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Report of Working Group IV (Electronic Commerce) on the work of its sixty-sixth session (Vienna, 16–20 October 2023)

Contents

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I. Introduction

1. At its sixty-sixth session, the Working Group continued work in parallel on the topics of the use of artificial intelligence and automation in contracting and data provision contracts (see A/78/17, para. 158).

2. This was the third session at which the Working Group considered the topic of the use of artificial intelligence and automation in contracting under the mandate conferred by the Commission at its fifty-fifth session in 2022 (A/77/17, para. 159), and the second session at which the Working Group considered the topic of data provision contracts under the mandate conferred by the Commission at the same session (ibid., para. 163).

II. Organization of the session

3. The Working Group, composed of all States members of the Commission, held its sixty-sixth session in Vienna from 16 to 20 October 2023.

4. The session was attended by representatives of the following States members of the Working Group: Afghanistan, Algeria, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Brazil, Canada, Chile, China, Colombia, Czechia, Dominican Republic, Ecuador, Finland, France, Germany, Hungary, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kuwait, Mexico, Morocco, Panama, Peru, Poland, Republic of Korea, Russian Federation, Saudi Arabia, Singapore, Spain, Switzerland, Thailand, Türkiye, Ukraine, United States of America and Viet Nam.

5. The session was attended by observers from the following States: Cambodia, Egypt, El Salvador, Libya, Malta, Myanmar, Oman, Paraguay, Philippines, Portugal, Slovakia, Sri Lanka and Uruguay.

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

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

(a) *United Nations system*: International Monetary Fund (IMF);

(b) *Intergovernmental organizations*: Association of Southeast Asian Nations (ASEAN), Gulf Cooperation Council (GCC), Hague Conference on Private International Law (HCCH);

(c) *International non-governmental organizations*: All India Bar Association (AIBA), Alumni Association of the Willem C. Vis, American Law Institute (ALI), Baltic and International Maritime Conference (BIMCO), Center for International Legal Studies (CILS), Centro de Estudios de Derecho, Economía y Política (CEDEP), 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), International Chamber of Commerce (ICC), International Union of Notaries (UINL), International and Comparative Law Research Center (ICLRC), Law Association for Asia and the Pacific (LAWASIA), Max Planck Institute for Innovation and Competition (MPI), New York City Bar (NYCBAR), New York State Bar Association (NYSBA) and Tehran Chamber of Commerce, Industries, Mines and Agriculture (TCCIMA).

8. The Working Group elected the following officers:

Chairperson:	Mr. Alex IVANČO (Czechia)
Vice-Chairperson:	Mr. Alan DAVIDSON (Australia)
Rapporteur:	Ms. Ligia GONZÁLEZ LOZANO (Mexico)

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

(a) An annotated provisional agenda (A/CN.9/WG.IV/WP.181);

(b) A note by the Secretariat containing a second revision of draft principles on automated contracting, as well as a proposal as to how the Working Group might proceed with discharging the second stage of its mandate (A/CN.9/WG.IV/WP.182); and

(c) A note by the Secretariat containing a first revision of draft default rules for data provision contracts (A/CN.9/WG.IV/WP.183).

10. The Working Group adopted the following agenda:

1. Opening of the session and scheduling of meetings.
2. Election of officers.
3. Adoption of the agenda.
4. The use of artificial intelligence and automation in contracting.
5. Data provision contracts.
6. Other business.

III. The use of artificial intelligence and automation in contracting

A. Preliminary observations

11. The Working Group recalled its mandate on the topic, by which the Commission had requested it:

> "(a) As a first stage, to compile provisions of UNCITRAL texts that apply to automated contracting, and to revise those provisions, as appropriate;
>
> "(b) As a second stage, to identify and develop possible new provisions that address a broader range of issues, including those identified by the Working Group at its sixty-third session."[1]

12. The Working Group also recalled that, at its sixty-fourth session (Vienna, 31 October to 4 November 2022), it had started a process of distilling principles on the topic from existing UNCITRAL texts and developing additional principles on legal issues not fully addressed in those texts (A/CN.9/1125, paras. 11–90) and that, at its sixty-fifth session (New York, 10–14 April 2023), it had advanced the development of draft principles on the topic (A/CN.9/1132, paras. 52–85).

13. At the present session, the Working Group had before it a second revised set of draft principles (A/CN.9/WG.IV/WP.182). It heard that the revised text had been prepared by the secretariat to incorporate the deliberations and decisions of the Working Group at its sixty-fifth session and was accompanied by notes which explained how the draft principles had been revised and identified issues that the Working Group might wish to consider at the present session. The Working Group also heard that the text was accompanied by additional remarks which drew on earlier reports of the Working Group and notes by the Secretariat with a view to preparing explanatory material on the eventual output of the project. The Working Group was reminded of views expressed in earlier sessions that the principle of functional equivalence should not guide its work on the topic given that the functions pursued by automated systems did not always have a clear paper equivalent.

