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Draft Model Law on Electronic Transferable Records with explanatory notes

Note by the Secretariat

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Draft Model Law on Electronic Transferable Records

CHAPTER I. GENERAL PROVISIONS

Article 1. Scope of application

1. This Law applies to electronic transferable records.
2. Other than as provided for in this Law, nothing in this Law affects the application to an electronic transferable record of any rule of law governing a transferable document or instrument including any rule of law applicable to consumer protection.
3. This Law does not apply to securities, such as shares and bonds, and other investment instruments, and to [...].¹

Article 2. Definitions

For the purposes of this Law:

“Electronic record” means information generated, communicated, received or stored by electronic means, including, where appropriate, all information logically associated with or otherwise linked together so as to become part of the record, whether generated contemporaneously or not;

“Electronic transferable record” is an electronic record that complies with the requirements of article 10;

“Transferable document or instrument” means a document or instrument issued on paper that entitles the holder to claim the performance of the obligation indicated in the document or instrument and to transfer the right to performance of the obligation indicated in the document or instrument through the transfer of that document or instrument.

Article 3. Interpretation

1. This Law is derived from a model law of international origin. In the interpretation of this Law, regard is to be had to the international origin and to the need to promote uniformity in its application.
2. Questions concerning matters governed by this Law which are not expressly settled in it are to be settled in conformity with the general principles on which this Law is based.

Article 4. Party autonomy and privity of contract

1. The parties may derogate from or vary by agreement the following provisions of this Law: [...].²
2. Such an agreement does not affect the rights of any person that is not a party to that agreement.

¹ The enacting jurisdiction may consider including a reference to: (a) documents and instruments that may be considered transferable, but that should not fall under the scope of the Model Law; (b) documents and instruments falling under the scope of the Convention Providing a Uniform Law for Bills of Exchange and Promissory Notes (Geneva, 1930) and the Convention Providing a Uniform Law for Cheques (Geneva, 1931); and (c) electronic transferable records existing only in electronic form.

² The enacting jurisdiction may consider which provisions of the Model Law, if any, the parties may derogate from or vary by agreement.

Article 5. Information requirements

Nothing in this Law affects the application of any rule of law that may require a person to disclose its identity, place of business or other information, or relieves a person from the legal consequences of making inaccurate, incomplete or false statements in that regard.

Article 6. Additional information in electronic transferable records

Nothing in this Law precludes the inclusion of information in an electronic transferable record in addition to that contained in a transferable document or instrument.

Article 7. Legal recognition of an electronic transferable record

1. An electronic transferable record shall not be denied legal effect, validity or enforceability on the sole ground that it is in electronic form.
2. Nothing in this Law requires a person to use an electronic transferable record without that person's consent.
3. The consent of a person to use an electronic transferable record may be inferred from the person's conduct.

**CHAPTER II. PROVISIONS ON FUNCTIONAL
EQUIVALENCE****Article 8. Writing**

Where the law requires that information should be in writing, that requirement is met with respect to an electronic transferable record if the information contained therein is accessible so as to be usable for subsequent reference.

Article 9. Signature

Where the law requires or permits a signature of a person, that requirement is met by an electronic transferable record if a reliable method is used to identify that person and to indicate that person's intention in respect of the information contained in the electronic transferable record.

Article 10. Requirements for the use of an electronic transferable record

1. Where the law requires a transferable document or instrument, that requirement is met by an electronic record if:
 - (a) The electronic record contains the information that would be required to be contained in a transferable document or instrument; and
 - (b) A reliable method is used:
 - (i) To identify that electronic record as the electronic transferable record;
 - (ii) To render that electronic record capable of being subject to control from its creation until it ceases to have any effect or validity; and
 - (iii) To retain the integrity of the electronic transferable record.
2. The criterion for assessing integrity shall be whether information contained in the electronic transferable record, including any authorized change that arises from its creation until it ceases to have any effect or validity, has remained complete and

unaltered apart from any change which arises in the normal course of communication, storage and display.

Article 11. Control

1. Where the law requires the possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if a reliable method is used:

(a) To establish exclusive control of that electronic transferable record by a person; and

(b) To identify that person as the person in control.

2. Where the law requires or permits transfer of possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record through the transfer of control over the electronic transferable record.

CHAPTER III. USE OF ELECTRONIC TRANSFERABLE RECORDS

Article 12. General reliability standard

For the purposes of articles 9, 10, 11, 13, 17, 18, and 19, the method referred to shall be:

(a) As reliable as appropriate for the fulfilment of the function for which the method is being used, in light of all relevant circumstances, which may include:

(i) Any operational rules relevant to the assessment of reliability;

(ii) The assurance of data integrity;

(iii) The ability to prevent unauthorized access to and use of the system;

(iv) The security of hardware and software;

(v) The regularity and extent of audit by an independent body;

(vi) The existence of a declaration by a supervisory body, an accreditation body or a voluntary scheme regarding the reliability of the method;

(vii) Any applicable industry standard; or

(b) Proven in fact to have fulfilled the function by itself or together with further evidence.

Article 13. Indication of time and place in electronic transferable records

Where the law requires or permits the indication of time or place with respect to a transferable document or instrument, a reliable method shall be used to indicate that time or place with respect to an electronic transferable record.

Article 14. Determination of place of business

1. A location is not a place of business merely because that is:

(a) Where equipment and technology supporting an information system used by a party in connection with electronic transferable records are located; or

(b) Where the information system may be accessed by other parties.

2. The sole fact that a party makes use of an electronic address or other element of an information system connected to a specific country does not create a presumption that its place of business is located in that country.

Article 15. Issuance of multiple originals

Where the law permits the issuance of more than one original of a transferable document or instrument, this may be achieved with respect to electronic transferable records by the issuance of multiple electronic transferable records.

Article 16. Endorsement

Where the law requires or permits the endorsement in any form of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if the information required for the endorsement is included in the electronic transferable record and that information is compliant with the requirements set forth in articles 8 and 9.

Article 17. Amendment

Where the law requires or permits the amendment of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if a reliable method is used for amendment of information in the electronic transferable record so that the amended information is identified as such.

Article 18. Replacement of a transferable document or instrument with an electronic transferable record

1. An electronic transferable record may replace a transferable document or instrument if a reliable method for the change of medium is used.
2. For the change of medium to take effect, a statement indicating a change of medium shall be inserted in the electronic transferable record.
3. Upon issuance of the electronic transferable record in accordance with paragraphs 1 and 2, the transferable document or instrument shall be made inoperative and ceases to have any effect or validity.
4. A change of medium in accordance with paragraphs 1 and 2 shall not affect the rights and obligations of the parties.

Article 19. Replacement of an electronic transferable record with a transferable document or instrument

1. A transferable document or instrument may replace an electronic transferable record if a reliable method for the change of medium is used.
2. For the change of medium to take effect, a statement indicating a change of medium shall be inserted in the transferable document or instrument.
3. Upon issuance of the transferable document or instrument in accordance with paragraphs 1 and 2, the electronic transferable record shall be made inoperative and ceases to have any effect or validity.
4. A change of medium in accordance with paragraphs 1 and 2 shall not affect the rights and obligations of the parties.

CHAPTER IV. CROSS-BORDER RECOGNITION OF ELECTRONIC TRANSFERABLE RECORDS

Article 20. Non-discrimination of foreign electronic transferable records

1. An electronic transferable record shall not be denied legal effect, validity or enforceability on the sole ground that it was issued or used abroad.
2. Nothing in this Law affects the application to electronic transferable records of rules of private international law governing a transferable document or instrument.

Explanatory Notes to the Model Law on Electronic Transferable Records

I. Introduction [*to be inserted*]

II. Article-by-article commentary

Chapter I. General provisions

Article 1. Scope of application

Paragraph 1

1. The Model Law provides for generic rules that may apply to various types of electronic transferable records based on the principle of technological neutrality and a functional equivalence approach. The principle of technological neutrality entails adopting a system-neutral approach, enabling the use of models based on registry, token, distributed ledger and other technology.

2. Article 2, paragraph 2, of the United Nations Convention on the Use of Electronic Communications in International Contracts (New York, 2005)¹ (the “Electronic Communications Convention”) provided a starting point for defining the scope of application of the Model Law. That provision excludes from the scope of application of the Electronic Communications Convention “bills of exchange, promissory notes, consignment notes, bills of lading, warehouse receipts or any transferable document or instrument that entitles the bearer or beneficiary to claim the delivery of goods or the payment of a sum of money”. That exclusion is due to the fact that at the time of the adoption of the Convention “finding a solution for this problem [of the legal treatment of electronic transferable records] required a combination of legal, technological and business solutions, which had not yet been fully developed and tested”.²

3. The Model Law focuses on the transferability of the record and not on its negotiability on the understanding that negotiability relates to the underlying rights of the holder of the instrument, which fall under substantive law.

4. Certain documents or instruments, which are generally transferable, but whose transferability is limited due to other agreements, do not fall under the definition of “transferable document or instrument” contained in the Model Law (see below, para. 19). The Model Law would therefore not apply to those documents or instruments. However, that conclusion should not be interpreted as preventing the issuance of those documents or instruments in an electronic transferable records management system since such prohibition is likely to result in unnecessary multiplication of systems and increase of costs.

