



General Assembly

Distr.: Limited
16 August 2000

Original: English

Working Group on Electronic Commerce

Thirty-seventh session
Vienna, 18-29 September 2000

Electronic Signatures

Draft Guide to Enactment of the UNCITRAL Uniform Rules on Electronic Signatures

Note by the Secretariat

1. Pursuant to decisions taken by the Commission at its twenty-ninth (1996)¹ and thirtieth (1997)² sessions, the Working Group on Electronic Commerce devoted its thirty-first to thirty-sixth sessions to the preparation of the draft UNCITRAL Uniform Rules of Electronic Signatures (hereinafter referred to as "the Uniform Rules"). Reports of those sessions are found in documents A/CN.9/437, 446, 454, 457, 465 and 467. In preparing the Uniform Rules, the Working Group noted that it would be useful to provide in a commentary additional information concerning the Uniform Rules. Following the approach taken in the preparation of the UNCITRAL Model Law on Electronic Commerce, there was general support for a suggestion that the draft Uniform Rules should be accompanied by a guide to assist States in enacting and applying the Uniform Rules. The guide, much of which could be drawn from the *travaux préparatoires* of the Uniform Rules, would also be helpful to other users of the Uniform Rules.

2. At its thirty-sixth session, the Working Group discussed the issue of electronic signatures on the basis of the note prepared by the Secretariat (A/CN.9/WG.IV/WP.84). After discussion, the Working Group adopted the substance of draft articles 1 and 3 to 11 of the Uniform Rules and referred them to a drafting group to ensure consistency between the provisions of the Uniform Rules. The Secretariat was requested to prepare a draft guide to enactment of the provisions adopted. Subject to approval by the Commission, the Working Group recommended that draft articles 2 and 13 of the Uniform Rules, together with the guide to enactment, be reviewed by the Working Group at a future session.³

3. At its thirty-third session (June-July 2000), the Commission noted that the Working Group, at its thirty-sixth session, had adopted the text of draft articles 1 and 3 to 11 of the Uniform Rules. It was stated that some issues remained to be clarified as a

result of the decision by the Working Group to delete the notion of enhanced electronic signature from the draft uniform rules. A concern was expressed that, depending on the decisions to be made by the Working Group with respect to draft articles 2 and 13, the remainder of the draft provisions might need to be revisited to avoid creating a situation where the standard set forth by the Uniform Rules would apply equally to electronic signatures that ensured a high level of security and to low-value certificates that might be used in the context of electronic communications that were not intended to carry significant legal effect.

4. After discussion, the Commission expressed its appreciation for the efforts extended by the Working Group and the progress achieved in the preparation of the Uniform Rules. The Working Group was urged to complete its work with respect to the Uniform Rules at its thirty-seventh session and to review the draft guide to enactment to be prepared by the Secretariat.⁴

5. The annex to the present note contains Chapter II of Part Two of the draft Guide prepared by the Secretariat. Part One and Chapter I of Part Two are published in document A/CN.9/WG.IV/WP.86.

Annex

Chapter II. Article-by-article remarks

(Draft articles 1 and 3 to 11 of the UNCITRAL Uniform Rules on Electronic Signatures, as adopted by the UNCITRAL Working Group on Electronic Commerce at its thirty-sixth session, held in New York from 14 to 25 February 2000)

Title

“Uniform Rules”

1. The title “Uniform Rules” has been used pending a final decision by the Working Group and the Commission as to the legal nature of the instrument and its relationship with the Model Law. However, throughout its preparation, the instrument has been conceived of as an addition to the Model Law, which should be dealt with on an equal footing and share the legal nature of its forerunner.

Article 1. Sphere of application

These Rules apply where electronic signatures are used in the context* of commercial** activities. They do not override any rule of law intended for the protection of consumers.

*The Commission suggests the following text for States that might wish to extend the applicability of these Rules:

“These Rules apply where electronic signatures are used, except in the following situations: [...]”

**The term “commercial” should be given a wide interpretation so as to cover matters arising from all relationships of a commercial nature, whether contractual or not. Relationships of a commercial nature include, but are not limited to, the following transactions: any trade transaction for the supply or exchange of goods or services; distribution agreement; commercial representation or agency; factoring; leasing; construction of works; consulting; engineering; licensing; investment; financing; banking; insurance; exploitation agreement or concession; joint venture and other forms of industrial or business cooperation; carriage of goods or passengers by air, sea, rail or road.

General remarks

2. The purpose of article 1 is to delineate the scope of application of the Uniform Rules. The approach used in the Uniform Rules is to provide in principle for the coverage of all factual situations where electronic signatures are used, irrespective of the specific electronic signature or authentication technique being applied. It was felt during the preparation of the Uniform Rules that exclusion of any form or medium by way of a limitation in the scope of the Uniform Rules might result in practical difficulties and would run counter to the purpose of providing truly “media-neutral”

rules. However, in the preparation of the Uniform Rules, special attention has been given to “digital signatures”, i.e., those electronic signatures obtained through the application of dual-key cryptography, which were regarded by the UNCITRAL Working Group on Electronic Commerce as a particularly widespread technology. The focus of the Uniform Rules is on the use of modern technology and, except where they expressly provide otherwise, the Uniform Rules are not intended to alter traditional rules on hand-written signatures.

