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Item No. 2 on the agenda: Matters concerning the 2020–2022 Work Programme

(b) ii. Work on Artificial Intelligence, Smart Contracts and DLT

(prepared by the Secretariat)

<i>Summary</i>	<i>Refining the project scope</i>
<i>Action to be taken</i>	<i>The Governing Council is invited to approve the proposed scope of the project and to reassess upward the priority status given to the project, allowing the Secretariat to establish a Working Group</i>
<i>Mandate</i>	<i>Implementation of the decision of the General Assembly in relation to the Work Programme 2020-2022</i>
<i>Priority</i>	<i>Original priority – medium – to be reassessed and high priority given</i>
<i>Related documents</i>	<i>(UNIDROIT 2017 – C.D. (96) 5, Appendix II); (UNIDROIT 2017 – C.D. (96) 15, para. 58); UNIDROIT 2018 – C.D. (97) 17; UNIDROIT 2018 – C.D. (97) 19, paras. 238-245; UNIDROIT 2019 – C.D. (98) 17, paras. 263-275; <i>Work Programme for the 2020-2022 triennium</i> (UNIDROIT 2019 – A.G. (78) 12, paras. 43 and 51, and UNIDROIT 2019 – A.G. (78) 3 paras. 69-71);</i>

I. BACKGROUND AND HISTORY OF THE PROJECT

1. In 2015, the Secretariat received a proposal from the Ministry of Justice of Hungary to consider the development of model laws in the domain of “business informatics”, in relation to platform services, software services, hardware services, database handling, and cloud computing.¹ In November 2016, the Ministry of Industry and Trade of the Czech Republic sent the UNIDROIT Secretariat a proposal to include two main topics in the Work Programme: distributed ledger (or blockchain) technology and inheritance of digital properties ([see UNIDROIT 2017 – C.D. \(96\) 5, Appendix II](#)).

2. This proposal was submitted to the attention of the General Assembly at its 75th session (Rome, 1 December 2016), and later to the Governing Council at its 96th session (Rome, 10-12 May 2017), during which the Governing Council concluded that the Secretariat should continue to follow developments in this regard (see [UNIDROIT 2017 – C.D. \(96\) 15, para. 58](#)).

¹ [UNIDROIT 2016 – C.D. \(95\) 13 rev., Annex II.](#)

3. The Czech Republic submitted a second proposal to UNIDROIT for the 2020-2022 Work Programme in 2017, expressing the need to study a number of key legal questions related to emerging new technologies – in particular, what would be a fair distribution of rights and obligations in contracts for provision of products and services incorporating the use of artificial intelligence – with a view to eventually establishing an appropriate international legal framework (see [UNIDROIT 2018 – C.D. \(97\) 17](#)). The proposal was presented to the Governing Council at its 97th session (Rome, 2-4 May 2018), during which the Council concluded that the Secretariat should continue to monitor developments in this area with a view to its possible inclusion in the future Work Programme (see [UNIDROIT 2018 – C.D. \(97\) 19](#), para. 245).

4. Similarly, the Czech Republic presented a proposal to the UNCITRAL Secretariat requesting that UNCITRAL closely monitor developments relating to legal aspects of smart contracts and artificial intelligence and report back to the Commission on areas that might warrant uniform legal treatment, with a view to undertaking work in those fields if and when appropriate. At its 51st session (New York, 25 June-13 July 2018), the Commission decided that “[t]he Secretariat should compile information on legal issues related to the digital economy, including by organizing, within existing resources and *in cooperation with other organizations*, symposiums, colloquiums and other expert meetings, and to report that information for its consideration at a future session.”²

5. In line with the joint proposal of the Czech Republic and having received a similar mandate from their governing bodies, UNIDROIT and UNCITRAL agreed to explore the possibility of future joint work in this area. Both organizations agreed that it would be necessary first to identify the most adequate areas of possible work and later to narrow down the scope of the work as well as to define its nature. In light of this, it was decided that two workshops would be held, convening international experts on the different subject matters encompassed by the initial proposal of the Czech Republic.

6. A first joint, invitation-only, workshop was convened at UNIDROIT’S seat (Rome, 6-7 May 2019). The workshop gathered leading experts, particularly in the fields of distributed ledger technology (DLT), smart contracts and areas of artificial intelligence possibly linked with private law.³

7. The purpose of the workshop was not to create yet another forum for discussion on these topics or to go into detailed expert analysis of specific items, but rather – and *exclusively* – to identify the most suitable topic(s) for future work by both organisations. The workshop featured a final panel addressing conclusions, during which it was proposed that a future workshop be organised to narrow down the scope of the work to be undertaken with a view to clearly identifying the specific areas that were most feasible and best suited for the development global instruments.