[1] *Official Records of the General Assembly, Seventy-seventh Session, Supplement No. 17* (A/77/17), para. 159.

B. Principle 1. Use of automated systems in contracting

14. It was suggested that principle 1 should clarify that automated systems may be used in only one stage or in multiple stages of the contract life cycle, and therefore with varying degrees of human intervention. It was clarified that the principles were concerned with the use of automation in contracting and not the use of automated systems to assist in contract management (e.g. the use of an AI system to generate contract terms).

15. Broad support was expressed for greater clarity regarding the use of automated systems in connection with the termination of contracts. The view was reiterated that contract termination fell within the broad meaning of contract "performance" given in paragraph 55 of the explanatory note on the United Nations Convention on the Use of Electronic Communications in International Contracts ("ECC"). It was observed, however, that this was not clear from principle 1 or from the additional remarks on that principle (A/CN.9/WG.IV/WP.182, para. 11). Accordingly, it was suggested that the explanatory material on principle 1 should expressly refer to the use of automated systems in connection with contract termination, such as issuing notices of termination or ceasing the performance of the contract. It was suggested that the contract life cycle should involve all matters from the drafting to termination of the contract. To avoid doubt, it was also suggested that the words "for the purpose of forming or performing contracts" should be deleted from the definition of "automated system" in the first sentence of paragraph (a). It was added that explanatory material should avoid references to performance "encompassing" non-performance.

16. The Working Group heard several further suggestions to revise the definition of "automated system":

(a) First, since the terms "deterministic" and "non-deterministic" were not defined, the definition should clarify that it is concerned with algorithmic systems. It was recalled that an earlier definition referred to automated systems as "computer programs" (see also A/CN.9/1132, para. 58(a));

(b) Second, the words "deterministic or non-deterministic systems" should be deleted and replaced with "systems based particularly on artificial intelligence". In response, it was observed that there was no universally accepted definition of "artificial intelligence" and that the reference to "deterministic or non-deterministic systems" struck an appropriate balance between upholding technology neutrality and acknowledging the features that distinguish systems that might be said to exhibit "intelligence".

17. The Working Group heard views regarding terminology:

(a) First, various principles referred to automated systems carrying out "actions" and processing "data messages". It was suggested that, if the processing of data messages constituted an action, as stated in paragraph (b) of principle 1, the principles should refer consistently to the processing of data messages. It was added that, to further acknowledge the distinguishing features of systems powered by artificial intelligence, the principles should, where appropriate, refer to automated systems not only "processing" but also "generating" data messages;

(b) Second, while not in itself inappropriate, the term "action", which refers to a fact, should not be confused with "act", which refers to a legal notion. It was suggested that, if the term "action" was retained, it should be clarified that the term applied to any type of process performed by an automated system – whether internal to the system or external – without reference to any legal qualification. It was added that the term "output" could be used as a more neutral term;

(c) Third, some principles referred to "validity or enforceability" while others also referred to "legal effect". It was suggested that "legal effect" could be used as a catch-all term. In response, it was noted that the various terms were used deliberately in existing UNCITRAL provisions, and that the secretariat would review the references for consistency.

C. Principle 2. Legal recognition

18. It was noted that article 12 ECC was concerned with upholding the validity of contracts formed without human intervention, which might otherwise be regarded as lacking an expression of will of the parties. A concern was expressed that, while paragraph (a) of principle 2 was to be read with the definition of "automated system" in paragraph (a) of principle 1, the absence of an express reference to the validity of contracts formed without human intervention might reduce the effectiveness of paragraph (a) of principle 2 as a restatement of article 12 ECC.

19. It was explained that paragraph (d) was inserted to address cases when dynamic information, i.e. information that is generated and processed periodically or continuously, was incorporated into the terms of a contract after its conclusion through the application of an automated system. It was recalled that the use of dynamic information had been addressed in article 6 of the UNCITRAL Model Law on Electronic Transferable Records ("MLETR"). It was added that paragraph (d) was based on article 5 bis of the UNCITRAL Model Law on Electronic Commerce ("MLEC").

20. Different views were expressed on paragraph (d). One suggestion was to qualify the dynamic nature and source of the information. In that regard, it was clarified that the source of information could be external, e.g. an oracle, or internal to the automated system. It was added that dynamic information could be generated and processed at any stage of the contract life cycle.

21. The Working Group considered a revised version of paragraph (d) along the following lines:

> "Information generated and processed by an automated system shall not be denied legal effect, validity or enforceability on the sole ground that the information [originated in a source] that changes periodically or continuously."

22. General support was expressed for the suggested principle as a basis for further discussion. Noting that the term "action" included both generating and processing information (see para. 17 (a) above), it was said that, alternatively, a reference to the use of dynamic information could be inserted in paragraphs (b) and (c) of principle 2. Another suggestion was to insert a reference to the use of dynamic information in principle 1 as a feature of automated systems. It was noted in response that, while this could be a useful addition given the descriptive nature of principle 1, the adoption of a prescriptive principle might still be desirable. Nevertheless, it was observed that, with the suggested changes, the focus of paragraph (d) had shifted from the legal recognition of dynamic information incorporated in the terms of a contract to the modalities for the generation and processing of information by an automated system.