*Footnote ***

3. It was felt that the Uniform Rules should contain an indication that their focus was on the types of situations encountered in the commercial area and that they had been prepared against the background of relationships in trade and finance. For that reason, article 1 refers to “commercial activities” and provides, in footnote **, indications as to what is meant thereby. Such indications, which may be particularly useful for those countries where there does not exist a discrete body of commercial law, are modelled, for reasons of consistency, on the footnote to article 1 of the UNCITRAL Model Law on International Commercial Arbitration (also reproduced as footnote **** to article 1 of the UNCITRAL Model Law on Electronic Commerce). In certain countries, the use of footnotes in a statutory text would not be regarded as acceptable legislative practice. National authorities enacting the Uniform Rules might thus consider the possible inclusion of the text of footnotes in the body of the text itself.

*Footnote **

4. The Uniform Rules apply to all kinds of data messages to which a legally significant electronic signature is attached, and nothing in the Uniform Rules should prevent an enacting State from extending the scope of the Uniform Rules to cover uses of electronic signatures outside the commercial sphere. For example, while the focus of the Uniform Rules is not on the relationships between users of electronic signatures and public authorities, the Uniform Rules are not intended to be inapplicable to such relationships. Footnote * provides for alternative wordings, for possible use by enacting States that would consider it appropriate to extend the scope of the Uniform Rules beyond the commercial sphere.

Consumer protection

5. Some countries have special consumer protection laws that may govern certain aspects of the use of information systems. With respect to such consumer legislation, as was the case with previous UNCITRAL instruments (e.g., the UNCITRAL Model Law on International Credit Transfers and the UNCITRAL Model Law on Electronic Commerce), it was felt that an indication should be given that the Uniform Rules had been drafted without special attention being given to issues that might arise in the context of consumer protection. At the same time, it was felt that there was no reason why situations involving consumers should be excluded from the scope of the Uniform Rules by way of a general provision, particularly since the provisions of the Uniform Rules might be found very beneficial for consumer protection, depending on legislation in each enacting State. Article 1 thus recognizes that any such consumer protection law may take precedence over the provisions in the Uniform Rules. Should legislators come to different conclusions as to the beneficial effect of the Uniform Rules on consumer transactions in a given country, they might consider excluding consumers from the sphere of application of the piece of legislation enacting the Uniform Rules. The question of which individuals or corporate bodies would be regarded as “consumers” is left to applicable law outside the Uniform Rules.

Use of electronic signatures in international and domestic transactions

6. It is recommended that application of the Uniform Rules be made as wide as possible. Particular caution should be used in excluding the application of the Uniform Rules by way of a limitation of its scope to international uses of electronic signatures, since such a limitation may be seen as not fully achieving the objectives of the Uniform Rules. Furthermore, the variety of procedures available under the Uniform Rules to limit the use of electronic signatures if necessary (e.g., for purposes of public policy) may make it less necessary to limit the scope of the Uniform Rules. The legal certainty to be provided by the Uniform Rules is necessary for both domestic and international trade, and a duality of regimes governing the use of electronic signatures might create a serious obstacle to the use of such techniques.

References to UNCITRAL documents

A/CN.9/467, paras. 22-24;
A/CN.9/WG.IV/WP.84, para. 22;
A/CN.9/465, paras. 36-42;
A/CN.9/WG.IV/WP.82, para. 21;
A/CN.9/457, paras. 53-64.

Article 3. Equal treatment of signature technologies

None of these Rules, except article 5, shall be applied so as to exclude, restrict or deprive of legal effect any method of creating an electronic signature that satisfies the requirements referred to in article 6 (1) of these Rules or otherwise meets the requirements of applicable law.

Neutrality as to technology

7. Article 3 embodies the fundamental principle that no method of electronic signature should be discriminated against, i.e., that all technologies would be given the same opportunity to satisfy the requirements of article 6. As a result, there should be no disparity of treatment between electronically-signed messages and paper documents bearing hand-written signatures, or between various types of electronically-signed messages, provided that they meet the basic requirements set forth in article 6(1) of the Uniform Rules or any other requirement set forth in applicable law. Such requirements might, for example, prescribe the use of a specifically designated signature technique in certain identified situations, or might otherwise set a standard that might be higher or lower than that set forth in article 7 of the UNCITRAL Model Law on Electronic Commerce (and draft article 6 of the Uniform Rules). The fundamental principle of non-discrimination is intended to find general application. It should be noted, however, that such a principle is not intended to affect the freedom of contract recognized under article 5. As between themselves and to the extent permitted by law, the parties should thus remain free to exclude by agreement the use of certain electronic signature techniques. By stating that “these Rules shall not be applied so as to exclude, restrict or deprive of legal effect any method of creating an electronic signature”, article 3 merely indicates that the form in which a certain electronic signature is applied cannot be used as the only reason for which that signature would be denied legal effectiveness. However, article 3 should not be misinterpreted as establishing the legal validity of any given signature technique or of any electronically-signed information.

