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Summary of the Chairperson and the Rapporteur of the work of Working Group IV (Electronic Commerce) at its sixty-third session (New York, 4-8 April 2022)

Contents

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I. Introduction

1. At its sixty-third session, the Working Group deliberated on pending issues concerning a draft model law on the use and cross-border recognition of identity management (IdM) and trust services. It also deliberated on possible future work on two new topics, namely (a) the use of artificial intelligence (AI) and automation in contracting, and (b) data transactions.

2. Background information on the work of the Working Group on legal issues related to IdM and trust services may be found in A/CN.9/WG.IV/WP.169, paragraphs 4–20, and A/CN.9/WG.IV/WP.172, paragraphs 5-6. Background information on the work on the two new topics may be found in A/CN.9/WG.IV/WP.172, paragraphs 8-11.

II. Organization of the session

3. The Working Group, composed of all States members of the Commission, held its sixty-third session from 4 to 8 April 2022. The session was held in line with the decision taken by the Commission at its fifty-fourth session to extend the arrangements for the sessions of UNCITRAL working groups during the COVID-19 pandemic as contained in documents A/CN.9/1078 and A/CN.9/1038 (annex I) until its fifty-fifth session (A/76/17, para. 248). Arrangements were made to allow delegations to participate in person at the United Nations Headquarters in New York and remotely.

4. The session was attended by representatives of the following States members of the Working Group: Algeria, Argentina, Australia, Austria, Belarus, Belgium, Brazil, Burundi, Canada, Chile, China, Colombia, Côte d'Ivoire, Czechia, Dominican Republic, Ecuador, France, Germany, Ghana, Hungary, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Kenya, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Republic of Korea, Russian Federation, Singapore, Spain, Sri Lanka, Switzerland, Thailand, Turkey, Uganda, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.

5. The session was attended by observers from the following States: Angola, Armenia, Azerbaijan, Bahrain, Bangladesh, El Salvador, Guatemala, Madagascar, Maldives, Malta, Morocco, Nepal, Panama, Paraguay, Qatar, Republic of Moldova, Senegal, Slovakia, Sweden, Trinidad and Tobago, Tunisia, Turkmenistan and Uruguay.

6. The session was attended by observers from the Holy See and from the European Union.

7. The session was attended by observers from the following international organizations:

(a) *United Nations system*: United Nations Industrial Development Organization (UNIDO) and World Bank;

(b) *Intergovernmental organizations*: Asociación Latinoamericana de Integración (ALADI), Cooperation Council for the Arab States of the Gulf, Hague Conference on Private International Law and World Trade Organization;

(c) *International non-governmental organizations*: All India Bar Association, Arab Society of Certified Accountants (ASCA), Asociación Americana de Derecho Internacional Privado (ASADIP), Barreau de Paris, Center for International Legal Education (CILE) – University of Pittsburgh School of Law, Center for International Legal Studies (CILS), Centro de Estudios de Derecho, Economía y Política (CEDEP), China Council for the Promotion of International Trade (CCPIT), China International Economic and Trade Arbitration Commission (CIETAC), Council of Bars and Law Societies of Europe (CCBE), Council of the Notariats of the European Union

(CNUE), European Law Institute (ELI), European Law Students' Association (ELSA), Grupo Latinoamericano de Abogados para el Derecho del Comercio Internacional (GRULACI), Institute of Law and Technology (ILT) – Masaryk University, Inter-American Bar Association (IABA), International and Comparative Law Research Center (ICLRC), International Association of Young Lawyers (IAJA), International Bar Association (IBA), International Chamber of Commerce (ICC), International Union of Notaries (UINL), Kozolchyk National Law Center (NATLAW), Law Association for Asia and the Pacific (LAWASIA), Tehran Chamber of Commerce, Industries, Mines and Agriculture (TCCIMA), and Union Internationale des Huissiers de Justice (UIHJ).

8. According to the decision of the Commission (see para. 3 above), the following persons continued their office:

Chairperson: Ms. Giusella Dolores FINOCCHIARO (Italy)

Rapporteur: Mr. Paul KURUK (Ghana)

9. The Working Group had before it the following documents:

(a) An annotated provisional agenda (A/CN.9/WG.IV/WP.172);

(b) A note by the Secretariat on the use of AI and automation in contracting (A/CN.9/WG.IV/WP.173).

10. The Working Group adopted the following agenda:

1. Opening of the session and scheduling of meetings.
2. Adoption of the agenda.
3. Draft model law on the use and cross-border recognition of identity management and trust services.
4. The use of artificial intelligence and automation in contracting and related issues.
5. Other business.

III. Deliberations and decisions

11. The deliberations and decisions of the Working Group on the draft model law on the use and cross-border recognition of IdM and trust services are reflected in chapter IV below. The deliberations and decisions of the Working Group on the new topics of AI and automation in contracting and data transactions are reflected in chapters V and VI below, respectively.

IV. Draft model law on the use and cross-border recognition of identity management and trust services

A. Preliminary matters

12. The Working Group recalled that, at its sixty-second session, it had completed a third read-through of draft provisions on the use and cross-border recognition of identity management and trust services, as contained in A/CN.9/WG.IV/WP.170 (A/CN.9/1087, para. 12). It further recalled that it had requested the secretariat to revise the draft provisions to reflect the deliberations and decisions of the Working Group at the session, and to transmit the revised provisions to the Commission, in the form of a model law, for consideration at the fifty-fifth session of the Commission (ibid., para. 11). The Working Group was informed that a combined note containing the draft model law and revised explanatory note (A/CN.9/1112) was due to be published and circulated to all Governments and relevant international organizations for comment as soon as available in all official languages of the United Nations.

