JERSEY LAW COMMISSION

Jersey

CONSULTATION PAPER

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DIGITAL ASSETS REFORM PROJECT: SMART CONTRACTS, DATA ASSETS & DAO

032024

The Jersey Law Commission is an independent body appointed by the States Assembly to identify and examine aspects of Jersey law with a view to their development and reform.

This includes in particular: the elimination of anomalies; the repeal of obsolete and unnecessary enactments; the reductions of the number of separate enactments; and generally the simplification and modernisation of the law. Members of the Law Commission serve on a part-time basis and are unremunerated.

The current Law Commissioners are:

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ADVOCATE STEVEN PALLOT
ADVOCATE EMMA GERMAN (Topic Commissioner and author of this paper)
PROFESSOR ANDREW LE SUEUR

The Jersey Law Commission invites comments on this consultation paper before 16 June 2024 in writing addressed to:

<div align="center">

Jersey Law Commission

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CONSULTATION PAPER No. 032024   **12 March 2024**

HOW TO RESPOND TO THIS SCOPING CONSULTATION

The Jersey Law Commission is working on a project relating to the impact of the digital age on certain Jersey laws. The project focuses on the enforceability of smart contracts in Jersey and, to a lesser extent, the following related topics:

1. the recognition and impact of decentralised autonomous organisations (**DAOs**); and
2. the treatment of data objects as a new class of property right

under Jersey law.

This Scoping Consultation Paper (the "**Consultation**") is not exhaustive as to matters affecting digital assets and Jersey law. Suggestions of additional areas for reform are welcome.

In relation to the central topic, the enforceability of smart contracts in Jersey, the key issues are:

- whether smart contracts are capable of being recognised and enforceable in Jersey as valid legal contracts, so called "smart legal contracts";
    - o if yes, whether this should be subject to any specific conditions including consumer protection provisions such as requiring "translations" into human readable ("parsable") language;
- whether any specific rules are required to apply only to smart legal contracts; and
- whether Jersey needs to recognise the concept of an electronic agent.

In relation to the secondary subjects of DAOs and data objects, the key questions are:

- whether Jersey needs to recognise the concept of a DAO as a vehicle offered under Jersey law and if yes what form that should take; and
- whether Jersey should also consider recognising a new category of personal property rights similar to the "data object" proposed by the Law Commission in England and Wales.

It is intended that the project will have three phases:

1. In phase 1 (this Consultation), we are seeking to discover what people consider to be the legal issues arising under the current law by asking a series of 'scoping' questions.
2. In phase 2 (the Formal Consultation), we expect to publish a further consultation report, containing provisional findings and recommendations.
3. In phase 3 (Topic Report) we will set out our final recommendations to the Chief Minister.

We seek responses from a wide range of people, including lawyers in the Channel Islands, lawyers from other from other jurisdictions, individuals with experience of fintech, legaltech and regtech matters, technology and digital companies, trust companies, members of the Royal Court, members of the States Assembly, Ministers, charities and other organisations with activities relating to emerging technologies. We also welcome comments from experts outside the island.

You may submit a response without responding to all the scoping questions. Comments may be submitted by email or letter.

The Consultation period runs from **March 2024 to 16 June 2024**.

Please send responses in writing

- by email to: commissioners@jerseylawcommission.org.je or
- by post to: Smart Contract Scoping Consultation, Jersey Law Commission, c/o Corbett Le Quesne, 1a West's Centre, St Helier, JE2 4ST

When responding, please include your name and (if relevant) any organisation on whose behalf you are responding. In the Consultation Paper, which will set out our initial findings and provisional recommendations, and in any subsequent Final Report, we may

- summarise views expressed in response to this Consultation; and/or
- list the names of people and organisations who respond to this Consultation.

If you do not want your views to be summarised or your name listed at the end of such published documents, please say so in your response.

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PURPOSE OF THE CONSULTATION PAPER

Smart contracts have the potential to revolutionise how we form and perform contracts. Elements of smart contracts are novel and challenge traditional methods of conducting business familiar from the "paper era" relying on dematerialised methods of transferring data.[1]

Whilst the underlying technology (distributed ledger technology, "**DLT**") originated from Bitcoin, the application of DLT in serious commercial transactions should be distinguished from the hype surrounding highly speculative crypto-assets. The Master of the Rolls in the UK, Sir Geoffrey Vos, predicted that smart contracts will be:

> *"ubiquitous in all major industrial and financial sectors, simply because it allows for the immutable recording of data, thereby reducing friction in commercial and consumer transactions, and obliterating the scope for dispute as to what has occurred".*[2]

For Jersey law to stay relevant and competitive in global financial services markets, it must have the capability to function within the increasingly digital methods of transacting. This requires upskilling in distributed ledger technology of Jersey's professional services providers including specifically lawyers and technology experts. Familiarity with other emerging technologies such as artificial intelligence and data related matters is also advised.

The purpose of this Consultation is to outline the importance of smart contracts for Jersey law and practice and provide an overview as to smart contracts (particularly smart legal contracts), provide a basis for understanding Jersey law issues relating to:

- the recognition of smart legal contracts;
- the usage of smart legal contracts in Jersey legal contracts;
- invite comment as to whether Jersey law requires reform to both recognise and deploy smart legal contracts governed by Jersey law; and
- provide a list of additional resources for further reading.

This Consultation will not address general proposals for the reform of Jersey law of contract. This Consultation will also not address availability of on-island skills to form smart legal contracts with a Jersey governing law.

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[1] Nick Szabo is a computer scientist and legal scholar. He distinguishes between the "paper era" and the "digital era" in N Szabo (1997) "Formalizing and Securing Relationships on Public Networks" https://nakamotoinstitute.org/formalizing-securing-relationships/.

[2] In a speech in Spring 2022 See: https://www.lawgazette.co.uk/news-focus/news-focus-master-of-the-rolls-vision-for-smarter-contracts-/5111838.article.

BACKGROUND: WHAT ARE SMART CONTRACTS?

Often described as "self-executing contracts" smart contracts effectively animate contracts by automatically performing certain contractual obligations such as making a payment. They can offer automated payment solutions, secure data transfer and a new way of forming contracts. Smart contracts may simply be expressed as: If x, then y. This is potentially transformative:

e.g.1 for finance contracts by automating the performance of payment provisions on certain dates and trigger events;

e.g.2 for conveyancing contracts, by automating updates to a public land registry on a transfer of title to a property –this is on the basis that the relevant land registry was a register of title, in Jersey it is not it is simply a repository of title instruments which conveyancers use to deduce title).

Using Nick Szabo's original example as an illustration, a blockchain literate car can, using a smart contract, detect the occurrence of a default on the car finance and disable itself until payment is received.[3] By extension, a blockchain literate car could pay for its own parking, petrol and road tolls using the balance of an integral smart wallet. As internet of things devices become more common, applications could extend to household items such as your smart fridge automatically ordering and paying for your grocery shopping using its inbuilt smart wallet.

The term "smart contract" is a computer science term and not a legal term. A "smart contract" is computer code and not a contract in the legal sense. In ordinary legal practice, to constitute a *legally binding* contract, the usual elements necessary to make a legally binding contract need to be satisfied. A smart contract used to form and perform legally binding contracts are referred to as "smart legal contracts".[4] This Consultation paper focuses on "smart legal contracts" referred to as "**SLCs".**

The enormous potential application of smart legal contracts domestically and internationally creates a commercial imperative for Jersey law to recognise smart contracts as legal contracts enforceable in Jersey.

This area of law has new terms that respondents may not be familiar with, please refer to the Glossary at Annex A.

Smart Legal Contracts - Overview
Smart contracts and SLCs vary in: (i) the level of automation they deploy; and (ii) the interaction between the computer code and any human-readable (parsable) text of the contract referred to as "natural language". SLCs can be wholly or partly written in code with the natural language text being explanatory or being deemed to prevail over the code. The code is computer source code of the relevant programming language native to the blockchain protocol in question. A key distinction between them is

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[3] See note 1.
[4] See The Chamber of Digital Commerce (2018) "Smart Contracts: Is the Law Ready?" Smart Contract Alliance. https://digitalchamber.org/smart-contracts-whitepaper/. See also the ISDA, Linklaters whitepaper (2017) "Whitepaper Smart Contracts and Distributed Ledger—A Legal Perspective". https://www.isda.org/a/6EKDE/smart-contracts-and-distributed-ledger-a-legal-perspective.pdf .

that code is more limited than natural language, designed to command a computer program to run in certain binary way and intentionally lacking the subtlety of natural language often present and crafted into traditional legal contracts.

The 2021 Law Commission of England and Wales' Advice to Government (of the UK) concerning Smart Legal Contracts[5] refers to automation being on a "spectrum" and identifies three forms that an SLC may take within that spectrum:

1. **natural language contract**- an SLC drafted in natural language with performance being wholly or partly automated by code. The code does not define contractual obligations being "*merely a tool... to perform those [contractual] obligations*"[6];

2. **coded contract** – an SLC written solely in code where the "*contractual terms are defined in, and performed by code*"[7] with no natural language version.

3. **hybrid contract**– an SLC containing both natural language and code.

A word of caution: do not automatically assume that the English law analysis of what constitutes a SLC (rather than merely a smart contract) is identical to the analysis under Jersey law. The differences in the sources of contract law in the two jurisdictions (specifically around contract formation) means that Jersey should take a nuanced approach even if ultimately a similar end point is reached. It should be further noted that Jersey and England and Wales are fundamentally different jurisdictions. Jersey is a small offshore jurisdiction with a very small domestic market and comparatively large export market; exporting financial services internationally within a specific risk appetite and subject to a distinct financial services regime (regulated by the Jersey Financial Services Commission). Therefore, UK standard operating practices may not be suitable for adoption in Jersey in whole or in part.

For the purposes of this Consultation, assume that three categories noted above are three types of smart contract. Whether the hybrid contract and coded contract constitute an SLC under Jersey law is the subject matter of this Consultation. For example, under Jersey law, contracts with contractual terms defined solely by code *may* be less likely to constitute valid, legally binding contracts under Jersey

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[5] UK Law Commission, Advice to Government concerning Smart Legal Contracts (2021). Available at: https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2021/11/Smart-legal-contracts-accessible.pdf.
[6] See Note 5.
[7] See Note 5.

law unless the coded part is peripheral[8] or there is a natural language translation of the code, particularly in a consumer context[9].

Various overviews of smart contracts and DLT already exist. The most relevant is that published by the Law Commission of England and Wales, links to extracts of which are shown at Annex B. As noted above, this extract should be reviewed with care: most notably, the Law Commission of England and Wales identifies different types of smart contract which may not automatically constitute SLCs in a strict legal sense under Jersey law.

Useage[10]

There are endless uses in Jersey for smart legal contracts and DLT more broadly[11]. A few examples give some context:

(i)   The issuance and transfer of digital assets: digital representations of traditional securities (i.e., security tokens with the rights and obligations of a traditional security which are transferable in dematerialised digital form); utility tokens; and other non-security tokens can be issued and transferred by smart contract. This would enable on-chain transfers of securities and instantaneous updates of registers, e.g. shares in share transfer companies owning properties, could be transferred on the blockchain (if the distributed ledger was nominated as the register of members/securities holders).