References to UNCITRAL documents

A/CN.9/467, paras. 25-32;
A/CN.9/WG.IV/WP.84, para. 37;
A/CN.9/465, paras. 43-48;
A/CN.9/WG.IV/WP.82, para. 34;
A/CN.9/457, paras. 53-64.

Article 4. Interpretation

- (1) In the interpretation of these Rules, regard is to be had to their international origin and to the need to promote uniformity in their application and the observance of good faith.
- (2) Questions concerning matters governed by these Rules which are not expressly settled in them are to be settled in conformity with the general principles on which these Rules are based.

Source

8. Article 4 is inspired by article 7 of the United Nations Convention on Contracts for the International Sale of Goods, and reproduced from article 3 of the UNCITRAL Model Law on Electronic Commerce. It is intended to provide guidance for interpretation of the Uniform Rules by arbitral tribunals, courts and other national or local authorities. The expected effect of article 4 is to limit the extent to which a uniform text, once incorporated in local legislation, would be interpreted only by reference to the concepts of local law.

Paragraph (1)

9. The purpose of paragraph (1) is to draw the attention of any person who might be called upon to apply the Uniform Rules to the fact that the provisions of the Uniform Rules (or the provisions of the instrument implementing the Uniform Rules), while enacted as part of domestic legislation and therefore domestic in character, should be interpreted with reference to its international origin in order to ensure uniformity in the interpretation of the Uniform Rules in various countries.

Paragraph (2)

10. Amongst the general principles on which the Uniform Rules are based, the following non-exhaustive list may be found applicable: (1) to facilitate electronic commerce among and within nations; (2) to validate transactions entered into by means of new information technologies; (3) to promote and encourage in a technology-neutral way the implementation of new information technologies in general and electronic signatures in particular; (4) to promote the uniformity of law; and (5) to support commercial practice. While the general purpose of the Uniform Rules is to facilitate the use of electronic signatures, it should not be construed in any way as imposing their use.

References to UNCITRAL documents

A/CN.9/467, paras. 33-35;
A/CN.9/WG.IV/WP.84, para. 38.
A/CN.9/465, paras. 49-50;
A/CN.9/WG.IV/WP.82, para. 35.

Article 5. Variation by agreement

These Rules may be derogated from or their effect may be varied by agreement, unless that agreement would not be valid or effective under the law of the enacting State [or unless otherwise provided for in these Rules].

Deference to applicable law

11. The decision to undertake the preparation of the Uniform Rules was based on the recognition that, in practice, solutions to the legal difficulties raised by the use of modern means of communication are mostly sought within contracts. The Uniform Rules are thus intended to support the principle of party autonomy. However, applicable law may set limits to the application of that principle. Article 5 should not be misinterpreted as allowing the parties to derogate from mandatory rules, e.g., rules adopted for reasons of public policy. Neither should article 5 be misinterpreted as encouraging States to establish mandatory legislation limiting the effect of party autonomy with respect to electronic signatures or otherwise inviting States to restrict the freedom of parties to agree as between themselves on issues of form requirements governing their communications.

12. With respect to the words "unless otherwise provided in these Rules", the Working Group agreed at its thirty-sixth session that the matter might need to be reconsidered after the Working Group had completed its review of the draft articles. Pending a decision as to whether the Uniform Rules would contain any mandatory provision, the words "unless otherwise provided in these Rules" have been placed within square brackets (A/CN.9/467, para. 40).

Expressed or implied agreement

13. As to the way in which the principle of party autonomy is expressed in article 5, it was generally admitted in the preparation of the Uniform Rules that variation by agreement might be expressed or implied. The wording of draft article 5 has been kept in line with article 6 of the United Nations Convention on Contracts for the International Sale of Goods (A/CN.9/467, para. 38).

Bilateral or multilateral agreement

14. Article 5 is intended to apply not only in the context of relationships between originators and addressees of data messages but also in the context of relationships involving intermediaries. Thus, the provisions of the Uniform Rules could be varied either by bilateral or multilateral agreements between the parties, or by system rules agreed to by the parties. Typically, applicable law would limit party autonomy to rights and obligations arising as between parties so as to avoid any implication as to the rights and obligations of third parties.

References to UNCITRAL documents

A/CN.9/467, paras. 36-43;
A/CN.9/WG.IV/WP.84, paras. 39-40;
A/CN.9/465, paras. 51-61;
A/CN.9/WG.IV/WP.82, paras. 36-40;
A/CN.9/457, paras. 53-64.

Article 6. Compliance with a requirement for a signature

(1) Where the law requires a signature of a person, that requirement is met in relation to a data message if an electronic signature is used which is as reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all the circumstances, including any relevant agreement.

(2) Paragraph (1) applies whether the requirement referred to therein is in the form of an obligation or whether the law simply provides consequences for the absence of a signature.

