UNITED
NATIONS

A

General Assembly

Distr.
LIMITED

A/CN.9/WG.IV/WP.80
15 December 1998

ORIGINAL: ENGLISH

UNITED NATIONS COMMISSION
ON INTERNATIONAL TRADE LAW
Working Group on Electronic Commerce
Thirty-fourth session
Vienna, 8-19 February 1999

ELECTRONIC SIGNATURES

Note by the Secretariat

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V.98-58095

INTRODUCTION

1. The Commission, at its thirtieth session, in May 1997, entrusted the Working Group on Electronic Commerce with the preparation of uniform rules on the legal issues of digital signatures and certification authorities. With respect to the exact scope and form of such uniform rules, it was generally agreed at that session that no decision could be made at such an early stage of the process. In addition, it was felt that, while the Working Group might appropriately focus its attention on issues of digital signatures in view of the apparently predominant role played by public-key cryptography in the emerging electronic-commerce practice, the uniform rules to be prepared should be consistent with the media-neutral approach taken in the UNCITRAL Model Law on Electronic Commerce (hereinafter referred to as "the Model Law"). Thus, the uniform rules should not discourage the use of other authentication techniques. Moreover, in dealing with public-key cryptography, those uniform rules might need to accommodate various levels of security and to recognize the various legal effects and levels of liability corresponding to the various types of services being provided in the context of digital signatures. With respect to certification authorities, while the value of market-driven standards was recognized by the Commission, it was widely felt that the Working Group might appropriately envisage the establishment of a minimum set of standards to be met by certification authorities, in particular where cross-border certification was sought.[1]

2. At its thirty-first session, in June 1998, the Commission had before it the report of the Working Group on the work of its thirty-second session (A/CN.9/446). The Commission expressed its appreciation of the efforts accomplished by the Working Group in its preparation of draft uniform rules on electronic signatures. It was noted that the Working Group, throughout its thirty-first and thirty-second sessions, had experienced manifest difficulties in reaching a common understanding of the new legal issues arising from the increased use of digital and other electronic signatures. It was also noted that a consensus was still to be found as to how those issues might be addressed in an internationally acceptable legal framework. However, it was generally felt by the Commission that the progress achieved so far indicated that the draft uniform rules on electronic signatures were progressively being shaped into a workable structure. The Commission reaffirmed the decision made at its thirty-first session as to the feasibility of preparing such uniform rules[2] and expressed its confidence that more progress could be accomplished by the Working Group at its thirty-third session (New York, 29 June-10 July 1998) on the basis of the revised draft prepared by the Secretariat (A/CN.9/WG.IV/WP.76). In the context of that discussion, the Commission noted with satisfaction that the Working Group had become generally recognized as a particularly important international forum for the exchange of views regarding the legal issues of electronic commerce and for the preparation of solutions to those issues.[3]

3. The Working Group continued the revision of the Uniform Rules at its thirty-third session (July 1998) on the basis of the note prepared by the Secretariat (A/CN.9/WG.IV/WP.76). The report of that session is contained in document A/CN.9/454. The Secretariat prepared a note containing revised draft provisions based on the deliberations and decisions of the Working Group (A/CN.9/WG.IV/WP.79).

4. This note contains draft articles, a number of which are based on those contained in document A/CN.9/WG.IV/WP.79, which could be considered by the Working Group in combination with, or as alternatives to, draft articles 1-15 of the revised draft Uniform Rules.

5. The purpose of this note is to facilitate discussion in the Working Group by providing draft articles based on the key elements of Chapters II and III of the revised draft Uniform Rules contained in document A/CN.9/WG.IV/WP.79, together with three draft articles which address the difficulties encountered by the Working Group in its discussions of the issues of liability. As such, these three articles draw upon a number of obligations of parties to signature transactions already set out in Chapters II and III of the revised draft Uniform Rules. The terminology and definitions of the draft Uniform Rules as set out in document A/CN.9/WG.IV/WP.79, have been revised as necessary.

6. In the preparation of this note, the Secretariat was assisted by a group of experts, comprising both experts invited by the Secretariat and experts designated by interested governments and international organizations.

DRAFT ARTICLES ON ELECTRONIC SIGNATURES

Article A. Definitions

For the purposes of these Rules:

(a) "Electronic signature" means data in electronic form in, affixed to, or logically associated with, a data message, and [that may be] 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].

(b) "Enhanced electronic signature" means an electronic signature which [is created and] can be verified through the application of a security procedure or combination of security procedures that ensures that such electronic signature:

(i) is unique to the signature holder [for the purpose for][within the context in] which it is used;

(ii) can be used to identify objectively the signature holder in relation to the data message;

(iii) was created and affixed to the data message by the signature holder or using a means under the sole control of the signature holder.

