Taxonomical Approaches to Cryptoassets

Response to European Commission Consultation—Part I

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www.fmlc.org
Financial Markets Law Committee

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1. EXECUTIVE SUMMARY AND INTRODUCTION

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, in the framework of the wholesale financial markets which might give rise to material risks and to consider how such issues should be addressed.

1.2. In 2014, stakeholders recommended that the FMLC explore legal uncertainties arising from the proliferation of digital currencies such as Bitcoin. In response, the FMLC established the Virtual Currency Scoping Forum as a space for discussion and initiated an analysis of the legal character of virtual currencies and their development as a medium of exchange. As the pace of innovation poses challenges for regulators, the Committee decided in 2016 to widen the remit of the Virtual Currency Scoping Forum to include discussions on developments in regulatory technology and cybersecurity. Through the Forum—renamed the Finance and Technology Scoping Forum—and specialised Working Groups, the Committee has undertaken a broader evaluation of Financial Technology (“FinTech”). The FMLC has published papers analysing virtual currencies, questions about governing law in relation to distributed ledger technology (“DLT”), initial coin offerings and the application of anti-money laundering regulation to cryptoassets.2

1.3. In December 2019, the European Commission published a Consultation Document on an E.U. framework for markets in cryptoassets (the “Consultation”).3 The FinTech Action Plan, published in March 2018, had mandated the European Banking Authority (“EBA”) and the European Securities and Markets Authority (“ESMA”) to assess the applicability and suitability of the existing financial services regulatory framework for cryptoassets. ESMA provided Advice in January 2019, pointing out that while some cryptoassets fall within the scope of E.U. legislation, effectively applying it to these assets is not always straightforward.4 At the same time, the EBA and ESMA have pointed out that most cryptoassets are outside the scope of E.U. legislation and hence are not subject to provisions on consumer and investor protection and market integrity, among others. The Consultation may be divided into three broad parts: (1) whether and how to classify cryptoassets; (2) cryptoassets that currently fall outside the scope of the

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2 For a complete list of the FMLC’s work on FinTech issues, see: http://fmlc.org/Topic/fintech/


E.U. financial services legislation; and (3) cryptoassets that currently fall within the scope of E.U. legislation. The FMLC has drafted a response to the Consultation in the form of two complementary reports. This Report comprises comments by the FMLC on the classification of cryptoassets.

2. CLASSIFICATION OF CRYPTOASSETS

2.1. Section II of the Consultation focuses on the classification of cryptoassets. It notes that there is no widely agreed definition of cryptoassets and proposes, for the purpose of the Consultation, the following definition: “a digital asset that may depend on cryptography and exists on a distributed ledger”. This definition, the Consultation states, differentiates cryptoassets from other “digital assets” which would cover the digital representation of “real world” assets (such as scriptural money). Another question on which there is no consensus at the E.U. level is the classification of cryptoassets. The Consultation states that classification is important because it aids in the regulation of cryptoassets—especially with regards to those which resemble existing forms of assets—and draws attention to efforts to characterise cryptoassets based on their economic function.

2.2. Much work has gone into the classification of cryptoassets based on their function, resulting in the parallel creation of taxonomies in the U.K. and E.U. In the U.K., three categories of cryptoassets were proposed: (1) exchange tokens, which are used as a means of exchange or for investment; (2) security tokens, which provide rights such as ownership, repayment of a specific sum of money, or entitlement to a share in future profits; and (3) utility tokens, which can be redeemed for access to a specific product or service, typically provided using a DLT platform. This taxonomy was, for the most part, adopted by the Financial Conduct Authority (“FCA”). It did, however, add a new category—that of “E-money tokens”—which it defines as any token which reaches the definition of e-money. In early 2019, the European Securities and Markets Authority (“ESMA”) issued Advice to the European Commission, Council and Parliament in

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5 Consultation (n. 2), p. 7
7 Ibid, paragraph 2.11.
which it proposed a similar taxonomy, using the terms payment-type, investment-type and utility-type cryptoassets.\textsuperscript{9} The FMLC has argued in the past that such a categorisation is reductive and does not take into account cryptoassets which do not neatly fall into one or another category, resulting in their exclusion from the regulatory ambit.\textsuperscript{10} In respect of questions 5-8 of the Consultation, the FMLC would encourage the European Commission to reconsider the criteria on the basis of which any classification is attempted. The truth is that a wide variety of cryptoassets exist and that, as a group, they share few, if any, common characteristics. The regulatory and legal concerns to which these schemes give rise will bear almost no relation to concerns which regulatory authorities have expressed from time to time about more complex schemes.

