</td>
<td>Supreme Court</td>
<td>Digital files</td>
<td>Criminal law: theft</td>
<td>Bartender took CCTV footage and sold it</td>
</tr>
<tr>
<td>11. Henderson v. Walker</td>
<td>2019</td>
<td>High Court</td>
<td>Digital files</td>
<td>Property law: Tort of conversion / insolvency</td>
<td>Liquidator seized laptop, insolvent director sued for return of files</td>
</tr>
<tr>
<td>12. Ruscoe and Moore v. Cryptopia</td>
<td>2020</td>
<td>High Court</td>
<td>Bitcoin</td>
<td>Trust law / insolvency</td>
<td>Account holders sued exchange after hack</td>
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### Singapore

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<tr>
<th>Case</th>
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<th>Court/Location</th>
<th>Digital Files</th>
<th>Law Category</th>
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### Australia

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<th>Digital Files</th>
<th>Law Category</th>
<th>Details</th>
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<tbody>
<tr>
<td>14. Hague v. Cordiner</td>
<td>2020</td>
<td>District Court</td>
<td>Bitcoin</td>
<td>Procedural law</td>
<td>Court holding property on trust as security for payment of legal costs</td>
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### Canada

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<th>Court/Location</th>
<th>Digital Files</th>
<th>Law Category</th>
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<tr>
<td>15. Tucows.com v Lojas Renner</td>
<td>2011</td>
<td>CoA, Ontario</td>
<td>Domain name</td>
<td>Jurisdiction: location of a domain name</td>
<td>Dispute as to which court should hear a dispute over a domain name v. a trademark</td>
</tr>
<tr>
<td>16. Canivate Growing Systems v Brazier</td>
<td>2020</td>
<td>Domain name</td>
<td>Property law: Tort of conversion</td>
<td>Founder refused to transfer domain name to company</td>
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<td>17. Copytrack Pte Ltd v Wall</td>
<td>2018</td>
<td>Supreme Court of British Columbia</td>
<td>Ether</td>
<td>Property law: Tort of conversion</td>
<td>Customer refused to return to an exchange ETH mistakenly transferred by the exchange</td>
</tr>
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<td>18. Shair.Com Global Digital Services Ltd v Arnold</td>
<td>2018</td>
<td>Supreme Court of British Columbia</td>
<td>Bitcoin</td>
<td>Property law: preservation order</td>
<td>Company sued former CEO for return of crypto-currency, including Bitcoin</td>
</tr>
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54 Hague v. Cordiner (No. 2) [2020] NSWDC 23.  
56 Canivate Growing Systems Ltd v Brazier, 2020 BCSC 232.
Possessable Digital Assets

Response to the Electronic Trade Documents
Law Commission Consultation Paper No 254 and
Call for Evidence on Digital Assets 2021

Tatiana Cutts
Possessable Digital Assets

Response to the Electronic Trade Documents
Law Commission Consultation Paper No 254 and
Call for Evidence on Digital Assets 2021

Tatiana Cutts*

I respond here to questions within the Electronic Trade Documents (2021) Law Commission Consultation Paper No 254, and the Digital Assets call for evidence. I deal with these together, as the latter proposes to consider whether criteria similar to those proposed within the former “could identify certain other digital assets as being possessable”. Throughout, I use the term “non-digital physical assets” to label those assets which we traditionally think of as the object of possessory rights, and the term “possessable digital assets” to label those assets which are the subject of these proposals. My comments are directed towards: (i) the proposed criteria for possessable assets; and (ii) the scope of liability for interference with digital assets.

Recommendations

The following steps might be considered in determining the indicia of possession for electronic trade documents, and when adapting them for a broader category of possessable digital assets:

- “Has an existence independent of both persons and the legal system (that is, it is not a bare legal right...)” could simply read “has an existence in the form of computer code”.
- “The nature of the thing does not support concurrent assertions of occupation or use” could read “the nature of the thing is such that use or consumption by one person necessarily limits use or consumption by another”.
- The requirement that the asset be “divestible, in that the thing must be fully divested on transfer” could be removed.

There is a case for extending liability in conversion to some digital assets (those identified by the criteria). This might be achieved:

i. By way of a general provision specifying that assets which meet certain criteria can be possessed; or
ii. Directly, by specifying the parameters of liability for interference with those assets.

Possessable Assets

Consultation Paper No 254 proposes that an electronic trade document would be possessable if it:

1) has an existence independent of both persons and the legal system: it is not a bare legal right;
2) is capable of exclusive control: the nature of the electronic document does not support concurrent assertions of occupation or use; and
3) is fully divested on transfer: that is, if A transfers the document to B, A must no longer be able to access or use the document.

In this Call for Evidence, similar criteria are considered as a foundation for the possession of other digital assets. A digital asset would be possessable if it:

1) has an existence independent of both persons and the legal system (that is, it is not a bare legal right such as a right under a simple contract or a debt claim);
2) is capable of exclusive control: the nature of the thing does not support concurrent assertions of occupation or use; and
3) is divestible, in that the thing must be fully divested on transfer.

I will consider each in turn.

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1) “has an existence independent of both persons and the legal system (that is, it is not a bare legal right such as a right under a simple contract or a debt claim)”

Question 9 of Consultation Paper No 254 asks: “We provisionally propose that bare legal rights should be excluded from the scope of our proposals for the possession of electronic trade documents. Do consultees agree?”

My answer here is “yes”, but my suggestion is that we might achieve this more simply by way of the phrase “has an existence in the form of computer code”.

This step is helpful—distinguishing legal relations from the things to which those legal relations may relate. Much of our case law has failed to do this, by assuming that our conclusions about the property-ness or otherwise of contract rights (see e.g. OBG Ltd v Allan [2007] UKHL 21) determine our decisions about digital assets (see e.g. Your Response v Datateam Business Media [2014] EWCA Civ 281). In what follows, I consider the criterion by working through three examples: bank transfers; Bitcoin and carbon credits.

The debt against one’s bank is just that. We do not transfer bank money by assigning that debt, or any part of it; rather, the bank reduces its liability to its customer in return for applying credit to the acquisition of some other right or extinguishment (or reduction) of some other debt. There is some distinct data associated with the payment instruction, but that instruction does not survive transfer; it is an instruction to do something to effect a value transfer, not a way of pointing to any particular sum.¹

Elsewhere, I have argued that:

“Bitcoins” are described as unspent transactional outputs (“UTXO”). This is not a linguistic quirk; rather, it describes a substantive quality of the relationship between a user and “their” bitcoin. When a particular wallet holds “฿1,” that means that the wallet contains one or more UTXO totalling ฿1. An instruction to transfer “a bitcoin” is an instruction to send one or more UTXO’s worth ฿1 (or more, returning change). No single “bitcoin” has a constant identity. Each is simply made up from the history of transactions by which one or more UTXO’s have come to be associated with a particular wallet address. So, each bitcoin is unique, but none retains precisely the same form before and after a wallet transaction.²

What, then, is the asset over which one might assert a claim? We need not be distracted here by the material footprint of a blockchain, though all data registered by physical systems (including that which we process by thinking) has one.³ Many assets do not have a material form, but we can control them exclusively.⁴ For Bitcoin, the asset over which one can exercise that control is the value associated with a particular UTXO. It is a value construct—the sum of ฿ associated with a wallet, which can be identified by distinct data. Armstrong v Winnington involved the unauthorised transfer of some carbon credits (“EUAs”).⁵ Any company within the EU that emits CO₂ above a certain threshold must hold the number of EUAs that corresponds to its CO₂ emissions in each year to avoid incurring a fine. Sitting as Deputy High Court Judge, Mr Stephen Morris QC concluded that these credits were a “liberty” or freedom from incurring a penalty, with an “electronic form”, represented by unique serial numbers within a registry system. That electronic form was enough to support some sort of “proprietary restitutionary claim” for the value of those EUAs in the hands of a third party, to which I turn in the discussion of common law remedies below.

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¹ It has been my assertion in a prior policy brief that we can exert exclusive control over contractual claims. The point about personal rights is not that they cannot be controlled exclusively, but rather that they are creatures of the law; what it means to have a contract is just that one has a certain set of legal rights and duties, with a certain set of consequences “Crypto-property”, LSE Policy Briefing Series No. 36 (2019).


Now, if the notion that an asset must have an "independent existence" operates negatively (knocking out debts and other legal relations, even if there is some distinct non-legal data associated with them), EUAs and bank "money" cannot be possessed, but bitcoin can. But the notion appears to do something positive: Consultation Paper No 254 notes that "an electronic document exists as a matter of fact, regardless of the recognition given to it by any legal system, and regardless of whether anyone lays a claim to it". The question, then, is what it means to say that an asset exists "as a matter of fact" (that it "has an existence independent of both persons and the legal system").

Perhaps it is that there is some distinct data associated with the asset—not merely data for humans to process by thinking, or which constitutes a legal right, but data that can be processed by a computer. And perhaps the data must be such that it can survive a transfer of the asset that it constitutes or at which it points (albeit not necessarily in precisely the same form, on which more below). If we understand the criterion thus—as a positive requirement for distinct data that does not exclude legal rights—bank debts could not be possessed, but EUAs and bitcoin (and domain names) could. That criterion would extend to any contract rights in the form of instructions to a computer. However, the requirement for rivalry (which I consider below) must also be met to admit the asset to the category of possessable digital asset.

I think the criterion can function in its current form. But I also think that we could more simply pursue a definition that pointed directly at computer data. We could, for instance say: "has an existence in the form of computer code". The notion of rivalry would do the work necessary to exclude mere computer code, over which one could not exert exclusive control. And if we did this, we would need the bracketed sub-clause.

2) “is capable of exclusive control: the nature of the thing does not support concurrent assertions of occupation or use”

Question 10 of Consultation Paper No 254 asks: “We provisionally propose that, in order for an electronic trade document to be capable of possession, the nature of the document must not support concurrent control by multiple parties at one time. Do consultees agree?”

I think that this criterion will suffice for electronic trade documents, but my suggestion would be to amend it for the purposes of digital assets more broadly—such that "The nature of the thing does not support concurrent assertions of occupation or use" becomes “the nature of the thing is such that use or consumption by one person necessarily limits use or consumption by another”.

In a prior policy brief issued in response to the UKJT’s consultation, I argued that the key to a distinction between mere information and something that might be the object of a property right was the notion of “rivalry”. This is the notion that an asset can be controlled exclusively, in that (in the language used here) the nature of the thing does not support some concurrent use. I wholly support the use of rivalry as a key to characterising assets as susceptible to possession.

Yet, the suggested language does create a possible ambiguity. Many non-digital physical assets support “concurrent assertions of occupation or use”. Sofas, dining tables and board games are all designed to be used by multiple persons; the point is that I (as owner) can decide who (if anyone) gets to share. Digital assets can be designed in precisely the same way, such that the “owner” gets to decide who is granted access. An asset is not rivalrous because it is impossible for multiple persons to use it. It is rivalrous if use by one person necessarily limits use by another. If someone else is sitting on the sofa, I cannot lounge with my book; if my usual seat at the dining table is occupied, I must take my lunch elsewhere. An asset is rivalrous if use or consumption by one person, or a specific group of persons, inhibits use or consumption by others.

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3) “divestible, in that the thing must be fully divested on transfer”

Consultation Question 14 of Consultation Paper No 254 asks: “We provisionally propose that, in order for an electronic document to be capable of possession, transfer of the document must transfer control of the document to the transferee, and the transferor must lose control of it as a consequence. Do consultees agree?”

It is not clear to me that the third characteristic adds anything for the purposes of the electronic trade documents consultation, and I think it should be removed when adapting the criteria to accommodate digital assets more broadly.

It is not clear to me that the third characteristic adds anything for the purposes of the electronic trade documents consultation: I can think of no good example of a case in which an electronic trade document could be susceptible to exclusive control, but yet not fully divested on transfer. Nevertheless, my comments go to the picture of liability for the purposes of digital assets more broadly.

I have argued elsewhere that calling something “property” (or concluding that we can possess something) is not a catch-all term: we might reach that conclusion for different purposes, in different contexts. Where transferability certainly matters for the question of whether e.g. an asset is devisable, it matters less for the purposes of determining whether there can be or has been some third party interference. One can convert an asset by altering its form; indeed, the evidence suggests that conversion was developed precisely to solve the problem that specificatio—altering the form of some thing drastically—knocked out detinue.

Let us suppose that a digital asset was designed to be uniquely associated with some aspect of one’s identity. That asset could be made wholly non-transferable. But it might yet be possible to destroy or interfere with such an asset in such a manner that would amount to a conversion. The consequence of restricting the ability to “possess” a digital asset to transferable assets is that no liability would lie in conversion for such an action. And other common law routes, such as unjust enrichment, would be unavailable to fill this gap.

Conversion

Question 10 of the Digital Assets call for evidence asks: “If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise? Do you think conversion would provide a useful or practical claim in this context?”. My answer to both questions is “yes”.

The answer to the first question is straightforwardly “yes”: if a digital asset were possessable, it could be converted: a domain name can be transferred without permission from one person to another; a crypto-asset can be diverted from one wallet to another through hacking; a database could be deliberately deleted (or deliberately accessed and accidentally deleted). But what are the consequences of this conclusion?

First, it is possible that rivalrous digital assets, if possessable, would fall within the definition of “goods” in the TIWGA 1977. If so, that is the proper regime for claims in respect of interference with goods. Whether we take the statutory or common law route, liability is strict and its scope is the same: a defendant who has the asset may be required to give it up, subject to certain conditions; more often, she will be required to pay the value of the asset, and may be liable for consequential loss. Thus, if digital assets could be converted, an innocent party to whom a wrongdoer has transferred the relevant asset to be liable for its full value to the person from whom that asset was originally taken, even if that party bought the asset.

So where does this leave us? It seems to me that we have four options. First, we could extend liability in conversion to digital assets. We might do this by: (i) specifying in a general way that assets which meet certain criteria could be possessed; or (ii) specifying the parameters of liability for interference with those assets (by altering the TIWGA 1977, or otherwise). Now, the question would be: does it matter that one can accidentally interfere with digital assets—directly, or by receipt? The cases have replied with a resounding “yes”. But, of course, those cases have dealt with conversion on the footing that it would encompass contractual claims—a possibility that these proposals neatly exclude. Thus, it should be emphasised at the outset that the risk of opening the floodgates is considerably smaller than it might seem.
It is, of course, always possible to interfere accidentally with non-digital physical assets. We may do so directly: suppose that I leave the contents of my garage outside on the front lawn to my house whilst I perform a spring clean; a passer-by spots a pile of my belongings, and thinks that they have been left out for others to take. Or we may do so by receipt from another's interference. The concern with digital assets is less about the former sort of case: if the asset is rivalrous, it follows that there are boundaries to that asset. And in the context of digital assets, gaining access is often much more difficult than it is with non-digital physical assets: passwords, for instance, can be very effective exclusionary tools. Rather, the concern goes to receipt: as digital methods of transfer can be quick and relatively friction-free, it seems possible that instances of innocent receipt (e.g. in consequence of hacking or fraudulent diversion) may be more frequent.

But if this is a problem, it is a problem with conversion, or its counterpart in the TIWGA 1977. Liability in conversion is extensive, and strict. In fact, I think there is a good case for limiting that liability. I pointed out in a prior policy brief that it is only by an accident of history that conversion has come to be a hybrid tort—one that caters for wrongful interference and accidental receipt, with innocent recipients bearing the brunt. So, call this the second option—to "switch on" possession, but alter the TIWGA to provide some discretionary protection for innocent parties regarding the extent of liability in damages. If this concerned the scope of liability in damages, it would hardly create acute uncertainty regarding title; indeed, the TIWGA already acknowledges the possibility of conditions attached to demands for delivery up. But there has thus far been very little appetite to take that step. Thus, the first option remains the more serious contender.

The third option is to come up bespoke principles to govern the receipt of digital assets. The advantage to this move goes to precisely the comments immediately prior—that it could allow us to protect innocent recipients in a more extensive and nuanced manner. But it seems to me harder to defend as a matter of principle: the thrust of these proposals, which I think absolutely correct, is that some digital assets can bear all the relevant hallmarks of non-digital physical assets. This, then, is simply a practical workaround to a problem with the scope of liability for interference with assets.

The fourth option is to do nothing. This may be a variation on the third option—to introduce (or alter existing) provisions to make it possible to possess digital assets for some purposes, but not to enable actions for interference with digital assets. This does not leave claimants without recourse; I consider existing common law avenues to protection for possession or possessory rights in what follows. But it does leave the same gap—between digital assets that bear all the hallmarks of non-digital physical assets, but which cannot be possessed, and non-digital physical assets, which can.

**Restitutionary Liability**

My choice of the term "restitutionary liability" rather than "unjust enrichment" is deliberate. There exists a clear body of authority for the proposition that it is possible to sue someone who receives your asset (or its traceable substitute), if that asset was transferred without your authority. That liability encompasses physical assets, bank money, and digital assets. The rationale for that liability is less pellucid.

Actions for money had and received are often given the newer name "unjust enrichment". But those actions also swept up some of the work of trover: they allowed people to recover physical money in the hands of some third party. The essence of this action was proprietary: it was an action that asserted "that is mine; give it back", not "this came to belong to you unlawfully; restore its value to me". When the action for money had and received was extended to bank money, individuals could then "trace" their money into a third party's hands, and to recover its value. Courts reached this conclusion by treating bank money as if it retained its original form throughout the process of transfer. This, of course, is a fiction.
For better or worse, it is now orthodoxy that these are claims in “unjust enrichment”: a claimant can sue to recover value that they transfer directly to some other person, or which can be “traced” from their hands through a series of transactional links (e.g. bank transfers) to the hands of some third party. In either case, the claimant must show some relevant defect in their intention, which includes an absence of authority.

Yet, some tension remains: in Armstrong v Winnington, Mr Stephen Morris QC preferred the term “proprietary restitutionary” liability. This is not a proprietary claim, but a personal claim which reflects the value of one’s property in the hands of a third party. This tension reflects the original provenance of this part of money had and received as a property-based claim, rather than a claim for some defective transfer.

The difference matters. In Armstrong, Mr Stephen Morris QC recognised the possibility of asserting a bona fide purchase defence (though held that the recipient had notice on the facts), but not change of position.11 Change of position is a broad defence, which protects innocent transferees by reducing their liability wherever full restitution would render them worse off than they were prior to transfer. Bona fide purchase is a complete defence to liability, but slightly stricter: it requires proof of innocent purchase.

Yet, whether one frames the relevant action as “unjust enrichment” or a “proprietary restitutionary claim” (and Armstrong is a clear outlier in this regard), it is clear that there is extensive protection for those who receive an asset innocently, thereby balancing the interests of prior owners and subsequent recipients.

Transfer

Question 2 of the Digital Assets call for evidence asks: “Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer?”

My answer here is that the transfer of a digital asset is more akin to a transfer of a thing in possession. However, I note that courts have been content to treat bank money as akin to the transfer of physical money (and thus a thing in possession) in order to “trace” it from one set of hands to another, for the purposes of establishing proprietary or personal receipt-based liability.

It should be made clear at the outset that one can exercise possessory rights over an asset that does not retain a constant form. One can own or possess a plant, animal or other object that alters its physical makeup drastically over the duration of its lifespan. There are limits: one can only retain title to an asset that has not altered its identity in some fundamental way.12 But these rules acknowledge that an asset might change its form and yet remain identifiable “the same” for legal purposes—whatever the physical position. So, the fact that a digital asset may change its form does not preclude a continuing possessory right.

I have argued that we can conceptualise bitcoin as assets that retain their identity, though the information associated with them changes over time. To that extent, they are more similar to non-digital physical things than to bank debts: there is a distinct asset, beyond the payment instruction. Yet, it bears emphasis that courts have often conceptualised bank transfers by fiction as if they involve the transfer of some independent asset, that it is possible to pursue through a sequence of transactional links.13 Thus, the gap in the legal treatment between bank debts and non-digital physical assets more directly concerns the question of whether they can be possessed at all, rather than the question of how a transfer ought to be treated.

11 Armstrong v Winnington [2012] EWHC 10. See paras [102] and [103].
12 See e.g. Borden v Scottish Timber [1981] Ch 25.
TATIANA CUTTS

Tatiana is an Associate Professor at Melbourne Law School, and a member of the Law, Technology and Society group within LSE Law. She has published widely on the subject of private law, and is currently writing a book (“Artificial Justice”) on automated decision making in matters of justice. She published a prior brief in this series: Crypto-Property: Response to Public Consultation by the UK Jurisdiction Taskforce of the LawTech Delivery Panel

LSE Law - Policy Briefing Paper No. 36, June 2019
Friday, 30 July 2021

Response to the Law Commission Call for Evidence on Digital Assets

By email via digitalassets@lawcommission.gov.uk
I welcome the opportunity to respond to your call for evidence. As an economist, I have worked extensively on financial infrastructures, financial technologies and financial regulation over the past two decades, with an emphasis in my research on sound economic understanding of competition, innovation and systemic risks. My work in this area is primarily institutionally focused, since a proper understanding of the institutions is an essential before attempting formal modelling or statistical analysis. From this two decades of work, I believe that there are substantial potential economic benefits from adoption of the new cryptographic technologies for holding financial assets. An appropriate legal treatment is crucial to fully achieving these benefits.

I am happy for my response to be made public.

Digital assets, cryptoasset record keeping, and the innovation of cryptocurrencies

Before offering my answers to some of your ten questions (and also one more general question that appears in your terms of reference), I set out my own understanding of digital assets.

1. I welcome the statement at the beginning of your call for evidence (pg 1) “At this stage, we use the term ‘digital assets’ in a broad sense to cover assets that are represented digitally or electronically, including cryptoassets.”

For the reasons I discuss below, I believe it will considerably weaken the ability of the law to effectively support property rights if an attempt is made to distinguish cryptoassets as a separate class of assets from conventional digital assets such as bonds, equities, commercial bank deposits and e-money. I have previously argued that the regulation of cryptoassets should be based on precisely the same regulatory framework as conventional digital assets, not a separate framework that encourages “regulatory arbitrage”. I suspect the same argument applies to the extension of the law of property to cryptoassets.

I am not sure you are entirely consistent in your call for evidence, in maintaining the usage of digital assets in the broad sense. See my question answers below.

2. All digital assets are accounting entries.

Considerable confusion has arisen in economic and financial discussions of cryptoassets from the perception that they are ‘virtual objects’ or ‘tokens’ that transfer ‘peer to peer’ and not accounting entries. I have discussed this at length in my paper “Argument by False Analogy”. A revision is nearly complete and I will share with the Commission once this is done. That paper demonstrates the substantial terminological traps in discussion of cryptoassets. The term ‘token’ is particularly problematic because it has several quite different meanings in relation to money and financial assets. The January 2021 HM Treasury consultation UK regulatory approach to cryptoassets and stablecoins is one illustration:

“1.11 A cryptoasset is understood to be a digital representation of value or contractual rights that can be transferred, stored or traded electronically, and which may (though does not
necessarily) utilise cryptography, distributed ledger technology or similar technology. The term ‘token’ is used interchangeably with ‘cryptoasset’ hereafter.” (HM Treasury, 2021, pg 4).

As you may observe, their use of the word ‘token’ is inconsistent with your own, which you in my view correctly limit (para 2.53, pg 16 of your consultation) to “Some digital assets are ‘tokens’ – they represent something else that exists either digitally or physically.”

A separate point: a difficult with the HM Treasury definition of cryptoassets is that includes commercial bank deposits, which can be transferred and stored electronically and also to instruments such as bonds and equities. Again, I prefer your approach, in which these are all digital assets, and cryptoassets are a subset.

My paper also contests the view that there can be virtual objects, corresponding to physical objects but existing in the virtual rather than the physical world. It is possible to create a virtual ‘artefact’ which simulates the property and behaviour of a physical object (a bitcoin holding is an example). But the existence of the artefact is always dependent on the supporting software used for its creation. Unlike a physical object, such an artefact has no independent existence. This means there can be no virtual equivalent to physical possession of a physical object.

That cryptoassets are accounting entries not virtual objects is consistent with the view put forward in the UKJT Legal statement that cryptoassets cannot be physically possessed. However, as accounting entries, it is less clear that they cannot be property in a similar way to money held in a bank account i.e. a “thing in action”. This may not be the current law of England and Wales but it could be made the law. I provide some further thoughts on this below.

3. Cryptoassets are not a new form of asset, they are a new way of recording and transferring the ownership of assets.

Cryptoassets are sometimes characterised as a new ‘asset class’, for example in the context of the recently growing interest of mainstream financial firms in cryptoasset investment. This is in my view fundamentally misleading. These as innovative technologies for recording and transferring the ownership of assets. It is the new record keeping technologies, not the underlying assets, that are the innovation. From this I argue that central to your project is appropriate legal recognition of these new mechanisms of recording and transferring ownership.

4. An objection: “cryptocurrencies are new assets that did not exist before”

To this objection, “but cryptocurrencies are new”, I would reply, yes previously there were no private issues of account-based assets which did not represent anything else and had financial value. But the innovation is the new way of recording and transferring the ownership of assets, not the assets themselves.

Private issue of account-based assets which did not represent anything else has been possible since the birth of writing, this could have been done in Mesopotamia. But to our knowledge no one bothered to do this before Nakamoto. Why? Because no one could trust the issuer not to overissue such account based private ‘money’.

The novelty is the underlying software-based control of the total outstanding count of ledger entries, without requiring any institutional involvement. Previously this function, sometimes referred to as the ‘notary function’, has had to be carried out by a public central institution. Now this function can be based entirely on code. It is only since the Nakamoto white paper that the total count of such entries could be controlled without reliance on a ‘trusted third party’. The
software-based limits that prevent overissue in turn allow privately created cryptocurrencies to have financial value (which cryptocurrencies have value and how much depends on broader contextual features not here relevant).

5. **There were publicly issued valuable account-based assets, before Nakamoto, which like Bitcoin did not represent anything else**

Fiat money is the historical example (perhaps there are others, I am not totally sure). During the 20th century with the abandonment of metallic monetary standards, commercial bank reserve accounts held with the central bank evolved into first paper and then electronic accounting entries that no longer represented an underlying claim (perhaps in law they represent an underlying claim on paper money, but this is anachronistic since paper money came to be held by commercial banks only for providing customer services, not for expenditure).

6. **A distinct innovation also predating the Nakamoto whitepaper is automated software-based transfer of digitally held assets.**

This has been possible for some years using existing bank transaction technologies. One example is the transfer of commercial bank money between accounts held at the same commercial bank. This can be fully automated because the accounts are held on a single ledger. Other examples of automated software-based transfer of digitally held assets are payments in the Visa, Mastercard and other card-based payment schemes and faster payments in the UK and other countries between accounts held at different banks. These latter examples though depend on guarantees of subsequent settlement by the banks or other intermediaries from which the payments are taken.

What is distinctive about Bitcoin and other cryptocurrencies is the support for automated software-based transfer without the involvement of any financial intermediaries. This is possible because of several distinguishing features of cryptocurrencies: integration of cryptographic public-private key security into the software design; the holding of these assets on a single ‘distributed’ ledger with a consensus mechanism to ensure consistency between the different copies of the ledger; the absence of any regulatory requirements, for example on anti-money laundering reporting.

This indicates that development of the law on digital assets will need to pay careful attention to the role of both intermediaries and software in asset transfers.

7. **A powerful but neglected aspect of cryptoassets is the possibility of an automated delegated authority. The owner of the asset can provide software-based authority to another party to dispose of it in specified ways.**

This point is recognised in the Blockchain Research Institute Token Taxonomy Initiative, cited in your call for evidence (what they call delegation). It rests on the consistent use of public-private key cryptography to provide the secure prescribed access to cryptoasset accounts. I illustrate the potential importance of this in my answers to your question 8 and 9 below.
A naïve suggestion on the legal treatment of assets, held securely through a cryptoasset systems for recording and transferring assets.

Here is a further suggestion, naïve because I am not a lawyer, that may reconcile some of the issues raise in your call for evidence about the status of digital assets as property and the exercise of property rights in digital assets.

The recording of a digital asset on a cryptoasset ledger, i.e. the system of recording and transfer of ownership used by cryptocurrencies and cryptotokens, is characterised by the feature that the ability to dispose of the asset depends on access to one or more cryptographic private keys (the plural is important, potentially there are many possibilities, for example an asset may require more than private key for disposal, much like a joint bank account requiring two signatures to validate a cheque).

When holding a digital asset on a cryptoasset ledger, then there are two possibilities: self-management of private keys or (the vastly more popular choice) a contract with a financial intermediary – a wallet or sometimes an exchange to manage the keys and execute instructions for asset disposal.

It seems to me that the simplest means of accommodating cryptoassets within something close to the existing framework of private law in England and Wales is to say that the asset held on the cryptoasset ledger is a “thing in action”, which imposes legally enforceable rights or obligations on those with access to the private keys; but with the degenerate possibility that the owner of the asset and the person with access the private keys can be one and the same person. One might describe this as “self-banking” for digital payment assets. Trust yourself more than you trust the banks or the crypto wallets? Then keep your money held in the form of cryptocurrencies or stablecoins yourself, using direct access to the underlying software without any intermediary involved. This means you are agreeing to give up potential legally enforceable rights or obligations that would arise if you entrust the private keys to a third party.

This does not necessarily mean giving up all legally enforceable rights or obligations. For example, the issuer of a stable coin might have a legal obligation to maintain its par value in terms of a stated fiat currency. Even when managing your own private keys, you would retain the right to sue if the part value peg is then broken. The underlying crypto ledger may be a permissioned distributed ledger in which certain participants have obligations for ensuring the consensus of the differ ledger copies. These are also obligations that are not extinguished by self-management of digital keys.

An advantage of this approach (as well as ensuring a single framework for all forms of digital asset cryptoassets and digital assets) is that it may be the “least change” approach to meeting the goals of supporting property rights in digital assets of your call for evidence. In practice the overwhelming majority of holders of digital assets held on cryptoasset ledgers will not self-manage their private keys, they will entrust this responsibility to third party intermediaries. If I understand the legal concepts correctly, this approach would (a) allow bailment of a cryptoasset, through passing the private keys (which determine possession) to a third or fourth party (b) all forms of possessory security interests would be possible (c) as would claims in conversion. However, it can be noted, that the possibility of “delegated authority” with a precise software encoded determination of what this authority allows, depending as it does on underlying software may require developing the application of these legal concepts to new contexts.
I now turn to your questions.

Question 1.
2.23 What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales? Please explain your answer and provide examples.

No direct legal or practical implications. I note though that you here seem to mean “digital assets held on cryptasset ledgers”, since conventional digital assets are already possessable as things in action.

Question 2.
2.36 Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? Please explain your answer and provide examples.

More analogous to a thing in action. See above for examples.

Question 3.
2.37 Are there practical circumstances in which it would be useful to distinguish, or to separate, the ownership and the possession of a digital asset, particularly in relation to transfers? If so: (1) For cryptoassets, could these circumstances arise both on-chain (reflected by modifying a ledger or blockchain) or only off-chain (where value moves or a transaction occurs without modification to the relevant ledger or blockchain)? (2) Do other technical or practical solutions (for example smart contracts, multisignature, escrow arrangements, Layer 2 applications or “mixing”) or market practice make these distinctions less important? Please explain your answer and provide examples.

As you see from my discussion above, I believe that separation of ownership and possession, similar to that already applicable to “things in action” can apply to digital assets held on cryptoasset ledgers.

I think such separation will also be practically useful. Consider the on-chain/ off chain issues you raise in (1) above. There is one asset but multiple systems of recording holdings and transferring the same asset. Legally there need be no primacy for “on chain” or “off chain”. The same asset is being transferred, allowing transactions off chain simply means that the onchain record does not full reflect all transactions (only certain frozen holdings that have gone ‘off chain’). Distinguishing ownership and possession, perhaps in my “naïve” way, will clarify the legal obligations of those providing services both off-chain and on-chain in a consistent way.

What is important is consistent treatment across assets held on cryptoasset ledger and conventionally held assets. There should be equivalent treatment of a bond held as an account with a custodian bank and a bond held instead as an account on a cryptoasset ledger. To my understanding, it will better support the possibilities of innovation if these are treated consistently as “things in action”. This would, for example, facilitate the transfer of a bond from a custodian bank onto a cryptoasset ledger in order to benefit from the resulting novel transaction functionalities this makes available such as employment in smart contracts.

I am not expert on “decentralised finance” DeFi and the smart contract and other transaction innovations that this supports referred to under your (2). My understanding is as follows-
DeFi, defined as it is by the absence of any transaction role for financial intermediaries, can just like holding of cryptocurrencies be approached in one of two ways:
(a) Relying on an intermediary to engage in DeFi transactions on your behalf
(b) “Self management” engaging with the Ethereum blockchain directly.

The solution you refer to in (2), smart contracts, multisignature, escrow etc. etc. are non-contractual software-based services. One question is the obligation of the software developers behind these solutions, should something go wrong that interferes with the ability to self-manage. I am not sure separation of ownership from possession helps here. However, whenever there is reliance on an intermediary, which will be essential if DeFi solutions are to achieve mainstream adoption, then separation of ownership and the obligations of the intermediary possessing private keys, is central (I know that the notion of intermediated DeFi is a bit self-contradictory, but I do not believe that DeFi solutions are going to be widely adopted without this).

What is missing here, is any discussion of the potential economic and financial benefits of (permissioned) cryptoasset mechanisms of recording holdings and transfers for mainstream assets. On this see below my answers on questions 8 and 9 below.

Question 4.
2.42 How do you typically characterise an on-chain transfer of a cryptoasset? Please explain your answer and provide examples.

See Appendix to my “Argument by False Analogy” paper.

Question 5.
2.49 In what circumstances (if any) are digital assets analogous to “goods”, as currently defined under the Sale of Goods Act 1979? In what circumstances are digital assets not analogous to “goods”? What would be the practical consequences of characterising digital assets as “goods” for these purposes? Please explain your answer and provide examples. We would also be interested in respondents’ views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

No opinion.

Question 6.
2.52 What practical or legal difficulties or problems (if any) do you encounter with the application of the “nemo dat” principle in respect of a transfer of a digital asset? (1) Do you encounter or anticipate the same practical or legal difficulties or problems in respect of on-chain transfers and off-chain transfers? (2) Do different digital assets or digital assets that perform different functions give rise to different practical or legal difficulties or problems? (3) Would the ability to possess a digital asset affect the application of the “nemo dat” principle? (4) What else could be done to alleviate these practical or legal difficulties or problems? Please explain your answer and provide examples.

No opinion.

Question 7.
2.58 How do you typically characterise the relationship between a digital asset token and the underlying tokenised asset? (1) What are the practical consequences of this characterisation for the purposes of transfers of either the digital asset token or the underlying tokenised asset
which it represents? (2) Does the current legal characterisation of a transfer give rise to practical or legal difficulties or problems? (3) Would the ability to possess a digital asset token help to clarify this analysis? (4) What else could be done to alleviate these practical or legal difficulties or problems? Please explain your answer and provide examples.

The word token is confusing in this context, suggesting as it does something like physical bearer instrument which is passed from one holder to another. These are account holdings not bearer instruments.

I don’t have anything further to add here, since I am assuming here by digital ‘thing’ you are excluding all digital financial assets, which is where my expertise is relevant.

Question 8.
2.64 If a digital asset were possessable, are there practical circumstances in which bailment of digital assets could arise? (1) Do you think bailment of a digital asset would be a useful or practical concept? (2) Do other technical or practical solutions or market practice make bailment of digital assets less important? Please explain your answer and provide examples.

Question 9.
2.71 How is security over digital assets granted or taken in practice? (1) Do you consider mortgages and charges to be effective methods of taking security over digital assets? (2) If a digital asset were possessable, are there practical circumstances in which the creation of possessory security over a digital asset might be used? (3) Do other technical or practical solutions or market practice, including the creation of quasi-security, make the ability to take possessory security over a digital asset less important? Please explain your answer and provide examples.

I answer questions 8 and 9 together, because I believe these are central to major “use cases” for the recording and transfer of digital assets using cryptoasset ledgers. I am not giving a legal answer, I am not able to say if mortgages are effective for example. But I would like to draw your attention to some of these use cases, which together suggest the importance of being able to apply the established concepts of bailment and security to digital assets held on cryptoasset ledgers.

I will keep (mostly) to the example of a central bank digital currency, transferred through instructions given and validated with private keys.

Ensuring that the law governing CBDC (as a wholesale instrument held by financial intermediaries and large companies on a cryptoasset register in which private keys are used to initiate transfers of the asset) offers a number of potential economic benefits. Here are some examples.

- Ensuring protection of client assets in the event of a firm’s failure. Consider the failure of Lehman Brothers International in 2008. In addition to the impact on creditors, brokerage clients were impacted because Lehman Brothers International was not compliant with the London client asset segregation rules, client money was co-mingled with Lehman’s own money. CBDC with transaction based on private keys could have allowed clients to give possession of their CBDC (if I understand correctly this would be a bailment) to Lehman for specified purposes,
such as trade execution, with the assurance that following default they could immediately reassert possession of any unspent CBDC

- Similarly, in foreign exchange and other markets, a client giving broker-dealers possession of CBDC to execute and then settle trades on their behalf, e.g. a spot foreign exchange transaction, could then trace precisely which trade their CBDC was used for and at what price. This will in turn allow them to monitor best execution. If the trade is CBDC against CBDC then it would be possible for settlement could then be immediate rather than at ‘t+2’ offering the client additional liquidity benefit of real time realisation of the proceeds of trade.

- If both CBDC and other money market assets (e.g. bonds used in repo, corporate paper, treasury bills and others) are all held on cryptoasset registers, further benefits of immediate settlement and reduced counterparty risk in money market contracts could be realised. Achieving this will depend on the separation of ownership and possession and ensuring that law on bailment and possessory security interests can apply to assets on cryptoasset ledgers

**Question 10.**
2.76 If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise? (1) Do you think conversion would provide a useful or practical claim in this context? (2) Do other technical or practical solutions or market practice mean that the applicability of conversion to digital assets is less important to stakeholders and market participants? Please explain your answer and provide examples.

No answer.

**Further question in your Terms of Reference**

Could a crypto/intangible asset be characterised as: (1) a documentary intangible? (2) a document of title? (3) negotiable? (4) an “instrument” under the Bills of Exchange Act 1882?

My answer: all of the above. This is because the legal treatment of a digital asset should be independent of the system used for recording ownership and transfers (whether a cryptoasset register or a conventional system) and be unaffected by a decision to move that asset from one system to another. Thus an asset which becomes a “crypto/intangible” asset by virtue of being now recorded on a cryptoasset ledger should be able to have any of these characteristics depending on the nature of the asset.
1. What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales? Please explain your answer and provide examples.

1.1. We will start from the definition that UK Jurisdiction Taskforce in its 2019 statement on cryptoassets and smart contracts offers: ‘Broadly speaking, the term “cryptoasset” is often used to describe something which is, or of which at least a component is, represented by certain data (often, although not necessarily, recorded on a distributed ledger) which, by virtue of the design of a broader system, can only be updated upon the satisfaction of specific conditions.’

1.2. The Law Commission develops this and breaks down features of digital assets to: (a) intangibility; (b) cryptographic authentication; (c) use of a distributed transaction ledger; (d) decentralisation; and (e) rule by consensus. This definition implies that the main constituent elements of cryptoassets are data, information and digital records, so our response will focus on these.

1.3. It is common knowledge in legal profession that in England, property rights are predominantly made by judges and have not yet been incorporated into statutes comprehensively (apart from, e.g. the Law of Property Act 1925), unlike in civil law countries where property law forms a significant part of civil codes or statutes. However, as per Lord Wilberforce in National Provincial Bank Ltd v. Ainsworth there is a ‘continuing

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creative ability of the courts’, to recognise the right or interest in the category of property if it is ‘definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability.’

1.4. These requirements were not identified in the case of information and data, and consequently, it would be difficult to include cryptoassets within this definition either, since they essentially comprise information, digital records on the ledger, as noted by the Taskforce in the Consultation paper and the Commission in this Consultation Paper, plus the rights purportedly represented by these records. These rights, arguably, already exist in law elsewhere, in the analogue world, so the real issue here is with digital records and data, such as private keys.

1.5. The law of England & Wales tends to recognise only two categories of personal property.
   It should be noted that these fall in to 2 categories: (i) things capable of physical possession (chose in possession) and (ii) things which embody a right or an obligation, and which are enforceable through the law (chose in action).³

1.6. This was the conclusion reached by the UK Jurisdiction Taskforce in its 2019 statement on cryptoassets and smart contracts.⁴

1.7. Choses in action are a different type of intangible (incorporeal) property, residual in character (i.e. debts, goodwill, rights under an insurance policy, shares, bills of exchange and intellectual property). The main characteristic of choses in action is that they can only be claimed by action, legal procedure, and not in rem, reclaiming possession.⁵ Choses in action further divide into pure intangibles (e.g. debt, goodwill and copyright) and documentary intangibles (bill of lading, bill of exchange, promissory note, shares, insurance policy, etc). Notwithstanding the rigid 1885 (in Colonial Bank v Whinney) categorisation of personal property in English law, many authors would argue that, unlike in civil law, common law property is capable of expansion and inclusion of new categories.⁶ Also, as Ball rightly notes, the lack of a principle of unity of property in English law, the lack of limitative definitions of property and the bundle of rights conception of property, make English law liberal and prone to fragmentation and the manipulation of property rights by lawyers.⁷

1.8. This theory, however, no longer appears to reflect the reality as the courts have refused to create new forms of property in the last century, with the exception of carbon emission.⁸ Even legal recognition of full property rights for choses in action, which are recognised as property in English law, has been denied on the grounds that this property is not tangible. Thus, in OBG Ltd v Allan⁹, the House of Lords by a 3:2 majority denied the application of the tort of conversion to anything other than chattels. We could confirm this difficulty in expanding the definition of property, by looking at some other examples of intangibles, such as emails and databases. Before embarking on that task, however, we will briefly set

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³ See: Colonial Bank v Whinney [1885] 7 WLUK 82.
⁴ Supra note 1
⁵ Choses in action are ‘personal rights of property which can only be claimed or enforced by action and not by taking physical possession’ Torkington v Magee [1902] 2 K.B. 427, at 430, or ‘a thing which you cannot take, but must go to law to secure’ T. Cyprian Williams, ‘Property, Things in Action and Copyright’ (1895) 11 L.Q.R. 223, 232.
⁸ E.g. confidential information or electricity (‘electricity … is not capable of ownership’ in Low v Blease [1975] Crim. L.R. 513)
out the common law's historical position on property in information, which diverges to what the Commission sets out in the Consultation Paper.

1.9. Traditionally, English common law has not been prepared to recognise information as property. For instance in *Boardman v Phipps*, Lord Upjohn maintained 'it is not property in any normal sense, but equity will restrain its transmission to another if in breach of some confidential relationship'. There are some earlier authorities in English common law that afford proprietary character to certain kinds of information: *Jeffrey v. Rolls Royce Ltd* where Lord Redcliffe treated 'know-how' as an asset distinct from the physical records it was contained; *Herbert Morris Ltd v. Saxelby* where Lord Shaw of Dunfermline held that trade secrets are 'his master's property'; *Dean v. MacDowell* where Judge Cotton held that information constitutes property of the partnership. Nevertheless, Palmer and Kohler state that these authorities do not establish 'a universal characterisation of information as property.' Rather, other rules of law, (like contract, tort and breach of confidence) have been preferred in theory and jurisprudence.

