UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS – A NEW GLOBAL STANDARD

The recently adopted United Nations Convention on the Use of Electronic Communications in International Contracts is a landmark legal instrument that sets a new global standard for electronic commerce legislation. In Part I, the article discusses the key features of this landmark Convention, and the significance of the Convention which extends beyond the strict ambit of the Convention itself. In Part II, the article broadly compares the Convention provisions with those of the UNCITRAL Model Law on Electronic Commerce and the UNCITRAL Model Law on Electronic Signatures, and highlights some provisions from the UNCITRAL Model Law on Electronic Commerce that were omitted from the Convention. In Part III, the article discusses legal issues that are raised by the implementation of the Convention in Singapore, focusing on the necessary amendments to the Electronic Transactions Act (Cap 283A, 1996 Rev Ed). [Editorial note: For a brief overview of the Convention, refer to the note at p 234 of this issue of the Academy Journal.]

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I. The United Nations Convention on the Use of Electronic Communications in International Contracts

A. Development of the United Nations Convention on the Use of Electronic Communications in International Contracts

1 On 23 November 2005, the United Nations ("UN") General Assembly adopted[1] the new UN Convention on the Use of Electronic Communications in International Contracts ("the Convention").[2] The Convention is the latest legal instrument developed by the UN Commission on International Trade Law ("UNCITRAL") in the area of electronic commerce.

2 UNCITRAL is the core legal body of the UN system in the field of international trade law. Its mandate is to remove legal obstacles to international trade by progressively modernising and harmonising trade law.

3 In the field of electronic commerce, UNCITRAL had previously developed the UNCITRAL Model Law on Electronic Commerce in 1996 and the UNCITRAL Model Law on Electronic Signatures in 2001. The Model Law on Electronic Commerce has been widely implemented in many countries around the world, including the US, Canada, Australia and Singapore.[3] However, different countries implemented the Model Law on Electronic Commerce differently, resulting in significant variations in electronic commerce legislation even amongst countries that had adopted the Model Law on Electronic Commerce. In 2000, the European Union ("EU") promulgated the Directive 2000/31/EC on Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market[4] ("EU Directive on

1 Resolution Adopted by the General Assembly [on the report of the Sixth Committee (A/60/515)] 60/21. United Nations Convention on the Use of Electronic Communications in International Contracts, Official Records of the General Assembly, 60th Session, A/RES/60/21, available at <http://www.uncitral.org/uncitral/en/commission/resolutions.html> (accessed 18 April 2006).

2 The text of the Convention is available at the UNCITRAL website <http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Convention.html> (accessed 18 April 2006) and is also reproduced at Appendix A of this article.

3 Singapore was the first country to implement the UNCITRAL Model Law on Electronic Commerce in 1998.

4 Directive 2000/31/EC on Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market (Luxembourg, 8 June 2000), English text available at Official Journal of the European Communities, L 178.

Electronic Commerce") which differed significantly in scope and content from the UNICTRAL Model Law on Electronic Commerce. There was therefore a lack of uniformity and harmonisation amongst national electronic commerce legislation around the world. This lack of uniformity and harmonisation was perceived as a barrier to international trade by electronic means.

4 In 2001, UNCITRAL tasked its Working Group IV on Electronic Commerce ("the Working Group") with the preparation of an international instrument dealing with issues of electronic contracting. The Working Group was also asked to consider ways of removing possible legal barriers to electronic commerce contained in existing international instruments relating to international trade. The Working Group began its deliberations at its 39th session in March 2002, and finally completed work on a draft Convention on the Use of Electronic Communications in International Contracts at its 44th session in October 2004.

5 During the 38th annual UNCITRAL plenary session held in Vienna, Austria, from 4 to 15 July 2005, UNCITRAL adopted the finalised text of the new draft Convention on the Use of Electronic Communications in International Contracts, and recommended its adoption by the UN General Assembly.[5]

6 The Convention was adopted by the UN General Assembly on 23 November 2005, and is open for signature by all States at the UN Headquarters in New York from 16 January 2006 to 16 January 2008.[6] It is subject to ratification, acceptance or approval by the signatory States, and open for accession by all States that are not signatory States. In accordance with Art 23 of the Convention, the Convention will enter into force on the first day of the month following the expiration of six months after the date of deposit of the third instrument of ratification, acceptance, approval or accession.[7]

5 Report of the UNCITRAL on the work of its 38th session (4–15 July 2005) (Official Records of the General Assembly, 60th Session, Supplement No 17) (A/60/17), at para 167.

