

## JOINT UNCITRAL/UNIDROIT WORKSHOP

Rome, Seat UNIDROIT  
6 and 7 May 2019

### Summary of the Discussion and Conclusions

1. On 6-7 May 2019, UNIDROIT, at its headquarters in Rome, hosted a joint workshop, co-organised with UNCITRAL, on legal issues arising from the use of smart contracts, artificial intelligence (AI) and distributed ledger technology (DLT).

2. The workshop opened with an address by Mr Pasquale Velotti (Deputy Head of the Service for Legal Affairs, Diplomatic Disputes and International Agreements, Italian Ministry of Foreign Affairs and International Cooperation), which was followed by introductory remarks by Professor Ignacio Tirado (Secretary-General, UNIDROIT) and Ms Anna Joubin-Bret (Secretary, UNCITRAL).

3. Professor Tirado stressed the importance of putting stable principles of law in place to complement and support technological advancements. He stated that the main purpose of the workshop was to identify topics for future work at UNIDROIT and UNCITRAL in order to ensure that legal regulations were kept up-to-date with modern day technologies. Ms Joubin-Bret reiterated the need to seek clarity in the regulation of new technologies, so that private law could act as a facilitator for small and medium sized businesses that were looking to benefit from these technologies. She noted that UNCITRAL had recently been mandated to explore legal issues related to the digital economy, and that the workshop would look at areas it could potentially explore further in collaboration with UNIDROIT.

4. The workshop consisted of six panels, chaired by Professor Henry Gabriel (UNIDROIT Governing Council member, Elon University), Professor Charles Mooney (University of Pennsylvania), Professor Giusella Finocchiaro (University of Bologna), Professor Louise Gullifer (University of Oxford), Professor Teresa Rodríguez de las Heras Ballell (Universidad Carlos III Madrid), Professor Hideki Kanda (UNIDROIT Governing Council member, Gakushuin University), respectively. The agenda for the workshop, as well as a list of participants, can be found in the annexes of this document.

#### **PANEL I. Mapping the market, defining concepts and understanding applications and business models in the area of DLT, Smart Contracts and AI**

5. Chaired by Professor Henry Gabriel, the panel, composed of Professor Louise Gullifer, Professor Teresa Rodríguez de las Heras Ballell and Professor Tetsuo Morishita (Sophia University, Tokyo), focussed on how DLT, smart contracts and AI fit into the law.

6. The panellists highlighted the importance of focussing on commercial actors within the industries involved in the areas of concern of the panel and their transactions (i.e. consumer transactions were not considered). It was noted that commercial actors sought (i) legal certainty, (ii) standardisation, and (iii) unfragmented regulation, with a view to avoiding diverging regulations at national level. The panel explored the definition of, and the relationship between, smart contracts and legal contracts and noted that, in order for a smart contract to be deemed a contract and be valid and enforceable at law, it must meet all the standard requirements for a contract in general. When all such requirements were not met, a 'smart contract' could not be regarded as a contract (despite its name), although it could be used to enable the determination of contractual obligations, the partial performance of a contract, or the execution of contractual remedies. The panellists addressed the issue of the enforcement of smart contracts, and agreed that not all smart contracts could be treated the same as they do not all meet the requirements of an enforceable contract.

7. The panel also explored the concept of digital assets, keeping the distinction in the treatment of digital assets within “permissionless ledgers” (in which anyone can participate as a node holding the ledger on their computer) and “permissioned ledgers” (in which authorisation is required for participation), in mind. Professor Gullifer drew a distinction between “endogenous tokens” (which do not refer to anything existing outside the blockchain) and “exogenous tokens” (which are tokens which have a necessary connection with assets existing outside the blockchain). She noted a further, and different, means of classifying tokens by reference to the purpose that the particular asset served (e.g. as a medium of exchange or as a store of value). Additionally, the panel discussed questions arising, inter alia, as to the proprietary nature of digital assets. The first question addresses whether digital assets constituted property at all, and the different types of categories of property under which digital assets could be classified depending on their purpose. Professor Gullifer also explored the custody of digital assets, noting that many of the issues relating to the holding of digital assets by custodians were similar to issues that arise in relation to the holding of securities by intermediaries. The discussion of these issues over many years and the legal conclusions that had been reached as a result of this debate (for example, the harmonised concepts and rules that are found in the UNIDROIT Geneva Securities Convention) could inform analysis of what legal model should be developed for the holding of digital assets by custodians and other intermediaries.