Paragraph 2

5. Paragraph 2 sets forth the general principle that the Model Law does not affect substantive law, including rules of private international law, applicable to transferable documents or instruments. Hence, the same substantive law applies to a transferable document or instrument and to the electronic transferable record containing the same

¹ General Assembly resolution 60/21, annex.

² United Nations Convention on the Use of Electronic Communications in International Contracts (New York, 2005), Explanatory Note, United Nations Publication Sales No. E.07.V.2, para. 81.

information as that transferable document or instrument. The principle applies to each step of the life cycle of an electronic transferable record.

6. One consequence of the rule contained in paragraph 2 is that the Model Law is not intended to be used to create electronic transferable records that do not have an equivalent transferable document or instrument. Allowing such creation by party autonomy would circumvent the principle of *numerus clausus* of transferable documents or instruments, where that principle is applicable (see para. 33 below).

7. During the preparation of the Model Law, UNCITRAL agreed that certain issues related to electronic transferable records did not require a dedicated provision, since those issues were matters of substantive law. Such matters include the requirements and legal effects of:

- (a) The definition of “performance of an obligation”;
- (b) The issuance of an electronic transferable record to bearer;
- (c) The change of the modalities for circulation of an electronic transferable record issued to bearer in an electronic transferable record to the order of a named person and the reverse case (“blank endorsement”);
- (d) The reissuance of an electronic transferable record (see also below, paras. 155 and 159);
- (e) Division and consolidation of electronic transferable records; and
- (f) The use of an electronic transferable record, including as collateral for security rights purposes (see below, para. 9).

8. The explicit reference to consumer protection law aims at highlighting the interaction between that law and the Model Law and represents an application of the general principle that the Model Law does not affect the substantive law applicable to transferable documents or instruments.

Paragraph 3

9. Paragraph 3 clarifies that the Model Law does not apply to securities and other investment instruments. The term “investment instrument” is understood to include derivative instruments, money market instruments and any other financial product available for investment. The term “securities” does not refer to the use of electronic transferable records as collateral and therefore the Model Law does not prevent the use of electronic transferable records for security rights purposes.

10. The purpose of paragraph 3 is to permit the exclusion of certain documents or instruments from the scope of the Model Law. To that end, paragraph 3 includes an open-ended exclusion list that permits application of the Model Law according to the needs of each enacting jurisdiction, thus providing both flexibility and clarity on the scope of application of the Model Law.

11. The footnote to paragraph 3 highlights three possible types of exclusions and does not prevent enacting jurisdictions from adding other types of exclusions according to their needs:

- (a) Certain instruments or documents, such as letters of credit, which may be considered transferable documents or instruments in some jurisdictions but not in others. In that respect, it should be noted that national legislation does not define transferable documents and instruments in a uniform manner;
- (b) Documents or instruments falling under the scope of the Convention Providing a Uniform Law for Bills of Exchange and Promissory Notes (Geneva, 1930)

and of the Convention Providing a Uniform Law for Cheques (Geneva, 1931) (the “Geneva Conventions”) in order to avoid possible conflicts between the Geneva Conventions and the Model Law, regardless of whether the Geneva Conventions are in force or not in the jurisdiction enacting the Model Law (see below, paras. 12-15);

(c) Electronic transferable records that exist only in an electronic environment. Such exclusion could be useful in jurisdictions allowing for the use of both electronic transferable records that are functional equivalent of transferable documents or instruments and of electronic transferable records that exist only in an electronic environment. In that respect, it should be noted that a provision allowing for the application of the Model Law to purely electronic transferable records on a residual basis, so that in case of conflict the Model Law would not prevail over the law applicable to such electronic transferable records, was not inserted in the Model Law due to concerns on the relationship between the general principles contained in the Model Law and the general principles contained in laws of a different nature.

The Geneva Conventions

12. During the preparation of the Model Law, different views have been expressed on the interaction between the Model Law and the Geneva Conventions.

13. One view expressed was that formalism was a fundamental principle underpinning the Geneva Conventions that prevented the use of electronic means and therefore the instruments falling under the scope of those Conventions should always be excluded from the scope of the Model Law. In order to accommodate that view, the Model Law allows for exclusion of the documents and instruments falling under the scope of the Geneva Conventions (see above, subpara. 11(b)).

14. Jurisdictions adhering to that view and wishing to enable the use of electronic versions of the documents and instruments falling under the scope of the Geneva Conventions may consider introducing electronic transferable records existing only in an electronic environment, which will neither be legally the documents and instruments falling under the scope of the Geneva Conventions nor fall under the scope of the Model Law.

15. Another view expressed was that the scope of application of the Model Law should include instruments falling under the scope of the Geneva Conventions on the understanding that the Model Law generally aims at overcoming obstacles to the use of electronic means arising from form requirements relating to the use of paper-based transferable documents or instruments.

References

[A/CN.9/761](#), paragraphs 18-25, 28-30; [A/CN.9/768](#), paragraphs 17-24; [A/CN.9/797](#), paragraphs 16-20, 27-28, 65, 109-112; [A/CN.9/828](#), paragraphs 24-30, 81-84; [A/CN.9/834](#), paragraphs 72-73; [A/CN.9/863](#), paragraphs 17-22; [A/CN.9/869](#), paragraphs 19-23.

Article 2. Definitions

16. The definition of “electronic record” builds upon the definition of “data message” contained in the UNCITRAL Model Law on Electronic Commerce (1996)³ and in the Electronic Communications Convention and aims to clarify that electronic records may, but do not need to, include a set of composite information. It highlights the fact that information may be associated with the electronic transferable record at

³ UNCITRAL Model Law on Electronic Commerce with Guide to Enactment (New York, 1999), United Nations Publication Sales No. E.99.V.4.

the time of issuance or at any time before or after (e.g., information related to endorsement). In particular, the generation of metadata does not necessarily take place after the generation of a record, but could also precede it. The composite nature of an electronic transferable record is particularly relevant for the notion of “integrity” contained in article 10, paragraph 2, of the Model Law.

17. Moreover, the definition of “electronic record” allows for the possibility that in certain electronic transferable records management systems data elements may, taken together, provide the information constituting the electronic transferable record, but with no discrete record constituting in itself the electronic transferable record. The word “logically” refers to computer software and not to human logic.

18. The Model Law contains a definition of “electronic transferable record”. For comments on the definition of “electronic transferable record” (see below, paras. 68-70).

19. The definition of “transferable document or instrument” focuses on the key functions of transferability and of providing a title to performance. It does not aim at affecting the fact that substantive law shall determine the rights of the person in control.

20. Applicable substantive law shall determine which documents or instruments are transferable in the various jurisdictions. An indicative list of transferable documents or instruments, inspired by article 2, paragraph 2, of the Electronic Communications Convention, includes: bills of exchange; cheques; promissory notes; consignment notes; bills of lading; warehouse receipts; insurance certificates; and air waybills.

21. As indicated in the definition of “transferable document or instrument”, the words “transferable document or instrument” refer to a transferable document or instrument issued on paper (as opposed to an electronic transferable record) in the Arabic, Chinese, English and Russian language versions of the Model Law. The words “paper-based” are used for linguistic clarity before the words “transferable document or instrument” in the French and Spanish language versions of the Model Law ([A/CN.9/863](#), para. 93).

References

[A/CN.9/768](#), paragraphs 25-34; [A/CN.9/797](#), paragraphs 21-28, 43-45; [A/CN.9/828](#), paragraph 31; [A/CN.9/834](#), paragraphs 25-26, 95-98 and 100; [A/CN.9/863](#), paragraphs 88-102; [A/CN.9/869](#), paragraphs 24-27.

Article 3. Interpretation

International origin and promotion of uniform interpretation

22. Article 3 is intended to draw the attention of courts and other authorities to the fact that domestic enactments of the Model Law should be interpreted with reference to their international origin and the need to promote their uniform interpretation in light of that origin. The uniform interpretation of UNCITRAL texts is a key element to ensure predictability of the law applicable to commercial transactions across borders.

23. Similar wording appears in several UNCITRAL texts, including in article 3 of the UNCITRAL Model Law on Electronic Commerce and article 4 of the UNCITRAL Model Law on Electronic Signatures,⁴ and was first introduced in article 7 of the Convention on the Limitation Period in the International Sale of Goods (New York,

⁴ UNCITRAL Model Law on Electronic Signatures with Guide to Enactment (New York, 2002), United Nations Publication Sales No. E.02.V.8.

1974).⁵ The words “This Law is derived from a model law of international origin” emphasize that the law constitutes an enactment of a model law with international origin and are not contained in other UNCITRAL texts.

24. Article 3, unlike other provisions contained in UNCITRAL texts and dealing with their international origin and uniform interpretation, does not refer to the notion of good faith. That exclusion is due to the fact that the principle of good faith has a specific meaning with respect to transferable documents or instruments, which is distinct from the general principle of good faith in international trade law. The principle of good faith as a general principle of international law could be included in the general principles on which the Model Law is based.