(ii)   Payment solutions for immediate settlement: bypassing lengthy settlement times and removing intermediaries, agents and clearing houses (and their costs) from the process, smart contracts enable immediate on-chain settlement.[12] This would enable e.g. ETH payments of interest or

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[8] *Prestige Properties Ltd v Styles* 1989 JLR 96 supports the proposition that an endorsed contract with some amendments is an implied acceptance of the other terms. Accordingly, if the acceptance altered peripheral details, there may still be acceptance of the overall terms. as confirmed in *Trico Limited v Buckingham [202]JRC 009*. Available at:
https://www.jerseylaw.je/judgments/unreported/Pages/[2020]JRC009.aspx Where Bailiff TJ Le Cocq quoted Prestige:
"Now, the plaintiffs did not ask the defendants to sign anything at all and as a result have to rely in these proceedings upon an oral agreement evidenced by their own subsequent letter to their client "confirming" their instructions. Had the plaintiffs asked the defendants to sign a copy of the letter they sent to them, the defendants would then have been bound by it (see L'Estrange v. F. Graucob Ltd. (5) where Scrutton, L.J. laid down a general rule which is, in our view, equally applicable to estate agent cases ([1934] All E.R. Rep., at 19): "When a document containing contractual terms is signed, then, in the absence of fraud, or, I will add, misrepresentation, the party signing it is bound, and it is wholly immaterial whether he reads the document or not")."
[9] E German,, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review. See: https://www.jerseylaw.je/publications/jglr/Pages/JGLR2102_German.aspx.
[10] This section is taken and updated from E German, The Recognition of Smart Contracts in Jersey (2021) See Footnote 9.
[11]   For   an   overview   on   notable   blockchain   projects   around   the   world   in   2022   see: https://101blockchains.com/top-blockchain-projects-ideas/.

[12] Bank for International Settlements ("BIS") anticipates efficiencies in clearing and settlement by reducing T+2 settlement to instantaneous settlement on-chain (or as the parties may specify). BIS quotes Mainelle and Milne (2016) who estimated that DLT can—

principal on a loan to be automated via a SLC removing the need for bank accounts, account banks, paying agents and similar.

Examples include the JP Morgan DLT derivatives margin payment solution[13] and the HSBC custody solution[14] and digital vault digitisation of transaction records of private placements[15]. In the retail context: (a) BMW, General Motors and Ford are testing blockchain payment systems in their cars[16] and Ford is working with Stripe to facilitate payments for vehicle services;[17] and (b) Mastercard and Ikea[18] are using smart contracts to facilitate settlement.

(iii)   Transferring and validating information, such as: (a) voting (e.g. by the electorate or security holders), thereby reducing the administrative burden of convening and voting at meetings. (b) public records: if Jersey introduced DLT public registers, they could automatically update on trigger events. Example (1) The register of immovable properties could update on the change of legal owner[19]; example (2) A confidential register of wills (registered on satisfaction of relevant formalities) could release a will to the family of the testator following his/her death, but allow codicils or new wills to be made in sequential order, thereby reducing the costs, delay and emotional burden of lost, destroyed or uncertain wills.[20]

Notable Considerations

Before outlining the questions for the Consultation, please see below some considerations to bear in mind when considering your responses to the Consultation:

"*reduce back office costs by up to 50%. A study . . . by Santander InnoVentures (2015) estimates that $15–20 billion could be saved annually in the broader banking industry*."
See M Bech and R Garratt (2017) BIS Quarterly Review, 17 September 2017. Central bank cryptocurrencies. BIS https://www.bis.org/ publ/qtrpdf/r_qt1709f.htm.

[13] H Partz (2019) "JPMorgan Automates Derivatives Margin Payments With DLT Firm" https://cointelegraph.com/news/jpmorgan-automates-derivative s-margin-payments-with-blockchain-tech.

[14] Ledger Insights (2019) "HSBC Securities to use Blockchain for Securities custody" https://www.ledgerinsights.com/hsbc-securities-blockchain-custody/.

[15] For an overview of HSBC's activity in blockchain space see: https://www.hsbc.com/news-and-media/hsbc-news/harnessing-the-benefits-of-blockchain The webpage includes an explanatory video "Explore how blockchain technology is improving trade and payments for our clients".

[16] A Zmudzinski (2019) "BMW, General Motors, Ford to Start Testing Blockchain Payments in Cars" https://cointele graph.com/news/ bmw-general-motors-ford-to-start-testing-blockchain-payments-in-cars.

[17] M Guy (2022) "What's in Your Wallet? If Ford Has its Way, It'll be a Blue Oval" available at: https://www.thetruthaboutcars.com/2022/01/whats-in-your-wallet-if-ford-has-its-way-itll-be-a-blue-oval/.

[18] E German, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review –. See footnote 9. Ikea have also launched Saoace20, an innovation lab, see: https://www.getdor.com/blog/2021/09/14/retail-companies-using-blockchain-technology/.

[19] A pre-requisite for doing so would require an extensive process of registering title to all land in Jersey.

[20] France has a register of wills, the Fichier Central des Dernières Volontés, which only notaires (sworn draftsmen/lawyers) can access. England has an optional register where law firms hold their own registers. Neither jurisdiction has the same execution formalities as Jersey.

i.   Distinguishing between the Failure to Read Terms expressed in Natural Language and an *inability* to read contractual Terms expressed in Code (see further below);

ii. Degree of negotiation and contact between the parties prior to concluding the contract; and

iii. Subjective v Objective approach to contractual consent (see further below).

Distinguishing between the Failure to Read Terms expressed in Natural Language and an inability to read contractual Terms expressed in Code

It may be argued that the ability (or rather inability) of a party to read contractual terms because they are expressed in code should be distinguished from a party's failure to read contractual terms expressed in natural language. In the latter situation where a party has failed to read contractual terms expressed in natural language, under Jersey law, contractual consent is considered objectively and consent deemed to be given:

> *""When a document containing contractual terms is signed, then, in the absence of fraud, or...misrepresentation, the party signing it is bound, and it is wholly immaterial whether he reads the document or not"."* [21]

By extension, it is arguable that the specific carve out for fraud and misrepresentation indicates that:

(i)   a degree of pre-contractual dealing between the parties is assumed in so far as there is an inducement to form the contract;

(ii) the parties need a degree of awareness of the principal contractual terms and underlying contractual relationship; and

(iii) the contract (even if unread by one or more parties) did represent such terms and relationship.

If this were not the case, the carve outs for fraud and misrepresentation would be superfluous.

Typically in traditional contracts, the parties' awareness of the principal contractual terms and underlying contractual relationship comes from a period of discussion and negotiation prior to the contact being concluded, during such discussions and negotiations representations are made. In the fast-paced digital world where SLCs could be used, the opportunity for pre-contractual negotiations may be more limited (if at all).

Subjective v Objective approach to contractual consent

A coded contract and a hybrid contract will contain contractual terms defined in whole (coded) or in part (hybrid) by computer code. Code is typically only readable by: (i) computer programmers able to code in the specific language of the code in question; and (ii) a computer programmed to read and run that code.

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[21] *Trico Limited v Buckingham [202]JRC 009*. Available at: *https://www.jerseylaw.je/judgments/unreported/Pages/[2020]JRC009.aspx Where at paragraph 66 Bailiff TJ Le Cocq quoted Properties Ltd v Styles* [1989] JLR 96 and the general principle laid down in turn *L'Estrange v. F. Graucob Ltd* regarding the validity of contracts where a party has not read its terms.

The average human is not able to read the current iterations of computer code and coding languages and therefore the human would also not be able to read any contractual terms expressed in code. The question to be considered is whether this fact is material to a party being able to consent to the terms of the contract. Consent being one of the four keystones to contract formation under Jersey law.[22]

The outcome differs when applying an objective or subjective approach to contractual consent or a hybrid approach. Under the objective approach, what the parties actually intended in the contractual terms is not relevant but rather what a properly informed reasonable person would take to be the terms. A stark contrast to the subjective approach, where a party's subjective intention of the contract terms is key to giving (or not, as the case may be) valid contractual consent.

There had been differing and conflicting Jersey legal authorities and views on this point. However, in the Royal Court of Jersey in *Hore and Little Wing Investments Limited v Valmorbida and Untitled - Copyright Limited* sought to irrefutably settle this point in favour of the objective test, which it held to be "*appropriate and preferable to the subjective approach*"[23].

The author suggests that the starting position is that the "*ordinary rules of Jersey contract law apply to smart contracts*".[24] In light of *Hore & Anor v Valmorbida & Anor*, this would mean applying the objective test to contractual consent. Respondents may however consider it beneficial to differentiate between situations where one approach or other (or elements thereof) would yield more equitable results.

e.g.1. For commercial contracts involving sophisticated and well-resourced parties, the objective approach would remain appropriate as each party would have the means and access to expertise to be able to ascertain the contractual terms.

e.g.2. For consumer contracts involving consumers and retail parties, an objective approach may yield inequitable results as it is likely parties would be unable to read and understand (or "parse") code. However, clauses written in plain English (human) language which prevail over computer coded clauses could be introduced to ensure that:

(i) the parties are given the key terms in a clear and understandable format; and

(ii) the counterparty can avoid any attempts by a customer to avoid the contract by attempting to resurrect and rely on the subjective test in the future.

Respondents should apply caution in advocating for a blanket objective approach to smart contacts in all circumstances given the specific characteristics of e-commerce and impact of BigTech in the space.

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[22] The other cornerstones being capacity, (licit) objet and (licit) *cause per Selby v Romeril 1996 JLR 210 and Marett v Marett 2008 JLR 384*.

[23] The Royal Court in *Hore and Little Wing Investments Limited v Valmorbida and Untitled - Copyright Limited [2022]JRC202*, paragraph 137. In the judgement the Royal Court noted and agreed with the judgment of the Bailiff in Murray v Camerons Limited [2020]JRC 179.

[24] E German, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review see extract at Appendix C. For full citation see Footnote 9.

In an increasingly BigTech driven, monopoly dominated, global marketplace, there is little to no equality of bargaining position between corporate counterparties, least of all an individual consumer acting as a counterparty. Take Amazon as an example, a small business wishing to become a seller must accept the merchant terms of the Amazon marketplace without negotiation or is prevented access to customers and unable to sell its products at scale on the Amazon platform. Equally a buyer must accept the terms of Amazon (including all those not directly relevant to effecting the primary sale contract in question) which are several pages long. The above reflects the current position, where all parties have access to the full set of terms and conditions drafted clearly in human-parsable language. Noting that the terms do not clearly explain the algorithms used, impact of the algorithms on search results or pricing or the order that products are displayed for sale to a specific customer on the platform. A future state, where smart contracts are concluded using tokenised payments drafted fully in code would rank lower still on the "explainability" index.

How does, or should, the law afford protection or a more-equal bargaining position (equality being assumed to be unachievable and uncommercial) in the context of SLCs?

An objective approach has long been used to give credence and legal justification to the practice of accepting lengthy terms and condition, irrespective of whether such terms are directly relevant to the sale/substance of the contract or are instead serving a collateral purpose. E.g. data harvesting.

In a theoretical world of smart contracts, where tokenised payments are made by internet of things devices using integral smart wallets (e.g. Alexa ordering groceries or a prescription, not as remote a possibility as respondents may think) and where a human person does not review the order, the author advocates that:

- there is an imperative for law makers and the judiciary to consider how this technology can be misused for the furtherance of harms against consumers, SMEs, countries and the public good; and
- how the law should operate or what regulations should be introduced to limit, mitigate or avoid such harms and abuse,

whilst: (i) supporting the adoption of the technologies and maximising the benefits that can be gained from the technologies; and (ii) building in transparent and ethical working practices.

Jersey law makers and regulators have the opportunity to create an environment for a more-equal position in several ways including:

- competition law (preventing and discouraging market abuse);
- market regulation in specific markets where harms are anticipated to be greater such as lending and financial services;
- dictating terms that may be implied into contracts or certain categories of contract
- introducing legislation relating to unfair contract terms
- introducing legislation relating to the rights of third parties.

It should be noted that, in Jersey, there is no unfair contracts legislation or rights of third parties similar to that of the United Kingdom.

Respondents are encouraged to reflect upon potential harms and mitigants in their responses including whether Jersey should consider legislating in certain areas as outlined above or otherwise.