8. The panellists agreed that an overarching problem in the regulation of modern technologies was its fragmentation, and therefore it was essential to coordinate efforts. Specifically for AI and smart contracts, the panel concluded that it was important to observe the market within which these technologies were being used and developed, and that new law should only be brought to facilitate areas where it was needed to respond to these new technologies. Professor Rodríguez de las Heras Ballell noted that a comprehensive transnational legal approach (i.e., action by institutions/actors that work in the area of transnational law) was necessary, which could be introduced in a sector specific manner.

9. The panellists stressed the importance of identifying the point at which new technologies become disruptive and are no longer adequately covered by existing law so that new regulation is required. Professor Rodríguez de las Heras Ballell identified five key disruptive features of AI and other emerging technologies that should be considered in formulating a plan for future work: increasing autonomy, increasing complexity, opacity (in the sense of the “black box” phenomenon), vulnerability (specifically, vulnerability to cyberattacks) and data dependency. Professor Rodríguez de las Heras Ballell noted that a legal analysis of AI should recognise the different components of AI-driven systems, notably: (i) algorithms and deep/machine-learning techniques; and (ii) the need for data, whether collected by sensors (IoT) in the interaction with the environment, provided by users and operators (personalizing or using), fed by trusted third parties and intermediaries (oracles), or produced by machine-generated activities. The panellists presented diverging views on the differences between DLT and smart contracts. The panellists also addressed conflict of laws issues raised by smart contracts and DLTs. Professor Morishita noted that *lex mercatoria* could be a useful mechanism to address some of these concerns, with the possible need for new dispute resolution mechanisms to correspond with the new technologies.

## **PANEL II. Institutions and participants**

10. Chaired by Professor Charles Mooney, the panel, composed of Professor Alzbeta Krausova (Institute of State and Law, Prague), Professor Phillipp Paech (London School of Economics), Professor Matthias Haentjens (University of Leiden), and Professor Ross Buckley (University of New South Wales), sought to identify areas of future work for international organisations in the areas of AI and digital assets.

11. On AI, two specific topics were proposed for future work: (i) transparency of algorithms; and (ii) contracting for intelligent products and services. With regards to the first topic, it was suggested that a rule could be developed to provide transparency in the results produced by algorithms (“outcome transparency”), such that the results could be monitored for compliance with legal requirements and standards. As for the second topic, it was suggested to address appropriate standards of fairness, unequal bargaining power and control, adhesion contracts, and standards of performance to counterbalance current practices of service providers limiting liability and remedies. In this regard, the panel suggested the development of model contract provisions and good practice guides.

12. With respect to custody of digital assets, the panellists proposed that future work consider the legal and contractual relationship between investors and digital assets on the one hand, and investor and intermediaries on the other, noting that intermediation could be in the form of online trading platforms. Further to the discussion of digital assets in panel I, it was suggested that the nature of digital assets be addressed alongside issues of custody.

13. The panellists also proposed that future work consider the phenomenon of “double intermediation”. The first intermediation reflects the relationship between the custodian and the asset, including any exogenous real world asset that exists outside of the blockchain platform (see paragraph 7, above). The second intermediation reflects the relationship between the custodian and the investor. For example, does the custodian merely engage that it will provide to the investor the economic benefits of the asset, giving the investor a contractual claim against the custodian? Or does the custodian hold the asset for the benefit of the investor with the investor obtaining a proprietary interest in the asset itself? In addition, the impact on real world assets and transfers that could occur outside a digital platform could be explored. Furthermore, this work could also consider: the nature of any regulatory or supervisory authority for custodians engaged in the business of acting for investors in digital assets; or to intermediary risks imposed by custodial relationships (such as the insolvency or default of a custodian that impairs the rights of investors to the benefits of digital assets as against, e.g., creditors of the custodian or the custodian’s insolvency representative); the suitability of the relationships of providing collateral security; the private law characterisation of rights in digital assets; and as against the custodian (i.e. the personal contractual rights, as well as proprietary real rights, the rights of the investors and custodians in insolvency proceedings); the operation of intermediated relationships in relation to digital assets, including legal segregation (e.g., rules that preserve and identify assets set aside for investors); and the determination and harmonisation of the conflict of laws rules (e.g., rules that determine which State’s laws apply to various aspects of the custodial relationship).