23. Examples were provided of the use of dynamic information for the determination of price and termination for hardship. It was explained that under the principle of party autonomy the parties to a contract could agree on automated mechanisms to complete or complement contractual terms, and that the incorporation of dynamic information did not necessarily modify the terms of the contract. It was indicated that paragraph (d) should give legal recognition both to the incorporation of dynamic information in the terms of a contract and to automated decision-making based on dynamic information. In that same line, it was suggested that paragraph (d) should give legal recognition to the result of the application of automated systems generating and processing dynamic information.

24. After discussion, the Working Group agreed to retain paragraph (d) as contained in A/CN.9/WG.IV/WP.182 and asked the secretariat to insert a new paragraph drafted along the lines of that contained in paragraph 21 above.

D. Principle 3. Technology neutrality

25. Broad support was expressed for principle 3 as formulated in A/CN.9/WG.IV/WP.182. It was recalled that the term “method” was widely used in existing UNCITRAL texts, including article 3 of the Model Law on Electronic Signatures, and support was expressed for the view that it adequately encompassed the various technologies and techniques implemented by automated systems and any relevant specific products.

26. The view was reiterated that the principles should incorporate a requirement for automated systems to use a reliable method. In that respect, the Working Group heard a suggestion to insert the words “provided that the method is reliable” at the end of principle 3.

E. Principle 4. Attribution

27. The Working Group recalled the exchange of views on the use of “data message” (see para. 17 (a) above).

28. Broad support was expressed for distinguishing attribution and liability and for the Working Group to address rules on attribution. In that respect, it was observed that the distinction was reflected in paragraph (d) but was less apparent in paragraph (b). It was suggested that it would nevertheless be desirable expressly to acknowledge that rules on attribution were connected to liability. It was observed, for instance, that identifying the person to whom a data message was to be attributed would ordinarily be a preliminary step to applying rules on liability. It was also suggested that it would be desirable expressly to acknowledge that rules on attribution were principally concerned with denying that automated systems had any independent will or legal personality. It was emphasized that attribution was relevant throughout the contract life cycle.

29. Different views were expressed about the meaning of “attribution”. On one view, it was said that, in lay terms, attribution was concerned with identifying the person behind the automated system. It was clarified that nothing in the principles required a party to a contract to be identified. On another view, attribution was about linking the legal effects of the actions or data messages generated or processed by automated systems to a natural or legal person. In that regard, a distinction was also drawn with allocation of risk. Reference was also made to the explanation of attribution in paragraph 24 of A/CN.9/WG.IV/WP.182.

30. The view was reiterated that attribution was a matter of application of substantive law, which raised questions of law and fact. It was therefore queried whether the Working Group could find common ground on attribution. In response, the importance of addressing attribution was stressed.

31. Support was expressed for the Working Group to consider principle 4 on the basis of different use cases of automated systems. In that regard, the following scenarios were presented: (i) both parties agree to use the same automated system; (ii) each party uses its own system; (iii) one party alone uses an automated system (e.g. embedding a “chatbot” into a website). A query was raised as to whether scenario (i) occurred in practice, as it raised the question as to whether a single system could serve the interests of both parties.

32. Broad support was expressed for prescribing how the rule in paragraph (a) should be applied. It was noted that the rule would be meaningless without prescribing a mechanism for identifying the person who operated the system, or on whose behalf the system was operated, absent any agreement of the parties.

33. It was noted that a role model might be helpful for a consistent consideration and formulation of principles 4, 6 and 7. A suggestion for an abstract role model was presented and explained to the Working Group, whereby the related roles were

defined by reference to the functions that they played with respect to an automated system alone, and not by reference to their affiliation to a specific institution. The suggested roles were: (i) contracting parties (who use the automated system as end-users and who contract for this purpose the automated system service provider); (ii) automated system service provider (i.e. the person on whose behalf the automated system is operated and who is legally responsible for the service); (iii) automated system designer (who designs and develops the system on behalf of the service provider); (iv) automated system commissioner (who configures, trains, tests, tunes and adjusts the system on behalf of the service provider); and (v) automated system operator (who operates the system on behalf of the service provider).

34. In the context of this role model, it was stressed that contracting parties in the role of "user" can neither have any impact on the operation and characteristics of an automated system nor usually have any access to the operational records generated by the system. By contrast, the role "automated system service provider" has impact on the operation and characteristics of an automated system, as well as access to the operational records generated by the system. It was suggested that the Working Group might discuss this model to facilitate further discussion. In response, several delegations expressed the opinion that such a model is helpful indeed for a clear understanding, which of the roles should be considered within the current mandate of the Working Group, and which of them can be excluded.