1.10. The infamous case where an English court found property in information is *Exchange Telegraph Co. v. Gregory & Co.* The Court of Appeal upheld injunction to restrain the defendant broker from publishing information, the quotations in stocks and shares from the Stock Exchange, on the grounds that the information was the plaintiff's property. This stance has not been supported by most of the subsequent case law. For example, in *OBG v Allan*, Lord Walker stated: 'Information, even if it is confidential, cannot properly be regarded as a form of property.'

1.11. Similarly, in *Moorgate Tobacco v Philip Morris*, Judge Deane, writing about breach of confidence, declared that confidence's 'rational basis does not lie in proprietary right.' Rather, it lies in the notion of an obligation of conscience arising from the circumstances in or through which the information was communicated or obtained. A recent Court of Appeal case tied breach of confidence to intellectual property, deciding that confidential information should be regarded as a type of intellectual property. This is an unusual decision, and it does not follow the principles established in the previous and applied in the subsequent case law.

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10 [1967] 2 AC 46 (HL).
11 Ibid 128.
13 Ibid 805.
15 Ibid 714.
16 (1878) 8 Ch D 345.
17 Ibid 354.
19 Ibid 4–5.
20 [1896] 1 QB 147.
21 Ibid 152–153 (Lord Esher M.R.) ('This information . . . is something which can be sold. It is property, and being sold to the plaintiffs it was their property. The defendant has, with intention, invaded their right of property in it, and he has done so surreptitiously and meanly.').
22 *OBG Ltd. v. Allan* [2007] UKHL 21 at 275.
1.12. Recent examples of decisions on whether databases or emails can be property confirm the long-standing principles of common law. In *Fairstar Heavy Transport NV v Adkins*, Justice Edwards - Stuart he found that emails are not to be considered property. The Court of Appeal has recognised the same conceptual difficulties that property in information would encounter, as those that Justice Edwards-Stuart identified. However, the Court further asserted that this does not mean that there can never be property in any kind of information, as the inquiry depends on the quality of the information in question. This would mean that information such as 'know-how' might be susceptible to property, as opposed to personal data.

1.13. Despite this long-held position, the case of *AA v Persons Unknown* found that cryptocurrencies are capable of being regarded as a form of property. The judgment in this case indicated that while the narrow conception of categories of property recognised by English law, it does not mean that cryptoassets cannot be considered as a form of property.

1.14. While the court in *AA v Persons Unknown* reached the conclusion that cryptocurrencies can be a form of property, no further clarity has been offered on whether this introduces a new or additional category of property in English law.

1.15. The judgment in *AA v Persons Unknown* may be novel, and regarded as groundbreaking for its treatment of cryptocurrencies, but it also contains serious flaws, and is based around rather straightforward reasoning.

1.16. *AA v Persons Unknown* is a judgment which is based on other decisions which are controversial, and much less reasoned, so is in itself a spurious decision. It is therefore less than convincing in terms of the conclusion that cryptocurrencies can be property. The judgment in *AA v Persons Unknown* suggests that it is property, and as such, can be owned. While this may be the straightforward conclusion, and one shared by the UKJT, it is a position which we do not share given the numerous difficulties in equating cryptoassets with property.

1.17. These difficulties include establishing the property norms which are well-established for the legally recognised two categories of property in English law. Other forms of property – including intellectual property – has become justifiable through addressing these challenges. The same cannot (yet) be said for cryptoassets.

1.18. It is, however, possible to create new rights by the courts (chooses in action in particular), or the Parliament, as indicated above. Before doing so, it is wise to consider other vehicles that could be used to protect investments in cryptoassets, which we refer

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26 Ibid 69.
27 The claim to property in intangible information presents obvious definitional difficulties, having regard to the criteria of certainty, exclusivity, control and assignability that normally characterise property rights and distinguish them from personal rights. *Fairstar Heavy Transport N.V. v. Adkins* [2013] EWCA (Civ) 886, [47].
28 Ibid 48.
29 Ibid. Similarly, see *Veolia ES Nottinghamshire Ltd v Nottinghamshire County Council* [2010] EWCA Civ 1214, per Lord Justice Rix [111] and [120]. Aplin has convincingly criticised this decision, noting *inter alia*, a stark divide between the 'public law' or human rights notion of property in A1-P1 and the private law notion that has been explored in various cases and by numerous scholars'. Tanya Aplin, 'Confidential Information as Property?', *King’s Law Journal*, (2013)24:2, 172-201, DOI: 10.5235/09615768.24.2.172, p 201. For more on the legal nature of confidential information see Tanya Aplin, Lionel Bently, Phillip Johnson, Simon Malynicz, *Gurry on breach of confidence: the protection of confidential information*, 2nd ed. (Oxford: Oxford University Press, 2012).
30 *AA v Persons Unknown* [2019] EWHC 3556 (Comm).
32 *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC (I) 3.
33 Vorotnytseva v Money-4 Ltd (t/a Nebeus.com) [2018] EWHC 2598 (Ch).
34 Ibid, n2.
to in this response (including potentially, contracts). Recognising something as property, as
demonstrated above, implies serious consequences and some of them could be
intended (as judges clearly state in Fairstar and Your Response), especially for the
uncertain and developing technology such as DLT.

Conceptual problems around property and possession

1.19. At a more abstract level, it is useful to refer to the widely-accepted Honoré’s theory of
property. This theory introduces incidents of property that ‘are not individually necessary,
though they may be together sufficient, conditions for the person of inherence to be
designated as ‘owner’ of a particular thing in a given system’.

These incidents are: the
right to possess, the right to use, the right to manage, the right to the income of the thing,
the right to the capital, the right to security, the rights of transmissibility and absence of
term, the prohibition of harmful use, liability of execution, and the incident of residuarity.

1.20. We argue that cryptoassets lack at least a few of these, such as the right to possess (in
the legal sense, to the exclusion of others, given the distributed nature of the technology,
the rule by consensus, the problems with permanence and stability), the right to use and
manage (similar consideration of control and actors involved in the DLT).

DLT and
cryptoassets are composed of various actors that crucially participate in its operation;
these are participants, developers, administrators, and gateways. The Taskforce notes
some of these difficulties too.

1.21. In addition, one needs to consider the economic features, which qualify various objects
as property. The list presented here is not exhaustive, but only the most crucial features
will be referred to for the purpose of brevity. These are the following: rivalrousness (the
fact that the object cannot be physically possessed by multiple individuals at the same
time); excludability (possession of one individual excludes the possession of another);
permanence (temporality, certain stability in time); and interconnectivity (objects in the
real world, means that they can affect each other, ‘by the laws of physics’).

1.22. Here, we can again see the lack of rivalrousness, excludability, permanence for
cryptoassets, due to the inherent nature of the DLT technology, referred to in your
Consultation paper. Interconnectivity as a quality is, arguably, more easily detectable in the
case of cryptoassets. The Taskforce notes that control and excludability might be easier to
achieve with private and permissioned DLT applications. These networks have, however,
been criticised due to the lack of security achieved through distributed networks and peer-

35 A M Honoré ‘Ownership’ in A G Guest, ed, Oxford essays in jurisprudence, a collaborative work (Oxford
University Press, 1961), pp. 112-113
36 Ibid 113-128.
37 The Tasks Force notes these issues too, referring to Your Response v Datateam Business Media [2014] EWCA
38 ‘Electronic data which does not appear in a physical format is more or less (depending on the way in which it
is held) susceptible of being copied. Without an infrastructure designed to protect against this, this is likely to
destroy the possibility of a given electronic record having unique qualities, i.e. the scarcity of that digital record.
It is also likely to mean that an individual cannot credibly claim to have exclusive control of that electronic
record.’. The UK Jurisdiction Taskforce (the “UKJT”) of the LawTech Delivery Panel, Consultation on the status of
cryptoassets, distributed ledger technology and smart contracts under English private law, p. 17.
40 ‘As Private and Permissioned networks provide participants with greater levels of control over who
participates, how cryptoassets come into existence and how they are transferred, Private and Permissioned DLT
implementations are often seen as being more suitable for the development of a “security token” structure.’
The UKJT of the LawTech Delivery Panel, Consultation on the status of cryptoassets, distributed ledger
technology and smart contracts under English private law, p. 22, fn 47.
to-peer structures,\textsuperscript{41} going so far as proclaiming these "nothing more than cumbersome databases."\textsuperscript{42}

2. Do you consider a transfer of a digital asset to be more analogous to a transfer of a thing in possession, such as cash, or a transfer of a thing in action, such as bank money? Does a different analysis apply for different types of digital assets (including different sub-sets of cryptoassets) or different methods of transfer? Please explain your answer and provide examples.

2.1. No. A digital asset cannot be analogous to a transfer of a thing in possession because of the difficulties in establishing possession.

2.2. It is more conceivable that a digital asset can be analogous to a transfer of a thing in action given the digital composition of the thing. That said, such an analogy still presents obstacles given the narrow conception of categories of property under English law.

2.3. A different analysis is required given that we remain unconvinced that cryptoassets can fall within the categories of property. It is perhaps easier to conceive of a cryptoasset as similar to a bank note or a cheque in that it represents a 'promise', rather than property.

5. In what circumstances (if any) are digital assets analogous to “goods”, as currently defined under the Sale of Goods Act 1979? In what circumstances are digital assets not analogous to “goods”? What would be the practical consequences of characterising digital assets as “goods” for these purposes? Please explain your answer and provide examples. We would also be interested in respondents' views on these issues in the context of the Supply of Goods and Services Act 1982 and the Consumer Rights Act 2015.

5.1. There are differing definitions of ‘goods’ under each of these pieces of legislation.

5.2. The Sale of Goods Act (SGA) defines, goods under s61 as including “all personal chattels other than things in action and money, and in Scotland all corporeal moveables except money; and in particular “goods” includes emblements, industrial growing crops, and things attached to or forming part of the land which are agreed to be severed before sale or under the contract of sale.”

5.3. The definition under the Consumer Rights Act (CRA) 2015 differs somewhat in that it is not as comprehensive, but should be read alongside the SGA 1979.

5.4. The CRA defines ‘goods’ as "any tangible moveable items, but that includes water, gas and electricity if and only if they are put up for supply in a limited volume or set quantity." (s2(8)). It goes further in offering a definition of what is meant by digital content, taken under this Act to be "data which are produced and supplied in digital form."

5.5. These definitions support the analysis above that digital assets are not property, therefore are not goods under the SGA 1979, nor the CRA 2015 and as a result, are not analogous.


\textsuperscript{42} Ibid.
11. We welcome comments on the aspects of the Liechtenstein Blockchain Act and the Wyoming Blockchain Laws relevant to the questions in this call for evidence. What other jurisdictions, if any, should we consider and why?

11.1. Japan has been required to consider whether bitcoin / cryptoassets can be considered to be property. The Tokyo District Court concluded in the MtGox case answered this in the negative.

11.2. Japan would be one jurisdiction worth exploring given the significance of the MtGox judgment, but also the centrality of the property question as the precursor to the bankruptcy proceedings.

Response ID ANON-KA1W-5781-9

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-07-30 16:57:59

Page 1: About you

What is your name?
Name:

What is the name of your organisation?
Organisation:
Blockchain & Climate Institute

Are you responding to this consultation in a personal capacity or on behalf of your organisation?
Response on behalf of organisation

What is your email address?
Email:

What is your telephone number?
Telephone number:

If you want the information that you provide in response to this consultation to be treated as confidential, please explain to us why you regard the information as confidential. As explained in our privacy notice, we will take full account of your explanation but cannot give an assurance that confidentiality can be maintained in all circumstances.

Answer box:
We do not require the information in this response to be treated as confidential. As context, we would like to provide some background on the Blockchain & Climate Institute (BCI).

The BCI is a progressive think tank providing expertise on the deployment of emerging technologies for climate and sustainability actions. Its mission is to effect positive changes by raising awareness of the potential of blockchain technology to considerably enhance state and non-state climate actions through targeted technological interventions. The BCI's work includes advising governments on the adoption of policy and regulatory frameworks which enable the deployment of blockchain and emerging digital technologies to support the decarbonisation of the global economy.

The BCI is a network of 140 climate blockchain expert members in over 30 countries. Among the members of the 100-strong secretariat, Alastair MARKE (Director-General), Dr Sai NELLORE (Principal Assistant Director-General), and Dr Maria GRAZIA-VIGLIOTTI (Deputy Director of Research (Finance)) are UK and India representatives to ISO TC307 Blockchain & Distributed Ledger Technology Standards Working Groups. The Director-General is also an ad hoc expert advisor to the All-Party Parliamentary Group on Blockchain.

Distributed ledger technology ("DLT") is a promising technology with enormous potential to help underpin the UK's green transition. Specifically, DLTs can play a key role in supporting the UK's climate change mitigation and adaptation efforts, and as part of the UK's legal obligation to achieve net-zero carbon emissions by 2050 under the Climate Change Act 2008. However for DLT to do so, greater legal certainty around the treatment of digital assets is necessary.

For projects seeking to deploy DLT for climate and sustainability actions, uncertainty relating to the legal treatment of digital assets raises the additional legal risks that could discourage much-needed investment. The BCI, therefore, supports the work of the Law Commission seeking to increase legal certainty and encourage the uptake of DLT and digital assets, in particular in the arena of climate change mitigation and adaptation.

One area that the BCI is exploring is how DLT could be used to address some of the existing security and practical issues relating to carbon markets and emissions trading. The BCI has been advocating for the potential of DLT to help facilitate emissions trading, as a way to address some of the challenges currently encountered in emissions trading such as the double counting and theft of allowances. DLT has a number of potential benefits to offer emissions trading (see our response to paragraph 12 for reference), but it is yet to be widely adopted in part due to perceived legal risk and uncertainties. The BCI's response to this Call for Evidence, therefore, focuses in particular upon the potential use of DLT for carbon markets and emissions trading, as well as the potential use of DLT for peer-to-peer energy trading.

Page 2: Call for evidence

Question 1.
1. If digital assets were capable of being possessable under the law of England and Wales, this would help provide greater legal certainty as to the use of digital assets to represent certain intangible rights and documentary intangibles, and the remedies available in the event of theft or unlawful obtaining of tokens representing such intangible assets. For example, legal certainty that theft of a digital asset representing a tradeable emission allowance would give rise to equivalent remedies as if that stolen emission allowance were not represented by a digital token.

2. As the Call for Evidence notes, documentary intangibles, which are intangible rights embodied by physical documents, are an exception to the rule that delivery of possession is not possible for intangibles or things in action (in the way that it is for things in possession). Instead, documentary intangibles such as emissions allowances may be transferred by passing possession, subject to the rules of the applicable arrangements (such as any transfer requirements under the applicable scheme or energy trading system).

3. If digital tokens representing documentary intangibles are not recognised as a form of property capable of being possessed, this could present practical and legal challenges to the use of DLT to represent documentary intangibles. The Law Commission’s Consultation on Electronic Trade Documents seeks to address this issue in relation to those types of trade documents defined under section 1(2) of the proposed Bill. However, there are other types of documentary intangibles not included in this list that could also benefit from the recognition that digital assets are capable of being possessable in certain circumstances.

4. To demonstrate this, the BCI’s response focuses on discussing two examples where digital assets may be used to represent two different intangible rights; tradeable emissions allowances and peer-to-peer energy exchange systems.

Example 1: Emission allowances:

5. DLT has a number of potential benefits to offer emissions trading (for further information, see our response to question 12), for example as part of the UK Emissions Trading Scheme (“UK ETS”) or voluntary emission trading schemes. However, DLT is yet to be utilised for emissions trading, in part due to perceived legal risk and uncertainties around the treatment of digital assets.

6. In Armstrong v Winnington [2012] EWHC 10, [2013] Ch 156, the court held that an EU emissions allowances could be characterised as intangible property at common law. As a result, the original holder of a stolen allowance, Armstrong, was entitled to a money judgment following the fraudulent theft and subsequent sale of its allowances, on the basis that the allowance was a type of property that was possessable and could be the subject of a proprietary restitutionary claim. The court characterised the carbon emission allowances as “other intangible property”, distinct from a thing in action or thing in possession, thereby recognising a potential third category of property.

7. Imagine instead that Armstrong participated in an emissions trading scheme where the emissions allowances are represented by a digital token recorded on a distributed ledger. Compared to carbon allowances identified in a central registry, the use of DLT and cryptographically secured tokens would provide a number of security benefits to reduce the risk of theft of these allowances (see our response to question 12). However in the event that a third party was able to ‘hack’ the wallet and steal the digital tokens, the original holder should be entitled to equivalent remedies as if the allowance were not represented by a digital token. If digital assets are not capable of being possessable under the law of England and Wales, then had Armstrong’s emissions allowances instead been digitally represented using DLT, a proprietary remedy might not have been available to Armstrong.

8. To provide greater legal certainty regarding the use of DLT for emissions trading, the BCI consider that a digital token representing an emissions allowances should therefore be recognised as capable of possession in much the same way as the underlying emission allowance itself.

9. We note the proposal in the Law Commission’s Consultation on Electronic Trade Documents that one of the conditions for an electronic trade document to be capable of being possessable in the eyes of the law is that it is capable of “exclusive control”. In regulated carbon markets (as opposed to voluntary carbon markets), some degree of control by the administrator of the centralised emissions trading scheme would be necessary, for example, to oversee the issuance and surrender of the allowances. For digital assets representing an emissions allowance to be “possessable”, such degree of control by a centralised administrator should not preclude the digital asset from being “possessable”.

Example 2: Peer-to-peer energy exchange

10. To mitigate dependence on fossil fuels, new schemes to reward the production and consumption of renewable energy are required. The decentralization of renewable energy production comes with many challenges, and many believe that blockchain technology can help address these challenges.

11. One way in which this might be achieved is by using blockchain-based utility tokens for the production and consumption of renewable energy. To incentivize local production of green energy, homes that produce energy (“prosumers”), for example by photovoltaic panels or micro-windmills that feed into the grid, could be issued with cryptographically secured tokens in exchange for each kWh of energy produced. This token could be exchanged for consumption of energy from the grid or, in some cases, it might be possible to trade the token on open exchange markets for their monetary equivalent in order to further incentivize the generation of renewable energy.

12. An example of this kind of arrangement is the Brooklyn Microgrid, based in the USA. This is a peer-to-peer network of photovoltaic cells and electricity infrastructure, whereby consumers and prosumers (who both produce and consume) operate a self-contained electricity supply system, based on a distributed ledger. Digital tokens are awarded for surplus power generation which is made available to the grid. Such tokens are stored in secure wallets accessed through private keys, and can then be exchanged on an automated marketplace for units of electricity. This means that such credits have value, as they are exchangeable for a desired commodity – electricity.

13. If such digital tokens were not recognised as possessable under the law of England and Wales, in the event of the theft or unlawful obtaining of such token (or example through the hacking of a wallet), the original holder of the digital token might not have a proprietary remedy in relation to such theft.
The current legal uncertainty as to the legal treatment of the digital tokens represents a further barrier discouraging much-needed investment in decentralised energy exchange schemes such as this and their role in reducing carbon emissions.

Question 2.

Answer box for Question 2:

1. We expect it is likely that a different analysis will apply depending on different types of digital assets and the legal and regulatory context in which they occur.

2. For example, in the emissions trading context, if participants are able to directly transfer a digital token representing an emission allowance from their wallet to another party in exchange for payment, this appears to be more analogous to a transfer of a thing in possession. The transfer can be made by delivery of possession of the token. When the participant comes to surrender that allowance to the administrative body responsible for the issuance and surrender of allowances against participants’ carbon emissions, this is once again effected by a transfer of the token from the participant to the administrative body.

3. In the example of a digital token representing the a kWh of energy produced, similarly, the token itself can be held in a participant’s wallet and transferred from one wallet to another, as if it were delivered to another person. Again, when it comes to surrendering that token in exchange for the purchase of a kWh of electricity, this can occur by the transfer of that token from the participant to the operator of the scheme or directly to another prosumer that has generated a kWh of electricity. It, therefore, appears that the transfer operates in a similar way to the transfer of a physical object.

4. However, the BCI expects that there may be other types of digital assets where a transfer is more analogous to a transfer of a thing in action.

Question 3.

Please share your views below:

Question 4.

Please share your views below:

1. In the example of the use of DLT and digital tokens for emissions trading, the BCI would characterise an on-chain transfer of the digital token as a transfer of property (in much the same way as the transfer of the emissions allowance itself would involve the transfer of intangible property), rather than the transfer as creating “new” property as discussed in the Call for Evidence.

2. One of the potential advantages of DLT for emissions trading is that DLT could enable each emissions allowance to have its own unique identifier; all the key information relating to that allowance and its trading (e.g. original buyer and seller) would be trackable through its cryptographic hash functions, with new ‘blocks’ added to the chain as the unit is traded between market participants. However, this relies on each individual token being capable of being transferred as if it were property and each a unique token; the token represents the same original allowance but with the benefit of additional information being recorded on the ledger. If each transfer of the digital token brought into existence a ‘new’ token, this could undermine the advantages that DLT has to bring to emissions trading.

Question 5.

Please share your views below:

1. We expect that the position will likely depend upon the type of digital asset and the circumstances in which it exists.

2. In the case of the examples of emissions trading and peer-to-peer electricity exchange, we do not consider the tokens would be analogous to “goods” subject to the protections under the Sale of Goods Act 1979 (“SGA”). For example, provisions under the SGA such as implied terms about quality or fitness are not directly applicable or relevant to fungible utility tokens representing intangible rights such as an emissions allowance or kWh of energy. Instead, the rights attaching to each token would be determined according to the rules of the relevant scheme, as established by the operator of the private permissioned blockchain.

3. However, to increase legal certainty relating to digital assets, the BCI would welcome measures (such as legislation or guidance) that provided greater legal certainty as to the sale and transfer of digital assets, for example, to address aspects such as contract formation and performance.

Question 6.

Please share your views below:

Legal certainty is required as to whether and how the exceptions to the nemo dat principle would apply in respect of a digital asset, in particular, in what circumstances a bona fide purchaser for value without notice will acquire good title.

Question 7.

Please share your views below:

1. We respond to this question using the above examples of digital tokens representing an emissions allowance or a kWh electricity in a decentralised energy trading system. In such use cases, that the underlying intangible assets have been ‘tokenised’ should not have the effect of reducing the legal rights or remedies available to the holder of that token.
2. As discussed in our response to question 1, we consider that the ability to possess a digital asset token would help clarify the legal analysis relating to ownership of digital tokens, by clarifying that the holder of a digital token may pursue proprietary remedies in the event of the theft or unlawful obtaining of such token, in the same or similar manner as it would have the underlying asset itself been stolen.

3. Take the example of a prosumer participating in a decentralised peer-to-peer electricity exchange scheme by generating electricity through solar panel installations and selling this electricity to a micro-grid in exchange for digital tokens that can be used to purchase electricity at a later date or exchanged for value. That prosumer should have the same or similar rights and remedies against a third party that stole electricity by tampering with the power equipment as if the third party hacked into the prosumer’s wallet and stole digital tokens representing such energy already sold to the micro-grid.

4. The way in which the Liechtenstein Blockchain Act enables a digital token to contain rights to real assets could provide one solution to this problem. For example, if upon the transfer of a digital token representing an emissions allowance, that token was recognised as “tethered” or “fused” to the underlying allowance, this could enable the holder of that token to be entitled to the same rights as the holder of an underlying allowance, helping to address some of the current legal uncertainties discussed in our response to question 1.

Question 8.
Please share your views below:

Question 9.
Please share your views below:

Question 10.
Please share your views below:

Question 11.
Please share your views below:

Question 12.
Please share your views below:

As further background and context, we include below a number of advantages that DLT could offer to facilitate emissions trading and the trading of emissions allowances. These include:

• Protection against theft and duplication of emission units. The electronic nature of carbon allowances identified in a central registry makes them particularly susceptible to technology crimes, such as theft of units from hacking of the central registry or a participant’s account. Further, as a unit is traded between market participants, the trading history might comprise a mix of validly acquired transfers and those obtained following a defective transfer. Theft of emissions allowances raises difficult questions as to the legal owner of the ‘defective’ units, which DLT itself cannot solve. However, the use of DLT and cryptographically secured emission allowances could enhance the technological protection against the theft and duplication of emission allowances in the first place. In particular, DLT could enable each emissions unit to have its own unique identifier; all the key information relating to that unit and its trading (e.g. origin, buyer and seller) would be trackable through its cryptographic hash functions, with new ‘blocks’ added to the chain as the unit is traded between market participants. The validation of each carbon unit transfer on the blockchain, combined with the use of AI-based transaction monitoring, provides further protection from theft or fraudulent transfers. Even where fraud does occur, the information recorded on the blockchain could enable this to be identified and prevent the fraudulent surrender or re-sale of the units. This reduces the fraud risk to individual participants.

• Immutability of transactions. Whereas current emissions trading systems maintain a single, centralised copy of transactions and accounts, a DLT emissions trading system would spread these across all the key points in the network through a database consensually distributed and synchronised across multiple sites. This would make tampering with transactional data or fraud almost impossible, because of the huge redundancy of remaining good copies. Nobody in the DLT system would accept a transaction from anyone who attempts to build that transaction on a modified version of the data that has already been accepted by other stakeholders. The immutability of records held on a distributed ledger is therefore crucial to help build trust in trading records held on registries such as for emissions trading purposes.

• Protection of participants’ units and data using encryption systems and secure ‘wallets’. Instead of a centralised registry of emissions units held by a centralised authority, each participant in the emissions trading system could instead be provided with a digital ‘wallet’ in which to store their emissions allowance tokens, accessible via a private encryption key. Without this private key, illicit actors would be unable to access the wallet and emission allowance tokens. Again, this can help ensure protection against theft or fraudulent transfers.

• Authentication and use of smart contracts. Traditional emissions trading systems only record data in centralised ledgers. The use of DLT however enables users to enter into contractual arrangements using smart contracts, which can be programmed to automatically execute upon the fulfilment of certain conditions. For example, a buyer and a seller of a carbon unit can agree upon a transaction (including price) which cannot proceed until the receipt of due diligence information, as verified by a trusted third party verifier.
Submission to the Law Commission of England and Wales Call for Evidence on Digital Assets

28 July 2021

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1. General comments

This submission addresses the “Key Questions” and “Additional Questions” in turn. It adopts the nomenclature used in the Cambridge Centre for Alternative Finance, which defines “cryptoassets” narrowly to mean data-based objects “endogenous” to an open, permissionless DLT system, which play an indispensable role in the economic incentive design of the underlying shared ledger. This definition does not violate the principle of technology neutrality in a problematic way—it refers to a set of prima facie “things” (data-based and therefore notional “objects” treated by market participants as objects of value) created by means of some combination of cryptography and economic incentive. Thus defined, “cryptoassets” are a subset of a much broader category.

I would define “digital assets” broadly to mean any digital representation of value. In contrast to “cryptoassets” (which do not “represent” but are ascribed value in their own right) most digital assets are literally representations of some (other) value/asset. In this context, I would define asset broadly as a “thing of value” irrespective of whether it corresponds to a “liability” in some accounting framework. Digital assets may use distributed ledger technology (DLT) or blockchain technology specifically, but if the relevant system is used to represent “off-chain” value I would approach it as a case of “DLT-based digital assets”, not “cryptoassets”.

As a catch-all category, there is some difficulty in limiting the scope of “digital assets”. It is an open question where “digital assets” end and “digital data” begins. I would suggest that some aggregation of data have to be capable of individuation in a particular context to be considered “assets” as such. Further, there are digital objects that exist and are ascribed value in their own right (rather than being used as a “token” for some other value). For example, in-game objects exist “for themselves”, but clearly do not meet the definition of “cryptoassets” set out above.

The basic distinction between “cryptoassets” and “digital assets” seems to be finding a degree of acceptance in the literature. Despite occasional debate, a distinction between things like bitcoins, on the one hand, and things like DLT-based company shares, on the other, is ultimately accepted as basic—especially from the perspective of property law.


2 This has been a topic of discussion has been a repeated point of discussion in the UNIDROIT Study LXXXII on digital assets in private law: https://www.unidroit.org/work-in-progress/digital-assets-and-private-law.
The Law Commission’s work in this respect will be helpful for both the emerging literature and parallel law reform processes in other jurisdictions. My approach so far has been heuristic in the sense of starting with “cryptoassets” and then working out to “digital tokens” (e.g., DLT-based company shares or commodities) of various kinds and then crossing other bridges as/if they are reached. Such an approach might also be helpful in the context of English law, but it would be helpful for the Law Commission to bite in the sour apple, as it were, and venture some answers to these difficult taxonomic questions.

2. Responses to Key Questions

1.2 Under what circumstances, if any, would the following be characterised as personal property: (1) a crypto/intangible asset; (2) a private key?

In my view, it is fairly straightforward that digital assets broadly (including cryptoassets) can and should be characterised as “personal property” in English law. The question of private keys is a difficult one. Looking at a USB “cold storage” device, it is tempting to treat the private keys on it as the relevant “objects” of property rights; they seem to be what is important, and seem more readily capable of individuation and localisation than the notional “bitcoins” (for example) that exist on a ledger that is everywhere and nowhere. Cryptoassets like bitcoins are also ephemeral in the sense that transactions implicitly create and destroy them. However, it is the notional pounds and pence in my bank account that are important, not my PIN. I think the same analysis necessarily applies to cryptoassets and private keys.

Turning to digital assets more broadly, we often (perhaps usually) approach digital assets like “tokenised” shares/commodities/real estate by analogy with commercial instruments. Within the industry there is sometimes talk of DLT tokens being like “bearer instruments”, for example. They may be functionally equivalent, but the process of “tokenisation” in a DLT system creates notional objects (i.e., book entries), if anything. Accordingly, an ambiguity that runs through much of the emerging literature and, indeed, through the various workstreams of the Law Commission including this Call for Evidence. On this point, I would refer to the works of J.S. Rogers, many of which were written during the revision of the US Uniform Commercial Code in the 1980s and 1990s. My impression is that Rogers advocated for a “natively digital” approach to UCC reform, whereas UCC reform has rather taken an approach informed by the law of commercial instruments. This is superficially at odds with the Law Commission’s approach to “digital possession” in the context of electronic trade documents, insofar as “possession” connotes physical states of affairs and processes that are inappropriate to the digital context, but I do not think that the Law Commission’s approach necessarily entails any strong analogy to physical instruments. I think that the Law Commission must tackle the deeper questions head-on and aim towards a framework for cryptoassets and digital assets that reflects the actual mechanics occurring at the interface between novel information repositories and the conceptual categories of the common law.

With regards to digital “tokens” of other value, whether that other value be an obligational relationship, a physical asset, or another cryptoasset/digital asset, the question arises why digital representations of “exogenous” value should be seen as “things” in their own right at all. This in turn reveals a grey zone in our thinking about things in English law. We tend to back-walk into the question “is X a thing?” by asking questions about rights and remedies, rather than launching an ontological enquiry into the nature of “thing-ness”. This is a sensible, pragmatic

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orientation, but it elides the question why we treat notional objects that (only) exist in virtue of documentation as “objects” at all. We do not generally consider land register entries in this way, for example—the relevant “thing” is the land, not the record of it. An obligation owed by a counter-party with regards to land might be “reified” as a chose in action, on the other hand. So too, “obligation-things” like bank account money are routinely treated as objects in their own right for many, if not all, purposes. So are company shares and securitised commodities. As the Call for Evidence notes (with reference to Hernando de Soto), the law creates “capital” from “assets” and so allows documentary representations of assets to live a double life, with assumed economic benefits. However, particularly in relation to systems in which records are treated as things in their own right, there may be some fundamental conceptual questions to be answered about the ontology of the things in question.

1.3 In particular: (1) What are the key characteristics that a crypto/intangible asset must have to be considered property? (2) What characteristics would prevent a crypto/intangible asset from being considered property?

The factual characteristics that a digital object has to have in order to be recognised as a fitting object of property rights are probably quite similar to the indicia set out in para [2.19] of the Call for Evidence. The digital object has to have some kind of perdurance, in the sense of persistence through time; some degree of documentation or fixation in a verifiable medium (usually writing), and some characteristic of rivalrousness (in the economics sense that duplication entails a marginal cost and the “object” cannot be enjoyed by an arbitrary number of parties without prejudice to some parties’ enjoyment). I think there is a strong presumption that the law should facilitate, rather than discourage, the creation by private parties (i.e., the market) of new assets (i.e., objects of value), unless there is some good reason not to do so. To that extent, market expectations should also be considered directly, but market opinion cannot be considered dispositive.

1.4 If a crypto/intangible asset is capable of being property: (1) Is that as a thing in possession, a thing in action or another category of property? (2) How is title to that property capable of being transferred?

Following on from the above point, it is important not to allow market expectations or practice to muddle the law’s conceptual categories. This is true even in a system such as English law, which is generally thought to be the antithesis of “conceptual jurisprudence” (in which axiomatic definitions are established and the system of law unfolds as deductive propositions from those axioms). This is of particular relevance in the context of the “thing in action” versus “thing in possession” question.

Here it is helpful to start at a basic level. New things in action are created when private subjects use the building blocks provided to them by private law in valid ways. For example, a valid contractual arrangement might give rise to a claim in debt that can be “reified” and treated as if it were a thing. New things in possession are created when private subjects manipulate the physical world in ways that the law regards as relevant. For example, where I join two things or cut one thing in half, the law recognises my dealing in some way or another. The historical process by which things in action were “reified” and their treatment equated with things in possession was a dialectical process between commercial practice and judicial (and later

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4 See in particular Barry Smith, David Mark & Isaac Ehrlich (eds.), The Mystery of Capital and the Construction of Social Reality (Open Court 2008), combining de Soto’s theory on “the mystery of capital” and John Searle’s social ontology.

5 Which refers to para [2.57] of the Consultation Paper No. 254 on Electronic Trade Documents on the question of “possessability”.

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legislative) accommodation of market innovations. This process is instructive to contemporary law reform processes including the present one.

For both types of things, there is a broad presumption of freedom subject to supervening legal restrictions, which usually track moral assumptions implicit in the law. So, for example, the obligation of service under a purported contract of voluntary enslavement might not be a thing in action even though it arises from apparently consensual dealings; a stolen organ might not be a thing in possession, even though it is created by manipulating the physical world. These sorts of fringe issues show that the constitution of a new “thing”, of whatever kind, rests at base on normative as well as (or rather than) purely physical mechanics (e.g., separation or admixture).

From this, contractual dealings that fulfil all the legal requirements to create a “thing in action” create such a thing even though the relevant documentation is in digital rather than written form. For this reason, I think that DLT-based company shares or “tokenised” commodities, for example, are straightforwardly “things in action”. That is a different problem to the one raised by cryptoassets as I have defined them. Here, the problem is simply that the apparently factual dealing of creating new “things” occurs in a digital rather than in the physical realm. No legal system has dealt with this situation directly in the past. The basic conceptual structure of all major legal systems was established in a pre-industrial or early industrial society. What is more concerning is that, even in the decades since digital objects (such as in-game objects) have been on the table, we have for the most part been kicking the can down the road instead of dealing with the legal ontology of the digital directly.

Perhaps the classic example of this is, paradoxically, Judge Frank Easterbrook’s “law of the horse” argument. This is the published version of a keynote speech on the topic of “Property in Cyberspace”, which Easterbrook dismissed as a legitimate or useful area of enquiry. Current efforts to adapt and modify the workings of property law confirm his general point that we should work from general principles rather than proliferate niche sub-disciplines. The first thing to observe is that most digital assets—but no cryptoassets—are straightforwardly things in action. But current developments also stand as a powerful indictment of his failure to approach the novel questions already apparent in the 1990s about the property status of digital objects. If legal scholars in the 1990s and 2000s had been more adventurous, the “blockchain revolution” would not have raised so many novel issues. That is the paradox of the “law of the horse” approach; it has actually discouraged novel conceptual development from first principles.

With regards to cryptoassets, the most obvious solution to the “in action” versus “in possession” question is to “stretch” one or the other of the existing categories to include them. I would not take the approach of stretching the “things in action” category to include any “thing” that is not tangible. A thing in action is the “reification” of an obligational relationship, and the granularity

6 In the latter case, the law stipulates that the body of another human being—even a dead one—is not simply a thing that can be exploited for value like any other. In a sense, the status of “person” sticks to a corpse for a certain time after death. This does, however, sit uneasily both with the existence of extensive and important licit markets in human body products.

7 English property law still bears the hallmarks of feudalism in its summa divisio between “personal” and “real” property and its piecemeal treatment of intangible objects as sometimes personal property and other times real property. See generally the discussion in J.G. Allen, “Property in Digital Coins” (2019) 8(1) European Property Law Journal 64.

of that category would be reduced if it were simply made a catch-all. This is not because I would give Fry LJ’s dictum in *Colonial Bank v Whinney* an axiomatic status that it does not deserve; I am aware of arguments based on a contextual understanding of that case and what Fry LJ might be taken to have meant with his “*tertium quid*” argument. Rather, it is based on my view of the most sensible path forward for the development of English law through a Law Commission procedure.

However, cryptoassets are not straightforwardly “things in possession” either. Again, the possession question arises. It is obviously possible to redefine the concept of “possession” to apply to purely digital objects, but this approach requires caution in order to avoid slipping into inappropriate habits of thought. The problem is not so much of the “law of the horse” as the “law of horseless carriages”. J.S. Rogers made this observation in the context of an earlier iteration of the same basic question. It had been observed in the context of the evolution of commercial instruments that the law always makes the necessary accommodations to the changing practice, but with a time lag: it took a few years for the law to recognise, for example, that “an automobile (although it has four wheels) is not in all respects like a horse (which has four legs).” Rogers pursued the metaphor in a review of the 1994 revision of UCC Article 8. Referring back to the 1974 revision, he observed that it made no sense to make laws for horseless carriages when the intended object of regulation was automobiles:

> We had a commercial system based on paper and a law written in terms of paper. The paper was replaced by electronic media, so the law had to be revised to reflect that change. How do you do that? Simple; you just take the paper part out… So today we hear a good deal of discussion of the need for a law of electronic negotiable promissory notes… Or, to use the current jargon, we consider rewriting the law in “media neutral” terms, so that it will not matter whether the thing in question is represented by carved stone, ink on paper, or electronic impulses. But there’s the rub. Are we really so sure that the world is media neutral? To define, and hence limit, law revision projects by the effort to devise electronic equivalents of the familiar paper-based representations… is to assume that technological change will have no significant ontological consequences.

One such “ontological consequence” is that “possession” does not connote the ability to amend an information repository, even if it is redefined to denote that as a term of art. Without delving into too much detail on the “possession question” (or commenting on the parallel Electronic Trade Documents workstream), any use of a (redefined) concept of possession in English law should be careful not to distort the fact that dealings with digital assets of all kinds amount to manipulations of a ledger.

Alternatively, a new category could be created that is natively designed for “pure intangibles”. It could either follow the suggestion to abandon the “in action/in possession” language entirely or it could create a *tertium quid*. This is most important in the context of cryptoassets and possibly in-game objects and some NFTs.

These things remain more “in action” than “in possession” like to the extent that they implicitly rely on some normative framework in which the notional “objects” that a technical system creates are treated as legal things at all. Again, there is a counter-intuitive parallel to land here. As mentioned above, we intuitively think of land as the “realest” of things—a part of the earth’s surface. But if we dig a little deeper, parcels of the earth’s surface do not have many of the

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9 (1885) 30 Ch D 261.


characteristics of thing-ness. One parcel of land cannot actually be individuated from another physically, for example—one can build a fence, a wall, a ditch, but these do not “separate” the land on one side from that on another, so much as they change the way that humans (or other animals) can move on the land. Individuation—the division of meum from tuum that is inherent in the claim that it is my “property”—occurs on a purely informational plane, historically through the use of certificates and ceremony and today through the use of detailed cadastres and registers. These exist and operate only by reference to a framework of legal rules, and the “individuation” and “reification” of a notional set of geographical coordinates is, in a very important sense, normative rather than physical.

This brings us to the method of transferring an intangible asset. Fundamentally, the method of “transfer” in the legal sense is the legal meaning attributed to some dealing in the world, such as the utterance of certain words, manipulation of certain records, or a change of physical possession. Here, I think it is advisable to start with the act-in-fact that is being deemed to be an act-in-the-law. Is it a change of possession? Is it assuming occupation of a place? Is it signing a paper? Is it changing a ledger? In keeping with my general approach, I think it is a law of horseless carriages to press “changes to a ledger” into the “change of possession” category, even though this seems to be the more popular approach and, I think, may even be the preferred approach of the Law Commission. When a ledger is changed, generally one entry is erased and a new one is created. This is taken by the parties involved to mean that property rights in a notional object have “moved” from A to B. Any law reform should reflect the way that these systems actually work; it is an unnecessary detour to go via some “intangible documentary intangibles” route, for example. Such an approach would give too much credence to conventional categories of property, in my view, and miss the unique opportunity to update the law to govern the world around us.

1.5 Is a crypto/intangible asset capable of being the object of a bailment?

1.6 Can security validly be granted over a crypto/intangible asset and, if so: (1) How? (2) What forms of security may validly be granted over a crypto/intangible asset?

My answer to these questions follow from the position set out above. I think that the UKJT Legal Statement was correct to say that non-possessable objects cannot be subject to a bailment relationship, and that forms of security interest that conventionally require possession are not available over such assets. Again, it is possible to reform the concept of possession to denote “control”, which in turn means “ability to amend the information kept in a technical system with the features XYZ”. This has the advantage of making existing legal categories and mechanisms (such as “bailment” or “lien”) available without anything further. But it is not the approach I would take because it is rather reflective of conventional categories than the way that digital objects actually work. What dealings between to parties would amount to a “bailment”, for example? Most likely, A would give B certain private keys. Why is that a “bailment” of notional objects? How else might it be conceptualised? Does another category of security interest “fit” the factual scenario more straightforwardly?

The fundamental problem is that DLT, and blockchains in particular, present a robustly (if not absolutely) “trustworthy” technology, but were designed without a very rich or nuanced set of legal dealings in mind and provide no mechanisms to, for example, record security interests “on-chain”. This is perhaps in large measure due to the fact that their creators had inaccurate analogies such as “digital bearer instruments” in mind instead of “next generation, multilateral

12 This point is discussed in David Fox, “Cryptocurrencies in the Common Law of Property” in David Fox and Sarah Green, Cryptocurrencies in Public and Private Law (Oxford 2019), [6.19], [6.53].
ledgers”. This presents a problem now, as parties wish to be able to perform the whole range of actions with (notional) digital objects and some (still) see the law as regulative and obstructive rather than facultative. An instinctive response to this is to accommodate those misconceptions in law reform. Again, the practical harm in redefining “possession” to mean “control of an entry in an information repository” may not be realised, if done carefully. But I would urge caution and particularly I would urge that this approach should not be allowed to brush the more fundamental questions under the carpet, as it were—to create a “law of horseless carriages” rather than a “law of automobiles”.

1.7 Can a crypto/intangible asset be characterised as “property” for the purposes of the Insolvency Act 1986?

1.8 Can crypto/intangible assets be characterised as “goods” under the Sale of Goods Act 1979?

Briefly, Question 1.7 should be answered with “yes” as the catalogue in s. 436 of the Insolvency Act 1986 is extremely broad and expressly includes “every description of property” and “every description of interest in property” of whatever kind.

Question 1.8 is a little more complicated because it depends on the answer chosen to more basic questions about the taxonomy of digital assets. Digital assets that are properly seen as “things in action” should definitely not be characterised as “goods” under the definition in s. 61 of the Sale of Goods Act 1979, because that definition expressly excludes things in action. A DLT-based company share, for example, should not be treated differently to other electronic company shares.