8. The Governing Council, at its 98th session (Rome, 8-10 May 2019), was informed that the joint workshop had revealed great interest in the area, with particular reference to a general project on digital assets. It was further noted that this project “would require work on categories and conceptualisations, in order to develop a set of definitions for terminologies and concepts used within this area”, which in turn “would entail establishing a taxonomy of terms used as part of the digital economy” (see [UNIDROIT 2019 – C.D. \(98\) 17](#), para. 267). The Governing Council asked the Secretariat to “conduct further research to narrow down the scope of the project”, which, based on the conclusions of the joint workshop, “would be initially confined to digital assets”, with a decision on final scope to be taken by the Council at its 99th session. The Council also recommended that the Secretariat “conduct additional research on the impact of Smart Contracts/DLT/AI on existing UNIDROIT instruments” (see [UNIDROIT 2019 – C.D. \(98\) 17](#), para. 275).

9. The Governing Council recommended to the General Assembly that it include this item at medium priority on the 2020-2022 Work Programme ([C.D. \(98\) 17](#), para. 275). The level of priority

² See Report of the United Nations Commission on International Trade Law, UNGA Doc. A/73/17 (51st session, 25 June – 13 July 2018), para. 253, available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/V18/052/21/PDF/V1805221.pdf?OpenElement> (emphasis added).

³ For further information, the Summary of the Discussion and Conclusions from that workshop can be found here: <https://www.unidroit.org/english/news/2019/190506-unidroit-uncitral-workshop/conclusions-e.pdf>.

assigned was merely formal. The Council, at its 99th session, would adopt a decision on the final scope of the project and the level of priority, as well as decide on the proposed form of the joint work with UNCITRAL.

10. The General Assembly, at its 78th session, approved the inclusion of the project in the Work Programme of the organisation for the 2020-2022 triennium as recommended by the Governing Council ([A.G. \(78\) 12](#), paras. 43 and 51, and [A.G. \(78\) 3](#) paras. 69-71). The General Assembly asked the Secretariat to more precisely determine the scope of the project and present it for reconsideration at the next session of the Governing Council.

11. This paper has been developed to comply with the mandate received from the General Assembly.

II. SUMMARY OF UNCITRAL-UNIDROIT VIENNA EXPERT GROUP MEETING (10-11 MARCH 2020)

12. The second workshop was convened at the UNCITRAL Secretariat in Vienna on 10-11 March 2020. As the previous meeting, this event was an invitation-only meeting of experts, many of whom had also taken part in the first workshop. The invitation was extended with the aim of developing “a legal taxonomy of key emerging technologies and their applications”. This second event focused exclusively on the drafting of a taxonomy as well as on the potential relevance of new technologies to existing instruments.

13. Led by the host, both Secretariats prepared a discussion paper to guide the deliberations of the expert group meeting. The event discussed a very wide range of topics thoroughly, including, *inter alia*, (i) artificial intelligence, (ii) distributed ledgers, (iii) smart contracts, (iv) digital assets, (v) data transactions, and (vi) on-line platforms. According to the preliminary conclusions of the event, and in line with previous exploratory work carried out by UNCITRAL’s Secretariat, there would seem to be sufficient grounds for preparatory work to be conducted on certain aspects of the use of artificial technology in contract negotiation, formation and performance, as well as on different areas of data transactions. The UNCITRAL Secretariat also considers that further work on taxonomy would seem warranted, and that exploratory work in the area of digital assets, as regards existing instruments (e.g., secured transactions and insolvency), might be appropriate going forward.

14. UNCITRAL’s Secretariat will submit the updated and adapted discussion document, together with a proposal for preparatory work, to the UNCITRAL Commission scheduled to meet in July 2020 for approval. It is expected that the documents will be ready for distribution in May or June, at which point they will be shared with Governing Council members.

15. The conclusions of both the second workshop and of their exploratory work regarding certain aspects of technology would fall outside of UNIDROIT’s current mandate on this project, as determined by the Governing Council in its 98th Session and the General Assembly at its 78th Session. Cooperation, however, should continue concerning the taxonomy as well as some aspects of digital assets.