(3) An electronic signature is considered to be reliable for the purpose of satisfying the requirement referred to in paragraph (1) if:

(a) the means of creating the electronic signature is, within the context in which it is used, linked to the signatory and to no other person;

(b) the means of creating the electronic signature was, at the time of signing, under the control of the signatory and of no other person;

(c) any alteration to the electronic signature, made after the time of signing, is detectable; and

(d) where a purpose of the legal requirement for a signature is to provide assurance as to the integrity of the information to which it relates, any alteration made to that information after the time of signing is detectable.

(4) Paragraph (3) does not limit the ability of any person:

(a) to establish in any other way, for the purpose of satisfying the requirement referred to in paragraph (1), the reliability of an electronic signature; or

(b) to adduce evidence of the non-reliability of an electronic signature.

(5) The provisions of this article do not apply to the following: [...]

Importance of article 6

15. Article 6 is one of the core provisions of the Uniform Rules. Article 6 is intended to build upon article 7 of the Model Law and to provide guidance as to how the test of reliability in article 7(1)(b) can be satisfied. In interpreting article 6, it should be borne in mind that the purpose of that provision is to ensure that, where any legal consequence would have flowed from the use of a handwritten signature, the same consequence should flow from the use of a reliable electronic signature.

16. At its thirty-sixth session, the Working Group adopted the following wording as a definition of "Electronic signature", subject to possible reconsideration to ensure consistency between the provisions of the Uniform Rules (A/CN.9/467, para. 57):

"Electronic signature" means any method that is used to identify the signature holder in relation to the data message and indicate the signature holder's approval of the information contained in the data message."

Paragraphs (1), (2) and (5)

17. Paragraphs (1), (2), and (5) of draft article 6 introduce provisions drawn from article 7(1)(b), 7(2), and 7(3) of the UNCITRAL Model Law on Electronic Commerce, respectively. Wording inspired by article 7(1)(a) of the Model Law is already included in the definition of “electronic signature” under draft article 2(a).

Notions of “identity” and “identification”

18. The Working Group agreed that, for the purpose of defining “electronic signature” under the Uniform Rules, the term “identification” could be broader than mere identification of the signatory by name. The concept of identity or identification includes distinguishing him or her, by name or otherwise, from any other person, and may refer to other significant characteristics, such as position or authority, either in combination with a name or without reference to the name. On that basis, it is not necessary to distinguish between identity and other significant characteristics, nor to limit the Uniform Rules to those situations in which only identity certificates which name the signature device holder are used (A/CN.9/467, paras. 56-58).

Effect of the Uniform Rules varying with level of technical reliability

19. In the preparation of the Uniform Rules, the view was expressed that (either through a reference to the notion of “enhanced electronic signature” or through a direct mention of criteria for establishing the technical reliability of a given signature technique) a dual purpose of draft article 6 should be to establish: (1) that legal effects would result from the application of those electronic signature techniques that were recognized as reliable; and (2), conversely, that no such legal effects would flow from the use of techniques of a lesser reliability. It was generally felt, however, that a more subtle distinction might need to be drawn between the various possible electronic signature techniques, since the Uniform Rules should avoid discriminating against any form of electronic signature, unsophisticated and insecure though it might appear in given circumstances. Therefore, any electronic signature technique applied for the purpose of signing a data message under article 7(1)(a) of the Model Law would be likely to produce legal effects, provided that it was sufficiently reliable in the light of all the circumstances, including any agreement between the parties. However, under article 7 of the Model Law, the determination of what constitutes a reliable method of signature in the light of the circumstances, can be made only by a court or other trier of fact intervening *ex post*, possibly long after the electronic signature has been used. In contrast, the Uniform Rules are expected to create a benefit in favour of certain techniques, which are recognized as particularly reliable, irrespective of the circumstances in which they are used. That is the purpose of paragraph (3), which is expected to create certainty (through either a presumption or a substantive rule), at or before the time any such technique of electronic signature is used (*ex ante*), that using a recognized technique will result in legal effects equivalent to those of a handwritten signature. Thus, paragraph (3) is an essential provision if the Uniform Rules are to meet their goal of providing more certainty than readily offered by the Model Law as to the legal effect to be expected from the use of particularly reliable types of electronic signatures (see A/CN.9/465, para. 64).

Presumption or substantive rule

20. In order to provide certainty as to the legal effect resulting from the use of what might or might not be called an “enhanced electronic signature” under draft article 2, paragraph (3) expressly establishes the legal effects that would result from the conjunction of certain technical characteristics of an electronic signature. As to how those legal effects would be established, enacting States, depending on their law of civil

and commercial procedure, should be free to adopt a presumption or to proceed by way of a direct assertion of the linkage between certain technical characteristics and the legal effect of a signature (see A/CN.9/467, paras. 61-62).

Intent of signatory

21. A question remains as to whether any legal effect should result from the use of electronic signature techniques that may be made with no clear intent by the signatory of becoming legally bound by approval of the information being electronically signed. In any such circumstance, the second function described in article 7(1)(a) of the Model Law is not fulfilled since there is no “intent of indicating any approval of the information contained in the data message”. The approach taken in the Uniform Rules is that the legal consequences of the use of a hand-written signature should be replicated in an electronic environment. Thus, by appending a signature (whether hand-written or electronic) to certain information, the signatory should be presumed to have approved the linking of its identity with that information. Whether such a linking should produce legal effects (contractual or other) would result from the nature of the information being signed, and from any other circumstances, to be assessed according to the law applicable outside the Uniform Rules. In that context, the Uniform Rules are not intended to interfere with the general law of contracts or obligations (see A/CN.9/465, para. 65).