DECENTRALISED AUTONOMOUS ORGANISATIONS ("DAO")

DAOs are a new type of decentralised structure associated with the governance of blockchain protocols (typically using Ethereum). They use smart contracts and enable members to vote on certain matters such as whether to participate in a transaction. Examples include Maker DAO,[25] Decentraland[26] and LexDow.[27] The main idea of a DAO is that there is no centralised authority (e.g. board of directors) and that a DAO acts only as authorised by its members in accordance with pre-set rules (coded into smart contacts) or by voting which limits the need for oversight.

DAOs were developed by the Web3 community and are not legal entities *per se*. DAOs lacking legal personality have met operational challenges stemming from their inability to hold assets, contract, sue and be sued. Due to the lack of legal personality comparisons could be made between DAOs and unincorporated associations (or friendly societies). In such cases, members of a DAO (that constitutes an unincorporated association) would be liable for the actions of the DAO under Jersey law a feature likely to be undesirable for the membership. Hence that type of structure is typically used for organisations with a small membership such as sports clubs.

Certain States in the United States of America therefore introduced legislation recognising DAOs as legal entities such as the blockchain based LLC law in Vermont, the DAO LLC in Wyoming (also governed by Wyoming's LLC law), and the Decentralised Organisation LLC in Tennessee. Other countries have established a legal framework tailored for DAOs by using foundations and companies as a legal wrapper for DAOs such as Switzerland, Singapore, Liechtenstein and the Cayman Islands (the Cayman Islands Foundation Companies Act, 2017), although jurisdictions differ as to whether the DAO are for profit or not for profit and their KYC requirements.

The Law Commission of England and Wales are undertaking a 15-month scoping study to explore and describe the current treatment of DAOs under the law of England and Wales and identify options for how they should be treated in law in the future.

This Consultation will address whether Jersey should introduce its own DAO legislation to recognise DAOs a having separate legal personality or to extend existing principles of companies law to DAOs and/or use the Jersey foundations law a legal wrapper for DAOs. Failure to promote a structure suitable

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[25] https://makerdao.com/en/.

[26] https://decentraland.org/.

[27] https://www.lexdao.coop/. For more DAO projects see: B Marr The Best Examples Of DAOs Everyone Should Know About. See: https://www.forbes.com/sites/bernardmarr/2022/05/25/the-best-examples-of-daos-everyone-should-know-about/?sh=434f942c40c3.

for DAOs could risk Jersey being overlooked by the Web3 community and miss an opportunity to participate in forthcoming developments to the internet.

For completeness, it is noted that on 28 November 2023, the Jersey Financial Services Commission issued a statement regarding StableDAO/Stable Opinion not being registered with them to conduct financial services business or Schedule 2 business. This case indicates a lack of market awareness and practice around the use, operation and regulation of DAOs making it important to address these issues now.

DIGITAL ASSETS, DATA & DATA TRUSTS

The potential impact of smart contracts is likely to be extensive given its ability to transcend many industries and sectors beyond banking and payments. Tokenisation is one example. Its universal appeal is in part due to the ability of smart contracts to transfer stores of value. This value can have a monetary or quasi-monetary value (e.g. cryptocurrencies) or simply a data value (e.g. tracking ownership of a digital representation of artwork transferred by NFT, or providence of goods within a supply chain).

There are technical nuances around the transfer of data relating to the transfer of internal datasets, the metadata and external datasets which is explored by the Law Commission of England and Wales| in greater detail in relation to NFTs[28].

Historically unstructured data, pure information has not constituted or attracted property rights. Rights can however exist over: (i) the medium on which information is recorded (e.g. a USB stick) and (ii) other rights which may be property rights that result from the information[29]. When data is structured, database rights exist: *sui generis* property rights under Intellectual Property (Unregistered Rights) (Jersey) Law 2011 where there has been "*a substantial investment in obtaining, verifying or presenting the contents of the database*". Copyright and intellectual property rights in information exist, but pure data or information rights do not.

The question is whether Jersey law needs to recognise proprietary rights in pure information or pure information in certain formats?

To date there have been various other methods of claiming proprietary rights relating to information whilst not over the information itself: e.g. rights over the medium of storage, contact rights that flow from data, data base rights and intellectual property rights. Even data transferred by smart *legal* contracts could give rise to a proprietary claim in those contract rights. However, were pure data is transferred via smart contracts that are simply code and that fall short of constituting a legally valid, binding and enforceable contract (a smart legal contract) that analysis would not benefit them and would not attract contract rights. This may be unsatisfactory for those claiming their smart contracts have monetary value and are objects of property but cannot demonstrate a legal basis for a proprietary interest in them.

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[28] See: Law Commission of England and Wales reference to Lord Justice Floyd in Your Response Ltd v Datateam Business Media Ltd [2014] EWCA Civ 281, [2015] QB41 at 42 in Digital-Assets-Consultation-Paper-Law-Commission, Chapter 3 paras 3.7 to15.24 from p36 accessible at https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2022/07/Digital-Assets-Consultation-Paper-Law-Commission-1.pdf.

[29] See: Digital-Assets-Consultation-Paper-Law-Commission, Chapter 15 paras 15.18 to15.24 from p315 accessible at https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2022/07/Digital-Assets-Consultation-Paper-Law-Commission-1.pdf.

The Law Commission of England and Wales examined this issue and observe that some digital assets (including crypto-tokens and crypto assets) are treated as objects of property by market participants and that:

> "[w]hile the law of England and Wales is flexible enough to accommodate digital assets... certain aspects of the law now need reform. This will ensure that digital assets benefit from consistent legal recognition and protection, in a way that acknowledges the nuanced features of those digital assets"

The Law Commission of England and Wales consulted on a reform to the law of England and Wales to introduce a new class of personal property rights "data objects" that apply to digital assets (including crypto-tokens and cryptoassets) distinct from things in person or things in action.[30] The Law Commission of England and Wales have now concluded their consultation and have recommended that a new "third category of thing to which personal property can relate" be introduced.

The Law Commission of England and Wales proposal is for **data objects** to be those which satisfy its indicia, including:

(1)   it exists independently of persons and exists independently of the legal system (as explained further in the Law Commission of England and Wales report); and

(2)   it is rivalrous as endorsed by the Court of Appeal in **Tulip Trading** (i.e. a resource if used by one person (or a group of persons) necessarily prejudices the ability of others to make equivalent use of it at the same time. The Law Commission of England and Wales distinguish that type of digital asset from other digital files where persons cannot be excluded).

A link to the Law Commission of England and Wales Digital Assets Summary of the final report is included at Annex D. It is worth emphasising that the Jersey law of property (and related matters such as insolvency and security) is separate and distinct from the property laws of England and Wales with roots in civil law[31] (and Norman customary law) rather than the common law of England and Wales. However, as to matters of intangible movable property, English law principles and those from the Commonwealth are more familiar as evident in the security interests regime over intangible movables. Therefore a change in the English law position as to the recognition of data objects is likely to carry weight in Jersey although it would not be prescriptive as to what Jersey law should be.

The last characteristic that the data object be "rivalrous" is of note in the Jersey context. It may assist in the establishment of data governance or data stewardship services in Jersey via data trusts or data foundations.

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[30] See summary paper: https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2022/07/Digital-Assets-Summary-Paper-Law-Commission-1.pdf and full paper https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2022/07/Digital-Assets-Consultation-Paper-Law-Commission-1.pdf.

[31] A Dessain and M Wilkins, Jersey Insolvency and Asset Tracking, Key Haven Publications, 4th ed, 2012.

Jersey Data Trusts

In Autumn 2021, Digital Jersey Limited, the island's government-backed economic development agency, convened a working group to explore Data Stewardship ("**Working Group**"). The Working Group observed the striking parallels between the good governance skills needed for data stewardship and those already present in Jersey serving the financial services ecosystem which could expand into a new asset class, data (situate anywhere in the world). At its core is a central governance structure a "data institution", which could be a Jersey law trust or foundation or similar. This data institution would hold rights to data assets and be operated and overseen by experienced regulated, fiduciaries whether a trustee, guardian, council of members or similar. These fiduciaries would provide a robust governance structure to induce trust and confidence of data providers in holding data assets and oversee opportunities to monetise that data by providing and accelerating controlled access to it (data sharing). The idea being that the greater the volume of data stewarded, the greater the volume of data shared, the greater the return in the strategic use and value of that data.[32] However, to establish a trust, there must be trust property.

To create a data trust, the starting assumption is that the trust property would need to comprise data (in whole or in part). If so, recognising a proprietary interest in pure, unstructured data or information would be helpful and give flexibility to hold and steward unstructured data in Jersey data trusts. The question is whether that starting assumption is correct i.e. whether a data trustee needs a proprietary interest in unstructured data to establish a trust over it or rights relating to it? Views in response to this question are welcome.

One answer is "no", a proprietary interest over pure data is not required to establish a data trust (or foundation) due to the breadth of the concept of trust property. Trust property can vary from cash, real estate, stocks and shares to contract rights. The principle limitation in Jersey is that, to be valid, the trust should not "*purport to apply directly to immovable property situated in Jersey*"[33]. Accordingly, rights flowing from or relating to the data can be held under existing principles of law without needing to characterise or re-characterise interests in the data itself. For example:

- contract rights in data sharing provisions and agreements could constitute trust property,
- the medium in which data is stored or generated could constitute trust property (e.g. a sensor, hard drive, USB stick); and
- data base rights in a data base (ie structured data) and IP give rise to proprietary rights that could constitute trust property.

This point has been proven by the Digital Jersey pilot project, LifeCycle, a Jersey law governed data trust established for the purpose "*to create a new database about local cyclists, community cycling and*

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[32] Extracts taken from German E and Harker R "*AI, Machine Learning & Big Data 2022 Jersey Chapter, Fourth Edition*" available at www.globallegalinsights.com and https://www.monocerosinnovation.com/wp-content/uploads/2022/06/AI-Machine-Learning-Big-Data-2022-Fourth-Edition.pdf.
[33] Article 11(2)(a)(iii) of the Trusts (Jersey) Law 1984 available at: https://www.jerseylaw.je/laws/current/Pages/13.875.aspx?revisedredir=true.

cycling conditions in Jersey with a particular focus on cycling as a mode of transport. The data will be aggregated and analysed by the trustees and, if the trustees deem appropriate, shared with third party data users"[34]. The LifeCycle Data Trust did not claim proprietary interests over unstructured data to enable it to establish a trust able to control data via its trust property, being contract rights, sensors and database rights. It should be noted that LifeCycle was a non-commercial application of a data trust and so this point may need to be revisited for a commercial structure.

The contrasting answer is "yes", it may be preferable to introduce a new category of property rights so that these property rights are clear and unequivocal and to give flexibility to cater for unstructured data not held in a medium or that do not attract contract rights, intellectual property rights or other ancillary rights.

> **Should Jersey introduce a new category of property rights or otherwise recognise "data objects" (however defined) as capable of constituting movable property?**

If yes, such an approach would involve assessing: the wider characteristics of data; its ability to be owned and to satisfy the criteria of "thingness"[35]; and resolve its key differentiating characteristic from other assets: the fact that data, in particular data in electronic form, is not finite, it is not owned. Note that as regards ownership, data subjects have certain rights to data relating to them under the data protection regime but are not considered to "own" that data.

Data begets data and data insights. As outlined above in the data objects discussion, electronic data, generally, can be copied limitless times, aggregated into datasets, anonymised, transferred and stored in several locations and is difficult to delete completely. This makes the task of recognising proprietary rights in data generally extremely difficult. One practical approach would be for Jersey law to recognise proprietary rights in a more limited sub-set of data, similar to the rights in "data objects" proposed by the Law Commission of England and Wales.