There is, on the other hand, a live issue as to whether cryptoassets should be seen as tantamount to “goods” to the extent that they are not things in action, i.e., do not embody or represent claims against a (known) counter-party but rather a capacity for some function within a technical system that is plausibly seen as a kind of “digital commodity” (even though I would not use that terminology). Perhaps more importantly, to the extent that NFTs or in-game objects are seen as “digital goods” there might be some basis to argue that they should fall under s. 61. Without being an expert on this Act, I would tend to say that a purposive interpretation should be taken and that this might lead to differences in the treatment of, for example, bitcoins and in-game objects based not on their features per se but on their use in light of the objects of the Act.

1.9 In what circumstances is a distributed ledger capable of amounting to a register for the purposes of evidencing, constituting and transferring title to assets?

This raises an interesting and fundamental question. Ontologically, the category of “register” fits cryptoassets (and many other digital assets) much better than any other. At base, despite much talk of “digital bearer instruments” and similar, the aspirations and assumptions underlying much of the “crypto movement” are for distributed ledgers to act as private registers for the purpose of evidencing, constituting, and transferring title to assets.

This raises the question whether private associations—such as companies, consortia, or indeed open-source developer communities—can create “registers”. The paradigm of a register would seem to be one created and maintained by an appropriately authorised entity, be that a government agency directly or some non-governmental body authorised by law to maintain one. There does not, it seems, seem to be a well-developed law of purely private registers. This in turn makes the question one of the legal effect given to a private register. I do not think it can ever have quite the same legal effect as a register kept by a governmental authority directly.
Provided there are sufficient guarantees of its reliability, and provided there are effective avenues of redress, it is fairly straightforward that a private database could be treated as a register for the purposes of evidencing title (and evidencing transfers of title). Whether a purely private register can provide a kind of “root of title” is an open question. This also raises questions about the categories of “register” and “account” as different types of ledger-based system.

These questions are important because they go to the basic legal-technical characterisation of DLT systems and the “assets” they create/evidence. Much of the impulse to squeeze ledger-based assets into categories such as “bearer instruments” and “possession” stems from the need to account for purely private dealings creating root of title, which is perhaps more familiar in the deed/certificate context.

3. Additional questions for consideration

1.10 If crypto/intangible assets can be characterised as property: (1) What are the key characteristics that a DLT system must have so that crypto/intangible assets on that system can be considered property? (2) What characteristics would prevent any crypto/intangible assets on a DLT system being considered property?

1.11 The Legal Statement found that private/public keys in themselves are not private property. (1) Does the Law Commission agree? (2) If so, what are the implications for cryptoasset wallets (especially in a theft scenario)?

I do not see how a private key could be “property”, that is, an object of property rights. I would see private keys as the means to manipulate digital assets in systems which require private keys as authentication to deal with digital assets in the system. The most direct analogy, in my view, would be with a bank account PIN; the PIN allows dealings with the units of bank account “money”, but the units of money are the “thing” (in action), not the PIN.

1.12 Crypto/intangible assets may be represented “off-chain” (outside the DLT) by other digital assets. Crypto/intangible assets may also be linked to underlying physical assets. In such case: (1) How are assets, services or other things that are linked to cryptoassets to be treated? (2) Would linkage create separate legal rights, such that bailment is possible in certain circumstances?

It is helpful to back-walk into this question. Building a “link” or “bridge” between an asset—be it a physical asset, a conventional thing in action, or a cryptoasset such as bitcoin—is something currently assumed to be possible; there is a good prima facie case that English law should provide a certain and robust legal framework by which this “link” is supported. In all such cases, the “digital asset” represents rights (in a physical thing, in a conventional thing in action, or in a cryptoasset). It would thus fall naturally and easily within the conventional category of a thing in action because it is a symbolic representation of a legal relationship, a “bundle” of rights.

There is, however, a significant degree of uncertainty as to how the “link” is to be constructed from the legal perspective, at least insofar as DLT is used to construct the “link”. It will probably boil down to questions of documentation (both technical and legal, and the combination of technical and legal) and to the interoperability of novel technical systems with legacy ones—for example, between a DLT-based “tokenised real estate” system and the land register in which interests in land are actually created, destroyed, and transferred. In this regard, there is likely to be a lot more “securitisation” than true “tokenisation” in the sense of some kind of corporate counter-party being used to intermediate the investor’s interest in the
underlying asset. This will, in turn, implicate other bodies of law such as companies law, law of trusts, and special statutory regimes governing structures like real estate investment “trusts”.

The circumstances are likely to be varied and it is likely that in a lot of cases the “token” of some underlying asset will be an object of property rights/thing in its own right. (This relates back to Question 1.3(2), above, and on the question whether an entry in a DLT-based land register, for example, would be an “object” or “thing” in its own right rather than a mere record.) On the bailment question, this also depends on the answer to questions further upstream.

1.13 Could a crypto/intangible asset be characterised as: (1) a documentary intangible? (2) a document of title? (3) negotiable? (4) an “instrument” under the Bills of Exchange Act 1882?

Although I understand that the Law Commission is working on a concept of “possession” that would be appropriate to cryptoassets and other digital assets, I think that the options set out in Question 1.13 should all be answered in the negative. With regards to (1), the whole point of this category is to make intangibles behave like tangibles in private law transactions in virtue of a paper “wrapper”. It’s not the “document” in the sense of a written record of structured data that yields semantic meaning to a human, it is the “document” in the sense of that writing’s medium that is important—namely, the ontological feature of being made of paper and therefore graspable by a human being. To quote Rogers again:

[T]he negotiability doctrine rests on an assumption that the best way to transfer abstract rights is to embody them in pieces of paper and then physically deliver the papers from person to person. As the volume and velocity of trading increases, the requirement of physical delivery becomes an intolerable burden; once we pass from paper to electronic recording of financial relationships, delivery becomes a metaphysical absurdity.\(^\text{13}\)

The same applies to (2) and (4). Although I am aware of established conventions in other jurisdictions of referring to certain electronic records as “negotiable” or “instruments”, I think this makes a basic ontological error and rather circumvents exactly the type of law reform the Law Commission should be undertaking.

Question 1.

One possible problem is that it would further complicate the already complex concept of possession. As noted in the report, people draw an inference of ownership from the fact of possession. People are able to do this because possession is a visible, factual relationship between a person and some object that is capable of being owned. However, one cannot say this with respect to purely intangible things, such as digital assets. No one can see a visible connection between someone and her Bitcoin, for instance. Just as one cannot possess shares or debentures (as opposed to some physical document/token evidencing ownership of them), it is not clear why one could/should be able to possess what is, in effect, a particular state of affairs represented by nodes on a decentralised register.

The other issues concern the nature of the “thing” that is being possessed. Holdings of cryptoassets and other such assets are, as noted above, nothing more than the consensus that exists amongst nodes on a decentralised ledger. Perhaps a more promising “thing” or “object” of property is the participant’s private key, in which case the common law would be forced to recognise a limited form of property in information. The next step is then to determine whether information can be “possessed” in any meaningful sense. The problem with information is that it is inherently non-rival, meaning that, following the discussion in the electronic trade documents paper, it would be difficult to establish the exclusivity of control necessary for possession, in the legal sense.

Question 2.

Answer box for Question 2:

Further to the Question 1, it is more analogous to the novation of rights against a bank that underpins transfers of bank money. This is because there is no “thing” that persists through the transfer, just as bank money involves the termination of rights against the payor bank and the creation of rights against the payee bank resulting in a change in the ledgers maintained by each bank, transfers of cryptoassets result in the destruction of old keys and the creation of new ones, the ultimate outcome of which is the alteration of the state of the decentralized ledger.

This does not mean that such a process is beyond proprietary analysis. For instance, there is no in-principle reason why the equitable rules of tracing could not apply to transfers of cryptoassets as they apply to transfers of value through mixed bank accounts. The point is simply that there is no process analogous to manual delivery/traditio of goods.
Question 3.

Please share your views below:

I have no particular answer to ss 1) and 2), but one could imagine someone disclosing his/her private key to a creditor as a form of security. In respect of that information as a “thing”, one might say that there is separation of “ownership” and “possession” in a broad sense.

If, however, one is concerned with outright transfers of (for instance) cryptoassets that are recorded on-chain, it is difficult to imagine a circumstance in which this separation would occur.

Question 4.

Please share your views below:

The most obviously analogy is with transfers of value between bank accounts, with the obvious difference that, unlike in the banking scenario, the ledger is controlled by no one.

Question 5.

Please share your views below:

One potential problem is that, if cryptocoins are ever used as a means of payment (as was intended) instead of a speculative commodity, they may fall afoul of the definition of goods as excluding things in action and “money” (although this would depend upon whether the concept of money under SOGA is confined to legal tender, or expands to include anything that, as a social convention, is regularly accepted in discharge of a debt).

Question 6.

Please share your views below:

My one thought is the potential interaction between the principle of nemo dat and the immutability of the blockchain (or similar).

If B steals A's car and sells it to C, B has only passed to C his/her own infirm title (acquired by taking possession of the car). B does not, in other words, divest A of his/her title to the car. This is not true of transaction on a blockchain. If B fraudulently obtains A's private key and initiates a transfer to C, then that transfer is irreversible. A really has lost her right to that particular cryptoasset, and altering the register to reflect B's fraud involves creating a “fork” that results in the creation of a new crypto asset.

If one were to apply normal property law principles to this scenario, a court could (presumably) order C to transfer the asset/coin to A, and/or B to pay A compensation in the fiat currency at the equivalent exchange rate (although given the volatility of such assets, the date of assessment of damages would become a serious issue).

Question 7.

Please share your views below:

As mentioned in the discussion paper, the obvious analogy would be with the law of negotiable instruments. Importantly, these tokens would not be negotiable simply because the issuer says that they are. Presumably, their negotiability would have to be a attribute conferred by law.

Question 8.

Please share your views below:

As noted above, one could imagine a debtor disclosing the details of his/her private key to a creditor as security for the debt.

Given the entirely intangible nature of the assets in question, why not simply characterize this as a pure hypothecation (such as a lien or charge)? Given that the law has long been able to have liens over book debts and other intangible assets, it is not clear why; a) this should pose a conceptual challenge for the law; and b) why the law needs to invoke the possessory concept of a bailment to give effect to what is simply a security right.

Question 9.

Please share your views below:

Question 10.

Please share your views below:

As noted in respect of Question 1, one could conceive of the misuse of someone's private key (in order to effect an unauthorised transfer) as a the conversion of, for instance, a Bitcoin. Once again, the Bitcoin (which is really the state of a decentralised ledger) is really a rough proxy for the information that is the particular alphanumeric code.

Someone who misused a private key in this way could be ordered to pay damages equivalent to the value of the Bitcoin in fiat currency, although, given the wild fluctuations in the value of most cryptocurrencies, this would give rise to disputes about the appropriate time of assessment of damages.
Consistently with strict liability in conversion, one could also imagine a court ordering the transferee of the coin being order to transfer it back to the victim.

Question 11.
Please share your views below:

Question 12.
Please share your views below:

The other issue that might warrant attention is the analysis of off-ledger crypto-wallet services as express trusts.
Respondent ID ANON-KA1W-5771-8

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-06-06 17:45:52

Page 1: About you

What is your name?

Name: Hosam Mahmoud

What is the name of your organisation?

Organisation:

Are you responding to this consultation in a personal capacity or on behalf of your organisation?

Personal response

What is your email address?

Email:

What is your telephone number?

Telephone number:

If you want the information that you provide in response to this consultation to be treated as confidential, please explain to us why you regard the information as confidential. As explained in our privacy notice, we will take full account of your explanation but cannot give an assurance that confidentiality can be maintained in all circumstances.

Answer box:

Page 2: Call for evidence

Question 1.

Answer box for Question 1:

I have some perpetual software licenses that I want to pass on to my heirs.

Additionally, I have purchased digital books and videos, some of which are educational and others for entertainment. These items have long-term value and I want my children to have access to them.

I also want my family to have access to my files and photos that are stored in Cloud services, such as Microsoft OneDrive or Google Drive.

Question 2.

Answer box for Question 2:

Purchased items, such as books, videos, or software licenses, are more analogous to cash in my opinion.

On the other hand, online accounts and data stored in the cloud are more analogous to bank money. Similarly, services controlled by companies, such as domain name registries and cloud servers, are more analogous to bank money.

Question 3.

Please share your views below:

I think there should be some separation. Although I have appointed a friend as an executor, I don't want them to have access to my family's photos.

Question 4.

Please share your views below:

Question 5.
Digital content that is perpetually available can be classified as goods. This includes books and perpetual software licenses.

Digital content that is provided with limited access should be classified as a service in my opinion. Examples include subscription-based licensed content, content that can be accessed for a specified time limit, and content that can only be accessed in specific geographies or countries.

Another example of services is content purchased via Amazon Prime Video because the terms specify that a “purchase” is paying for a limited license for “on-demand viewing over an indefinite period of time” and “Amazon reserves the right to end the license”.

Any digital asset that can only be used for a limited time, or whose use is limited to continual payment, should be classified as a service.

If I understand bailment correctly, then I can think of practical reasons to provide an encrypted or “locked” copy of personal data to an executor who passes it to a child after they reach adulthood.
Response ID ANON-KA1W-577K-2

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-05-04 14:57:12

Page 1: About you

What is your name?

Name: Judith Birchall

What is the name of your organisation?

Organisation: Fiona Bruce LLP

Are you responding to this consultation in a personal capacity or on behalf of your organisation?

Personal response

What is your email address?

Email: [REDACTED]

What is your telephone number?

Telephone number: [REDACTED]

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Answer box:

Page 2: Call for evidence

Question 1.

Answer box for Question 1:

If assets are possessed then they are inheritable. I am a solicitor of 38 years qualification currently working in Wills and Probate. There is currently no guaranteed way of ensuring digital assets are received by those the testator wishes after death. Problems are how does the executor or the administrator if no will is left even know of their existence let alone access them or transfer use of them to beneficiaries. What happens if a digital asset was mid transfer and one party dies?

Question 2.

Answer box for Question 2:

I know very little about digital assets but it seems to me it should be analogous to bank money for reasons of security. Cash is usable by anyone and mostly untraceable.

Question 3.

Please share your views below:

i do not have the knowledge to comment.

Question 4.

Please share your views below:

As question 3

Question 5.

Please share your views below:
See my answer to question 1

Question 6.

Please share your views below:

The problem is the lay person does not understand them and the laws of Wills and Probate as formulated over the last two hundred years or so have no conception of them. This is really a plea that the consequences of the death of an individual are not overlooked or thought of little importance. If nothing else the current pandemic has reminded us that all people die and it is usually unexpected and, unplanned, and unprovided for.

Question 7.

Please share your views below:

I think the answer to 3 is yes and to 4 clear and precise definitions

Question 8.

Please share your views below:

Not really qualified to comment

Question 9.

Please share your views below:

From a probate perspective the benefit and burden of mortgages and charges are inheritable.

Question 10.

Please share your views below:

most people prefer not to consider what happens when they die and I suspect the younger the person is the more likely this is so its relevance and importance will probably be overlooked or under appreciated.

Question 11.

Please share your views below:

Don't forget conflict of laws after death - recognition of Grants in each other's countries without the need for a court order in that country as well which would make any inheritance of anything other than many thousands financially impossible.

Question 12.

Please share your views below:

See my answer to q.1
Response ID ANON-KA1W-577W-E

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-07-27 10:07:01

Page 1: About you

What is your name?

Name:
Kelvin FK Low

What is the name of your organisation?

Organisation:
National University of Singapore

Are you responding to this consultation in a personal capacity or on behalf of your organisation?

Personal response

What is your email address?

Email: [REDACTED]

What is your telephone number?

Telephone number:

If you want the information that you provide in response to this consultation to be treated as confidential, please explain to us why you regard the information as confidential. As explained in our privacy notice, we will take full account of your explanation but cannot give an assurance that confidentiality can be maintained in all circumstances.

Answer box:

Page 2: Call for evidence

Question 1.

Answer box for Question 1:

The implications would be quite undesirable. Although it is often thought that this amounts to a modernisation of the law, this is not actually true. The expression “digital assets” is highly ambiguous and can refer to information stored in digital form which is valuable (digital files) or digital records. In either case, the extension of “possession” unavoidably employs a metaphor which is likely to be difficult to apply. The result would be that the development of the law will be left to the vagaries of litigation. Depending on what fact pattern first reaches the court, judicial instinct for the particular litigants will lead in the development of the law.

Question 2.

Answer box for Question 2:

There are at least four varieties of digital assets which need to be treated differently. First, digital files which are valuable for their information. These should not be treated as property as it is difficult to justify why information in digital (as opposed to analogue, and in future quantum) form should especially be protected. “Transfers” of such files are neither akin to transfers of chattels, since it entails copying with no immediate deletion, nor bank money. The latter is arguably closer since the extinction of one debt and the creation of the other is not simultaneous but the “transferred” debt will not persist for very long. This is not true of many digital transfers since hard disk capacity is now quite affordable and most users do not use up their disk space, which means that “transferred” files are often not actually deleted (technically overwritten) for a long time.

Secondly, digital records are simply evidence of rights that are valuable. Their digital form is neither here nor there. The simplest example is digital records of land. No one would say that land now exists in digital form. The same ought to be true of digital records of intangible property.

Thirdly, endogenous cryptoassets must be separately considered. Exogenous cryptoassets are simply records but endogenous cryptoassets are records that do not purport to represent any external res. Transfers of such assets can be regarded as the equivalent of a transfer of a thing in possession just as transfers of (e.g. IP rights) are.

Finally, virtual in-game assets are highly complex as any legal rules need to also accommodate a variety of EULA and take into account the complex means by which these virtual assets are “created” - namely information kept on central servers which are then rendered in game play by computers and game consoles.
I would characterise it as a transfer of property, albeit a very unique form of property:

Whilst it is tempting to analogise digital assets with goods, particularly with respect to computer programs, this is the result of how dissemination of these programs evolved over time from dissemination via physical media to direct downloads as transmission bandwidth improved. Some parts of the Sales of Goods Act 1979 are useful (eg implied terms) but others actually make no sense (eg transfer of property). Passing of title is irrelevant in this context since the process entails a copying rather than a transfer.

Nemo dat makes no sense with digital "transfers" because what happens is not a transfer. A file transfer entails a copying of information on new media with the deletion of the logical path of the same on the old media. The information however remains until it is eventually overwritten (if ever). To try to apply property law principles to such a process is akin to trying to fit a square peg in a round hole. The reason many laypersons and lawyers alike think like this is because we have been conditioned by the metaphors, both linguistic and graphical, that were useful in helping end users learn to use these miraculous machines. However, these metaphors are an obstacle to clear, accurate, legal analysis.

Tokenisation is a highly problematic and poorly understood process. Technically, it entails the use of a ledger, albeit often decentralised. Thus, it is best analysed as such. This creates numerous problems. Most efforts at tokenisation are entirely private. As such, these ledgers have no legal value beyond the capacity of the technology providers' ability to prove that they are accurate. However, all decentralised ledgers can be compromised, both at the end user end and (unfortunately) at the network level as well. A simple cost/benefit analysis whilst bearing in mind these real world flaws will demonstrate that they are a deeply misguided technology: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3715372

The idea of possession of a token is likewise misguided and problematic. Decentralised ledgers are neither perfectly secure nor even more secure than centralised ones and they carry dramatic downsides such as difficulties of rectification. Tying them to a metaphorical version of possession will not solve these problems but will generate confusion. What amounts to interference? The reason the common law property torts protect possession is because possession is rivalrous. Other forms of interference such as visual trespass may "interfere" with an owner's wishes but since such activities are nonrivalrous, they are not protected. Given that the property law torts are premised on possession, they cannot be readily replicated where possession is irrelevant.

The idea of bailment of digital assets is a distraction and can and has led the courts astray: see Kelvin FK Low, "The perils of misusing property concepts in contractual analysis" (2014) 130 L.Q.R. 547.

Conversion is premised upon interference with possession. True possession is impossible with digital assets abstracted from its medium. Attempting to create a metaphorical version of conversion will lead to confusion initially and a departure from the physical reality of how digital files operate technically.

All jurisdictions that have enacted laws on blockchains have jumped on the hype train but also assumed that blockchain ledgers are simply a different, newer, better form of ledger. However, they give rise to very different problems (eg rectification becomes difficult and possibly impossible in some cases).
but none of these laws provide any solution to these new problems.

Question 12.

Please share your views below:

The fundamental problem of this project is trying to create a metaphor for possession that departs from how digital assets operate technically. There are also a variety of different digital assets (digital files, digital records, endogenous cryptoassets, in-game assets) that must be differently analysed. In most cases (save endogenous cryptoassets), property is not the answer and propertisation will create problems down the road as property (which assumes rivalrousness) becomes divorced from reality (digital information is non-rivalrous).
Response ID ANON-KA1W-5788-G

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-07-30 12:17:02

Page 1: About you

What is your name?
Name: [Redacted]

What is the name of your organisation?
Organisation:
The Digital Alliance Institute for Digital Finance Research

Are you responding to this consultation in a personal capacity or on behalf of your organisation?
Response on behalf of organisation

What is your email address?
Email: [Redacted]

What is your telephone number?
Telephone number: [Redacted]

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Answer box:

Page 2: Call for evidence

Question 1.
Answer box for Question 1:

Question 2.
Answer box for Question 2:

A transfer of a digital asset is more analogous to a transfer of a thing in action. This is especially the case for a cryptoasset transaction (eg a bitcoin transaction)—a user, be it a buyer or a seller, is essentially interacting with a network of ledgers when conducting the transaction, whilst there is no asset being physically changing hands. The process is much akin to a transaction conducted between bank accounts where both the money sender and the receiver interact with ledgers kept by their banks. Whether at the protocol layer a cryptoasset is dictated by an unspent transaction output (UTXO) model or an account-based model does not bear any effect on the essence of transactions on a digital ledger.

Question 3.
Please share your views below:

The distinction between ownership and possession for cryptoassets is useful in both on-chain and off-chain transactions.
In on-chain transactions, though transaction related information is recorded on the digital ledger, there can be occasions where the intended recipient loses access to the receiving digital wallet, while a third-party wrongfully acquires the private key of the receiving digital wallet, when the private key is not well kept by the intended recipient. In this scenario, the wrongdoer can be said in possession of the digital wallet, but their ownership of the digital wallet cannot be established.

In off-chain transactions, the sender and the receiver can enter into an agreement to a transfer of ownership, but as long as the agreed transaction has not taken place, the information is not recorded on the corresponding digital ledger, in which case again the possessor does not align with the owner. In the above cases, the problems are likely to be greatly reduced by technological advances and market practice. For example, a digital asset can be designed with a smart contract that enables a particular user alone to exert control, and when unauthorised users take possession of the digital asset, it stops to function in a fully-fledged fashion and thus decreases in value. One should bear in mind that it is often the case a computer programme may not work as perfectly as the programmer intends it to be. A possible scenario is that a smart contract designed to provide escrow service is hacked and the digital asset in escrow is subsequently stolen, where the factual acquisitor or possessor of the digital asset is not the owner.
A digital painting in the form of an NFT, whose equivalent in the physical world is a personal chattel, is analogous to goods in the sense that it is neither money nor a thing in action (in the term's narrower interpretation as being only enforceable by action and not by taking physical possession). Where there are financial attributes attached to a digital asset, say, an ETH token on Ethereum, the digital asset, applied in facilitating a financial transaction, becomes more analogous to money, rather than goods.

The bailment of a digital asset would be a useful concept in this context. In DeFi lending applications, such as MakerDAO, the debtor, acting as a bailer, would confer an amount of digital assets under their ownership as collaterals to be possessed by the lending network, in order to acquire a loan.
Response ID ANON-KA1W-5784-C

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-07-28 17:16:19

Page 1: About you

What is your name?

Name: [redacted]

What is the name of your organisation?

Organisation: twindig

Are you responding to this consultation in a personal capacity or on behalf of your organisation?

Response on behalf of organisation

What is your email address?

Email: [redacted]

What is your telephone number?

Telephone number: [redacted]

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Answer box:

Page 2: Call for evidence

Question 1.

Answer box for Question 1:

Simply put if digital assets were possessable we could revolutionise the UK housing market. Creating digital title deeds would allow for fractional ownership of housing allowing everyone to participate in homeownership.

It would take away the barriers stopping individuals accumulate housing wealth and it would defuse the ticking pensions timebomb by allowing homeowners to consume some of the equity in their homes.

The tokenisation of housing could significantly reduce the level of housing wealth inequality across the UK.

It would also significantly reduce the time taken to buy and sell property

Question 2.

Answer box for Question 2:

If we were able to tokenise housing, the transfer of the digital asset would be a transfer of a thing in action. Essentially a blockchain would act as an immutable record of ownership of each token or fraction of a home

Question 3.

Please share your views below:

In the example of housing, we would not need to separate ownership from possession. The ownership would be recorded in a blockchain.

Question 4.

Please share your views below:
The digital asset is a claim on the underlying tokenised asset - in the same way that, historically, a bank note issued by the Bank of England was not gold itself but a claim on the gold ‘I promise to pay the bearer..’ so the digital asset is a claim on the physical asset and represents ownership of the physical asset.

Storing the digital tokens (of underlying ownership) on a blockchain would be an immutable record of ownership.
Response ID ANON-KA1W-5774-B

Submitted to Law Commission call for evidence on digital assets
Submitted on 2021-05-04 16:22:00

Page 1: About you

What is your name?
Name: Victoria Ball

What is the name of your organisation?
Organisation: Kings College London

Are you responding to this consultation in a personal capacity or on behalf of your organisation?
Personal response

What is your email address?
Email: [email protected]

What is your telephone number?
Telephone number:

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Answer box:

Page 2: Call for evidence

Question 1.
Answer box for Question 1:

This would allow a claimant to claim in conversion for interference with digital assets.

Conversion is an important element of the protection of property, but conversion protects property through the protection of possession. As such, it is not necessary to prove ownership of the goods in order to make a claim in conversion, or that the goods are a form of property, instead the claimant in a case needs only to show that he had possession immediately before the conversion or that he has an immediate right to possess.

After the Legal statement it was confirmed that cryptocurrency could be property but I have argued elsewhere that the usefulness of the label of property is compromised if digital assets (or cryptocurrency) cannot also be possessed. This is because the label of property is not helpful if this doesn’t allow the core property protection to apply. This is the case if digital assets cannot be possessed.

We can therefore question the usefulness of attaching the label of property, if this does not give access to the full arsenal of protection that the law provides to ‘property’. This is important, as conversion might be (more) useful in many cases because conversion does not depend on property still being in an account but provides a claim against anyone through whose hands the property has passed (though this is only a claim for damages). The availability of this type of remedy would bolster the protection of digital assets.

As an example in cases like AA v Unknown Persons if the Bitcoins had been further moved the finding that they could also be possessed would allow a conversion claim against anyone who has interfered e.g. by passing along etc. bolstering protection.

Question 2.
Answer box for Question 2:

I think many digital assets are unique in terms of how identifiable they are and how the cant be tracked through codes and digits. I think the transfer of them is not closely analogous with either, but more of a mix between both examples.

Question 3.
Please share your views below:

Yes there are practical consequence in terms of the remedies open to the owner and possessor.

Question 4.

Please share your views below:

N/A

Question 5.

Please share your views below:

N/A

Question 6.

Please share your views below:

N/A

Question 7.

Please share your views below:

N/A

Question 8.

Please share your views below:

N/A

Question 9.

Please share your views below:

N/A

Question 10.

Please share your views below:

I think conversion would be a useful claim if assets have been moved as it enables a monetary claim through whose hands the assets have passed. For conversion to be very useful - digital assets would need to be considered unique to allow for delivery up as well.

Question 11.

Please share your views below:

N/A

Question 12.

Please share your views below:

N/A
D2LT Response (July 2021)

Law Commission’s Call for Evidence on Digital Assets and Consultation Paper on Electronic Trade Documents of April 2021
This paper sets out the views of D2 Legal Technology ("D2LT") on the Law Commission’s Call for Evidence on Digital Assets (the “Call”), and the Consultation Paper titled “Digital assets: electronic trade documents” (the “Consultation”), both published in April 2021.

D2LT is a legal data and change consulting firm, sitting at the intersection of FinTech and LegalTech. With offices in London, Frankfurt, New York, Charlotte, Hong Kong and Sydney, it provides inter alia, strategic advice and implementation services to leading investment banks, asset managers and various other financial firms on the digitisation of legal agreements and opinions. This has assisted its clients in the areas of resource management (such as capital, liquidity and collateral), regulatory reporting and compliance (such as qualified financial contract reporting (often colloquially known as “living wills reporting”), client assets and money compliance and ECB close-out netting reporting) and operational management.

D2LT’s work has included leading document and legal opinion digitalisation programmes for major trade associations in the capital markets industry, such as the International Swap and Derivatives Association (ISDA) and the International Securities Lending Association (ISLA). This has included creating for these clients, an industry Clause Taxonomy and Library for their published master agreement documentation, which is regarded as an important stepping-stone and legal agreement data standard to facilitate the use of smart contracts in the OTC derivatives and securities lending industries respectively. D2LT has also been involved with assisting financial firms with the documentation of various digital assets, such as a client that offers (interest-paying) bank accounts for cryptocurrencies that can then be used to borrow cash, and buy or sell cryptoassets. It has also been involved with the creation and issuance of non-fungible tokens, for example to represent reliance in a close-out netting legal opinion.

Our responses have been mainly provided by:

1 Please note that Akber Datoo has led a similar response to the Call in this regard for the Law Society (as chair of its subcommittee on Digital Assets and Smart Contracts), however the views expressed in this D2LT response differ slightly based on D2LT context, views and experiences.
Digital assets will only grow in usage over the upcoming years. An analogy can be drawn in terms of the state of digital assets to the early years of the internet. Like the internet, we believe they will build their own unstoppable momentum as their value and utility become more widely appreciated. We therefore commend the Law Commission’s work in this area (together with the prior Call for Evidence on Smart Contracts) and look forward to the next steps in respect of this work, which we believe will create a positive, safe and certain legal framework for digital assets and smart contracts – which is much needed in order to allow the laws of England and Wales to support these growing areas of commerce and the use of digital assets in society more broadly. There is a significant risk of increased forum shopping if changes are not made to the existing legal framework.

Instead of using the Commission template, we have structured our response to reflect our analysis of the main issues raised by the Call for Evidence. In so doing, we have regrouped the questions in line with our feedback.
Scope – Definition of Digital Assets

Paragraph 1.5 of the Call for Evidence states that: “At this stage, we use the term “digital assets” in a broad sense to cover assets that are represented digitally or electronically, including cryptoassets”. We suggest this is too wide, risks confusion and is likely to result in unintended consequences.

Digital assets as used in the Call is an umbrella term that might be extended to a wide array of items with some digital aspect to them. For example: social media accounts, online bank accounts, photography, software applications, databases, logos, illustrations, animations, audiovisual media, presentations, spreadsheets, cryptocurrencies and blockchain tokens, digital paintings, electronic documents, electronic mails, and websites. It is our view that the laws of England and Wales provides certainty on the legal status of a number of these items.

Accordingly, our view is that the questions raised in the Call are best restricted at the current time to where clarity is most needed to allow the laws of England and Wales to encourage the growth of digital economy with the support of the jurisdiction. We believe this is best done at the current time by focusing on digital assets where “trust” is effectively provided through technology, rather than intermediaries such as banks. It would help to distinguish from forms of digital payments such as PayPal and BACS.

In order to remain technology neutral, we would suggest limiting the scope utilising a similar approach to that of Liechtenstein through the use of the term “transaction systems based on trustworthy technologies”. We believe to be a better approach than the characteristics approach of a DLT adopted by the UK Jurisdictional Taskforce in their Legal Statement, which we feel may be overly specific to distributed ledger technologies (as they are today), and may not provide future-proofing.

Current Law – Possession

Given they are not capable of physical possession, we agree that digital assets do not fall into the category of “things in possession” as personal property, and are better thought of as “things in action”, should “all things [need to] fall within one or other of the two categories”. This however, appears a significant stretch, as it is hard to identify who would be the defendant in such an action. Noting paragraph 2.14 of the Call for Evidence, we strongly support, the creation of a new third category of property that is a digital asset (narrowly defined per our discussion above), allowing for a clearly defined legal position (and therefore rights) in respect of such digital assets.

Our view is that the current law regarding possession is both convoluted and nuanced in its application. We understand the need to weigh up the options of either adopting a bold, more blank sheet of paper approach (e.g., through the creation of a new third form of personal property), versus smaller incremental steps that build gradually on current law and legal constructs. With regard to the latter approach, our view is that there are significant issues arising from the incremental approach to law reform in this

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2 Liechtenstein Government, Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über auf vertrauenswürdigen Technologien (VT) beruhende Transaktionssysteme (Blockchain-Gesetz; VT-Gesetz; VTG), und die Abänderung weiterer Gesetze, 16 November 2018.
area, which have resulted in increasing forum shopping between jurisdictions. We strongly advocate the bold approach, with a focus on intended outcomes.

We note paragraph 2.17 of the Call links to the Consultation Paper on Electronic Trade Documents and the Law Commission’s proposal for a concept of possession which would apply to electronic trade documents. In considering Question 1 of the Call, we recommend that the Law Commission should consider extending the legal framework to allow digital assets (in our narrow sense as detailed above) to be possessable, especially if the three criteria set out in paragraph 2.19 are met.

Our view is that it is crucial that cryptoassets are considered in two separate categories: fungible and non-fungible. In respect of the former, it may be possible to continue the application of the current legal framework (both in respect of the consideration of possession and other areas). We do not believe this is sensible for non-fungible tokens given they are identifiable, transferable and have possession-like functionality. In this case, it is critical to create a third form of ownership which is neither possessory nor title based but applies an analysis of control.

**Ownership and Transfer**

Our view is that there is merit in drawing a distinction between the possession and ownership of a digital asset, noting that in many cases, the owner would also be the person in possession of a digital asset. Ownership is primarily reflected through on-chain records, whereas possession can be practically transferred off-chain.

We would warn against an outcome whereby ownership is conclusively proven by holding a private key. If the possession of the private key equates to ownership, this raises issues as to the legal title of the cryptoasset transferring to a malicious actor with access to the private key. The holding of the private key should instead be regarded as a strong indication of ownership, but the question of ownership will need to be evaluated on a case by case basis.

Regarding transfer (Question 2), we regard the transfer of a digital asset to be more analogous to the transfer of a thing in action, such as bank money – rather than a thing in possession. Notwithstanding this, we see merit in allowing differing types of digital assets that may differ in their transfer mechanisms. This would be similar to securities which can, for example, take bearer or registered form.

Paragraph 2.40 of the Call asks respondents whether an on-chain transfer ought to be treated as creating “new” property (and accordingly, Question 4 of the Call seeks views on the characterisation of the on-chain transfer of a cryptoasset). We do not believe an on-chain transfer creates “new” property, rather it creates metadata that, in certain circumstances, records changes to ownership of property – and is therefore a modification or derivative of existing property rather than new property.
We note that the UK Jurisdiction Taskforce’s legal statement makes clear that an “on-chain” transfer is not strictly a transfer: the asset “spent” by the transferor is a different asset to that received by the transferee on the basis that the property of the transferor is consumed or destroyed (the spent cryptoasset cannot be spent again) and an entirely new cryptoasset is created that can in turn be spent by the transferee (paragraph 45). We consider that this view of the transfer creating “new property” during a transfer is complex and non-intuitive and therefore not helpful to the application of the legal analysis.

Classification for the Purposes of the Sale of Goods

Our view is that digital assets in the sense in which we have described them are not analogous to goods as currently defined under the Sale of Goods Act 1979, which excludes analogous items such as shares, securities, debts, bills of exchange etc.

Nevertheless, we are of the view that there should be defined legal rights and protections in place for purchasers of digital assets. We dismiss the view that these areas with which the law should not interfere due to the technological protections seemingly in place. Additionally, while the nature of distributed ledger technology (such as its immutability) means that enforcement of legal rights can be challenging, this should not mean such legal rights are not afforded or constructed in a more amenable manner – especially in a consumer context. We consider that the increasing use and understanding of cryptoassets by unsophisticated users, and the number of malicious actors operating cryptoasset schemes, necessitates this protection.

Bailment, Security and Conversion & Security Interests

We see no reason why digital assets should not be subject to possessory legal interests and claims, e.g., bailment, possessory security interests and wrongful interference with property (conversion).
Other

We note the view expressed in the Legal Statement, at paragraph 123, that a ledger cannot be treated as a definitive record of legal rights unless statute has given it binding effect, and that there is at present no such statute applicable to cryptoasset ledgers. We believe that this would be a positive step.

We recognise that the nature of digital assets makes them susceptible to money laundering and terrorist financing. We therefore believe that all digital tokens, whether in or outside the purview of the Financial Conduct Authority, should be subject to legislation for combating money laundering and terrorist financing. Issuers of tokens should be subject to licensing requirements and platforms facilitating secondary trading of such tokens should require approval or recognition as authorised exchanges/market operators.

We also recommend that the payments framework include rules to address money laundering and terrorism financing risks relating to the dealing or exchange of cryptocurrencies for fiat or other digital assets, with intermediaries being required to put in place policies, procedures and controls to address such risks (e.g., customer due diligence, monitoring of transactions, screening, reporting of suspicious transactions and the keeping of adequate records). It is hard to see how this can be effected successfully without the implementation of a registration system to ensure compliance with obligations of due diligence and trustworthiness of individual market participants.

We understand our view in this regard runs counter to the cultural origins of distributed ledger technology and the move away from a centralised authority. While the design of cryptoassets may create practical obstacles to regulatory oversight and intervention, we believe that the money laundering and terrorist financing possibilities of distributed ledger technology should be firmly addressed. This is particularly of concern given the ease with which ransomware attacks have multiplied recently due to the ability to demand payment in unregulated digital assets. As a result, these attacks are increasing in frequency and sophistication.

Although the approach we advocate might result in those wedded to the cultural origins of distributed ledger technology, we strongly believe that ultimately the safety and protections such an approach would provide will ensure that those seeking to commercially conduct transactions utilising digital assets do so due to the benefits this ultimately provides.
Our Response

We recognise that the consultation paper focuses on areas of international trade finance. This is a highly technical area, and accordingly we recognise that there are inevitably going to be a number of technical legal issues that require attention. We do not believe these to be insurmountable but rather require input from relevant trade and international associations and trade actors. We have focussed our comments on some high-level concerns relating to the legal framework and we look forward to commenting further on the detail of the Law Commission’s recommendations in this area in due course.

We note that the Consultation does not refer to the extent of litigation/commercial disputes in relation to paper trade documents. We would assume that where such disputes arise, the analysis will often focus on the form, nature and function of the documents. Accordingly, s.1(3)(b) of the draft bill is crucial to the success of the proposed law reform (noting that the change from paper to electronic form, effectively acknowledged in section s.1(3)(a), is the fundamental aspect of the proposed changes).

D2LT commends the simplicity of the draft Bill in seeking to allow for electronic trade documents to have the same effect as paper form trade documents.

We note the work and experience of the Government of Singapore in facilitating the use of electronic trade documents. In particular, we recognise the challenges they have faced in respect of:

   a. Lack of marketing and promotion in respect of their digitalisation efforts

   b. Difficulties overcoming the traditional mindset that hard copy documents are more reliable

   c. The absence of a conducive ecosystem in that the remaining parts of the trade process are yet to adapt digitalisation and therefore there are greater costs for electronic documentation.

Based on this experience, we hope that the government will recognise the need for marketing and promotional activities in considering the reform of this area. We suggest that the following key benefits of electronic trade documents are actively detailed, in addition to the specific changes to the legal framework through the proposed Bill:

   a. Faster transmission – electronic trade documents will reduce the lead time for hard copy documents to be sent to the respective parties. It will overcome delays from difficulty in obtaining wet ink signatures through the physical unavailability of signatories;
b. Increased accuracy – with the information on trade documentation becoming electronic, there is less need for manual and error prone review and extraction of key information from paper documents, which would now be in a native data-friendly form;

c. Reduced risk of fraud and forgery – technology will enable greater controls to prevent forgery (which is always a risk on paper-based documents); and

d. Easier storage and retrieval – digital documents can be stored and located more easily than their paper counterparts.

We would like to emphasise the importance of engagement with trade bodies in delivering the marketing and promotional activities needed in order for the changes to the legal framework to successfully provide the business and efficiency savings they ought to.
DIGITAL ASSETS:

THE LIMITS OF THE CONCEPT OF "POSSESSION"

A. Introduction

1. The City of London Law Society ("CLLS") represents approximately 17,000 City solicitors through individual and corporate membership including some of the largest international law firms in the world. It specialist Committees comprise leading solicitors in their respective fields. These solicitors and their law firms operating in the City of London act for UK and international businesses, financial institutions and regulatory and governmental bodies in relation to major transactions and disputes, both domestic and international. The Financial Law Committee of the CLLS (with members also drawn from the Regulatory Law Committee) has formed a working group (the Working Group) to consider and respond to the Law Commission’s "Digital assets: Call for Evidence" (the CE) and Consultation Paper on “Digital assets: electronic trade documents” (the CP). The CE and CP together form the Law Commission’s current project on digital assets, including cryptoassets. We refer to the CE and CP collectively, therefore, as the Digital Assets Papers.

2. For the reasons we explore in greater detail in our response below, the Working Group considers that caution should be exercised in relation to any proposal for legislative reform to extend the application of the “possession” concept – at least to areas beyond those industry sectors where, arguably, it may serve an appropriate and helpful purpose in supporting the safe, efficient and effective holding and transfer of value or rights constituted or evidenced exclusively in digital form.

3. Members of the Working Group have considerable experience, garnered over many years and in different market sectors, of dealing with and resolving most of the legal and practical issues identified and discussed in the Digital Assets Papers. That experience in fact also extends to a number of those matters on which the Law Commission is not currently seeking views from consultees, including regulatory, tax, data protection and settlement finality issues (see the CE, para. 1.19).

4. The Working Group believes that while it is certainly correct that new technologies and types of asset can create novel legal issues (for example, in the area of conflict of laws where under certain models of DLT the primary record of entitlement to a cryptoasset may be held, maintained or located in numerous different jurisdictions at the same time), many of the
legal issues associated with digital assets have been encountered and resolved by practitioners, policy-makers and law-makers in analogous contexts and markets. It will, in many areas, prove fruitful and enhance legal certainty to draw parallels with the corresponding solutions that have been adopted in those other contexts and markets. This is likely to be especially the case where these are solutions mirrored in other legal systems and, therefore, the approach may be more readily accepted internationally.

5. We are, therefore, concerned to ensure that the Law Commission's thinking in this area should be informed by our experiences in assisting the development (on a case-by-case basis) of legal and statutory solutions to the problems of "digitalisation"1 examined in the Digital Assets Papers. We believe that those experiences show that it is unlikely to prove helpful, and may indeed undermine the certainty of English law, to seek to make all types of digital asset amenable to possession.

B. Policy and other considerations

6. Before extending the concept of possession, and its related legal principles, to digital assets, we consider it important to determine the principal policy reasons behind the concept and those principles. Specifically, it seems self-evident to us that the rules on the negotiability of documentary intangibles (such as bills of exchange and promissory notes), as well as their amenability to the pledge device and perfection of third party interests without the requirement for registration on a public charges register, are inextricably tied to the physical manifestation of a document as the holder's "root of title" to the rights constituted by the document.

7. Possession of a document, title to the value and rights constituted by which is reducible to possession, is itself the best available evidence of the title of the holder to that value and those rights2. A documentary intangible is both a document of title and an instrument of transfer3, so that delivery of possession of the document itself (whether with or without endorsement) immediately, irrevocably and unconditionally transfers the value and rights constituted by the document to the transferee.