2.3. Precisely identifying the cryptoasset is highly important in order to define with equal precision the contours of the regulatory perimeter. It is also important in identifying the role of the cryptoasset—and, notably, when the cryptoasset is \textit{constitutive} of rights and obligations (e.g. of property rights in the cryptoasset itself), and when its use is merely \textit{evidentiary} (in the same way as many other systems of books and records, without those books and records amounting to regulated instruments). Under other DLT implementations still, there may be no separate “cryptoasset” at all, but instead a claim against a permissioning or validating entity. A failure to address these subtleties in the way that DLT/blockchain systems can be deployed gives rise to significant legal uncertainty in the market. Another key distinguishing feature is whether a particular DLT implementation includes a set of binding rules as between the participants that is additional to the code or script that forms the basis of the software. Such rules may change fundamentally the legal nature of the DLT implementation. The paragraphs below offer six characteristics on the basis of which cryptoassets may be differentiated.

\textbf{Function}

2.4. The choice made by legislative and regulatory authorities to differentiate cryptoassets on the basis of function is understandable given the parallels between some cryptoassets and traditional financial products. The FMLC would argue, however, that differentiating by function gives rise to three substantial issues: (1) such categorisation would only make sense if almost all—if not all—functions were taken into account; (2)

\textsuperscript{9} ESMA, \textit{Advice} (n. 4), paragraph 80.

such differentiation is only useful if each category fits neatly into a regulatory framework; and (3) cryptoassets are fluid and, over their lifetime, may resemble more than one functional type of cryptoasset.¹¹

2.5. ESMA and the U.K.’s Cryptoassets Taskforce have focused on cryptoassets which (1) may be used for payments or exchange, (2) may represent profit rights on investment, and (3) enable access to a specific product or service. This limited taxonomy does not accommodate cryptoassets which may, for example, be used for a limited transactional purpose—for example, in a game or a training programme. “In game” currencies fall outside the remit of the FMLC, which is to consider legal developments in the framework of the wholesale financial markets. It is possible, however, that “virtual transactions”—exchanging purpose-built virtual currencies for virtual securities—may, in future, be a useful innovation in financial markets infrastructure. It is said that innovations of this kind could offer intra-day settlement by means of proxy virtual transactions, which are then “converted” or “materialised” into net “real world” transactions at the end of the day. In December 2019, the Bank for International Settlement (“BIS”) published a report on what it called “wholesale digital tokens”: cryptoassets that could potentially be used as a settlement asset, to effect settlement.¹² The BIS notes that, at the current stage of development,

many of the tokens envisaged as wholesale settlement assets represent a claim related to a pool of assets or funds and are characterised as being backed by commercial or central bank deposits denominated in a sovereign currency.¹³

There is currently insufficient clarity on the nature of rights or claims embedded in the wholesale digital token, and on how the asset or funds backing it relates to such right or claim, all of which make it tricky, if not impossible, to fit such cryptoassets into the functional model.

2.6. In addition, dividing tokens into payment tokens, investment tokens, utility tokens and hybrid tokens is of limited use if those terms are not aligned with any particular

¹¹ The Consultation acknowledges the existence of such “hybrid” cryptoassets but little guidance is offered as to the impact of their changing characteristics on the manner in which the assets themselves or their users may be regulated. See, Consultation (n. 3), p. 8


¹³ Ibid., p. 14
regulatory treatment. It may be more useful to refer to terms that have meaning in the context of financial regulation—such as whether they qualify as e-money or financial instruments or under some new category. As stated above, it is necessary to determine whether a cryptoasset is the asset or is merely evidence of a legal right or claim to an asset. In the latter case, it seems that the categorisation of the right should follow existing principles reflecting the nature of the right as opposed to the technology by which it is evidenced.