The recognition of proprietary rights in "data objects", could help a nascent Jersey data trust industry attract a greater range of data assets to be stewarded in Jersey. It being noted that the requirement for data to be "rivalrous" limits the types of data or information that could qualify as a data object. E.g. 1 Pure information is unlikely to qualify as a data object without looking further into the manner of its storage, recording or means of control. E.g.2 Data stored or transferred via a blockchain by way of a smart contract or as a digital asset may qualify other types of data transfer may not.

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[34] https://www.lifecycle.je/about.
[35] Law Commission of England and Wales data objects paper, page 22.

SCOPING QUESTIONS - PROBLEMS WITH THE CURRENT LAW

Questions to which we would like you to respond are in boxes.

Smart contracts

> **It is submitted that smart contracts are capable of being recognised and enforceable in Jersey as valid legal contracts subject to the ordinary rules of Jersey contract law (referred to as smart legal contracts or SLCs). Do you agree?**
>
> **If yes, do you consider that SLC should be subject to any specific conditions on formation e.g. human readable translations to be provided where the contract contains material terms written only in code?**

In considering your response please note the following:

Requirements for contracts to be in writing

The Law Commission of England and Wales in its summary on SLCs under English law has noted that source code can satisfy any relevant requirements for contracts to be in writing because:

> "*Source code can be considered a "mode of representing or reproducing words" because it is capable of being read by a person with knowledge of the relevant programming language, and translated into words...as source code can be visibly displayed on a screen or printout, it can be considered a mode of representing or reproducing words "in a visible form"*".

This position could be reflected under Jersey law to enable an approach to be taken in Jersey consistent with that stated for England and Wales. This would assist provide legal certainty in cross border transactions involving England and Wales (which make up a large percentage of Jersey's international transactions).

Contractual Consent

At a time prior to *Hore & Anor v Valmorbida & Anor*, the author wrote about her reservations in adopting a blanket objective approach and the erosion of the inherent flexibility afforded by the customary law of contract[36] in the context of SLCs. The contractual freedom embodied in "*La convention fait la loi des parties*" assists with the legal recognition of smart contracts, because it embodies the freedom which:

> "*entails that a person is free to decide whether or not to bind himself by contract and to determine the consent of his commitment, the corollary of that . . . consensus ad idem [meeting of the minds] means that intention will suffice, without there being any requirement as to form*."[37]

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[36] E German, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review – para 30. See Footnote 9.

[37] H Beale, A Hartkamp, Kötz and D Tallon (2002) *Ius Commune Casebooks on the Common Law of Europe, Cases Materials and Text on Contract Law* North America (US and Canada): Hart Publishing, para 1.3.2.A at 115.

Applying the objective approach to contractual consent[38], makes consent become mechanical in the SLC context because consent will effectively be deemed (or not) from the written word of the contract[39] and its circumstances. If a SLC is entered into, consent could therefore be deemed given directly or indirectly by the principal.

The distinction between the objective v subjective approach is important because it can lead to very different outcomes in practice. The examples below highlight these different outcomes in the blockchain context.

   (a) *Example 1: transferring a token from Alice to Bob via smart contract (running human-parsable code).* Applying the objective approach to contractual consent (which is the current law post- *Hore & Anor v Valmorbida & Anor*), the outcome is assessed by the facts: the smart contract is agreed when the code is run. This automatically performs the terms of the contract and Bob becomes the tokenholder. Applying the subjective approach, the outcome is unchanged if the code reflects the human-parsable terms.

   (b) *Example 2: transferring a token from Alice to Bob via smart contract (running code that is not human-parsable).* Computer code that is not human-parsable cannot be reviewed by the counterparties. Taking the objective approach (which is the current law post- *Hore & Anor v Valmorbida & Anor*), some construction of the facts could lead to an argument that contractual consent had been given to terms the parties had not read. e.g. the parties thought the token transfer would be immediate upon execution, but the code provides that transfer will take one month.

This type of situation could arise under the Guernsey Ordinance (defined below) as it gives legal effect to contracts **not** reviewed by a human (see para 101 *et seq*). This paves the way for artificial intelligence software to contract "on behalf" of human or corporate principals. This may be efficient for a contract with simple terms e.g. if your car's smart wallet is debited when it drives over a smart parking meter, but may cause issues with a more complex contract or series of contracts. It is foreseeable that situations could arise where contracts are difficult or expensive to unwind or may expose parties to risks and liabilities that cannot be avoided by simply unwinding the contract.

By comparison, applying the subjective approach, if the terms of the contract are not human-parsable, it may be difficult to show that the minds met or that there was a *volonté* of the parties. It could also build in some flexibility for consumer contracts to protect against inequitable outcomes. The simple inclusion of a human parsable translation could avoid any future discussion on the subject without needing to revisit the objective v subjective approach.

   (c) *Example 3: transferring a token from Alice to Bob via smart contract (running code that is not human-parsable) the terms of which will transfer the token to Charlie if the DeFi reaches X. Neither Alice nor Bob realise there could be an onwards transfer.* Applying the subjective approach, Alice and Bob

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[38] The objective test is the prevailing test and was held to be "appropriate and preferable to the subjective approach" in *Hore and Little Wing Investments Limited v Valmorbida and Untitled - Copyright Limited [2022]JRC202*.

[39] The written word would include the source code (as outlined above).

could claim they had not agreed to the onwards transfer as it did not reflect their intentions. This argument would not be available if the objective approach were applied. Taking the objective approach (which is the current law post- *Hore & Anor v Valmorbida & Anor*), the facts would show that the code contained the contractual terms that were exchanged between Alice and Bob.

The above examples illustrate that, whilst there are advantages to the objective approach in terms of simplicity and contractual certainty, the disadvantage is the potential for unjust outcomes to arise.[40]

To mitigate the risks of inequitable outcomes arising, certain safeguards could be deployed including:

(a) *introducing a requirement to provide human parsable translation and explanation of the key terms of the code*. The document would assist explain key contractual terms and could prevail over the code in the event of any inconsistencies between the translation and the base code. A "translation" would be helpful in any event (consumer or non-consumer) where the base code deprecates over time and becomes unreadable, unsupported (and unable to run on the system) and so would be practically and evidentially useful to document the parties original intentions.

(b) *introducing a requirement to confirm that they have obtained legal advice*. Substantial transactions involving consumers entering into smart legal contracts could be subject to a requirement for consumers to receive legal advice explaining the legal consequences of entering into the transaction. This may not be necessary for simple purchases of low-value fractionalised crypto assets or tokens but may be more relevant for loan agreements or transactions over a stated threshold e.g. the equivalent of £20,000 or more, this can be evidenced by the protocol allocating a node to authorised law firm(s) who will use it to indicate advice has been given to the consumer during the transaction approval process;

(c) *introducing a limit on consumer holdings of crypto balances* - a custodian could be required to set an upper limit for balances of consumer crypto wallets. This would not apply to sophisticated individuals or corporates and could exclude balances relating to central bank issued stable coins.

(d) *introducing a consumer lending limit on smart legal contract lending transactions* – a lender would be restricted from offering loans to consumers over a certain amount e.g. £50,000 for transactions involving smart legal contracts. Again, this would not apply to sophisticated individuals or corporates and could exclude central bank issued stable coins.

(e) *Introducing new legislation concerning implied terms, unfair contractual terms and or rights of third parties.*

Respondents to the Consultation are welcome to suggest additional safeguards and comment on the appropriateness of the above.

These safeguards fulfil two key purposes:

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[40] Sir Philip Bailhache observes in his article at para 13 that "a subjective test makes for more individualised justice" citing *La Motte Garage* as an example where the objective and subjective tests produce different results.

1. *protecting consumers with baked- in opportunities for the transaction to be explained and for evidence to be collated by the counterparty that the consumer both understood and consented to the transaction (such as reference to any human-parsable elements of the written contract and/or other evidence showing the acceptance of the terms such as by conduct.41);*

2. *protecting chains of transactions vulnerable to attack by consumers claiming their consent was invalid. Blockchain and smart contracts offer the potential to expedite entire contractual chains. This would provide certainty in the subsequent chain of transactions and mitigate the risk that subsequent transferors were transferring assets that they did not have title to (pursuant to the maxim nemo dat quod non habet).*

In practical, contract drafting terms, the safeguards would need interpretation provisions in contracts to be carefully drafted. In addition to explaining what documents were incorporated by reference, whether language or code prevails, it should explain:

- what code libraries were incorporated or incorporated by reference

- the parties intention as to what happens with code deprecation or when code becomes obsolete

- the parties intention as to what happens software is unsupported or has new features

- matters relating to the code base and the parties' mutual intention as to what happens if modification of the code is not possible and the code simply cannot run for any reason (not limited to code deprecation)

Respondents should consider the lack of industry standards around code deprecation and the likely impact that being unable to run code (e.g. due to code deprecation) will result in parties being unable to perform all or some material functions of smart contracts/SLCs. This by contrast to traditional contracts where parties can include terms that; (i) deem modifications be made to contractual terms to the minimum extent necessary to make the contract valid, legal and enforceable; or failing that, (ii) delete such term (or part thereof), again without affecting the validity and enforceability of the contract.

SLC Execution Requirements
It is submitted that the execution of SLCs should be subject to the ordinary rules of Jersey contract law. This would include the validity of applying electronic or digital signatures to SLCs where necessary.

Whilst Jersey law does not recognise the concepts of deeds in the same manner as recognised under Jersey law, it is noteworthy that the Law Commission of England and Wales has expressed doubt over whether English law deeds defined wholly or partly by code can be created.[42] The Law Commission of England and Wales have distinguished such deeds from those recorded in natural language, the

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[41] Professor Fairgrieve notes there are subjective elements in the English objective approach, see D Fairgrieve, Institute of Law Jersey (2018): *Jersey Law Course 2018–2019 Law of Contract*, It may be that the solution is not a binary choice between subjective or objective, but an approach which blends the two.
[42] **Law Commission of England and Wales, Smart Legal Contracts** page 14.

performance of which are automated by code which could be signed, witnessed and attested in the ordinary way[43].

Are there specific rules of contractual interpretation that should apply to smart legal contracts?

Should a reasonable coder test be adopted?

As above, rules could include reference to the adoption of a reasonable coder test or specify the circumstances when human parsable translations must be provided such as a business process document or term sheet and which contractual interpretation should prevail E.g.1 a requirement to provide a human parsable translation for material terms of consumer contracts. E.g.2 a default rule of interpretation stating that the interpretation of material terms written in human parsable language (where provided) should: (i) form part of the contract and (ii) prevail over the terms of source code in the event of conflict (or vice versa) even where the human parsable term has been "translated" from source code.

"Reasonable coder" Test
On the subject of interpreting coded terms, the Law Commission of England and Wales has published a "reasonable coder" test for interpreting coded terms. [44] The test involves asking what a *"person with knowledge and understanding of code would understand the coded term to mean"*. The reasonable coder will be required to:

> "*explain the effect of certain combinations of words, and give their reasoned opinion as to what the code appear to instruct the computer to do*".

The Law Commission of England and Wales acknowledge that this would enable a nuanced development to the existing principles of interpretation.

This test was preferred by the Law Commission of England and Wales to a reasonable test or a functioning computer test.

Natural Language Comments Contained in Source Code
The Law Commission of England and Wales considered the admissibility of natural language comments contained in source code and concluded that such comments "*can still be admissible as a useful aid to the interpretation of the coded terms*". It may be helpful for Jersey law to reflect this position for reasons of certainty and consistency (as noted above).

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[43] The Law Commission of England and Wales referred to the requirements set out in *R (on the application of Mercury Tax Group Limited and Masters) v Her Majesty's Revenue & Customs [2008] EWHC 2721 (Admin)* for signatures and attestations to form part of the same physical document.
[44] *Law Commission of England and Wales, Smart Legal Contracts* page 16.