14. In regards to digital assets themselves, the panellists proposed that future work consider (i) control of digital assets and whether it equates to ownership; (ii) the acquisition of digital assets, including the settlement of acquisition transactions (i.e. the transfer of assets in exchange for value), transfer finality within those transactions and the reversal of such transactions ; (iii) the insolvency of an issuer of digital assets or the operator of a platform on which such assets were held; (iv) the international recognition (i.e., recognition in one State of the relevant rules applicable in another State) of settlement and acquisition transfer finality (this would be important particularly with respect to digital assets that are traded in the securities markets); and (v) the harmonisation of choice of law rules, such as recognition of the law of the platform as controlling.

15. The panel recommended that UNIDROIT and UNCITRAL could consider organising a large coordination conference for all the relevant organisations involved in this area. This would allow for the avoidance of duplication of work, as well as enable better communication and channelling of resources available to international organisations.

### **PANEL III. DLT, Smart contracts and AI in the transactional lifecycle: general contract law issues**

16. Chaired by Professor Giusella Finocchiaro, the panel, composed of Dr Mateja Durovic (Kings College London), Professor Vincent Gautrais (University of Montreal), and Dr Nikita Aggarwal (Oxford), discussed the legal nature of smart contracts with special emphasis on the types of transactions in which they were used.

17. The panellists stressed the need to develop a framework to secure contractual relationships arisen in the context of the use of technology. Additionally, the panellists identified sources of law that potentially applied to smart contracts, such as the various UNCITRAL model laws on electronic commerce, the United Nations Convention on the Use of Electronic Communications in International Contracts, the UNIDROIT Principles of International Commercial Contracts, and several EU directives.

18. The panel analysed several different approaches for future legislative work at the international level, including (i) a “formal” approach of assessing the need to update and adapt the

language of existing instruments; (ii) a “substantive” approach of focussing on liability within technological systems related to smart contracts; and (iii) a “mixed” approach, which would comprise both legal regulation and the development of standards on the subject matter. Reference was made to article 12 of the United Nations Convention on the Use of Electronic Communications in International Contracts, which deals with “automated message systems”, with the point being made that AI-driven systems can be not only automated but also autonomous. Reference was also made to new sources of legal risks and the adequacy of existing legislative instruments to address them.

19. The panel identified several areas worthy of further work by international organisations: the primary issue around smart contracts was the lack of certainty in commercial relationships, with the consequent need for a secure institutional framework. It was important to avoid building obstacles for technological advancements, keeping in mind that the general standard rules for contract law could not be rewritten, and that the solution to the problems posed by the use of new technologies needs to be holistic.

20. The panel agreed that smart contracts did not exist in a normative vacuum, and that there were many rules and general principles of contract law which equally applied to smart contracts. There were two different types of provisions found in existing international legal texts: enabling provisions (e.g. those found in the UNCITRAL Model Law on E-Commerce), and generally applicable provisions (e.g. the part on contract formation in the UNIDROIT Principles), as well as many applicable domestic laws. While it was noted that the possibility of drafting new legislation should not completely be discarded, and that new specific legal instruments should be prioritised, emphasis on the application of existing rules and instruments on smart contracts, and other modern technologies was encouraged. Hence, it was important to clarify how these existing rules and general principles applied to smart contracts and, where necessary, to propose updated language in existing legal texts.

21. The panellists also noted the importance of guiding businesses in the use of smart contracts, and providing them with the clarifications necessary for the application of general principles of contract law to smart contracts.

22. The issue of risk allocation was determined to be highly problematic, and further analysis was necessary to determine how this could be addressed.

#### **PANEL IV. DLT, smart contracts and AI in specific business sectors: focus on fintech**

23. Chaired by Professor Louise Gullifer, the panel, composed of Dr Peter Werner (ISDA), Dr Andrea Tosato (University of Pennsylvania), Dr Thomas Keijser (Radboud University), and Dr Marek Dubovec (NatLaw, Arizona), identified and described different use cases for the technologies discussed and how these use cases caused disruptions to current law.