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1 We use the term digitalisation in this paper to refer to any legal and operational process under which value or rights that are reducible to possession or transfer of a physical document are replicated by a legal and operational process that converts such value or rights into a digital or other intangible representation stored and transferred by means of a register, ledger, account or other electronic technology.

2 This, of course, finds expression in the French civil law presumptive rule, in relation to (tangible) movable assets, that "En fait de meubles, la possession vaut titre". A person lawfully in possession of a tangible asset is usually presumed to be its owner.

3 In this way, for a documentary intangible, there is unity between the right to dispose of the thing (as an incident of ownership acquired through possession) and the power to dispose of the thing (as an incident of the document being itself the instrument of transfer). In contrast, for shares, securities and other registered intangible assets, title to the asset is distinct from the means used to effect a transfer of title to the asset. Title to a registered intangible asset is constituted or evidenced by entry of the holder on the relevant register, but that title is only capable of being transferred by delivery up of a relevant certificate and a "proper instrument of transfer" (or equivalent process) by or on behalf of the person named on the register (as transferor). We consider that this bifurcation between the source of title (i.e. the register) and the mechanism for transfer of that title, as applicable to registered intangible assets, is a key distinctive feature of such assets in comparison to tangible or other assets that are "possessable". It is the person entered on the register of a registered intangible asset that alone has the right (as against the issuer of the share etc.) to control and enjoy the rights constituted by the asset to the exclusion of others, and the right to dispose of it. This is so even though it may have given the power to a third party to dispose of its title to the asset by depositing any relevant share or other certificate and completed proper instrument of transfer. Any such disposal by the third party will be effected in the name (and in right) of the person entered on the register - it will not be effected in the name (or in right of) the person who possesses and, therefore controls, the means of transfer over those rights.
8. In relation to such a document, it is a perfectly sensible policy position to conclude that no further formal act should be required to perfect the intended title of the transferee to the instrument (and the value or rights constituted by it). As the instrument itself is the root of title to such value or rights, any absence of possession of the instrument should in itself put third parties on notice as to any claimed rights of a person to the instrument (but who is not in possession of it). Thus, a creditor dealing with a debtor who claims to own a particular documentary intangible can properly ask to have sight of the asset to confirm the debtor’s ownership of it, and if that is not forthcoming the creditor is put on enquiry for a proper explanation as to the reason for the debtor’s lack of possession of the claimed asset. The risk of “false wealth”, and related fraud or other operational risk concerns, is materially reduced for a third party dealing with a person who holds (or claims to hold) a documentary intangible.

9. In contrast, where value or rights are represented in digital form, solutions adopted under the law relating to negotiable instruments (or other documentary intangibles) may not be appropriate because the policy basis for those solutions may be absent. This may be so even though the digital asset, in economic or legal substance, replicates (or seeks to replicate) the value or rights that may be constituted or evidenced by its physical (tangible) equivalent.

10. Specifically, certain legal and operational models for digital assets may accord to the ledger or account (to which the assets are recorded) a status equal or similar to the primary record of entitlement to an asset constituted by entry on a register. In addition, the process for transfer of title to digital assets under such models may be closely aligned to the process for transfer of title to shares or other registered securities. In such cases, we consider it likely

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4 On this point, we would agree and adopt the observations of the Law Commission in the CP that, “The tangible quality of an asset can make it easy to observe who has control of, or who is using that asset at any particular time...” (at para. 5.39) and that, “The role that tangibility is really playing... is that it allows legal rights to be allocated based on an observable state of facts” (at para. 5.41).

5 Legal title to corporate shares and other registered securities is constituted or evidenced by entry of the holder on the register itself: Société Générale v. Walker (1886) 11 AC 20 at 28; and J Sainsbury Plc v. O’Connor (Inspector of Taxes) [1991] 1 WLR 963 at 977. The register is a public instrument of which third parties can make enquiry to verify the title of the holder and place trust as to the integrity of the holder’s title recorded on it. For such registered intangible assets, the instrument that constitutes or evidences title (the register) is different from the instruments that must be used to transfer that title (i.e. a certificate and proper instrument of transfer, where the shares or other securities are held in certificated form; or a “properly authenticated dematerialised instruction” attributable to the relevant “system-member”, where the shares or other securities are held in uncertificated form). Equally, the UK Jurisdiction Taskforce’s “Legal Statement on cryptoassets and smart contracts” (the UKJT Legal Statement), under DLT it is the distributed ledger that represents the “public data parameter” of the asset, while the private key is the “private data parameter” of the asset: see paras. 28 and 29 of the UKJT Paper. The functions of a distributed ledger to keep a reliable history of transactions and ownership, and so prevent double-spending, correspond to the like functions performed by a register in relation to shares, securities and other registered intangible assets. Equally, the function of the cryptographic private key to enable or facilitate transfers or other dealings in the cryptoasset corresponds to the instruments of transfers that are used for registered shares, securities or other registered intangible assets.

6 In the view of the Working Group, for such assets, the process of transfer (being essentially one of novation) can rationally be analysed as being the same or similar as between shares, securities and other registered intangible assets as for cryptoassets (at least where the cryptoasset is held and transferred under rules and protocols of a DLT or similar system that accord status to the ledger as the primary record of a holder’s entitlement to the asset). We consider the process of transfer for assets so stored on such DLT or similar technology, as described in paras. 42 to 48 of the UKJT Legal Statement and paras. 2.29 to 2.41 of the CE, to be most closely analogous with the similar novation process that occurs in relation to the transfer of shares or other registered securities: see Goode & Gullifer on Legal Problems of Credit and Security (6th edition) at paragraph 3.10, footnote 68. Under such transfers effected by novation, in contrast to transfers by assignment, a “new” asset and new relationships are created upon transfer – in much the same way as the process for this class of cryptoasset: see the CE, paras. 2.39 and 2.40; and the UKJT Legal Statement, para. 45. However, we think this is a more accurate and helpful comparator than that made by the UKJT or the Law Commission in relation to debits/credits to bank accounts because, as for shares or other registered securities, the process for the transfer of cryptoassets requires the existence and use of an “instrument of
to be inappropriate, and generative of legal uncertainty and inconsistency, to seek to impose a legislative or other legal solution that makes (or purports to make) such assets "amenable to possession". This is because the policy rationale at the basis of core legal rules associated with a person’s possession of a tangible asset would not apply, and the extension of the applicability of the concept of possession itself to the asset will produce unhelpful and unclear policy results.

11. For example, if a cryptoasset is recorded on a ledger or account which performs functions equivalent to or similar to a register, then to legislate that the transfer of "control" over that asset effects delivery of "possession" of the asset is likely, in our view, to produce incorrect or irrational policy results.

12. The concept of "control" is an elusive one, although we recognise both that the challenges to defining the concept may not be insurmountable and that there is increasing support among academics and market commentators for a doctrine of control in place of an extension of the concept of possession. The UKJT Legal Statement suggests that exclusive control of a cryptoasset (by analogy with possession of a tangible asset) arises in a person who has acquired knowledge and control of the private key linked to the asset by some lawful means. Such control may in fact be exercisable by a person who is not identified (or identifiable) by the ledger as the holder of the cryptoasset at the relevant time. For such transfers effected across a register of shares, securities or other registered intangible assets also responds appropriately, in our view, to concerns that the novation analysis for the transfer of digital assets may, in fact, be unhelpful. In this context, we are aware that concerns have been expressed by some stakeholders that this type of analysis may not reflect the expectation of market participants as to the transfer of their digital assets, and may give rise to unintended practical consequences for the taking of security or priority disputes in the event of the wrongful acquisition of such digital assets. However, the financial markets (supported by English company law and personal property law) have never found these issues to be material with regard to the "transfer" of, taking security over or priority disputes relating to, shares or other registered securities. Market participants still properly view a transfer of such assets as a "transfer"; a mortgage or charge remains a well-accepted means of creating a security interest of such assets; and there is a clear, well-founded body of law that governs any priority or other title dispute as between competing claims to such assets – and in all cases, this is so notwithstanding the proper legal analysis for the transfer of such assets being founded on novation reasoning.

7 For example, the system rules under which a ledger or account is operated may provide or otherwise recognise that the person with title to the relevant cryptoasset, as the person who has the ultimate right to control and enjoy that asset to the exclusion of others and the right to dispose of it, is the person who is entered on the ledger or account at the relevant time. In this context, we note the discussion on the ownership and transfer of cryptoassets recorded on DLT at paras. 43 to 46 of the UKJT Legal Statement. While it is suggested there that "the starting point" is that a person who has acquired knowledge and control of a private key by lawful means would "generally" be treated as the owner of the associated cryptoasset, the discussion goes on to recognise that until a transfer (as evidenced by the transferor's authentication and broadcast to the system for validation) is actually recorded on the ledger, there remains the risk that the transferor makes a second transfer (i.e. double-spend the cryptoasset) and that will be accepted on the ledger "in priority to the first". Accordingly, while it may be correct to say that (depending on the rules and protocols governing the operation of a ledger) a ledger should not be regarded as a "definitive" record of title, it may nevertheless represent the primary record (or best available evidence) of title and, as a result, perform "title" functions equivalent to a register. On this point, which may not be widely appreciated, it is worth emphasising that under English company law, a regular register of shares or other securities is not given definitive value as to matters of title: it is given evidential value only – but this does not, and should not, adversely affect the status of the register of members or other company law register as a "register". Generally, under English company law, a register is "prima facie evidence" of any matter which under statute is directed or authorised to be inserted in it: see, for example, section 127 of the Companies Act 2006 and regulations 24(1) of the USRs. Indeed, this is the basis of the court’s power of rectification over a register. In our view, analogous reasoning can equally be applied to those matters that, under the rules or protocols governing a ledger's operation, are directed or authorised to be inserted in it where (as a practical matter) the ledger remains the "best available evidence" of a person's title to a cryptoasset recorded in its name or attributable to its address identifier.

8 See UKJT Legal Statement, paras. 28 and 43.

9 On this point, see for example the discussion at paras. 44 to 46 of the UKJT Legal Statement. Such a person may include a third party who has knowledge or custody of the private key. There is some discussion of this issue at paras. 5.94, 5.128 and 6.70 of the CP, but while the Law Commission suggests that, in such cases, "we still think it would be possible to identify which party was the party intended to have "possession" being the person... named on the system", this may not provide the level of legal certainty that would be required by the financial markets dealing with proprietary and other issues relevant to financial instruments recorded on DLT or a similar electronic technology. For example, systemically important financial market infrastructures, including CCPs and CSDs (that require finality and
an asset, the relevant rules or protocols may make the ledger or account the root or source of the holder's title to the asset – and not the private key which must be used to transfer that title. In such a case, transfer of control over the cryptoasset may be effected to vest equitable title in the asset (e.g. by way of security) in another person. As the key is a private function, this would be a private operation that would (and should) not be capable of third party verification by a person dealing with the holder of the asset (as disclosed by the ledger). The ledger or account, as part of the public parameter of the asset, would continue to show the holder of the asset as its owner.

13. In this context, one possible solution to mitigate the risk of “false wealth” or fraud or other operational risk considerations is that the interest of the collateral-taker should be entered on a public charges register enquirable by third parties dealing with the person recorded as holder on the ledger or account. However, if the relevant cryptoasset is treated as being amenable to possession (and the control function as described transfers that possession), then the legal result would be that the operation has effected a “pledge” over the asset and, as such, no public registration of the security interest on a charges register needs to be made. Where the relevant digital asset is held and transferred by entries on a ledger that, under the rules or protocols of the DLT or other technological system, is accorded a contractual or other legal status equivalent to a register (as the primary record of entitlement to the digital assets), this automatic and self-executing result (avoiding the need for registration of the security interest) is unlikely to produce the correct policy result in the interests of the safe and efficient operation of the financial markets.10

14. We also believe that, if the legal and operational arrangements governing the holding and transfer of value or rights recorded on a ledger or account are more analogous to their

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10 We recognise, of course, that for certain types of asset operating in certain markets a separate policy decision may be made, for example in the interests of the efficient operation of a financial market or where such public registration would require a fundamental change to accepted practices (and/or the imposition of increased costs) in a particular market (e.g. the trade finance market), to disapply a requirement for public registration on a charges register that might otherwise apply to a security or other arrangement over the asset: see, for example, the treatment of financial collateral (in the form of securities, cash or credit claims) provided by a collateral-provider to a collateral-taker under the FCARs. However, we consider that any such policy decision should be made with reference to the specific considerations relevant to the particular market and the requirements of its participants. It would not be sensible, in our view, to remove normal standards for the transparency of dealings with an asset (e.g. to minimise the risk of fraud) by means of a broad, generic and "one size fits all" extension of the applicability of the concept of possession, and its attendant legal consequences, to all types of digital asset in all circumstances.
characterisation as registered intangible assets (rather than "possessable" assets), it would create legal uncertainty to impose legal rules developed for negotiable instruments (or other documentary intangibles) to determine priority or other proprietary issues affecting title to the asset. For such assets, we see no reason to import a requirement, as a condition to establish title to the asset, that there must be an action manifesting an intention to possess the asset (animus possidendi\textsuperscript{11}) – as such a requirement might suggest an action that is required beyond the simple entry of the holder on the relevant ledger or account (as the primary record of entitlement to the asset). Equally, we consider that the priority or perfection of rights or interests relating to such cryptoassets should be determined by the corresponding rules relating to registered intangible assets\textsuperscript{12} – and not to the rules relating to negotiability\textsuperscript{13}.

15. We also consider that the Digital Assets Papers may underestimate the jurisprudential difficulty, as a matter of English law, of possessing intangible, fungible assets. Many of the intangible assets recorded on DLT or other similar electronic technology will be constituted as identical and interchangeable rights or claims, which are not numbered or otherwise identifiable individually so as to be capable of segregation. As a general principle, it is a precondition to the effective possession or bailment of an asset under English law that the asset should be identified, segregated and appropriated by or for the person who claims to possess it\textsuperscript{14}. In the absence of such identification, segregation and appropriation, the relevant party may at best have only a personal claim in relation to the asset. This fundamental principle of English law is modified for a pre-paying buyer of part of a bulk of goods under section 20A of the Sale of Goods Act 1979, but with respect to fungible cryptoassets it may in principle (without appropriate associated legislative reform) prove difficult to satisfy the requirements for identification, segregation and appropriation to a holder or transferee in order to establish their “possession” of the relevant cryptoasset as a matter of law\textsuperscript{15}.

\textsuperscript{11} On the requirement for an intention to possess as a criterion to establish title founded on possession of an asset: see the CP at paras. 5.40 and 5.121 to 5.128.

\textsuperscript{12} See, for example, Société Générale v- Walker (1886) 11 AC 20, Ireland v-Hart [1902] 1 Ch. 52 and Dodds v-Hill (1865) 2 H&M 424.

\textsuperscript{13} We would emphasise, on this point, that there is no reason to conclude that the finality and integrity of the title of a transferee to a cryptoasset treated as analogous to a registered security, and therefore governed by the priority and perfection rules applicable to registered securities, would be “lesser” than the corresponding title that the transferee might acquire if the asset were treated as amenable to possession (and, therefore, transferable subject to the rules of negotiability). In connection with the dematerialisation of the UK’s money markets (see Section C of this paper), CRESTCo Limited (the former name of EUI) and the Bank of England consulted leading counsel, Richard Sykes QC, on this point of equivalence of finality and integrity of title in respect of money market instruments to be converted into uncertificated form under the USRs and held in the CREST relevant system. Counsel concluded that the scheme for the transfer of such instruments, as registered “eligible debt securities” with the protections afforded to transferees under regulation 35 of the USRs, would provide at least equivalent integrity and finality of title for a transferee as would be acquired by a transferee of a corresponding negotiable instrument held outside the CREST relevant system: see “The Future of Money Market Instruments: A Consultation – Appendix II” (November 1999), https://studylib.net/doc/8778983/the-future-of-money-market-instruments.

\textsuperscript{14} See Goode and McKendrick on Commercial Law at paras. 2.45, 2.59, 2.87 – 2.91 and 10.10. See also Re Goldcorp Exchange Ltd. [1995] 1 AC 74, Re Stapylton Fletcher Ltd. [1994] 1 WLR 1181 and Re London Wine (Shippers) Ltd [1986] PCC 121.

\textsuperscript{15} Under English law, the issue of appropriation as relating to the creation of a trust over intangible, fungible assets has now largely been resolved as a practical matter by the decision of the Court of Appeal in Hunter v-Moss [1994] 1 WLR 452. As under current English law an intangible asset is not considered to be possessable, the English courts have not been required to date to develop similar jurisprudential reasoning to support the transfer, possession or bailment of an intangible, fungible asset that ex hypothesi is incapable of identification and segregation from another interchangeable asset.
C. **Existing market solutions: the risk of "overreach" under the Law Commission’s proposals**

16. In Section B above, we have highlighted at the level of principle some fundamental concerns that the Working Group would have with any legislative proposal to extend wholesale the application of the concept of possession to digital assets governed by legal and operational arrangements that make them more akin to registered intangible assets.

17. A real-life example of how such a proposal could cause considerable uncertainty and disruption arises in the current operation of the UK’s money markets. Prior to 2003, instruments such as bankers’ acceptances, certificates of deposit, commercial paper and other short-term debt instruments were held and settled (as negotiable instruments) in physical form. However, as a result of amendments made to the USRs in 2003, it became possible to issue, hold and transfer such instruments (in uncertificated form) in and through the CREST relevant system under the USRs.

18. In developing the statutory, contractual and operational model for the digitalisation of the money markets, Euroclear UK & Ireland Limited (EUI), as operator of the CREST relevant system, the Bank of England (as the relevant supervisory authority) and HM Treasury consciously and specifically avoided any solution based upon an extension of the concept of possession to MMIs when held in uncertificated form in CREST. Any such extension was felt to be artificial and unhelpful, potentially incorporating legal concepts developed with reference to tangible assets (MMIs as negotiable instruments) into a statutory, contractual and operational framework developed with reference to shares and other registered securities.

19. In particular, none of EUI, the Bank of England or HM Treasury considered it fundamentally problematic or complex for the transfer of title to an MMI (when held in uncertificated form in the CREST relevant system) that the MMI was not (and should not be) amenable to possession. Under the USRs, the new concept of an "eligible debt security" was established...
to cover and replicate (as a matter of statutory interpretation and practical application) the complete range of instruments that are issued, traded, held and settled in the UK’s money markets. These instruments are held and transferred under a statutory scheme for the maintenance of “Operator registers of eligible debit securities” on and subject to the provisions of the USRs. This framework allows for, and supports, a robust, clear and enforceable basis for the transfer of digitalised MMIs and related provisions to govern perfection, priority and other proprietary issues affecting such instruments (as eligible debit securities).

20. We would also briefly mention the statutory solution that was adopted to allow for the “electronic presentment” of cheques, other bills of exchange, promissory notes and other instruments through the Image Clearing System (the ICS) (now operated by Pay.UK Limited) – which was launched on 30 October 2017. Section 13 of the Small Business, Enterprise and Employment Act 2015 inserted a new Part 4A into the Bills of Exchange Act 1882. New sections 89A to 89F of the 1882 Act modify the old statutory and common law rules that required the physical presentment of an instrument to the drawee for payment. An image of such instruments can now, on the basis of these provisions, be transmitted to the drawee bank or other payment service provider through the ICS and be an effective presentment of that instrument for payment under English law.

21. In a similar way to the approach taken for the dematerialisation of the UK’s money markets, considerable care was taken by the operator of the ICS, in collaboration with HM Treasury, to develop a legislative solution for the partial digitalisation of instruments to respond to the particular needs of the markets for payments services to be served by the ICS. In this case, it was concluded that it would not be appropriate or helpful to seek to digitalise cheques or other payment instruments – which are still issued and held in physical form – but a key part for the process of exercising the rights of a holder (i.e. to present an instrument as a condition to receive payment on it) was, in effect, "digitalised". The importance of this project, in the context of the Digital Assets Papers, is that it is another

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19 These include solutions for functions that operate in a similar way to the off-chain "Layer 2" applications that, as explained in para. 2.35 of the CE, may cause specific problems for the proposal to extend the concept of possession to all types of digital asset. This is because "possession", as a construct of common law, is likely to be less flexible than those concepts developed in equity to deal with issues arising in relation to intangible assets.

20 In the course of developing the new legislative framework for electronic presentment of cheques and other eligible instruments, the ICS Operator and HM Treasury identified a number of provisions of the Bills of Exchange Act 1882 which were drafted on the basis that the relevant bill of exchange or promissory note would be held in tangible form. We consider that there may be a number of additional sections of the 1882 Act that would need to be modified under the statutory proposals put forward by the Law Commission in its CP, if it were proposed to apply them to relevant bills of exchange or promissory notes issued and held in digital form. Some of these changes would be required because the relevant section of the 1882 Act contemplates a physical location for an act relevant to the instrument to take place (see e.g. the concept of the “proper place” in ss. 45(3) and (4)) or for the continuing tangible nature of the instrument on which an act may be required to be effected (e.g. the requirement that any act of cancellation of a bill of exchange or promissory note must be “apparent thereon”: see s. 63).
example of a bespoke statutory solution\textsuperscript{21} developed and adopted by a particular market that is responsive to the requirements of that market. It suggests that a “one size fits all” legislative proposal to extend the applicability of the concept of possession to all instruments (that are negotiable or transferable as documentary intangibles in the certificated environment) should be developed with considerable caution and with care to avoid disrupting established market practice for existing financial instruments.

22. However, it is fair to say that we recognise that there may be limitations to the introduction of closed statutory or contractual systems, such as those we outline above in this Section C, which effectively require market participants to “opt-in” for them to apply. There may be a number of digital asset types that relate to tangible real-world assets accepted as negotiable and widely tradeable by a range of market participants (including consumers). In these circumstances, it is likely that English courts will still need to resolve issues in relation to digital assets where parties have not consciously opted-in or opted-out of an applicable regime. In such cases, it would still be necessary to rely upon an apposite and well-founded underlying analysis of property rights, including how they relate to the relevant digital asset outside of such a closed system’s specific arrangements.

23. We also recognise that, in those cases where the digital asset is not itself a chose in action (but is properly viewed as some form of “third category” property right\textsuperscript{22}) and/or is not recorded on a ledger that performs functions equivalent to a register of shares, securities or other registered intangible assets, there may be no perfect analogy between securities and the relevant digital asset. In developing policy in this space, it will be necessary to consider the nuances between different types of digital assets.

\textsuperscript{21} Aside from the statutory solutions outlined in this paper, and in addition to the non-statutory solutions identified and discussed in the CP at paras. 2.36 to 2.43, modern day custody arrangements in relation to intermediated securities generally (as a matter of English law and regulation) rely upon the custodian’s status as a trustee (and not as a bailee) of the underlying securities or cash deposits (or right or interest in or in relation to the underlying securities or cash deposits) held by or on behalf of the custodian for the benefit of its clients (as account-holders). We consider that the wide recognition and acceptance of such trust structures, as relating to intangible rights recorded in securities and cash accounts maintained by custodians and other intermediaries, further potentially undermine the view that the legal risk issues created by the digitalisation of assets requires as a solution the extension of the applicability of the concept of possession (and its related legal constructs, such as bailment, pledge or conversion) to such assets: see paras. 2.59 to 2.81 of the CE. We believe, for example, that custodians and other intermediaries (or other financial market participants as collateral-takers of intermediated securities) do not in practice consider that any material legal, operational or other risks arise by reason of the fact that the proper characterisation of any security interest over intermediated securities is that of a charge or mortgage - rather than a pledge. Indeed, we consider material legal uncertainty and inconsistency would be introduced into English law (whether as the law governing a securities account, the law of the financial collateral arrangement over securities credited to such an account or the law of the place where the securities account is maintained) if law reform were to re-characterise intermediated securities (contrary to the accepted market view and supporting contractual/regulatory frameworks) as being amenable to possession (and bailment or pledge arrangements and conversion claims). We would, separately (and as the City of London Law Society has indicated in its response document to the Law Commission’s call for evidence relating to its scoping paper on intermediated securities published on 11 November 2020) strongly support specific and targeted reforms on certain aspects of the law relating to the holding and transfer of title to intermediated securities. However, we do not consider that the clarity, certainty and enforceability of the law relating to such assets (whether held on DLT or a similar electronic technology) would be enhanced by extending the concept of possession to them when held in digital form. We make these observations not to suggest, of course, that the trust device (which is a specific construct of English common law) should itself be used to provide any form of general solution to the issues identified in the Digital Assets Papers. They merely illustrate that, in practice, other market solutions (outside the extension of the concept of possession) have been developed in response to the digitalisation of assets in certain markets. Any proposed legislative solution in this area should, as far as possible, reflect the inherently international nature of digital assets and accordingly adopt a clear, well-founded and comprehensible legal framework that is likely to be widely acceptable for use in cross-border business - but do so without undermining existing market solutions for digitalisation that remain efficient and effective for participants in those markets.

\textsuperscript{22} We use the term “third category” property right to refer to a digital asset that, upon a proper analysis of its inherent features, does not display the indicia of either a chose in possession or a chose in action.
24. The appropriate classification and legal analysis is likely, therefore, to differ for any digital asset depending on its purpose and audience. This may allow for a distinct approach to be taken in relation to specific markets, including for trade finance as is proposed in the CP, acknowledging that in this case possession and the ability to pledge trade instruments may well be considered as crucial to the smooth continuation of existing market practice (subject to our observations in footnote 10 above).

The Working Group which prepared this paper consists of:
Response to the Law Commission’s Electronic Trade Documents Consultation Paper (CP 254) and Call for Evidence on Digital Assets 2021

In this document I respond to the Law Commission’s Consultation Paper on Electronic Trade Documents (CP 254) and the Call for Evidence on Digital Assets.

I. Response to the Electronic Trade Documents Consultation Paper

Question 18

We provisionally propose that: (1) the person who is able to control an electronic trade document is the person in possession of it; and (2) possession of an electronic trade document is transferred from one person to another when the transferee gains control of that electronic trade document. Do consultees agree? If not, please explain why not.

I am strongly in favour of enabling, so far as possible, electronic trade documents to play the same role as their paper equivalents. However, I have some concerns about the proposed means of achieving this objective. My main concern relates to the consequences of implementing the proposals regarding the extension of “possession”. As Chapter 2 of the Consultation Paper explains, (factual) possession has been conceptualised by reference to tangible things. This is the reason why electronic trade documents cannot be possessed under the current law and the basis of the argument that reform is required. However, possession is not the only important concept, and the laws relating to possession are not the only significant rules, in the law of personal property that are defined or limited by reference to tangibility. Tangibility limits the applicability of other core aspects of the law of personal property, including parts of the law relating to (a) the nature of the proprietary interests that may exist in respect of personal property, (b) the “wrongful interference” torts, and (c) bailment. In my answer to question 33, below, I illustrate this through an examination of some of the rights and duties that may exist in respect of tangible things and related issues concerning the nature of the “wrongful interference” torts. The Consultation Paper considers in great detail how possession might be extended to electronic trade documents. But enabling electronic trade documents to be possessed does not, by itself, explain how certain other concepts (eg “wrongful interference”), which hitherto have been applied only in respect of tangible things, are to be applied to electronic trade documents. A provision providing that “possession” of an electronic trade
A document has an effect that is “equivalent” to possession of an equivalent paper document raises, but does not address, this issue—for what needs to be determined is what the “equivalent” effect is. Consequently (as I explain in more detail below), the proposals are silent on some significant issues, which would need to be resolved by the courts.

Question 33
We provisionally propose that an electronic trade document should be capable of being the subject of possessory concepts including bailment, conversion, pledges, and liens, and that this should be provided for in legislation. Do consultees agree?

I have some concerns about the proposed approach to extending “possessory concepts” to electronic trade documents. I am not sure whether these concerns are surmountable or outweighed by other considerations.

I agree that, without clause 2(2)(c), a court might conclude that the provision in clause 2(1) does not have the legal effect that the Law Commission provisionally regards as desirable. One important point here is that the fact that a person has (factual) possession of a thing is often a necessary but not sufficient condition of the occurrence of a particular legal effect. For example, if a thief, $B$, takes possession of $A$’s car, $B$ thereby acquires a particular type of proprietary interest in respect of the car (this interest is sometimes called a “possessory title”, but for reasons I have outlined elsewhere,¹ I believe it is more appropriate to call it a “general property interest”). But the acquisition of possession of a thing does not always give rise to precisely this legal effect. For instance, where a person, $C$, takes possession of a wild animal, $C$ does not thereby acquire a general property interest in respect of the animal; she acquires, at most, a mere “qualified property interest”, which will generally last only for so long as the animal remains in her possession.²

Taken in isolation, then, it is arguable that clause 2(1), if enacted, would not ensure that a person who obtains “possession” of an electronic trade document thereby acquires a proprietary interest in respect of it that is equivalent to the interest that a person acquires upon

taking possession of a trade document in paper form. Clause 2(2)(c) is designed to address this. By virtue of this provision, X’s possession of an electronic trade document would have an “equivalent effect” to X’s possession of a trade document in paper form. This raises a question of some importance, namely, insofar as the acquisition of rights is concerned, what, exactly, is an “equivalent effect”?

It might be thought that there is an easy answer to this question: since it is the case that, where X takes possession of a trade document in paper form, X thereby acquires a general property interest in respect of the document,^{3} where X takes possession of an electronic trade document, X should acquire the same kind of interest in respect of it. However, thought needs to be given to whether the core features of a general property interest are such that it is conceptually possible for a general property interest to pertain to an electronic trade document and, if so, whether it would be justified for the law to allow such interests in respect of them.

I believe there are reasons to doubt that it is possible for a general property interest, in its current form, to pertain to an electronic trade document (or to other digital assets). Perhaps the most important of these reasons is that the rights that are partly constitutive of a general property interest are, in part, defined by reference to physical properties and, therefore, the laws that recognise these rights cannot be applied, without significant modification, to electronic trade documents.

A general property interest ordinarily comprises a right to exclusive possession.^{4} Where this is so, the world at large (i.e., other people generally, but not necessarily all others) owe the interest-holder a duty, or a set of duties, not to interfere with the chattel. What, precisely, is the content of these duties? To answer this question, one must consider the “wrongful interference” torts. The most important of these are trespass to goods, conversion, and negligence insofar as it results in damage to goods.

Suppose that X has a general property interest in respect of a car that comprises a right to exclusive possession, and Y does not have a better right to the car than X. Y will commit the

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^{3} It is, of course, important to distinguish the interest that the possessor acquires in respect of the document from the interest, if any, that the possessor acquires in respect of some other thing that the document relates to (e.g., in a case involving a bill of lading). The discussion in the text focuses on the relationship between the possessor and the document.

^{4} This is not the case where a person holds a general property interest in reversion. I think the rights that are partly constitutive of a general property interest in reversion are also (in part) defined by reference to physical properties, but I do not think it is necessary to provide an argument for this here.
tort of trespass against \( X \) if (1) \( Y \) interferes with the car without \( X \)'s consent;\(^5\) and (2) the interference with the car is intentional.\(^6\) What, for this purpose, is an “interference”? A well-recognised and important form of “interference” is damaging the chattel,\(^7\) that is, bringing about a physical change that renders the chattel less useful or valuable.\(^8\) A second established and central form of “interference” is physically interacting with the chattel. So, \( Y \) “interferes” with a chattel where, for instance, \( Y \) scratches the panel of a car or removes a tyre from it or clamps a wheel,\(^9\) picks up jewellery and moves it,\(^10\) climbs on a lorry,\(^11\) or shoots an animal.\(^12\)

\( Y \) will commit the tort of negligence as against \( X \) if \( Y \), by her negligence, damages or destroys \( X \)'s chattel.\(^13\) The definition of damage in this context is the same as in the tort of trespass. In other words, \( Y \) damages a chattel if she brings about a physical change that renders it less useful or valuable.\(^14\)

\(^5\) Historically, the interference needed to be “direct”, ie the immediate result of the defendant’s conduct. It has been forcefully argued, however, that this is no longer a requirement of trespass to chattels: see Simon Douglas, Liability for Wrongful Interferences with Chattels (Hart 2011) 97–110. This issue has no bearing on the points I wish to advance here.

\(^6\) The traditional view is that an unintentional interference may amount to trespass if the interference is a direct result of the defendant’s negligence: National Coal Board v Evans [1951] 2 KB 861 (CA). The law on this point is unsettled. I believe that the more principled view is that trespass to goods is confined to intentional interferences: see Letang v Cooper [1965] 1 QB 232 (CA); Simon Douglas, Liability for Wrongful Interferences with Chattels (Hart 2011) ch 6.

\(^7\) eg Hamp v Darby [1948] 2 KB 311 (CA).


\(^9\) Fouldes v Willoughby (1841) 8 M & W 538, 549 (Alderson B); GWK Ltd v Dunlop Rubber Co Ltd (1926) 42 TLR 376 (KB) 377 (Lord Hewart CJ); Vine v Waltham Forest LBC [2000] 1 WLR 2383 (CA).

\(^10\) Kirk v Gregory (1876) LR 1 Ex D 55.

\(^11\) UK Oil and Gas Investments Plc v Persons Unknown [2018] EWHC 2252 (Ch) [57] (John Male QC).

\(^12\) Hamp v Darby [1948] 2 KB 311 (CA).

\(^13\) Leigh & Sullivan Ltd v Aliakmon Shipping Co Ltd (The Aliakmon) [1986] AC 785 (HL) 809 (Lord Brandon).

Conversion also involves intentionally interfering with another’s chattel, though not every intentional interference is a conversion. It is notoriously difficult to provide a complete and simple explanation of the forms of interference that may amount to conversion. What can be said, as Lord Nicholls explained in *Kuwait Airways Corp v Iraqi Airways Co (Nos 4 & 5)*, is that converting a chattel typically involves “so extensive an encroachment . . . as to exclude [the right-holder] from use and possession of the goods”. There are various ways in which a person may interfere with a chattel so as to exclude the right-holder from the “use and possession” of it, and many of these involve a physical interference. Examples include taking custody of a chattel with the intention of keeping it for oneself, and destroying a chattel.

Importantly, if $Y$ impedes $X$’s ability to use the chattel in particular ways without physically interfering with it, $Y$ will not thereby breach her duties of non-interference and no “wrongful interference” tort will be committed. This is illustrated by *Club Cruise Entertainment and Travelling Services Europe BV v Department for Transport*, where the defendant served a statutory detention notice on the claimant’s cruise ship following two outbreaks of norovirus on board. The court held that, even if the detention was invalid, the defendant had not tortiously interfered with the ship. The judge, Flaux J, said: “if there had been actual physical restraint of the ship by chaining it to the quayside, that would have constituted the tort of trespass to goods”. But the defendant had not physically interfered with the ship, it had merely prevented the claimant “from using the ship in a particular way”. In these circumstances, there was no trespass and no conversion. The position may be different where $Y$ totally prevents $X$ from using the chattel without physically interfering with it. But the point I wish to defend is not that a physical interference is always necessary in order for a person to “wrongfully interfere” with a chattel. It is that some central forms of “interference”

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15 *Walgrave v Ogden* (1590) 1 Leon 224; 74 ER 205; *BMW Financial Services (GB) Ltd v Bhagwanani* [2007] EWCA Civ 1230; [2007] CTLC 280. A bailee will commit a “statutory conversion”, however, if she negligently allows goods in her charge to be lost or destroyed: Torts (Interference with Goods) Act 1977, s 2(2).


17 Ibid, [39].

18 Ibid, [42] (Lord Nicholls).

19 *Fouldes v Willoughby* (1841) 8 M & W 538, 547 (Lord Abinger CB).


21 Ibid, [50].

22 Ibid, [53].

23 See, eg, *Oakley v Lyster* [1931] 1 KB 148 (CA).
involve a physical interference. The notion of an “interference” has partly been defined by reference to tangibility.

In light of the above, there are several issues that need to be addressed when considering whether it is possible for a right to exclusive possession and the concomitant duties to obtain in respect of an electronic trade document. First, what is the “thing” that one must not interfere with? In cases concerning tangible chattels, there is an object with a physical existence, such as a book, a car, or a piece of paper; and it is this object that one must not interfere with. If duties of non-interference are to be imposed in respect of electronic trade documents (or other digital assets), what will these duties relate to? What is it that one must not interfere with? The range of plausible answers to these questions would be circumscribed by, inter alia, the provisions that define the term “electronic trade document”. But even within these limits, there are different ways of conceptualising what electronic trade documents are and how they relate to the technology that underpins them. Consequently, there are different ways of understanding the thing that people should refrain from interfering with.

Secondly, what, exactly, are the duties of non-interference in respect of electronic trade documents? What content do they have? The discussion above supports the claim that, under the present law, some central forms of “interference” involve a physical interference. It is not possible for a person to interfere with an electronic trade document in these ways. Therefore, one cannot apply, without modification, the current law concerning what counts as an “interference” for the purposes of the “wrongful interference” torts to electronic trade documents. Of course, it is possible to draw analogies between the physical interferences that the law currently recognises and certain interferences with electronic trade documents. In some cases, the nature of the respective interferences may be very similar. But the point is that one cannot simply apply the existing law concerning the “wrongful interference” torts to electronic trade documents; the law would need to be developed, similarities and differences between various kinds of interference, across a range of cases, would need to be assessed and choices would need to be made. A host of questions would arise: is the alleged interference with an electronic trade document in this case sufficiently similar to a type of interference in respect of tangible chattels that the law prohibits? Are there any relevant differences? If so, how important are these? Are they more significant than the similarities?

As a result of all this, if the draft Bill were to become law, the answer to an important question would be left open: what effect must a person’s conduct have on an electronic trade document in order for it to count as an “interference” for the purposes of the “wrongful interference” torts? There would be a gap in the law until the question was answered by the
courts. One might question whether it is appropriate to leave the resolution of this matter to the
courts. But irrespective of what one thinks about that, it seems that, at least for a time, there
would be a legal vacuum, contrary, perhaps, to the requirements of the Rule of Law. I do not
mean to suggest that legislation could provide complete certainty as to the nature of an
“interference” with an electronic trade document. But I do think that further consideration
should be given to whether the extent of the uncertainty that would arise in this case is a cause
for genuine concern and, if so, its gravity and whether it is outweighed by other factors.

II. Response to the Call for Evidence on Digital Assets

Question 1

What would be the legal or practical implications for you if digital assets were possessable
under the law of England and Wales? Please explain your answer and provide examples.

As noted in the Call for Evidence, in the current law, only “things in possession” can be
possessed (in the relevant sense) and “things in possession” are objects that can be physically
possessed. Obtaining possession of such an object is a means of acquiring a proprietary interest
(or “property right”) in respect of it. The kind of interest acquired by a possessor depends upon
the circumstances. Where, for instance, a thief, B, takes possession of A’s car, B acquires a
general property interest in the car, which comprises, among other things, a right to exclude
the world at large (but not anyone with a better right, such as A) and a power to transfer the
interest by way of sale.24 In contrast, if A pledges his watch with B in order to secure his (A’s)
obligation to discharge a debt of £1,000, B acquires, not a general property interest, but a lesser
kind of legal proprietary interest in the watch (sometimes called a “special property interest”
or, more helpfully, a “pledge”).25 So when considering whether digital assets should be
“possessable”, one question that should be addressed is: what kind (or kinds) of proprietary
interest, if any, can and should be acquired through taking possession of a digital asset? This

25 Franklin v Neate (1844) 13 M & W 480, 153 ER 200; The Odessa [1916] 1 AC 145 (PC) 157–159
(Lord Mersey). For discussion of the nature of a pledgee’s interest, see TC Williams, ‘The True Nature
of a Pawnee’s Interest in Goods Pawned’ (1915) 31 LQR 75; Hugh Beale and others, The Law of
Security and Title-Based Financing (3rd edn, OUP 2018) paras 5.03–5.12.
question, in turn, raises a broader question: what kinds of proprietary interest, if any, could and should the law recognise in respect of digital assets?

There is a danger of losing sight of this question by (1) focusing on whether digital assets are “personal property” and on the related issue of whether they belong to the category of “things in possession”, “things in action” or a third category; and then (2) simply concluding that, since digital assets are “personal property”, people can and should hold property rights (that is to say, rights in respect of things that are “good against the world”) in respect of them. It does not follow from the fact that a thing is “personal property” that the law should recognise rights against the world in respect of them. It is vital to consider both the nature of the relevant assets and the rights/interests that may pertain to them.

For these reasons, I think the legal implications of rendering digital assets “possessable” can be properly worked out only once one has considered which kinds of proprietary interest, if any, should be recognised in respect of such assets.

Question 10
If a digital asset were possessable, are there practical circumstances in which conversion of a digital asset could arise?

(1) Do you think conversion would provide a useful or practical claim in this context?

(2) Do other technical or practical solutions or market practice mean that the applicability of conversion to digital assets is less important to stakeholders and market participants?

Please explain your answer and provide examples.

Since committing one of “wrongful interference” torts, such as conversion, involves breaching a duty owed to the right-holder, the question of whether these torts can and should protect digital assets is closely connected to the issues discussed in my answer to question 1, concerning the interests that can and should be recognised in respect of digital assets. The fundamental issue is as to the kinds of interest that the law should recognise in respect of digital assets and, relatedly, what duties should be imposed on others with respect to them.

When considering whether to extend the current law concerning the “wrongful interference” torts to digital assets, thought should be given to whether it is conceptually possible and/or desirable to extend the application of concepts and rules that, hitherto, have been applied only to “things in possession”. As I have explained in my response to the
Consultation Paper on Electronic Trade Documents, some important elements of the “wrongful interference” torts have been defined by reference to tangibility and, therefore, the present law cannot be applied, without modification, to non-physical things. For the “wrongful interference” torts to apply to digital assets, aspects of the law concerning them would need to be recast and Parliament or the courts would need to determine how this should be done. For instance, decisions will need to be made as to what forms of “interference” with digital assets can and should be prohibited. There may well be reasons not to treat all digital assets in the same way, for different types of digital asset can be interfered with in different ways.

Luke Rostill
Associate Professor of Property Law
University of Oxford
August 2021
Response to the Law Commission’s Call for Evidence on Digital Assets

A. Respondents

This response is submitted by Alfonso Delgado and Amila Kulasinghe.

Alfonso Delgado is a lecturer on Blockchain & Entrepreneurship at Imperial College London, where he is also completing his PhD in Computer Science. Alfonso actively works with financial institutions and start-ups in the cryptoasset space. Prior to this, he worked as a lawyer in the City and as a smart contract developer. Alfonso is a member of the DLT Committee of the British Standards Institution. He holds an MSc in Law and Finance from the University of Oxford and an LLB from King’s College London.

Amila Kulasinghe is a legal, regulatory and business structuring adviser and has been actively engaged with blockchain and cryptoasset projects since 2015. Amila originally qualified as a chancery barrister and subsequently practised financial services law in the City. In addition, he is a CFA Charterholder and also worked in investment banking, focusing on prime brokerage and custody. Amila has a BA in Law from the University of Oxford and an LL.M from UCL.

B. General Remarks

We very much welcome the Law Commission’s Call for Evidence, as we believe that industry participants are in need of greater clarity when it comes to the treatment of digital assets (and cryptoassets in particular) under English law. We believe that the current lack of clarity operates as a bottleneck for the growth of this sector of the UK economy, insofar as it discourages economic activity and raises the costs of “hedging” legal uncertainty (whether through insurance, legal opinions, or otherwise). This position may lead market participants to establish themselves in other jurisdictions with detailed cryptoasset-specific guidance or legislation, such as Switzerland, Lichtenstein or Wyoming (US). In the long run, this “flight” of talent and innovation could jeopardise the competitiveness of the UK economy across digital services and threaten its stance as a leading global fintech hub.