35. One option put forward (for a mechanism for identifying the person who operated the system) was to focus on (i) control over the operational parameters of the system in connection with its use for a particular economic activity, and (ii) benefit derived from that use. It was noted in response that the concept of "control" should be clarified as it could be interpreted as requiring "command" over the system, which might be difficult to establish for non-deterministic systems. It was acknowledged that the concept of "control" carried a different meaning in different legal contexts and should be used with caution.

36. Another option put forward was to focus on the "user" of the system. It was noted that a data message generated or processed by an automated system could be attributable to a person regardless of whether that person had control over the system. In response, it was noted that "using" an automated system covered different roles, namely (i) the role of making the system available to a contracting party, which encompassed the design, commissioning and operation of the system, and (ii) the role of interacting with the system. It was explained that the rules on attribution should address both roles, and that it would be insufficient to refer alone to the person interacting with the system. It was added that, in some cases, a contracting party could play both roles.

37. Yet another option put forward was to focus on public representations made with regard to the use of an automated system, or to supplement the rule by reference to the information obligations of the person who is operating the system. The example was given of information on a website concerning the use of a "chatbot". It was observed that that scenario also presented an example of the website operator exercising control over the operational parameters of the "chatbot".

38. As an alternative, it was suggested that the Working Group should not attempt to identify the person to whom a data message was to be attributed in the abstract and should instead focus on attributing the data message in accordance with the method agreed by the parties. Accordingly, it was suggested that (i) paragraph (a) be deleted, and (ii) the words "or method" be inserted after "procedure" in paragraph (b), unless it was clarified that "procedure" included "method".

39. After discussion, the Working Group heard a compromise proposal to retain paragraph (a) but to reformulate it in terms of "use" along the following lines:

> "A data message that is generated or processed by an automated system is attributed to the person who uses the system for the purpose of forming or performing contracts."

40. It was explained that the word “purpose” presupposed a certain expectation as to how the system operated and the exercise of a certain degree of control over its use to form and perform contracts. It was added that, in the interest of commercial certainty, the purpose of using the system would need to be capable of objective determination. It was cautioned that, notwithstanding the reference to purpose, the word “use” needed to be contextualized. It was observed that, given the all-encompassing term “automated system” (as compared to the more discrete notion of “electronic agent”), the word “use” could be interpreted broadly to include any interaction with the automated system, including mere data inputs, as well as the design and commissioning of the system.

41. It was suggested to further revise paragraph (a) to clarify that it accommodated the use of third-party intermediaries (e.g. the system operator). It was said that, if the desire of the Working Group was to focus on attribution as between the contracting parties, it would not be appropriate to substitute “operate” for “use”, as the term “operate” invoked the role of system operator.

42. It was observed that, while the notes stated that paragraph (c) addressed the specific situation in which a third-party system was used (see A/CN.9/WG.IV/WP.182, para. 22), paragraph (c) was not, on its face, limited to third-party systems.

43. It was observed that paragraphs (b) and (c) both addressed scenarios in which the parties assented to the use of an automated system. Support was expressed to combine the paragraphs along the following lines:

> “Notwithstanding paragraph (a), as between the parties to a contract, a data message generated or processed by an automated system is attributed in accordance with the procedure agreed by the user of the system.”

44. It was observed that the “procedure” for attributing a data message might not be agreed between the parties but rather be contained in the terms of use of the system, incorporated into the agreement between one or both parties, on the one hand, and a third-party operator, on the other hand.

45. After discussion, the Working Group agreed to restructure principle 4 so as to focus primarily on attribution as between the parties along the lines of article 13 MLEC. The discussion concluded with a suggestion to proceed with the new paragraph combining paragraphs (b) and (c) as a first paragraph of principle 4. It was observed that, as the Working Group was concerned with the entire contract life cycle, and therefore with the use of automated systems in the pre-contractual stage, there was merit in retaining a second paragraph based on paragraph (a), as reformulated (see above), which would apply in the absence of agreement. Support was expressed for that view. Broad support was also expressed to retain paragraph (d).

F. Principle 5. Intention, knowledge and awareness of the parties

46. It was queried whether principle 5 was an application of other principles or had a stand-alone operation. In response, it was observed that principle 5 logically followed principle 4. It was explained that its purpose was to provide guidance where the state of mind of a party had to be ascertained in cases involving the use of an automated system, and pointed to the design and operation of the system as factors that might be relevant. It was added that what factors were relevant depended on the facts of the particular case. It was clarified that the principle did not create a presumption of intention, knowledge or awareness, but rather merely served as a “signpost”. Nevertheless, it was pointed out that the principle would be difficult to apply in practice as information on the design and operation of the system would not ordinarily be available to all parties.