6 UN Press Release L/T/4395.

7 Central African Republic and Senegal became the first two States to sign the Convention on 27 February 2006 and 7 April 2006 respectively. A signature event is scheduled to be held at the 39th UNCITRAL plenary session (19 June 2006 to 7 July 2006) in New York.

7 Singapore played an important and central role in the development of the Convention. Mr Jeffrey Chan Wah Teck[8] of the Attorney-General's Chambers of Singapore took a leading role in the deliberations on the Convention as the Chairman of Working Group IV on Electronic Commerce from March 2002 to October 2004, and also as the Vice-Chairman chairing the deliberations on the Convention at the 38th UNCITRAL plenary session. Members of the Singapore delegation also made important contributions to the deliberations that led to the adoption of the draft Convention, including the drafting of key provisions in the draft Convention.

B. Key features of the Convention

8 The Convention is an interpretative legal instrument with minimum substantive provisions. It facilitates the use of electronic communications in international contracting by providing for the functional equivalence of electronic communications, while preserving the principle of technological neutrality. Taking the form of a convention, it is a landmark legal instrument that promises to harmonise basic electronic commerce legislation amongst Contracting States, hence removing legal barriers to cross-border electronic commerce. The Convention is also intended to remove obstacles to the use of electronic communications that might arise under existing international trade law instruments, most of which were negotiated long before the development of new technology, such as electronic mail, electronic data interchange ("EDI") and the Internet.

9 The Convention builds upon the UNCITRAL Model Law on Electronic Commerce and the UNCITRAL Model Law on Electronic Signatures, but its provisions have been improved and updated to take into account technological developments since 1996, most notably, the growth of the Internet. The rules contained in the Convention are intended to supersede existing domestic electronic commerce legislation of the Contracting States covering the same areas, including domestic electronic commerce legislation based upon the UNCITRAL Model Law on Electronic Commerce and the UNCITRAL Model Law on Electronic Signatures.

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10 In this section, we highlight and discuss the key features of the Convention, and include first-hand observations and insights on the rationale and ambit of the provisions from the deliberations at UNCITRAL.

(1) Scope of application

11 Under Art 1(1) of the Convention, the Convention applies to the use of electronic communications in connection with the formation or performance of a contract between parties whose places of business are in different States.[9] The word "formation" includes negotiations and offers, even where such communications do not result in a concluded contract.[10]

12 The Convention does not have autonomous application, and applies only when the law of a Contracting State governs the transaction between the parties.[11] The Convention will apply either if the law of a Contracting State is the applicable law chosen by the parties to govern their transaction, or, if the parties have not chosen the applicable law, the Convention will apply if the law of a Contracting State is determined to be the governing law in accordance with the rules of private international law of the forum State.[12] Article 1(1) of the Convention only requires that the parties must be located in different States, but does not require that both the States must be Contracting States. The Convention therefore establishes the broadest possible scope of application as the starting point, while enabling Contracting States to make declarations under Art 19(1) narrowing the broad scope of application. Article 19(1) of the Convention provides that Contracting States may declare that they will apply the Convention only when the States referred to in Art 1(1) are Contracting States, or only when the parties to the transaction have agreed that it applies.

13 Article 20 of the Convention extends the scope of application of the Convention by making the Convention applicable to electronic communications used in connection with the formation or performance of a contract to which other international instruments apply. Through this method, the Convention removes legal obstacles to electronic

9 Article 1(1) of the Convention.
10 Report of the Working Group on Electronic Commerce on the work of its 44th session (Vienna, 11–22 October 2004) (A/CN.9/571), at para 15.
11 A/60/17, *supra* n 5, at para 22.
12 *Ibid*.

commerce conducted under these other international instruments without the need to amend each international instrument.[13]