13. It was further recalled that the Working Group had not reached consensus at its sixty-second session on certain issues, that it had agreed that those pending issues should be considered in informal intersessional consultations, and that the secretariat should report back to the Working Group on those consultations at its sixty-third session for further deliberations (A/CN.9/1087, para. 113). The Working Group heard a report on those consultations, which discussed the following pending issues: (a) whether the term "electronic identification" or the term "authentication" should be used; (b) whether the term "electronic identification" carried a consistent meaning throughout the model law; (c) how the reliability requirement should be reflected; (d) the level of equivalence of reliability for cross-border recognition; (e) consistent reference to "levels of assurance" or "levels of reliability" for identity management; and (f) reference to "third party" and "relying party" in article 6.

B. The use and meaning of "electronic identification"

14. The Working Group recalled its deliberations on the term "electronic identification" at its sixty-second session (A/CN.9/1087, para. 18). The Working Group agreed to retain "electronic identification" as the defined term in the model law as opposed to "authentication".

15. It was recalled that article 1(c) clearly defined the term "electronic identification" as the second stage of IdM, yet it was unclear whether the term carried that meaning in each provision of the model law in which it was used, namely articles 1(e), 1(f) and 1(h), the chapeau of article 5, article 6(a)(iv), article 9 and article 25.

16. The Working Group agreed that the chapeau of article 5 and article 25 were concerned with the legal recognition of IdM as a whole and not only with the second stage of IdM. It was proposed that this could be clarified by referring to "the result of electronic identification" in each instance. In response, it was added that, in the abstract, the concept of the "result of electronic identification" might not be clear to the reader, and that therefore it was preferable for the operation of both provisions to be clarified in the explanatory note. After discussion, the Working Group agreed to amend articles 5 and 25 as proposed.

17. It was added that the different functions performed in providing an IdM service (such as those listed in article 6) could be performed in different jurisdictions, and therefore that article 25 applied whether all or some of the functions were performed outside the enacting jurisdiction. It was suggested that such clarification should be included in the explanatory note.

18. It was observed that article 9 was concerned with the reliability of both stages of IdM. It was therefore proposed that the words "identity proofing and" should be inserted before "electronic identification" in that article. Broad support was expressed for that position, and the Working Group agreed to amend article 9 as proposed.

19. The Working Group observed that, in the remaining provisions of the model law, it was clear that the term "electronic identification" carried the meaning as defined in article 1(c).

C. Reliable method

20. It was recalled that article 9 would now refer to the reliability of the method used for both stages of IdM (see para. 18 above). The Working Group recalled the deliberations at its sixty-second session (A/CN.9/1087, paras. 39–41) and heard that broad support was expressed during the informal intersessional consultations for the principle that the model law should not endorse the use of non-reliable methods. It also recalled that two proposals had been put forward to clarify the link between articles 9 and 10: first, to insert the word "reliable" before "method" in article 9; second, to insert the words "in accordance with article 10" at the end of article 9

(ibid., para. 41). While the two proposals had been originally presented as alternatives, it was observed during the session that both proposals could be adopted, and the Working Group agreed to amend article 9 accordingly.

21. In response to a query, it was explained that the use of a non-reliable method should not result in a successful identification. However, it was explained that the current wording of article 10 might be incompatible with that position. Indeed, it could be interpreted as validating the use of non-reliable methods despite the amendments to article 9. Specifically, it was suggested that article 10(1)(b) could not be applied to validate potentially non-reliable methods, as previously explained to the Working Group (A/CN.9/1087, para. 40).

22. It was indicated that the model law should not suggest that the reliability of a method could be assessed otherwise than either by the authorities designated in the enacting jurisdiction (ex ante approach) or by a court as part of the review of the various factors listed in article 10(2) in the event of a dispute (ex post approach). On yet another view, it was indicated that the model law should not suggest that the reliability of a method could be assessed otherwise than by the authorities designated in the enacting jurisdiction nor that the various factors listed in article 10(2) could be scrutinized by a court. It was also pointed out that, although cross-border and domestic use of IdM and trust services had elements in common, some concerns still existed regarding the compliance of foreign service providers with the mandatory law of the country where the service was provided, and also its relevant level of reliability. Therefore, the need to insert such a factor as a new element for assessment of reliability in article 10(2) was strongly recommended.

23. Several proposals were put forward to address concerns about article 10(1)(b), which, it was added, implemented the so-called safety clause against non-repudiation, as contained in recent UNCITRAL texts such as the United Nations Convention on the Use of Electronic Communications in International Contracts and the UNCITRAL Model Law on Electronic Transferable Records. One proposal was to insert the words “deemed to be reliable if it is” at the beginning of article 10(1)(b). An alternative proposal was to amend article 10(1)(b) to state that the method used to fulfil in fact the function described in article 9 was presumed reliable unless it was proven otherwise.

24. In reply, it was indicated that neither proposal adequately addressed the concern. Accordingly, it was proposed that article 10(1)(b) should be deleted and transferred to article 10(2) to consider it as one of the factors of reliability under the ex post approach. It was added that this could be done by inserting a new subparagraph or by amending subparagraph (d) by inserting the words “in particular, if it is proven in fact that the purpose is fulfilled”.