While the legal treatment of smart contracts has been more extensively considered by public bodies, the characterisation of cryptoassets as objects of property, as well as the availability of specific collateral arrangements and remedies, have not benefited from the same level of examination. This is despite the fact that property laws are default rules of general applicability (unless and to the extent their operation is validly and clearly excluded by the contractual agreement of all relevant system participants) and the

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efficacy of collateral arrangements is subject to the mandatory application of insolvency laws, which as a matter of public policy will override inconsistent private contractual arrangements (in the absence of any relevant “safe harbour” provisions in the statutory code). We view the UK Jurisdiction Taskforce’s *Legal Statement*, and the Call for Evidence, as important steps in the search for greater clarity in this legal area.²

In the sections that follow, we set out our thoughts on specific aspects of the Call for Evidence and highlight areas which, in our view, merit consideration by the Law Commission. Given our background, we have opted to focus our response on cryptoassets (as a subset of digital assets). In particular, we have sought to account for innovations in asset holding and transaction protocols, beyond conventional (base layer) on-ledger transactions. As such, our response provides examples of and highlights legal challenges stemming from certain Layer 2 protocols (such as the Lightning Network), DeFi applications, and other innovative intermediation structures, which we believe have not been examined in sufficient detail in existing legal commentaries. We are, however, cognizant that this is a buoyant, dynamic sector of the economy and that our comments are unlikely to capture all of the industry’s idiosyncrasies.

The topics being considered in this Call for Evidence are bound to shape the transactional structures that participants adopt when interacting with one another, particularly with respect to intermediation activities. In view of the Law Commission’s ability to propose legal reform, we have also sought to consider how different legal structures might be beneficial to participants in different segments of the industry, be it as a means of incentivising entrepreneurial activity and innovation, fostering business efficacy and lowering transaction costs, or facilitating greater consumer protection.

We appreciate the chance to share our thoughts and experiences in this sector and happily make ourselves available should the Law Commission wish to discuss in more detail any of the points set out in this response.

### C. Comments on Specific Issues

**C1. Expanding the concept of possession & alternative approaches to legislative reform**

We note that in framing the issues to be explored in the Call for Evidence, the Law Commission places significant emphasis on the concept of possession, and how the scope of its application as a matter of English property law could be expanded by legislative reform to encompass certain types of intangible assets, including cryptoassets. This approach draws upon and extends substantial work already undertaken by the Law Commission in relation to electronic trade documents that has resulted in a set

of proposals to sever the long-standing legal link between, and conceptual conflation of, possession and tangibility. We understand that this would enable certain categories of documents that are widely-used in international trade and recognised as giving their possessor the right to call for performance of the obligations recorded within them to be capable of continuing to fulfil these core legal and commercial functions, even when issued in electronic rather than physical paper form.\footnote{3}

In the context of trade documents, we can fully appreciate the merits of building law reform through the development of a non-standard notion of possession. Such an approach would be aligned with clear and long-standing demands from industry, not only in the UK but in multiple leading international trade jurisdictions globally, calling for legislative change that would enable the modernisation and dematerialisation of processes for trade documentation issuance, holding and transfer.\footnote{4} It would also apply to and be used by participants of markets that are likely to be very familiar with developing and deploying complex and unconventional conceptions of possession in order to remotely manage and transact in rights to goods through decades if not centuries of mercantile custom. A legislative solution built around possession for such industries would in our view pose only a limited risk of causing confusion amongst businesses, and could reasonably be regarded as a positive example of how English law can adopt a responsive and flexible attitude to redefining the boundaries of existing legal concepts and established categories or rights and remedies in order to support and reflect the changing needs of the modern commercial world.\footnote{5}

However, we would argue that cryptoasset markets are fundamentally different. Amongst industry participants generally, there is no long-standing and widespread use of non-standard notions of possession to facilitate cryptoasset transactions in the ordinary course of business.\footnote{6} Consequently, we think that for the cryptoasset sector, introducing law reform affecting intangible assets but expressed in the language of possession, is more likely to lead to misunderstanding, and would risk being perceived as the converse of how such an initiative would be received in an international trade context, namely as an example of new business practices having to adapt to and make sense of the common law deploying definitions and labels that appear distant from and at odds with how such concepts are typically understood and used in everyday interactions.

\footnotesize{3}Electronic Trade Documents (2021) Law Commission Consultation Paper No 254, 2.34 - 2.35, 3.18.
\footnotesize{4}ibid 5.4.
\footnotesize{5}In the UKJT Legal Statement, the Taskforce notes the “ability of the common law to stretch traditional definitions and concepts to adapt to new business practices” at para. [77].
\footnotesize{6}We do, however, acknowledge that there may be limited subsets of cryptoasset market participants with exposure to considering the application of possessory concepts to intangible property, albeit in varying contexts not directly related to cryptoasset transactions, and with differing outcomes: see for example in the context of collateralised lending and custody of dematerialised securities, the comments of Briggs J in Re LBIE (in administration) [2012] EWHC 2997 at [34] regarding the potential application of a contractual lien over intangible property; and at [131] (as well as Reg. 3(2) of The Financial Collateral Arrangements (No. 2) Regulations 2003 as amended by The Financial Markets and Insolvency (Settlement Finality and Financial Collateral Arrangements) (Amendment) Regulations 2010) (“FCAR”) regarding the application of possession to intangible property in the context of a financial collateral arrangement.
C2. Market perspectives on approaches to legislative reform: general principles or new targeted concepts?

Following on from our comments above, we would encourage the Law Commission to reconsider whether attempting to derive and codify general principles for identifying categories of intangibles that should be capable of “possession”, based on the conclusions of a parallel project focused on addressing industry-specific demands to facilitate the modernisation of trade document management processes, is an appropriate strategy for constructing and clarifying a property law framework that supports continued innovation and growth in the cryptoasset sector. We would instead advocate for an alternative, bottom-up approach that begins with a broad review of both established and emerging practices for transacting in, using, retaining and otherwise realising the value in holdings and interests in cryptoassets, in order to identify areas of legal uncertainty or legal obstacles that are placing substantive constraints on transactional efficiency, entrepreneurial activity, consumer protection and / or broader adoption. Once the scope and nature of these issues have been surveyed, we believe that it will be easier to determine the appropriate legislative solutions, whether based on the extension of existing legal concepts (with potentially wide-ranging and multi-faceted consequences) or the development of new, bespoke legal regimes tailored to address and confined in their application to potentially discrete, sector-specific problems.

Where it is appropriate to develop bespoke regimes, a further choice will have to be made as to whether and to what extent the relevant legal frameworks will be based on entirely new and self-contained concepts or whether they will deploy statutory hybrids adapted from general common law and equitable principles. Although the former may in theory provide market participants with greater certainty, they would require the formulation of a more detailed legislative code, which would be more time-consuming and more challenging to construct, as well as potentially less responsive to changing market conditions (an approach perhaps better suited to mature, established markets with relatively low levels of structural change and product innovation over time). The latter would likely incorporate a greater degree of (and require a higher level of tolerance from market participants for) interpretive ambiguity, but would possibly be a better option for a fast-evolving sector such as the cryptoasset industry, since it would be able to draw on the dynamic capabilities of common law and equitable jurisprudence to address unintended gaps and / or novel issues that cannot easily be anticipated and provisioned for in advance.

7 A failure to provide sufficiently detailed and precise definitions for new legislative concepts can be highly problematic and present significant challenges for market participants. Note, for example, the concepts of “possession or control” in the FCAR. For an overview of the difficulties caused by unclear statutory drafting see R. Goode, L. Gullifer, Legal Problems of Credit & Security (6th Ed.) (2017), 6-40 - 6-45; and for more in-depth analysis, see L. C. Ho, ‘The Financial Collateral Directive’s Practice in England’ (2011) JIBFL 151.

8 See as an example of a hybrid approach, the courts’ use of general trust law principles and inherent jurisdiction over trusts to support the interpretation and practical operation of statutory client money trusts - Lehman Brother International (Europe) (in administration) v CRC Credit Fund Ltd [2010] EWCA Civ 917, per Arden LJ at paras. [64]-[65]; and Re MF Global UK Ltd (in special administration) [2013] EWHC 1655 (Ch) (in which the High Court considered whether the court's inherent jurisdiction over trusts enabled it to make an order sanctioning a procedure for settling claims and distributing monies held in a client money trust).
If the Law Commission is open to reconsidering its approach to introducing law reform and legal guidance for the cryptoasset sector along the lines suggested above, we would be happy to provide further concrete comments and recommendations on the structure and content of any future legislative proposals at the relevant consultation stage.

**C3. Addressing common intermediated structures for dealings and holdings in cryptoassets**

Although the potential for disintermediation has inspired much of the development and design of permissionless DLT protocols, a substantial proportion of market participants, ranging from retail customers to large-scale institutions, currently manage their exposure to and control of cryptoassets "off-ledger" through third party intermediaries, such as exchanges and dedicated custodial wallet providers. Intermediary services are utilised for a variety of reasons, including ease of use, liquidity, settlement efficiencies, scalability, and security.⁹

Many market participants rely on third party custodians and custodial exchanges to hold cryptoassets on their behalf, whether purely for safekeeping or to facilitate trading. In these setups, participants will not have control of the private keys associated with the addresses at which their assets are held. As such, it would be useful to have clarity on the legal structures that could be deployed to support such facilities, as well as to whether and to what extent market participants’ rights to such assets would be safeguarded in an intermediary’s insolvency and would rank ahead of, and be ring-fenced from, the claims of general unsecured creditors.

To the extent that such arrangements could be characterised as trusts (which would be consistent with how custody services for mainstream financial markets are structured and understood as a matter of English law), it would be helpful to have clarity on how an intermediated custody and trading facility would need to be structured in order to create a valid trust under English law.¹⁰ In particular, the following questions come to mind where assets are not held at individual customer-specific addresses, but at “omnibus addresses” (that is, on a pooled basis with the assets of other customers and / or commingled with the proprietary assets of the intermediary):

- Under what circumstances might such an arrangement be (or cease to be) characterised as a trust?

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⁹ For statistics relating to custodians’ holdings of BTC, see https://blog.keys.casa/the-custodian-menace/.
¹⁰ See Goode and Gullifer (n 7), 6.18-6.19. We are aware of a number of cryptoasset custody services providers utilising trust frameworks as well. Custodial exchanges could (and based on our survey of the market, in some instances do) also implement arrangements whereby they take full legal and beneficial ownership of the client cryptoassets (or client cryptoasset entitlements) held on their platforms. However, this is unlikely in the longer term to prove acceptable to more sophisticated and institutional users with concerns over their exposure to intermediary credit risk, since their rights to the return of equivalent assets would be contractual only and would rank as unsecured creditor claims without any protected priority status in the event of an exchange insolvency.
• What are the implications for the ring-fencing of client assets in insolvency and the integrity of the trusts established if intermediaries commingle such assets with “house funds”?
• What would be the nature of clients’ entitlement under such trusts?
• How would such an entitlement be affected by a shortfall in pool assets?  

We note that such commingled structures tend to be cheaper to operate and have been widely adopted by intermediaries in the industry, as the process of managing private keys in a secure environment becomes less cumbersome. For instance, Fidelity Digital Assets (an institutional custodian) notes that omnibus structures circumvent the need to conduct multiple transactions from different on-chain addresses to meet clients’ withdrawal request, thereby resulting in faster processing times and reducing the proportion of funds that need to be held in hot storage (i.e. on a device that is connected to the internet). We would expect customers to benefit from such operational efficiencies, as well as the associated cost savings.

On a related note, we understand that the Law Commission may intend to consider law reform initiatives that would permit intermediated cryptoasset holdings to be characterised and structured as bailments, whether as a consequence of revising the notion of possession as a matter of general principle, expanding the scope of the permissible object of bailments to encompass (certain categories of) intangibles or otherwise. We appreciate that this could have the advantage of providing intermediaries with a broader range of options for structuring the legal foundations of their platforms. However, given the current lack of certainty in the subject matter of such bailments and the difficulties in assigning equitable interests, we have some concerns about the potential for litigation and regulatory scrutiny in the event of a shortfall. We would welcome more detailed guidance on this matter from the Law Commission.

11 We note that similar issues have arisen and been considered by the English courts in the context of prime brokerage and custody services for mainstream financial markets. See V. Dixon “The Legal Nature of Intermediated Securities: An Insurmountable Obstacle to Legal Certainty?” in L. Gullifer, J. Payne (eds.) Intermediation and Beyond (2019), at p. 64, on the conceptual difficulties of establishing a trust over pooled interests in intermediated securities held in omnibus accounts, and the potential alternative methods available for defining the precise nature of the equitable interests granted in relation to such accounts. In 
Re Lehman Brothers International (Europe) (in administration), Pearson v Lehman Brothers Finance SA (RASCALS) [2010] EWHC 2914 (Ch) (upheld [2011] EWCA Civ 1544), Briggs J concluded at [232] that the most persuasive analysis was that “a trust [over a pool of intangible fungible assets in the form of intermediated securities booked to an omnibus client account] works by creating a beneficial co-ownership share in the identified fund, rather than in the conceptually much more difficult notion of seeking to identify a particular part of the bulk which the beneficiary owns outright.” The equitable co-ownership interest analysis has also been adopted by the New Zealand High Court in relation to omnibus cryptoasset wallets maintained at a custodial exchange in Ruscoe v Cryptopia Ltd (in liquidation) [2020] NZHC 728, per Gendall J at [104], [145], with the effect that losses due to shortfalls would be “borne pari passu” (at [204]), by and shared rateably among the relevant account holders in proportion to their respective entitlements. It would be extremely helpful to know whether the Law Commission would endorse this approach to establishing the requisite certainty of subject matter for a valid trust over pooled entitlements to cryptoassets as a matter of English Law.

12 For a discussion of the operational efficiencies (esp. cost savings), improved liquidity, and security advantages of adopting an omnibus custody model, see https://www.fidelitydigitalassets.com/articles/the-omnibus-model-for-custody.

13 While we recognise that self-custody remains attractive to users who are tech-savvy and prefer to exercise full control over their cryptoassets, having a broader set of options that come with adequate and clear legal safeguards would be beneficial to foster cryptoassets’ adoption.

14 On the assumption that bailments over cryptoassets could support omnibus accounts, whether pooled solely with the assets of other customers or whether commingled additionally with intermediary assets as well) and rights to the return of equivalent assets. We believe these arrangements could potentially be supportable by analogy with existing principle (see Glencore International v Metro Trading International [2001] 1 Lloyd's Rep 284 at [154]-[155], and Burrows (Ed.), Principles of English Commercial Law (2016) at 7.14), but would encourage the Law Commission to consider the legal implications of such arrangements.
availability and use of (as well as the familiarity that market participants with experience of mainstream financial markets custody have for deploying) trusts, expanding the law of bailment could also likely lead to greater variation and reduced standardisation in legal frameworks for intermediated cryptoasset custody market-wide, resulting in a lack of clarity and increased confusion for end-users in understanding their legal rights and obligations, particularly when engaging with multiple intermediaries for trading and safeguarding activities. On balance, we would therefore argue against any expansion to the law of bailment to encompass cryptoasset holdings at this stage of the industry's development.\textsuperscript{15}

Given their widespread use in mainstream financial markets, we regard fixed and floating charges and mortgages as likely providing effective initial building blocks for structuring collateral arrangements over cryptoassets (and interests in cryptoassets), although it would in our view be necessary to develop a supplementary statutory regime with similar policy objectives to the FCAR, such that administrative burdens and formalities with respect to the creation, validity, perfection of security interests are adapted or removed, insolvency law provisions constraining security enforcement and close-out netting are disapplied, rights of collateral re-use are recognised, and rights to excess collateral withdrawal and substitution are accommodated, particularly where such rights and enforcement actions are exercised or given effect to through automated processes. To give market participants additional flexibility, we also believe that it would be helpful to provide clear legal support for title transfer collateral arrangements over cryptoassets (and interest in cryptoassets).

In our view, it would be preferable for any legislative reform to be enacted as a distinct cryptoasset-specific regime rather than as an extension to the existing FCAR, with detailed, yet adaptive provisions on possession / control requirements, providing market participants with clear practical guidance on structuring effective collateral arrangements over cryptoassets covering a range of common holding structures (including intermediated on-ledger or off-ledger escrows, multi-sig addresses, multi-party computation setups, and state channel-based networks).\textsuperscript{16} It may also be worthwhile considering legislative recognition for the validity of other forms of consensual security that traditionally rely on possession, such as liens or pledges,\textsuperscript{17} which we think could perhaps better be achieved through targeted

\textsuperscript{15} For further analysis on the versatility and adaptability of trusts and their application to intermediated cryptoasset holdings, together with a critical assessment of the law of bailment (in which the authors express doubts as to the practical utility and necessity of law reform that would permit bailments over cryptoasset custody structures), see L. Gullifer, H. Chong, H. Liu, 'Client-Intermediary Relations in the Crypto-Asset World' (2021) University of Cambridge Legal Studies Research Paper Series (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3697946).

\textsuperscript{16} For commentaries on practical difficulties caused by drafting deficiencies in the FCAR, see citations included at (n 7) above.

\textsuperscript{17} Although any expansion to the permissible scope of pledges would also likely require supplemental law reform changes to provide explicit support for and recognition of common collateral management techniques, including in particular rights of use or rehypothecation of pledged assets (see Glencore International v Metro Trading International (n 14 above) at [155] on the risk of arrangements incorporating such rights being recharacterised as contracts of sale).
laws affirming the efficacy of such arrangements over intangibles instead of as a consequence of revising the concept of possession as a general principle of English property law.\textsuperscript{18}

The points raised in this section are also relevant to the development of supplementary services that rely on robust custody arrangements, such as collateralised lending and margin trading. Indeed, we are seeing more “prime brokerage” offerings come to market as the space matures, becomes more financialised, and sees increased custom from institutions.\textsuperscript{19} These service providers would benefit from guidance on the range of legal mechanisms that can be deployed to create collateral arrangements that operate as effective risk management tools, but also provide a sound basis for developing attractive client service offerings, such as using a single consolidated pool of collateral to support trading on multiple platforms concurrently and providing flexibility to withdraw excess collateral where not required to secure outstanding obligations. Such arrangements would help optimise the netting of exposures arising in connection with assets and liabilities held across multiple venues (providing market participants’ with more effective credit risk management tools and the potential for enhanced capital efficiencies for margin trading arrangements), as well as improving accessibility and liquidity conditions.

\textit{C4. On-ledger escrow and locked asset holding structures}

Beyond conventional forms of intermediated cryptoasset custody arrangements, we would also encourage the Law Commission to examine and consider providing guidance on the legal characterisation of on-ledger cryptoasset escrow or locked asset holding structures. These structures are increasingly being used by market participants to fulfil a “security-like” function in relation to cryptoasset transactions, particularly in the rapidly growing decentralised finance (DeFi) sector, despite considerable ongoing uncertainty and ambiguity as to their precise legal characterisation.

Smart contracts on certain DLT networks such as Ethereum can be utilised to lock deposits of cryptoassets, such that these can only be released or transferred at a subsequent point in time, upon the satisfaction of certain specified conditions. In networks like Bitcoin, functional encumbrances can also be created through the use of select scripts when sending a payment instruction to the network.\textsuperscript{20} On-ledger locked assets are perceived as having a number of potential applications, including:

\textsuperscript{18} In making the argument in this context for targeted law reform as opposed to the reworking of general concepts, we note that in \textit{Re LBIE (in administration)} (n 6 above) at [34], Briggs J indicated a willingness to adopt a more expansive view of the permissible objects of security for a contractual lien that would encompass intangibles, thereby bringing the law more into line with modern commercial banking practices (and adopting a flexible attitude to apparent conceptual obstacles similar to Lord Hoffman’s consideration of charge-backs in \textit{Re BCCI No.8} [1998] AC214, at 228), notwithstanding the existing limitations to the nature of possession as a matter of general English property law (although ultimately the point was not addressed, as the parties declined to advance arguments in support of a change in the law, seemingly to the disappointment of the judge).


• Creating multi-signature (escrow) arrangements that allow several parties to be involved in the management or custody of cryptoassets. These arrangements usually provide that a subset of signatures (M) within a broader set (N) is required to unlock (i.e. spend) the corresponding cryptoassets.\textsuperscript{21} Such structures can be adopted by participants in decentralised autonomous organisations (DAO) to create voting-like mechanisms or reserve certain governance-related actions to a set of administrators.\textsuperscript{22}

• Locking (or “staking”) assets to participate in a DLT network’s consensus protocol. In particular, proof of stake models (including derivative forms, like delegated proof of stake), typically require participants (called “validators”) to lock some portion of the network’s native currency to obtain a chance to confirm a new set of transactions. The probability of confirming the set of transactions is usually dependent on the validator’s proportion of the total locked funds. To incentivise orderly behaviour, a reward of newly issued tokens is awarded to participants who are selected to perform this task. In addition, a financial penalty is often imposed on those who act disorderly, with a portion of their staked funds being “slashed”. We have seen an increase in interest for participation in such “staking” processes, as participants look to obtain some “yield” on their cryptoasset holdings. Since participation in these activities requires technical expertise, trading venues and dedicated intermediaries have started to provide “managed staking” solutions to end-users.\textsuperscript{23}

• Locking assets in connection with “liquidity mining” programs, which seek to reward participants with newly issued application tokens and/or fee-based income. Automated market makers (AMMs) like Uniswap offer tokenholders the ability to place cryptoassets within the applications’ smart contracts for market-making purposes. These AMM applications continuously provide quotes to market participants who want to trade a given asset pair. In exchange for provisioning cryptoassets, liquidity providers (LPs) receive tokens representing shares in the relevant pool’s assets and/or a pro rata economic entitlement to fee income (see diagram below). These LP shares can be staked in various other DeFi protocols (such as those operated by a the pool’s sponsor) as a time-based commitment to providing liquidity, earning

\textsuperscript{21}In the context of Bitcoin, see \url{https://en.bitcoin.it/wiki/Multi-signature}.
\textsuperscript{22}See the discussion on administrative keys in Nic Carter and Linda Jeng, “DeFi Protocol Risks: The Paradox of DeFi” in \textit{Regtech, Supertech and Beyond: Innovation and Technology in Financial Services} (Riskbooks, Q3 2021 forthcoming), available at \url{https://ssrn.com/abstract=3866705}. For further information regarding admin keys in DeFi protocols, see \url{https://defiwatch.net/}.
\textsuperscript{23}See e.g. \url{https://www.attestant.io/service/}. 


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the sponsor’s protocol tokens in the process of doing so (e.g. CRV).24 The diagram below illustrates the LP share issuance process for Uniswap.

![Diagram of LP share issuance process for Uniswap](source: Uniswap)

- Locking up assets in connection with the opening of second layer channels (such as the Lightning Network), the release of assets on a “sidechain”, or other scalability solutions. These actions effectively generate assets or claims that reference the locked funds, for use in such higher layers or parallel networks. The original assets can typically be retrieved by locking the linked assets or claims in the connected layer or network, so as to avoid inflating the circulating supply of the referenced asset. These scaling solutions are typically implemented to facilitate more regular and/or smaller payments between market participants, due to processing limits in the base layer. We share further comments on the Lightning Network in Section C7.4 below.

- Collateralising the settlement of future payment or transfer obligations under financial derivative transactions, thereby reducing counterparty credit risk. Protocols like dYdX (forwards and margin lending), Opyn (options) or Opium (forwards, options and swaps) will lock in a portion of participants’ assets on-ledger by way of collateral for such potential future obligations. These applications are likely to have higher collateral requirements than traditional, centralised operations, as the identity of parties is not usually known and recourse on a default is practically limited to the assets that have been locked by way of collateral. Despite these frictions, market participants may find such applications attractive insofar as they facilitate market completeness, price discovery and/or have less stringent onboarding requirements.

- Facilitating the issuance of “stablecoins” on a collaterised basis.25 An interesting example of this type of arrangement is the “Vault” smart contract mechanism used in the Maker Platform, which enables users to draw DAI stablecoin units against the value of locked deposits of eligible

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cryptoassets. Locked assets will only be released back to the user who opened a Vault upon repayment of the drawn funds, together with any accrued fees. However, if prior to repayment a Vault breaches a prescribed collateral ratio, it will be automatically liquidated, resulting in the deposited collateral being auctioned off to platform participants, with any post-sale surplus being returned to the Vault owner after the value of the outstanding debt (as well as any applicable fees and penalties) has been accounted for.\textsuperscript{26} In functional terms, this system resembles certain lending arrangements (like revolving facilities), although funds are not directly borrowed from other platform participants. Instead, a multilateral arrangement exists between a pseudonymous collateral provider, the decentralised autonomous organisation (MakerDAO) that oversees the platform’s technical capabilities and economic parameters, and self-interested economic agents who engage with the protocol in search of profit (for instance, by participating in the aforementioned auction).

The diagram below offers a high-level overview of the functioning of the Maker protocol:

- Similar to how assets can be deposited on the Maker platform to generate stablecoin units, other platforms have sought to use collateralised mechanisms to issue cryptoassets that reference a broader set of assets (beyond fiat currencies). One such example is Synthetix, which enables participants to stake “SNX” tokens in order to draw assets referencing fiat currencies (sUSD), other cryptoassets (sBTC), and even stocks (sAAPL).\textsuperscript{27} In contrast to more conventional “tokenisation” operations, the underlying assets are not themselves held in escrow; instead, the SNX tokens placed by participants are used to provide support for the backing of each synthetic asset.\textsuperscript{28} If a staking participant does not comply with the

\textsuperscript{26}https://makerdao.world/en/learn/vaults
\textsuperscript{27}See the range of “synths” at https://synthetix.io/synths.
\textsuperscript{28}For a high-level overview, see https://www.gemini.com/cryptopedia/synthetix. See also https://www.seba.swiss/research/synthetix-a-platform-to-issue-and-trade-synthetic-assets.
prescribed collateral ratio, it will cease to receive staking rewards, and its position may eventually be liquidated.\textsuperscript{29} The collateral ratio is set very high (currently at 600\%) to account for the high volatility of SNX tokens. Despite the associated technological and economic risks, participants may find these synthetic assets attractive, insofar as they are issued on a DLT network and can therefore be supported by other DeFi applications running on such network.

The DeFi ecosystem, which makes extensive use of the various forms of locked asset holding arrangements, is growing and evolving at a fast rate. Below is a map of the most popular applications on Ethereum, which remains the leading network for DeFi applications.

Despite the finance element in the name of this market segment, a number of DeFi platforms appear to be actively avoiding the use of terms such as ‘debt’, ‘collateral’ and ‘credit risk’, arguing that they are not appropriate for describing the nature of the transactions that such platforms facilitate.\textsuperscript{30} In our view, such statements or disclaimers are not in themselves convincing and may well be focused on reducing short-term regulatory risk for the industry, although we believe that this is likely to prove counterproductive as a strategy in the long term.\textsuperscript{31} Developing an analytically rigorous understanding of

\textsuperscript{29} See https://blog.synthetix.io/liquidation-faqs/.
\textsuperscript{30} See for example, MakerDAO’s rebranding of locked asset holding structures on its platform, dropping the term “Collateralised Debt Position” in favour of “Vaults” (https://blog.makerdao.com/say-goodbye-to-cdps-and-hello-to-maker-vaults/); and Compound’s explanation as to why its platform constitutes an “autonomous interest rate protocol”, and should not be considered a “lending protocol”: https://newsletter.banklesshq.com/p/defi-lending-doesnt-exist-yet
\textsuperscript{31} See https://cryptolawinsider.com/defi-lending/ for an effective rebuttal of Compound’s argument.
the legal nature of on-ledger collateralised lending facilities will be instrumental in unlocking the full potential of such structures and encouraging their broader use, particularly by institutions and regulated financial market participants.

We also note that for locked asset holding arrangements to be effective as credit risk safeguards, any transfers of locked assets that are effected in connection with the settlement of related transactions or the termination of a loan must benefit from finality (in the eyes of the law) and not be susceptible to reversal or being stayed, even if such transfers take place after the depositor has become insolvent (or after the commencement of a “suspect period” relating to a depositor’s subsequent insolvency) under applicable law.

Many of the interactions between participants in these DeFi applications are conducted by calling smart contract functions that enable assets to be transferred, collateral to be managed or redeemed, and positions to be liquidated or closed. These actions may not have a “manual trigger” as such, insofar as they may have been automated in advance by market participants, such as those looking to exploit arbitrage opportunities or to automate collateral management processes. Further, we note that certain economic or technical parameters in these applications (such as the eligibility of collateral and the debt-to-collateral ratio) are often managed through a collective governance process, with votes typically weighted on the basis of how many “governance tokens” each voting participant holds. At times, applications also have emergency “shutdown” procedures that can be triggered by one or more administrators (often members of the original development team). We believe that these nuances would need to be considered in the context of any crypto-related guidance and/or legislation.

In order to further the development of applications for on-ledger locked asset holding structures, we would invite the Law Commission to consider providing guidance as to their characterisation under the English law of personal property security (and in particular, collateral control requirements for a valid grant of security), and their operation under English insolvency laws. In particular, we would welcome the consideration of the following questions:

- To what extent might technical encumbrances (including escrow mechanisms) be construed by English law as giving rise to security or trust arrangements?

- What further steps would participants need to take (if any) to ensure that such arrangements can be created and maintained?

- In the absence of a cryptoasset-specific collateral regime of the type advocated above, to what extent would the rules in FCAR apply (or could be made to apply) to DeFi-related arrangements?
• To what extent might the particular mechanisms by which certain key collateral arrangement activities are implemented in practice (for example, involving automated processes or alternatively, the exercise of discretionary powers exercisable collectively by participants with standing to vote on governance issues) impact the validity, efficacy and characterisation of such arrangements as a security interest under English law?

• To what extent might the existence or absence of certain powers and processes typically associated with conventional collateral arrangements (for example, the power to realise the value of collateral through the sale of assets to third parties) impact the validity, efficacy and characterisation of such arrangements as a security interest under English law?

• What remedies would be available to participants under English law in the event of an exploit of a protocol or the conduct of other unintended or undesirable operations?

We acknowledge that enforcement of these legal structures and/or remedies is presently a challenge in permissionless networks, as on-ledger interactions are typically pseudonymous by design and private keys may not be easy to seize. Nonetheless, we believe that practical difficulties in enforcement should not prevent the law from recognising and seeking to give force to such legal structures and remedies, as these will be beneficial for many market participants who seek to make use of smart contracts for transactional efficiency, as well as to provide novel intermediation activities. We are also cognizant of the challenges in determining the applicable law when faced with transactions on networks that are global in scope. At the expense of setting an ambitious goal, we agree with the UKJT that a convention would prove helpful in reconciling these issues and creating a uniform framework for the establishment of legal jurisdiction over transactions on DLT networks, including related networks and scalability solutions.33 We acknowledge that work is already being undertaken by UNIDROIT to set general guidance for common law and civil law states as to the characterisation of cryptoassets with respect to various private law considerations.34

C5. The question of legal finality

One of the challenges that we encounter when transacting in DLT networks, particularly those that are permissionless in nature, is the assessment of legal finality.35 From a technical and economic standpoint, the settlement of transactions in these networks is typically regarded as probabilistic. Many industry

33 See para. [99] of the UKJT Legal Statement.
35 See paras. [131]-[134] of the UKJT Legal Statement.
participants (though not all) recognise that transactions that are widely accepted as having been confirmed at one point in time may subsequently be rearranged or reversed. There are various potential drivers of such an eventuality:

- A reorganisation of the transactional history occurring in the ordinary running of a network’s consensus protocol. For instance, Bitcoin uses a proof of work system as part of its consensus protocol, where a subset of willing nodes (called “miners”) are racing each other to solve a computational puzzle that will confer on the winner the ability to broadcast a new block of transactions and have other nodes update their local ledgers with said block. The puzzle is designed such that on average, a miner will emerge victorious every 10 minutes (a “mining round”). Note that there may be times where different miners solve the puzzle and broadcast their candidate block within a short time frame of each other, creating a temporary divide in participants’ records. In general terms, the split is resolved when one of these candidate blocks is built on by other miners, creating a “longer” history of transactions and causing the alternate history to be discarded.\(^{36}\)

- Reorganisations of the transactional history can also occur as a result of attacks from network participants. For instance, in a proof of work system, the probability of winning a given mining round is largely based on the proportion of computational power (or hashpower) that one has amassed. This could lead a malicious participant to (i) send a transaction to a select recipient, such as a service provider; (ii) subsequently work on mining an alternative transactional history that includes a transaction with the same identifier going to a different recipient; and (iii) broadcast this history to the broader network for acceptance. In effect, this would result in what is referred to as a “double-spend attack”.\(^{37}\)

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\(^{36}\) On Nakamoto Consensus and the interplay with proof of work, see Dmitrii Zhelezov, “PoW, PoS and DAGs are NOT consensus protocols” (2018), available at [https://medium.com/coinmonks/a-primer-on-blockchain-design-89605b287a5a](https://medium.com/coinmonks/a-primer-on-blockchain-design-89605b287a5a).

The implementation of a fork (i.e. update to the protocol) that results in a given transaction record being excluded from the widely accepted history or otherwise being declared invalid. The latter was the case with the contentious “hard fork” of Ethereum in 2016 following the demise of The DAO, where a transaction that facilitated an exploit of circa $150M was subsequently annulled. Not all network participants agreed with this decision, causing a divide between nodes that still wished to recognise the transaction as legitimate (the Ethereum Classic network) and those who sought to invalidate the transaction (the Ethereum network). Note that forks can be implemented for a variety of reasons and may be contentious (leading to the persistence of parallel transactional histories) or widely accepted.

Market participants have developed conventions designed to mitigate this settlement risk. For instance, trading venues and wallet operators wait for Bitcoin transactions to be settled 3-6 blocks deep before they are regarded as having been confirmed. The number of blocks that market participants require for transactions in other cryptoassets depends on the block interval and the security of the network, often calculated as the cost of conducting a successful attack.

We believe that this challenge is relevant to the broader set of matters under consideration, including the transfer of legal title, the characterisation of (and the allocation of collateral integrity / collateral value realisation risk between parties to) collateral arrangements, the rules around tracing and following (which we reference below), and intermediary obligations (whether fiduciary or otherwise) for safeguarding client cryptoassets or client cryptoasset entitlements in their custody. To the extent that a specific collateral regime for cryptoassets is introduced, said regime could provide greater legal clarity as to the question of title and the implications of probabilistic finality from a legal perspective. We would be happy to refer the Law Commission to more in-depth commentary on these points, should that be of help.

38 See e.g. https://www.gemini.com/cryptopedia/the-dao-hack-makerdao#section-the-response-to-the-dao-hack.
C6. Cryptoassets as an object of property

In identifying and formulating potential options for reforming English property law principles in their application to cryptoassets, we agree with the Law Commission that as a preliminary step, it is important to precisely define what a cryptoasset is as a specific object of property. Identifying cryptoassets by reference to the specific data strings representing discrete instances of spendable value within a protocol is potentially problematic given English law’s general reluctance to treat information as property. That said, we find merit in Professor Fox’s argument for treating the information representing particular instances of value in cryptoasset systems differently, due to the fact that their value is derived not from mere knowledge of the data that comprise them but from the ability to transact with them exclusively, by activating or unlocking their associated spending conditions, in accordance with the rules of the system within which they are recorded.

Moving beyond on-ledger holding structures, we think that intermediated interests in cryptoassets are likely to be characterised as either equitable beneficial (and where pooled in omnibus accounts, co-ownership) interests to cryptoassets held and controlled on trust by the relevant intermediary, or secured or unsecured contractual claims for the delivery of equivalent cryptoassets, depending on the terms of the service provided.

40 Your Response Ltd v Datateam Media Ltd [2014] EWCA Civ 281, per Floyd LJ at [42].

41 By ‘exclusivity’ we primarily mean cryptoassets are ‘rivalrous’ in that one person’s consumption of an asset necessarily causes some reduction in another person’s consumption of it, as manifested by the safeguards against double-spending inherent in the underlying protocol, to the extent that such rules are practically effective. Where the spending conditions attached to a cryptoasset specify the application of a digital signature through the use of a private key, such cryptoassets would also be practically ‘excludable’ in the sense of having the capacity to prevent (or make it economically unfeasible) for participants without knowledge of the private key to consume the asset. However, we note that locking conditions attached to cryptoassets do not invariably require association with a private key. As Antonopoulos notes in Mastering Bitcoin at pp.132, 134:

“...A locking script is a spending condition placed on an output: it specifies the condition that must be met to spend the output in the future... An unlocking script is a script that ‘solves’, or satisfies, the conditions placed on an output by a locking script and allows the output to be spent. Unlocking scripts are part of every transaction input. In this book we refer to it as an “unlocking script” to acknowledge the much broader range of locking script requirements, because not all unlocking scripts must contain signatures. [emphasis added]

...Although most locking scripts refer to a public key hash (essentially, a bitcoin address), thereby requiring proof of ownership to spend the funds the script does not have to be that complex. Any combination of locking and unlocking scripts that results in a TRUE value is valid. The simple arithmetic we used as an example of the scripting language \(2 + 3 = 5\) is also a valid locking script... Use part of the arithmetic example script as the locking script: \(3 \text{ OP} _{\text{ADD}} 5 \text{ OP} _{\text{EQUAL}}\) which can be satisfied by a transaction containing an input with the unlocking script: \(2\)....Not only is this a valid transaction output locking script, but the resulting UTXO could be spent by anyone with the arithmetic skills to know that the number 2 satisfies the script.”

Accordingly, in our view, for a cryptoasset to be an object of property it must be exclusive in the sense of being practically rivalrous and possess the capacity to be made excludable.

42 Or, in the words of the UKJT Legal Statement (para. [60]): “it is not what the data tells you but what it allows you to do”.

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C7. The characterisation of on-ledger and Layer 2 cryptoasset transactions

The proper characterisation of on-ledger transfers is not entirely straightforward. It is undoubtedly commonplace for participants in cryptoasset transactions to refer to and (at a non-technical level) understand such transfers as being analogous to the delivery of a tangible physical object that is received in an unchanged state by the transferee. However, consistent in part with the views expressed by the UKJT and referenced in the Call for Evidence, we agree that a deeper, more nuanced evaluation of on-chain transactions would in certain (but perhaps not all) scenarios suggest that this is not an accurate characterisation of their nature and operation.

In formulating our response, we consider the nature of on-ledger transactions by reference to native currencies transacted within DLT networks with UTXO-based and account-based ledger structures, using two widely used token standards on Ethereum (ERC-20 and ERC-721), and under Layer 2 state channels by reference to the Lightning Network. We conclude that it may not be possible to provide a single, unitary characterisation that clearly applies to and coherently explains all such forms of transactions. To the extent that the proper interpretation of a particular class of transactions is as constituting the acquisition by the transferee of a derivative asset that is not the same as the asset disposed of by the transferor, we consider how tracing rules could be applied to such transactions where they have been used to effect the unauthorised disposition of a cryptoasset, and suggest areas of uncertainty and potential deficiencies that the Law Commission could consider addressing through legislative reform in order to provide market participants with greater clarity and a robust legal foundation for continued innovation in the cryptoasset industry.

C7.1 Bitcoin and other UTXO-based networks: native currencies

Bitcoin utilises a UTXO-based ledger model, in which instances of value - the bitcoin (BTC) units - are represented by the unspent outputs of transactions that have been included in the network’s shared ledger. The data parameters associated with such outputs specify both their value and the criteria for spending them as inputs in future transactions on the network. The associated conditions or technical encumbrances might, for example, be based on a certain number of signatures being applied (as is the case with multisig escrow mechanisms) or the passage of time (by referencing a given block height).

The data strings representing the inputs and outputs of transactions are distinct and different objects. This particular feature of the technical implementation for representing instances of value and their manipulation through transactions is referenced by the UKJT in support of their conclusion that transactions should not be characterised as the transfer of an unchanging asset but a flow of value, achieved through the consumption of inputs and the creation of new outputs to the extent recognised and
validated by network consensus.\textsuperscript{43} We note that the UKJT’s analysis is consistent with the approach adopted by other legal commentators that have considered the issue both from the perspective of specific individual common law-based systems,\textsuperscript{44} and also in a comparative, multi-jurisdictional context by reference to general legal principles.\textsuperscript{45}

We accept that the idea of bitcoin transactions involving a transfer of value and the creation of new assets is likely to be inconsistent with how they are commonly understood by a substantial majority of standard users. However, we do not believe that everyday conceptions should necessarily define or be the primary driver for determining the appropriate legal characterisation for a particular cryptoasset system, or of the nature of participant interactions undertaken within it.\textsuperscript{46} In addition, it could perhaps be argued that the fact that data strings representing the corresponding inputs and outputs of transactions are different is merely reflective of how the protocol has been implemented at a technical, accounting or operational level, and was not intended to define and should not in itself constrain how transactions

\textsuperscript{43} UKJT Legal Statement, at para. [45]

\textsuperscript{44} For example, see D. Fox, ‘Cryptocurrencies in the Common Law of Property’ in Cryptocurrencies in Public and Private Law (2019), who comments, as part of an analysis of cryptocurrencies under the English common law, by reference to a transaction for the transfer of a quantity of bitcoin between two public keys, pk\textsubscript{A} and pk\textsubscript{B} that “[t]he coin representing the input to the transaction at pk\textsubscript{A} is destroyed and replaced by another coin representing the transaction output at pk\textsubscript{B}. We should not imagine the data string representing the coin at pk\textsubscript{A} as being transferred to pk\textsubscript{B}..... Value flows from pk\textsubscript{A} to pk\textsubscript{B} by the consumption and creation of distinct informational entities at each public key” (para.6.18); and that “[u]nlike a physical coin that passes as a continuing thing from payer to payee, the object of the cryptocurrency payment is not the same thing on either side of the payment transaction.” (para.6.53). A similar conceptual framework appears to have been adopted by the New Zealand High Court in Ruscoe v Cryptopia Ltd (in Liquidation) 2020 NZHC 728, in which the judge noted at [117] that cryptocurrency transactions operate by the “process of transferring the value inherent in the asset so that one asset becomes replaced by another”. [emphasis added]

\textsuperscript{45} See the UNIDROIT Digital Assets and Private Law Working Group – Revised Issues Paper (n 34), which in relation to sub-paragraph (3) of the proposed principle addressing the “Acquisition and Disposition (“Transfer”) of Digital Assets” at page 17 notes that legislative rules defining digital asset transfers should include transfers that result “in the acquisition of a derivative digital asset that is not the same digital asset that was disposed of by the transferee. An example of such a derivative digital asset is the UTXO (unspent transaction output) generated by a transaction in Bitcoin.” For an overview of contrary legal arguments in favour of the “asset transfer” characterisation. See L. Gullifer, H. Chong, H. Liu, ‘Client-Intermediary Relations in the Crypto-Asset World’ (n 15 above), at p. 7.