14 Article 20(1) extends the application of the Convention to contracts which fall within the scope of listed UNCITRAL conventions (*eg*, the UN Convention on Contracts for the International Sale of Goods[14] ("CISG")) which the Contracting State is or may become party to. Article 20(2) of the Convention further extends the application of the Convention to contracts which fall within the scope of *any* other international instrument which the Contracting State is or may become party to, unless the Contracting State "opts out" of Art 20(2) by way of a declaration.[15] In order to adopt the "opt-out" approach in Art 20(2), a Contracting State would need to vet all international instruments that it is party to, to ensure that there are no difficulties in applying the Convention to those international instruments, before adopting the Convention. Contracting States that prefer to take a more incremental approach ("opt-in" approach) to the extension of the scope of application of the Convention to cover other international instruments it may be party to, can "opt out" of Art 20(2) of the Convention by way of a declaration, and then incrementally extend the scope of application of the Convention to cover specific international instruments as specified in declarations made under Art 20(3) of the Convention. Even where a Contracting State has decided to adopt the "opt-out" approach in Art 20(2), it still has the ability under Art 20(4) to declare that it will not apply the Convention to contracts falling within the scope of any specified international instrument.

13 A/CN.9/571, *supra* n 10, at para 49.

14 UN Convention on Contracts for the International Sale of Goods (Vienna, 11 April 1980) (United Nations, *Treaty Series*, vol 1489, No 25567).

15 During the deliberations at the 44th session of the Working Group IV, the Working Group considered two alternative draft provisions for the extension of the scope of application of the Convention to cover the subject matter of other international instruments. Variant A was referred to as the "opt-in" variant, by which Contracting States were given the ability to make declarations to incrementally extend the scope of application of the Convention to cover other international instruments. Variant B was referred to as the "opt-out" variant, by which the Convention automatically extends the scope of application of the Convention to cover all other international instruments which the Contracting States may be party to, but the Contracting States are given the power to "opt out" of this provision, which would result in the States parties falling back to their ability to incrementally extend the scope of application of the Convention (a Variant A outcome). The final formulation of Art 20(2) adopts the formulation contained in Variant B. The Working Group recognised that the ultimate end result under both the "opt-in" and "opt-out" approaches would be the same. See A/CN.9/571, *supra* n 10, at paras 23–27 and 51.

15 The finely balanced provisions in Arts 20(2), 20(3) and 20(4) were designed to give Contracting States great flexibility in choosing what other international instruments the Convention would be applied to and when such an extension would take place.

(2) Excluded matters

16 Article 2 of the Convention lists three categories of matters excluded from the scope of the Convention. Firstly, consumer contracts are excluded as it was felt that certain provisions of the Convention as an international trade law instrument are inconsistent with consumer contracts.[16] Secondly, the Convention does not apply to transactions in certain financial markets[17] as it was felt that the financial services sector is already subject to well-defined regulatory controls and industry standards, and no benefit would be derived from their inclusion in the Convention.[18] Thirdly, the Convention does not apply to negotiable instruments, bills of lading or any transferable document or instrument that entitles the bearer or beneficiary to claim delivery of goods or payment of money,[19] due to the difficulty in creating an electronic equivalent of paper-based negotiability.[20] However, it is noted that the Convention does apply to letters of credit and bank guarantees, which are not covered by the third excluded category.[21]

17 During the deliberations at UNCITRAL, it was felt that all three specified exclusions in Art 2 concern matters for which a system of global exclusions was felt to be necessary. This list has been kept short so as to achieve the broadest application of the Convention. The Working Group had originally considered a longer list of excluded categories of matters which included, for example, contracts dealing with immovable property and family law.[22] Whilst there was support for the retention of these other excluded categories of matters in Art 2, the predominant view of the Working Group favoured the deletion of these other excluded categories

16 Article 2(1)(*a*) of the Convention.
17 Article 2(1)(*b*) of the Convention.
18 A/CN.9/571, *supra* n 10, at para 61.
19 Article 2(2) of the Convention.
20 The Working Group recognised that the issues raised by negotiable instruments and similar transferable instruments, that entitled the bearer or beneficiary to claim the delivery of goods or the payment of a sum of money, made it necessary to develop legal, technological and business solutions to ensure the presentment of a singular original, which had yet to be fully developed.
21 A/60/17, *supra* n 5, at para 75.
22 A/CN.9/571, *supra* n 10, at paras 59 and 62–66.

on the ground that it was preferable that such exclusions be made individually by Contracting States using declarations under Art 19, as the adoption of such an extended list of exclusions in Art 2 would impede the use of electronic communications by the industry in these transactions in line with technological developments, or by States that saw no objections to the use of electronic communications in such transactions. It was also noted that electronic communications were already being used in some countries for transactions involving these extended categories (*eg*, immovable property and public authorities).