(c) "Signature holder" means a person by whom, or on whose behalf, an enhanced electronic signature can be created and affixed to a data message.

(d) "Information certifier" means a person or entity which, in the course of its business, engages in [providing identification services] [certifying information] which [are][is] used to support the use of enhanced electronic signatures.

Remarks

7. While reflecting decisions reached by the Working Group at its thirtieth session that, consistent with media neutrality in the Model Law, the Uniform Rules should not discourage the

use of any technique that would provide a "method as reliable as appropriate" as an alternative to handwritten and other paper-based signatures in compliance with article 7 of the Model Law, this document builds upon a broad definition of electronic signatures to focus more specifically upon signatures that provide a higher level of trustworthiness by reference to a set of criteria which, once met, would entail legal effects.

8. The definitions of "electronic signature" and "enhanced electronic signature" are intended to cover all techniques that might be applied to provide the functional equivalent of a handwritten signature, as understood in article 7 of the Model Law.

9. The term "signature holder" has been adopted in this draft to overcome problems which were identified with the use of the phrase "signer" i.e., that the natural meaning of the word implies that a signature has already been created, whereas in these draft articles, for example, the signature holder has certain obligations to protect its enhanced electronic signature, irrespective of whether it actually affixes it to a data message. This would be the same situation as that of the holder of a credit card or cash card where the personal identification number (PIN) should be protected, irrespective of whether or not the card was ever used.

10. "Information certifier" replaces the more specific term "certification authority" which is generally understood in the context of digital signatures only, to make it clear that the draft Uniform Rules should also apply to signature technologies which may not be specifically digital signatures, but which may nevertheless utilize similar functions to those characteristic of digital signatures.

Article B. Compliance with requirements for 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) Where the law requires a signature of a person, that requirement is met in relation to a data message if an enhanced electronic signature is used.

(3) Paragraphs (1) and (2) apply 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.

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

Remarks

11. The purpose of draft article B is to confirm the connection with article 7 of the Model Law. Paragraph (1) restates the principle of article 7 of the Model Law that an electronic signature can satisfy a requirement of law for a signature provided that it meets certain conditions. Paragraph (2) provides that an enhanced electronic signature does meet those conditions and establishes a shortcut to satisfying the requirement of article 7.

12. Paragraphs (3) and (4) are included for consistency with article 7 of the Model Law.

Article C. Compliance with requirements for original

(1) Where the law requires information to be presented or retained in its original form, that requirement in relation to a data message if an electronic signature is used which provides a reliable assurance as to the integrity of the information from the time when it was first generated in its final form, as a data message or otherwise.

(2) Where the law requires information to be presented or retained in its original form, that requirement in relation to a data message if an enhanced electronic signature is used.

(3) Paragraphs (1) and (2) apply 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.

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

Remarks

13. The purpose of draft article B is to confirm the connection with article 8 of the Model Law. Paragraph (1) restates the principle of article 8 of the Model Law that an electronic signature can satisfy a requirement of law for an original provided that it meets certain conditions. Paragraph (2) provides that an enhanced electronic signature does meet those conditions and establishes a shortcut to satisfying the requirement of article 8.

14. Paragraphs (3) and (4) are included for consistency with article 7 of the Model Law.

Article D. Determination of enhanced electronic signature

(1) *[The organ or authority specified by the enacting State as competent]* may determine that an electronic signature is an enhanced electronic signature.

(2) Any determination made under paragraph (1) should be consistent with recognized international standards.

Remarks

15. The purpose of draft article D is to make it clear that an enacting State may designate an organ or authority that will have the power to make determinations on what specific technologies may qualify as an enhanced electronic signature. The purpose of paragraph (2) is to encourage States to ensure that determinations made under paragraph (1) conform with international standards where applicable, thus facilitating harmonization of practices with respect to enhanced electronic signatures and cross-border use and recognition of signatures.

Article E. Freedom of contract

A signature holder and any person who may rely on the electronic signature of the signature holder may determine that as between themselves the electronic signature is to be treated as an enhanced electronic signature.

Remarks

16. Draft article D recognizes the importance of party autonomy in the use of enhanced electronic signatures, while ensuring that any agreement as to what may be treated as an enhanced electronic signature will not operate to affect any person not a party to that agreement (i.e., third parties).