\textsuperscript{46} We note, for instance, that the public’s perception of bank (i.e. deposit) transactions does not constrain their legal characterisation. See Foskett v. McKeown [2000] 3 All ER 97 (HL), in which Lord Millet at 120, notes that "We speak of money at the bank, and of money passing into and out of a bank account. But of course the account holder has no money at the bank. Money paid into a bank account belongs legally and beneficially to the bank and not to the account holder. The bank gives value for it, and it is accordingly not usually possible to make the money itself the subject of an adverse claim. Instead a claimant normally sues the account holder rather than the bank and lays claim to the proceeds of the money in his hands. These consist of the debt or part of the debt due to him from the bank. We speak of tracing money into and out of the account, but there is no money in the account. There is merely a single debt of an amount equal to the final balance standing to the credit of the account holder. No money passes from paying bank to receiving bank or through the clearing system (where the money flows may be in the opposite direction). There is simply a series of debits and credits which are causally and transactionally linked. We also speak of tracing one asset into another, but this too is inaccurate. The original asset still exists in the hands of the new owner, or it may have become untraceable. The claimant claims the new asset because it was acquired in whole or in part with the original asset. What he traces, therefore, is not the physical asset itself but the value inherent in it.”; see also Fox, Property Rights in Money (OUP, 2008), in which the author notes at 5.46 that “It is easy to be beguiled by the simple analogy of a transfer of corporeal money made by the delivery of coins and notes and to assume that title to incorporeal money must pass in the same way. This is far from the truth.” [emphasis added].
involving the disposition of assets on a UTXO-based ledger should be characterised from a property law perspective.

However, a review of more analytically rigorous commentaries would seem to indicate that the appearance of transaction outputs being new replacement assets is not an unconscious, unintended quirk of a particular technical implementation, but a manifestation of a specific conceptual framework for structuring transactions in a network’s native currency:

a) In the Second Edition of *Mastering Bitcoin*, the author explains the operation and nature of transactions in BTC units on the Bitcoin network as follows [emphasis added]:

i. “In simple terms, a transaction tells the network that the owner of some bitcoin value has authorized the transfer of that value to another owner.”

ii. “In summary, transactions move value from transaction inputs to transaction outputs…. Outputs from one transaction can be used as inputs in a new transaction, thus creating a chain of ownership as the value is moved from owner to owner.”

iii. “A transaction consumes previously recorded unspent transaction outputs and creates new transaction inputs that can be consumed by a future transaction. This way, chunks of bitcoin value move forward from owner to owner in a chain of transactions consuming and creating UTXO.”

b) The research team behind WabiSabi (a privacy-enhancing protocol for Bitcoin) uses similar language to describe the essential nature of BTC transactions [emphasis added]:

i. “Bitcoin transfers value on a public ledger of transactions anyone can verify.”

ii. “Bitcoin transactions spend coins as inputs and create new coins output in place of the spent ones.”

c) “Pour transactions” on Zcash, a privacy-focused protocol with its own native currency and an UTXO-based ledger model, are presented in the following terms [emphasis added]:

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48 ibid p. 18
49 ibid p. 120
51 ibid p. 1
52 ibid p. 2
i. “Coins are spent using the pour operation, which takes a set of input coins, to be consumed, and “pours” their value into a set of fresh output coins — such that the total value of output coins equals the total value of the input coins.”

ii. “Pouring coins. The Pour algorithm transfers value from input coins into new output coins, marking the input coins as consumed.”

iii. “Pour transactions. A pour transaction allows a user to make a private payment, by consuming some number of coins (owned by this user) in order to produce new coins.”

d) In relation to UTXO-based ledgers, IOHK (the developer team behind the Cardano Protocol) make the following points [emphasis added]:

   i. “One can think of transactions as transfers of value.”

   ii. “In a UTXO accounting model, transactions consume unspent outputs from previous transactions, and produce new outputs that can be used as inputs for future transactions.”

The consistently repeated references to transactions involving a transfer of “value” through coins being “consumed” and “created” provide in our view strong support for the proper (although admittedly, neither “typical” nor “everyday”) characterisation of Bitcoin Layer 1 (and other UTXO-based) transactions in native currencies as involving the acquisition of a new asset by the transferee that is derived from but not the same as the asset disposed of by the transferor. To that extent, we agree with UKJT’s conclusions stated at para. [45] of the Legal Statement.

We recognise that certain participants are able to track UTXO sets and discount the value of “tainted sets” that are associated with criminal activity. On that basis, one could make the argument that specific BTC units are indeed transferred (along with their history). We believe that such a conclusion would be unsatisfactory. Simply because a ledger’s transparency may facilitate tracking, or because certain legal recourse to recover value may be available through the law of tracing, does not mean that a transfer of specific, unchanged assets was intended and has indeed occurred. Instead, we would argue that it is the relevant chain of value that is being marked as compromised.


54 ibid 465. Additionally, in the formal presentation of the necessary building blocks for a decentralised autonomous payment scheme at p. 469, the authors refer to the inputs and outputs for Pour Transactions as “old coins” and “new coins”, respectively.

55 http://zerocash-project.org/how_zerocash_works


57 See https://www.cl.cam.ac.uk/~is410/taintchain/. We also note that market participants may pay a premium for “clean” units. See https://bitcoins.net/investing/fungibility.
C7.2 Ethereum and other account-based networks: native currencies

It is important to note that not all DLT networks utilise an UTXO-based ledger model. For example, Ethereum relies upon an account-based system; instead of tracking and retaining unique references for individually transacted instances of ether, nodes maintain a list of accounts with their corresponding ether balances. In such a system, a transaction is valid if the sending account is sufficiently well-funded, and upon execution of a valid transaction, the sending account is debited and the receiving account is credited with the value of ether transferred.  

It is not clear whether the UKJT actively considered whether different ledger designs could impact upon the characterisation of transactions or whether the UKJT’s conclusions at para. [45], although expressed as being of general application to on-ledger cryptoasset holdings and transfers, were primarily or exclusively derived from an analysis of bitcoin transactions within an UTXO-based ledger model.

As with bitcoin transactions, we accept that the idea of ether transactions involving a transfer of value and the creation of new assets are likely to be inconsistent with their common characterisation by many regular users. A review of analytical resources does not readily provide a clear answer as to whether ether transactions were designed to effect and were intended to operate as a transfer of value, as opposed to a transfer of specific unchanging assets. Nevertheless, based on our research we make the following observations:

a) In *Mastering Ethereum*, the authors make multiple references to ether payment transactions as mechanisms for transmitting or sending *value* (as opposed to the transfer of an *asset*).

b) In explaining the rationale behind adopting an account-based ledger the maintainers of the Ethereum Wiki explain that this would enhance fungibility since “there is no blockchain-level concept of the source of a specific set of coins”.

C7.3 Token standards, coloured coins, and tailored arrangements

We recognise that it is tempting to extend the same logic that we set out in the previous subsections to cryptoassets at large, insofar as all transactions take the form of ledger entries that themselves follow or are impacted by prior entries and which may be accompanied by varying degrees of technical

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58 See “Accounts and not UTXOs” at https://eth.wiki/en/fundamentals/design-rationale.

59 In addition, we note that D. Fox (n 44 above) also states his conclusions about the characterisation of cryptoasset transactions in general terms (see 6.18 and 6.53), and although the author acknowledges in passing that Ethereum’s ledger tracks account balances (at 6.14) the analysis appears to be based almost entirely on a detailed consideration of the operation of transactions on the Bitcoin protocol.


61 ibid p. 6; p. 110.

62 See n 58 above.
encumbrances. However, we think that the use of a ledger in itself does not necessarily entail that all of
the transfers recorded therein must be transfers of value. We believe that participants should, through
the use of specific provisions or commonly accepted standards, be able to attribute specific importance
to an individual asset and / or define the outcome and effect of a particular transaction mechanism,
irrespective of the default rules applying to the characterisation of transactions in a network’s native
currency or the model adopted by the network’s ledger.

For the purposes of this discussion, it is helpful to refer to popular token standards (i.e. smart contract
templates) on Ethereum. In their analysis of different token standards that have been developed for use
on the network, the authors of Mastering Ethereum note that: 63

a) ERC-20 tokens are designed such that “different units... are interchangeable and have no unique
properties” and in order to support interchangeability, “[t]he ERC20 token standard only tracks
the final balance of each account and does not (explicitly) track the provenance of any token”.

b) In contrast, the design of the ERC-721 token standard is expressly referred to as “intended to
reflect the “ownership of property”” and the tokens themselves as tracking “ownership of a
unique thing”. [emphasis added] The authors continue by drawing a clear distinction between
the structural design of ERC20 and ERC721 tokens in the following terms: “To grasp the basic
difference between ERC20 and ERC721, it is sufficient to look at the internal data structure
used in ERC721... Whereas ERC20 tracks the balances that belong to each owner, with the
owner being the primary key of the mapping, ERC721 tracks each deed ID and who owns it,
with the deed ID being the primary key of the mapping. From this basic difference flow all the
properties of a non-fungible token.”

Based on the above, it appears that ERC-721 tokens have been clearly and explicitly designed as
representations of and for transfer as distinct and unique objects of property. This explains their
popularity within the non-fungible token (NFT) segment of the industry, encompassing distinct tokens
that are usually linked to an external (off-ledger) object, be it a physical or digital in form. This link
often takes the form of a pointer to a database in which the file is being stored. Note that the linked object
need not in itself be “unique”, nor would the token usually confer intellectual property rights on its
holder. Instead, market participants regard the cryptoasset itself as the collectible. To illustrate this point,
we include below the freely available collage of digital images that was linked to an NFT which was
auctioned by Christy’s for $69 million in March 2021. 64

63 Antonopoulos and Wood (n 60) p. 247.
In our view, the absence of equivalent statements in relation to the intended operation of transactions involving ERC-20 tokens (or ether), provide reasonable grounds for concluding that ERC-20 transfer transactions should, as a default rule, be characterised as transfers of “value” and as involving the derivative acquisition of a new asset by the transferee.

Bitcoin (and other UTXO-based networks) may not have token standards as such, as their programming languages are more limited by design. This has led industry participants to “colour” UTXO sets (by embedding some identifier in the associated meta-data), including for the purposes of purportedly tracking specific off-chain object(s). For instance, UTXO sets could be marked to track a specific car or collectible that is of interest to a subset of network participants. Importantly, these UTXO sets are able to preserve said meta-data following a transfer to another network participant, facilitating their identification.

We believe that participants should also be able to grant specific importance to select cryptoassets through tailored arrangements, for instance, by designating the important attributes of a token within a smart contract (or in a cryptoasset’s meta-data). In our view, the law should recognise such importance, and leave room on the basis of principles of freedom of contract, for characterising particular transaction arrangements as asset transfers and for making available remedies that protect a party’s right to enforce title to identified assets where consistent with the clearly expressed (contractual) intentions of participants to a particular token issuance or distribution. We note that the mere fact that a cryptoasset has a “serial number” or other identifier does not, in itself, grant special importance to said asset. Instead,

it is parties’ express recognition of the distinctiveness of the cryptoasset, and its ability to be tracked in some manner, that warrants in our view such a differential treatment.

In conclusion and on balance, we believe the UKJT’s analysis at para. [45] should apply to the transfer of native currencies (such as bitcoin and ether), irrespective of how the relevant network’s ledger is structured. We would, however, argue that a different characterisation should apply to transactions involving the transfer of cryptoassets that are designed and intended to operate as the delivery to the transferee in unchanged form of uniquely identifiable assets, such as ERC-721 tokens and perhaps coloured coins or even particular issuances of ERC-20 tokens (whether linked to off-chain assets or otherwise) where the default characterisation is clearly displaced by contrary provisions in the terms governing the issuing smart contract. In such circumstances, we disagree with the conclusions of the UKJT at para. [47] of the Legal Statement that the nemo dat principle does not apply and cannot be used to recover such cryptoassets where they have been transferred to a third party without the authority of their owner. We acknowledge that identifying the appropriate conceptual framework for understanding such transactions is not without difficulty and would therefore invite the Law Commission to provide additional guidance on the characterisation of Layer 1 transactions under English Law.

C7.4 Transactions through Second Layer State Channel Networks

Although it is undoubtedly important and valuable to the cryptoasset industry for there to be clarity as to the proper characterisation of onledger holdings and onledger transactions as a matter of English Law, we would support the Law Commission in adopting an expansive scope to its investigations and for any resulting guidance to encompass supplementary technical systems and operational frameworks for retaining and transacting in interests in cryptoassets that are used (or are likely to become increasingly widespread in their adoption) by market participants to overcome the current limitations and deficiencies of existing blockchain protocols.

An example of these alternative systems is “second layer” payment or state channel networks that can facilitate multiple cryptoasset transactions offledger at higher throughput and lower fees (enabling...
micro-transactions and streaming payments), with only the initial funding transaction and final settlement transaction (which respectively, open and close the relevant channel) being secured via settlement and recorded on the relevant underlying blockchain (i.e. Layer 1). By way of analogy, the exchanges taking place on these Layer 2 networks could be characterised as transactions involving promissory notes, where the amounts outstanding are being updated after each transaction and can be discharged (or claimed) by parties by broadcasting a settlement transaction on the underlying (Layer 1) network.

Given that second layer networks are an emerging technology, it is unlikely that there is yet any “typical” characterisation of cryptoasset transactions undertaken both within and routed through multiple, linked open state channels that would command broad acceptance from a majority of regular market participants. That said, and whilst acknowledging that the following comments and conclusions may not be applicable to second layer networks in general, in the context of the Lightning Network specifically we would make the following observations:

a) Payments within and between the parties to an open state channel are performed by the exchange of signed transactions - called commitment transactions - that alter the allocation of balances described by the initial state. Commitment transactions must meet the prescribed requirements as to form and may be submitted for settlement to the underlying Bitcoin blockchain (although the intention is for them to be held off-chain by each party instead until closure of the relevant channel). If our conclusion that the proper characterisation of a transaction in BTC units settled on the Bitcoin blockchain is as a transfer of value involving the derivative acquisition of a new asset, we would argue that this characterisation should not be any different for a transaction of identical form and substance merely because it is held off-ledger via a two-party state channel.

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69 Antonopoulos – Mastering Bitcoin (n 47 above), p. 284.
70 See, for example, the Lightning Network, a proposal for a routed bi-directional payment channel network for use with Bitcoin and related blockchain protocols: https://lightning.network/#intro
72 See also Antonopoulos – Mastering Bitcoin (n 47 above), in which the author at p. 286 refers to state channels as being a mechanism for facilitating a flow of “value”; and at p. 288 where transactions used in the establishment and operation of payment channels are represented as involving the “consumption” of inputs and the “creation” of outputs.
b) Bitcoin transactions between Lightning Network participants routed through multiple linked, two-party bidirectional payment channels appear to be a clear example of derivative transfers where the ultimate recipient acquires an asset that is linked to, but different from, the asset disposed of by the transferor. These transactions require no transfer of bitcoin between the bilateral payment channels themselves but instead operate by cascading value across them secured through a series of “Hash Time-Locked Contract” commitments that are redeemed atomically from from the ultimate recipient and ending with the original transferor.\textsuperscript{73}

In conclusion and based on our limited investigations so far, we would argue that that UKJT’s characterisation of cryptoasset transactions stated at para. [45] of the Legal Statement should also apply to cryptoasset transactions undertaken both within and routed through multiple, linked open state channels, at least to the extent that such channels and their associated networks are similar in structure to those implemented by the Lightning Network.

\textit{C8. Implications for available remedies and property identification techniques}

To the extent that cryptoasset transactions are to be properly characterised as involving the derivative acquisition of new assets, establishing claims to remedy unauthorised dispositions would result in possession-based actions such as conversion being of reduced utility\textsuperscript{74}, whilst placing a greater reliance on and in many instances requiring the application of rules of tracing to determine whether such new

\textsuperscript{73} See “Basic Lightning Network Example” in A. Antonopoulos – \textit{Mastering Bitcoin} (n 47 above), pp. 298-301.

\textsuperscript{74} With such actions, even under an expanded notion of “possession”, perhaps being limited to cases involving the unauthorised use of private keys.
assets could be identified legally as substitutes for, and representative of, the value once inherent in the original assets.75

However, the English law of tracing is complex and in its current form not in our view particularly well-adapted to providing market participants with a clear, coherent and comprehensive framework for supporting a range of remedies that can effectively safeguard proprietary rights in cryptoasset holdings. We would therefore encourage the Law Commission to consider as part of its inquiries the application of tracing rules to cryptoasset transactions,76 and to assess the merits of introducing legislative guidance or reform, including in relation to the following specific topics:

a) Eliminating the distinction between tracing at common law and in equity, and to thereby permit the application of equity’s more flexible approach to tracing into mixed substitutions without the need to establish a fiduciary relationship.77

b) Permitting the application of “backwards tracing” to classes of cryptoasset transactions where appropriate (such as those routed through multiple linked state or payments channels on the Lightning Network or similar protocols), by analogy with the exception currently permitted for banking network payments.78

To the extent that cryptoasset transactions are to be properly characterised as involving the transfer of assets, safeguarding property rights in cryptoassets would require reliance on a different range of remedies. We understand that these would at present be restitutionary in nature and available potentially to enforce title-based claims in law (by, or by an equivalent to, an action for money had and received)79 and in equity (on the basis of knowing receipt or inconsistent dealing, and for liability as principal or dishonest accessory in breach of trust or fiduciary duty). Claims for such remedies require or may be subject to defences based on levels of knowledge or notice on the part of the transferee or recipient as to the unauthorised nature of the transfer of or dealings with a cryptoasset. Whilst it would certainly be beneficial for industry participants to have a clear understanding of what would constitute the requisite

75 D. Fox (n 44 above) at 6.54, 6.75.
76 On this point we agree with the UNIDROIT Digital Assets and Private Law Working Group, which notes in its Revised Issues Paper (see n 34 above) that “[a]n important subset of questions under this section [considering remedies and enforcement] relates to following and tracing digital assets through transaction pathways that may be novel, as they are based on new technologies and business models.”. We believe that such inquiries should encompass and specifically analyse non-standard arrangements, including transactions effected through privacy-enhancing services protocols (such as tumblers and mixers) and via multi-hop second layer payment channel networks.
77 Shalson v Russo [2003] EWHC 1637 (Ch) at [103]-[104]. For criticism of the continued divergent approach to common law and equitable tracing see Burrows, The Law of Restitution (3rd Edition) (2011) at p. 120; and the obiter dicta of Lord Millet in Foskett v McKeown [2001] 1 AC 102, 128-129
78 Per Foxton J in SFO v Hotel Portfolio II UK Ltd [2021] EWHC 1273 (Comm) at para. [46], point (i), and possibly under point (iii), as an exercise in anticipatory substitution.
79 Armstrong v Winnington Networks [2012] EWHC 10 at [84]-[94], in which the court held that “as a matter of authority and principle, if and where legal title remains with the claimant, a proprietary restitutionary claim at common law is available in respect of receipt by the defendant of a chose in action or other intangible property.” [emphasis added]
levels in practice, we do not think it would be appropriate for this to be addressed in and prescribed by legislation, but should instead be developed by the courts, by reference to emerging standards of market practice and informed by any applicable regulatory conduct frameworks that are implemented over time.

As to the availability of tort-based remedies, we agree that the law does not appear to have kept pace with advances in technological innovation and the related emergence of new forms of intangible assets. In our view, the current limitation on the availability of an action in conversion to tangible property and documentary intangibles is an unprincipled “relic of history” and should be re-examined.\footnote{OBG Ltd v Allan [2008] 1 AC 1, per Lady Hale at [310].} We would support law reform initiatives that permit title to cryptoassets to be enforced at law by an action in conversion, although for the reasons stated above, we would encourage the Law Commission to consider legislative solutions that do not involve the introduction of unconventional and expanded notions of possession of general application.

In addition and given its impact on the availability of and defences to remedies for the enforcement of title, and the particular tracing and following rules applicable for determining property identification, we would recommend that the Law Commission consider providing authoritative guidance on the qualifying criteria for determining whether particular forms of cryptoassets could constitute money under English law.

We note that certain English law commentators have applied a purely functional test in determining whether a cryptoasset could qualify as money.\footnote{J. Perkins and J. Enwezor, ‘The legal aspect of virtual currencies’, (2016) JIBFL 569, at 570-572; and in the context of characterising certain ETH-denominated financial instruments, see R. Cohen, P. Smith, V. Arulchandran and A. Sehra, ‘Automation and blockchain in securities issuances’, (2018) JIBFL 144, 149-150.} However, others have argued that there may be an additional requirement for an asset used as a medium of exchange to be denominated in a legally sanctioned national unit of account as well before it can be treated at law as money.\footnote{D. Fox, ‘Cryptocurrencies in the Common Law of Property’ (n 44 above) at 6.62.}

Furthermore, different opinions have been expressed on the scale or breadth of adoption necessary in order for an asset to satisfy the functional test of being utilised as a medium of exchange. It is unclear whether relatively widespread use and / or acceptance amongst the general domestic public could potentially be required.\footnote{Ibid at 6.61.} Alternatively, it may be possible to argue that as long as there is a community of reasonable scale in existence somewhere that uses a particular cryptocurrency as a medium of exchange (whether located in a foreign country or spread perhaps across multiple countries), then that would be sufficient for it to satisfy this limb of the functional test for characterising an asset as money,
even if such cryptocurrency were not at the same time particularly widely adopted as such by the general public of England & Wales.\textsuperscript{84}

As a final matter, we would also ask the Law Commission to consider clarifying the conceptual foundations and rules governing the process of ‘following’ title to assets that are subject to unauthorised transfers, dealings or mixtures, so that their application to cryptoasset transfers, whether undertaken through Layer 1 on-ledger protocols or through alternative transaction mechanisms (to the extent such activities should be properly characterised as asset - not value - transfers), can be more readily understood and interpreted by market participants.\textsuperscript{85}

\textsuperscript{84} J. Perkins and J. Enwezor (n 81), at 571-572, drawing an analogy with the English law treatment of foreign currency denominated payment obligations, as demonstrated by the decision of the Court of Appeal in \textit{Camdex International Ltd v Bank of Zambia} [1997] CLC 714.

\textsuperscript{85} See the comment of the UNIDROIT Digital Assets and Private Law Working Group referred to at (n 76) above; on mixtures, see Waghorn, ‘Sorting Out Mixtures of Property at Common Law’ (2021) 84(1) \textit{MLR} 61.
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ABOUT THIS SUBMISSION

The Digital Law Association is an organisation dedicated to the promotion of a fairer, more inclusive, and democratic voice at the intersection of law and technology.

Our mission is to encourage leadership, innovation, and diversity in the areas of technology and law by:

- bringing together the brightest legal minds in the profession and in academia to collaborate; and
- developing a network that promotes digital law, and particularly female leaders in digital law.

Submission Process

In developing this submission, our members have engaged through email correspondence and discussion groups relating to the issues related to the submission.

Approach

Our approach to this submission recognises and respects that the Law Commission’s intent in respect of this inquiry has been to only focus on the private legal rights of Digital Assets and not to deal with their regulatory and public law aspects. Notwithstanding this, we use the opportunity of this submission to advocate for the UK law Commission to continue its work going forward to also focus on the regulatory and public law aspects of Digital Assets within its Digital Asset project. Our collective market insight is that this is work that needs immediate attention, this is where legal risk and opportunity for real world harms are most significant and this is where there is a great deal of legal uncertainty.
# Summary of Recommendations

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The Common Law Position

Question 1 - What would be the legal or practical implications for you if Digital Assets were possessable under the law of England and Wales?

Property rights regulate relations between people over resources. Property law is, thus, an historical record of the methods that societies have used to allocate resources between people, and to generate certainty in the control and transfer of resources in order to put them to productive use. The two most important aspects of property law are, therefore, the nature of the resource and the mechanisms of control.

The nature of the resource determines the rights that property law confers and the mechanism of allocation of the rights. Sometimes property laws are said to regulate “relations between people over things,” with classic examples being land and physical objects. However, the reality has long been that any valuable resource will typically fall into the purview of property, and the tangibility or otherwise of the resource is not meaningful in property law. From the early medieval development of feudal estates and trusts, through the emergence of choses-in-action and riparian rights, to modern day conceptions of patents, trademarks, copyright and virtual property, property law has never concerned itself with physical tangibility. The only meaningful aspect of physical instantiation is that this brute fact determines the rules of allocation of the propertised resource: since non-rivalrous use is generally not possible for a physical object, property laws relating to these kinds of objects will necessarily have certain characteristics that seek to limit disputes over the exclusive use of the property. The law of adverse possession is a good example: in the interest of certainty and dispute settlement, it grants property rights over land (or, in some jurisdictions, objects) to someone who would otherwise be characterised as a trespasser but who nonetheless has maintained control over the property for such an extended period of time that the law grants them title to the property.

The important observation here is that the nature of the resource determines the mechanism of control, and that this mechanism of control over the resource defines the nature of the property right. For land, control includes excluding others—thus we have laws against trespass—and similarly for physical objects we have property rights ensuring that others cannot simply take the object. (Although for various historical and philosophical reasons these resource control rights are sometimes found in torts like conversion or crimes such as theft.) For modern intellectual property laws such as patents or copyrights, where the property in question is wholly virtual, the mechanism of control is the legislative/administrative grant of the monopoly or exclusive right, with a state-backed right of legal exclusion of others from the resource. Each of these property types have at their core the concept of control over the resource, even though the characteristics of the resources differ widely.

This focus on the nature of the resource and the mechanism of control provides the core tenets of the submission of the DLA. Notably, it explains why we have only addressed Question 1 and 12. Moreover it explains why, in our view, the framing of the enquiry in its current form is somewhat unhelpful. We wholly endorse the Commission’s stated aims to ensure certainty and encourage investment in Digital Assets; however the questions asked
appear to only focus on property rules that meaningfully relate to certain (historically significant) property types and may not generate useful regulations for the broad category of Digital Assets as a resource. The questions asked assume that there are useful analogies to be drawn between Digital Assets and certain historical property types (notably land and objects). In our view, this approach is counterproductive, since it seeks to place Digital Assets into the procrustean bed of physical property types, and does not provide guidance as to the types of property rights that should apply to this new type of resource in order to generate socially productive uses from it.¹

Questions that ask about possession *simpliciter* or ask about similarities between Digital Assets and choses-in-action are examples of how this type of analogy-making, while plausible on the surface, fails to address the fundamental property question for Digital Assets: how can we generate certainty in the control and transfer of this type of resource in order to put them to productive use? As for all property rights, the two issues are the nature of the resource and the mechanisms of control.

1. **The nature of the resource**

Even identifying what a Digital Assets is, is difficult. To date, most discussions around definitions have are the product of regulatory focus. This approach is insufficiently expansive to identify the legal, rather than merely functional, characteristics of Digital Assets. JG Allen rightly identifies that the

“...taxonomies of the new digital ‘tokens’ that have emerged often express some version of the trichotomy of ‘payment’, ‘security’ and ‘utility’ tokens. This approach looks attractive, at first blush, because it refers to the function of the token and brings certain tokens effectively under existing regulation. However these regulatory driven taxonomies fail to identify what is truly novel – and therefore legally challenging – about ‘cryptoassets’ from a private law perspective.”²

We propose that a single definition of digital asset is used. We consider the following concepts to be relevant to such definition:

*A record that is either created, recorded and transmitted, or stored in a digital (or otherwise intangible) form by electronic magnetic or optical means (or by any other similar means) and is a digital representation of value.*

*Digital Assets include anything that can be created and transmitted electronically, and have associated control, ownership³ or use rights, and includes digitised assets that are a digital representation of any other type of asset and do not need a blockchain to be created or maintained, as well as natively digital assets that are created, maintained, and can be used on a blockchain and interact with smart contracts.*

¹ Recognising the novel approaches contained in the Digital Assets: Electronic Trade Documents consultation paper.
³ Recognising that a key point of this submission is the complexity of ownership of digital assets within the traditional concept of property law.
2. The mechanism of control

We propose, at least in the foreseeable future that control provides a better starting point for thinking about how Digital Assets are held, rather than ownership.

Relevant discussions around data ownership versus data control and the focus in that area on control as the better approach are instructive in identifying some of the legal problems surrounding legal identification of proprietary rights in Digital Assets. Noting that Digital Assets like data evolve, are endlessly duplicable and are amorphous.

For this reason we extract now from the 2018 British Academy, Royal Society and techUK seminar on Data ownership, rights and controls.

“The concept of ‘data ownership’ seems to have quite a lot of intuitive power. ‘Your data’ seems to be a simple shorthand for data that is about you, and because we feel as though we understand how ownership works, this seems to be a helpful way to get purchase on ideas that are otherwise difficult to talk about. Motivations for talking about ownership include privacy protection, the desire to be able to use one’s own data (both for individuals and organisations), and the idea of sharing in the benefits that others get from using data that might be about you as a person. It seems intuitively right that you should have control over ‘your data’, and that if it were used for financial (or even political) gain that you should be able to benefit...However, there are very significant problems with the concept of ‘data ownership’ that make it unsuitable for use in developing a vision for a system of data management that combats the growing sense of unease. The idea of owning data is challenging because data is not like other goods that we can own. It is non-rivalrous – I can both give it to you and still have it myself without it costing me any of the original good. Other goods are not like this. If my bag is stolen, I no longer have it. But, generally, if your data is stolen you still have it, but someone else has it too. If I sell my house to you, it is yours, it no longer belongs to me and I cannot sell it to someone else, but this is not always the case with data, be it personal data or data that is not about people at all. In addition, data can be about multiple people, breaking the link between the idea of data that is ‘about me’ and data that I therefore ‘own’. …. The parallels to other forms of property are actually easier to see if the person understood to ‘own’ the data is someone who holds an aggregated data set about many people. For these reasons, there is a lack of legal basis, in common or civil law, for the idea of data ownership. Common and civil law lack a definition of ‘data’ and do not confer a special status on it. Only personal data is defined, non-personal data is not defined, and even with personal data there is no clarity whether it can be held or not, and the definition of ‘personal data’ is extremely broad. It is also a dynamic concept: what is today not personal data could be considered in the near future to be personal data if changes mean that it can be used to identify an individual. Technology evolves continuously and even machine-generated data could be considered, in some situations, as personal data. Anthropology considers ownership in relation to the social practice of exchange. It is primarily at the moment of exchange, when one person gives something to another person, that the very question of ownership is made visible. One of the things that is at stake in debates about data ownership might be not only data’s (lack of) legal status as property, but also its social status as an artefact of exchange.

Notwithstanding you can capture their status at a moment in time in certain systems, for example, distributed ledger technology systems.

Could some of the problems about what constitutes appropriate exchange in fact be what is at the heart, in some of the discussions, about data ownership?”

The reason that distributed ledger technology (and/or blockchain technology) has been so successfully tied to the rise of Digital Assets, is that it provides us with a shared immutable record that facilitates identification of the who, what and where of control, including in the absence of a centralised custodian with legal personhood. That is not to say it is the final technological invention for supporting Digital Asset property rights, but in a world of increasing, replicable digital assets, distributed ledger technology is inordinately useful in both alienating and recording the alienating of rights.

Our recommendations in question 12 are associated with the provision of appropriate mechanisms of control to establish legal certainty in the holding of Digital Assets. They include, new legal structures, systems or processes, new opportunities for holistic review and oversight as well as the establishing of new infrastructure which may or may not rely on distributed ledger technology.
Other

Question 12 - We welcome suggestions as to other issues which arise in practice, or other areas of law which could be affected, and which should be included in the scope of our Digital Assets project.

Recommendation #1

Consideration of the introduction of a new type of legal entity – DAO Limited (decentralised autonomous organisation).

Intended outcomes

Appropriate corporate oversight and guidance for a new business model manifesting in the digital economy, particularly in respect of digital asset transactions.

Clarity and recognition as to the cross over between Digital Assets and DAOs and how their integration into existing regulatory regimes should be facilitated with an eye to both functions.

(For example, a constitution document set up as a smart legal contract could operate as both a DAO and a digital asset).

Reasons

Recognition of the ability for digital asset networks to decentralise control and operation among network participants, to an extent that inhibits the practical and logical application of regulations unless a new entity is recognised.

Make the United Kingdom an attractive destination for innovative financial products and services and other digital asset businesses.

Recognition of international movement in this space, with DAO’s either being adopted or considered in other jurisdictions, for example see the COALA DAO Model law (which we do not endorse in its entirety but recognise to be an important part of the conversation) and on July 1, 2021, Wyoming became the first state in the United States of America to recognize DAOs as a legal entity.

Recommendation #2

Further review of legislative changes required to support the future of digital identity in the UK, where those changes recognise the value afforded by a digital identity system that uses technologies to balance security with individual consent and control - privacy enhancing technologies (PET).

Reasons
Natively digital assets do not currently have a clear legal regime that defines a person’s rights. Many natively digital assets could be said to be analogous to bearer assets in the sense that the person with access to the private key to sign transactions involving the natively digital asset would consider themselves the ‘owner’ of the natively digital asset. However, more than one person may have knowledge of the private key and bad actors may discover the private key that is associated with a public key address so exclusive ‘ownership’ or control cannot be guaranteed for a natively digital asset unlike a bearer asset where a person actually holds a bearer certificate and there is only one copy of the certificate. If a person’s private keys are obtained by a bad actor without the person’s knowledge it is extremely difficult for that person to prove their ‘ownership’ unless they have kept good and contemporaneous records of their ‘ownership’ and control of the digital assets associated with the wallet address.

Absent a legal register that documents a person’s name to a public address associated with a natively digital asset, it is the proof of ‘ownership’ that is made difficult by the nature of natively digital assets, not the rights or uses of the digital assets. Therefore, a possibly appropriate mechanism of control is a digital identity solution that enshrines and protects privacy rights which is possible with the emergence of privacy enhancing technologies. For example, a person’s public wallet address could be linked to an identifier address where that identifier address has gone through a process of ‘zero knowledge Know Your Customer’ so that the personal information is stored securely and to the extent of any wrong doing or suspected wrong doing, the personal information associated with the identifier address that links to the public address is verifiable and readily obtained to deliver a swift and certain proving of legal ownership and establish clear property rights over the natively digital assets.

**Recommendation #3**

To extent the Law Commission is not already tasked with a full regulatory review of how digital assets should be incorporated into the economy through existing or new legislative frameworks, the Law Commission (or other appropriate body – such as the UK Judicial Cross-Disciplinary Task Force on the Digital Economy) should have their remit extended to undertake this vital and comprehensive review. In addition to private law, this should include aspects of regulatory, and public law (for example capital markets, conflicts, consumer protection, anti-money laundering, tax, and laws governing regulation of securities and corporations).

**Reasons**

Digital Assets are a cross industry, cross sector consideration. The Government response to how they should be integrated into the entire UK economy should not be piecemeal, but done in a holistic way given the interdependencies and the need for uniform approach. See for example the approach recently adopted in Lichtenstein. Given the international footprint of Digital Assets this review should also cover issues of international law.

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6 Much of the rationale for this recommendation relates to public, permissionless blockchains. The DLA recognises public permissionless blockchains as only one component of a holistic set of technological solutions.
**Recommendation #4**

Address the need for the United Kingdom to identify requirements for the public and private use of high integrity critical digital infrastructure (whether through legislation or otherwise) to address some of the practical implementation problems associated with reliance on critical Digital Assets (like digitised or smart legal contracts). See here for features identified as necessary for critical digital infrastructure⁷. This may include opening up new grant programs for the digitisation of the legal sector.

**Reasons**

We are seeing an increased dependency on digital assets (such as smart legal contracts). Wide scale use of digital assets by governments and the private sector will require appropriate digital infrastructure, and such infrastructure will assume a critical role in the functioning of the economy. Governments will need to consider what legislative measures are required to support the proper functioning of, access to and integration of such digital infrastructure into the fabric of the economy.

There are significant risks in failing to understand the public interest requirements of the digitisation of legal contracts and legal facilities including risks in respect of the performance and meeting of director and legal duties.

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1. INTRODUCTION

1.1 Herbert Smith Freehills LLP welcomes the opportunity to comment in response to the Law Commission's Digital Assets Call for Evidence (the "Call for Evidence").

2. CHAPTER 2: CALL FOR EVIDENCE

2.1 What would be the legal or practical implications for you if digital assets were possessable under the law of England and Wales

2.1.1 The call for evidence rightly recognises that "digital assets are generally treated as property by market participants", but that, "the law of England does not currently provide certainty as to the legal status of digital assets." It further rightly recognises that, "legal certainty would lay a strong foundation for the development of adoption of digital assets... [and that] it would also incentivise the use of the law and jurisdiction of England and Wales in transactions concerning those assets."

2.1.2 In keeping with the project requests from the Ministry of Justice, (MoJ) and the Department for Digital, Culture, Media & Sport (DCMS), the call for evidence asks stakeholders how digital assets are used, treated and dealt with by market participants and about how the law might accommodate digital assets now and in the future.

2.1.3 Specifically the MoJ asked for other recommendations the Law Commission considers necessary or desirable to ensure the law can provide legal certainty and predictability for digital assets, and, identification of areas for future consideration with respect to digital assets.

2.1.4 Our experience is that the market is indeed looking for information and clear legal guidance on how the law might accommodate digital assets and the UK Law Commission is a key stakeholder in solving for this need; but that the focus of that market interest is not possession.

2.1.5 We note the decision in AA v Persons Unknown that: (i) cryptocurrencies are neither 'things in possession' nor 'things in action' and (ii) a third (open) form of property right may extend to all crypto assets going forward, and in turn acknowledge that the law of England and Wales may follow on from that decision.

2.1.6 Our experience is that the market is looking for certainty in respect of the characterisation and regulation of digital assets in respect of corporate law and securitisation as well as data protection, consumer protection, taxation and Anti-money laundering/counter terrorism financing questions.

2.1.7 These are having private law implications, particularly as individuals and corporations are looking for certainty in how they deal in digital assets including private rights around ownership of unregulated assets.

2.1.8 Further we consider that caution should be exercised in extending the application of the "possession" concept particularly as we do not think it is necessary for ownership or effective legal management of digital assets. We consider the provisional proposition of extending possession to meet electronic documents (as
suggested in the Digital Assets: electronic trade documents, summary of consultation paper, p.9) to be potentially problematic (particularly in the long term) if adopted for the following reasons:

(A) It is unnecessary (on reasoning above);

(B) the nature of digital assets are such that they are often established as a single source of truth, controlled by multiple parties (i.e. not under exclusive control); and

(C) the fractionalised nature of digital assets may mean that multiple persons may have rights and control in respect of a digital asset, such that the requirement for an “electronic document…(to be)… fully divested on transfer. That is, if A transfer the electronic document to B, A must no longer be able to control the document….”, would create an unnatural limit on the functionality of the technology as it is currently evolving.

2.2 Suggested other issues which arise in practice, or other areas of law which could be might be included in the scope of our digital assets project.

A. RECOMMENDATION ONE

To the extent the Law Commission\(^1\) is not already tasked with a full review of how digital assets should be incorporated into the economy through existing or new legislative frameworks they undertake a comprehensive review that, in addition to private law, should include the holistic integration of digital assets into regulation and public law. This review for example would extend to capital markets, the impact and whether there is a need for limited liability distributed autonomous organisations, consumer protection, anti-money laundering, tax, the impact of conflicts (given the international nature of digital assets) and of course those laws governing the regulation of securities and corporations.

Rationale

Digital Assets are a cross industry, cross sector consideration. The Government response to how they should be integrated into the entire UK economy should not be piecemeal, but done in a holistic way.

B. RECOMMENDATION TWO

Address whether there are any legislative changes required to support high integrity critical digital infrastructure to address some of the practical implementation problems associated with reliance on critical Digital Assets (like digitised or smart legal contracts). See here for features identified as necessary for critical digital infrastructure.

Rationale

There are significant risks in failing to understand the public interest requirements of the digitisation of legal contracts and legal facilities including risks in respect of the performance and meeting of director and legal duties.

\(^1\) Or make recommendations that the UK Judicial Cross-Disciplinary Task Force on the Digital Economy, or some other appropriate body, do same.
RLBA Response To Law Commission’s Consultation On ‘Digital Assets’

10th July 2021 - For Distribution.

The Law Commission have opened a Consultation on Digital Assets. They state that Digital assets are generally treated as property by market participants. Property and property rights are vital to modern social, economic and legal systems and should be recognised and protected as such. The consultation requests input from individuals and industry bodies on key aspects of law relating to their industry. This document outlines the Residential Logbook Association (RLBA) response.

Overview

The RLBA believe that a residential Property Logbook is a clear example of a ‘digital asset’ whose recognition, status and treatment in law have yet to be defined in any meaningful way by the legal industry.

We have responded to the Law Commission’s Consultation making that case for their recognition in laws relating to property, assets and transactions. However, we have framed the call for Property Logbook recognition within a call to consider the wider context for ‘digital assets’.

We make the case that there is an ‘immediate’ problem to be resolved in residential property law around digital assets made up of data, online services, apps and logbooks; and a ‘future’ challenge around blockchain and crypto-based issues for which we can begin to layout principles. We have urged the Law Commission not to focus on the second of these issues (which are more high profile) before solving the first (which have immediate commercial implications).

This document summarises the RLBA response to both sets of issues raised in our submission and, at the end, we have provided the full text of our submission as entered on the Law Commission website. See the RLBA Submission on the next page.
The RLBA Summary Response

The Residential Logbook Association recognises that the concept of digital assets has implications for a wide range of industries and processes. Our focus is specifically on their recognition and use in connection with residential property and, in particular, transfer of ownership during residential property transactions.

The RLBA believes that recognition of digital assets is a key factor in the wider digitisation of the property industry. This issue is an outcome of the wider digitisation in the way we run our homes and interact with the services providers around us. It is poorly reflected in current property law and the RLBA believe it requires urgent attention within the wider changes occurring within conveyancing.

There is an emphasis in the Law Commission’s overview briefing on blockchain based concepts and technologies (cryptoassets, smart contracts, distributed ledger technology etc). For residential property these are ‘future’ concepts and we comment on their implication for residential property markets in the second part of our submission. However, the term ‘digital assets’ has a wider and more ‘immediate’ implication for residential property and property transactions that we believe need urgent action. We urge the Law Commission to focus on the immediate before addressing future issues.

The RLBA defines the term ‘digital assets’ as referring to a wide range of online accounts, passcodes, and apps that create a fog of connected data around our homes. Ownership of these assets is not well defined and this problem becomes most obvious now when a home gets sold. The RLBA breaks down this mess of digital activity into at least three types of digital ‘asset’ that need to be considered when buying or selling a home:

- Online accounts for services (eg utilities) and the data they hold against a specific property
- Online accounts attached to fixed hardware (eg central heating apps and CCTV apps) which need to be passed on at sale
- Data and digital documentation held in long-term records (eg residential property logbooks) which need to be recognised.
We have made the case that the above systems, accounts and records need to be recognised in law as ‘digital assets’ attached to ‘physical asset’ of a home. They may need to be considered as part of a property’s ‘fixtures and fittings’, with principles and processes established to ensure their transfer to new owners when the ownership of the physical asset is also transferred. Our submission states:

“The law needs to evolve to both recognise the existence of digital assets and the principle that they can be attached to a property asset”.

We also make the case that any organisation creating data on behalf of a property should not be viewed as the ‘owner’ of that data, but as an agent for the property owner with the data recognised as belonging to the main property asset. Our submission states:

“Digital assets created by an owner, or by a third party organisation for or about a property and its performance should accrue in law to that property’s asset base”

With a specific reference to the Law Commissions question on the nature of ‘possession’ around digital assets the RLBA make the case that ‘ownership’ needs to be defined as:

‘having a sole right to access, manage and transfer the asset, but this right might be mediated by a third party’

‘possession’ needs to be defined as:

‘having control of the means to access, manage and transfer the asset’.

We offered the following examples to differentiate between ‘ownership’ and ‘possession’ of a digital asset as it impacts Residential property:

**Ownership** - The data held by a utility on the energy performance of a home may be described as being ‘owned by the homeowner’ as part of their wider ownership of the property asset. Ownership implies the right to dictate how the data is stored and used. But the data is not ‘possessed by them’ as they have no direct control over where and how it is stored, and have no rights to move, delete or transfer that data.