47. It was suggested that the principle should either be deleted or reformulated to state its purpose more clearly. Different suggestions were made to redraft

principle 5. It was indicated that the principle should focus on non-deterministic systems, and that reference should also be made to the commissioning of the system as a factor so as to capture all the relevant phases of deployment. It was explained that "commissioning" encompassed configuring, training, testing and tuning (see also para. 33 above). It was observed that, whilst paragraph 31 of A/CN.9/WG.IV/WP.182 indicated that principle 5 sought to distil a common approach from relevant cases involving an enquiry into the state of mind of the parties, the court in the *Quoine* case referred to in paragraph 31 had considered the state of mind of the programmer of the system, and not the design of the system in itself.

48. After discussion, the Working Group decided to retain principle 5 along the following lines:

> "If the law requires the presence of intention, knowledge or awareness of a person in connection with the formation or performance of a contract, the design, commissioning and operation of the automated system may be relevant to satisfying that requirement in relation to the use of an automated system (whether deterministic or non-deterministic), unless otherwise provided by law".

49. It was suggested that the words "as appropriate" should be maintained to stress that there might be cases in which not all or none of the factors listed in principle 5 would be relevant. It was also specified that the relevance of the factors should pertain not to satisfying the requirement, but rather to determining whether the use of the system met the requirement.

G. Principle 6. Legal consequences of erroneous data messages

50. It was suggested that principle 6 should be redrafted to require the disclosure of information on system malfunction, such as operations logs, and to introduce an obligation of the parties to cooperate in investigating the malfunction. In response, it was noted that operational rules and operations logs were not ordinarily available to the parties, and that it was preferable to refer in the first limb of paragraph (a) to the terms of use of the automated system, which would have been shared with the parties. Another suggestion was to recast the principle as a positive obligation that clarified the burden of proof.

51. It was indicated that, when a non-deterministic system was used, the parties could not anticipate how the data message was generated or sent, and therefore that the subjective elements in both limbs of paragraph (a) should be deleted. It was also noted that the principle required fulfilling cumulative conditions that might hinder avoidance of the contract and ultimately discourage the use of automated systems in contracting. It was queried whether the use of automated systems entailed a higher risk of generation and dispatch of erroneous data messages.

52. It was recalled that the principle originated in a proposal for the Working Group to provide guidance on situations in which things could go wrong (A/CN.9/1125, para. 33). Reference was made to the situations listed in paragraph 36 of A/CN.9/WG.IV/WP.182. It was indicated that, while the first two situations listed (errors in programming and third-party interference) were not novel, the third situation (unexpected output) was novel and deserved particular attention. It was noted that the third situation (unexpected output), although novel, did not represent a malfunction of an automated system, but rather its expected behaviour, of which users of the system should be aware, e.g. by terms and conditions of use. Based on that explanation, which was supported by some delegations, the view was expressed that existing law was indeed sufficient to address the situation. It was also pointed out that the situation involved the system operating properly. It was added that the terms of use should alert the parties to the operation of the system so that they would be aware of unexpected outputs. Hence, it was said that the parties should be bound by the allocation of risk stipulated in

their contractual agreement regardless of whether the output of the automated system was favourable to them or not.

53. It was observed that, if principle 6 was concerned with unexpected outputs, it was misleading for its title to refer to “erroneous” data messages. Moreover, it was not appropriate for the title to refer to “legal consequences” or for the text to refer to a “relying party” if it denied the ability of a party to rely on data messages. It was suggested that a comprehensive definition of “electronic errors in data messages” in automated systems and its different aspects should be provided to decrease any further ambiguity and misinterpretation.

54. Some support was expressed for deleting principle 6, while it was also suggested that the Working Group should look to article 13(5) MLEC for other possible solutions for dealing with unexpected outputs. It was generally felt that issues addressed in principle 6 deserved further consideration. The Working Group asked the secretariat to redraft the principle in light of its deliberations.

H. Principle 7. Compliance with applicable laws

55. It was indicated that, since work focused on automated contracting, principle 7 should not impose obligations on the system operator and should instead focus on the obligations of the contracting parties. More generally, it was explained that matters concerning the regulation of the design of automated systems, their governance and contractual arrangements for their functioning were outside the scope of work. A concern was expressed that excluding the system operator might limit the utility of a future instrument.

56. It was indicated that, if principle 7 were to impose an obligation on the user to ensure compliance of the automated system with applicable laws, it would impose a particularly heavy burden. In particular, it was noted that users did not have control over the design and operation of automated systems deployed as part of off-the-shelf software applications. It was suggested that the principle could be redrafted to allocate risk for non-compliance of the automated system on the user where that user was actually responsible for the design, commissioning and operation of the system.

57. The view was also expressed that principle 7 should be redrafted to indicate that a contracting party could not use an automated system to avoid compliance with applicable law. It was added that such a principle should not imply any additional obligation.

58. After discussions, the Working Group decided to retain principle 7 along the following lines:

> “The use of an automated system for the purpose of forming and performing contracts may not be invoked as the sole ground for failing to comply with applicable law or the contract or for not bearing the legal consequences of that failure.”