25. In further response, it was explained that a method that fulfilled the function described in article 9 was, by definition, a reliable method. It was also observed that replacing article 10(1)(b) with a new or amended factor listed in article 10(2) would substantially alter the provision. It was explained that the list in article 10(2) was non-exhaustive and the various factors listed therein were not presented in any order of priority, and therefore that the fulfilment in fact of the function described in article 9 would no longer be determinative in assessing reliability. It was added that the balance of article 10 had not been identified as a pending issue at the sixty-second session, and that the Working Group should exercise caution in reopening issues at such an advanced stage of deliberations. It was noted that the placement of article 10(1)(b) was a problem of utmost importance for some jurisdictions, particularly those that applied an ex ante mechanism to the assessment of reliability. The view was expressed that all circumstances relevant to the ex post determination of reliability needed to be covered in article 10(2). A suggestion was put forward that placing the content of article 10(1)(b) in article 10(2), but framing it as a factor to be taken into account “in particular”, might offer a starting point for developing a compromise solution. However, doubts were expressed as to whether placing the

safety clause in article 10(2) would ensure that it retained the same legal effect that it enjoyed in other UNCITRAL texts.

D. Level of equivalence of reliability for cross-border recognition

26. The Working Group recalled its previous deliberations on the issue (A/CN.9/1051, para. 61; A/CN.9/1087, paras. 102–107). In particular, it was emphasized that article 25, together with the other provisions of chapter IV, was a core provision of the model law that allowed for the cross-border recognition of IdM and trust services.

27. It was observed that the provisions of the model law on the designation of reliable services and the determination of reliable methods already prohibited discrimination on the basis of geographic location, while requiring the method used by the service to be "reliable". However, a concern was raised about certain exceptions to this general principle in practice. This could be the case if an IdM or trust service provider was established in a territory not recognized by other enacting jurisdiction or when different and sometimes inconsistent standards of reliability existed between the geographic location of the place of business of the service provider and the place where the service was provided. Accordingly, it was suggested that the designation of reliable services and the determination of reliable methods should be subject to a decision made by a court or other competent authority of enacting jurisdictions and, in that regard, relevant standards of the place of the provision of service should be borne in mind.

28. It was added that, by requiring the service to offer "at least an equivalent level of reliability", articles 25 and 26 introduced an element of legal uncertainty as to the interaction between chapters II and III of the model law, on the one hand, and chapter IV, on the other hand. The Working Group also heard a concern that chapter IV of the model law did not recognize the reality of the market, in which a limited number of service providers based in only a few jurisdictions offered IdM and trust services to a worldwide subscribership. It was added that unfettered cross-border recognition of services provided by those service providers could ultimately violate the principles of State sovereignty and equality. Thus, it was proposed to explicitly clarify that this instrument should not affect the principles of State sovereignty, equality and non-intervention. In response, it was noted that regional experience had demonstrated that the approach reflected in chapter IV was adequate in bridging jurisdictions that exported services and those that imported services, as well as in fostering the entrance of new service providers. Retaining chapter IV in its present formulation was therefore reaffirmed. In response to a further query, it was noted that regional experience had also demonstrated that it was possible to introduce a cross-border recognition "layer" of legislation that respected legal and regulatory differences between affected jurisdictions, and therefore that chapter IV did not conflict with the principles of State sovereignty and equality.

29. It was also observed that the standard of "at least an equivalent level of reliability" risked producing asymmetry between the enacting jurisdiction and the foreign jurisdiction, whereby the jurisdiction mandating a higher level of assurance (in the case of IdM) would have its service providers recognized but the jurisdiction mandating a lower level of assurance would not, and that that was not a good basis for cross-border recognition. It was added that similar considerations could be made with respect to levels of reliability of trust services. In response, it was noted that any such asymmetry could be addressed between the two jurisdictions bilaterally and that, in any case, the standard had the effect of raising the bar overall, which was to be welcomed.

30. It was further observed that determining equivalence was not an exact science given the variation between services. It was explained that the alternative standard of "substantial equivalent", which the Working Group had considered in earlier sessions, was not intended to give legal effect to services offering lower levels of reliability.

Accordingly, it was proposed to replace “at least an equivalent level of reliability” with “substantially equivalent or higher level of reliability”. While some support was expressed for the alternative standard, it was noted that legal certainty demanded an objective rather than subjective determination, which militated against notions of “substantial” equivalence. It was added that, to avoid doubt, the model law could specify that the level of reliability was to be at least equivalent “to that of the enacting jurisdiction”.

31. A concern was reiterated about the meaning of the term “recognized international standards” (cf. A/CN.9/1087, paras. 43, 50 and 92). It was suggested that the model law could provide additional guidance as to which standards should be used, and how those standards should be used in practice. On account of such uncertainty and in light of sovereign functions of enacting jurisdictions, a proposal was put forward to replace “shall” with “may” in articles 25(1) and 26(1), and it was reiterated that, in determining the equivalence in those articles, regard shall be had to mandatory standards of the place where the service was provided. It was added that having regard to international standards was an effective way to operationalize the determination of equivalence, and that standards developed at a regional level were being applied effectively under regional recognition regimes. It was also noted that a requirement to have regard to recognized international standard would provide impetus for international standard-setting bodies to develop such standards.

E Level of assurance

32. It was noted that the term “level of assurance” was generally used with respect to IdM, while the term “level of reliability” was used with reference to trust services. However, it was also noted that the term “level of reliability” was used in articles 10(2)(d) and 25, which dealt with IdM, and it was suggested that reference in those articles should instead be made to “level of assurance” for consistency.

33. It was suggested that, for greater clarity, the definition of level of assurance contained in A/CN.9/WG.IV/WP.157 should be inserted in the explanatory note.

34. After discussion, the Working Group agreed to replace “level of reliability” with “level of assurance” in articles 10(2)(d) and 25, and to reproduce the definition of level of assurance contained in A/CN.9/WG.IV/WP.157 in the section of the explanatory note that discussed the term.

F. Third parties and relying parties

35. A question was asked with respect to the use of the term “third party” in articles 6(d) and 14(1)(c) vis-à-vis the term “relying party” in articles 6(e) and 14(1)(e). It was explained that each provision correctly identified the respective target classes of users, which was useful to raise the level of compliance of service providers.