**Possession** - The data and/or documentation held by a homeowner in Property Logbook may be described as being both ‘owned by the homeowner’ as part of their wider ownership of the property asset, but also ‘possessed by them’ as they have direct control over where and how it is stored, and have rights to move, delete* or transfer that data. (*Note: some data in Property Logbooks is immutable so cannot be deleted).
Very specifically, these concepts impact residential property in two ways. A homeowner selling their property needs to be able to transfer both kinds of data to a new owner on completion. More importantly,

“the act of transferring control should be an explicit and recognised step in the conveyancing process - as outlined in the Law Society’s Conveyancing Quality Scheme (CQS).”

The RLBA would welcome debate on all the above points of immediate concern and will be participating in any industry wide discussion of the points. We also recognise there is need to debate the implications of future changes, and the use of blockchain based concepts in residential property.

**Comment On Blockchain Based Digital Assets**

This section offers the RLBA’s comment on various aspects of the potential use of blockchain technology in residential property transactions, with a particular focus on **Distributed Ledger, Smart Contract** and **Tokenisation**.

**Distributed Ledger**

The RLBA recognises that, in societies with very low trust in institutions, and where no Land Registry functions exist, then it is possible to imagine the advent of disintermediated blockchain-based property registers that utilise the ‘Distributed Ledger’ capability to create trust. However the UK is not one of those markets, and we expect any blockchain based property register to be introduced and managed by the Land Registry.

**Smart Contracts**

While we recognise that ‘Smart Contract’ systems, based on blockchain protocols may play a part in enabling transactions to take place in the future, we recognise there is currently no overarching or dominant protocol that links all blockchain protocols and that a series of incompatible Smart Contract systems is a likely outcome in the short term. We therefore anticipate Smart Contracts for residential property transactions will have to take place either

- in systems where both parties recognise the same protocol and agree use of the system, (eg in auction systems, or conveyancer CRMs)...or
- in a standard UK system run by a single trusted agent (most likely the Land Registry).
In the second of these concepts, it is possible to envisage the Land Registry Smart Contracts becoming recognised as 'digital deeds'. However, in both systems the Smart Contract (or 'digital deed') would be ownable but not possessable due to the nature of Smart Contract systems.

The RLBA would encourage development of rules for these systems in which the homeowner can realise the concept of 'ownership' through a range of access routes. We anticipate Property Logbooks adding functions by which Smart Contracts can be recorded and accessed. The 'ownership' right to a Smart Contract must be realisable through third party systems; be attachable to another digital asset (ie Logbook) and transferable on sale of the underlying property.

**Tokenisation**

However, of greater concern is the potential for tokenisation of residential property ownership, and specifically, how those tokens may be recognised in law and used in digital systems as proof of ownership of a residential property.

The RLBA recognises that blockchain based tokens can be both 'owned' and 'possessed'. If the residential property market were to adopt a tokenised system (where property ownership is enshrined in a form of crypto token supported by smart contracts) then a homeowner would, by definition, be deemed to own the token and which represented ownership of the underlying physical and digital assets. In the UK we would advocate that this be within a system built and managed by the Land Registry.

We also recognise that a homeowner would be able to ‘possess’ the token with the correct property related wallet software. We anticipate Property Logbooks developing a residential token ‘wallet’ (analogous to a bitcoin wallet) but it would need to be interoperable with a token issuing system which is, once again, created and managed by Land Registry.

While possession of a property token may technically mean that confirmation or personal identity would not be required for each transaction, we anticipate that KYC/AML checks would not be superseded, but might be sought once at the point where people sign up to use the blockchain system.

End.
A Tertium Quid? How theft of cryptoassets uncovers the flaws within English property law.

Research question:

Can cryptoassets be considered property under English law for the purposes of proprietary injunctions?

Zain Hussain

York Law School Undergraduate Dissertation

Submission Date: 04/06/2022

Word Count: 9953
Abstract

This research explores the proprietary status of cryptoassets in English law for the purposes of a proprietary injunction (a court order relating to property). Injunctions in relation to cryptoassets are being increasingly sought after as cryptoassets are a popular choice amongst fraudsters to hide proceeds of crime. However, when granting a proprietary injunction, the courts need to consider whether cryptoassets constitute property.

In assessing cryptoasset’s status as property, it is found that whilst cryptoassets possess the characteristics necessary to be considered a form of property, they fit into neither of the two existing categories of personal property in English law. This research considers propositions to reform the law of personal property by introducing a new, third category of property to accommodate cryptoassets. This research also explores challenges the courts may face in recovery of stolen cryptoassets, even after an injunction may be granted.
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Armstrong DLW GmbH v Winnington Networks Ltd [2012] EWHC 10

Bankers Trust v Shapira [1980] 1 WLR 1274

Boardman v Phipps [1967] 2 AC 46

Cape Intermediate Holdings Ltd v Dring (Asbestos Victims Support Groups Forum UK) [2019] UKSC 38

Cayne v Global Natural Resources Plc [1984] 1 All ER 225

Colonial Bank v Whinney [1885] 30 ChD 261

Fetch.AI Ltd & Anor v Persons Unknown Category A & Ors [2021] EWHC 2254 (Comm)

Goel v Pick [2006] EWHC 833 (Ch)

Jonathan Yearworth & Ors v North Bristol NHS Trust [2009] EWCA Civ 37

LJY v Persons Unknown  [2017] EWHC 3230 (QB)

Mr Dollar Bill Limited v Persons Unknown [2021] EWHC 2718

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Supreme Court of Judicature Act 1873

Theft Act 1968
Introduction

Background

The rising rates of theft and misappropriation of cryptoassets has become a key subject matter of civil fraud litigation. Over £3.38 billion worth of cryptocurrencies was stolen in 2019 alone\(^1\), and victims of fraud continue to seek legal remedy to recover their assets. To preserve any asset at risk of dissipation, proprietary injunctions are sought in the interim until judgements surrounding equitable remedy can be obtained or satisfied. However, in order to begin considering possible legal (or equitable) rights in respect of cryptoassets, they require distinct classification in the realm of English property law.

“All personal things are either in possession or in action. The law knows no tertium quid [third thing] between the two.”\(^2\) English law has two classifications of property: things in possession, and things in action. However, The UK Jurisdiction Task Force’s Legal Statement on cryptoassets and smart contracts and the recent case of AA v Persons Unknown\(^3\) has shown that despite cryptoassets falling into neither of the two classifications, the courts are still willing to recognise cryptoassets as a form of personal property.

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\(^2\) Colonial Bank v Whinney [1885] 30 ChD 261, 285 (Fry LJ)

\(^3\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
The decision considered whether the preeminent cryptoasset Bitcoin may be the subject of a proprietary injunction to assist an insurance company in recovering Bitcoin that had been misappropriated as a result of a cyberattack⁴. As proprietary injunctions can only be granted over property⁵, the case is one of several that has compelled the courts to explore a fundamental question - does Bitcoin constitute ‘property’ under English law? If so, what type of property is it?

The process of considering the proprietary status of cryptoassets highlighted flaws in the legal categorisation of personal property, and reignited the debate of whether there should be a third category of personal property. Lastly, other challenges involved when granting injunctive relief to assist in recovery of stolen cryptoassets are uncovered.

Decisions surrounding proprietary status of a particular thing “cannot be reached in a vacuum. It must be considered in context.”⁶ This research therefore considers whether cryptoassets should be considered property through the lens of its suitability of a proprietary injunction. This is achieved through applying first principles of personal property law and applies to cryptoassets. In doing so, the flaws in the sub-categorisation of personal property and its inapplicability is highlighted, and proposed reforms are examined. Lastly, the suitability of proprietary injunctions (amongst other remedies) for recovery of stolen cryptoassets are considered.

⁴ Ibid
⁵ 25A PD
⁶ Jonathan Yearworth & Ors v North Bristol NHS Trust [2009] EWCA Civ 37 [28]
Justifications for Research

There is a definitive statement from the UK Jurisdiction Taskforce on the status of cryptoassets as property\(^7\). The statement is not a piece of formal legislation nor binding, however it has significant judicial acceptance as it has been heavily referenced and relied upon in leading cases concerning the status of cryptoassets as property. Furthermore, there is existing authority of cryptoassets as property\(^8\). Despite this, there is a need for research that explores the roots of fundamental property law and attempts to critique recent application of it. Secondly, a proposition of a whole new category of personal property is suggested in this research; a debate which has continuously resurfaced when novel assets appear, but often postponed. A Law Commission reform paper is currently also underway exploring the potential introduction of a third category of property for the purposes of protecting digital assets\(^9\). This research attempts to contribute to that debate for the purposes of reframing English personal property law to appreciate and accommodate novel creatures such as cryptoassets.

As stated by Baroness Hale, “Once the law recognises something as property, the law should extend a proprietary remedy to protect it”\(^10\). As this research will uncover, the law requires development in extending remedies for cryptoassets. Clarity on how existing legal devices should be employed to facilitate restitution of cryptoassets is fundamental to develop the United Kingdom as a hub for embracing new, disruptive technology.

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\(^7\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
\(^8\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
\(^10\) OBG Ltd v Allan [2007] UKHL 21 [310]
Furthermore, the courts have also expressed that “honest commercial developments may be hindered if general law did not recognise cryptoassets as property.”  

Ancillary Questions

This research has a primary focus on the status of cryptoassets as property, and a secondary focus on injunctions as a form of remedy. The overarching research question is answered through four ancillary questions:

1. Do cryptoassets possess the characteristics necessary to be considered a form of personal property?
2. Do cryptoassets fall within either of the two existing categories of personal property?
3. Should there be a third category of personal property to accommodate cryptoassets?
4. Can a proprietary injunction be used to assist in recovery of stolen or misappropriated cryptoassets?

Outline of Chapters

The first chapter provides an overview of the underlying technology of cryptoassets and identifies its principal features. Commonly referred to as ‘distributed ledger technology’, the decentralised nature of cryptoassets is what distinguishes them from electronic payment systems that we are familiar with. This chapter also delves into the different types

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11 Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 [130] (Gendall J)
of cryptoassets and highlights the crucial components and common features amongst them that should be taken into account during their characterisation in the law of property.

The second chapter focuses on the first ancillary question of examining whether cryptoassets possess the characteristics necessary to form personal property. Before deciding which particular category of personal property cryptoassets falls under, it is necessary to apply first principles reasoning to deduce whether cryptoassets can be considered a form of personal property on a broader level. This chapter therefore assesses Gendall J’s application\(^{12}\) of the \textit{Ainsworth}\(^{13}\) criteria for recognition of personal property to illustrate a cryptoasset’s proprietary characteristics, and also discusses how cryptoassets, despite being represented by a string of numbers and letters, differentiates from ‘mere information’.

The third chapter addresses the second ancillary question surrounding the classification of cryptoassets into the two existing categories of personal property law: things in possession, and things in action. The chapter explores the challenges presented when attempting to classify cryptoassets into either of the two categories.

The fourth chapter expands upon the third chapter to answer the third ancillary question by proposing a new, third category in the law of personal property. The chapter traces the development of the binary categorisation of personal property law stemming from Blackstone’s commentaries\(^{14}\) in the 18th century. The chapter considers Fry LJ’s repudiation of a ‘tertium quid’\(^{15}\) (third category), proposed reforms to personal property

\(^{12}\)\textit{Ibid}
\(^{13}\)National Provincial Bank v Ainsworth [1965] UKHL 1
\(^{14}\)Bl Comm II 389
\(^{15}\)Colonial Bank v Whinney [1885] 30 ChD 261, 285 (Fry LJ)
law, and lastly the proposition of a new category: a ‘thing in command’\textsuperscript{16} to appreciate the novelty of cryptoassets and other emerging forms of technology.

The fourth chapter applies the analysis from the preceding chapters in the context of proprietary injunctions to answer the fourth ancillary question. This chapter predominantly focuses on a landmark case that considered Bitcoin property and granted a proprietary injunction. The chapter also comments on the limitations of interim injunctions for recovery of stolen cryptoassets, and the need for additional forms of remedy (such as disclosure orders).

The final chapter concludes on the findings throughout the previous chapters to solidify the proprietary status of cryptoassets and the suitability of interim injunctions as a means of recovery. Alongside this, the discussion surrounding reform of personal property classification, and other appropriate remedies is summarised.

Methodology and Sources

This dissertation employs a doctrinal method of research and draws from a wide range of primary and secondary sources to answer the ancillary questions. As cryptoassets are a relatively new phenomenon, it may be presumed that there are a limited number of primary sources available for extensive analysis. However, cryptoassets have been around for over a decade now and there are a substantial number of court decisions across the commonwealth jurisdiction assessing its proprietary status. These are considered alongside a number of other key principles in the realm of personal property law. Amongst the secondary sources is the aforementioned UK Jurisdiction Taskforce Statement on

\textsuperscript{16} Adam Sannit, ‘What sort of property is a cryptoasset?’ [2022] 5 JIBFL 295
Cryptoassets\textsuperscript{17}, government consultations, legal commentary reforming the sub-categorisation of personal property law, and other relevant sources relating to injunctive relief.

\textsuperscript{17} UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
Chapter 1 - Principal Features of Cryptoassets

Bitcoin, the first cryptoasset, was pioneered in 2009 after an pseudonymous individual named Satoshi Nakomoto published a paper named ‘Bitcoin: A Peer-to-Peer Electronic Cash System.’\(^\text{18}\) Nakamoto proposed an alternative to traditional currency through digital tokens “based on cryptographic proof instead of trust”\(^\text{19}\), eliminating the need for any centralised, financial intermediary.

Since Bitcoin, thousands of cryptoassets have emerged with different applications and use cases, but share some common features that make cryptoassets distinctive. This section draws from the UK Jurisdiction Taskforce (UKJT) statement\(^\text{20}\) to identify the relevant features of a cryptoasset for a legal analysis.

A cryptoasset is represented by a pair of two data sets: a public and private key. The public key is a string of numbers and letters that contain information about ownership, value and transaction history.\(^\text{21}\) The private key (which should be kept secret by the owner) is necessary to cryptographically authenticate and authorise a cryptoasset transfer. In this sense, a private key ‘confers practical control over the asset’.\(^\text{22}\)

All cryptoassets utilise a form of ‘distributed ledger technology’ (DLT) to keep a record of all transfers. A distributed ledger synchronises a set of digital data with capabilities beyond

\(^{19}\) Ibid
\(^{20}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
\(^{21}\) Ibid [28]
\(^{22}\) Ibid
that of centralised and paper-based ledgers. Identical and independent copies of the database are held across several geographically dispersed devices, with no central administrator. When a transfer occurs and is confirmed valid by the consensus algorithms (that are defined within the system the specific cryptoasset belongs in), all devices update their copies of the ledger.

The consensus algorithms that govern the functions of systems are not enforced through any legally binding contract, they are self-enforcing in practice. Any transactions made in accordance with the rules of the system are broadcast to the participants, and added to the ledger if valid.

The UKJT therefore identifies the following as the principal features of a cryptoasset\(^{23}\):

(a) intangibility;

(b) cryptographic authentication;

(c) use of a distributed transaction ledger;

(d) decentralisation; and

(e) rule by consensus.

This dissertation will expand upon specific features of cryptoassets throughout, however these are the fundamental features that create cryptoassets the novel creature that they are and give rise to questions surrounding its legal nature.

\(^{23}\) Ibid [31]
The Ainsworth Test for Recognition of Personal Property

The case of Ruscoe v Cryptopia Ltd\textsuperscript{24} concerned whether cryptoassets constitute property for the purposes of being held on a trust. In \textit{Ruscoe},\textsuperscript{25} Justice Gendall concluded the status of cryptoassets as property by applying Lord Wilberforce’s criteria for recognition of property outlined in the National Provincial Bank Ltd v Ainsworth\textsuperscript{26}. The test in \textit{Ainsworth} outlines the four indicia of personal property. Lord Wilberforce states in \textit{Ainsworth} that for the ‘thing’ to be considered property, ‘It must be definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability.’\textsuperscript{27}

This criteria does not classify the subject matter into a particular category of property (this is considered in the subsequent chapter), but assists in answering the first, and fundamental ancillary question of whether a cryptoasset possesses the necessary characteristics to be considered property.

1. Definable

Gendall J concluded that cryptoassets are easily identifiable and thus the first requirement is satisfied. The first requirement is that the right must be “definable” – the asset must

\textsuperscript{24} Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728
\textsuperscript{25} Ibid
\textsuperscript{26} National Provincial Bank v Ainsworth [1965] UKHL 1
\textsuperscript{27} Ibid, 19
hence be capable of being isolated from other assets whether of the same type or of other types and thereby identified\(^{28}\). To this end, cryptocurrencies are ‘computer-readable strings of characters which are recorded on networks of computers established for the purpose of recording those strings, and are sufficiently distinct to be capable of then being allocated to an account holder on that particular network’\(^{29}\).

With cryptoassets, this allocation is made by a public key and is distinct, despite there being multiple copies of the ledger across a network of computers. This is combined with cryptography that prevents alteration of data, and ensures stability.\(^{30}\) Gendall J argues that this distributed ledger technology underpinning the nature of cryptoassets makes them more identifiable than other recognised forms of intangible property such as copyright, where ‘issues of originality may be at play’\(^{31}\). Thus, the first requirement is convincingly satisfied.

2. Identifiable by Third Parties

The second requirement in \textit{Ainsworth}\(^{32}\) is that the owner of the asset in question must be identifiable by third parties. Similarly to the first requirement, Gendall J concluded that this criteria is easily satisfied.

Gendall J noted that an important indicator of ownership is excludability; the owner’s power to exclude others from use of the asset in question. Cryptoassets achieves this by

\(^{28}\) Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 [104] (Gendall J)
\(^{29}\) Ibid, [105] (Gendall J)
\(^{30}\) Ibid
\(^{31}\) Ibid [108] (Gendall J)
\(^{32}\) National Provincial Bank v Ainsworth [1965] UKHL 1
allocating only the owner of the cryptoasset with a ‘private key’. The combination of both data sets (the public and private key) is necessary to record a transfer of cryptocurrency from one account to another\textsuperscript{33}. Gendall J refers to two unique features of cryptoassets when assessing the second requirement:

i) The existence of a private key reduces the possibility of involuntary transfers and gives the owner to power to exclude third party access\textsuperscript{34}.

ii) A new private key is created after each transfer or disposition, which prevents the cryptoasset being transferred twice\textsuperscript{35}.

These features provide the owner with the power of exclusion, thus satisfying the second requirement in the criteria.

3. Capable of assumption by third parties

The third requirement in Lord Wilberforce’s criteria involves two aspects:

a) Third parties must respect the rights of the owner in the asset

b) The asset must be potentially desirable by third parties\textsuperscript{36}

The first aspect also requires third parties to recognise the owner’s interest in the asset, and be subject to actions expressly devised by the law if they assert claim to ownership

\textsuperscript{33} Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 [112] (Gendall J)
\textsuperscript{34} ibid [113] (Gendall J)
\textsuperscript{35} ibid
\textsuperscript{36} CLM v. CLN and others [2022] SGHC 46, 20
without justification. Gendall J argues the third requirement is met as a whole, with the second aspect of desirability being fulfilled by an active trading market for many cryptocurrencies. It is irrelevant if the asset has no current market value; as long as there has been value in the past it would be considered desirable. To further illustrate this point, Gendall J draws upon an example of polluted land - despite having significant clean-up costs and in a sense be considered ‘worthless’, it still constitutes property\(^\text{37}\). Ultimately, both aspects of the assumption by third parties criterion were satisfied on the basis that there is clearly a market in cryptocurrency in which the rights of holders are respected, and subject to remedies for interference.\(^\text{38}\)

4. Some degree of permanence or stability

The final requirement of the criteria for recognition of an asset’s proprietary status is that it requires a degree of permanence or stability. Gendall J argues that this criteria should not hold much relevance as it adds little to the other three requirements. For instance, a football ticket has no inherent value after the end of a game, yet unquestionably is considered a form of property despite its short life span.\(^\text{39}\)

Although, when considering the permanence and stability of cryptoassets, the distributed ledger technology cryptoassets ensure that a cryptoasset “stays fully recognised, in existence and stable unless and until it is ‘spent’ through the use of the private key”\(^\text{40}\). This

\(^{37}\) Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 [114] (Gendall J)

\(^{38}\) ‘Cryptocurrency and the Property Question’ (Oxford Law Faculty, 12 May 2020) <https://www.law.ox.ac.uk/research-and-subject-groups/property-law/blog/2020/05/cryptocurrency-and-property-question> accessed 3 June 2022

\(^{39}\) Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 [117] (Gendall J)

\(^{40}\) Ibid [118] (Gendall J)
is achieved through the public-record keeping of the cryptoasset on the distributed ledger since the inception of that particular cryptoasset. Furthermore, whilst cryptoassets may be subject to plentiful risks such as wrongful use or hacking\(^1\), these do not detract from the inherent permanence or stability of a cryptoasset\(^2\).

**Cryptoassets as Mere Information**

To solidify the legal status of cryptoassets as property, the UKJT Taskforce and Gendall J considered whether cryptoassets possess any features that may disqualify it as a form of property\(^3\). At first glance, cryptoassets being a digital record on a distributed ledger may be considered a form of ‘mere information’. This would appear to present an obstacle in recognising the proprietary status of cryptoassets, since authority exists in not regarding mere information as a form of property\(^4\). Analysis of the nature of cryptoassets reveals that it would be incorrect to classify it as mere information.

Cryptoassets are represented by a data set: a public and private key. However, the value of a cryptoasset is held in the ability of the person possessing the data set to cryptographically sign and authenticate transactions on the distributed ledger. As put by the UKJT Taskforce, ‘it is not what the data tells you but what it allows you to do’\(^5\). This assists in understanding the difference with other forms of ‘information’ such as trade

\(^{1}\) Ibid [119] (Gendall J)  
\(^{2}\) ‘Cryptocurrency and the Property Question’ (Oxford Law Faculty, 12 May 2020) <https://www.law.ox.ac.uk/research-and-subject-groups/property-law/blog/2020/05/cryptocurrency-and-property-question> accessed 3 June 2022  
\(^{3}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [59]  
\(^{4}\) Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41  
\(^{5}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [60]
secrets, personal information, or database and digital photographs\textsuperscript{46}. The latter are considered forms of information as the value is held within the information itself. On the other hand, the data set (such as a private key) of a cryptoasset itself does not hold value, but rather the private key’s value is derived from its relationship with the public key, allowing transactions to be authenticated.

Gendall J considers this aspect in \textit{Ruscoe}\textsuperscript{47} and draws an analogy between the use of a private key and a PIN number of a bank account; both serve the purpose of transferring value, not simply as a store of information\textsuperscript{48}. Similarly, a contract is considered a form of property not because of the words, but due to equity recognising a unique relationship that has been created between parties (by the words), and a system of transferring contractual rights\textsuperscript{49}. There is a comparable relationship that exists between the data set of a cryptoasset, and its relationship with the distributed ledger.

Another difficulty in recognising information as a form of property is that information can be duplicated, indistinguishable, and shared and used simultaneously by multiple people. As stated by Lord Upjohn, information cannot be regarded as property because ‘it is normally open to all who have eyes to read an ears to hear’\textsuperscript{50}. Duplicity prevents alienating the subject matter in order to define it and identify the owner, which is key in assessing its status as property inline with Lord Wilberforce’s criteria\textsuperscript{51}. Cryptoassets do not face this issue, as they cannot be duplicated. Each public key is unique on the system, and the private key prevents multiple simultaneous controllers.*

\textsuperscript{46} Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41
\textsuperscript{47} Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 (Gendall J)
\textsuperscript{48} Ibid [127] (Gendall J)
\textsuperscript{49} Ibid
\textsuperscript{50} Boardman v Phipps [1967] 2 AC 46 [35] (Lord Upjohn)
\textsuperscript{51} National Provincial Bank v Ainsworth [1965] UKHL 1
To classify a cryptoasset as mere information would require one to view the string of numbers and letters of a private key in isolation as the cryptoasset, which is incorrect. As previously mentioned, a cryptoasset should be viewed as a ‘conglomeration of public data, private key, and system rules’. The characteristics of which are far greater than that of mere information.

**Conclusion**

Gendall J confidently concludes in *Ruscoe*[^53], that a cryptoasset satisfies Lord Wilberforce’s criteria for recognition of a subject matter’s status as property[^54]. The characteristics of cryptoassets are uncovered when applying first principles reasoning that also differentiate cryptoassets from mere information. Cryptoassets are to be seen as a whole, not as an individual data set of the private key. The public data enables a recording of the asset, providing identification and definition. The private key and system rules (generation of a new private key upon transfer) enable ownership and stability. These three features specific to cryptoassets when considered with a first principles approach, allow us to determine that cryptoassets possess the necessary characteristics to be considered a form of property.

[^52]: UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [65]
[^53]: Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728 (Gendall J)
[^54]: National Provincial Bank v Ainsworth [1965] UKHL 1
Chapter 3 - The Two Categories of Personal Property

Things in Action and Things in Possession
Traditionally, common law has divided personal property in two sub-categories: things in action, or things in possession. These two categories are seemingly exhaustive, as stated by Fry LJ in Colonial Bank v Whinney\(^{55}\), “all personal things are either in possession or in action. The law knows no tertium quid between the two”\(^{56}\). This division originates from Sir William Blackstone’s Commentaries: “Property in chattels personal may be either in possession; which is where a man hath not only the right to enjoy, but hath the actual enjoyment of, the thing; or else it is in action; where a man hath only a bare right, without any occupation or enjoyment.”\(^{57}\)

Viewed broadly, things in possession consist of those that are “tangible, moveable and visible and of which possession can be taken.”\(^{58}\) Whilst things in action can be seen as a residual category for all intangible property.

‘Thing’ or ‘Chose’

It is important to note that within most referenced sources, ‘thing’ and ‘chose’ are used interchangeably, but refer to the same legal concept. The first provision of a statutory mechanism for assignment of property used the term ‘chose in action’\(^{59}\) as a result of French influence on traditional common law\(^{60}\). Modern statutory language employs the use of ‘thing in action (or possession)’ since the re-enactment of the law in the Law of Property Act 1925\(^{61}\). Where appropriate, this analysis will use ‘thing’ as opposed to ‘chose’

\(^{55}\) Colonial Bank v Whinney (1885) 30 Ch D 261
\(^{56}\) Ibid, 285 (Fry LJ)
\(^{57}\) Bl Comm, Il 389
\(^{58}\) Armstrong DLW GmbH v Winnington Networks Ltd [2012] EWHC 10 (Ch) [44]
\(^{59}\) Supreme Court of Judicature Act s 25(6)
\(^{60}\) Michael Bridge and others, The Law of Personal Property (3rd edn, Sweet & Maxwell 2022) ch 1
\(^{61}\) Law of Property Act, s 136(1)
in an attempt to maintain consistency with modern terminology. The impact of terminology in the realm of personal property law is discussed further in chapter four of this research exploring a potential third category of property.

**Cryptoassets as Things in Possession**

A cryptoasset cannot be classed as a thing in possession. The data sets that create a cryptoasset are intangible, and incapable of physical possession. Whilst the data set(s) of a cryptoasset (the public or private key) can be stored on a physical medium, such as a USB stick, or by writing the string of numbers and letters down on a piece of paper, this does not equate to the cryptoasset itself being physically possessed.

Fundamentally, it has been held that “possession is concerned with the physical control of tangible objects; practical control is a broader concept, capable of extending to intangible assets and to things which the law would not regard as property at all.”62 This poses an insurmountable barrier in classing a cryptoasset as a thing in possession, as it lacks a physical reality.63 In this sense, a private key providing practical control would not equate to the ability to possess. Tangibility is essential to be classed as a thing in possession, and as a cryptoasset lacks this specific characteristic, it cannot be classed as such.

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62 Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41 [23]
63 OBG Ltd v Allan [2007] UKHL 21
Cryptoassets as Things in Action

It would also be incorrect to classify a cryptoasset as a ‘thing in action’. However, this is the category that the courts have at times considered assigning it to\(^\text{64}\). This is attributed to the term ‘thing in action’ being used as a residual category for all intangible forms of property, or species of property ‘unknown to the common law’\(^\text{65}\).

Traditionally, things in action were described as “all personal rights of property which can only be claimed or enforced by action and not by taking physical possession.”\(^\text{66}\) Therefore, this would be to classify any rights of property that can be enforced under legal action, such as any debts or other contractual rights.

A cryptoasset exists and operates independent of a legal system, and so it would seem unreasonable to classify it as a thing in action. Cryptoassets are governed by an informal consensus of participants, not by any legally binding methods; the rules are self-enforcing.\(^\text{67}\) This is the defining difference between conventional currencies, and cryptoassets: the transaction history of a cryptoasset is recorded on a decentralised and distributed ledger, whilst conventional currencies are maintained by the existence of a central intermediary\(^\text{68}\).

To illustrate this difference, and why a cryptoasset cannot be a thing in action, Fox employs an example of a transaction taking place using a cryptocurrency, and a

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\(^{64}\) Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728

\(^{65}\) Joshua Williams, Principles of the Law of Personal Property, (T & JW Johnson 1848)

\(^{66}\) Torkington v Magee [1902] 2 KB 427 (Channell J)

\(^{67}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [30]

\(^{68}\) Satoshi Nakamoto, ‘Bitcoin: A Peer-to-Peer Electronic Cash System’, 16
conventional currency\textsuperscript{69}. ‘Alice’ and ‘Bob’ are the fictitious parties named in these transactions. In the case of a cryptocurrency transaction, Alice has direct control of her private key to record a transaction on the ledger. Alice’s ownership is not dependent on anyone else’s obligation to enforce the transfer of the coin (cryptoasset)\textsuperscript{70}. On the other hand, Bob intends to transact using conventional fiat currency, and has one hundred pounds in his bank account. Bob’s situation differs, as his ownership of his ‘money’ is not of the funds, but rather the legally recognised and enforceable right requiring the bank to ‘pay legal tender in discharge of the debt owed to him, and to authorise the bank to make payments from the account as an agent on his behalf’\textsuperscript{71}.

The thing in action in Bob’s situation is the right to enforce a debt, and is dependent on legal obligations. Alice’s transaction will occur irrespective of the existence of any legal obligations. This highlights the difficulty in treating cryptoassets as a thing in action. There is no particular person that cryptoassets are exigible against, and they do not give rise to a right of action.

**Cryptoasset Intermediaries**

In some occasions, a cryptoasset may be linked to a legal rights external to its system, particularly in the case of intermediaries such as wallet service providers. A wallet holds the public and private keys of a user which gives access to the cryptoasset. A wallet service provider is typically an online platform allowing users to remotely access that wallet, as well as access to a range of other tools to facilitate transactions or trading of

\textsuperscript{69} David Fox and Sarah Green, Cryptocurrencies in Public and Private Law (Oxford University Press 2019)

\textsuperscript{70} ibid

\textsuperscript{71} ibid
cryptoassets. This relationship can be analogous to that of a banker and its customer\textsuperscript{72}. In such an arrangement, the wallet service provider holds the keys, and the account holder or depositor holds the right to direct payments using the cryptoasset, or realise its value through a sale of the cryptoasset. These are rights external to the system of a distributed ledger, and embody a right capable of being enforced by action. There is an existence of remedy here if the wallet service provider do not fulfil their obligations, which is necessary for the existence of a thing in action\textsuperscript{73}. Thus this right the depositor holds against the wallet service provider classifies as a thing in action. It is important to note though, that this is a method of holding cryptoassets that give rise to a thing in action - it is separate to the nature of a cryptoasset itself that exists within a completely decentralised system, with no legal obligations between participants.

**Conclusion**

There is consensus that a cryptoasset cannot be considered a thing in possession or thing action due to its inherent nature. There is authority that a cryptoasset cannot be a thing in possession because it is virtual, not tangible, and cannot be possessed\textsuperscript{74}. A cryptoasset cannot be considered a thing in action as it does ‘not embody any right capable of being enforced by action’\textsuperscript{75}. Furthermore, a definitive statement by the UK Jurisdiction Taskforce argues it is ‘neither necessary nor useful’\textsuperscript{76} to classify cryptoassets as things in action since it does not embody a legally-enforceable right or obligation\textsuperscript{77}.

\textsuperscript{72} Ibid, 150
\textsuperscript{73} Investors Compensation Scheme v. West Bromwich Building Society [1997] UKHL 28, 915.
\textsuperscript{74} AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556 [55]
\textsuperscript{75} ibid
\textsuperscript{76} UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [86]
\textsuperscript{77} Ibid
Chapter 4 - The Tertium Quid

A Third Category of Personal Property

It is established that under existing authority, cryptoassets are neither a thing in possession, nor a thing in action\(^{78}\). Yet they possess all the characteristics of property, and have been treated as such. This reignites the debate on whether there should be a third category of property in English law. This section explores Fry LJ’s binary categorisation of property\(^{79}\) and its critiques, and the different proposals for reforming the categorisation of personal property, and introducing a third category of property.

Fry LJ’s Statement

Fry LJ’s authoritative statement that “all personal things are either in possession or action”\(^{80}\), and there is “no tertium quid between the two”\(^{81}\) stems from a 19th century decision in the case of Colonial Bank v Whinney\(^{82}\) which considered whether shares in a public company ought to be considered a ‘thing in action’ within the meaning of the Bankruptcy Act 1883\(^{83}\). Colonial Bank sought to claim the shares as part of the relevant property.

Under section 44 of the act, any ‘things in action’ in the relevant property would not be deemed goods and thus would have been excluded from the bankrupt estate\(^{84}\). In the

\(^{78}\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
\(^{79}\) Colonial Bank v Whinney [1885] 30 ChD 261, 285 (Fry LJ)
\(^{80}\) Ibid
\(^{81}\) Ibid
\(^{82}\) Ibid
\(^{83}\) Bankruptcy Act 1883
\(^{84}\) Ibid, s 44
Court of Appeal, Lindley LJ and Cotton LJ held that the shares in the company were not things in action\(^{85}\). They relied upon case law concerning a comparable situation relating to prior statute relating to bankruptcy\(^{86}\). Fry LJ dissented from the views of Lindley LJ and Cotton LJ arguing that a share is a “right to receive certain benefits from a corporation, and to do certain acts as a member of that corporation”\(^{87}\). Additionally, receiving dividends, or in other words enjoying the benefits of a share, requires legal action.

The judgement of Fry LJ was upheld on appeal, with Lord Blackburn commenting that there was an issue of inaccurate use of ‘things in action’ by lawyers at the time\(^{88}\), understanding it only to be restricted to rights enforceable by legal action. In practice, things in action could act as a residual category for all things in possession. From one perspective, Fry LJ’s reasoning in the case of Colonial Bank\(^{89}\) shows ‘the ability of the common law to stretch traditional definitions and concepts to adapt to new business practices’\(^{90}\), and from another perspective, shows the infinite and broad nature of the ‘things in action’ category that leads to there being little in common amongst the types of property considered a thing in action, “beyond the characteristic fact of their not being subjects of actual physical possession.”\(^{91}\)

Things in action being the only method to class intangibles has presented significant difficulties in recent times, in an era of emerging items that possess the characteristics of property, yet do not fit within the scope of being enforceable by action. The nature of this

\(^{85}\) Colonial Bank v Whinney [1885] 30 ChD 261

\(^{86}\) Bankruptcy Act 1869

\(^{87}\) Colonial Bank v Whinney [1885] 30 ChD 261, 37

\(^{88}\) Ibid

\(^{89}\) Ibid

\(^{90}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019) [77]

\(^{91}\) Halsbury’s Laws, (5th edn, 2017), vol 13 para 1
debate is predominantly semantic, but still “makes it very difficult to accept that the common law recognises the existence of intangible property other than choses in action”\textsuperscript{92}. This section considers the attempts the courts have made, and legal academics have put forward in reclassifying the two categories of property, proposing sub-categories, and even a third standalone property.

‘Intangible Property’ Instead of ‘Things in Action’

Cryptoassets are not the only form of intangible assets that are recognised to possess the characteristics of property, yet face difficulty in being categorised under existing law. In Armstrong v Winnington\textsuperscript{93}, EU carbon trading credits were considered a form of property for the purposes of a tracing claim, and similarly milk quotas in Dairy Swift v Dairywise Farms Ltd\textsuperscript{94}, for the purposes of being subject of a trust. Neither were a thing or possession or thing in action, yet were considered property. The debate surrounding a third category was largely postponed until Your Response Ltd v Datateam Business Media Ltd\textsuperscript{95} (in which the claimant sought to claim possessory lien over an electronic database until payment of outstanding fees), which made an attempt to distinguish between intangible property and things in action.

Within Your Response\textsuperscript{96} it was argued that unlike things in action, intangible property could be possessed, thus action would lie in conversion for interference. Whilst this was rejected by the Court of Appeal on the basis of Fry LJ’s binary categorisation of property

\textsuperscript{92} Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41 [26]
\textsuperscript{93} Armstrong DLW GmbH v Winnington Networks Ltd [2012] EWHC 10
\textsuperscript{94} Swift & Anor v Dairywise Farms Ltd & Ors [2001] EWCA Civ 145
\textsuperscript{95} Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41
\textsuperscript{96} ibid
and repudiation of a third category\textsuperscript{97}. The proposition of folding things in action into a category of intangibles is worth exploring.

The Court of Appeal itself suggested it may be in favour of using ‘intangible property’ instead of ‘things in action’, which should only be used where necessary\textsuperscript{98}. Bridge draws upon Goel v Pick\textsuperscript{99} to suggest that folding things in action into a category of intangibles would make it ‘easier to rationalise cases where an item plainly possesses property features but restrictions on its transfer prevent it from being treated as a thing in action’\textsuperscript{100}. A personalised car registration number was held not to be a thing in action in Goel v Pick\textsuperscript{101}, as it could not be freely transferred from one vehicle to another. The decision dismissed the holder’s right as merely the ability to “resort to the regulatory machinery in order to obtain the transfer”\textsuperscript{102}. Bridge argues that this leaves doubt to the proprietary nature of the right; if the language of ‘intangible property’ were instead to be adopted, there would be ‘no such doubt’\textsuperscript{103}. There is a market of car registration numbers that holds value, and means of consensual transfer of rights to use specific registration numbers. In this sense, the right to a specific car registration number is in line with Lord Wilberforce’s criteria for recognition of personal property\textsuperscript{104} as they are definable, identifiable, and capable of assumption by third parties, and have a degree of permanence or stability. Undoubtedly, the right to a car registration number possesses proprietary characteristics,

\begin{footnotes}
\footnote{97} Colonial Bank v Whinney [1885] 30 ChD 261, 285 (Fry LJ)
\footnote{98} Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41 [12]–[13]
\footnote{99} Goel v Pick [2006] EWHC 833 (Ch)
\footnote{100} Michael Bridge and others, The Law of Personal Property (3rd edn, Sweet & Maxwell 2022) ch 4 para 7
\footnote{101} Goel v Pick [2006] EWHC 833 (Ch)
\footnote{102} Ibid
\footnote{103} Michael Bridge and others, The Law of Personal Property (3rd edn, Sweet & Maxwell 2022) ch 4 para 7
\footnote{104} National Provincial Bank v Ainsworth [1965] UKHL 1
\end{footnotes}
and would be recognised as such with less doubt in the event that English law were to fold ‘things in action’ into a broader category of intangible property.

However it seems that there is little practical advantage that is offered through simply favouring the use of ‘intangible property’ instead of ‘things in action’ beyond the confusion caused by excess terminology in a ‘cluttered scene’ as Bridge suggests.\(^{105}\)

**Division of Intangible Property - Goode’s Proposition**

Goode’s proposition of recognising a division of intangible property into documentary intangibles and pure intangibles\(^{106}\) on the other hand seems to provide practical advantages beyond clarity of terminology, and was initially considered in a case concerning the proprietary status of EU Carbon Allowances\(^{107}\). The sub-category of documentary intangibles are forms of property that have somewhat of a ‘hybrid nature’\(^{108}\) for which the remedy of damages for conversion and specific delivery is available. This is unlike things in action, which are capable of being the subject matter for theft, but not the tort of conversion\(^{109}\).

**Documentary Intangibles**

Goode considers this sub-category of intangibles as rights which are inextricably linked to a document\(^{110}\), or in his own words, “a debt or any other obligation that is considered in

\(^{105}\) Michael Bridge and others, The Law of Personal Property (3rd edn, Sweet & Maxwell 2022) ch 4 para 7
\(^{106}\) Ewan McKendrick and Roy Goode, Goode and McKendrick on Commercial Law (6th edn, 2021) para 2.56 – 2.58
\(^{107}\) Armstrong DLW GmbH v Winnington Networks Ltd [2012] EWHC 10
\(^{108}\) ibid [47]
\(^{109}\) ibid [45]
\(^{110}\) Michael Bridge and others, The Law of Personal Property (3rd edn, Sweet & Maxwell 2022) ch 1 para 25
law to be locked up in the document”\textsuperscript{111}. Furthermore, Goode identifies three kinds of documentary intangibles\textsuperscript{112}:

1. Documents of title to payment of money (e.g. bills of exchange or promissory notes)
2. Documents of title to negotiable securities (e.g. bearer bonds)
3. Documents of title to goods (e.g. instruments and bonds)

Goode provides a test to assess whether the subject matter would be recognised as a documentary intangible at common law: ‘Is the document one which is treated as representing the obligation?’\textsuperscript{113} Applying this to cryptoassets, it would not be recognised as a documentary intangible. The private key would constitute the document, representing the right to transact on the distributed ledger, but fundamentally there is no legally recognised ‘obligation’, therefore this test would not be applicable to cryptoassets.

In Goode’s classification of intangible personal property, cryptoassets would therefore constitute a ‘pure intangible’\textsuperscript{114}. Goode’s categorisation is comparable to the existing binary categorisation of personal property; once documentary intangibles are identified and classified, pure intangibles are a residual category, similarly to forms of personal property considered ‘things in action’.

In conclusion, there are two propositions of reshaping the classification of personal property that have been explored in this section. Firstly, the suggestion made in Your

\begin{flushleft}
\textsuperscript{111} Ewan McKendrick and Roy Goode, Goode and McKendrick on Commercial Law (6th edn, 2021) para 2.56 – 2.58
\textsuperscript{112} Ibid
\textsuperscript{113} ibid, para 2.57
\textsuperscript{114} Ibid
\end{flushleft}
Response of folding things in action into a category of ‘intangible property’, and secondly Goode’s specific classification of types of intangible property. As discussed, the first proposition has almost no practical advantages beyond decluttering existing terminology. Goode’s proposition on the other hand does have the advantage of extending forms of remedy (such as damages in the event of conversion) to some forms of intangible property through specific sub-categorisation based on the nature of the intangible property in question. Whilst Goode provides a useful framework, it is inapplicable to a novel creature such as cryptoassets, despite evidently being recognised as a form of personal property. To reiterate Baroness Hale’s statement, ‘Once the law recognises something as property, the law should extend a proprietary remedy to protect it’. Both of the proposed means explored in this section fail to extend any existing proprietary remedies to cryptoassets.

**Things in Command**

The third proposition is the creation of an entirely new category of personal property to sit alongside things in action and things in possession.

Conceptually, the law holds practically no difficulty in expressly distinguishing intangibles and things in action, yet accepting them as a form of property. In the realm of criminal law, section 6 of the Fraud Act 2006 defines property as ‘real or personal (including things in action and other intangible property)’. The Theft Act 1968, and Proceeds of Crime Act 2002 have near identical provisions. Similarly, section 30 of the Patents Act directly

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115 Your Response Ltd v Datateam Business Media Ltd [2015] Q.B. 41
116 AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
117 OBG Ltd v Allan [2007] UKHL 21 [310]
118 Fraud Act 2006, s 6
119 Theft Act 1968, s 4(1)
120 Proceeds of Crime Act 2002, s 84
states that ‘any patent or application for a patent is personal property (without being a
tingible personal property through statutory classification.