Criteria of technical reliability

22. Subparagraphs (a) to (d) of paragraph (3) are intended to express objective criteria of technical reliability of electronic signatures. Subparagraph (a) focuses on the objective characteristics of the signature creation device, which must be “linked to the signatory and to no other person”. From a technical point of view, the signature creation device could be uniquely “linked” to the signatory, without being “unique” in itself. The linkage between the data used for creation of the signature and the signatory is the essential element (A/CN.9/467, para. 63). While certain electronic signature creation devices may be shared by a variety of users, for example where several employees would share the use of a corporate signature-creation device, that device must be capable of identifying one user unambiguously in the context of each electronic signature.

Sole control of signature device by the signatory

23. Subparagraph (b) deals with the circumstances in which the signature creation device is used. At the time it is used, the signature creation device must be under the sole control of the signatory. In relation to the notion of sole control by the signatory, a question is whether the signatory would retain its ability to authorize another person to use the signature device on its behalf. Such a situation might arise where the signature device is used in the corporate context where the corporate entity would be the signatory but would require a number of persons to be able to sign on its behalf (A/CN.9/467, para. 66). Another example may be found in business applications such as the one where the signature device exists on a network and is capable of being used by a number of people. In that situation, the network would presumably relate to a particular entity which would be the signatory and maintain control over the signature creation device. If that was not the case, and the signature device was widely available, it should not be covered by the Uniform Rules (A/CN.9/467, para. 67).

Agency

24. Subparagraphs (a) and (b) converge to ensure that the signature device is capable of being used by only one person at any given time, principally the time at which the

signature is created, and not by some other person as well. The question of agency or authorized use of the signature device should be addressed in the definition of "signatory", not in the substance of the rules (A/CN.9/467, para. 68).

Integrity

25. Subparagraphs (c) and (d) deal with the issues of integrity of the electronic signature and integrity of the information being signed electronically. It would have been possible to combine the two provisions to emphasize that, where a signature is attached to a document, the integrity of the document and the integrity of the signature are so closely related that it is difficult to conceive of one without the other. Where a signature is used to sign a document, the idea of the integrity of the document is inherent in the use of the signature. However, it was decided that the Uniform Rules should follow the distinction drawn in the Model Law between articles 7 and 8. Although some technologies provide both authentication (article 7 of the Model Law) and integrity (article 8 of the Model Law), those concepts can be seen as distinct legal concepts and treated as such. Since a hand-written signature provides neither a guarantee of the integrity of the document to which it is attached nor a guarantee that any change made to the document would be detectable, the functional equivalence approach requires that those concepts should not be dealt with in a single provision. The purpose of paragraph (3)(c) is to set forth the criterion to be met in order to demonstrate that a particular method of electronic signature is reliable enough to satisfy a requirement of law for a signature. That requirement of law could be met without having to demonstrate the integrity of the entire document (see A/CN.9/467, paras. 72-80).

Functional equivalent of original document

26. Subparagraph (d) is intended primarily for use in those countries where existing legal rules governing the use of hand-written signatures could not accommodate a distinction between integrity of the signature and integrity of the information being signed. In other countries, subparagraph (d) might create a signature that would be more reliable than a hand-written signature and thus go beyond the concept of functional equivalent to a signature. In any circumstances, the effect of subparagraph (d) would be to create a functional equivalent to an original document.

Electronic signature of portion of a message

27. In subparagraph (d), the necessary linkage between the signature and the information being signed is expressed so as to avoid the implication that the electronic signature could apply only to the full contents of a data message. In fact, the information being signed, in many instances, will be only a portion of the information contained in the data message. For example, an electronic signature may relate only to information appended to the message for transmission purposes.

Variation by agreement

28. Paragraph (3) is not intended to limit the application of article 5 and of any applicable law recognizing the freedom of the parties to stipulate in any relevant agreement that a given signature technique would be treated among themselves as a reliable equivalent of a hand-written signature.

References to UNCITRAL documents

- A/CN.9/467, paras. 44-87;
A/CN.9/WG.IV/WP.84, paras. 41-47;
A/CN.9/465, paras. 62-82;
A/CN.9/WG.IV/WP.82, paras. 42-44;
A/CN.9/457, paras. 48-52;
A/CN.9/WG.IV/WP.80, paras. 11-12.

Article 7. Satisfaction of article 6

- (1) *[Any person, organ or authority, whether public or private, specified by the enacting State as competent]* may determine which electronic signatures satisfy the provisions of article 6.
- (2) Any determination made under paragraph (1) shall be consistent with recognized international standards.
- (3) Nothing in this article affects the operation of the rules of private international law.