36. For greater clarity as to the relationship between the two classes of users, it was proposed to insert the words “relying parties and other” after the word “subscribers” in articles 6(d) and 14(1)(c). Noting past deliberations of the Working Group on a definition of “third party”, it was also proposed that the explanatory note should provide guidance on the meaning of that notion. After discussion, the Working Group agreed to both proposals.

G. Explanatory note

37. The Working Group considered the explanatory note to the model law based on documents A/CN.9/WG.IV/WP.171 and A/CN.9/1112. It recalled the amendments to the explanatory note that had already been agreed during the session (see paras. 34 and 36 above).

38. It was proposed that, for greater clarity, paragraph 11 of the revised explanatory note should state that the model law does not deal with data privacy and protection rather than stating that it does not “aim to” deal with those matters. Support was expressed for that proposal and the Working Group agreed to amend the explanatory note accordingly.

39. It was proposed that the following words should be added at the end of paragraph 68: “under certain conditions. Such limitation of liability should be permitted by the enacting jurisdiction and not be contrary to its public order legislation.” It was noted that those words should not be read as an invitation to modify existing law to allow service providers to limit liability, and that the word “should” should be replaced with “may” to that end.

40. It was also proposed that the following sentence should be inserted before the final sentence of paragraph 113: “In addition, the obligations under article 6 may not be derogated by contract.” It was explained that the sentence highlighted the mandatory nature of article 6. In response, a concern was expressed that the proposal did not reflect the careful balance in article 6, according to which not all obligations listed in that article necessarily applied to all IdM systems and service providers.

41. After discussion, the Working Group agreed in principle to the proposals with respect to paragraphs 68 and 113, subject to editorial adjustments.

42. Several proposals were made with respect to paragraphs 47 and 48 of the revised explanatory note with the aim of more accurately describing the stages of IdM and clarifying its eventual implementation in practice. In that context, it was proposed to introduce references to “authentication” and “foundational identity”. It was noted that those proposals could be elaborated in comments on the revised explanatory note.

43. It was suggested that paragraphs 113 and 175 of the explanatory note should refer to additional examples of obligations of IdM and trust service providers which are supplementary and may be imposed on IdM and trust service providers by the mandatory law of each enacting jurisdiction. In that regard, cooperation with law enforcement authorities (e.g. in matters of data protection and combating identity theft) and, to that end, establishing a local presence in the enacting jurisdiction, compliance of service providers with the mandatory law of the place where their service was provided or modification of the terms of services and policies in accordance with relevant mandatory rules were emphasized. Moreover, it was indicated that obeying such obligations would facilitate achieving the goal of mutual recognition in articles 25 and 26, and thus it would be highly desirable for enacting jurisdictions to incorporate them in their cooperation in article 27 or at least to consider them as examples of such cooperation in paragraph 234 of the explanatory note. In response, it was noted that the explanatory note should illustrate the content of the model law, and that those obligations were not contained in the model law, though they might be contained in other national law.

44. A concern was raised with respect to the inference of consent of a person by their conduct in paragraph 100 of the explanatory note and it was felt that this rule would seem to be unfair to people with poor knowledge of technology. To that end, the importance of determining the implied consent of parties in a clearer and predictable way was emphasized.

H. Way forward

45. The decisions of the Working Group at its sixty-second session on the way forward for the model law were recalled (see paras. 12–13 above). It was noted that all issues identified as pending and considered in the informal intersessional consultations had been addressed at the present session. It was emphasized that the Working Group had made considerable progress towards finalization of the model law in its recent sessions despite the disruption created by the COVID-19 pandemic.

46. However, during the consideration of article 9, concerns had been raised as to the placement of article 10(1)(b), which was an issue that had not been considered in the informal intersessional consultations. Moreover, the Working Group did not reach consensus on that issue. Different views were expressed on whether it was preferable to seek consensus in the Working Group, in further informal intersessional consultations, or at the Commission.

47. Following various questions on how the discussions and disagreements would be reflected in the text sent to the Commission, the Working Group was informed that, due to the need to circulate the draft Model Law and revised explanatory note in all official United Nations languages with sufficient time for comment before the Commission session, it was not possible to reflect the decisions of the Working Group at the present session in those documents. It was added that, to ensure that comments were made on the most recent version of the texts, the secretariat would draw the attention of States and relevant international organizations to the sections of the report of the Working Group recording those decisions when circulating the texts.

48. The view was reiterated that no final decision had been reached on the drafting of article 9 and 10, and of articles 16 to 21 and 22, namely with respect to the drafting of article 10(1)(b) (see para. 25 above). It was added that, in the interest of clarity, the text to be transmitted for comments and contained in document A/CN.9/1112 should contain multiple drafting options. In response, it was reiterated that, following the decision of the Working Group to circulate the draft Model Law and revised explanatory note in all official United Nations languages for comment before the Commission session (A/CN.9/1087, paras. 113–114), and in light of the need to provide sufficient time for comment, it was not possible to reflect the decisions of the Working Group at the present session in document A/CN.9/1112, which had been made available to the public during the session. It was also reiterated that the secretariat would draw the attention of States and relevant international organizations to those decisions when circulating the texts (see para. 47 above). Noting that the Commission would make a final decision on the text of the Model Law, delegations were urged to submit written comments to inform the Commission of their views.