17. This draft article is intended to be consistent with the approach to party autonomy taken in the Model Law, and in particular in article 4. The Model Law provides that while certain articles (those in chapter II) are to be regarded as mandatory, they can nevertheless be modified by agreement to the extent that that would be permitted by national law. Similarly, draft article E is not intended to allow parties to modify form requirements where this is not permitted by national law.

Article F. Obligations of the signature holder

(1) A signature holder is obliged to:

(a) Exercise due care to avoid unauthorized use of its signature;

(b) Notify [appropriate persons] [as soon as possible] in the event its signature is compromised and could be used to create unauthorized enhanced electronic signatures;

(c) Ensure that all material representations or statements made by the signature holder to information certifiers and relying parties are accurate and complete to the best of the signature holder's knowledge and belief.

(2) A signature holder shall be responsible for the consequences of its failure to fulfill the obligations in paragraph (1).

Remarks

18. Draft article F establishes minimum standards which a signature holder is obliged to observe in holding and using its signature, including notification where that signature is compromised, and in its dealings with information certifiers and relying parties. The draft article includes the key obligations which generally could be expected to apply to any person using an enhanced electronic signature.

19. The draft article establishes that the signature holder is responsible for the consequences of not observing these obligations, but leaves it up to national law to determine what these consequences would be. Naturally, an article which leaves it up to national law to determine the

consequences of not observing these obligations is unlikely to foster the development of harmonized rules on electronic signatures. The Working Group may wish to consider a rule along the lines of draft article 7 of the Uniform Rules (see A/CN.9/WG.IV/WP.79), which more specifically provides for what these consequences might be.

Article G. Reliance on an enhanced electronic signatures

A person is entitled to rely on an enhanced electronic signature, provided it takes reasonable steps to determine whether the enhanced electronic signature is valid and has not been compromised or revoked.

Remarks

20. Draft article G takes the principle of article 13(3) of the Model Law that a party relying upon a data message or, in this case an enhanced electronic signature, is only entitled to do so in certain circumstances. Such a party is not entitled to rely on a signature where it could have found out, had it taken reasonable steps, that the signature had been compromised and was no longer valid, or if the party knew or should have known that representations with respect, for example to the authorization of the signature, were not valid. For the purposes of this draft article, it is assumed that validity includes the concept of authorization of the signature.

21. Taking reasonable steps might include, for example, checking information made available by an information certifier as to the validity or otherwise of signatures it has certified, or verifying a signature using a procedure agreed with the signature holder or that was reasonable in the circumstances.

Article H. Obligations of an information certifier

(1) An information certifier is obliged to:

(a) act in accordance with the representations it makes with respect to its practices;

(b) take reasonable steps to determine accurately the identity of the signature holder and any other facts or information that the information certifier certifies;

(c) provide reasonably accessible means which enable a relying party to ascertain:

(i) the identify of the information certifier;

(ii) the method used to identify the signature holder;

(iii) any limitations on the purposes for which the signature may be used; and

(iv) whether the signature is valid and has not been compromised.

(d) Provide a means for signature holders to give notice that an enhanced electronic signature has been compromised.

(e) Ensure that all material representations or statements the information certifier makes are accurate and complete to the best of it's knowledge and belief;

(f) Utilize trustworthy systems and procedures in performing its services.

(2) An information certifier shall be responsible for the consequences of its failure to fulfill the obligations in paragraph (1).

Remarks

22. Like draft article F, draft article H establishes minimum standards which an information certifier is obliged to observe in conducting its business, including certifying information with respect to the identification of the signature holder, providing information on the continuing validity of signatures including notification where that signature is compromised, and in its dealings with signature holders and relying parties. The draft article includes the key obligations which generally could be expected to apply to any person in the business of an information certifier in the context of enhanced electronic signatures.

23. The draft article establishes that the information certifier is responsible for the consequences of not observing these obligations, but leaves it up to national law to determine what these consequences would be. Paragraph (3) provides that the information certifier, like the relying party, is not entitled to rely upon representations that is knows or should know are not true.

24. As in the case of draft article F, this article, which leaves it up to national law to determine the consequences of not observing these obligations, is unlikely to foster the development of harmonized rules on electronic signatures. The Working Group may wish to consider a rule along the lines of draft article 7 of the Uniform Rules (see A/CN.9/WG.IV/WP.79), which more specifically provides for what these consequences might be.

Notes

1. *Official Records of the General Assembly, Fifty-second Session, Supplement No. 17* and corrigendum (A/52/17 and Corr. 1), para. 250.

2. Ibid., paras. 249 and 250.

3. Ibid., *Fifty-third Session, Supplement No. 17 (A/53/17)*, paras. 207-208.