24. Specifically, the panel looked at the following four types of use cases:

a. The use of blockchain and DLT in relation to commodity sales. It was important to note that blockchain and DLT were not always used together. Blockchain and DLT were often used to reduce costs, and to provide end to end solutions, sometimes in relation to specific elements of a transaction such as letters of credit or bills of lading. The legal issues here related to the tokenisation of off-chain (exogenous) assets;

b. The use of permissioned DLT in financing payment rights, including receivables sold on platforms using blockchain technology. The legal issues here revolved around the use of blockchain payment rights;

c. The real importance of legal certainty, particularly highlighted by Dr Werner who spoke from the standpoint of an operator actively working with these new technologies in the context of complex market transactions involving swaps and derivatives. He noted that the three main legal certainty issues related to: (i) whether or not complex financial transactions were fully enforceable; (ii) whether the insolvency laws were clear in their application to these transactions, and (iii) what the treatment of collateral and secured transactions would be (i.e. would they be enforceable and whether DLT would make any differences to them);

d. The use of AI and smart contracts in the enforcement of security interests. On this, Dr Keijser identified four aspects of enforcement which could become important in the future: (i) procedural steps, including notifications; (ii) the choice of the method of enforcement; (iii) valuation and the application of commercial reasonableness; and (iv) the distribution of proceeds. The legal issues in this area included liability for AI decisions, the nature of digital assets, custodian arrangements, and conflict of laws.

25. The panel also looked at future work which could be conducted by UNIDROIT and UNCITRAL in light of these use cases. Dr Tosato noted that a broader project could involve a taxonomy and a categorisation of DLT assets, while more specific work could be done on legal issues that arose from tokenisation of documents of title. Dr Dubovec noted that there was value in the development of a practice guide to address issues raised by technologies in applying the law. The proposed UNIDROIT Model Law on Factoring could also address issues relating to the use of blockchain and DLT. Some of the major issues included clarifying the meaning of blockchain payment rights, considering decentralised payment systems for receivables financing, and considering the relationship between electronic payment rights and prudential regulation. Dr Werner noted that work could be done on the property dimension of digital assets, the location of assets and the resulting conflict of laws issues, and the nature of trading taking place on platforms. Dr Keijser stressed the importance of future-proofing current instruments in relation to their enforcement, particularly aspects of liability and the characterisation of digital assets. Hence, any future work by UNIDROIT on effective enforcement should also give due regard to new technologies and the challenges that they would introduce.

26. After discussion, the panel put forward three recommendations as to possible future work:

- a. a general project considering endogenous digital assets and the tokenisation of off-chain assets (exogenous assets), which could address legal classification, the link between token and off-chain assets (for exogenous assets), transfers, secured transactions, insolvency, and conflict of laws.
- b. a more focused project on particular types of transactions or elements of transactions, such as documents of title and receivables financing; and
- c. updating and future-proofing existing instruments.

27. Additionally, the issues identified by the panel largely related to resolving problems of economic inefficiency, trust in liquidity prices, and transparency. Hence, a coordinated effort by UNIDROIT and UNCITRAL could be extremely useful in providing *ex ante* certainty to the market. In the case of an absence of such an effort, the market would be likely to self-regulate, and develop its own standards. However, the panellists agreed that such a process would lead to large amount of uncertainty during the self-regulation process and would also lead to fragmentation of laws which was undesirable.

#### **PANEL V. What happens when things go wrong? Liability, execution, remedies**

28. Chaired by Professor Teresa Rodríguez de las Heras Ballell, the panel, composed of Professor Gerhard Wagner (Humboldt University of Berlin), Professor Eugenia Dacoronia (UNIDROIT Governing Council member, University of Athens), and the Honourable Ole Böger (District Court Judge, Hanseatic Court of Appeal Bremen), focussed on issues of liability, enforcement, execution, and remedies in relation to smart contracts, DLT and AI. Professor Hannah Lim Yee Fen delivered a video presentation remotely.

29. The panellists emphasised the importance of not regulating either the technological aspects or a specific technology itself – i.e. it would be not advisable to propose a general law of blockchain or general rules on AI in relation to all potential applications with no connection with international commercial practices at all -, as this would hinder technological progress, competition and business innovation; but only to develop legislation which offered clarity in the usage of technology in existing practices or enabling new practices in international trade. Moreover, most of these technologies were

parts of highly complex ecosystems, and hence should not be dealt with in isolation between one another.

30. It was important to develop regulations for specific legal issues that arose from the application of technologies in international trade, or in relation to international trade. As such, regulation is not to dictate how technology works (e.g. smart contracts), but to govern aspects of its application (e.g. the regulation of self-executing remedies in smart contracts); technological enforcement; use of digital assets which embedded a claim in DLT; and other specific legal issues which created legal problems and were relevant for international trade, and needed to be addressed and harmonised.