V. The use of artificial intelligence and automation in contracting

A. Background

49. The Working Group was informed of the exploratory work undertaken by the secretariat on legal issues related to the digital economy, which had shortlisted a range of topics for further preparatory work, including artificial intelligence (AI), data transactions, digital assets, online platforms, and distributed ledger systems. It recalled that, at its fifty-fourth session, in 2021, the Commission had considered a proposal by the secretariat for legislative work on electronic transactions and the use of AI and automation (A/CN.9/1065) and had mandated the Working Group to hold a focused conceptual discussion on the use of AI and automation in contracting with a view to refining the scope and nature of the work to be conducted on the topic (A/76/17, para. 25(e)).

50. The Working Group proceeded with its discussion on the basis of a note by the secretariat on the use of AI and automation in contracting (A/CN.9/WG.IV/WP.173), which outlined the concept of AI and automated contracting and developed the general contours of a legal framework for AI and automated contracting.

51. It was noted at the outset that the use of AI and automation in contracting presented new business opportunities, and that the development of AI could contribute to achieving the Sustainable Development Goals in international trade law. In that regard, it was noted that a legal framework for AI and automated contracting needed to take into account all actors, in particular micro, small and medium-sized enterprises, and be sensitive to existing legal frameworks.

B. Concepts

52. The Working Group considered several key concepts outlined in A/CN.9/WG.IV/WP.173 and focused on (a) the distinction between automated and AI systems, and (b) the concept of automated contracting.

1. Distinction between automated and AI systems

53. The Working Group took note of the concept of "automated system" and of the definition of "automated message system" in the United Nations Convention on the Use of Electronic Communications in International Contracts (i.e. "a computer program or an electronic or other automated means used to initiate an action or respond to data messages or performances in whole or in part, without review or intervention by a natural person each time an action is initiated or a response is generated by the system"). The view was expressed that that definition was apt to describe the systems that were being used for automated contracting.

54. The Working Group considered the distinction between automated and AI systems. General support was expressed for conceptualizing AI systems as a subset of automated systems. Nevertheless, it was recognized that the line between automated systems and AI systems was difficult to draw, particularly for legal purposes.

55. Caution was expressed against defining "AI" itself, which would not only prove difficult but also jeopardize the principle of technology neutrality. Similarly, it was suggested that AI systems should not be defined by reference to the techniques used to develop the underlying computer program, given that those techniques were constantly evolving. Instead, it was proposed to focus on those distinguishing features of AI systems that were legally significant. In that regard, broad support was expressed for the view that the defining feature of AI systems was their unpredictability, which stemmed from the use of "machine learning" techniques, which in turn involved the processing of large quantities of data from multiple sources. In other words, AI systems operated in an "adaptive" – not "deterministic" – manner. There was general support for the view that the distinction between deterministic and non-deterministic operation (i.e. whether the system always generates the same output given the same input) provided an appropriate starting point for formulating a definition of AI system that captured the defining feature of unpredictability. It was questioned whether it was technically correct to assert that an AI system, once the model had been trained and integrated, operated in a non-deterministic manner. However, it was also said that whether a system operated in a non-deterministic manner was not based on the complete lack of predictability but rather on a probability threshold.

56. A preference emerged within the Working Group for referring to "autonomous" systems rather than AI systems. It was added that the reference to "autonomy" did not imply a loss of human control over the design or operation of the system. Broad support was expressed for the view that "autonomous" systems should not be treated as having an independent will or distinct legal personality.

2. Automated contracting

57. It was noted that AI was being deployed in a variety of legal settings, including law enforcement, the administration of justice, and regulatory compliance. Broad support was expressed for focusing future work on the use of automation in contracting. It was emphasized that AI contracting spanned the entire contract life cycle, from the pre-contractual stage to contract formation, performance, renegotiation and termination. The view was affirmed that such a focus would anchor future work within the mandate and past work of UNCITRAL, while avoiding overlap with the work being carried out within the United Nations system and other international forums aimed at developing harmonized standards on the ethical use and governance of AI.

58. A distinction was drawn between AI contracting and contracts for AI. It was explained that the latter comprised contracts for the supply of AI models and AI services, and called for guidance similar to that provided in the Notes on the Main Issues of Cloud Computing Contracts. The difference between AI software and conventional software was emphasized, and it was noted that contracts for AI gave rise to a distinct set of legal issues. It was added that data processing errors in AI contracting could engage the liability of third-party providers of the AI services that are used in automated contracting under the separate contract for AI.

59. A connection was drawn between automated contracting and online platforms, noting that online platforms supported a range of services for automating various stages of the contract life cycle. A connection was also drawn between automated contracting and dispute resolution, noting that automated systems used for contracting could integrate a dispute resolution module.

C. Scope

60. The Working Group heard different approaches as to the scope of future work.

61. On one approach, existing contract law was generally sufficient to address automation but could benefit from guidance as to how it should apply. Accordingly, the Working Group could focus on reviewing UNCITRAL texts to identify and fill any gaps with respect to the legal treatment of automated contracting. It was emphasized that general contract law principles should not be displaced and that non-contractual matters, particularly extracontractual liability, should be avoided. It was also suggested that the work should focus on the relations between the parties to automated contracts and should not concern third-party providers of services used in automated contracting.

62. On another approach, automated contracting posed significant legal challenges that were not addressed within existing texts, and the creation of a new legal framework could be envisaged. A range of legal issues were put forward for further consideration, including: (a) attribution; (b) matters relating to state of mind; (c) pre-contractual disclosure of information; (d) traceability with respect to the operation of automated systems; (e) liability for the output of automated systems, particularly in event of data processing error; (f) non-performance or partial performance of automated contracts; (g) self-enforcement and automated dispute resolution; and (h) renegotiation of contracts.