III. PROPOSED SCOPE OF THE PROJECT AND ISSUES TO BE CONSIDERED

16. Bearing in mind that the Governing Council, at its 98th session, noted that this project “would require work on categories and conceptualisations, in order to develop a set of definitions for terminologies and concepts used within this area”, which, in turn, “would entail establishing a taxonomy of terms used as part of the digital economy” ([C.D. \(98\) 17](#), para. 267), and that the Governing Council asked the Secretariat to “conduct further research to narrow down the scope of the project”, which, based on the conclusions of the joint workshop, “would be initially confined to digital assets” ([C.D. \(98\) 17](#), para. 275), the Secretariat has prepared a refinement of the initial

proposal to conduct work which focuses on developing a legal taxonomy relating to tokens and other digital assets, plus consideration of legal issues arising in particular contexts.

17. The following paragraphs, based on the discussions during the first and second workshops (Rome, 6-7 May 2019, and Vienna, 10-11 March 2020, respectively) set out the Secretariat's proposal on the most appropriate scope for this project, taking into account that further refinements should be entrusted to the experts who will be selected as members of the Working Group for the project.

The growing economic importance of tokens and other digital assets

18. Technological development over the last 10 years has resulted in various types of technical systems enabling data to be held in such a form that it represents an asset which can be transferred (in a broad sense) but not replicated – thus avoiding the danger of double spending. Until the development of this technology, the danger of double spending had been avoided either by the tangibility of assets (tangible assets only exist in one form) or, in the case of intangible assets, the use of trusted intermediaries (such as registries and banks). Current technology enables a type of asset to exist which was not possible before: an intangible asset which could be transferred without the danger of double spending and without the use of a trusted intermediary. This special type of asset, which in this proposal is called a 'token', is part of a wider category of 'digital assets'. The current technology used to operate token systems is distributed ledger technology (DLT) and blockchain technology, which are usually, but not always, combined. Well known examples of tokens are Bitcoin and Ethereum, but there are very many different types of token systems operating around the world, and new systems are constantly being developed.

19. Tokens have already become of great economic importance. They are (or can be) a new asset class and therefore a method of diversification of investment portfolios. They are easily transferred and can be used to create liquidity. They can be used as a method of payment. They can be combined with other technology, for example, 'smart contracts', to achieve a wider range of functionality. The replacement of intermediaries can facilitate and encourage economic activity, particularly in developing economies, where the system of intermediaries may be inefficient or corrupt.

The benefits of legal harmonisation

20. There are many other current and potential uses of this technology. It is therefore economically advantageous to the world for tokens to be able to be used in these ways. However, in order both to maximise the economic advantages, and to protect market participants and others, it is important for there to be an appropriate private law structure underpinning the token markets. The proposed benefits of taking a harmonised approach are multiple:

- The international nature of the markets, and, in many cases, the fact that the nodes in the distributed ledger can be anywhere in the world, mean that there is great advantage in uniformity in the basic principles of national legal structures.
- A harmonised approach would favour a level of certainty and predictability in markets necessary for their continued development.
- Such an approach would offer the benefit of *ex ante* guidance as opposed to a piecemeal approach of waiting for disputes to arise, thus forcing the judiciary to come up with *ad hoc* solutions.

Developing a legal taxonomy relating to tokens and other digital assets

21. This proposed project would develop a legal taxonomy relating to tokens, plus consideration of legal issues arising in particular contexts. The project would take a functional approach to legal concepts, in order to produce a set of principles which would not be jurisdiction specific, but which

could be applied and reflected in any given legal system or culture. The principles would embody best practice and international standards, and would enable jurisdictions to take a common approach to legal issues arising out of the holding, transfer and use of digital assets.

22. The swift development of token technology has led many jurisdictions to consider whether national private law provides a sufficient framework for the realisation of the economic benefits. Some countries have introduced proposals to amend national legislation (e.g., Russia, Japan, Switzerland)⁴, others have brought in completely new codes (e.g., Malta, Liechtenstein, or the US State of Wyoming)⁵ and some common law countries are allowing the law to develop through case law (e.g., UK, Singapore, New Zealand).⁶ Not surprisingly, different jurisdictions have taken different approaches, partly through differences in legal culture and partly for other policy and contextual reasons.