18 The Working Group felt that while some States may wish to exclude certain other matters from the scope of the Convention, other States may wish to extend the Convention to these areas, and a system of global exclusions should be avoided for these other areas so as not to preclude the application of the Convention to these other areas. It was also felt that this would allow individual States to progressively remove their individual exclusions made by way of declaration, as and when they become more comfortable in those areas. In addition to the three excluded categories in Art 2, individual Contracting States wishing to exclude other matters from the scope of the Convention (*eg*, transactions dealing with immovable property) may do so by way of declarations made by individual Contracting States under Art 19(2).

(3) Party autonomy

19 The Convention preserves the principle of party autonomy in Art 3. Contracting parties are free to choose not to apply the Convention, or to choose to apply only parts of the Convention. The contracting parties may derogate from the provisions of the Convention either expressly or implicitly.[23] However, party autonomy does not permit parties to opt out of mandatory legal requirements of public policy in domestic legislation, *eg*, statutory requirements on form or authentication.[24]

(4) Location of parties and information requirements

20 In Art 4(*h*) of the Convention, "place of business" is defined as "any place where a party maintains a non-transitory establishment to pursue an economic activity other than the temporary provision of goods

23 A/60/17, *supra* n 5, at para 32.
24 A/CN.9/571, *supra* n 10, at para 74.

or services out of a specific location".[25] Article 6 of the Convention provides a presumption and a set of default rules that facilitate the determination of a party's place of business. It is important to have a set of rules for the determination of the "place of business" of the parties, in view of the important role that the "place of business" plays in the Convention.[26] The Convention does not impose a duty on the parties to disclose their place of business, as it was felt that such a duty would be ill-fitted for a commercial law instrument and potentially harmful to certain existing business practices.[27] However, Art 7 of the Convention preserves the application of domestic law that may require the parties to disclose their identities, places of business and other information.[28]

21 Article 6(1) creates a rebuttable presumption that the party's place of business is the location indicated by that party. Another party can rebut this presumption by showing that the first party does not have a place of business at that indicated location. Upon a successful rebuttal of the presumption, Art 6(2) applies to the transaction.[29] Article 6(2) provides that if a party has not indicated a place of business, *and* has more than one place of business, the place of business for the purposes of the Convention is that which has the closest relationship to the relevant contract, having regard to the circumstances known to or contemplated by the parties at or before the conclusion of the contract. If a party did not indicate any place of business, but has only one place of business, the sole place of business as falling within the definition of "place of business"

25 The definition of "place of business" in the Convention is different from both the corresponding definitions in the UNCITRAL Model Law on Electronic Commerce and the EU Directive on Electronic Commerce. Instead, the definition adopted in the Convention is a compromise incorporating elements from both these sources. See A/CN.9/571, *supra* n 10, at paras 86–87.

26 Under Art 1(1), the Convention applies when parties have *places of business* in different States. Therefore the determination of the places of business of the parties is crucial to the determination of whether the Convention is applicable to the transaction.

27 It was observed that a duty of disclosure was a consumer protection requirement, and it was felt that the Convention should not include consumer protection provisions. It was also observed that there are currently certain business practices where an agent transacts for an undisclosed principal, and a duty of disclosure of the principal's identity would preclude the continuation of such business practices. See Report of the Working Group on Electronic Commerce on the work of its 42nd session (Vienna, 17–21 November 2003) (A/CN.9/546), paras 88–105.

28 For example, the EU Directive on Electronic Commerce contains a number of disclosure and informational requirements that are targeted at consumer transactions.

29 A/60/17, *supra* n 5, at para 46.

in Art 4(*h*) of the Convention would be the place of business for the purposes of the Convention.[30]

22 Article 6(4) of the Convention clarifies that a location is not a place of business merely because that is where the equipment and technology (*eg* servers) supporting an information system used by a party in connection with the formation of a contract are located, or where the information system may be accessed by other parties.

23 Article 6(5) further clarifies that the sole fact that a party's domain name or electronic mail address is connected to a specific country does not create a presumption that its place of business is located in that country. This is in recognition of the fact that the technological architecture and the actual practice of assignment of domain names and electronic mail addresses do not provide a reliable link to the connected country.[31]

24 However, Arts 6(4) and 6(5) do not prevent a court or arbitrator from taking into account the location of a server or the assignment of a domain name as relevant elements for the determination of a party's place of business, where appropriate.