31. Professor Lim Yee Fen explained the meaning of “wrong” in the context of the operation of AI-driven systems, when and why AI-driven systems could malfunction, lead to unexpected outcomes, or cause damage. Professors Dacornia and Wagner analysed the difficulties in applying existing liability regimes such as product liability regimes to AI (autonomous vehicles, algorithm-driven systems, smart homes, healthcare robots) and discussed alternative policy options to effectively address these challenges. Judge Böger focused on the role of judicial remedies and enforcement in smart contracts and digital assets and the need for adaptation.

32. The panel put forward three possible projects for consideration:

a. a review of existing provisions enabling the use of automated systems and analysis of their application to autonomous systems with a view to recognising the validity and legal effect of actions performed, and decisions taken, by autonomous systems; this could be complemented by consideration of a provision relating to the attribution of these actions and decisions;

b. the development of rules on risk allocation in contractual and extra-contractual matters (including, but not limited to, mistakes, malfunctioning, wrong-doing, default or damages caused by autonomous systems); and

c. the development of a set of substantive and procedural rules in relation to self-executing enforcement and self-executing remedies, aimed at specifying legal requirements or standards that self-executing enforcement of smart contracts and other automated systems and self-executing remedies in case of defaults should meet in order to ensure validity, conformity with the law, and due protection of rights.

## **PANEL ON CONCLUSIONS**

33. Chaired by Professor Hideki Kanda (UNIDROIT Governing Council member, Gakushuin University), this panel brought together the chairs of the previous panels to recollect the conclusions reached by the various panellists.

34. After discussing the conclusions already referenced in previous parts of this document, Professor Kanda commended the effort made by all participants and noted the important progress achieved towards identifying the international legal issues which UNIDROIT and UNCITRAL could focus on in the future. He elaborated that there seemed to be agreement on the possibility of two separate lines of projects: general, and specific. General work could include organising additional workshops with a more specific focus on certain areas of these new technologies, possibly developing guiding principles on how existing laws could be adapted for use within these new areas, and the development of a taxonomy to define commonly used terminologies in order to offer greater clarity to those who relied upon these new technologies. On the other side, specific projects could look at new legal issues raised by the advent of these new technologies, such as custody of digital assets or liability related to AI systems.

35. Professor Kanda noted that, in order to create greater legal certainty, a two-fold approach could be implemented: on the ‘defensive’ side, existing instruments of both organizations could be analysed with a view to determining their applicability and adaptability to new technologies; on the ‘proactive’ side, work priorities could be identified according to the importance and relevance of the

technologies, and simple rules could be developed for facilitating these technologies. A “governance” approach could also be considered in order to indirectly regulate newer technologies, so that standardisation within the various industries could be promoted and norms of transparency and clarity within contracts could be encouraged.

36. Participants noted the need to allocate projects to UNIDROIT and UNCITRAL which were consistent with their respective mandates, and to explore possible partnerships in areas of common interest. While one participant queried whether international organisations in this sphere could simply identify the legal issues, and then let specific industries address them on their own, others -the vast majority- noted the usefulness of international law and standard setting by offering the legal certainty which the market requires. While it was important not to limit, *ex ante*, the legal issues that new technologies could create, and to not restrict the growth of technological advancement, it would seem equally important to develop practical, feasible, and materially helpful standards to facilitate all actors within these innovative new areas. A foundational document (possibly entitled: ‘Law Tech: Annotated Taxonomy, Categorisation, Concepts, and Legal Implications’) could be developed by UNIDROIT and UNCITRAL through future workshops, and then could consequently be built upon in the future to cater for specific industries and technologies; this document could also look at how existing international instruments would apply to new technologies and how different types of business models fit into the existing legal ecosystem. Further, there seemed to be consensus on the need for work to be conducted, with an international/global component, in the areas of liability and risk allocation and digital assets. A majority of those present agreed that the latter would be more useful than the former as a general area of possible future work, together with the referred work on conceptualization and taxonomy.