General principles

25. The notion of “general principles” has been used in several UNCITRAL texts. Article 7 of the United Nations Convention on Contracts for the International Sale of Goods (Vienna, 1980)⁶ is the provision containing that notion that has been most interpreted by case law.

26. The general principles of the law governing electronic communications, namely the principles of non-discrimination against electronic communications, technological neutrality and functional equivalence that have already been identified and formulated in other UNCITRAL texts, are the fundamental principles underlying the Model Law.

27. The clarification of the exact content and operation of the notion of general principles referred to in paragraph 2 may take place progressively in light of the increasing level of use, application and interpretation of the Model Law (for the principle of good faith, see above, para. 24). Such progressive clarification provides flexibility in the interpretation of the Model Law useful to ensure its ability to accommodate evolving commercial practices and business needs.

References

[A/CN.9/768](#), paragraph 35; [A/CN.9/797](#), paragraph 29; [A/CN.9/869](#), paragraphs 28-31.

Article 4. Party autonomy and privity of contract

28. Party autonomy is a fundamental principle underpinning commercial law and UNCITRAL texts that aims to promote international trade as well as technological innovation and the development of new business practices. Moreover, party autonomy may provide desired flexibility in the implementation of the Model Law.

29. However, the implementation of the principle of party autonomy has found some limits in UNCITRAL texts on electronic commerce in order to avoid conflicts with rules of mandatory application, such as those on public policy.

30. In particular, article 4 of the UNCITRAL Model Law on Electronic Commerce allows variation by agreement of the provisions on electronic communications, but sets limits to variation by agreement of functional equivalence rules, also to avoid circumventing form requirements of mandatory application. Moreover, party autonomy may not affect rights and obligations of third parties.⁷

31. In addition, article 5 of the UNCITRAL Model Law on Electronic Signatures indicates that parties may derogate from all provisions of that Model Law, unless derogation would not be valid or effective under applicable law, i.e. it would affect

⁵ United Nations, *Treaty Series*, vol. 1511, No. 26119, p. 3.

⁶ United Nations, *Treaty Series*, vol. 1489, No. 25567, p. 3.

⁷ UNCITRAL Model Law on Electronic Commerce, Guide to Enactment, paras. 44-45.

rules of mandatory application such as those relating to public policy.⁸ A similar approach is adopted in article 3 of the Electronic Communications Convention.⁹

32. Similarly, the Model Law provides party autonomy within the limits of mandatory law and without affecting rights and obligations of third parties. The Model Law does not indicate which provisions may be derogated from or varied by agreement; it is for enacting jurisdictions to identify them. In doing so, it may be useful to consider that variance in the enactment of the Model Law may significantly disrupt uniformity. In that respect, enacting jurisdictions should carefully consider the possibility of allowing derogation of the fundamental principles underlying the Model Law (see above, para. 26) and, in particular, functional equivalence rules, and the consequences thereof.

33. Certain jurisdictions, in particular those belonging to the civil law tradition, recognize the principle of *numerus clausus* of transferable documents or instruments. The Model Law does not aim at offering manners to circumvent by agreement that principle, in line with the general principle that the Model Law does not affect substantive law provisions. At the same time, and based on the same general principle, the Model Law does not limit in any manner the ability of the parties to derogate from or vary substantive law.

34. Therefore, a careful analysis is necessary to ascertain which provisions of the Model Law could be derogated from or varied by the parties. The Model Law leaves this assessment to the enacting jurisdiction, in order to accommodate differences in legal systems. To that end, paragraph 1 contains square brackets, in which the enacting jurisdiction could identify the provisions which could be derogated from or varied (see also below, paras. 119-120).

References

[A/CN.9/768](#), paragraphs 36-37; [A/CN.9/797](#), paragraphs 30-32 and 113; [A/CN.9/869](#), paragraphs 32-44.

Article 5. Information requirements

35. Article 5, inspired by article 7 of the Electronic Communications Convention,¹⁰ highlights the need to comply with possible disclosure obligations that might exist under other law. Examples of those information requirements include information to be provided under consumer protection law and to prevent money-laundering and other criminal activities.

36. The obligation to comply with those information requirements arises from the principle that the Model Law does not affect substantive law that is contained in article 1, paragraph 2, of the Model Law. The reference to other law containing the information requirements provides desirable flexibility since those requirements are likely to change over time. Article 5 does not deal with the legal consequences attached to violating information requirements, which are to be found, like the information requirement itself, in other law.

37. Article 5 does not prohibit the issuance of an electronic transferable record to bearer when permitted under substantive law. In that respect, it should be noted that an electronic transferable records management system may allow to identify

⁸ UNCITRAL Model Law on Electronic Signatures, Guide to Enactment, paras. 111-114.

⁹ United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, para. 85.

¹⁰ United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, paras. 122-128.

the person in control of an electronic transferable record for regulatory purposes (e.g., anti-money-laundering) but not for commercial law purposes (e.g., for an action in recourse).

References

[A/CN.9/768](#), paragraph 38; [A/CN.9/797](#), paragraph 33; [A/CN.9/869](#), paragraphs 45-47.

Article 6. Additional information in electronic transferable records

38. As a general rule, according to article 10, subparagraph 1(a) of the Model Law an electronic transferable record shall contain the information required to be contained in a transferable document or instrument (see below, paras. 71-75; see also below, paras. 151 and 166). The Model Law does not require the insertion of information additional to that contained in a transferable document or instruments for the issuance and use of an electronic transferable record. Requiring that additional information would create a legal requirement that does not exist with respect to the issuance and use of transferable documents or instruments and therefore could constitute discrimination against the use of electronic means.

39. Adding to that general rule, article 6 clarifies that the electronic transferable record may, but does not need to contain information additional to that contained in the transferable document or instrument. In other words, while the Model Law does not impose any additional information requirement for electronic transferable records, it also does not prevent the inclusion in those records of additional information that may not be contained in a transferable document or instrument due to the different nature of the two media.

40. Examples of such additional information include information necessary due to technical reasons, such as metadata or a unique identifier. Moreover, such additional information could consist of dynamic information, i.e. information that may change periodically or continuously based on an external source, which may be included in an electronic transferable record due to its nature but not in a transferable document or instrument. The price of a publicly-traded commodity and the position of a vessel are examples of dynamic information.

References

[A/CN.9/761](#), paragraph 32; [A/CN.9/768](#), paragraph 66; [A/CN.9/797](#), paragraphs 70-73; [A/CN.9/869](#), paragraphs 101-102.

Article 7. Legal recognition of an electronic transferable record

Paragraph 1

41. Paragraph 1 restates the general principle of non-discrimination against the use of electronic means that is set forth in article 5 of the UNCITRAL Model Law on Electronic Commerce¹¹ and in article 8, paragraph 1, of the Electronic Communications Convention.¹²

42. By stating that information “shall not be denied validity or enforceability on the sole ground that it is in electronic form”, paragraph 1 merely indicates that the form in which an electronic transferable record is presented or retained cannot be used as the only reason for which that record would be denied legal effectiveness, validity or

¹¹ UNCITRAL Model Law on Electronic Commerce, Guide to Enactment, para. 46.

¹² United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, para. 129.

enforceability. However, the provision should not be misinterpreted as establishing the legal validity of an electronic transferable record or any information therein.

Paragraphs 2 and 3

43. Paragraphs 2 and 3 are inspired by article 8, paragraph 2, of the Electronic Communications Convention.¹³

44. Paragraph 2 clarifies that legal recognition of electronic transferable records does not imply a requirement to use or accept them. However, this does not preclude enacting jurisdictions from mandating the use of electronic transferable records, at least with respect to some categories of users and some types of transferable documents and instruments, in light of the policy goals pursued.

45. The requirement of consent to the use of an electronic transferable record is a general one and applies to all instances where an electronic transferable record is used under the Model Law and to all parties involved in the life cycle of the electronic transferable record. Therefore, other provisions of the Model Law do not contain an explicit reference to consent.

46. The consent to using electronic transferable records does not need to be expressly indicated or given in any particular form and may be inferred from all circumstances, including parties' conduct. While absolute certainty can be accomplished by obtaining an explicit consent before using an electronic transferable record, such an explicit consent should not be mandated as it would create an unreasonable barrier to the use of electronic means.

47. Certain systems used for electronic transferable records management, such as registry-based systems, may require acceptance of system rules prior to authorizing access to the system. Those system rules may include or imply consenting to the use of electronic transferable records.

48. Consent to the use of an electronic transferable record in systems that lack a centralized operator, such as token-based and distributed ledger-based systems, may be implicit and inferred by circumstances such as exercise of control on the record or performance of the obligation contained in the record.

References

[A/CN.9/768](#), paragraphs 39, 57-58; [A/CN.9/797](#), paragraphs 34-35, 62-63; [A/CN.9/804](#), paragraph 17; [A/CN.9/869](#), paragraphs 93 and 94.