Consumer Contracts

As noted above, contracts drafted wholly or partly in code do raise concerns in terms of accessibility, transparency and potential barriers to being understood particularly in contracts with individuals and unsophisticated parties.

The Law Commission of England and Wales flagged similar concerns framed in the context of consumer protection laws and whether SLCs can satisfy the requirements under the law of England and Wales for consumer contracts to be transparent for non-code literate consumers. [45] The transparency requirement incorporates a further requirement for terms to be "*expressed in plain and intelligible language and be legible*". The Law Commission of England and Wales therefore stated that a business-to-consumer SLC drafted in code and not accompanied by a natural language explanation may be more susceptible to a finding of unfairness.

In addition, the Law Commission of England and Wales highlighted concerns around the inability to bring a SLC to an end earlier than its automated termination date and have recommended practical solutions to be introduced to enable consumers to treat a given contract as terminated.

Jersey does not have the full suite of consumer protection legislation present in England and Wales and may wish to address these issues and particularly that of transparency and accessibility in a different way by requiring a natural language translation to be provided to consumers and natural persons. Similar concerns may exist for small to medium sized corporates who also lack the resource for professional advice. These concerns may become increasingly relevant as the world moves to adopt central bank issued cryptocurrencies and banking products.

The Law Commission of England and Wales have not recommended that the laws of England and Wales be reformed to require natural language translations on the basis that England and Wales have existing consumer protection legislation that requires this[46].

Security Agreements as SLCs

The State of Wyoming in the United States of America has enacted specific blockchain legislation, which includes in the 2019 Wyoming Digital Asset Statute, as amended in 2021[47]. The 2019 Act makes express provision for smart contracts to be used by secured parties in digital assets, algorithm or other code-controlled automated transactions, including transferring and taking proprietary control of a digital asset.

Respondents may consider whether Jersey law governed security agreements should take the form of SLCs and if yes, whether they should be subject to additional requirements in addition to the Security Interests (Jersey) Law 2012 ("**SIJL**"). Articles 1, 1A and 15 do not appear to preclude security interest

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[45] *Law Commission of England and Wales, Smart Legal Contracts* page 25.
[46] *Law Commission of England and Wales, Smart Legal Contracts* page 26.
[47]Enrolled Act No. 39, Senate Sixty-Fifth Legislature Of The State Of Wyoming
2019 General Session available at https://www.wyoleg.gov/Legislation/2019/SF0125 as amended by BILL NO. HB0043 Enrolled Act No. 61, House Of Representatives Sixty-Sixth Legislature Of The State Of Wyoming 2021 General Session available at https://wyoleg.gov/Legislation/2021/HB0043.

agreements taking the form of SLCs noting that the additional steps of attachment and perfection would still be required which may have different practical implications for SLCs.

Article 1 of SIJL makes reference only to a "*security agreement*" that "*creates or makes provision for a security interest, and includes – (a) an agreement that varies, renews or extends a security agreement; and (b) writing that evidences a security agreement*."

Article 1A states that the form of the transaction does not matter, which purports to include SLCs.

"1A   Meaning of "security interest"

(1)   In this Law, "security interest" means an interest in intangible movable property, being an interest that, under a security agreement, secures payment or secures the performance of an obligation.

(2)   For the purposes of paragraph (1), the following do not matter –

(a)   the form of the transaction that creates or provides for the security interest;

(b)   the person who has title to the relevant collateral.

(3)   Without limiting paragraph (1), in this Law, "security interest" includes the interest of a secured party under a transfer of title by way of security, under a mortgage, pledge, or contractual lien, or under any other encumbrance that is by way of security."

To the extent that an SLC is deemed to constitute an agreement, Article 15 would operate to enable the SLC to form the agreement.

Article 15   Security interest created by agreement
(1)   A security interest to which this Law applies may only be created by agreement.

Amendments to SIJL may be desirable to provide expressly for the manner of attachment (possession or control) for perfecting a security interest taken directly over a smart wallet, cryptographic keys or similar but that falls outside the scope of this Consultation.

We conclude it would be preferable to amend SIJL to expressly and comprehensively take security over SLCs and crypto-assets more generally (including simple smart contracts). Do you agree?

(i) issues with contractual consent and authority such as vice de *consentement* (whether by dol, *erreur* or misrepresentation)

(ii) contractual remedies such as new contractual remedies for SLCs?

A review of the Jersey law of contracts concerning immovable property such as *hypothecs* falls outside the scope of this review. The Commission are interested to hear views on whether reform in this area would be welcomed, in particular to modernise the conveyancing process so that conveyancing may be dealt with outside a Samedi court process (as with share transfer properties). Please use the additional comments space to do so.

> **Are there specific rules that should be adopted relating to:**
>
> **(i) issues with contractual consent and authority such as vice de *consentement* (whether by dol, *erreur* or misrepresentation)**
>
> **(ii) contractual remedies such as new contractual remedies for SLCs?**

One advantage of smart contracts is that they enable faster transaction speeds. Consequently, it is foreseeable that remedies to contractual disputes may be demanded at a similar pace to contract formation. There may be a demand for faster rather than traditional legal remedies. As arbitration can be more time and cost effective than legal proceedings, it may be possible for an arbitration function to be incorporated into the consensus mechanism on the blockchain. In such cases, the nodes participating in the arbitration consensus would need to examine the evidence on an objective basis, probably by looking only to the written material (including code) available on the blockchain ecosystem and written submissions of the parties. If so, the same approach taken to contract formation (subjective, objective or a blend) may need to be applied to contractual remedies.[48]

In terms of traditional remedies, it is submitted that the usual rules of Jersey contract law should apply to *dol* (fraudulent or false conduct), *violence, erreur and* misrepresentation[49] The Law Commission of England and Wales reached a similar conclusion as to the laws of England and Wales (which differ in their substantive law to Jersey law) as to the laws on common mistake, misrepresentation, duress and undue influence.

The Law Commission of England and Wales noted that the use of SLCs could increase the instances of "*defective performance*" where code performs in ways in which the parties did not intend. The Law Commission of England and Wales discussed certain practical difficulties with regard to:

- rectification given that the defect may only be identified after the code has been executed and contract performed and. In such circumstances, the Law Commission of England and Wales consider that rectification may still be "*of value insofar as it provides a basis for the award of other remedies, such as breach of contract*".
- restitutionary remedies if there is no mechanism to prevent the execution of the code. In such circumstances reference is made to a new type of "practical justice" whereby a court could order ""*an equal and opposite" second transaction on the blockchain" which effectively mirrors (in reverse) the effects of the original transaction even through the original transaction would remain on the blockchain*".

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[48] E German, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review para 42 page 176. See Footnote 9.
[49] E German, The Recognition of Smart Contracts in Jersey (2021) The Jersey and Guernsey Law Review para 88 to 93 pages 186 to 187. See Footnote 9.

Does Jersey needs to recognise the concept of an electronic agent e.g. similar to that recognised in Guernsey?

There is a line of opinion and legislation supporting the notion that a smart contract is an agent for a human operator.

The argument in support of this notion is that: (i) smart contracts on Ethereum each have an address and can store value or data; (ii) the networked computer running programs ultimately operated by the human operator is the agent for such human operator; and (iii) the smart contract is autonomous (self-governing) insofar as it is only controlled by the code. It is this autonomy that distinguishes smart contracts from other technologies (such as the internet, which is simply a medium allowing parties to communicate, but, where the parties remain in control). It is important because it means that certain functions can be automated e.g. a blockchain ledger within a blockchain protocol can be automatically and instantaneously updated on the transfer of a token (which itself can be automatically transferred) without human oversight, review or approval.

However, the smart contract is not fully autonomous, it is simply code run on a network of computers and controlled by the code. In its current state, the smart contracts would not have discretion to act other than to execute the code as written. The author submits that the use of the term "agent" is therefore a potential misnomer in the current context of SLCs adding a layer of legal complexity that the technology does not yet warrant. Electronic agency is likely to be more relevant in the sphere of artificial intelligence noting that issues of accountability and transparency have not been addressed.

The fact that a smart contract has an address and can store value does not mean that it owns the value it holds. It is similar to (i) a bank account, with a distinct number capable of holding a balance for someone; or (ii) a humble vending machine, holding cans until purchased. Accordingly, it is the author's view that the smart contract is not capable of being appointed as an agent. A respondent may have a differing view.

Szabo[50] rightly expressed a concern about humans not understanding the underlying code controlling the smart contracts. In writing about smart contract protocols he observed that:

> *"A protocol in computer science is a sequence of messages between at least two computers . . . These programs act as proxies, or agents, for human users, who communicate their preferences via users' interfaces. We distinguish protocol endpoints by names such as 'Alice' and 'Bob' . . . which may or may not be under the control of, or taking actions contrary to the intent of, the human user."*

This concern is amplified applying the objective approach to contractual consent as this focuses on the written contractual terms (rather than intentions) which may be concluded between the parties' "agents" (computer programs) and contain terms or have consequences that neither party intended.

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[50] Nick Szabo is a computer scientist and legal scholar. He distinguishes between the "paper era" and the "digital era" in N Szabo (1997) "Formalizing and Securing Relationships on Public Networks" https://nakamotoinstitute.org/formalizing-securing-relationships/.

This would be exacerbated where parties cannot identify each other in order to make contact and independently verify their respective intentions.

As Szabo observes:

> *"Human users typically do not have full knowledge of the protocol in question, but rather a metaphorical understanding ... Unlike most real-world contracts, protocols must be unambiguous and complete."*

A party's "metaphorical understanding" (or lack of understanding) of the code may present a challenge to the purported "agency" relationship as it exposes the principal to the risk of being bound to unintended consequences resulting from that code. This lack of understanding may not be realised until after the contract has been performed in circumstances where that SLCs automate performance. This underlines the importance of parties receiving a natural language translation of the code so as to form contractual intentions (whether subjective, objective or a mixture) and the extent of the authority given to the agent.

Some jurisdictions, *eg* Guernsey and in the United States pursuant to 15 USCS § 7006 (3)[51], do recognise computer programs as electronic agents and the resulting contracts formed by such electronic agents, even where the human counterparties had not read the code. The advantage of accepting this risk is the resulting contractual certainty. The disadvantage of this is developing a new form of agency for non-natural persons with limited transparency over decision-taking and accountability (a concern when electronic agency extends to IoT and AI activities and the so called "black box problem"), the risk of defective authority and defective performance.

Whilst not dealing with the point of agency directly, the Law Commission of England and Wales flagged the risk of unilateral mistake under English law where parties contract via computer programs i.e. coded terms of a SLC are offered and accepted by computer programs on behalf of the parties. Unilateral mistake under English law is where "*it can be shown that (at the time of entry into the contract) a party was mistaken as to a term of the contract, and the other party knew of this mistake*" which renders the contract void. To deal with this situation, the Law Commission of England and Wales recommended adapting the existing English law test of unilateral mistake. The adapted test for determining whether a non-mistaken party has knowledge of the mistaken party's mistake, should address: whose knowledge of the mistake is relevant; the timeframe for assessing that person's knowledge; and the type of knowledge required. This revised test focuses on knowledge (and thereby understanding) of the contractual terms. Whilst not expressed, it is assumed that the knowledge will be that of the underlying principal or an agent on its behalf acting with delegated authority (that covers discretion to contract), vested in it by the principal.

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[51] According to 15 USCS § 7006 (3), the term "electronic agent" means "a computer program or an electronic or other automated means used independently to initiate an action or respond to electronic records or performances in whole or in part without review or action by an individual at the time of the action or response."