37. Ms Joubin-Bret and Professor Tirado concluded the workshop by thanking all the participants and noting the importance of discussions in this area. While both organisations had different mandates and working methods, these could complement one another in a collaborative effort to address jointly the legal issues raised by emerging technologies, and towards proving legal solutions that offer greater certainty and clarity for all stakeholders. Both secretariats agreed to continue to explore possible joint work in the area, once the scope is defined in more detail. Ms Joubin-Bret stated that international commercial transactions in the digital economy, with emphasis on data and digital assets, were an important area for broader work which both organisations could undertake, wherein special emphasis could be placed on the application of existing laws to new technologies, and any loopholes which these new technologies created in existing legal frameworks could be addressed. Furthermore, future projects (such as one on warehouse receipts presently being considered by UNCITRAL, or the proposed project on factoring at UNIDROIT) could keep in mind the impact of new technologies and should be drafted cognisant of the changes that these technologies would bring. Professor Tirado reminded attendants that, in accordance with the debate, should work on digital assets be considered, it ought to start with an effort to agree on a taxonomy and classification of concepts, and afterwards move on to cover the issues arising in areas pertaining to insolvency, conflict of laws, jurisdiction, and enforcement, with institutional elements such as that of custodians and platforms.

38. It was proposed that a future workshop could be organised to narrow down the scope of the work to be undertaken. Moreover it was suggested that initial research in certain areas could be conducted and amalgamated into a research document prior to this next workshop. This would allow UNIDROIT and UNCITRAL clearly to identify the specific areas that were most feasible and best suited for the development of international instruments.

## APPENDIX I

## AGENDA



With the Patronage of



*Ministry of Foreign Affairs  
and International Cooperation*

**JOINT UNCITRAL/UNIDROIT WORKSHOP  
ON LEGAL ISSUES ARISING FROM THE USE OF SMART CONTRACTS, ARTIFICIAL  
INTELLIGENCE AND DISTRIBUTED LEDGER TECHNOLOGY**

**Rome, UNIDROIT  
6 - 7 May 2019**

## DAY I

**9 am - 9.30 am INTRODUCTION**

*Opening address delivered by Mr Pasquale Velotti (Deputy Head of the Service for Legal Affairs, Diplomatic Disputes and International Agreements, Italian Ministry of Foreign Affairs and International Cooperation)*

*Introductory remarks delivered by Ms Anna Joubin-Bret (Secretary, UNCITRAL) and Professor Ignacio Tirado (Secretary-General, UNIDROIT)*

**9.30 am - 11.00 am PANEL I. Mapping the market, defining concepts and understanding applications and business models in the area of DLT, Smart Contracts and AI**

This "conceptual" panel will discuss and agree upon (to the extent possible) the main concepts and definitions. There is much confusion as to the specific legal meaning of AI/Fintech concepts, such as smart contracts and digital assets, which are mainly defined technologically. The objective of the panel will be precisely to try to identify the main topics/items that need consensus within the international community and precise legal definitions. The panel will also touch upon cross border issues (jurisdiction/applicable law)

**Chair:** *Professor Henry Gabriel (UNIDROIT Governing Council member, Elon University)*

**Panellists:**

*Professor Louise Gullifer (University of Oxford)*

*Professor Teresa Rodríguez de las Heras (Universidad Carlos III Madrid)*

*Professor Tetsuo Morishita (Sophia University, Tokyo)*



**11.00 am - 11.30 am      Discussion with the floor****11.30 am - 11:45 am      Coffee****11:45 am - 1 pm PANEL II. Institutions and participants**

The “institutional” panel would help understanding the adequate scope of the work to be undertaken by our joint-venture (without implying that we should focus our work on the regulatory aspects): Should there be some type of institutional framework in place in case of ex ante supervision/regulation and in case of ex post trouble? If so, how/what type of framework? Further - and less controversially -, the panel should address (a) institutional structures that have already grown up or are likely to grow up in the future; and (b) whether any other institutional structures should be mandated to exist or encouraged to exist. The panel will address these issues in the context of two important areas:

Artificial Intelligence: Consideration of (i) the matter of liability arising from the use of AI in, for instance, robots or decision-making, and how standards for such liability could be set, and (ii) challenges presented by decisions based on algorithms including related regulatory and liability issues. (The issues relating to liability also will be considered by Panels III and V.)

Custody of Digital Assets: Consideration of (i) the means of access and control and the use of custodians in holding of digital assets such as cryptocurrencies and cryptosecurities (as to the need/convenience of their participation and a legal analysis of the main elements of access and custody), (ii) private international law aspects of custody, and (iii) issues arising out of the insolvency of custodians, including private law rights of investors, characterization of assets, and treatment in insolvency proceedings.