63. It was acknowledged that the use of “autonomous” systems raised specific legal challenges, including access to evidence and causality on account of the large quantities of data processed from multiple sources. It also called for the consideration of specific regulatory tools, such as the monitoring of systems and certification of their compliance with predefined standards. It was added that certain sensitive business sectors, such as health care, might require additional safeguards. It was pointed out that several topics addressed by the proposal for an Artificial Intelligence Act in the European Union[1] could be included in the considerations of the Working Group as an additional source of inspiration for the facilitation of its work.

64. It was also said that both approaches were compatible, and that a compilation of existing texts and illustration of how they applied to automation would be useful to prepare for a broader drafting exercise. It was explained that the compilation could provide guidance on the use of automated systems operating on deterministic algorithms. In that regard, it was indicated that even the early work of UNCITRAL on electronic data interchange (EDI) could have relevance for certain issues relating to automation, such as attribution.

[1] See European Commission, Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts, document COM(2021) 206 final (21 April 2021).

65. A question was raised as to whether future work should include transactions with consumers, which constituted a significant share of automated contracts. It was added that the distinction between professional trader and consumer was blurred, particularly in the platform economy, and that the need to provide adequate legal protection to other groups, such as micro, small and medium-sized enterprises, was increasingly recognized.

66. It was indicated that future work should proceed on the basis of a review of business practice and use cases. High-frequency trading was identified as a common instance of automated contracting, and its possible impact on market stability was mentioned. It was also observed that automated contracting took place within established frameworks, which was causing the traditional notion of contractual relationship among a limited number of parties to morph into contractual ecosystems.

D. Legal framework for automated and autonomous contracting

67. Based on the deliberations above, the Working Group proceeded to consider the applicability of existing UNCITRAL texts and underlying principles to automated and autonomous contracting, and to elaborate on legal issues that would need to be addressed in future work.

1. Provisions and principles of existing UNCITRAL texts

68. The view was expressed that existing UNCITRAL texts on electronic commerce were drafted before the broader uptake of automated and autonomous systems and therefore could provide only partial solutions to the legal issues arising from their use in contracting. Accordingly, it was again suggested that the provisions of those texts should be reviewed and updated, and that guiding principles for a new legal framework should be identified. It was indicated that work should start with automated contracts and eventually deal with issues related to autonomous contracts.

69. There was broad support for the view that the provisions listed in paragraph 14 of A/CN.9/WG.IV/WP/173 were generally relevant for future work with the exception of the provisions listed in subparagraph (d), which were based on functional equivalence.

70. With respect to the principle of non-discrimination against the use of automated and autonomous contracts, it was suggested that article 8 ECC could be adapted to provide for the legal recognition of contracts in computer code. It was added that, with respect to contracts formed using autonomous systems, additional challenges could arise from a limited understanding of how the system operated. Possible solutions included a condition that a reliable method be used for the functions pursued by the system, or the development of a discrete set of legal provisions. It was also suggested that article 12 ECC could be revised to apply not just to the formation of automated contracts, but also to their performance and modification.

71. The Working Group considered the relevance of the key principles underlying UNCITRAL texts on electronic commerce, as mentioned in paragraph 16 of A/CN.9/WG.IV/WP/173. Broad support was expressed for the view that future work should be guided by technology neutrality, as well as non-discrimination against, and transparency in, the use of electronic means. However, caution and objection were expressed with respect to the role of functional equivalence as a principle, given that the functions pursued by automated contracting did not always have a clear traditional equivalent. In response, it was said that there could be instances where functional equivalence could be applied also in the context of automated and autonomous contracts.

2. Other legal issues

72. The Working Group heard several suggestions on how other legal issues related to automated and autonomous contracting might be dealt with in future work.

73. With respect to attribution, it was said that article 13(2)(b) MLEC provided a relevant reference point, but that it relied on the definition of "originator" set in article 2(c) MLEC that was not applicable in the context of automated and autonomous contracting, where a new definition of "operator" might be needed. Likewise, it was observed that article 14 ECC, which dealt with input errors, required the involvement of a natural person, which might not be involved in automated and especially autonomous contracting.

74. It was noted that transparency was particularly important for autonomous contracting. It was explained that transparency was relevant throughout the contract life cycle, including at the pre-contractual stage (e.g. disclosure of information about the use of an autonomous system and its legal functions), and during the performance of the contract (e.g. disclosure of an operations log that would explain the output of the system). It was added that transparency with respect to the operation of autonomous systems was challenging on account of their complexity and dynamic nature, and needed to pay due regard to copyright and trade secrets. It was also said that transparency could, in certain cases, require compliance with predetermined requirements so as to assure a certain level of reliability of the system, for example, that the level of transparency (e.g. revealing algorithms and codes) depended on the aspired or assigned level of reliability.

75. It was noted that the principle of traceability, which was also relevant to future work, was closely related to transparency and could assist in determining matters relating to state of mind.

76. The importance of liability was emphasized. It was said that it would be desirable to establish a common legal core for liability. It was noted that identifying the liable party could be challenging in autonomous contracting due to the impossibility of tracing the operation of the system. It was explained that possible solutions included a strict liability regime, the development of presumptions of liability, and exemption from liability.

VI. Data transactions

A. Background

77. The Working Group recalled that exploratory work by the secretariat on legal issues related to the digital economy had identified data transactions as a topic for further preparatory work (see para. 49 above). It was informed that a view had been expressed at the fifty-fourth session of the Commission that the topic of data transactions might eventually be referred to the Working Group to be dealt with in tandem with the topic of the use of AI and automation in contracting (A/76/17, para. 237). It was also informed that the Commission had requested the secretariat to continue preparatory work on data transactions as a stand-alone topic (ibid., para. 25(e)). In that regard, the secretariat had identified two aspects of the topic: (a) the rights and obligations of parties to data contracts; and (b) rights in data (or "data rights") independent of contractual relations.