2.7. A third key difficulty arises when tokens fall under more than one of the three categories. For such hybrid tokens, it may be unclear whether the legal obligations associated with each category are cumulative or hierarchical. A study by the University of Cambridge’s Centre for Alternative Finance, published in April 2019, pointed out that, for a security token that is also a payment token, regulators and courts could adopt different positions. If the legal obligations are cumulative, the hybrid token has to comply with both securities law and payment services law; if the obligations are hierarchical, questions arise about whether the issuers and users of the cryptoasset have to comply exclusively with the more stringent legal requirements only or whether a determination as to which legal obligations must be met depends on the predominant feature of the cryptoasset. It is plain that answering these questions without any further guidance from legislative or regulatory authorities will entail a high degree of discretion, resulting in an uneven application of regulation across the financial markets.

**Means of production**

2.8. Most cryptoassets exist on a DLT platform. DLT is a way of recording and sharing data across multiple data stores (known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, called nodes. In principle, any node within a network can propose the addition of new information or the creation of new cryptoassets. In order to validate whether this addition of information (for example a transaction record) is legitimate, the nodes have to reach some form of agreement. Consensus mechanisms—i.e., predefined specific (cryptographic) validation methods that ensure a correct sequencing of transactions on the blockchain—come into play here. The two consensus mechanisms most commonly used in the context of cryptoassets are the Proof of Work and the Proof of Stake mechanisms. In a Proof of Work system, network participants

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have to solve so-called “cryptographic puzzles” to be allowed to add new “blocks” to the blockchain. This puzzle-solving process is commonly referred to as “mining”. In a Proof of Stake system, a transaction validator (i.e. a network node) must prove ownership of a certain asset (or in the case of cryptocurrencies, a certain amount of coins) in order to participate in the validation of transactions. This act of validating transactions is called “forging”.

2.9. Bitcoin and Ethereum, the two most popular cryptoassets are “mined” using network power. One cryptocurrency which is not mined in this way is Nemcoin, also known as XEM, which is transacted on the NEM platform. Newly “minted” Nemcoins were first distributed evenly to about 3000 stakeholders in the community. Having been distributed, the coins can now be transferred on the NEM platform, which incorporates DLT like other altcoins. New blocks in the blockchain are created by an author who is identified using a consensus technique called “Proof-of-Importance”. This mechanism is intended to encourage stakeholders to spend, rather than hoard, the coins. Yet other niche methods of production also exist: Ripple's cryptoasset XRP, built to become a bridge currency to allow financial institutions to settle cross-border payments easier and faster, makes use of its own specific consensus protocol.

2.10. A failure to address the subtleties in the means of production of individual cryptoassets gives rise to significant legal uncertainty in the market. For example, a particular blockchain implementation might include a set of binding rules between the participants that is additional to the code or script that forms the basis of the software. Such rules may fundamentally change the legal nature of the platform, the cryptoassets and any related activities. The way in which the cryptoasset is produced will also determine the actors involved in the range of activities related to it. Miners or transaction processors may be incentivised by fees or other rewards, in respect of which relevant questions might arise under the traditional financial markets regulatory framework. Similar questions arise in respect of issuers and claims which might be made by holders of the cryptoasset in the event of insolvency.

**Means of holding and transfer**

2.11. The move from paper-based securities to electronic registries maintained by central securities depositories since the 1970s has led to a substantial shift from direct to indirect holding of assets with significant implications for property law. The meaning of “ownership” differs fundamentally across major jurisdictions, and even more so with regards to how property law treats immaterial digital objects. Cryptoassets present yet
another evolution which requires a re-examination of the concepts of ownership, custody and transfer. Cryptoassets have no physical manifestation and exist exclusively as digital book entries in a virtual, shared ledger. The transfer of cryptoassets requires an authorisation in the form of a cryptographically signed message by the initiator. The signature, produced by a private key, represents the user’s permission for the DLT system to request a ledger entry reflecting the change in ownership. If the signature is accepted as valid by the DLT system, the ledger is updated such that a particular cryptoasset is associated with the public key of a particular user.