The Issue with Statutory Classification

The difference with cryptoassets is that unlike EU carbon allowances and patents,
cryptoassets were not created by statute so the courts are under no duty to recognise
their existence. Statutory classification would not apply in the context of cryptoassets
due to the various types of cryptoassets, its constantly developing nature. A cryptoasset’s
rules of operation binds the users, and each cryptoasset will have differing methods of
operation. Statutory recognition of cryptoassets would require express recognition of its
method of operation, and would present insurmountable challenges in doing so for the
many different types of cryptoassets. However, the focal point here is not the near
impossibility of statutory recognition of cryptoassets, but rather to illustrate the
uncontested existence of the statutory classification of intangible property that falls outside
the boundaries of being a thing in action (e.g. patents and patent applications). It is
demonstrated that there is no conceptual barrier to a category of ‘other intangible property’
within the law, which is a key starting point when considering this third, proposed
category of property.

The Third Category

\[1^{21}\) Patents Act 1977, s 30
\[1^{22}\) David Fox and Sarah Green, Cryptocurrencies in Public and Private Law (Oxford University Press
2019) 153
\[1^{23}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
Sannit proposes a third category for intangible personal property analogous to a ‘thing in possession, known as a ‘thing in command’\textsuperscript{124}. This would accommodate a 'hybrid' form of personal property such as a cryptoasset, that does not fall under the existing two categories, yet holds proprietary characteristics and is capable of possession, or rather 'command'.

**Possession**

Sannit argues that the line between things in possession and things in action is misunderstood to be a physical, and non-physical divide, but rather it is a legal and non-legal divide, resting upon the concept of ‘possession’. As previously mentioned, the division of Fry LJ’s binary categorisation of personal property\textsuperscript{125} stems from Blackstone’s commentaries: “Property in chattels personal may be either in possession; which is where a man hath not only the right to enjoy, but hath the actual enjoyment of, the thing; or else it is in action; where a man hath only a bare right, without any occupation or enjoyment.”\textsuperscript{126}

Blackstone made no mention of the ‘chattels personal’ having a physical reality\textsuperscript{127}. However, at the time it was unimaginable that there could be an intangible object that is capable of possession, unless it is created through legal means; that being a thing in action. The line between things in possession and things in action is that the former has

\textsuperscript{124} Adam Sannit, ‘What sort of property is a cryptoasset?’ [2022] 5 JIBFL 295
\textsuperscript{125} National Provincial Bank v Ainsworth [1965] UKHL 1
\textsuperscript{126} BI Comm II 389
\textsuperscript{127} Ibid
an existence independent of the law, and is ‘something beyond the reach of the courts’\textsuperscript{128} whilst the latter has a purely legal existence.

Cryptoassets are also beyond the court’s reach, and have an existence independent of the law. A court decision can lead to the evaporation of a debt, but cannot do so with a cryptoasset: the underlying cryptographically secured ledger provides inherent permanence and stability, and ultimately, the existence of a cryptoasset that cannot be modified or destroyed without consensus from all participants\textsuperscript{129}. An owner of a cryptoasset has the same power to affect a cryptoasset, just as someone would on a physical item.

Therefore, there is a striking similarity amongst a thing in possession and a cryptoasset, but the concept of ‘intangible possession’ may be seen as an oxymoron, which Sannit puts forwards as a ‘reasonable objection’. Whilst the term ‘control’ may be better suited as a replacement to ‘possession’ for cryptoassets, it risks confusion with the wider legal concept of ‘control’. Thus, Sannit settles on the term ‘thing in command’, as the reality of a cryptoasset is dependent on ability to give ‘commands’ accepted by the distributed consensus, and be an authorised change on the ledger\textsuperscript{130}.

Sannit states that it is irrelevant whether a thing in command is a subcategory of things in possession, or a wholly new category overall. The importance here is to recognise that it is behaviorally similar to a thing in possession\textsuperscript{131}. This is a crucial factor of needing a distinct category in the first place; to attract remedies previously not afforded to

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\text{\textsuperscript{128}} \text{Adam Sannit, ‘What sort of property is a cryptoasset?’ [2022] 5 JIBFL 295} \\
\text{\textsuperscript{129}} \text{ibid} \\
\text{\textsuperscript{130}} \text{ibid} \\
\text{\textsuperscript{131}} \text{ibid} \\
\]
cryptoassets as a result of improper classification. The impact of a potential ‘thing in command’ category is considered in the section of this research concerning injunctive relief, but if considered behaviorally similar to things in possession, things in command should by virtue be afforded all applicable remedies available to things in possession.

Sannit dismantles the potential argument that a cryptoasset holds resemblance with a thing in action as ownership cannot be transferred since a cryptoasset cannot be ‘moved’. Sannit highlights the flaw in this particular argument; the concept of transferring possession is not restricted and can be mapped to varying legal concepts. A transfer of a thing in action can only take place within the parameters of the law. In the absence of section 136 of the Law of Property Act 1925, it would not be possible for a transfer of a contractual right to take place. A cryptoasset on the other hand, whilst intangible, can be transferred ‘irrespective of legal rights’. The change on the distributed ledger is unaffected by the existence of a legal system, therefore making it comparable to a thing in possession rather than a thing in action. If a physical object were to move to a different place, it is not a legal question of whether the item has moved, but rather a factual one. Sannit argues that the transference of cryptoassets should also be seen similarly as factual, not conceptual.

Conclusion

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132 ibid
133 Law of Property Act 1925, s 136
134 Adam Sannit, ‘What sort of property is a cryptoasset?’ [2022] 5 JIBFL 295
To conclude, Sannit’s ‘thing in command’ proposes a category that recognises the inescapable connection of cryptoassets to the real world that should be accommodated by law\textsuperscript{135}. Sannit clarifies the root of our property categorisation as a legal and non-legal divide as there is seemingly a misplaced focus on a physical and non-physical divide when categorising forms of personal property. Cryptoassets fit into neither of the two existing categories, but share more similarities with a thing in possession than in action, due to its ability to be ‘commanded’. Ultimately, a ‘thing in command’ category would attract a number of more appropriate remedies to cryptoassets and treat is a direct object of property, whilst also acting as a category to rightfully encompass emerging forms of new technology with proprietary status.

\textsuperscript{135} ibid
Chapter 5 - Injunctive Relief

As outlined initially, this research considers the proprietary status in the context of proprietary injunctions; decisions surrounding ownership and property “cannot be reached in a vacuum. it must be considered in context”\(^{136}\). The legal context in the situation of cryptoassets has generally been of remedy being sought to recover stolen cryptoassets through an application for an injunction. An interim proprietary injunction assists in recovery by freezing the cryptoassets in question, as well as any traceable proceeds of the assets.

The nature of cryptoassets means they can be dissipated near instantly. Cryptoassets such as Bitcoin are used as a means of payment for ransomware due to the decentralised and pseudonymous nature of the technology. They are however, not anonymous; the blockchain and decentralised ledger allows for extensive tracing, and specialist forensic investigation agencies have been successful in identifying owners of cryptoassets in situations of fraud\(^{137}\). An interim injunction can be obtained quickly, and is therefore crucial in freezing assets or proceeds whilst an effective remedy and enforcement is sought.

This section predominantly analyses the case of AA v Persons Unknown\(^ {138}\). There are similar (less fully reasoned) cases such as Vorotyntseva\(^ {139}\) and B2C2\(^ {140}\) which also

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\(^{136}\) Jonathan Yearworth & Ors v North Bristol NHS Trust [2009] EWCA Civ 37 [28]  
\(^{137}\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556  
\(^{138}\) Ibid  
\(^{139}\) Vorotyntseva v Money-4 Ltd [2018] EWHC 2596 (Ch)  
\(^{140}\) B2C2 Ltd v Quoine Pte Ltd [2019] SGHC(l) 3
concern injunctions in relation to stolen cryptoassets, however *AA*¹⁴¹ is a landmark English High Court case with significant reasoning by Bryan J in assigning proprietary status to cryptoassets and ultimately granting an injunction. The judgement considers the proprietary status of cryptoassets, anonymity in granting of injunctions, and practical difficulties in recovery and tracing of stolen cryptoassets. The first matter has been extensively considered throughout this research; this section will look at the latter two to assess the suitability of proprietary injunctions as a means of recovery for stolen cryptoassets.

**Proprietary Injunctions for Cryptoassets**

**AA v Persons Unknown - Factual Background**

The customer of a Canadian cyber attack insurance company named AA (the claimant) was victim of a ransomware attack, encrypting and disabling access to their systems. A ransom demand was made by the hacker (The First Defendant (D1)) of a value of $950,000; the payment of which was to be made using Bitcoin. The insurance company agreed to pay the ransom and the Bitcoin was transferred to the address provided by D1.¹⁴²

It was discovered by AA that the majority of the bitcoins were transferred to an address connected to a major cryptocurrency exchange (Bitfinex). The person(s) in control of Bitcoin at the time were identified as the Second Defendant (D2). The operators of the

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¹⁴¹ AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
¹⁴² ibid
cryptocurrency exchange were identified as the Third and Fourth Defendants (D3 and D4). D2’s identity could not be uncovered directly but was likely known by D3 and D4 due to Know Your Customer anti-money laundering requirements.

The following was considered by Bryan J in AA’s ex parte applications:

1. For the hearing to be held in private
2. For a proprietary injunction
3. Certain consequential orders
4. For a Bankers Trust and/or Norwich Pharmacal Order

The application for a private hearing and proprietary injunction will be analysed in the context of AA, and also applied to the nature of cryptoassets generally to assess its suitability for proprietary injunctions.

**Private Hearing**

The matter of a private hearing shifts from the focus on proprietary injunctions, but is a relevant matter worth exploring as ‘Persons Unknown’ appears, and will continue to appear as the defendant(s) for cases concerning injunctions in respect to cryptoassets.

Bryan J granted the request for the hearing to be held in private and for the parties to be anonymised upon compelling grounds “supported by credible and cogent evidence.”
This is a departure from the well established principle of open justice\(^{149}\) but Bryan J held that there were grounds to suggest that a private hearing was necessary to ensure proper administration of justice for a number of reasons.

Firstly, if the hearing were held publicly, the fraudsters may become aware and dissipate the Bitcoins, which would defeat the object of the hearing. This reason alone qualifies the hearing to be held in private\(^{150}\). The second reason for holding a private hearing concerned publicity risking a potential retaliation by the fraudsters in the form of another cyber attack as a public hearing may reveal vulnerabilities of the computer systems of AA’s customer. Lastly, it would be considered unjust for D3 and D4 as innocent receivers to be named in the course of a public hearing.\(^{151}\)

It is likely that similar cases that arise concerning misappropriated cryptoassets will be held in private. Bryan J considers a ransom demand analogous to blackmail, and in such situations the courts have generally permitted private hearings. As noted by Warby J, “Generally, the court has taken the view that blackmail represents the misuse of freedom of speech rights. Such conduct will considerably reduce the weight attached to free speech and correspondingly increase the weight of the arguments in favour of restraint.”\(^{152}\) It is thus unlikely that applications for private hearings will be considered a point of contention in court when injunctive relief is sought for cryptoassets, as it is necessary for proper administration of justice.

\(^{150}\) ibid
\(^{151}\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
\(^{152}\) LJY v Persons Unknown [2017] EWHC 3230 (QB) [29] (Warby J)
Applicability of Proprietary Injunction

The first and fundamental principle to be considered when granting a proprietary injunction is whether the subject matter (in this case, Bitcoin) constitutes property. Similarly to *Ruscoe*\(^{153}\), Bryan J applied the criteria of *Ainsworth*\(^{154}\) and relied upon the UK Jurisdiction Taskforce statement\(^{155}\) to conclude that cryptoassets are considered property\(^{156}\). Bryan J in doing so, gave significant judicial weighting to the taskforce statement\(^{157}\) and as a result we may see the statement will be referenced heavily in future cases.

Once the proprietary status is confirmed, the *American Cyanamid*\(^{158}\) principles are applied. The court must consider the three questions when deciding whether to grant an interim injunction.

1. Is there a serious question to be tried?
2. Would damages be an adequate remedy?
3. Where does the balance of convenience lie?

Bryan J was satisfied there was a serious issue to be tried due to the ‘extortion and blackmail’ committed, and the sum being obtained by way of ransom. Secondly, damages were not considered an adequate remedy as the Bitcoin could be dissipated, and the ‘insurer has a strong claim to the Bitcoins in question’\(^{159}\). Lastly, the balance of

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\(^{153}\) *Ruscoe v Cryptopia Ltd (in Liquidation)* [2020] NZHC 728
\(^{154}\) *National Provincial Bank v Ainsworth* [1965] UKHL 1
\(^{155}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
\(^{156}\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556 [61]
\(^{157}\) UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
\(^{158}\) *American Cyanamid Co (No 1) v Ethicon Ltd* [1975] UKHL 1
\(^{159}\) AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556 [65]
convenience, which is occasionally referred to as ‘the balance of the risk of doing an injustice’\textsuperscript{160} lies in favour of granting the injunctive relief\textsuperscript{161}. In cases where proprietary injunctions have been sought for cryptoassets, there has been no difficulty in applying the American Cyanamid\textsuperscript{162} principles. We can conclude that cryptoassets, once identified as property, are suitable for interim proprietary injunctions.

Other Relevant Remedies

Disclosure Orders

The injunctions are not of much use without court orders compelling the relevant exchange where the cryptoassets might be held, or traceable proceeds are linked, to disclose the identity of fraudsters and any other relevant information. It is possible to obtain such information through the use of Norwich Pharmacal Orders\textsuperscript{163} and/or Bankers Trust Orders\textsuperscript{164}; both being disclosure orders made under the equitable jurisdiction of the courts.

A Norwich Pharmacal Order may be sought when the wrongdoer cannot be identified, yet there is knowledge of a third party who has information to identify the wrongdoer\textsuperscript{165}. A Banker’s Trust Order is similar, but made against financial institutions.\textsuperscript{166} In the context of cryptoassets, the third party would typically be a cryptocurrency exchange where proceeds may have been held. On a basic level, cryptocurrency exchanges across the

\begin{flushright}
\textsuperscript{160} Cayne v Global Natural Resources Plc [1984] 1 All ER 225, 237  \\
\textsuperscript{161} AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556 [62]  \\
\textsuperscript{162} American Cyanamid Co (No 1) v Ethicon Ltd [1975] UKHL 1  \\
\textsuperscript{163} Norwich Pharmacal Co. & Others v Customs and Excise Commissioners [1974] AC 133  \\
\textsuperscript{164} Bankers Trust v Shapira [1980] 1 WLR 1274  \\
\textsuperscript{165} Norwich Pharmacal Co. & Others v Customs and Excise Commissioners [1974] AC 133  \\
\textsuperscript{166} Bankers Trust v Shapira [1980] 1 WLR 1274
\end{flushright}
world will hold information surrounding the user’s IP address, and other information during sign up. Increasingly though, cryptocurrency exchanges (particularly in the UK and EU) have to be compliant with statutory money laundering regulations and require extensive information from the user when signing up to use the platform\textsuperscript{167}. This information is essential in identifying the owner of the wallet controlling the misappropriated cryptoassets.

**Issues of Jurisdiction**

The granting of a Norwich Pharmacal Order or Bankers Trust Order was adjourned in AA\textsuperscript{168}. The granting of these orders is a developing area, with some inconsistency from the courts. In two cases with a factual background not too dissimilar to AA\textsuperscript{169}, the courts have rejected the granting of such orders. Fetch.ai Limited v Persons Unknown\textsuperscript{170} also sought a freezing order and service out of jurisdiction, where it had been held that a Norwich Pharmacal Order could not be against the defendants that were based outside the jurisdiction\textsuperscript{171}. However, in a recent decision in Mr Dollar Bill Ltd v Persons Unknown and Others\textsuperscript{172}, Trower J granted a Norwich Pharmacal and Bankers Trust Order against two major cryptocurrency exchanges, including permission to service out of the jurisdiction\textsuperscript{173}.

\begin{itemize}
  \item Money Laundering, Terrorist Financing and Transfer of Funds Regulations 2017, s 14
  \item AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
  \item ibid
  \item Fetch.AI Ltd & Anor v Persons Unknown Category A & Ors [2021] EWHC 2254 (Comm)
  \item ibid
  \item Mr Dollar Bill Limited v Persons Unknown [2021] EWHC 2718
  \item ibid
\end{itemize}
The reasoning behind the inconsistency of these decisions remains unclear. Questions concerning jurisdiction in disclosure orders are outside the scope of the present discussion, but the key takeaway is that in the context of cryptoassets, this is a developing area and such draconian orders will be sought, and there is a lack of clarity on when it is appropriate to serve orders out of jurisdiction. Cryptoassets are borderless, and can be transferred without oversight, and at the click of a button from a wallet held on an account by a regulated UK cryptocurrency exchange, to another in an entirely different jurisdiction. With the push for further regulation of cryptocurrency exchanges in the UK\textsuperscript{174}, fraudsters will increasingly look to deposit proceeds or misappropriated cryptoassets in exchanges elsewhere. Proprietary injunctions are to be coupled with disclosure orders to assist recovery of cryptoassets, but those disclosure orders will at times need to be served out of jurisdiction.

**Conclusion**

To conclude, after the initial hurdle of recognising the proprietary status of cryptoassets, there has been minimal friction from the courts in granting an interim proprietary injunction in order to assist recovery of stolen cryptoassets. However, disclosure orders out of jurisdiction are also needed at times to overcome practical difficulties of cryptoasset recovery. Additionally, sophisticated new technology is on the rise that assists fraudsters in concealing tracing and proceeds; cryptoassets such as Monero have a focus on being untraceable\textsuperscript{175}, and decentralised crypto-exchanges may find it easier to evade anti-money laundering regulations - the information from which has been pivotal in uncovering


\textsuperscript{175} Kurt M. Alonso, ‘Zero to Monero’ (2018)
the identity of fraudsters. The battle between fraudsters use of cryptoassets to facilitate fraud, and legal tools of injunctive relief is an area of development, but it can be concluded that the English courts are willing to consider cryptoassets as property for the purposes of an injunction, and deployment of other existing devices to assist in providing remedy to victims of fraud.
Chapter 6 - Conclusion

Summary of Findings

Through application of existing and well-established common law principles to the novel creature that are cryptoassets, we are able to answer the four ancillary questions outlined at the start of this dissertation.

Cryptoassets as a form of personal property

Cryptoassets possess the necessary characteristics to be considered a form of property. Gendall J’s application of the *Ainsworth*\textsuperscript{176} criteria in *Ruscoe*\textsuperscript{177} is extensively reasoned and serves as an important framework, whilst also commending the UKJT Statement on Cryptoassets\textsuperscript{178}. Cryptoassets have already been recognised as property in existing authority\textsuperscript{179} prior to *Ruscoe*\textsuperscript{180}, but lacked much needed substantiation. Whilst *Ruscoe*\textsuperscript{181} is a New Zealand court decision and the UKJT Statement\textsuperscript{182} is not a formal or legally binding document, their reasoning is consistent in identifying that the distributed ledger technology underpinning cryptoassets makes it an asset that is definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree

\begin{footnotesize}
\begin{itemize}
  \item[176] National Provincial Bank v Ainsworth [1965] UKHL 1
  \item[177] Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728
  \item[178] UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
  \item[179] B2C2 Ltd v Quoine Pte Ltd [2019] SGHC(I) 3
  \item[180] Ruscoe v Cryptopia Ltd (in Liquidation) [2020] NZHC 728
  \item[181] Ibid
  \item[182] UK Jurisdiction Taskforce, ‘Legal Statement on Cryptoassets and Smart Contracts’ (2019)
\end{itemize}
\end{footnotesize}
of permanence or stability\textsuperscript{183}. Through applying this first principles analysis, it can therefore be concluded that cryptoassets are a form of personal property within English law.

**Cryptoassets within the two existing categories of personal property**

Cryptoassets do not fall into either of the two existing categories of personal property: things in possession, and things in action. The intangible nature of a cryptoasset excludes it from being considered a thing in possession, and its existence being independent of the law means it would be incorrect to classify it as a thing in action. Whilst still being treated as personal property, cryptoassets lack distinct classification in the realm of property law. Under existing law, a cryptoasset cannot be ‘possessed’, which has implications on the remedies it may attract\textsuperscript{184}.

**The proposition of a third category of personal property**

A new, third category to sit alongside things in action and things in possession may be needed to accommodate hybrid forms of property such as cryptoassets and recognise its ability to be ‘possessed’. Some propositions to reform the law of personal property offer little practical advantage; they mainly assist in decluttering existing terminology and provide a sense of theoretical elegance. Sannit’s proposition of a ‘thing in command’\textsuperscript{185} however, creates a new category that would accommodate cryptoassets through recognising that the concept of ‘possession’ should just not be viewed through the lens of

\textsuperscript{183} National Provincial Bank v Ainsworth [1965] UKHL 1
\textsuperscript{184} OBG Ltd v Allan [2007] UKHL 21, [2008] 1 AC 1
\textsuperscript{185} Adam Sannit, ‘What sort of property is a cryptoasset?’ [2022] 5 JIBFL 295
whether it can only be possessed through a physical reality, but the ability to be controlled, and have an independent existence. A thing in command is thus considered behaviorally similar to a thing in possession, and have similar remedies available in the common law extended to them. A thing in command is therefore a suitable proposition of a new category that accurately classifies cryptoassets, and is inline with Baroness Hale’s stated principle that once the law recognises something as property, it should extend proprietary remedies\textsuperscript{186}.

\textbf{The suitability of proprietary injunctions as a means of recovering cryptoassets}

Cryptoassets have shown to satisfy the \textit{American Cyanamid}\textsuperscript{187} principles that ought to be considered by the courts when granting an interim proprietary injunction. However, the purpose of the injunction is to facilitate recovery of cryptoassets. An interim injunction is not enough for this, but is the primary step. Cryptoasset recovery requires the deployment of other devices used in civil fraud matters ranging from disclosure orders, and questions relating to jurisdiction. Whilst both are outside the scope of this research, they provoke an interesting challenge for the courts as sophisticated new technology is on the rise designed to evade the reach of enforcement. It is concluded however, that interim injunctions are a suitable means to recover cryptoassets, but at times, may be limited in their powers.

\textbf{Overall Conclusions}

\textsuperscript{186} OBG Ltd v Allan [2007] UKHL 21 [310]
\textsuperscript{187} American Cyanamid Co (No 1) v Ethicon Ltd [1975] UKHL 1
The case of AA v Persons Unknown\textsuperscript{188} has shown that despite cryptoassets being such a novel phenomenon, well-established principles of English law can be applied to recognise and accommodate cryptoassets a form of property when necessary to provide remedy to victims on an urgent basis. Through first principles reasoning and employing existing common law devices, this dissertation concludes that cryptoassets should be considered property under English law for the purposes of a proprietary injunction.

However, the reasoning and conclusion that they are property rests on perilous foundations as the courts grapple with difficulties when attempting to plainly classify which of the two categories cryptoassets fall under. More than ever, the introduction of a ‘tertium quid’ is appealing; the discussion cannot be afforded to be repeatedly postponed, especially in an environment where record levels of criminal activity relating to cryptoassets are on the rise. Undeniably, any novel technology comes with complex questions for the courts, but for cryptoassets those resources and collective efforts will need to be allocated towards the practical challenges in recovery in events of highly-sophisticated fraud that the courts have yet had exposure to. Regulation is constantly developing and being implemented around the world, but almost always will be behind the pace of the innovative criminal.

This is recognised by the much anticipated Law Commission reform project\textsuperscript{189} to develop a regime of protection for cryptoassets, through potentially introducing a third new category. To maximise protection for victims, there should not be barriers at the preliminary stage of deciding which category of property they fall under, but those barriers

\textsuperscript{188} AA v Persons Unknown & Ors, Re Bitcoin [2019] EWHC 3556
\textsuperscript{189} ‘Digital Assets | Law Commission’ <https://www.lawcom.gov.uk/project/digital-assets/> accessed 3 June 2022
will remain until the English law abandons the long-standing, but increasingly untenable rule that the only objects of property are to be things in action and things in possession. The law has 'known no tertium quid'\textsuperscript{190}, but it may be time to introduce one.

\textsuperscript{190} Colonial Bank v Whinney [1885] 30 ChD 261, 285 (Fry LJ)
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Question 1.

Answer box for Question 1:

1. The AGC-EFC first emphasizes that our members broadly support a legislative regime which provides a clear, harmonized framework for (a) the intermediation of possessory instruments and (b) the implications of the way these assets might be held. Predictable outcomes in our view support the efficiency and safety of capital markets and we believe this should be an overriding goal. We would support consideration of borrowing - or more clearly applying - concepts stemming from the law on bailment of tangible property in legislation wherever this makes sense – and not just with respect to digital assets. We believe focus should be not just on technology but on the nature of a particular asset and the characteristics that might facilitate the application of such an approach. For example, we believe legislation should help clarify whether these characteristics may be determined on the basis of lex societas, lex situs or lex contractus – or some combination thereof. We have taken the view generally that an approach sounding in lex contractus has made sense in the context of dematerialised intermediated securities, but we recognize this approach has not been entirely endorsed in all quarters, with some expressing a preference for considering lex situs as well. We believe the time has come for the UK to take a view on this question – preferably in legislation – in part to maintain the standing of the law of England and Wales on the international stage. More pragmatically, we emphasise the increasing importance of collateral arrangements, which would be helped with this additional legal certainty. We also recommend keeping in mind private international law considerations, which we will address in more detail later.

2. If digital assets were possessable, custodians and other collateral takers could take possessory security interests over the digital assets to secure the owner's obligations – e.g., pledge or lien - either to secure their own exposures or on behalf of others. These would not need to be registered at Companies House (unlike charges and other registerable security interests).

3. If ownership of digital assets could be achieved under the law on the basis of the delivery of possession of the digital assets to a transferee, where such digital assets are transferable securities, legal certainty may be improved in respect of the point in time that settlement finality is achieved.

4. If digital assets could be possessed as a matter of English law, the remedies available to the owner in relation to interference with the digital assets may be more extensive than at present – e.g. they may include remedies which are similar to those available to owners of documentary intangibles – e.g., the measure of damages could be linked to the value of the obligation embodied in the digital asset (rather than the nominal value of the digital information or record representing the digital asset) (consistent with the explanation set out in the Law Commission's "Digital assets: electronic trade documents – consultation paper summary", at p. 6). This may reinforce the ability of owners and their service providers to safeguard digital assets under English law.
5. Moreover, in a permissionless DLT environment, if there is no single ledger entry of a digital asset which can be said to be located in a particular place (and lacking contractual agreement as to the governing law), the “possessability” of the digital asset under English law – established based on certain criteria (which we describe further below) – might be a useful tool to help determine where the digital asset is located under English law. Clarification of this point under English law might also encourage other countries to consider taking a similar approach, providing for further harmonization in the cross-border context.

Question 2.

Answer box for Question 2:

1. To the extent that possession of an asset under English law requires a person to be capable of having exclusive control over the asset, the requirement for the use / generation of private keys to transfer a digital asset (e.g., Bitcoin) from the transferor to the transferee may indicate that the transfer of such assets is more analogous to the transfer of a thing in possession. We believe that an operating premise underlying “things in possession” could be established on the basis of a party having exclusive control: control with respect to a private key may be one basis to satisfy this requirement [N.B., this seems to be the approach being taken with proposed Uniform Commercial Code (UCC) Article 12 in the U.S.]. In this connection, it might be useful therefore if English law identified attributes of “exclusive control” of a digital asset.

2. On the other hand, if transfers of other digital assets – such as fiat currencies - from one electronic bank account to another without the use of a private key may be more analogous to the transfer of a thing in action (e.g., the replacement of one thing in action with another). However, we note there is uncertainty around the treatment of digital currencies, including stablecoins. A view may emerge that such assets may still only be capable of being held “in custody” rather than as a deposit on a bank’s balance sheet (i.e., as a “thing in action”). [See, Clifford Chance, Central Bank Digital Currencies and Stablecoins – How Might They Work in Practice? (Sept. 2020): available at https://www.cliffordchance.com/briefings/2020/09/central-bank-digital-currencies-and-stablecoins--how-might-they-.html]. We think it is important that this uncertainty be resolved.

3. Another basis to attack this question – beyond control of private keys – is an application of “control” to encompass control over private, permissioned networks in which there is an “operator”. In these cases, exclusive control could still be established, even without a private key, as the operator or intermediaries would be able to exercise this control. [N.B., Indeed, our understanding is that in the U.S., UCC Article 8 regarding “securities entitlements” will continue to apply to tokenised securities held through securities intermediaries in this setting.]

4. We believe that if the approach in No. 3 were pursued, it could apply equally to any property that is intangible, including intermediated book-entry securities in today’s environment. The logic is the same and we recommend ambition in this respect by the Government to create a harmonized, coherent legal framework that addresses property on a like-for-like basis without regard to the technology used. As alluded to above, an approach that could be adopted to accomplish this would be to provide a clear basic for intermediary interests (e.g., perhaps grounded in co-ownership concepts) for both digital assets and current forms of dematerialised securities linked to a recasting of the FCAR approach to possession and control, which in turn would support a wider set of means of taking security. Whatever legal analysis applies to a given asset, intermediaries should be provided the operational and conceptual efficiencies that arise from holding a broad set of assets on a same accounting and legal bases.

5. We note in this connection the following statement from the recent ECB Expert Group Report:

"In general, rules on the transfer of securities and enforceability of rights are based on systems for holding “intermediated securities” and imply the existence of bilateral relationships between the account holder and intermediaries along the custody chain (usually characterised as “deposit/custody” relationships, depending on the applicable law). Rights on intermediated securities are usually constituted through the crediting of securities to the account of the holder/beneficial owner. In this case, the intermediary has a [account] relationship with the account holder/beneficial owner, who can transfer the securities only through intermediaries. The compatibility of such rules in a DLT context, where transfer is usually intended to would take place directly on a peer-to-peer (P2P) basis, would need to be tested and clarified, given that these areas of law are largely based on local rather than harmonised legislation. This does not mean that ownership of securities on a distributed ledger cannot be intermediated, but intermediation is expected to happen outside the DLT network that is used for settlement.”

By way of example, the Paxos Settlement Service (PSS) – approved recently in the U.S. by the SEC pursuant to No-Action relief from having to register as a Clearing Agency - uses a private permissioned distributed ledger system that records changes in ownership of U.S. listed securities and cash resulting from settlement of securities transactions between broker-dealers that are DTC and PSS Participants. As a result, trades submitted to the PSS for clearance and settlement settle simultaneously, DVP.

In the ISSA Principles for DLT in post-trade, the key consensus assumptions for the adoption of DLT for securities custody included (1) a permissioned – rather than permission-less (as is the case with cryptocurrencies) – model, (2) multiple ledger models across the financial services ecosystem, and (3) preservation of data security and confidentiality through encryption through the chain.

Question 3.

Please share your views below:

1. Yes, for example:

a. It may be useful for a custodian to have possession of a digital asset as part of its safekeeping services, while its client, as owner, retains the ability to sell/transfer the asset. The client would (and should) remain the legal owner, with at least the same rights as a beneficiary of a bare trust. We believe there is no upside in altering the root of title by reason of intermediation.

b. Custodians, prime brokers and other service providers or financial counterparties should be able to take possession of digital assets, by way of a possessory security interest, while the client remains the owner. This type of possessory security interest may increase the availability of, and lower the cost of, relevant financial services in relation to digital assets. In this way, both the intermediary and client have a clear legal basis for intermediation with
the client's rights and interests appropriately protected. We believe consideration should be given to how these cryptoassets would compare with dematerialised securities in the event of intermediary default: we would assume they would be similarly ringfenced from the intermediary's estate, however, we query whether and to what extent other (e.g., Berkeley -v- Applegate tracing/loss-sharing) considerations might still apply.

2. In the case of tokenised securities, these circumstances could arise both on-chain (e.g., reflected by modifying a blockchain) as well as off-chain (e.g., by modifying other electronic account entries which record such securities).

Question 4.

Please share your views below:

In the case of an on-chain transfer of securities (whether these are native digital assets or tokenised securities), we consider that, in most cases, the commercial and legal intention of the parties is that this should be a transfer of existing property rights in the securities held by the transferor (notwithstanding that new data is being created). If on the other hand, the transfer was considered, as a matter of English law, to replace existing property rights over the transferred digital securities, this could cut across any proprietary rights that the transferor was supposed to retain in the original digital securities – e.g., as provider of a possessory security interest over the original digital securities under which possession was transferred to the holder of the security interest. We favour an approach that facilitates negotiability in a manner that is as consistent as possible with transfers of current dematerialised securities. However, we would go further in recommending consideration of application of the bona fide purchaser defense in this setting as well, where sensible. A possible approach to do this through recognition of exclusive control at an intermediary being dispositive of rights and obligations. [N.B., This – broadly speaking – is the approach being pursued in the U.S. under proposed Article 12 of the UCC.]

Question 5.

Please share your views below:

Since most transferable securities are de-materialised or immobilised and appear as electronic account entries (which may be on-chain and/or off-chain), it is unlikely that they are analogous to personal chattels, and therefore to "goods" for SGA purposes. On the other hand, a tokenised personal chattel – e.g. digital units of ownership in a work of art - may be sufficiently analogous to a (physical) personal chattel for SGA purposes.

Question 6.

Please share your views below:

If transfer is outright on delivery (effectively negotiable or quasi-bearer) based on an approach that recognizes a possessory interest, limits on absolute rights (notably flaws in title) to assets would not be expected to pass as well. Title to the asset should pass on the basis of a bona fide purchaser for value. Clarity in legislation to this effect would be sensible.

Nemo dat is likely to present concerns in the private international law context if different approaches to these questions are adopted in other jurisdictions. Assets held putatively under English law may be held hostage to laws elsewhere – unless clarity is provided to address differences in international convention, e.g., the Hague Securities Convention. We believe concepts underlying this Convention could be extended even to on-chain transfers if exclusive control can be agreed and established as an internationally recognized principle.

Question 7.

Please share your views below:

1. Given the flexibility of English contract and property law, it is likely that the relationship between a digital asset token and the underlying tokenised asset will often depend, at least in part, on the terms on which the digital asset token is issued. For example, it may confer all, or only certain, property rights in the tokenised asset on the holder of the digital asset token. This flexibility may, however, create uncertainty for investors and there may be advantages in introducing limited legislative measures, where necessary, to ensure alignment of property rights as between the digital asset token and the underlying tokenised asset.

2. Particularly in the case of on-chain crypto-assets, whether underlying rights are linked to a record maintained by an intermediary should be addressed. If – as we suggest above – exclusive control to a record – and with it the ability to control the holding and disposition of the underlying asset – can be established (e.g., through placing a private key in cold storage), then there may be inherent value to a record maintained with an intermediary without regard to the rights associated with the underlying cryptoasset. In other words, the asset that is the subject of a legislative framework may consist entirely of the right of exclusive control of the cryptoasset, and may not necessarily include a right to enforce underlying rights (e.g., "embodied rights" such as a right to receive a payment, or a right to require performance of obligations set out in a smart contract). Therefore, it may be possible to transfer rights in such an asset through purchase and sale - or by granting a security interest – without addressing how underlying rights in the underlying asset may be enforced. A mechanism for "attaching" (or "tethering") rights to enforce could be included in legislation, but this would require careful consideration**, perhaps similar to an approach that is consistent with documentary intangibles, as the Law Commission has alluded to. It would seem that the holding and transfer of "embodied rights" – beyond documentary intangibles – might by accomplished by considering digital assets as things in possession through exclusive control.

** This connection of underlying rights to the record of the asset maintained with an intermediary is referred to as "tethering" under the U.S. proposed UCC Article 12. Under subsection (f) or proposed Art. 12-104, a qualifying purchaser of a controllable electronic record would take other rights to payment, rights to performance, and interests in property that are evidenced by a controllable electronic record subject to third-party property claims, unless law other than the UCC provides to the contrary.

Question 8.
Please share your views below:

**Question 8.**

Reference to how security over tangible instruments, e.g., bearer instruments, may be instructive. Possession would seem to raise the prospect of specific delivery approaches such as pledging being available. However, because digital assets are intangible, the problem with liens would persist. We believe charges could be effective, preferably by addressing some of our prior recommendations for further clarification in FCAR: we believe reservation of title or interests should be addressed in this connection. We again would like to see an approach that is harmonized with book-entry securities that are currently considered to be held on trust.

**Question 9.**

Reference to how security over tangible instruments, e.g., bearer instruments, may be instructive. Possession would seem to raise the prospect of specific delivery approaches such as pledging being available. However, because digital assets are intangible, the problem with liens would persist. We believe charges could be effective, preferably by addressing some of our prior recommendations for further clarification in FCAR: we believe reservation of title or interests should be addressed in this connection. We again would like to see an approach that is harmonized with book-entry securities that are currently considered to be held on trust.

**Question 10.**

If digital securities (or other investments) were possessable under English law, conversion of these assets could arise as a result of interference with private keys and/or the relevant on-chain and/or off-chain ledgers which record these securities/other investments. In these circumstances, it could be helpful to investors in such digital assets, as well as their service providers with responsibility for safeguarding the digital assets, to have the additional remedies for the tort of conversion, where needed.

**Question 11.**

With regard to the U.S., we believe far more important than what has happened at the state level in the U.S. is what is happening under the auspices of the Uniform Law Commission and American Law Institute, namely proposed UCC Art. 12 and a review that is under way of UCC Art. 8. The U.S. will distinguish between “securities entitlements” that will continue to be held under UCC Art 8, even if in “digital” or tokenized form, versus “controllable electronic records” under proposed new Art. 12. Collateral arrangements could thus be put in place for the latter as well as the former. Both will have bona fide (good faith) purchaser defenses. A description of Art. 12 is attached as an Annex to this submission in a separate email to the Law Commission.

**Question 12.**

We have focused here on the law of England and Wales, however, we would be remiss not to flag governing law considerations relating to digital assets. We are mindful that the Law Commission has stated that this call for evidence does not cover issues relating to (among other things) conflict of laws. However, we believe that the UK’s approach to digital assets – especially if it considers digital assets as “possessable” – inevitably will affect any conflicts of law analysis, which means conflict considerations are unavoidable.

In this connection, we believe the question on conflict of laws may divide into two parts:

1. What is the nature of an investor’s rights and entitlements against an intermediary? For example, is an intermediary acting as trustee and purporting to confer on the investor an interest in whatever the underlying asset is? Or, is the intermediary acting as bailee and holding the asset without purporting to enjoy any form of interest or title? It may be worth considering whether foreign laws might approach the question in the same way, with a view to determining whether English law would prevail on questions related to the investor-intermediary relationship.

2. What laws govern the nature of the asset, and do those laws consider the asset to be a thing that is capable of being either owned or possessed? (This could, of course, be a matter of contract.)

We believe how English law addresses these questions will be important if there is a prospect of someday participating in a conflicts of law convention – such as the Hague Securities Convention or something similar – that addresses governing law with respect to digital assets.

In any case, we agree with the analysis in this regard of the UK Jurisdiction Task force in its “Legal Statement” of November 2019, which recommended (at Section 1.2.3, paragraph 99) the adoption of factors establishing physical contacts with the England and Wales (e.g., “whether there is any centralised control in England and Wales”) that are very likely to give rise to application of property rights under English law: we see no reason why this analysis could not be applied to tokenised securities held over a permissioned DLT system, by way of example.

We also call attention to the Jurisdiction Task Force’s following observation (at paragraph 95):

“Some permissioned cryptoassets have some sort of central control in a particular country. So the proprietary aspects of dealings in them might sensibly be said to be governed by the laws of that country. And that will very likely be the case where, for example, a distributed ledger is merely a record of ownership of property in conventional ‘real world’ assets which can be said to have a particular location (where) permissioned cryptoassets have some
sort of central control in a particular country they may be sensibly be said to be governed by the laws of that country."

We agree with the Task Force that questions around cross-border holdings and dispositions of these kinds of cryptoassets raise “complex issues that will best be resolved by legislation, most likely following international cooperation” (see paragraph 99).* Accordingly, we urge the Government to support the creation of an international convention to address these cross-border governing law issues.

Article 12 could apply to virtually any digital assets – including from bitcoin to NFTs.

Article 12 is intended to reduce risk to market participants by providing legal rules governing the transfer—both outright and as collateral—of interests in controllable electronic records. The rules will specify the rights in a controllable electronic record that a purchaser acquires. Because many systems for transferring controllable electronic records are pseudonymous (transferees are unable to verify the identity of the transferor or whether the transferor is empowered to transfer title), controllable electronic records would be “negotiable” – like book-entry securities: a “good faith purchaser for value” would take a controllable electronic record free of third-party claims of a property interest in the controllable electronic record.

This therefore creates an environment similar to the one that exists for book-entry securities. We may not refer to this as “custody” per se, but it would have attributes similar to those that protect rights in book-entry securities that custodians support as “securities intermediaries” under Article 8 of the Uniform Commercial Code today.

Experience with DLT and other records management systems has established some general functions required for electronic records to serve as an effective and reliable means of transferring economic value:

- The electronic record must have some “use” that one person can enjoy to the exclusion of all others, e.g., the power to “spend” a Bitcoin (or, more precisely, the power to include an unspent transaction output in a message that the Bitcoin protocol will record to its blockchain).
- A person must be able to transfer to another person this exclusive power to use the electronic record. To remain exclusive, the transfer must divest the transferor of the power to use the electronic record.
- A third party must be able to demonstrate to a third party that the person has the power to “use” the electronic record.

These functions form the basis of the Article 12 concept of control. To receive the benefits of negotiability, a person must have control of the controllable electronic record – which could be maintained by an intermediary.

In addition, control would serve as a method of perfection of a security interest in a controllable electronic record.

What is the scope of draft Article 12?

Article 12 is designed to work for both technologies that are known and those that may be developed in the future. Whether an asset is a controllable electronic record (and therefore within the scope of Article 12) would depend on whether the characteristics of the asset and the protocols of any system on which the asset is recorded would make it suitable for the application of Article 12’s substantive rules. Inasmuch as the nature of electronic commerce is constantly changing, the technology on which
an asset depends, the type of asset, and the prevailing use of the asset would all be irrelevant to whether the asset is a controllable electronic record.

To determine whether Article 12 would apply to a particular asset, e.g., Bitcoin, one must determine whether the asset would fall within the definition of controllable electronic record. A controllable electronic record is a record, as the UCC defines the term. A record is information that is retrievable in perceivable form. Electronic means “relating to technology having electrical, digital, magnetic, wireless, optical, electromagnetic, or similar capabilities.” A controllable electronic record is an electronic record that can be subjected to control: an electronic record that cannot be subjected to control would be outside the scope of Article 12.

The meaning of control in the UCC depends on the type of property involved.

That said, it is important to keep in mind that a controllable electronic record is a “just” a record, i.e., information. Some records have what is considered “inherent value” (e.g., Bitcoin would be an example of such a record). The value of many (if not most) records, however, is as evidence of the rights of the parties to a transaction. In these situations, it is essential to differentiate between the record and the rights that are evidenced by the record. In other words, the purchase of an electronic contract to receive goods is of much more value if the transfer includes rights under the contract (i.e., to receive goods), not just in the contract itself.

Underlying assets may be “tethered” to a controllable electronic record, that is to say controllable electronic records may carry with them rights to other assets, e.g., goods or rights to payment.

**Timing**

Article 12 is still in draft form: it is expected that final proposals will be presented to the Uniform Law Commission in November. If approved, this will move to the states for adoption into law. The timeline cannot be guaranteed but we believe states will move quickly to adopt. We estimate that states may adopt Article 12 into law within two years.