(5) Treatment of electronic communications and contracts

25 Article 8(1) of the Convention provides that a communication or a contract shall not be denied validity or enforceability solely because it is in the form of an electronic communication.[32] The rule of non-discrimination in Art 8(1) embodies the principle of functional equivalence, and confers legal recognition to electronic functional equivalents of communication or contracts. The Working Group noted that some electronic communications might not give rise to a contract, and Art 8(1) therefore explicitly refers to both the contract and the communications as both need to be validated.[33] Article 8(2) embodies the

30 Article 6(3) also provides that if a natural person does not have a place of business, then reference is made to that person's habitual residence.

31 For example, the domain name "www.mtv.tv" is the official website of MTV Europe, but is registered under the country code top level domain (ccTLD) of the island State of Tuvalu. There is no requirement of local presence in order to register a ".tv" domain name, and in actual practice, many domain names registered under the ".tv" top-level domain have no connection with Tuvalu, and are so registered because "tv" is an abbreviation for television.

32 *Cf* Arts 5 and 11 of the Model Law on Electronic Commerce.

33 A/CN.9/571, *supra* n 10, at paras 120–121.

principle of party autonomy, and clarifies that the Convention does not require a party to use or accept electronic communications.

26 Article 12 of the Convention provides that contracts may be formed as a result of actions by automated message systems, even if no natural person had reviewed or intervened in each of the individual actions carried out by the automated message systems or the resulting contract. Article 4(*g*) defines "automated message system" as "a computer program or an electronic or other automated means used to initiate an action or respond to data messages or performances in whole or in part, without review or intervention by a natural person each time an action is initiated or a response is generated by the system". An example of an automated message system would be the Amazon.com website, which accepts book purchases and online payment without any human intervention. The Working Group noted that in some legal systems,[34] there is a requirement that a human "will" be applied in order for a contract to be formed. Therefore, Art 12 addresses this requirement of a "will" by recognising the validity of actions carried out by automated message systems.

27 Article 11 of the Convention provides that an "offer" by electronic communication which is not addressed to specific parties, but is generally accessible to parties making use of information systems (*eg*, an "offer" on an Internet website), is to be considered as an invitation to make offers, unless the intention to be bound is clearly indicated.[35] The concept of "invitation to make offers" in Art 11 is the same as the common law concept of an invitation to treat. This provision arose from a concern that a seller offering goods on the Internet with a limited stock of goods would otherwise be bound to fulfil orders from a potentially unlimited number of buyers, which the seller would be unable to fulfil.

28 Whilst the Convention does not impose any requirement for contracting parties to make available the contractual terms in any particular manner, Art 13 preserves the application of domestic law that

34 An example cited was the civil law system.

35 The Working Group noted that in many legal systems, offers of goods through Internet auctions and similar transactions have been regarded as binding offers to sell the goods to the highest bidder. Such a scenario would be covered by the proviso in Art 11 which reads "unless it clearly indicates the intention of the party making the proposal to be bound in case of acceptance". See A/CN.9/571, *supra* n 10, at para 171.

may require a party to make available to the other party the electronic communications containing the contractual terms.

29 Although the provisions of the Convention are generally interpretative and not substantive in nature, the Convention does introduce a substantive rule (albeit a very limited one) in Art 14.[36] Article 14(1) gives a natural person, who had made an input error in an electronic communication exchanged with an automated message system, the right to withdraw the portion of the electronic communication in which the input error was made, if the automated message system did not provide the user with an opportunity to correct the input error,[37] and if two other conditions are met. The first condition is that the natural person must notify the other party of the error as soon as possible after learning of the error.[38] The second condition is that the natural person must not have used or received any material benefit or value from the goods or services received.[39]

30 Article 14 was introduced as it was felt that automated message systems created a different operating paradigm, with a potentially higher risk of mistakes made in real-time or nearly instantaneous transactions, as compared with written communications or telephone calls. This right of withdrawal provided in Art 14(1) is a very limited substantive right that does not exist for non-electronic transactions. As the natural person