2.12. It may also be helpful to distinguish more clearly between cryptoassets held through networks that are public vis-à-vis private and permissioned vis-à-vis permissionless. These distinctions can have the effect of changing the very nature of the assets. For example, in a permissionless system like Bitcoin, holding the cryptoasset will not give you a claim against any other party, whereas the arrangements under certain permissioned systems using DLT may be such that there is a claim against the permissioning entity or a third party with no permissioning power (but no separate property in a “cryptoasset”).

2.13. Once created and distributed, cryptoassets can be traded, exchanged and transferred on the secondary markets. This too can be done in multiple ways. One way to distinguish the transfer mechanism is by considering whether it is on-chain—i.e., whether the DLT system has an integrated value transfer mechanism that allows for the direct transfer of funds from one user to another as well as the exchange of one cryptoasset for another as long as both cryptoassets reside on the same network—or off-chain through marketplaces and exchange services which maintain their own database systems. In the latter situation, buyers and sellers often exchange and transfer claims on cryptoassets with each other. The methods used to transfer cryptoassets on the secondary markets may further be distinguished in terms of the ability to transfer—that is, whether or not the cryptoasset has an embedded restriction natively encoded into it by the issuer to prevent unauthorised on-chain transfers—and with reference to the need for a third party to effect the transfer (also known as the applicable trust model).

2.14. The ability to transfer cryptoassets and the mechanisms used to effect such transfers will have corresponding consequences for regulators in terms of the specific requirements for firm and individual authorisation, anti-money laundering and Know Your Customer

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15 It may be possible to create physical representations of cryptoassets (such as Casascius coins), but the unit itself still remains purely digital in the form of a ledger entry.

16 For a more detailed explanation on these models see, Global Cryptoasset Regulatory Landscape Study, (n. 11), p. 25
obligations, prospectuses and marketing requirements, disclosure and various third-party transfer risks.

**Relationship with fiat money**

2.15. Early forms of cryptoassets were known as “virtual currencies”, differentiating them from fiat currencies. As cryptoassets have proliferated, their relationship with fiat money too has evolved and a number of models have sprung up. The FMLC has interrogated the relationship between virtual and fiat currencies both in its seminal paper of 2016 and in a more recent report exploring the application of the money-laundering regime to cryptoassets.¹⁷

2.16. Some virtual currencies can be held and used only in the context of a computer game, while others are a straightforward electronic reflection of a “real world currency”, like U.S. dollars. Some cryptoassets allow for the direct exchange of other currencies, including sovereign fiat currencies, through their payment system. If the currency is freely interchangeable it is said to have “bidirectional flow”, if it can be purchased but not sold in other currencies it is said to have “unidirectional flow”. An example of the former is Linden Dollars, the currency created for the purposes of the online virtual world known as Second Life. Linden Dollars can be bought for U.S. dollars with a credit card and exchanged for digital goods inside Second Life. Surplus Linden Dollars can then be sold and converted back into U.S. dollars. Examples of the latter are to be found among the schemes created by the purveyors of computer games for use within their games, e.g. “Nintendo Points”, which can be purchased online by credit card but which cannot subsequently be converted back into money in the real world. Some virtual currencies are not “open” at all. Among these are “in-game” currencies which cannot be bought or sold outside the game. World of Warcraft Gold is said to be an example. Bitcoin is a scheme which is technologically “closed” but is functionally “open”. That is, there is no exchange possible between Bitcoins and real world currencies within the scheme itself—balances cannot be held and transactions cannot be executed or recorded in other currencies. Nonetheless Bitcoins have been designed as a “real world” medium of exchange and the market that has grown up around the scheme allows holders to purchase articles of commerce in the usual way from enterprises that accept Bitcoins as payment. Although new Bitcoins can only be created and introduced into the system by the activity of “mining”, as described above, platforms have been established which allow users to buy and sell Bitcoins for “real world” currency.