CHAPTER II. PROVISIONS ON FUNCTIONAL EQUIVALENCE

49. Any reference to a legal requirement contained in the provisions of the Model Law setting forth functional equivalence rules implies a reference to the consequences arising when a legal requirement is not met, making it not necessary to explicitly refer to those consequences. Accordingly, the Model Law does not contain the words "or provides consequences" after the words "when the law requires" ([A/CN.9/834](#), paras. 43 and 46).

¹³ United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, paras. 131-132.

Techniques of enactment of articles 8 and 9

50. Provisions indicating the requirements for functional equivalence of the notions of “writing” and “signature” in an electronic environment are of fundamental importance for the application of UNCITRAL texts on electronic commerce. While the enactment of the Model Law on Electronic Transferable Records requires the adoption of those functional equivalence standards, such adoption could take place with different techniques.

51. A law on electronic transactions is likely to contain such functional equivalence provisions, possibly based on UNCITRAL uniform texts. The general rules on functional equivalence between electronic and written form contained in the law on electronic transactions apply to all electronic records that are not transferable.

52. If the Model Law on Electronic Transferable Records is adopted by consolidation with an enactment of the UNCITRAL Model Law on Electronic Commerce or other text providing general rules on functional equivalence, it may be possible to adopt provisions for the functional equivalence of the paper-based notions of “writing” and “signature” that will apply to both transferable and non-transferable electronic records.

53. However, it may also be that those functional equivalence provisions do not exist in a jurisdiction wishing to enact the Model Law on Electronic Transferable Records. In that case, the adoption of articles 8 and 9 would address the legislative need.

54. In any case, careful consideration should be given to the consequences of establishing a dual regime setting forth different functional equivalence requirements for electronic records and electronic transferable records.

Reference

[A/CN.9/897](#), paragraphs 54-57.

Article 8. Writing

55. Article 8 establishes the requirements for the functional equivalence of the written form with respect to information contained in or related to electronic transferable records. It is inspired by article 6, paragraph 1, of the UNCITRAL Model Law on Electronic Commerce.¹⁴ Article 8 refers to the notion of “information” rather than “communication” as not all relevant information might necessarily be communicated, depending on the system chosen for electronic transferable records management.

56. Article 8 sets forth a functional equivalence rule for the notion of “writing” with respect to electronic transferable records only. The use of writing is instrumental in performing several actions that may occur during the life cycle of an electronic transferable record, such as endorsement (see below, para. 138). The general rule on functional equivalence of written and electronic form contained in the law on electronic transactions applies to all electronic records that are not transferable.

References

[A/CN.9/768](#), paragraphs 40-44; [A/CN.9/797](#), paragraphs 36-39; [A/CN.9/804](#), paragraphs 18-19.

¹⁴ UNCITRAL Model Law on Electronic Commerce, Guide to Enactment, paras. 47-50.

Article 9. Signature

57. Article 9 establishes the requirements for the functional equivalence of “signature” when substantive law either contains an explicit signature requirement or provides consequences for the absence of a signature (implicit signature requirement). The words “or permits” clarify that article 9 shall apply also to cases when the law permits, but does not require a signature.

58. Article 9 is inspired by article 7, subparagraph 1(a), of the UNCITRAL Model Law on Electronic Commerce.¹⁵ Moreover, following the text of article 9, paragraph 3, of the Electronic Communications Convention, it refers to the “intention” of the party so as to better capture the different functions that may be pursued with the use of an electronic signature.¹⁶ The reliability of the method referred to in article 9 shall be assessed according to the general reliability standard contained in article 12.

59. The reference to the signature requirement being fulfilled “by” an electronic transferable record is meant to clarify that article 9 applies to electronic transferable records only and not to other electronic records that are not transferable but are somehow related to an electronic transferable record. Hence, article 9 sets forth a functional equivalence rule for the notion of “signature” with respect to electronic transferable records only.

60. Certain electronic transferable records management systems, such as those based on distributed ledgers, may identify the signatory by referring to pseudonyms rather than to real names. That identification, and the possibility to link pseudonym and real name, including based on factual elements to be found outside distributed ledger systems, could satisfy the requirement to identify the signatory.

61. The general rule on functional equivalence of electronic and handwritten signatures contained in the law on electronic signatures applies to signatures used in relation to all electronic records that are not transferable.

References

[A/CN.9/768](#), paragraphs 41 and 43; [A/CN.9/797](#), paragraphs 40-47; [A/CN.9/804](#), paragraph 20; [A/CN.9/869](#), paragraphs 48-49.

Article 10. Requirements for the use of an electronic transferable record

62. Article 10 provides a functional equivalence rule for the use of transferable documents or instruments by setting forth the requirements to be met by an electronic record. The reliability of the method referred to in article 10 shall be assessed according to the general reliability standard contained in article 12.

63. Article 10 represents the outcome of discussions originating from the notion of “uniqueness”. Uniqueness of a transferable document or instrument aims to prevent the circulation of multiple documents or instruments relating to the same performance and thus to avoid multiple claims. Providing a guarantee of uniqueness in an electronic environment equivalent to possession of a document of title or negotiable instrument has long been considered a peculiar challenge.

64. Uniqueness is a relative notion that poses technical challenges in an electronic environment, as providing an absolute guarantee of non-replicability may not be technically feasible. In fact, the notion of uniqueness poses challenges also with respect to transferable documents or instruments, since paper does not provide an

¹⁵ UNCITRAL Model Law on Electronic Commerce, Guide to Enactment, paras. 53-56.

¹⁶ United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, para. 160.

absolute guarantee of non-replicability. However, centuries of use of paper in business transactions have provided sufficient information to commercial operators for an assessment of the risks associated with the use of that medium while practices on the use of electronic transferable records are not yet equally well-established.

65. Article 10 aims at preventing the possibility of multiple requests to perform the same obligation by combining two approaches, i.e. “singularity” and “control”.

66. The “singularity” approach requires reliable identification of the electronic transferable record that entitles its holder to request performance of the obligation indicated in it, so that multiple claims of the same obligation would be avoided, while the “control” approach focuses on the use of a reliable method to identify the person in control of the electronic transferable record (see also below, paras. 87-102).

67. One effect of the adoption of the notions of “singularity” and “control” in the Model Law is the prevention of unauthorized replication of an electronic transferable record by the system.

68. The definition of “electronic transferable record” reflects the functional equivalent approach and refers to electronic transferable records that are equivalent to transferable documents or instruments. It does not aim at affecting the fact that substantive law shall determine the rights of the person in control. Likewise, it does not aim at describing all the functions possibly related to the use of an electronic transferable record. For instance, an electronic transferable record may have an evidentiary value; however, the ability of that record to discharge that function will be assessed under law other than the Model Law.

69. In line with the general approach and the scope of the Model Law, the definition of “electronic transferable record” is meant to apply to electronic transferable records that are functionally equivalent to transferable documents or instruments. Yet, the Model Law does not preclude the development and use of electronic transferable records that do not have a paper equivalent as those records are not governed by the Model Law.

70. The definition of “electronic transferable record” does not cover certain documents or instruments, which are generally transferable, but whose transferability may be limited due to other agreements. This could be the case, in certain jurisdictions, of straight or nominative instruments, such as promissory notes, bills of lading and bills of exchange. The definition of “electronic transferable record” should not be interpreted as preventing the issuance of those documents or instruments in an electronic transferable records management system (see also above, para. 4). Substantive law shall determine which documents or instruments are transferable.

Subparagraph 1(a)

71. Subparagraph 1(a) states that the electronic record should contain the information required to be in a transferable document or instrument. Since that information is contained in writing in a transferable document or instrument, its inclusion in an electronic transferable record must comply with article 8 of the Model Law. The definition of “electronic record” contained in article 2 of the Model Law clarifies that the electronic record may, but does not need to, have a composite nature.

72. The information that would be required to be contained in a transferable document or instrument allows determining the substantive law applicable to the electronic transferable record (e.g., the law applicable to a bill of lading, rather than the law applicable to a promissory note). Nevertheless, one electronic transferable record may contain information that would be required to be contained in more than one type of transferable document or instrument.

73. A law that does not contain a provision akin to that contained in article 10, subparagraph 1(a), but sets forth directly the information requirements to be contained in an electronic transferable record, is likely to provide for electronic transferable records that are not functionally equivalent to transferable documents or instruments, but exist only in an electronic environment.

74. Accordingly, an electronic transferable record existing only in electronic form would not satisfy the requirements of article 10 and would not fall under the definition of electronic transferable record contained in article 2. Namely, while an electronic transferable record existing only in electronic form could satisfy other requirements set forth in the Model Law, that record would define autonomously the information requirements and therefore would not comply with article 10, subparagraph 1(a).

75. Subparagraph 1(a) does not contain any qualifier as “equivalent”, “corresponding” or “as having the same purpose” given that under that provision an electronic transferable record must indicate the same information required for a transferable document or instrument of the same type. Insertion of a further qualifier might create uncertainty.

Subparagraph 1(b)(i)

76. Subparagraph 1(b)(i) sets forth the requirement to identify an electronic record as the record containing the information necessary to establish that record as the electronic transferable record. That requirement implements the “singularity” approach.