Pre-determination of status of electronic signature

29. Article 7 describes the role played by the enacting State in establishing or recognizing any entity that might validate the use of electronic signatures or otherwise certify their quality. Like article 6, article 7 is based on the idea that what is required to facilitate the development of electronic commerce is certainty and predictability at the time when commercial parties make use of electronic signature techniques, not at the time when there is a dispute before a court. Where a particular signature technique can satisfy requirements for a high degree of reliability and security, there should be a means for assessing the technical aspects of reliability and security and according the signature technique some form of recognition.

Purpose of article 7

30. The purpose of article 7 is to make it clear that an enacting State may designate an organ or authority that will have the power to make determinations as to what specific technologies may benefit from the presumptions or substantive rule established under article 6. Article 7 is not an enabling provision that could, or would, necessarily be enacted by States in its present form. However, it is intended to convey a clear message that certainty and predictability can be achieved by determining which electronic signature techniques satisfy the reliability criteria of article 6, provided that such determination is made in accordance with international standards. Article 7 should not be interpreted in a manner that would either prescribe mandatory legal effects for the use of certain types of signature techniques, or would restrict the use of technology to those techniques determined to satisfy the reliability requirements of article 6. Parties should be free, for example, to use techniques that had not been determined to satisfy articles 6, if that was what they had agreed to do. They should also be free to show, before a court or arbitral tribunal, that the method of signature they had chosen to use did satisfy the requirements of article 6, even though not the subject of a prior determination to that effect.

Paragraph (1)

31. Paragraph (1) makes it clear that any entity that might validate the use of electronic signatures or otherwise certify their quality would not always have to be established as a State authority. Paragraph (1) should not be read as making a recommendation to States as to the only means of achieving recognition of signature technologies, but rather as indicating the limitations that should apply if States wished to adopt such an approach.

Paragraph (2)

32. With respect to paragraph (2), the notion of “standard” should not be limited to official standards developed, for example, by the International Standards Organization (ISO) and the Internet Engineering Task Force (IETF), or to other technical standards. The word “standards” should be interpreted in a broad sense, which would include industry practices and trade usages, texts emanating from such international organizations as the International Chamber of Commerce, as well as the work of UNCITRAL itself (including these Rules and the Model Law). The possible lack of relevant standards should not prevent the competent persons or authorities from making the determination referred to in paragraph (1). As to the reference to “recognized” standards, a question might be raised as to what constitutes “recognition” and of whom such recognition is required (see A/CN.9/465, para. 94)

Paragraph (3)

33. Paragraph (3) is intended to make it abundantly clear that the purpose of article 7 is not to interfere with the normal operation of the rules of private international law (see A/CN.9/467, para. 94). In the absence of such a provision, draft article 7 might be misinterpreted as encouraging enacting States to discriminate against foreign electronic signatures on the basis of non-compliance with the rules set forth by the relevant person or authority under paragraph (1).

References to UNCITRAL documents

- A/CN.9/467, paras. 90-95;
- A/CN.9/WG.IV/WP.84, para. 49-51;
- A/CN.9/465, paras. 90-98;
- A/CN.9/WG.IV/WP.82, para. 46;
- A/CN.9/457, paras. 48-52;
- A/CN.9/WG.IV/WP.80, para. 15.

Article 8. Conduct of the signatory

- (1) Each signatory shall:
 - (a) exercise reasonable care to avoid unauthorized use of its signature device;
 - (b) without undue delay, notify any person who may reasonably be expected by the signatory to rely on or to provide services in support of the electronic signature if:
 - (i) the signatory knows that the signature device has been compromised; or

(ii) the circumstances known to the signatory give rise to a substantial risk that the signature device may have been compromised;

(c) where a certificate is used to support the electronic signature, exercise reasonable care to ensure the accuracy and completeness of all material representations made by the signatory which are relevant to the certificate throughout its life-cycle, or which are to be included in the certificate.

(2) A signatory shall be liable for its failure to satisfy the requirements of paragraph (1).

Title

34. Article 8 (and articles 9 and 11) had been initially planned to contain rules regarding the obligations and liabilities of the various parties involved (the signatory, the relying party and any certification services provider). However, the rapid changes affecting the technical and commercial aspects of electronic commerce, together with the role currently played by self-regulation in the field of electronic commerce in certain countries, made it difficult to achieve consensus as to the contents of such rules. The articles have been drafted so as to embody a minimal “code of conduct” of the various parties. The consequences of failure to abide by that code of conduct are left to applicable law outside the Uniform Rules.

Paragraph (1)

35. Subparagraphs (a) and (b) apply generally to all electronic signatures, while subparagraph (c) applies only to those electronic signatures that are supported by a certificate. The obligation in paragraph (1) (a), in particular, to exercise reasonable care to prevent unauthorized use of a signature device, constitutes a basic obligation that is, for example, generally contained in agreements concerning the use of credit cards. Under the policy adopted in paragraph (1), such an obligation should also apply to any electronic signature device that could be used for the purpose of expressing legally significant intent. However, the provision for variation by agreement in article 5 allows the standards set in article 8 to be varied in areas where they would be thought to be inappropriate, or to lead to unintended consequences.