Guernsey Ordinance

The Bailiwick of Guernsey (with a similar customary law heritage to Jersey including in relation to contract law) has adopted legislation that recognises smart contracts are concluded using an electronic agent.[52] The Electronic Transactions (Electronic Agents) (Guernsey) Ordinance, 2019 (the "**Ordinance**") recognises electronic agents can conclude contracts and provides that such a contract:

"*shall not be denied legal effect, validity, enforceability or admissibility solely because its making, formation, creation or delivery involved the action or use of one or more electronic agents*."

The Ordinance provides that contracts can be formed either: (i) among electronic agents;[53] (ii) between an electronic agent and a natural person;[54] or (iii) with information in electronic form:[55] "where no natural person was aware of, or reviewed, the electronic agents' actions or the resulting terms"[56] or reviewed such information.

This gives a statutory recognition to the practice of counterparties accepting terms and conditions ("**T&C**") that they have not read. As noted above, there is a difference between choosing not to review T&C and not being able to read T&C (*e.g.* if they are not accessible in a natural language). Whilst parties are clearly free to choose to contract even when not able to read the T&C, it is not without risk. If smart contracts become a prevalent method of contracting (especially with individuals and consumers), this approach could have significant risks. For example, an individual may acquire a token (*via* smart contract) that results in losing their life savings.

Absent of giving source code legal personality, an electronic agent would create a potentially new form of agency where:

(a) the agent (the source code) is not a legal person;

(b) the agent's actions are limited to running pre-determined code (that the principal may not be able to read or understand) and the agent is unable to exercise any discretion to take a different course of action;

(c) the principal is unaware of the extent of the authority delegated to the agent if the principal does not understand the code being run.

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[52] "Electronic agent" is defined in the Ordinance as:

"a computer program or electronic or other automated means used independently to initiate an action or to respond in whole or in part to information or actions in electronic form or communicated by electronic means, without review or action by a natural person."

[53] Article 2(3) Ordinance.
[54] Article 2(4) Ordinance.
[55] Article 2(5) Ordinance.
[56] Article 2(3) Ordinance.

Bowstead & Reynolds[57] (the English law authority on agency adopted as authority under Jersey law)[58] define "agency" as:

> "... *the fiduciary relationship which exists between two persons, one of whom expressly or impliedly manifests assent that the other should act on his behalf so as to affect his legal relations with third parties, and the other of whom similarly manifests assent so to act or so acts pursuant to the manifestation ...*"

This definition clearly demonstrates that the agent must be: (i) a legal person; (ii) a fiduciary; (iii) appointed and authorised by the principal to affect legal relations; and (iv) able to act in accordance with such appointment and authority.

The new type of agency would not meet all of those elements: the first two elements are absent; the third element is satisfied through deemed authority; the fourth is satisfied because the actions of the agent (the code) are limited to running the code, illustrating that "the manifestation", the actual authority, must encompass the terms of the code—potentially problematic if the principal does not understand those terms. This raises the question of why does the code need to be an agent at all if the parties are simply running code that they are deemed to approve.

The central issue that this obfuscates is the interaction between: (i) the parties' understanding of the terms of the contract; and (ii) contractual consent. When the developments in artificial intelligence and Internet of Things technology[59] are overlaid with electronic agency, it is foreseeable that once the rights of the principal (to give actual consent to the contractual terms) are eroded, it may be difficult for the principal to re-assert those rights.

The question is whether Jersey should or can recognise electronic agents and if yes whether legislation similar to the Ordinance would be beneficial.

DAO

> **Does Jersey need to recognise the concept of a DAO? If yes, would this be a for profit or not-for profit DAO or both?**
>
> **Should Jersey partnerships, companies and/or foundations be used as a legal wrapper to a DAO or a bespoke entity?**
>
> **How should Jersey distinguish itself from other jurisdictions active in this space. Where should liability be attributed (to investors, to developers, to the DAO itself or a mixture)?**

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[57] Bowstead & Reynolds on Agency (2017) 21st edn. Consolidated Mainwork Incorporating Second Supplement. UK: Sweet & Maxwell Ltd.

[58] *Izodia PLC v Royal Bank of Scotland Intl Ltd* 2006 JLR 346, para 77.

[59] For example, where household appliances are connected to the internet and have cryptocurrency wallets to purchase products online when their sensors detect such products are required, *eg* a fridge orders milk when it has run out, or a car pays for parking.

Digital Assets

Should Jersey introduce a new category of property rights or otherwise recognise "data objects" (however defined) as capable of constating movable property?.

A starting point for a "data object" could be the original Law Commission of England and Wales criteria for data objects as follows, since revised to a less prescriptive list of indicia:

(1) it is composed of data represented in an electronic medium, including in the form of computer code, electronic, digital or analogue signals;

(2) it exists independently of persons and exists independently of the legal system; and

(3) it is rivalrous.

Do you have any comments on any of the criteria and whether they would be appropriate in the Jersey context?

ANNEX A – GLOSSARY

Abridged from the Glossary of the Law Commission of England and Wales at page v of "Smart legal contracts: Advice to Government" November 2021 available at: https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2021/11/Smart-legal-contracts-accessible.pdf

	Term	Definition
1.	Algorithm	A set of mathematical instructions that must be followed in a fixed order and, if given to a computer, will calculate an answer to a mathematical problem.
2.	Bitcoin	A type of cryptocurrency which is supported by blockchain.
3.	Bitcoin blockchain or network	A blockchain which records transactions in the bitcoin cryptocurrency.
4.	Blockchain	A method of recording data in a structured way. Data (which may be recorded on a database or ledger) is usually grouped into timestamped "blocks" which are mathematically linked or "chained" to the preceding block, back to the original or "genesis" block.
5.	Code	A language used to give instructions to computers.
6.	Computer program	A collection of instructions written in code that are executed by a computer.
7.	Consensus mechanism	The process by which participants on a DLT system reach consensus that a new data entry should be recorded on the ledger. The consensus mechanism is set by the software underlying the DLT system.
8.	Cryptoasset	A digital asset created or implemented using cryptographic techniques.
9.	Cryptocurrency	A form of cryptoasset which is used as a medium of exchange on a DLT system. Bitcoin and Ether are examples of cryptocurrencies.
10	Distributed ledger	A digital store of information or data. A distributed ledger is shared (that is, "distributed") amongst a network of computers (known as "nodes") and may be available to other participants. Participants approve and eventually synchronise additions to the ledger through an agreed consensus mechanism.
11	Distributed ledger technology ("DLT")	Technology that enables the operation and use of a distributed ledger.
12	Ether	The native cryptocurrency of the Ethereum network.
13	Ethereum	A blockchain based, permissionless, public DLT system.

14	Fiat currency	Currency that is issued by a government and is accepted to have value independently of the material from which it is made.
15	Hybrid contract	A smart legal contract, some terms of which are defined in natural language and other terms of which are defined in the code of a computer program. Some or all of the contractual obligations are performed automatically by the code. In addition, the same contractual term(s) can be written in both natural language and in code.
16	Mining	The process by which participants on a DLT system solve a computationally intensive mathematical problem so that data can be added to the distributed ledger. Mining is typically a feature of permissionless DLT systems, which require participants to solve mathematical problems as part of the consensus mechanism. Permissioned DLT systems may use different consensus mechanisms, and so may not necessarily involve mining. Language that has developed in the usual way as a method of communicating between people, rather than language that has been created for a specific purpose or application.
17	Natural language	Language that has developed in the usual way as a method of communicating between people, rather than language that has been created for a specific purpose or application.
18	Natural language contract/traditional contract	A contract in which all of the terms are recorded in natural language, either orally or in writing.
19	Node	A participant in a DLT system.
20	Off-chain / on-chain	"Off-chain" refers to actions or transactions that are external to the distributed ledger or blockchain. "On-chain" refers to actions or transactions that are recorded on the distributed ledger or blockchain.
21	Oracle	An external data source which transmits information to a computer program.
22	Permissioned	Requiring authorisation to perform a particular activity.
23	Permissionless	Not requiring authorisation to perform a particular activity.
24	Permissioned DLT system	A DLT system in which authorisation to perform a particular activity on the system is required.
25	Permissionless DLT system	A DLT system in which authorisation to perform a particular activity on the system is not required.
26	Private DLT system	A DLT system which is accessible for use by a limited group of participants.

27	Private key	A string of data that is unique to a participant on a distributed ledger and is known only to the participant. A participant can digitally sign a transaction by combining the transaction data with their private key.
28	Pseudonymity	The practice of using a false or fictitious identifier which conceals a person's real identity.
29	Public DLT system	A DLT system which is accessible for use by the public.
30	Public key	A string of data that is unique to a participant on a distributed ledger and is shared with other participants. A participant's public key can be used by the recipient of a transaction to confirm the authenticity of the transaction
31	Smart contract	Computer code that, upon the occurrence of a specified condition or conditions, is capable of running automatically according to pre-specified functions.
32	Smart contract platform	A DLT or other network upon which a smart contract may be deployed.
33	Smart legal contract	A legally binding contract in which some or all of the contractual terms are defined in and/or performed automatically by a computer program. In the UK, the Law Commission of England and Wales advised the UK Government that there are essentially three forms a smart legal contract can take, depending on the role played by the code. These are: • natural language contract with automated performance; • hybrid contract; or • solely code contract. **This Consultation queries the third form "solely code contract" for Jersey law purposes and whether or not such smart contracts can constitute legal contracts under Jersey law. Responses are invited in relation to this aspect of the definition of Smart legal contract in all instances particularly in the consumer context without being accompanied by a human parsable natural language translation.**
34	Solely code contract	A smart contract in which all of the terms are defined in, and performed automatically by, the code of a computer program.

35	Token	A type of digital asset. A token typically represents something else that exists either digitally or physically.
36	UKJT Legal Statement	UK Jurisdiction Taskforce, Legal statement on cryptoassets and smart contracts (2019).
37	Unilateral contract	A contract where one party (the offeror) makes a promise in return for performance by the other party (the offeree), but the offeree does not promise to perform so that only the offeror is bound under the contract. The contract forms when the offeree fulfils the specified condition

ANNEX B – ENGLAND & WALES LAW COMMISSION SMART LEGAL CONTRACTS SUMMARY

Please refer to pages 3 -9 inclusive.

See: https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2021/11/6.7776_LC_Smart_Legal_Contracts_2021_Final.pdf

ANNEX C – EXTRACT

Can smart contracts create enforceable contracts under Jersey law?
This section examines the traditional requirements for creating a contract under Jersey law and shows how smart contracts are capable of satisfying each requirement.

3.1 Choice of law
For Jersey law to apply to a smart contract, it should be governed by Jersey law. This could be determined by the governance documents of the relevant blockchain or by a term of the specific smart contract. The ordinary methodology for determining the governing law of traditional contracts should apply, i.e. parties make an express choice or take into account, for example, their physical locations, the situs of an asset, performance of services or the jurisdiction of incorporation of an issuer.[60]For example, Jersey law would be an appropriate governing law for smart contracts relating to immovable property in Jersey or tokens issued by a Jersey company. Where neither the identity nor location of the contracting parties is known, the architects of the blockchain ecosystem would need to select an appropriate governing law agreed by those participating in the network.

Traditional rules of private international law focus on the *lex situs* of tangible property. However, for dematerialised intangible property, analysis has previously focused on the situs of the ledger (book entry) recording the proprietary rights.[61] The decentralised nature of the blockchain network can complicate this analysis as DLT systems often have a cross-border dimension making it "less than clear where assets and their records are located in a DLT environment."[62]

Therefore, parties intending Jersey law to apply to their smart contract should include an express term to that effect (although this does not prevent claims that another governing law applies). Where there is a conflict of laws, there is a good argument to suggest that the ordinary conflict of law principles should apply. The UKJTF concluded likewise and suggested some factors to determine the governing law. These included:

(a) the location of (i) any relevant off-chain asset; (ii) any centralised control; (iii) a particular participant controlling a particular crypto-asset;[63]

(b) the law applicable to the relevant transfer (eg due to parties' choice).