77. The purpose of the provision is to identify the electronic transferable record as opposed to other electronic records that are not transferable. Identification alone suffices to express the singularity approach. The article “the” in the English, French and Spanish language versions of the Model Law suffices to point at the singularity approach, thus avoiding the use of any qualifier and related challenges. The Arabic, Chinese and Russian language versions of the Model Law intend to convey the same notion.

78. Unlike other legislation on electronic transferable records, subparagraph 1(b)(i) does not refer to a qualifier such as “authoritative”, “operative” or “definite” to identify the electronic record as the electronic transferable record. The reasons for that omission are that: insertion of a qualifier could create interpretative challenges, especially in certain languages; it could be interpreted as referring to the notion of “uniqueness”, which has been abandoned; and it could ultimately foster litigation.

Subparagraph 1(b)(ii)

79. Subparagraph 1(b)(ii) sets forth the requirement that the electronic transferable record should be capable of being controlled from its creation until it ceases to have any effect or validity, particularly in order to allow for its transfer. That requirement implements the “control” approach.

80. The reference to a reliable method with respect to subparagraph 1(b)(ii) refers to the reliability of the system used to render the electronic record capable of being subject to control.

Subparagraph 1(b)(iii)

81. The notion of integrity is an absolute one. It refers to a fact, and as such, is objective, i.e. either an electronic transferable record retains integrity or not. The reference to the reliable method used to retain integrity is relative or subjective and

the general reliability standard contained in article 12 applies to the assessment of that method.

Notion of “Original”

82. Unlike other UNCITRAL texts on electronic commerce, the Model Law does not contain a functional equivalence rule for the paper-based notion of “original”. In that respect, it should be noted that article 8 of the UNCITRAL Model Law on Electronic Commerce refers to a static notion of “original” while electronic transferable records are meant, by their own nature, to circulate. Therefore, the notion of “original” in the context of electronic transferable records is different from that adopted in other UNCITRAL texts. Accordingly, article 10, subparagraph 1(b)(iii), of the Model Law refers to integrity of the electronic transferable record as one of the requirements that needs to be fulfilled in order to achieve functional equivalence with a transferable document or instrument.

83. Hence, while the notion of “original” of transferable documents or instruments is particularly relevant to prevent multiplicity of claims, the Model Law achieves that goal with the use of the notions of “singularity” and “control” that allow identifying both the person entitled to performance and the object of control (see above, paras. 65-67).

Paragraph 2

84. Paragraph 2 sets forth a provision on the assessment of the notion of integrity. It indicates that an electronic transferable record retains integrity when any set of information related to authorized changes (as opposed to changes of purely technical nature) remains complete and unaltered from the time of the creation of the electronic transferable record until it ceases to have any effect or validity. It is inspired by article 8, paragraph 3, of the UNCITRAL Model Law on Electronic Commerce. However, it should be noted that article 8, subparagraph 3(a), of the Model Law on Electronic Commerce refers to a notion of integrity with respect to the use of the notion of “original” that may be more appropriate for electronic contracting. On the other hand, the notion of integrity contained in article 10, paragraph 2, of the Model Law necessarily takes into account the fact that the life cycle of electronic transferable records implies a number of events that need to be accurately reflected in those records.

85. “Authorized” changes are those changes agreed upon by the parties to contractual obligations related to electronic transferable records throughout the life cycle of an electronic transferable record and permitted by the electronic transferable records management system. The term “authorized” does not refer to whether the changes are legitimate, which would introduce a standard presupposing a legal assessment under substantive law. For instance, unauthorized changes would be those performed by a hacker who must compromise the integrity of the electronic transferable record in order to have access to it.

86. The words “apart from any change which arises in the normal course of communication, storage and display” refer to information added to an electronic transferable record for purely technical purposes. For instance, that could be the case of changes necessary to store the electronic transferable records in a dedicated repository. The same words are used in article 8, subparagraph 3(a), of the UNCITRAL Model Law on Electronic Commerce. However, the notion of purely technical change should be evaluated against the notion of integrity contained in the Model Law, which differs from the notion of original contained in the Model Law on Electronic Commerce (see above, para. 82). The fact that information may be added automatically by the electronic transferable records management system, for instance

in form of metadata, is not per se evidence that that information is of purely technical nature.

References

[A/CN.9/768](#), paragraphs 48-56, 75-76 and 85; [A/CN.9/797](#), paragraphs 47-60; [A/CN.9/804](#), paragraphs 21-40, 70-75; [A/CN.9/828](#), paragraphs 31-40, 42-49; [A/CN.9/834](#), paragraphs 21-30, 85-90, 92, 99-108; [A/CN.9/869](#), paragraphs 50-68.

Article 11. Control

87. Article 11 provides a functional equivalence rule for the possession of a transferable document or instrument. Functional equivalence of possession is achieved when a reliable method is employed to establish control of that record by a person and to identify the person in control.

88. The notion of “control”, which is closely related to the requirement contained in article 10, subparagraph 1(b)(ii), is not defined in the Model Law since it is the functional equivalent of the notion of “possession”, which, in turn, may vary in each jurisdiction.

89. The Model Law is concerned with identifying a functional equivalent to the fact of possession. In line with the general principle that the Model Law does not affect substantive law, the notion of control does not affect or limit the legal consequences arising from possession. Consequently, parties may agree on the modalities for the exercise of possession, but may not modify the notion of possession itself.

90. The title of article 11 refers to “control” and not to “possession”, thus departing from the naming style of other articles of the Model Law, since the notion of “control” is particularly relevant in the Model Law. While a notion of “control” may exist in national legislation, the notion of “control” contained in article 11 needs to be interpreted autonomously in light of the international character of the Model Law.

Paragraph 1

91. The reliability of the method referred to in article 11 shall be assessed according to the general reliability standard contained in article 12.

Subparagraph 1(a)

92. Subparagraph 1(a) refers to “exclusive” control for reasons of clarity, since the notion of “control”, similarly to that of “possession”, implies exclusivity in its exercise. Yet, control, like possession, could be exercised concurrently by more than one person in control. The concept of “control” does not refer to “legitimate” control, since this is a matter of substantive law.

93. Although both the notion of “control” and the notion of “singularity” aim at preventing multiple requests of performance of the same obligation, the two notions operate independently and should be distinguished (see above, paras. 65-67). For instance, it is possible to conceive exclusive control over a multiple record, i.e. a record that does not meet the requirement of singularity. Conversely, it is also possible to conceive non-exclusive control over a single record.

Subparagraph 1(b)

94. Subparagraph 1(b) requires to reliably identify the person in control as the holder of the electronic transferable record. The person in control of an electronic transferable record is in the same legal position as the holder of an equivalent transferable document or instrument.

95. The reference to the “person in control” of the electronic transferable record in subparagraph 1(b) does not imply that the person is also the rightful person in control of that record as this is for substantive law to determine (A/CN.9/828, para. 61). Further, the reference to the person in control does not exclude the possibility of having more than one person exercising control or of attributing selectively control on one electronic transferable record to multiple entities on the basis of the legal rights attributed to each entity (e.g., title to property of goods, security interests, etc.).

96. The person in control may be a natural or a legal person or other entity able to possess a transferable document or instrument under substantive law. The use of the services of a third party to exercise exclusive control does not affect exclusivity of control or imply that the third party service provider or any other intermediary is a person in control.

97. The requirement to identify the person in control does not imply that an electronic transferable record in itself shall contain the identification of the person in control. Rather, that requirement demands that the method or system employed to establish control as a whole shall perform the identification function. Moreover, identification should not be understood as implying an obligation to name the person in control, as the Model Law allows for the issuance of electronic transferable records to bearer, which implies anonymity.

98. Certain electronic transferable records management systems, such as those based on distributed ledgers, may identify the person in control by referring to pseudonyms rather than to real names (see above, para. 60). That identification, and the possibility to link pseudonym and real name, if need be, would satisfy the requirement to identify the person in control. In any case, anonymity for commercial law purposes may not preclude the possibility of identifying the person in control for other purposes, such as law enforcement (see above, para. 37).

99. Article 11 will also assist in carrying out those necessary steps occurring in the life cycle of the electronic transferable record that require demonstration of control of that record. For instance, the notion of “presentation” in the paper environment relies on demonstration of possession of a transferable document or instrument as its core element. That demonstration may be given by identifying the person in control. In practice, the electronic transferable records management system may rely on the requirement to identify the person in control contained in article 11 when dealing with presentation of a record. Accordingly, the Model Law does not contain a separate provision on presentation.

Paragraph 2

100. Transferable documents or instruments, and therefore also electronic transferable records, may circulate by delivery and by endorsement. Paragraph 2 sets forth that transfer of control over an electronic transferable record is the functional equivalent of delivery, i.e. transfer of possession, of a transferable document or instrument (see also below, paras. 137-141).

101. Paragraph 2 includes the words “or permits” in order to clarify its application to cases in which the law merely permits, but does not require transfer of possession of a transferable document or instrument.