36. Paragraph (1) (b) refers to the notion of “person who may reasonably be expected by the signatory to rely on or to provide services in support of the electronic signature”. Depending on the technology being used, such a “relying party” may be not only a person who might seek to rely on the signature, but also to persons such as certification service providers, certificate revocation service providers and others.

37. Paragraph (1) (c) applies where a certificate is used to support the signature device. The “life-cycle of the certificate” is intended to be interpreted broadly as covering the period starting with the application for the certificate or the creation of the certificate and ending with the expiry or revocation of the certificate.

Paragraph (2)

38. Paragraph (2) does not specify either the consequences or the limits of liability, both of which are left to national law. However, even though it leaves the consequences of liability up to national law, paragraph (2) serves to give a clear signal to enacting States that liability should attach to a failure to satisfy the obligations set forth in

paragraph (1). Paragraph (2) is based on the conclusion reached by the Working Group at its thirty-fifth session that it might be difficult to achieve consensus as to what consequences might flow from the liability of the signature device holder. Depending on the context in which the electronic signature is used, such consequences might range, under existing law, from the signature device holder being bound by the contents of the message to liability for damages. Accordingly, paragraph (2) merely establishes the principle that the signature device holder should be held liable for failure to meet the requirements of paragraph (1), and leaves it to the law applicable outside the Uniform Rules in each enacting State to deal with the legal consequences that would flow from such liability (A/CN.9/465, para. 108).

References to UNCITRAL documents

A/CN.9/467, paras. 96-104;
 A/CN.9/WG.IV/WP.84, para. 52-53;
 A/CN.9/465, paras. 99-108;
 A/CN.9/WG.IV/WP.82, paras. 50-55;
 A/CN.9/457, paras. 65-98;
 A/CN.9/WG.IV/WP.80, paras. 18-19.

Article 9. Conduct of the supplier of certification services

- (1) A supplier of certification services shall:
- (a) act in accordance with representations made by it with respect to its policies and practices;
 - (b) exercise reasonable care to ensure the accuracy and completeness of all material representations made by it that are relevant to the certificate throughout its life-cycle, or which are included in the certificate;
 - (c) provide reasonably accessible means which enable a relying party to ascertain from the certificate:
 - (i) the identity of the supplier of certification services;
 - (ii) that the person who is identified in the certificate had control of the signature device at the time of signing;
 - (iii) that the signature device was operational on or before the date when the certificate was issued;
 - (d) provide reasonably accessible means which enable a relying party to ascertain, where relevant, from the certificate or otherwise:
 - (i) the method used to identify the signatory;
 - (ii) any limitation on the purpose or value for which the signature device or the certificate may be used;
 - (iii) that the signature device is operational and has not been compromised;

- (iv) any limitation on the scope or extent of liability stipulated by the supplier of certification services;
 - (v) whether means exist for the signatory to give notice that a signature device has been compromised;
 - (vi) whether a timely revocation service is offered;
- (e) provide a means for a signatory to give notice that a signature device has been compromised, and ensure the availability of a timely revocation service;
- (f) utilize trustworthy systems, procedures and human resources in performing its services.
- (2) A supplier of certification services shall be liable for its failure to satisfy the requirements of paragraph (1).

Paragraph (1)

39. Subparagraph (a) expresses the basic rule that a supplier of certification services should adhere to the representations and commitments made by that supplier, for example in a certification practices statement or in any other type of policy statement. Subparagraph (b) replicates in the context of the activities of the supplier of certification services the standard of conduct set forth in article 8(1)(c) with respect to the signatory.

40. Subparagraph (c) defines the essential contents and the core effect of any certificate under the Uniform Rules. Subparagraph (d) lists additional elements to be included in the certificate or otherwise made available or accessible to the relying party, where they would be relevant to a particular certificate. Subparagraph (e) is not intended to apply to certificates such as transactional certificates, which are one-time certificates, or low-cost certificates for low-risk applications, both of which might not be subject to revocation.

Paragraph (2)

41. Paragraph (2) mirrors the basic rule of liability set forth in article 8(2) with respect to the signatory. The effect of that provision is to leave it up to national law to determine the consequences of liability. Subject to applicable rules of national law, paragraph (2) is not intended by its authors to be interpreted as a rule of absolute liability. It was not foreseen that the effect of paragraph (2) would be to exclude the possibility for the supplier of certification services to prove, for example, the absence of fault or contributory fault.

42. Early drafts of article 9 contained an additional paragraph, which addressed the consequences of liability as set forth in paragraph (2). In the preparation of the Uniform Rules, it was observed that suppliers of certification services performed intermediary functions that were fundamental to electronic commerce and that the question of the liability of such professionals would not be sufficiently addressed by adopting a single provision along the lines of paragraph (2). While paragraph (2) may state an appropriate principle for application to signatories, it may not be sufficient for addressing the professional and commercial activities covered by article 9. One possible way of compensating such insufficiency would have been to list in the text of the Uniform Rules the factors to be taken into account in assessing any loss resulting from failure by the supplier of certification services to satisfy the requirements of

paragraph (1). It was finally decided that a non-exhaustive list of indicative factors should be contained in this Guide. In assessing the loss, the following factors should be taken into account, *inter alia*: (a) the cost of obtaining the certificate; (b) the nature of the information being certified; (c) the existence and extent of any limitation on the purpose for which the certificate may be used; (d) the existence of any statement limiting the scope or extent of the liability of the supplier of certification services; and (e) any contributory conduct by the relying party.