B. Concepts and scope

78. It was stressed that future work on data transactions had to be acutely aware of the existing legal environment relating to data, which included laws on data protection and privacy, laws protecting trade secrets, copyright, and database rights, and national security laws. It was reaffirmed that future work should avoid data privacy and protection issues, as well as intellectual property issues. At the same time, it was observed that existing legal regimes dealing with those issues did not prevent future work on data transaction. Parallels were also drawn to the scope of issues addressed in the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data, as amended.

79. The point was made that the topics of AI and automation in contracting and data transactions were intimately linked. On the one hand, AI models were trained on data sets and AI and automated systems were "fuelled" by data. On the other hand, AI and automated systems were used to process data and extract value. However, it was emphasized that each topic engaged distinct legal issues, and therefore that the topics needed to be treated separately.

80. The Working Group was informed about the "Contract Guidelines on Utilization of AI and Data", which had been published by the Ministry of Economy, Trade and Industry of Japan in 2018, and updated in 2019 (on account of amendments to the Unfair Competition Prevention Act of 2018). It was explained that the "Data Section" of the guidelines was developed with a view to helping business to reduce the cost of implementing data contracts due to lack of experience, while also popularizing the use of data contracts and promoting effective data utilization. The guidelines described the main issues associated with three different types of data contracts – data provision, data generation, and data sharing (using a platform) – provided model contract clauses, and identified factors to consider when negotiating data contracts. It was explained that each type of contract gave rise to specific issues. While data provision contracts (in which one party provided data to another party) raised issues related to the use of provided and derived data and data quality, and data generation contracts (in which the parties cooperated to generate new data) raised issues related to the scope and granularity of data, allocation of rights in generated and derived data, the distribution of profits, and the allocation of costs and liability, data sharing contracts (in which a party operated a platform that the other party used to share data with other platform users) raised issues related to the type and scope of shared data and the use of derived data.

81. It was explained that the premise for the guidelines was that data was not an object of property rights, and that what was colloquially referred to as data "ownership" was essentially concerned with the ability to access and control data, whether in fact or by contractual right. It was added that data generated value by being processed by multiple actors, which in turn involved a relinquishment of control over the data by the original "owner" that had to be balanced against interests in safeguarding confidentiality and trade secrets. In response to a question, it was explained that the guidelines had no statutory force, and that they were based on the assumption that (a) the control to be exercised over data was context-specific, and (b) in line with the principle of party autonomy, the parties were best placed to determine what control was appropriate in the specific context. It was cautioned that statutory "default" rules could stymie data flows if too prescriptive.

82. The Working Group was informed about the "Principles for a Data Economy", which had been jointly developed by the American Law Institute and the European Law Institute ("ALI/ELI Principles"). It was explained that the objective of the ALI/ELI Principles was to bring coherence to existing law and to provide for a transnational and common understanding of basic concepts of the data economy. It was added that the ALI/ELI Principles were designed as both a best practice guide for parties and a legislative and judicial guide. It was emphasized that the ALI/ELI Principles were not model rules and did not contain model contract clauses.

83. It was explained that the ALI/ELI Principles focused primarily on the contractual aspects of data transactions. A distinction was drawn between contracts for the supply or sharing of data, of which five types of contracts were identified, and contracts for services with regard to data, of which four types of contracts were identified. For each type of contract, a set of default terms were established. The example was given of data generated from a sensor mounted on machinery operated by a farming company, which was shared with the manufacturer of the machinery. It was explained that, for this contract "for exploitation of a data source", the ALI/ELI Principles applied a "sales approach" to the default terms, which included the right of the manufacturer (as the recipient) to port the data (i.e. to initiate a transfer of the data from the supplier) and to use the data for any lawful purpose. The example was then given of a subsequent transaction between the manufacturer and third parties wishing

to consult that data. It was explained that, for this "contract for simple access to data", the ALI/ELI Principles applied a "licence approach" to the prescribed default terms, which included the right to access the data but only on infrastructure provided by the manufacturer (now as the supplier), and the right to use the data only for purposes consistent with the purposes agreed in the contract.

84. It was explained that the ALI/ELI Principles also addressed legal issues beyond the rights and obligations of the parties to data contracts. First, they established an obligation on data recipients to pass on any restrictions on the use of the data to other recipients down the data value chain, and a right on the original data supplier to enforce that restriction against the downstream recipient, despite the absence of any contract between the two parties. This was described as a type of "leapfrogging". Second, they established a range of rights that could be exercised against the data "controller" by persons involved in the generation of the data or by other persons in situations required by the public interest. It was explained that those rights included the right to be provided access to the data, the right to port the data, the right to require the data controller to desist from particular data activities, the right to receive an economic share in profits derived from the use of the data, and the right to require correction of the data. In response, it was observed that the rights established in the ALI/ELI Principles gave rise to claims against third parties that could be characteristic of "data ownership".

85. The Working Group heard that a possible working definition of "data" for future work could be formulated in terms of a representation of information in electronic form. It was observed that that definition was quite broad, and that transactions in data, so defined, could extend to dealings in digital assets. The Working Group was informed of earlier exploratory work carried out by the secretariat on digital assets (see A/CN.9/1012, paras. 28–32), which had flagged possible future work to address digital assets in the framework of existing UNCITRAL texts, including on secured transactions and insolvency, and that the secretariat was working closely with the Unidroit secretariat to coordinate future work on data transactions and other topics with the ongoing Unidroit project on digital assets and private law. It was added that the ALI/ELI Principles had excluded digital assets from scope by focusing on data as a representation of "information" (as opposed to data as a representation of a digital asset), and that that approach could be considered as a starting point for distinguishing data transactions from dealings in digital assets.