102. The delivery of a transferable document or instrument may be a necessary step in the life cycle of that document or instrument. For instance, the request for delivery of goods typically requires surrendering a bill of lading. The Model Law does not contain specific provisions on surrender as paragraph 2, on transfer of control as functional equivalent of delivery, would apply also to those cases.

References

[A/CN.9/761](#), paragraphs 24-25, 38-41 and 50-58; [A/CN.9/768](#), paragraphs 45-47 and 75-85; [A/CN.9/797](#), paragraphs 66 and 74-90; [A/CN.9/804](#), paragraphs 51-70; [A/CN.9/828](#), paragraphs 50-67; [A/CN.9/834](#), paragraphs 31-33 and 83-94; [A/CN.9/863](#), paragraphs 27-36 and 99-102; [A/CN.9/869](#), paragraphs 103-110.

CHAPTER III. USE OF ELECTRONIC TRANSFERABLE RECORDS

Article 12. General reliability standard

103. Article 12 provides a consistent and technology neutral general standard on the assessment of reliability that applies whenever a provision of the Model Law requires the use of a “reliable method” for the fulfilment of its functions. The concept of reliability refers to the reliability of the method used. In turn, reference to the method implies reference to any system used to implement that method.

104. Article 12 aims to increase legal certainty by indicating elements that may be relevant in assessing reliability. The list of circumstances contained in article 12 is illustrative and, as such, not exhaustive and does not prevent the parties from allocating liability contractually (see also paras. 119-120 below). The general reliability standard is applicable to all electronic transferable records management system providers and not only to third-party service providers.

105. Though article 12 aims at providing guidance on the assessment of the reliability of the electronic transferable records management system in case of dispute (“ex post” reliability assessment), its content will necessarily also influence the design of the system (“ex ante” reliability assessment) since system designers pursue offering reliable systems.

106. Each provision of the Model Law referring to the use of a reliable method aims at fulfilling a different function. Accordingly, the reference to “the purposes of articles” contained in the chapeau of article 12 aims to clarify that the assessment of the reliability of each relevant method should be carried out separately in light of the function specifically pursued with the use of that method. That approach provides needed flexibility when assessing the application of the reliability standard in practice as it allows customizing the reliability assessment to each function fulfilled by the system.

Subparagraph (a)

107. Subparagraph (a) contains a list of circumstances that may assist in determining reliability. The words “which may include” clarify that the list is not exhaustive and has an illustrative nature only. The words “all relevant circumstances” include the purpose for which the information contained in the electronic transferable record was generated.

108. The list of circumstances aims at achieving a balance between providing guidance on the assessment of reliability and imposing requirements that may result in excessive costs on business, ultimately hampering electronic commerce and leading to increased litigation on complex technical matters. Additional possibly relevant circumstances include: quality of staff; sufficient financial resources and liability insurance; and existence of a notification procedure for security breaches and of reliable audit trails.

“Operational rules”

109. Subparagraph (a)(i) refers to “operational rules” that are usually contained in an operating manual whose application could be monitored by an oversight body and that, as such, may not have a purely contractual nature. The words “relevant to the assessment of” clarify that only operational rules regarding the reliability of the system, and not operational rules in general, should be considered.

“Assurance of data integrity”

110. Subparagraph (a)(ii) refers to the “assurance of data integrity” as an absolute notion since data integrity cannot be expressed by reference to a level. The notion of “integrity” as an element in the assessment of the general reliability standard is different from that contained in article 10. More precisely, the notion of integrity contained in subparagraph (a)(ii) applies when integrity is in fact relevant to assess the reliability of the method used and, ultimately, the achievement of functional equivalence. As such, that notion is relevant also to articles other than article 10.

“Prevent unauthorized access to and use of the system”

111. The circumstance refers to the ability to prevent access to and use of the system by parties, including third parties not authorized to do so, as authorization of access to and use of the system is a notion relevant to all parties. In that respect, it should be noted that the notion of integrity in the Model Law refers to “authorized” changes. A reliable method shall therefore prevent unauthorized changes. Moreover, the notion of control is based on exclusivity, which presupposes the ability to exclude parties without authorized access to the system.

“Security of hardware and software”

112. Reference to “security of hardware and software” is included in the list of criteria for the assessment of the general reliability standard for electronic transferable records, since security of hardware and software has a direct impact on the reliability of the method used. That reference is found also in article 10, subparagraph (b), of the UNCITRAL Model Law on Electronic Signatures, which refers to the “quality of hardware and software systems” as one of the factors to be regarded for the determination of trustworthiness of any systems, procedures and human resources utilized by a certification service provider. The term “security” is used in subparagraph (a)(iv) instead of “quality” since the notion of security lends itself more easily to an objective assessment of the method used.

“Regularity and extent of audit by an independent body”

113. The existence of regular accurate audits carried out by an independent body may be seen as evidence of validation of the reliability of the system by a third party. Similarly, article 10, subparagraph (e), of the UNCITRAL Model Law on Electronic Signatures refers to the “regularity and extent of audit by an independent body” as one of the factors to be considered for the determination of trustworthiness of any systems, procedures and human resources utilized by a certification service provider.

“Declaration by a supervisory body, an accreditation body or a voluntary scheme regarding the reliability of the method”

114. The criteria of “regularity and extent of audit by an independent body” is inspired by article 10, subparagraph (f), of the UNCITRAL Model Law on Electronic Signatures, which refers to the “declaration by the State, an accreditation body or the certification service provider regarding compliance with or existence of the foregoing”

as one of the factors to be regarded for the determination of trustworthiness of any systems, procedures and human resources utilized by a certification service provider. A declaration by such body may guarantee a certain level of objectivity in the assessment of the reliability of the method.

“Any applicable industry standard”

115. The reference to “any applicable industry standard” stems from a suggestion to refer to internationally accepted standards and practices in order to avoid increased litigation based on complex technical matters and to allow flexibility in technology choice while providing guidance, in light also of the fact that electronic transferable records management systems are likely to be designed and maintained by highly-specialized professionals.

116. Reference to “any applicable industry standard” is more suitable than reference to “industry best practices” since the former can be more easily ascertained. Applicable industry standards should preferably be internationally recognized. In fact, the use of international standards may promote the emergence of a common notion of reliability across jurisdictions. Reference to industry standards shall not be interpreted so as to violate the principle of technological neutrality.

Subparagraph (b)

117. Subparagraph (b) provides a “safety clause” with the purpose of preventing frivolous litigation by validating methods that have in fact achieved their function regardless of any assessment of their reliability. It refers to the fulfilment of the function in the specific case under dispute and does not aim at predicting future reliability based on past performance of the method. The provision may operate with respect to any of the functions pursued with the use of electronic transferable records. A similar mechanism is contained in article 9, subparagraph (3)(b)(ii), of the Electronic Communications Convention, relating to the functional equivalence of electronic signatures.

118. In practice, the fact that the method used has achieved the function pursued with its use will prevent any discussion on the assessment of its reliability according to subparagraph (a).

Party autonomy

119. Article 12 does not contain an explicit reference to the relevance of an agreement of the parties when assessing reliability. That omission is due to the desire to set forth an objective reliability standard and therefore not to make it dependent on party autonomy. In particular, the inclusion of a reference to party autonomy could be read as: (a) introducing different standards for the assessment of reliability whose application would depend on the parties involved; (b) leading to inconsistent findings in respect of the validity of the electronic transferable record; and (c) circumventing substantive law, especially provisions of mandatory application, and ultimately affecting third parties. Hence, party autonomy with respect to the assessment of reliability is limited to allocation of liability under the limits set forth in applicable law.

120. The relevance of party agreements may be particularly significant in the context of closed systems or when referring to industry standards, since those agreements often contain useful guidance on technical details and may promote technological innovation within the limits of mandatory substantive law.

References

[A/CN.9/804](#), paragraphs 41-49 and 63; [A/CN.9/828](#), paragraphs 47-49; [A/CN.9/863](#), paragraphs 37-76; [A/CN.9/869](#), paragraphs 69-78.

Article 13. Indication of time and place in electronic transferable records

121. Significant legal consequences are attached to the indication of time and place in transferable documents and instruments. For instance, recording the time of an endorsement is necessary to establish the sequence of the obligors in the action of recourse. Article 13 allows for that indication in electronic transferable records. In the case of endorsements, this is particularly important given that the dematerialized nature of electronic transferable records does not make their temporal sequence apparent as in transferable documents or instruments.

122. Provisions relating to the indication of time and place, if any, are to be found in substantive law, which may indicate to what extent and which parties may agree on it. If the indication of time and place is mandatory under substantive law, that requirement must be complied with in accordance with article 10, subparagraph 1(a), of the Model Law, mandating that the electronic transferable record shall contain the information “required to be contained in a transferable document or instrument”.

123. The words “or permits” clarify that article 13 shall apply also to cases when the law permits, but does not require, the indication of time or place with respect to a transferable document or instrument. In line with the general rule that the Model Law does not impose any additional information requirement, article 13 does not require the indication of time and place when that information is not mandatory under applicable law.