References to UNCITRAL documents

- A/CN.9/467, paras. 105-129;
- A/CN.9/WG.IV/WP.84, para. 54-60;
- A/CN.9/465, paras. 123-142 (draft article 12);
- A/CN.9/WG.IV/WP.82, paras. 59-68 (draft article 12);
- A/CN.9/457, paras. 108-119;
- A/CN.9/WG.IV/WP.80, paras. 22-24.

[Article 10. Trustworthiness

In determining whether and the extent to which any systems, procedures and human resources utilized by a supplier of certification services are trustworthy, regard shall be had to the following factors:

- (a) financial and human resources, including existence of assets;
- (b) quality of hardware and software systems;
- (c) procedures for processing of certificates and applications for certificates and retention of records;
- (d) availability of information to signatories identified in certificates and to potential relying parties;
- (e) regularity and extent of audit by an independent body;
- (f) the existence of a declaration by the State, an accreditation body or the supplier of certification services regarding compliance with or existence of the foregoing; and
- (g) any other relevant factor.]

Flexibility of the notion of “trustworthiness”

43. Article 10 was initially drafted as part of article 9. Although that part later became a separate article, it is mainly intended to assist with the interpretation of the notion of “trustworthy systems, procedures and human resources” in article 9(1)(f). Article 10 is set forth as a non-exhaustive list of factors to be taken into account in determining trustworthiness. That list is intended to provide a flexible notion of trustworthiness, which could vary in content depending upon what is expected of the certificate in the context in which it is created.

References to UNCITRAL documents

- A/CN.9/467, paras. 114-119.

Article 11. Conduct of the relying party

A relying party shall bear the legal consequences of its failure to:

- (a) take reasonable steps to verify the reliability of an electronic signature; or
- (b) where an electronic signature is supported by a certificate, take reasonable steps to:
 - (i) verify the validity, suspension or revocation of the certificate; and
 - (ii) observe any limitation with respect to the certificate.

Reasonableness of reliance

44. Article 11 reflects the idea that a party who intends to rely on an electronic signature should bear in mind the question whether and to what extent such reliance is reasonable in the light of the circumstances. It is not intended to deal with the issue of the validity of an electronic signature, which is addressed under article 6 and should not depend upon the conduct of the relying party. The issue of the validity of an electronic signature should be kept separate from the issue of whether it is reasonable for a relying party to rely on a signature that does not meet the standard set forth in article 6.

Consumer issues

45. While article 11 might place a burden on relying parties, particularly where such parties are consumers, it may be recalled that the Uniform Rules are not intended to overrule any rule governing the protection of consumers. However, the Uniform Rules might play a useful role in educating all the parties involved, including relying parties, as to the standard of reasonable conduct to be met with respect to electronic signatures. In addition, establishing a standard of conduct under which the relying party should verify the reliability of the signature through readily accessible means may be seen as essential to the development of any public-key infrastructure system.

Notion of "relying party"

46. The Uniform Rules do not provide a definition of the notion of "relying party". Consistent with industry practice, the scope of the notion of "relying party" is intended to cover any party that might rely on an electronic signature. Depending on the circumstances, a "relying party" might thus be any person having or not a contractual relationship with the signatory or the certification services provider. It is even conceivable that the certification services provider or the signatory might itself become a "relying party". However, that broad notion of "relying party" should not result in the subscriber of a certificate being placed under an obligation to verify the validity of the certificate it purchases from the certification services provider.

Failure to comply with requirements of article 11

47. As to the possible impact of establishing as a general obligation that the relying party should verify the validity of the electronic signature or certificate, a question arises where the relying party fails to comply with the requirements of article 11. Should it fail to comply with those requirements, the relying party should not be

precluded from availing itself of the signature or certificate if reasonable verification would not have revealed that the signature or certificate was invalid. Such a situation may need to be dealt with by the law applicable outside the Uniform Rules.

References to UNCITRAL documents

A/CN.9/467, paras. 130-143;

A/CN.9/WG.IV/WP.84, paras. 61-63;

A/CN.9/465, paras. 109-122 (draft articles 10 and 11);

A/CN.9/WG.IV/WP.82, paras 56-58 (draft articles 10 and 11);

A/CN.9/457, paras. 99-107;

A/CN.9/WG.IV/WP.80, paras. 20-21.

Notes

¹ *Official Records of the General Assembly, Fifty-first Session, Supplement No. 17 (A/51/17)*, paras. 223-224.

² *Ibid.*, *Fifty-second Session, Supplement No. 17 (A/52/17)*, paras. 249-251.

³ A/CN.9/467, paras. 18-20.

⁴ *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 17 (A/55/17)*, paras. 380-383.