UNIDROIT's comparative advantage

23. The development of the situation is analogous to the way in which national law in relation to the holding of securities through intermediaries developed: in a piecemeal way and without regard to the global picture. UNIDROIT tackled this issue through its work on the Geneva Securities Convention, which took a functional approach to defining the rights and obligations of market participants and third parties. While not ratified by many states, this instrument, along with the UNIDROIT Legislative Guide on Intermediated Securities, has become an international standard.⁷ The experience of UNIDROIT in developing this instrument is highly relevant to the development of principles relating to tokens.

24. In broad contours, the project would aim to do the following:

- The project would develop principles relating to the legal nature, transfer and use of tokens. It would focus on private law, and not regulation. It would consist of a legal

⁴ Russia has introduced a bill into parliament for second reading, Draft Law No. 419059-7 "On Digital Financial Assets", which contains a number of definitions, including "cryptocurrency", "token" and "digital wallet". For details on Japan's legislative activities in this area, see Sayuri Umeda, "Regulation of Cryptocurrency: Japan", Law Library of Congress Legal Report, June 2018, available at <https://www.loc.gov/law/help/cryptocurrency/japan.php>. For details on the Swiss Federal Council's Blockchain/DLT Draft Bill, see: <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-74420.html#downloads>.

⁵ For Malta, see Malta Digital Innovation Authority Act, 2018, available at: <http://justiceservices.gov.mt/DownloadDocument.aspx?app=lp&itemid=29080&l=1>, sect. 2(1). For details on Liechtenstein's recently adopted Blockchain Act on tokens and trusted technology service providers, which established a legal framework for transacting in digital tokens, see: <https://www.loc.gov/law/foreign-news/article/liechtenstein-parliament-adopts-blockchain-act/>. For the US State of Wyoming, see United States, *Wyoming Statutes*, Title 34, Chap. 29, sect. 101(a)(i), available at: <https://wyoleg.gov/Legislation/2019/SF0125>.

⁶ For the UK, see: High Court of England and Wales, *AA v. Persons Unknown*, Case No. CL-2019-000746, Judgment, 13 December 2019, reported in *Weekly Law Reports*, vol. 2020, No. 4, [2019] EWHC 3556 (Comm), para. 61. For Singapore, see: *Quoine Pte. Ltd. v. B2B2 Ltd.*, Civil Appeal No. 81 of 2019, Judgment, 24 February 2020, [2020] SGCA(I) 02, para. 144. In New Zealand, a recent application was filed in the High Court of New Zealand by liquidators of the cryptocurrency exchange Cryptopia Limited, see: <https://www.grantthornton.co.nz/globalassets/1.-member-firms/new-zealand/pdfs/cryptopia/2020/d.submissions-for-the-liquidators-23-january-2020.pdf>.

⁷ For instance, the UNIDROIT Geneva Securities Convention (GSC) was very influential in the debate about harmonisation of the law relating to intermediated securities in the EU: see the consultation document, available at: https://ec.europa.eu/info/sites/info/files/consultation-document-2010_en.pdf, and summary of responses, available at: https://ec.europa.eu/info/sites/info/files/summary-second-consultation-on-securities-law-2011_en.pdf. It is also being used as a point of reference in the Law Commission of England and Wales' development of a scoping study on intermediated securities: see the call for evidence, available at: <https://www.lawcom.gov.uk/project/intermediated-securities/>, along with the City of London Law Society's response to that call, available at: <http://www.citysolicitors.org.uk/storage/2019/11/CLLS-Response-Intermediated-Securities-11-11-19.pdf>, which cite the GSC a number of times as an international standard. Further evidence of the influence of the GSC is the introduction of neutral terminology taken from the GSC in international cases, such as in the recent High Court of Justice decision, *Madison Pacific Trust Ltd v Shakoor Capital Ltd & Anor* [2020] EWHC 610 (Ch) (16 March 2020), available at: <https://www.bailii.org/ew/cases/EWHC/Ch/2020/610.html>.

taxonomy, and consideration of issues arising in various important contexts, such as insolvency, secured transactions, identification of the applicable law in cross-border transactions, and the legal position of intermediaries involved in the token markets, such as exchanges and custodians.