124. Methods available to indicate time and place in electronic transferable records may vary with the system used. Therefore, article 13 is based on a technology-neutral approach compatible with systems based on registry, token, distributed ledger or other technology. The reference to the use of a reliable method in indicating time points at the possibility of using trust services such as trusted time stamping.

125. The nature of the electronic transferable record may enable automation of certain steps in the life cycle of the record related to time. For instance, promissory notes may be presented for payment automatically on due date.

126. The provisions on time and place of dispatch and receipt of data messages (article 15 of the UNCITRAL Model Law on Electronic Commerce) and of electronic communications (article 10 of the Electronic Communications Convention) are relevant for contract formation and management but may not be appropriate with respect to the use of electronic transferable records.

References

[A/CN.9/797](#), paragraph 61; [A/CN.9/834](#), paragraphs 36-46; [A/CN.9/863](#), paragraphs 23-24, 26; [A/CN.9/869](#), paragraphs 79-82.

Article 14. Determination of place of business

127. The law may attach a number of consequences to the place of business. In particular, the place of business may be relevant for the cross-border use of electronic transferable records. Substantive law shall indicate how to identify the relevant place of business, which, in principle, does not need to be different only because of the use of electronic or paper medium. The scope of article 14 is limited to clarifying that the location of an information system, or parts thereof, is not an indicator of a place of business as such. That clarification may be particularly useful in light of the likelihood that third parties providing services relating to the management of electronic transferable records will use

equipment and technology located in various jurisdictions, or whose location may change regularly, such as in the case of use of cloud computing.

128. Article 14, whose text is inspired by article 6, paragraphs 4 and 5, of the Electronic Communications Convention,¹⁷ aims at providing guidance on the determination of a place of business when electronic means are used by indicating that certain elements do not per se identify a place of business. Its scope is therefore different from that of article 13, which relates to the indication of the place in the electronic transferable record, and not to its determination.

129. Reference to “place of business” shall be interpreted as reference to the various notions related to geographic location (e.g., residence, domicile, etc.) that may be relevant during the life cycle of the electronic transferable record. While the elements listed in article 14 do not, per se, determine the location of a place of business, those elements may be used together with other elements to determine that location.

130. Substantive law may allow parties to identify the place of business by agreement. In that case, article 14 may provide a set of suppletive rules on the determination of the place of business that could usefully complement parties’ agreements.

References

[A/CN.9/863](#), paragraphs 25-26; [A/CN.9/869](#), paragraphs 83-92.

Article 15. Issuance of multiple originals

131. The possibility of issuing multiple originals of a transferable document or instrument exists in several fields of trade. An example of legal provisions recognizing that practice may be found in article e8 of the Supplement to the Uniform Customs and Practice for Documentary Credits for Electronic Presentation. It has been reported that the practice of issuing multiple originals exists also in the electronic environment.

132. Article 15 aims to enable the continuation of that practice with respect to the use of electronic transferable records when that practice is permitted under applicable law. Similarly, the Model Law does not prevent the possibility of issuing multiple originals on different media (e.g., one on paper and one in electronic form), when this is permitted under applicable law.

133. As noted (see above, para. 82), the Model Law does not contain a functional equivalent of the paper-based notion of “original”. Instead, the functions fulfilled by the original of a transferable document or instrument with respect to requesting performance are satisfied in an electronic environment by the notions of “singularity” and “control” (see above, paras. 65-67). Hence, the transposition of the practice of issuing multiple original transferable documents or instruments in an electronic environment requires the issuance of multiple electronic transferable records relating to the performance of the same obligation.

134. However, caution should be exercised when issuing multiple electronic transferable records. In fact, that practice may expose to the possibility of multiple claims for the same performance based on the presentation of each original. Moreover, the same functions pursued with the issuance of multiple original transferable documents or instruments may be achieved in an electronic environment by attributing selectively control on one electronic transferable record to multiple entities on the basis of the legal rights attributed to each entity (e.g., title to property of goods, security interests, etc.). In practice, for instance, an electronic transferable records

¹⁷ United Nations Convention on the Use of Electronic Communications in International Contracts, Explanatory Note, paras. 116-121.

management system could provide information on multiple claims having different objects and relating to the same electronic transferable record.

135. Article 15 does not contain an obligation to indicate whether multiple originals have been issued. If substantive law contains that obligation, the electronic transferable record must comply with it in accordance with the information requirements contained in article 10, subparagraph 1(a), of the Model Law.

136. Similarly, article 15 does not specify whether one or all originals must be presented to request the performance of the obligation contained in the electronic transferable record as this matter is determined by applicable law or, where possible, by contractual agreement.

References

[A/CN.9/768](#), paragraphs 71-74; [A/CN.9/797](#), paragraphs 47, 68-69; [A/CN.9/804](#), paragraph 50; [A/CN.9/834](#), paragraphs 47-52; [A/CN.9/869](#), paragraphs 95-99.

Article 16. Endorsement

137. Transferable documents or instruments may be transferred by delivery and by endorsement. Substantive law sets forth the conditions for the circulation of transferable documents or instruments, which apply to functionally equivalent electronic transferable records. Article 16 identifies the requirements that need to be complied with in order to achieve functional equivalence of endorsement in addition to the requirements for functional equivalence of written form and signature.

138. While national laws may contain a wide range of formal prescriptions for endorsement in a paper-based environment, article 16 aims to achieve functional equivalence of the notion of endorsement regardless of those requirements and in line with the approach taken for other functional equivalence rules in the Model Law. Hence, article 16 adds to the functional equivalence rules for writing, signature and transfer already contained in the Model Law by providing also for specific forms of endorsement required under substantive law, such as endorsements on the back of a transferable document or instrument or by affixing an *allonge*.

139. Inserting in article 16 specific references to certain form requirements, but not to others, might be interpreted as excluding those other requirements from the scope of the article, thus ultimately frustrating its purpose. Hence, article 16 does not refer to any specific form of requirement, but includes all of them.

140. The words “or permits” are included in article 16 to provide for instances when substantive law allows for, but does not require endorsement.

141. The words “included in” have been chosen as reflecting more accurately current practice and to encompass instances when the information is logically associated with or otherwise linked to the electronic transferable record, thus enabling the use of different models for electronic transferable records management systems in line with the principle of technological neutrality.

References

[A/CN.9/768](#), paragraphs 46, 102; [A/CN.9/797](#), paragraphs 95-97; [A/CN.9/804](#), paragraphs 80-81; [A/CN.9/828](#), paragraphs 76-80; [A/CN.9/869](#), paragraphs 111-114.

Article 17. Amendment

142. Substantive law or contractual agreements may allow for the amendment of a transferable document or instrument and specify who has the authority to amend,

under what circumstances and whether a duty to notify third parties of the amendment exists. Article 17 provides a functional equivalence rule for instances in which an electronic transferable record may be amended.

143. The amendments referred to in article 17 are of legal nature. Amendments of purely technical nature do not fall under the scope of article 17. (See also above, para. 86, on the reference to “any change which arises in the normal course of communication, storage and display” contained in article 10, paragraph 2, of the Model Law.)

144. Article 17 sets forth an objective standard, as indicated by the use of the word “identified”, for the identification of amended information in an electronic environment. The rationale for requesting the identification of the amended information lies in the fact that, while amendments may be easily identifiable in a paper-based environment due to the nature of that medium, that may not be the case in an electronic environment. Qualifiers to identification, such as “accurately” or “readily”, do not provide an objective standard while introducing an additional burden and imposing cost on system operators.

145. Thus, article 17 aims to provide evidence of and trace all amended information. The article is in line with the general obligation to preserve the integrity of the electronic transferable record contained in article 10, paragraph 2, of the Model Law. It does, however, go beyond that general obligation, as the amended information shall not only be recorded but also identified as such and therefore recognizable.

146. Article 17 requires that a reliable method shall be used to identify the amended information, but does not set out the method to be employed to identify the amendment or the amended information, as that could impose an additional burden on the management of the electronic transferable record. The reliability of the method shall be assessed according to the general reliability standard contained in article 12.

147. The words “or permits” aim at capturing those instances in which applicable substantive law allows for amendment of the electronic transferable record but does not require it.

References

[A/CN.9/761](#), paragraphs 45-49; [A/CN.9/768](#), paragraphs 93-97; [A/CN.9/797](#), paragraph 101; [A/CN.9/804](#), paragraph 86; [A/CN.9/828](#), paragraphs 85-90; [A/CN.9/863](#), paragraphs 83-87.

Article 18. Replacement of a transferable document or instrument with an electronic transferable record

148. If the law recognizes the use of both transferable documents or instruments and electronic transferable records, the need for a change of medium may arise during the life cycle of those documents, instruments or records. Enabling change of medium is critical for the wider acceptance and use of electronic transferable records, especially when used across borders, given the different levels of acceptance of electronic means and readiness for their use in different States and business communities.

149. While legal texts based on the principle of medium neutrality may recognize the possibility of change of medium, laws dealing exclusively with transferable documents or instruments are unlikely to foresee it. Articles 18 and 19 of the Model Law aim to fill that gap.