IV. Data provision contracts

A. Preliminary observations

59. The Working Group recalled that, at its sixty-fifth session, it had commenced work on the topic of data provision contracts on the basis of a set of draft default rules prepared by the secretariat (A/CN.9/1132, paras. 9–51). At the present session, the Working Group had before it a first revised set of draft default rules (A/CN.9/WG.IV/WP.183). It heard that the text had been prepared by the secretariat to incorporate the deliberations and decisions of the Working Group at its sixty-fifth session and was accompanied by remarks that explained the revised text

and identified issues that the Working Group might wish to consider at the present session.

60. It was reiterated that, while the United Nations Convention on Contracts for the International Sale of Goods ("CISG") provided a useful starting point for the Working Group to advance its work, there was limited utility in seeking to apply its provisions owing to the significant differences between contracts for the sale of goods and data provision contracts. It was noted that the CISG applied to sales contracts, while the default rules applied to a variety of contractual arrangements for transactions in data. It was recalled that broad support had been expressed within the Working Group in previous sessions to avoid characterizing data provision contracts as "sales or "licences" (see A/CN.9/1132, para. 39).

61. It was noted that the term "provision" was intended to cover the "supply" and "sharing" of data. It was added that the terms "supply" and "sharing" might imply a particular regime for the use of data by the parties under the contract, and that "provision" was more neutral.

B. Article 2. Scope

62. The Working Group agreed to revisit the definitions contained in article 1 as it proceeded through the default rules, and thus to start its review at article 2 (for discussion of article 1, see paras. 88–89 below).

1. Paragraph 1

63. It was observed that paragraph 1 did little to clarify the scope of the default rules. Some support was expressed for a suggestion to insert, at the end of paragraph 1, a non-exhaustive list of the types of data contracts covered by the default rules, mindful that data contracts were constantly evolving. It was noted, for instance, that the Principles for a Data Economy, jointly developed by the American Law Institute and European Law Institute made special provision for "contracts for exploitation of a data source", "contracts for authorization to access", and "contracts for data pooling". In response, it was indicated that some of those contracts might involve more than simply the provision of data.

64. As an alternative, it was suggested that the default rules should confine their scope to specified types of data contracts. Under such an approach, general rules might be established for all specified types of contracts and specific rules for particular types of contracts. It was added that the approach could reduce the need for detailed provisions on exclusions from scope, which might defeat the purpose of default rules.

2. Paragraph 2

65. It was observed that paragraph 2 reflected, in the language of existing UNCITRAL texts, the deliberations within the Working Group at its sixty-fifth session regarding "functional data" (e.g. software) and "representative data" (e.g. cryptocurrency) (A/CN.9/1132, para. 19). It was suggested that, if the Working Group could agree on a definition for those concepts, it might be sufficient to delete paragraph 2 and define "data" to exclude "functional data" and "representative data".

66. A question was raised as to whether securities in electronic form were excluded from scope, and whether more generally an exclusion along the lines of article 2(d) CISG was warranted. In response, it was noted that data representing or constituting securities would ordinarily fall within the concept of "representative data" and constitute an "electronic record". Accordingly, securities could be excluded from scope. Alternatively, securities would fall under paragraph 4 of article 2, in which case the default rules would give way to securities law.

67. It was also observed that subparagraph (c) of paragraph 2 was designed to exclude the result of trust services from scope (A/CN.9/1132, para. 19). A question was asked whether the exclusion extended to trust services other than those specifically identified in the UNCITRAL Model Law on the Use and Cross-border Recognition of Identity Management and Trust Services.

3. Paragraph 3

68. It was acknowledged that the distinction between data provision contracts and data-processing contracts (i.e. contracts under which a party provides data-processing services) was not always clear-cut. It was added that services were not only provided as consideration for the provision of data, but also as a complement to the provision of data. An example was given of data provided via an online platform operated by the data provider. It was also suggested that the Working Group should address contracts involving the generation of data and supply of the generated data. Against that background, there was some support for the view that it was not appropriate to exclude contracts from scope by reference to the "preponderant part" of the obligations. It was suggested that the Working Group should instead proceed on the basis that all contracts involving the provision of data were within scope, or at least those contracts whose characteristic performance was the provision of data.

4. Paragraph 4

69. It was suggested that paragraph 4 should be reformulated to clarify whether it operated to exclude data provision contracts governed by specific laws from the application of the default rules, or whether it operated to give way to those laws in the event of a conflict. In response, it was explained that paragraph 4 was intended to operate exclusively as a "give way" clause, which built on an understanding that emerged from discussions within the Working Group at its sixty-third session (A/CN.9/1093, paras. 87–88) and which should be clarified in the text. Nevertheless, it was suggested that the interaction between the default rules and law relating to data privacy and protection should be further explored. In that regard, it was queried whether the notion of "laws" comprised constitutional safeguards. It was also suggested that the phrase "any laws governing transactions in specific electronic records" may require further clarification.