3.2 Contracts
Assuming the parties choose Jersey law, either in the blockchain terms of usage or in the smart contract terms or Jersey law otherwise applies, the elements of forming a valid Jersey contract must then be satisfied. Smart contracts are capable of satisfying these requirements.

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[60] Notwithstanding the decentralised ledger, private permissioned blockchain ecosystems could nominate a jurisdiction where the ledger is deemed situs for compliance with relevant laws.
[61] Financial Markets Law Committee (2018) "Report: Distributed Ledger Technology and Governing Law" http://fmlc.org/ report-finance-andtechnology-27-march-2018/. Para 1.2. Para 4.4.
[62] Ibid, para 1.2.
[63] The UKJTF gave the location of storage of the private key as an example of control.

Where a smart contract transfers a store of value (monetary or otherwise) from Alice to Bob in exchange for a benefit (however defined), it is a contract for value or contrat à titre onéreux. Alice confers a right on Bob with the intention of securing a reciprocal benefit from Bob. A feature of smart contracts on the public blockchain is that the parties may be anonymous or pseudo anonymous, so Alice does not know that she is contracting with Bob. This is not unique to smart contracts. For example, when contracting with an agent, Bob might not know the identity of the agent's principal. Similarly with contracts concluded in e-market places (eBay or Airbnb etc), the counterparties might not be easily identifiable.[64] It is not a requirement of Jersey law that parties be known to each other to create legal relations, but it is of practical importance for serving notice and suing for breach of contract.

There are instances when the identity of the counterparty is relevant in so far as it affects the value and provenance of the subject of the contract, eg Bob buys Sir William's copy of La Glose. The book's value is affected by the provenance viz. that it was owned by Sir William. Buying a book from Alice would not justify the premium.

3.3 Contract formation
Jersey law requires the four keystones of (a) consent, (b) capacity, (c) (licit) objet, and (d) (licit) cause (per Selby v Romeril[65] and Marett v Marett)[66].

Smart contracts can satisfy these requirements although there are some novel features which may arise. Some traditional contracts involve additional formalities such as powers of attorney but even these requirements could be satisfied using blockchain technology.

Intertwined with consent is the need for the parties to intend to create legal relations. Smart contracts transfer a store of value from Alice to Bob in return for, eg, Ether. The mutuality of obligations[67] establishes that the arrangement is intended to create legal relations.

To give clarity to the position, the blockchain terms and conditions of usage could include an acknowledgement by the parties of their intention to enter into legal relations. The Guernsey Ordinance[68] deals with this by including a rebuttable presumption to this effect. Whilst not advocating a blockchain specific statute, a rebuttable presumption (in statute) could give an element of contractual certainty. However, this goes beyond the approach taken for traditional contracts.

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[64] The UKJTF notes at paras 20 and 156—
". . . *a smart legal contract between anonymous or pseudonymous parties is capable of giving rise to binding legal obligations . . . there is no requirement under English law for parties to a contract to know each other's real identity.*"
See also Siu Yin Kwan v Eastern Insurance Co Ltd [1994] 2 AC 199, 207.
[65] Selby v Romeril 1996 JLR 210.
[66] Marett v Marett 2008 JLR 384.
[67] The court in 1995/105 Dairy Hill Real Estate v Rent Control Tribunal (unreported) held that mutual promises are not enough alone to establish an intention to create legal relations.
[68] The Electronic Transactions (Electronic Agents) (Guernsey) Ordinance, 2019.

3.3.1 Consent

Pothier said the consent of the parties is the "*essence of the contract of sale*"[69] (and of contracts generally). Consent is required for parties to reach an agreement and is essential to the operation of the legal maxim enshrined in Jersey law "*La convention fait la loi des parties*"[70](the agreement makes the law of the parties). It is this key principle that promotes the inherent flexibility of Jersey contract law and assists with the legal recognition of smart contracts. The parties are free to reach a binding agreement by smart contract if they see fit.

Under Jersey law, valid consent requires (a) a definite offer to be bound; (b) an unequivocal acceptance of that offer; and (c) certainty of terms.

Remedies

One advantage of smart contracts is that they enable faster transaction speeds. Consequently, it is foreseeable that remedies to contractual disputes may be demanded at a similar pace to contract formation. There may be a demand for faster rather than traditional legal remedies. As arbitration can be more time and cost effective than legal proceedings, it may be possible for an arbitration function to be incorporated into the consensus mechanism on the blockchain. In such cases, the nodes participating in the arbitration consensus would need to examine the evidence on an objective basis, probably by looking only to the written material (including code) available on the blockchain ecosystem and written submissions of the parties. If so, the same approach taken to contract formation (subjective, objective or a blend) may need to be applied to contractual remedies. This may also mean that even if a subjective approach to consent in contract formation is retained, the process to assess the evidence will create a hybrid approach.

In addition, standardised remedies may develop to deal more efficiently with contractual disputes (such as (i) a pre-agreed unwinding of the contract on certain terms; or (ii) a quasi-arbitration to process claims, possibly automated or via the consensus mechanics on the blockchain). If so, it is likely to be impossible or impractical for the counterparties' full subjective intentions to be examined or accounted for in the remedial process. Consequently, the requirements for contractual consent should include objective elements to enable a consistent approach to be taken to contract formation and remedies, for example, a consideration of the written terms of the contract.

The objectivity could be achieved in a manner similar to that present in the French civil procedure where weight is placed on written submissions and evidence rather than oral submissions.

The UKJTF had a slightly different theory, that smart contracts would reduce the need for legal intervention altogether because they "may prevent intentional non-performance by a party and avoid or limit factual disputes and disputes about interpretation of terms".

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[69] R Pothier (1761) Treatise On The Contract of Sale. Paris and Orléans Translated by LS Cushing (nd). Italy: Rotomail Italia S.p.A. Article III.
[70] Donnelly v Randall's Vautier Ltd 1991 JLR 49 at 57, Doorstop Ltd v Gillman 2012 (2) JLR 29, Basden Hotels Ltd v Dormy Hotels Ltd 1968 JJ 911.

Offer and acceptance

Returning to the elements of contract formation, in the example of a smart contract transferring a store of value from Alice to Bob in exchange for Ether, the offer is made by Alice sending the terms of a smart contract to Bob which is then accepted by Bob in transferring the Ether to the smart contract address. Further examples include algorithmic trading and robo-investing, where computer programs run algorithms reflecting a certain investment strategy to select order terms to offer to the market[71] and the terms to accept. In both cases these are examples of acceptance by conduct. The acceptance should be clear as there is no intervening opportunity for the parties to negotiate terms.

In a public blockchain, where parties are unknown to each other, negotiation is limited given the limited ability for the parties to communicate outside of the blockchain ecosystem. However, in a private blockchain, greater negotiation may be possible.

Certainty of terms

For a smart contract to constitute a legal contract, it must have certainty of terms. This is a logical component of the parties agreeing contractual terms that reflect their intentions. In the smart contract context, where terms can be written only in computer-parsable code (internal contract), the crucial point is whether any material, nonhuman-parsable terms of the contract can be deemed sufficiently certain to enable a valid contract to be formed. It raises the question whether the terms need to be capable of being understood by the parties. If the parties cannot read the terms of the contract, they cannot (i) understand it; (ii) be certain of its terms; or (iii) check that the proposed terms reflect their mutually agreed intentions.

This is important because, if "certain" does mean "understandable", it could lead to different outcomes depending on whether the objective or subjective approach to consent is taken. Taking the objective approach, once the terms are accepted, a reasonable man would say that the parties had agreed to be bound by the terms. Taking the subjective approach, no consent could be given if the terms were not understood.

The type of smart contract (internal or external) therefore affects the risk of this uncertainty arising, for example:

(a) internal contract *Editorial Note: This type of contract is broadly the "Solely code contract" a concept introduced since the time of original publishing by the Law Commission of England and Wales* — where the smart contract is written only in code and is not human-parsable, it is debatable whether the terms have sufficient certainty. If certainty of terms simply means to have identifiable terms, the UKJTF stated "there should be no difficulty in identifying terms (they will comprise the source code)". Identifying the source code containing the terms is one matter, but it is quite a separate matter to read and understand its terms sufficiently to enable a decision to be made whether or not to be bound by them. Under Jersey law, so long as the subjective approach to contractual consent prevails

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[71] See, eg, L Scholz, "Algorithmic Contracts", 20 Stan Tech L Rev 128 (2017).

(notwithstanding the mixed authorities on this point), there is an inference that to have certainty, the terms should be understood (or at least be able to be understood) by the parties. If a smart contract is written only in computer-readable code there is arguably no certainty of terms for a source-code illiterate human unless there is a human parsable translation;

(b) where part only of the contract is written in code and not human-readable

Editorial Note: This type of contract is broadly the "Hybrid contract" a concept introduced since the time of original publishing by the Law Commission of England and Wales, proving the certainty of terms may become pivotal in the event of inconsistency between human-parsable and computer readable elements of the contract (as by extension it relates to proving that such terms reflect the parties' mutually agreed intentions). Although, per *Prestige* if the inconsistency relates to a peripheral matter it should not be material[72];

(c) external contract

Editorial Note: This type of contract is broadly the "Natural language contract with automated performance" a concept introduced since the time of original publishing by the Law Commission of England and Wales — where the contract is fully human-readable and some terms have been automated (eg payment of interest) certainty of terms would be easily demonstrated.

The type of smart contract could become crucial because if the terms do not coincide with the terms of the offer understood by the parties, there is an *erreur obstacle* (where there has been no meeting of minds). This goes to the very heart of the contract. An *erreur obstacle* can be as to (i) the nature of the contract; (ii) the *objet* of the contract; or (iii) the cause of the contract. If any of these elements is absent, then the contract will be a *nullité absolu*.

Under French law, there are two types of *erreur* and two types of *nullité* that arise: (a) *erreur obstacle*— where there is no meeting of minds and no contract is formed; and (b) *erreur* leading to a *vice de consentement* which "does not destroy consent: it merely negatives consent, or to simplify again, the mistake concerns the validity of the contract".[73]

Arguably, if the parties cannot read the terms of the contract, they cannot: (i) understand it; (ii) be certain of its terms; or (iii) ascertain whether the terms reflect their intentions, and there is an inference that these requirements ought to be present taking the subjective approach to contractual consent. This concern was shared by Szabo who raised two concerns about contracts written in code: (i) human counterparties not understanding the code and therefore the terms of the contract; and (ii) the computer not carrying out the human counterparties' intentions. Szabo cautions that the computer processing

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[72] M Finck and V Moscon (2018) "Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0", https://link.springer.com/article/10.1007%2Fs 40319-018-00776-8.
[73] R Sefton-Green (2005) Fraud and Duties to Inform in European Contract Law. Cambridge: Cambridge University Press, p 6.

units involved in the messaging (which run the smart contract) may or may not be acting in accordance with the intentions of the human user.

This is a key challenge to any purported "agency" relationship (however tenuous) between human and computer.[74]

Conversely, following the UKJTF approach, it can be argued that the non-human-parsable terms (the source code) would have sufficient certainty and, accordingly, that the parties can intend to accept such terms irrespective of whether they understand them. This would lead to clear outcomes but may lead to difficulties, particularly if applied to contracts with members of the public.

For example, Natwest Bank announced a blockchain project to record data in the house buying process.[75]Taken together with the HM Registry project to produce a blockchain land registry, it is feasible to predict a future state where properties (including residential properties) are bought, sold and mortgaged on the blockchain.