2.17. It may be possible to exchange some cryptoassets with more than one currency. This may take the form of Facebook’s Libra—which, it is planned, will be pegged to a basket of world currencies. Another model is presented by Ripple’s cryptoasset XRP, which acts as a bridge currency to other currencies and is, therefore, exchangeable with multiple currencies.

2.18. Whether a cryptoasset is exchangeable, both with “real world” fiat currencies and with other cryptoassets, has important repercussions for anti-money laundering and the prevention of terrorism financing. The Financial Action Task Force has noted that “convertible” cryptoassets—i.e., ones that can be exchanged for real money or other virtual currencies—are potentially vulnerable to money laundering and terrorist financing abuse for many reasons, including anonymity and global reach.\(^{18}\) The challenge is exponentially larger for highly private cryptoassets (sometimes called “privacy coins”), such as Zcash, Monero, and Grin. A design specification of privacy coins’ underlying software is to make it more difficult to track on-chain transactions, which means privacy coins are in theory a particular challenge for anti-money laundering, tax avoidance, and illicit trade. The FMLC commented in 2019 on the definition of “virtual currencies” in Directive (EU) 2018/843 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing (the “Fifth Money Laundering Directive” or “5MLD”). In that case, 5MLD explicitly excluded any virtual currency which “possess[ed] a legal status of currency or money”. The FMLC demonstrated that the definition inadvertently excluded well known virtual currencies such as Bitcoin or Libra, which, in principle, meet the criteria for legal status of money and, it is likely, could be used for money laundering.\(^{19}\) The gaps in the regulatory regime means that certain cryptoasset exchanges, custodian wallet providers and other actors might not be regulated appropriately.\(^{20}\) A similar risk arises in the event any further legislative attempt fails to distinguish between convertible and non-convertible cryptoassets.

**Level of digitisation**

2.19. Some cryptoassets are simply digital representations of a traditional asset. The “tokenisation” of assets refers to the process of issuing a blockchain token that digitally

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\(^{19}\) See Exchange Tokens (n. 10).

represents a real tradeable asset—in many ways similar to the process of securitisation. Tokenised cryptoassets can be distinguished from new and natively-digital cryptoassets with unique characteristics. A natively-digital cryptoasset may play the incentive role in a particular network, while tokenised cryptoassets are sometimes issued through initial coin offerings and can represent a share in a company, ownership of a piece of real estate or participation in an investment fund. The tokenised cryptoassets are then traded on the secondary market. The advantages of tokenisation are most clear for asset classes that are typically considered illiquid and can benefit from improved transparency, efficiencies and lower minimum investment. One example is fine art.

2.20. Whilst such cryptoassets could fall under the category of security token or investment-type token, market participants have commented that the application of regulations meant for traditional securities to asset-backed cryptoassets might impede the free and international exchange of these cryptoassets. Questions arise about the governance of, or rights associated with the ownership of, asset-backed cryptoassets which may be distinguished from those attached to the asset in question under traditional law and/or, indeed, from those derived from fully-virtual cryptoassets. The link between a cryptoasset and its underlying asset should be inextricable; uncertainties remain, however, with regards to the rights to which owners of tokenised cryptoassets may be entitled in the event the underlying asset is stolen, destroyed or otherwise dismantled. Crucially, there remains a lack of clarity about the interplay between the piece of regulation which applies to the tokenised cryptoasset and the law which applies to the asset itself.

Relationship with issuer

2.21. Each of the features of cryptoassets described above might have an impact on the cryptoasset’s relationship with its issuer. As the Consultation notes, the cryptoasset issuer is the organisation that has developed the technical specifications of a cryptoasset and set its features. In “traditional” financial markets, the issuer is the entity that