**Chair:** Professor Charles Mooney (*University of Pennsylvania*)

**Panellists:**

*Professor Alzbeta Krausova (Institute of State and Law, Prague)*

*Dr Philipp Paech (London School of Economics)*

*Professor Matthias Haentjens (University of Leiden)*

*Professor Ross Buckley (University of New South Wales)*

**1 pm - 1.30pm                      Discussion with the floor****1.30 pm - 2.30pm                  LUNCH****2.30 pm - 4:00 pm      PANEL III. DLT, Smart contracts and AI in the transactional lifecycle: general contract law issues**

The “operational” panel touches upon specific operations and how DLT, smart contracts and AI would fit in the realm of traditional contract law, from the point of view of general contract law (including the relationship with other fields such as torts)

**Chair:** Professor Giusella Finocchiaro (*University of Bologna*)

**Panellists:**

*Dr Mateja Durovic (Kings College London)*

*Professor Houman Shadab (New York Law School)*

*Professor Vincent Gautrais (University of Montreal)*

*Dr Nikita Aggarwal (Oxford)*

**4 pm - 4.30pm                      Discussion with the floor**

**4.30 pm - 4.45 pm**            **Coffee**

**4.45 pm - 6.15 pm**    **PANEL IV. DLT, smart contracts and AI in specific business sectors: focus on fintech**

This panel examines particular business usages of DLT and Smart Contracts with a view to: (a) discussing whether there are particular business usages which themselves call out for harmonisation of the relevant law or of standards (b) debating whether any issues that arise in a particular business usage are examples of wider issues in private law which could benefit from harmonised principles or rules. In particular, the panel will discuss the (proprietary and) conflict of laws analysis of exogenous DLT tokens, the potential impact of technology on the enforcement of security interests in financial assets, DLT/Smart Contracts in international sale of goods/commodities, and the legal issues in the financing of rights to payment in the blockchain context.

**Chair:** Professor Louise Gullifer (University of Oxford)

**Panellists:**

*Dr Peter Werner (ISDA)*

*Dr Andrea Tosato (University of Pennsylvania)*

*Dr Thomas Keijser (Radboud University)*

*Dr Marek Dubovec (NatLaw, Arizona)*

**6.15 pm - 6.45 pm**            **Discussion with the floor**

**DAY II**

**9.30 am - 11:00 am**    **PANEL V. What happens when things go wrong? Liability, execution, remedies**

This panel will discuss the impact of digital emerging technologies on the legacy liability regimes and consider self-executing remedies and their relationship with procedural law and insolvency

**Chair:** *Professor Teresa Rodríguez de las Heras (Universidad Carlos III Madrid)*

**Panellists:**

*Professor Hannah Lim Yee Fen (Nanyang University, Singapore, participating via remote video contribution)*

*Professor Gerhard Wagner (Humboldt University of Berlin)*

*Professor Eugenia Dacoronia (UNIDROIT Governing Council member, University of Athens)*

*Hon. Ole Böger (District Court Judge, Hanseatic Court of Appeal Bremen)*

**11:00 am - 11.30 am**            **Discussion with the floor**

**11.30 am - 11:45 am**            **Coffee break**

**11:45 am - 12:45 am** **PANEL ON CONCLUSIONS**

This panel will summarise the findings of each prior panel and present them in a form that could be taken into consideration by the UNIDROIT Governing Council and by UNCITRAL

**Chair:** *Professor Hideki Kanda (UNIDROIT Governing Council member, Gakushuin University)*

**Panellists:**

*All panel chairs*

**APPENDIX II**

**JOINT UNCITRAL/UNIDROIT WORKSHOP**  
**ON LEGAL ISSUES ARISING FROM THE USE OF SMART CONTRACTS, ARTIFICIAL**  
**INTELLIGENCE AND DISTRIBUTED LEDGER TECHNOLOGY**  
**Rome, UNIDROIT**  
**6 - 7 May 2019**

**LIST OF PARTICIPANTS****MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION**

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**UNCITRAL**  
**UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW**

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Mr Dirk STAUDENMAYER European Commission Head of Unit DG JUSTICE Unit A2 Mr Konstantinos KAPSOUROPOULOS Policy Officer Directorate H4 – eGovernment and Trust Unit DG Communications Networks, Content & Technology – CONNECT
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**INTERGOVERNMENTAL ORGANISATIONS**

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