70. Differing views were expressed as to how consumer contracts should be addressed. On one view, it was noted that transactions in the digital economy made it difficult to identify the use of data or purpose of providing or receiving data, and that it was therefore preferable to apply the approach in paragraph 4 whereby the default rules applied to consumer contracts without prejudice to the application of consumer protection laws. On another view, it was noted that the Working Group was more concerned with contracts where both parties were acting for economic purposes, and therefore that it was appropriate to exclude consumer contracts from scope, based on the concept of consumer transactions defined in existing UNCITRAL texts (e.g. article 2(1)(a) ECC). It was clarified that the exclusion was not concerned with the provision of data originating from consumers, which might be legitimately transacted downstream between businesses. After discussion, a prevailing view emerged to exclude consumer contracts from scope.

C. Article 5. Mode of provision

71. It was observed that it was not clear whether paragraph 1 was prescriptive or merely descriptive of the various modes of providing data. It was explained that paragraph 1 sought to establish a default rule, but was not formulated as an obligation on the data provider as a means to accommodate the involvement of third-party intermediaries (see A/CN.9/WG.IV/WP.183, para. 36).

72. It was observed that a default rule affording the data provider a choice between modes of provision was undesirable as it might go against the expectations of the parties. Moreover, it was noted that expecting the parties to select the mode in the contract, or to agree on other modes of provision, might defeat the purpose of default rules.

73. It was recalled that the two modes of provision listed in paragraph 1 – "delivering the data" and "making the data available" – were the two main modes of provision in practice. Nevertheless, it was suggested that the Working Group should formulate a general rule on the provision of data that did not list specific modes of provision, consistent with the principle of technology neutrality. To that end, it was observed that the essential component of the data provider's obligation was to make the data accessible to the data recipient.

74. Several options to reformulate paragraph 1 were put forward, namely:

(a) To "provide the data recipient with access to the data";

(b) To "provide the data to the data recipient", while specifying that the data provider complied with the obligation "when the data, or any means suitable for accessing, downloading or processing the data is made available or accessible to the data recipient, or to a physical or virtual facility chosen by the data recipient for that purpose";

(c) To "make the data available without undue delay to the data recipient";

(d) To "use a procedure that allows the data recipient to avail itself of the data or to have access to the data"; and

(e) To "provide the data recipient with access to data in a form that empowers the data recipient to readily grasp, compare, process and evaluate the data".

75. It was explained that the first option drew on the OECD recommendation on enhancing access to and sharing of data, while the fourth option covered both accessing and downloading the data. It was observed that the second option might afford the data provider too much choice.

76. A concern was expressed that requiring the data to be "accessible" was insufficient. Broad support was expressed for revising paragraph 1 to clarify that the rule covered the active (e.g. transfer) and passive (e.g. granting access) provision of data. Further options were put forward:

(a) To require the data provider to "provide the data by any means that facilitates access to the data or makes the data available to the data recipient";

(b) To state that data was "made available or accessible" where "no further action is required by the data provider to enable the data recipient to access it in accordance with the contract".

77. It was suggested that the data should be provided so as to be usable under the contract. One option was to require data to be provided "in a form appropriate for the economic purpose of the data recipient and pursuant to the contract". Another option was to require the mode of provision to be appropriate in line with the reasonable or legitimate expectations of the data recipient. In response, it was noted that those requirements concerned matters that were addressed in other parts of the default rules, notably conformity of data. The view was also heard that the rules should align with established uniform contract law terminology.

78. It was stressed that assessing the mode of provision against the nature or purpose of the contract or underlying transaction differed from assessing data conformity. Based on that explanation, support was expressed for requiring the mode of provision to be "appropriate", although additional guidance might be needed as to what "appropriate" meant. To emphasize that articles 7 and 8 were essential components of the data provider's obligations, it was suggested to signal in

article 5 that data was to be provided in accordance with those provisions. For the time being, support was expressed for considering mode of provision separately to data conformity and use.

79. The Working Group asked the secretariat to revise paragraph 1 in light of its deliberations.

1. Paragraphs 2 and 3

80. The usefulness of retaining a default rule to facilitate cooperation was stressed. While the areas and duration of cooperation needed to be clarified, the reference to reasonable expectations was seen as sufficient, and it was suggested to delete the reference to specific areas of cooperation. It was suggested that paragraphs 2 and 3 should be moved to a general provision on the conduct of the parties.

D. Article 7. Conformity of data

1. Paragraph 1

81. It was suggested that the characteristics of data should not be listed exhaustively. In response to a query, it was emphasized that "quantity" was an important characteristic (e.g. range of data points).

2. Paragraph 2

82. It was observed that the conformity requirements should be applied alternatively and need not be applied cumulatively (see art. 35 CISG). It was also observed that the requirements applied as a closed list and as appropriate, and it was thus suggested that fitness for ordinary purpose be reinserted, and that the requirement in subparagraph (d) be recast as a stand-alone provision. Support was expressed for those suggestions.

3. Paragraphs 4 and 5

83. It was indicated that these paragraphs dealt with matters relating to remedies and should thus be moved to article 10. The Working Group agreed with that suggestion.