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22 Liechtenstein has dealt with this issue in its Tokens and TT Service Providers Law—known colloquially as the Blockchain Act—by creating a Token Container Model. As of January 2020, when the Act comes into force, nearly any right or asset can be “packaged” into a token. Within the framework, a token serves as a container with the ability to hold rights of all kinds. The container can be “loaded” with a right that represents a real asset such as real estate, stocks, bonds, gold, access rights, and money. This allows a separation of (1) the right and the asset on the one hand side and (2) the token technically “running” on a blockchain-based system on the other hand side. For more information see, Philipp Sandner, Thomas Nägele, and Jonas Gross Liechtenstein Blockchain Act: How can nearly any right and therefore any asset be tokenized based on the Token Container Model? (7 October 2019), available at: https://medium.com/@philippsandner/liechtenstein-blockchain-act-how-can-nearly-any-right-and-therefore-any-asset-be-tokenized-based-389f90f39b1.
creates rights and is legally responsible for them. Thus, financial instruments generally represent a credit or equity claim on the issuer. Some cryptoassets demonstrate similar characteristics and will therefore give to the holder a right which it may enforce against the issuer; other cryptoassets—such as Bitcoin—are not “issued” in quite the same way and the closest analogy which exists currently to the type of asset they represent is likely to be money. (This distinction is related to the distinction drawn in Common Law, between *chooses* in action and *chooses* in possession, and in Civil Law, between intangible and tangible rights constituting property, although some instruments may have features of both categories.)

2.22. Thus, a key consideration for regulators in this context will be whether the cryptoassets are enforceable against the issuer or not. This question is particularly acute in cases of alleged theft, loss of funds, smart contract bug or vulnerability, insolvency or bankruptcy. Where the cryptoasset is not a claim on the issuer, the identity of the issuer may not be known. Some issuers remain involved in maintaining and improving the cryptoasset’s code and underlying algorithm while other do not. The Global Study by the University of Cambridge observes that the right attached to the cryptoasset and conferred onto the holder may range from platform/application access, profit-sharing, voting and block creation to the granting of a voucher or a claim. Cryptoassets may also be distinguished on the basis of whether these rights can be unilaterally modified by the issuer (including in which circumstances and conditions) and how they are effectively enforced.23

2.23. The rights to which any holder of cryptoasset will be entitled depends fundamentally on the legal character of the cryptoasset. Despite their name, cryptoassets cannot be uniformly considered a category of property or even a right affecting property. Under English law, cryptoassets may be considered property or personal rights. Examples of interests and rights which do not qualify as property include licences, certain quotas, permissions, and reversionary interests. This determination goes beyond questions of simply the cryptoasset’s function. The FMLC analysed the question of how to allocate this new and, allegedly, disruptive technology to the traditional categories of property and personal rights developed by the common law in its paper from 2016.24 In civil law

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23 Global Cryptoasset Regulatory Landscape Study, (n. 11), p. 20

24 Virtual Currencies (n. 14), section 4. Property in English law may be either real or personal property. Personal property is further divided into chattels real—largely leasehold interests, which may be disregarded for the purposes of this analysis—and chattels personal, where the latter can be either "in possession" or "in action" at common law, hence: “chooses in possession” and “chooses in action”. A chose in action is a property right that can only be obtained or enforced through legal action. A chose in possession, in contrast, is a thing of which physical possession can be taken.
jurisdictions, however, intangible personal rights which fall short of being classified as contracts do not have a legal classification.

2.24. A great many consequential legal issues and questions would naturally flow from the legal classification of cryptoassets according to the criteria discussed above. On the one hand, were a cryptoasset to be classed as a form of intangible property in circumstances where the issuer does not take legal responsibility for the asset, then the question automatically arises against whom the action to enforce the rights of owner lies. This is likely to be critical for a trustee in bankruptcy or a liquidator appointed in the event of the insolvency of the holder of virtual currency. The office-holder would need to know against whom action could be taken to realise the value in the virtual currency. It is similarly important for anyone considering taking security over virtual currency. On the other hand, if a cryptocurrency represents rights enforceable against Party A but Party A is not the organisation that established and operates the cryptoasset, then there may be a question as to who is the “issuer” for the purposes of the regulation.

3. CONCLUSION

3.1. In this part of the response to the European Commission’s Consultation on regulating the market in cryptoassets, the FMLC has tried to demonstrate that the characterisation of cryptoassets simply by reference to their function(s) yields an incomplete picture. Any regulation of cryptoassets on the basis of simply such characterisation may fail to take into account the multitude of other factors which influence the roles of various actors creating, holding or transferring cryptoassets and the different types of rights and obligations which might arise amongst them.
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