86. The Working Group also heard that the "processing" of data referred to various operations that could be performed on data, including accessing, sharing and transferring data, as well as the "use" of data. It was observed that future work should clearly define what it meant to "hold" or "control" data.

87. The Working Group considered what it meant for future work to avoid data privacy and protection issues (see para. 78 above). It was noted that many jurisdictions had data privacy laws in place to regulate the processing of personal data. It was also noted that the concept of "personal data", as well as the nature and scope of regulatory measures concerning the processing of personal data, differed between jurisdictions. Support was expressed for the view that avoiding data privacy and protection issues meant that future work should not only be acutely aware of those laws, but should also desist from harmonizing regulatory measures concerning the processing of personal data. It was added that it also meant that a baseline for future work should be a requirement that data be processed "lawfully". It was further observed that the significance of that requirement was such that it influenced not only the terms of data contracts (e.g. warranties and scope), but also the decision of a party to enter into a data contract in the first place.

88. Support was also expressed for the view that avoiding data privacy and protection issues did not mean that future work should ignore data that, in a particular jurisdiction, was regarded as "personal data". In that regard, it was observed that, if personal data was defined as data related to an identified natural person or to a natural person who could be identified (or reidentified) from additional data processing, most

data being traded in business-to-business transactions, including industrial data, included some form of personal data. It was added that it was thus impractical – if not impossible – to limit the scope of future work to data that was not personal data.

89. Broad support was expressed for distinguishing two types of data contracts, namely: (a) contracts for data provision, under which one party provides or supplies data to another party, including by giving that other party access to data or access to a data source; and (b) data processing contracts, under which one party processes data for another party and gives that other party access to the processed data (i.e. data derived from the processing of data). A query was raised as to where data marketplace contracts and contracts with data intermediaries fit into that typology. One view expressed was that platform operators providing data marketplace services as well as data intermediaries were significant actors in the data "ecosystem", and that those contracts represented a third type of data contract. Another view was that data marketplace services essentially involved the processing of data and were thus provided under a data processing contract. Yet another view was that a data marketplace contract could exhibit traits of either a data provision contract or a data processing contract. It was added that data analysis was an important type of service provided under data processing contracts.

C. Legal framework for data transactions

90. The Working Group considered the terms of data provision contracts. It was recalled that the secretariat had examined the relevance of the United Nations Convention on Contracts for the International Sale of Goods (CISG) as a possible source of inspiration for establishing default rules for data provision contracts (cf. A/CN.9/1064, para. 19). A view was expressed that, from the perspective of the recipient, it was important to include an assurance that the data was lawfully provided and could lawfully be processed. It was suggested that data provision contracts should include a warranty that the data provided and intended use of the data complied with applicable data privacy laws. It was added that it was also important to include an assurance that the quality of the data was commensurate with the price.

91. The Working Group also considered the terms of data processing contracts. A view was expressed that it was important for such contracts to include a duty to cooperate, which could entail both an assurance as to the lawfulness of processing, and disclosure and explanation as to how the data was processed. In response, the point was echoed that transparency with respect to the processing of data needed to pay due regard to copyright and trade secrets, particularly given the use of proprietary methods to process data. Recalling other international and regional initiatives related to data, a preference was expressed to regard data "portability", or data porting in the sense given above (para. 83), as an issue for data provision contracts rather than data processing contracts, for which the issue was more about data "compatibility". A preference was also expressed for regarding "interoperability" not as an issue related to data but rather to the systems that are used to process data, including AI systems.

92. After discussion, a preference emerged in the Working Group in favour of focusing on data provision contracts in the first instance. The link between data provision contracts and international trade was emphasized. It was observed that the link between data processing contracts and international trade was not always so evident, and it was suggested that any future work on such contracts should focus on those contracts that contribute to generating value along the data value chain. It was added that data marketplace contracts were one type of data processing contract for which the link with international trade was more evident.

93. The Working Group also considered the merits of future work on rights in data independent of contractual relations. It was acknowledged that the absence of legal recognition of such rights was a source of legal uncertainty in some jurisdictions. It was also noted that amendments to unfair competition legislation in Japan and the Republic of Korea were examples of efforts to address that uncertainty. There was

broad support for future work not to address the issue of data ownership in the sense of establishing data as an object of property rights. There was, however, some support for exploring the concept of "data ownership" in the context of contractual relations. There was also support for focusing on co-generated data as a starting point for possible future work on establishing a bundle of sui generis rights in data. It was nevertheless observed that identifying the class of rightsholders and the content of the rights themselves were issues on which consensus might be difficult to build. It was also queried the extent to which data rights could be regarded as an aspect of data "transactions".

94. Finally, the Working Group heard views on the product of future work on data contracts and other parameters to guide that work. First, it was stressed that future work had to take into account the complexities of the data ecosystem, which involved a multiplicity of actors performing a range of roles with respect to the data that often overlapped. Second, it was underscored that future work should be mindful of the environmental impact of data processing, particularly where it involved data recorded in distributed ledgers maintained by energy-intensive computer networks. Third, it was emphasized that future work by the Working Group should be based on business practices, and that, to that end, it would be useful for the Working Group to collect information on the different types of data contracts being used.

95. Fourth, it was suggested that future work could take the form of establishing "default" rules for data contracts, rather than formulating model contract clauses. Alternatively, it was suggested that future work could take the form of a guide to good practice for parties or a legislative guide. A question was raised as to what gap default rules would fill that was not already filled by the ALI/ELI Principles. In response, it was noted that the Working Group had a broader geographic and legal representation, and that it had not been proposed for UNCITRAL to endorse the ALI/ELI Principles. Finally, the importance of the principle of party autonomy was stressed for any work on establishing default rules.