150. Articles 18 and 19 have a substantive nature and aim at satisfying two main goals: enabling change of medium without loss of the information required by substantive law; and ensuring that the replaced transferable document or instrument

will not further circulate so as to prevent the coexistence of two claims to performance of the same obligation and, more generally, not to affect in any manner the rights and obligations of any party.

151. As a general rule, according to article 10, subparagraph 1(a), of the Model Law an electronic transferable record shall contain the information required to be contained in a transferable document or instrument (see above, paras. 71-75). However, article 18 does not require that all information contained in a transferable document or instrument shall be contained in the replacing electronic transferable record. Substantive law determines the information necessary to be contained in the replacing electronic transferable record in order to preserve rights and obligations of all concerned parties.

152. Article 18 omits the reference to substantive legal notions such as “issuer”, “obligor”, “holder” and “person in control” in order to accommodate the variety of schemes used in the various transferable documents or instruments, thus providing the flexibility needed to accommodate business practice.

153. Substantive law, including parties’ agreement, identifies those parties whose consent is relevant for the change of medium and which parties, if any, need to be notified of the change.

154. Paragraph 1 requires that a reliable method shall be used for the change of medium. The reliability of the method shall be assessed according to the general reliability standard contained in article 12.

155. The word “replace” in paragraph 1 does not refer to the notion of reissuance, since reissuance and change of medium are distinct concepts and article 18 is clearly meant to refer to the latter.

156. The legal consequence for non-compliance with the requirement set forth in paragraph 2 is the invalidity of the change of medium and, consequently, of the electronic transferable record.

157. Paragraph 3 sets forth that, when the change of medium has taken place, the transferable document or instrument ceases to have any effect or validity. This is necessary to avoid multiple claims for performance. The word “upon” indicates that there should be no interval between the issuance of the replacement and the termination of the replaced document or instrument.

158. The words “shall be made inoperative and” before the word “ceases” reflect that the transferable document or instrument cannot be further transferred after change of medium. They leave sufficient flexibility on the choice of the method to render the transferable document or instrument inoperative.

159. If a transferable document or instrument or an electronic transferable record is invalidated on the wrong assumption of the validity of the replacing record, document or instrument, substantive law would apply to the reissuance of the invalidated document, instrument or record, or to the issuance of the replacing record, document or instrument.

160. A transferable document or instrument or an electronic transferable record could fulfil other functions besides transferability, such as providing evidence of a contract for the carriage of goods and of receipt of the goods, or, with respect to transferable documents or instruments, providing evidence of the chain of endorsements for an action in recourse. The ability to fulfil those additional functions may continue after the document, instrument or record has been made inoperative.

161. Paragraph 3 refers to the issuance of the electronic transferable record in accordance with paragraphs 1 and 2, to clarify that the electronic transferable record has to be issued in accordance with both paragraphs.

162. Paragraph 4 is intended to clarify as a statement of law that the rights and obligations of the parties are not affected by the change of medium. In particular, the replacing record should contain all the information necessary in order not to affect those rights and obligations, regardless of the nature of that information. Though restating a general principle already contained in the Model Law, the paragraph was retained in view of its declaratory function.

References

[A/CN.9/761](#), paragraphs 72-77; [A/CN.9/768](#), paragraph 101; [A/CN.9/797](#), paragraphs 102-103; [A/CN.9/828](#), paragraphs 94-102; [A/CN.9/834](#), paragraphs 53-64; [A/CN.9/869](#), paragraphs 116-120.

Article 19. Replacement of an electronic transferable record with a transferable document or instrument

163. Article 19 provides for the replacement of an electronic transferable record with a transferable document or instrument. A survey of business practice indicates that such replacement is more frequent than the reverse case due to the fact that a party whose involvement was not envisaged at the time of the creation of the electronic transferable record does not wish or is not in a position to use electronic means.

164. Under certain national laws, a paper-based print-out of an electronic record may be considered as equivalent to an electronic record. Under article 19 a print-out of an electronic transferable record needs to meet the requirements of that article in order to have effect as a transferable document or instrument replacing the corresponding electronic transferable record.

165. The content of article 19 mirrors that of article 18 on the replacement of a transferable document or instrument with an electronic transferable record. Therefore, the comments in paragraphs 148-162 above also apply, *mutatis mutandis*, to article 19.

166. Article 19 does not require that all information contained in an electronic transferable record shall be contained in the replacing transferable document or instrument. In particular, an electronic transferable record could contain information, e.g. metadata, that cannot be reproduced in a transferable document or instrument (see also above, paras. 38-40). Substantive law determines the information necessary to be contained in the replacing transferable document or instrument in order to preserve rights and obligations of all concerned parties.

References

[A/CN.9/768](#), paragraph 101; [A/CN.9/797](#), paragraphs 102-103; [A/CN.9/828](#), paragraphs 94-102; [A/CN.9/834](#), paragraphs 53-64; [A/CN.9/869](#), paragraphs 121-122.

Third-party service providers

167. Depending on the model chosen, electronic transferable records management systems may require the use of services provided by third parties. The Model Law is technology neutral and therefore compatible with all models. Reference in the Model Law to electronic transferable records management systems does not imply the existence of a system administrator or other form of centralized control.

168. UNCITRAL texts on electronic commerce have sometimes dealt with the conduct of third-party service providers. In particular, articles 9 and 10 of the

UNCITRAL Model Law on Electronic Signatures provide guidance on the assessment of the conduct of a third-party service provider and of the trustworthiness of its services.¹⁸

169. However, the Model Law has an enabling nature and does not deal with regulatory matters, which should be addressed in other legislation. Moreover, expected developments in technology and business practice recommend a flexible approach when assessing the conduct of third-party service providers. Hence, the Model Law leaves freedom of choice of third-party service providers as well as of the type of services requested and of their technology.

170. In that respect, it should be noted that the general reliability standard set forth in article 12 of the Model Law, and specific standards such as the criterion to assess integrity contained in article 10, paragraph 2, of the Model Law provide parameters to assess the reliability of an electronic transferable record and of its management system. Designers of those management systems need to comply with those standards in order to set up commercially viable enterprises.

Reference

[A/CN.9/834](#), paragraphs 78-82.

CHAPTER IV. CROSS-BORDER RECOGNITION OF ELECTRONIC TRANSFERABLE RECORDS

Article 20. Non-discrimination of foreign electronic transferable records

171. Article 20 aims at eliminating obstacles to cross-border recognition of an electronic transferable record arising exclusively from the fact that it was issued or used abroad. It does not affect private international law rules.

172. The need for an international regime to facilitate the cross-border use of electronic transferable records was already recognized at the outset of the work and reiterated throughout the deliberations on the Model Law. That need was also emphasized by the Commission at its forty-fifth session ([A/67/17](#), para. 83).

173. However, different views were expressed on how to achieve that goal. On the one hand, there was the desire not to displace existing private international law rules and to avoid the creation of a dual regime applying a special set of conflict of laws provisions for electronic transferable records. On the other hand, there was awareness of the importance of dealing adequately with aspects relating to the international use of the Model Law for its success and expression of the desire to favour its cross-border application regardless of the number of enactments.

Paragraph 1

174. Paragraph 1 aims at eliminating obstacles to cross-border recognition of an electronic transferable record arising exclusively from the place of origin or of use of the electronic transferable record. In other words, paragraph 1 aims to prevent that the place of origin or of use of the electronic transferable record could be considered in itself the reason to deny legal validity or effect to an electronic transferable record. A provision similar in scope may be found in article 12, paragraph 1, of the UNCITRAL Model Law on Electronic Signatures.

¹⁸ UNCITRAL Model Law on Electronic Signatures, Guide to Enactment, paras. 142-147.

175. The words “issued or used” aim at covering all events occurring during the life cycle of an electronic transferable record. In particular, they include endorsement and amendment of the electronic transferable record. In determining the location of the place of business, article 14 of the Model Law may also be relevant.

176. Paragraph 1 does not affect substantive law, including private international law. Thus, for instance, paragraph 1 could not per se lead to the recognition of an electronic transferable record issued in a jurisdiction that does not recognize the legal validity of electronic transferable records. However, paragraph 1 also does not prevent that an electronic transferable record issued or used in a jurisdiction not allowing the issuance and use of electronic transferable records, and that otherwise complies with the requirements of applicable substantive law, could be recognized in a jurisdiction enacting the Model Law.

177. The word “abroad” is used to refer to a jurisdiction other than the enacting one, including a different territorial unit in States comprising more than one.

178. Paragraph 2 reflects the understanding that the Model Law should not displace existing private international law applicable to transferable documents or instruments, which is considered substantive law for the purposes of the Model law (see para. 5 above). The introduction of a special set of private international law provisions for electronic transferable records would lead to a dual private international law regime, which is not desirable.

179. Since paragraph 1 refers only to non-discrimination while paragraph 2 relates to private international law, the two paragraphs operate on different levels and do not interfere.

References

[A/67/17](#), paragraph 83; [A/CN.9/768](#), paragraph 111; [A/CN.9/797](#), paragraph 108; [A/CN.9/863](#), paragraphs 77-82; [A/CN.9/869](#), paragraphs 124-131.