- It would take a functional approach, neutral as to legal culture. It would therefore seek to identify the rights and obligations arising, without giving bundles of rights and obligations labels, such as 'property', which vary between jurisdictions.
- It would be necessary to consider how far the principles developed by the project are consistent with existing law. Despite the fact that tokens are a 'new' type of asset, consistency with legal treatment of other types of asset could be seen as important, and consideration will need to be given to what extent existing legal principles can apply by analogy, and what modifications are required.
- The project would also take a neutral approach, as far as possible, in relation to technology, so as to 'future proof' the principles. In other words, it would seek to develop principles that could apply to any system in which data could constitute a token (that is, an asset which could only be spent once), rather than being specifically applicable to systems based on DLT or blockchain. In this way, the danger that the work would be overtaken by technological or market developments would be minimised.

Specific questions to be addressed in the project

25. It is envisaged that the project would consider, amongst others, the following questions and specific areas.

26. **A legal taxonomy:** examination of the different ways in which tokens are created, held and transferred and the ways in which they may relate to other non-digital assets to identify the legally relevant characteristics and differences. This would entail examining the use cases of tokens, bearing in mind the legally relevant characteristics and differences may not depend on differences in use cases, but on the nature and features of the tokens themselves.

27. One critically important difference, for example, is between endogenous tokens, which are not linked to or represent any non-digital asset and exogenous tokens, which are linked to or represent a non-digital asset, such as a tangible asset, a right to payment, a security, etc. The economic value of an endogenous token comes from the fact that it can only be spent once, plus the fact that the system will include a means for a person to have exclusive control of the token. The economic value of an exogenous token comes from the intrinsic value of the non-digital asset to which it is linked.

28. The legal taxonomy would particularly focus on the features of tokens which in domestic legal systems usually relate to property law, widely construed, that is, and rights and obligations relating to tokens which bind third parties under certain circumstances. It is likely to be appropriate to take a functional approach and consider attributes of property law separately. One example is the existence (or otherwise) and nature of a right in relation to a token which binds third parties. Another example is the legal analysis of the transfer of a token. Both of these examples are likely to vary according to the way in which particular types of token systems are set up. While the legal nature of smart contracts is not itself a major part of the proposed work, the use of smart contracts in the operation of token systems will need to be considered as part of the proposed work.

29. The questions arising in relation to endogenous and exogenous tokens are likely to be different. In relation to exogenous tokens, the nature of the link between the token and the non-digital asset would need to be considered, and the factors, present in different systems, which change the legal nature of that link identified. This work would need to draw on the work of UNIDROIT in

contexts where assets are represented by paper or recorded in a registration system, such as the work on warehouse receipts and intermediated securities.

30. **Insolvency:** The project ought to consider the treatment of tokens on the insolvency of each type of market participant. These types would include (but may not be limited to) the person beneficially entitled to the value of the token (colloquially, but maybe not legally, 'the owner'), an exchange or custodian holding a token for 'the owner' or the 'issuer' of the token (i.e. the person, if any, operating the token system).

31. **Secured transactions:** The project should consider whether security can be taken over tokens, bearing in mind the legal taxonomy of different types of tokens, and how this can be effected. Close attention will need to be paid, *inter alia*, to the UNCITRAL Model Law on secured transactions and the parts of the UNIDROIT Geneva Securities Convention relating to secured transactions.

32. **Conflict of laws:** The project would consider what law would be applicable to the various aspects of the holding and transfer of tokens. The property law aspects of these situations constitute a very complex matter which is in need of in-depth analysis. Where the system in which the tokens are held is based on a distributed ledger, the nodes may be in different countries. The traditional rule of *lex situs* will not apply, nor will PRIMA (Place of the Relevant Intermediary Approach), where no intermediaries are involved, and so it is necessary to develop new principles. Naturally, the involvement of the Hague Conference on Private International Law (HCCH) in the working group for this part of the work would be paramount.

33. **Intermediaries:** Although intermediaries are not required to prevent double spending of tokens, other intermediaries are already present in the market, for example, exchanges and custodians. Although the relationship between these intermediaries and their clients is a contractual one, many issues arise which are not necessarily covered by the contract and which could be the subject of general principles. Examples include:

- the analysis of the proprietary rights of the intermediary and the client;
- what amounts to segregation of tokens and what the effects of segregation (if possible) are;
- the legal position on the insolvency of the intermediary (see above),
- the conflict of laws principles determining what law applies to aspects of the intermediary/client relationship.

IV. ACTION TO BE TAKEN

34. *The UNIDROIT Secretariat would invite the Governing Council to approve the proposed scope of the project and to reassess upward the priority status given to the project, allowing the Secretariat to establish a Working Group.*