There are a few simple practical solutions to make code or internal contracts human-parsable: (a) provide human-readable translations of the code; and (b) use pro-forma contracts in human-parsable language. This could be embedded in the governance documents of the blockchain protocol. This is ideal for simple contracts. A rider could be included for nonautomated negotiated terms to be populated. These would be qualitative rather than quantitative terms (eg payment terms) and would need not be reduced to code to: (i) be valid contractual terms; or (ii) enable the parties to benefit from automation of the quantitative elements; in both cases the human "translation" would prevail.

Solutions to this may become more established with the development of smart contracts which are both human-parsable and computer-parsable. Mougayar[76] suggests that developments will—

> "... include user-friendly entry points, like a Web browser. That will allow any business user to configure smart contracts via a graphical user interface, or perhaps a text-based language input."

Human counterparties will then be able to draft contracts in human language using software that codes the automatable provisions into computer executable code. Such projects are underway.

3.3.2 Capacity
If the essence of a contract lies in consent,[77] each contracting party must be capable of giving such consent. Under Jersey law, for natural persons, the age of majority is 18[78]. There is a presumption that

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[74] see para 95 et seq.
[75] Ledger Insights 2020 "NatWest Bank in blockchain consortium to streamline the mortgage process" https://www. ledgerinsights. com/natwestbank-blockchain-consortium-mortgage-coadjute/.
[76] W Mougayar (2016) The Business Blockchain, New Jersey: John Wiley & Sons, p 43.
[77] R Pothier (1761) Treatise On The Contract of Sale. Paris and Orléans. LS Cushing (trans) (n.d.). Italy: Rotomail Italia S.p.A.—Article III.
[78] Article 1 Age of Majority (Jersey) Law 1999.

persons aged 18 are capable of giving valid consent, although certain medical conditions prevent the giving of consent.[79]

To mitigate the risk of incapacity, private blockchain platforms could incorporate a gating mechanism that checks age and capacity by incorporating some form of self-certification or independent identity verification. This would not mitigate the risk of the counterparty lacking capacity on other grounds, but this is an accepted risk of dealing with retail clients in online or non-face-to-face transactions. Public blockchains where parties are anonymous would be at risk.

Similar solutions can be used for corporate entities verifying their corporate existence which could be verified by reference to Public Registries and authorised signatories.

3.3.3 Objet

Objet is a "party's obligation of performance under a contract: What a party promises to do under the contract by way of performance /discharge of his or her obligations."[80] *Objet* must be (a) certain, (b) possible, and (c) lawful.[81]

Objet relates to either a thing (res) or a service (factum).

Applying the limbs to the example of the transfer of a token: (a) the objet is certain (identifiable) - it is the obligation to transfer the token, a res; (b) as long as the token exists and there are no transfer restrictions, the transfer will be possible; and (c) if the token does not relate to an illicit matter (see below) the transfer will be lawful.

Demonstrating whether an *objet* is possible should be straightforward in a smart contract context. Smart contracts are described as "auto-executing" because they can be programmed to perform tasks when certain conditions are met. This feature makes smart contracts suited to performing certain quantitative contractual terms (e.g. the transfer of tokens and payment of ether on a given date) without further instruction by either party.

However, usual contractual principles should apply where the underlying *objet* does not exist or is flawed. To use examples given by Pothier[82], one cannot sell a horse (if it is dead) or a house in Orleans (if it has burned down). Nevertheless, one can sell a "mere expectation"[83] of something which does not yet exist (such as wine which may be made). Therefore tokenisation (e.g. of real estate developments or derivatives) should not present any novel issues.

Lawful

Factors affecting whether the *objet* is lawful relate to whether the *objet* of the obligation is per se lawful. Under Jersey law, this is interpreted as not unlawful.

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[79] Article 4 (1) Capacity and Self-Determination (Jersey) Law 2016.
[80] *HRCKY Ltd v Hard Rock Ltd* 2019 (2) JLR 47, para 27 (CA) per Sir William Bailhache, President.
[81] Marett v Marett 2008 JLR 384, para 59.
[82] See note 66, art I.
[83] See note 66, art I

Blockchain-related assets, cryptocurrencies and other digital assets are not prohibited under Jersey law[84] as they are in some.[85]

Digital assets should therefore be subject to the same principles of legality under Jersey law as the subject matter of any other contract, eg digital assets relating to prohibited substances or sanctioned activities would be unlawful and fail this limb.

It is likely that being lawful includes meeting all relevant regulatory requirements. In the context of a Jersey entity issuing a digital security, this may include the issuer obtaining a consent pursuant to the Control of Borrowing (Jersey) Order 1958 (or future regulatory equivalent) and a consent pursuant to the Companies (General Provisions) (Jersey) Order 2002[86] depending on the number of security holders and number of persons to whom the offer is circulated. Cross-border transactions will require a more extensive review of the global regulations in jurisdictions for primary and secondary markets, on which the asset will be available, particularly if issued/transferred on a digital asset exchange.[87]

Factors relating to licit objet are relevant to licit cause (see below) because a transaction with an unlawful objet is likely to have an unlawful cause: "...*thus in bilateral contracts there is a fundamental interdependence between objet and cause. If one party's obligation lacks an objet, then it is likely that the other party's obligation will lack a cause*."[88]

3.3.4 Cause

The final limb is (licit) cause. In *Marett v Marett*[89] cause was found to be the reason for the contract, why it is that an obligation under a contract is owed.

Cause is essentially the rationale or reason for the parties to contract. In practice, it is often explained to foreign lawyers by likening cause to consideration under English law[90]; however, the Royal Court has firmly distinguished between the two.[91]

The concept of cause fits blockchain transactions of all types. By nature, a token on a blockchain transferring a store of value or operating as a medium of exchange, operates on the basis of reciprocity.

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[84] There are many jurisdictions where this is not the case. See https://www. profitconfidential.com/cryptocurrency/bitcoin/top-countries-bitcoin-legalillegal/. This potentially raises conflicts of law questions in cross-border digital assets transactions where the token is legal in the jurisdiction of one party but not the other. For an overview of jurisdictions where bitcoin is legal and not legal see Cryptonews (2020) "Countries where Bitcoin is Banned or Legal in 2020" https://cryptonews.com/guides/countries-in-which-bitcoin-isbanned-or-legal.htm.

[85] See Library of Congress (2019) "Regulation of Cryptocurrency Around the World" https://www.loc.gov/law/help/crypto currency/world-survey.php.

[86] These consents relate to the issuance of securities by Jersey entities and circulation of a prospectus respectively.

[87] See Basel Committee on Banking Supervision (2019) "Statement on crypto-assets". https://www.bis.org/publ/bcbs_nl21.htm.

[88] HRCKY Ltd v Hard Rock Ltd [2019] 2 JLR 47 at para 29.

[89] 2008 JLR 384.

[90] Note the discussion above regarding the objective v subjective approaches to contractual consent.

[91] *Osment v Constable of St Helier* 1974 JJ 1, *Granite Products Ltd v Renault* 1961 JJ 163, *Wightman v Cathcart Properties Ltd* 1970 JJ 1433.

The "value" transferred being anything from monetary value (eg the value ascribed to an ether) to the value ascribed to the sharing of data.

The cause for a party contracting is the rationale for contracting. Smart contracts should be subject to the same principles of cause as any other contract. The discussion above regarding certainty of terms is relevant here as the terms ought to make the cause obvious.

In considering Marett, the Court of Appeal in Booth v Viscount intentionally does not rule on whether cause is assessed on an objective or subjective basis. Rather the court noted the uncertainty in modern French law given that the new French Civil Code did not require cause at all in the formation of a contract.[92]

Smart contracts are not immune to cause being negated by vice de consentement (the usual exceptions to autonomy of will). There are three categories of vice de consentement: (a) dol; (b) violence, being (i) duress and (ii) undue influence, and (c) erreur.

Suggested reading:

1. *The Law Society, Tech London Advocates, Blockchain Legal and Regulatory "Blockchain: Legal & Regulatory Guidance Second Edition". Available at: https://www.lawsociety.org.uk/topics/research/blockchain-legal-and-regulatory-guidance-second-edition*

2. *Law Commission of England and Wales, "Smart Legal Contracts: Advice to Government" November 2021. Available at: https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2021/11/Smart-legal-contracts-accessible.pdf*

3. *Law Commission of England and Wales, "Smart Legal Contracts: Summary". Available at: https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy7q/uploads/2021/11/6.7776_LC_Smart_Legal_Contracts_2021_Final.pdf*

4. *Law Commission of England and Wales, "Digital Assets: Consultation Paper" 28 July 2022. Available at: https://www.lawcom.gov.uk/project/digital-assets/*

5. *Law Commission of England and Wales, consultation papers on DAOs. Available at: https://www.lawcom.gov.uk/project/decentralised-autonomous-organisations-daos/*

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[92] Article 1128 of the French Civil Code requires only: (i) consent of the parties; (ii) their capacity to contract; and (iii) a licit and certain content. Commentators have however noted that other areas of the Civil Code still make a reference to the purpose of passing contracts, eg art 1170 and art 1162. See also D Fairgrieve (2016) Comparative Law in Practice Contract Law in a Mid-Channel Jurisdiction. Bloomsbury Publishing plc, p 77

ANNEX D - LAW COMMISSION OF ENGLAND & WALES CONSULTATION

Law Commission of England and Wales "Digital Assets: Summary of the final report"

See: *https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2023/06/14.294_LC_Digital-assets-summary_v5_WEB.pdf*

> **Suggested reading:**
>
> 1. *Law Commission of England and Wales "Digital Assets: Final Report"* - pages 33-55, particularly paragraphs 3.59 to 3.76. *Available at:* *https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2023/06/Final-digital-assets-report-FOR-WEBSITE-2.pdf*
>
> 2. *Law Commission of England and Wales "Digital Assets: Consultation Paper"* – pages 77-94. Available at: *https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2022/07/Digital-Assets-Consultation-Paper-Law-Commission-1.pdf*

QUESTIONS FOR CONSULTATION - SUMMARY

Smart contracts

1. It is submitted that smart contracts are capable of being recognised and enforceable in Jersey as valid legal contracts subject to the ordinary rules of Jersey contract law (referred to as smart legal contracts or SLCs). Do you agree?

2. If yes, do you consider that SLC should be subject to any specific conditions on formation e.g. human readable translations to be provided where the contract contains material terms written only in code?

3. Are there specific rules of contractual interpretation that should apply to smart legal contracts? Should a reasonable coder test be adopted?

4. Are there specific rules that should be adopted relating to:

    (i) issues with contractual consent and authority such as vice de *consentement* (whether by dol, *erreur* or misrepresentation)

    (ii) contractual remedies such as new contractual remedies for SLCs?

5. Does Jersey need to recognise the concept of an electronic agent e.g. similar to that recognised in Guernsey?

DAO

6. Does Jersey need to recognise the concept of a DAO?

7. If yes would this be a for profit or not-for profit DAO or both?

8. Should Jersey partnerships, companies and/or foundations be used as a legal wrapper to a DAO or a bespoke entity? How should Jersey distinguish itself from other jurisdictions active in this space. Where should liability be attributed (to investors, to developers, to the DAO itself or a mixture)?

Data & Data Objects

9. Should Jersey introduce a new category of property rights or otherwise recognise "data objects" (however defined) as capable of constating movable property?.

    A starting point for a "data object" could be the original Law Commission of England and Wales criteria for data objects as follows, since revised to a less prescriptive list of indicia:

    (1) it is composed of data represented in an electronic medium, including in the form of computer code, electronic, digital or analogue signals;

    (2) it exists independently of persons and exists independently of the legal system; and

    (3) it is rivalrous.

10. Do you have any comments on any of the criteria and whether they would be appropriate in the Jersey context?