E. Article 8. Use of provided data

1. Paragraph 1

84. It was suggested to apply the bracketed words in subparagraph (a) also to subparagraph (b). In response, it was noted that all default rules applied absent an agreement of the parties and therefore that the words were redundant. The Working Group agreed instead to insert a provision on the application of the default rules in article 3. Support was expressed for the inclusion of a provision on the use of data upon expiration of the term or termination of the contract (A/CN.9/WG.IV/WP.183, para. 57).

2. Paragraph 3

85. It was noted that the obligations placed on the data recipient were of limited use in practice. In response, it was indicated that it was desirable to maintain a mutuality of obligations between the parties. It was suggested that it was sufficient to supplement the duty of cooperation in paragraph 2 with regard to information on party rights. The meaning of "lawful" use was questioned, and it was said that subparagraph (a) might require the data provider to ensure that the data recipient had sufficient capacity to comply with regulatory requirements. After discussion, the Working Group agreed to supplement subparagraph (a) with an obligation on the data provider to notify the data recipient of limitations to data use arising from

rights of the data provider and of third parties, and to delete the remaining subparagraphs.

F. Article 9. Derived data

86. It was suggested that paragraph (b) should be amended to clarify that, as a default rule, the data provider was not entitled to use derived data. The Working Group agreed with that suggestion. It was also suggested that paragraph (b) should accommodate data-processing contracts. Another suggestion was to insert a definition of derived data in light of its economic importance. It was cautioned that, if derived data was not sufficiently distinguished from provided data, the default rule under paragraph (b) could undermine limits on use under article 8. Moreover, it was noted that, in the absence of a clear definition of "derived data", problems related to intellectual property or copyright could arise. It was explained that, under data pooling agreements, all parties could assume both data provider and data recipient roles.

G. Article 10. Remedies

87. It was said that article 10 did not fully address contract termination, such as restitution, or price reduction. It was also said that paragraph 1 could make reference not only to articles 5 and 6 but also to articles 7 and 8. It was also noted that the duty of the data provider to provide the data may be excluded where performance is impossible or disproportionate. It was added that the requirement for specific performance in paragraph 1 could pose challenges in some jurisdictions. It was noted that remedies were legislative rather than contractual, and it was thus suggested that it would be more appropriate to refer to remedies under national law. A suggestion was made to further elaborate on self-help remedies. Broad support was expressed on the need to revise paragraph 1 in light of these concerns.

H. Article 1. Definitions

88. It was suggested that the definition of "data" should include a requirement of machine readability and suitability for automated processing to better define its scope. The Working Group agreed with that suggestion.

89. It was noted that the inclusion of transfer in the definition of "use" was a sensitive policy decision. It was suggested to list additional operations in the definition. It was also suggested to include a definition of "access" in article 1 (see also discussion of "accessible" in para. 76 above).

V. Next steps

90. The Working Group considered the proposal set out in A/CN.9/WG.IV/WP.182 regarding a possible way forward for the Working Group to discharge the second stage of its mandate on the topic of the use of artificial intelligence and automation in contracting. It was noted that the proposal involved recasting the principles developed by the Working Group as legislative provisions and incorporating them into a consolidation of existing UNCITRAL texts on electronic commerce.

91. It was acknowledged that a consolidation of existing texts could serve as a useful tool for technical assistance activities of the secretariat and provide an opportunity for UNCITRAL to reaffirm the relevance of those texts despite the passage of time and intervening technological developments in trade. At the same time, it was cautioned that a consolidation project would need to avoid redrafting and ensure that the resulting text remained consistent with existing texts. In particular, it was stressed that any additional provisions on automated contracting

would need to ensure consistency with the ECC. It was added that the project should avoid detracting from encouraging States to join the ECC and should identify clearly ECC provisions to ensure that enacting States recognized their provenance. At the same time, a case study was presented of a State adopting the ECC while enacting a consolidation of existing texts in part to implement the Convention.

92. It was noted that work on a consolidated text was beyond the current mandate of the Working Group and would therefore need to be considered and approved by the Commission. It was also noted that the secretariat might be better placed to carry out the project than the Working Group itself. It was therefore contemplated that the Working Group could recommend the project to the Commission as a secretariat work product.

93. Broad support was expressed for the secretariat to proceed with recasting the principles as model legislative provisions. The Working Group agreed to request the secretariat to prepare a revised set of principles, recast as provisions and accompanied by explanatory materials akin to those in a guide to enactment, and to submit it to the Working Group for consideration at its next session with a view to finalization and recommendation to the Commission for adoption at its fifty-seventh session together with a recommendation on proceeding with the consolidation project. The Working Group also agreed to prioritize the work on the use of artificial intelligence and automation in contracting at its next session, while acknowledging the need for flexibility in carrying out work at that session on the topic of data provision contracts. It was suggested that remedies could be a useful starting point for that work at that session on the latter topic.