36 At its 40th session (October 2002), the Working Group considered the question of whether and to what extent the Convention should address substantive issues of contract law or whether it should limit itself to the technicalities of contract formation and performance in an electronic environment. After extensive discussion, the prevailing view within the Working Group was that the Convention should not attempt to develop uniform rules for substantive contractual issues that were not specifically related to electronic commerce or to the use of electronic communications in the context of commercial transactions. There was also a widely shared view that a strict separation between mechanical and substantive issues in the context of electronic commerce was not always feasible or desirable. Where substantive rules were needed beyond the mere reaffirmation of the principle of functional equivalence in order to ensure the effectiveness of electronic communications for transactional purposes, the Working Group should not hesitate to formulate substantive rules. See Report of the Working Group on Electronic Commerce on the work of its 40th session (Vienna, 14–18 October 2002) (A/CN.9/527), at paras 80–81.

37 The Working Group preferred to limit Art 14 to providing consequences for the absence of an opportunity to correct input errors, rather than imposing an obligation on parties to provide an opportunity to correct input errors. See A/CN.9/571, *supra* n 10, at para 184.

38 Article 14(1)(*a*) of the Convention.

39 Article 14(1)(*b*) of the Convention.

is only entitled to withdraw the *portion* of the electronic communication in which the input error was made, whether the withdrawal would result in the invalidation of the communication or transaction would depend on the nature of the portion withdrawn.[40] Article 14 does not provide for the right to "correct" the error made, that is, it does not enable the natural person to modify the original communication so as to substitute the actual intent, as it was felt that the typical consequence of an error in most legal systems was to enable a party to avoid the effect of the transaction, and a right to correct an error would require a modification of the communication which entailed additional costs for the system provider, and entailed the system provider being required to keep the original offer open.[41] Article 14(2) makes it clear that the general law governing mistakes is preserved and unaffected save for the limited right of withdrawal created by Art 14(1).

(6) Form requirements

31 Article 9 of the Convention deals with electronic functional equivalents for writing, handwritten signatures and originals. Article 9(2) provides that a legal requirement for writing is met by an electronic communication if the information contained therein is accessible so as to be usable for subsequent reference. This is similar to the equivalent provision in the Model Law on Electronic Commerce.[42]

32 Significantly, Art 9(3) of the Convention contains a new rule for the electronic functional equivalent of a handwritten signature. Article 9(3)(*a*) provides a definition of a functionally equivalent electronic signature, as "[a] method … used to identify the party and to *indicate that party's intention* in respect of the information contained in the electronic communication" [emphasis added]. The phrase "indicate that party's intention" is different from the analogous provision in the UNCITRAL Model Law on Electronic Commerce, which uses the phrase "indicate that party's *approval* of the information contained".[43] Singapore had intervened to suggest an amendment to Art 9(3)(*a*) to include signatures that do not necessarily indicate the signor's "approval" of the

40 It was pointed out that if the portion of the electronic communication withdrawn concerned the quantity of goods ordered, the withdrawal would invariably result in the invalidation of the transaction as the quantity of goods ordered is an essential term for a contract for the sale of goods.

41 See A/CN.9/571, *supra* n 10, at paras 193–194; and A/60/17, *supra* n 5, at para 98.

42 *Cf* Art 6 of the Model Law on Electronic Commerce.

43 Article 7(1)(*a*) of the Model Law on Electronic Commerce, emphasis added.

contents of the document, such as signatures of a witness or a notary public.[44] As a result of Singapore's intervention, UNCITRAL amended Art 9(3)(*a*) and instead used the more appropriate phrase "indicate that party's intention in respect of the information contained".

33 As for Art 9(3)(*b*) which prescribes a reliability requirement for the validity of an electronic signature, the Working Group had previously considered two alternative formulations, the first being based on Art 7 of the UNCITRAL Model Law on Electronic Commerce, and the second being based on Art 6(3) of the UNCITRAL Model Law on Electronic Signatures.[45] The Working Group had initially considered the first formulation based on Art 7 of the Model Law on Electronic Commerce to be preferable to the second formulation based on Art 6(3) of the UNCITRAL Model Law on Electronic Signatures, as the first formulation was more technologically neutral.[46] At the 38th UNCITRAL plenary session, Singapore and Canada led a strong criticism of the first formulation on the ground that the "general reliability requirement" in Art 9(3)(*b*) would create problems of uncertainty and was unnecessary and inappropriate.[47] This was supported by the US delegation and a few other delegations, but ultimately received insufficient support. Although the majority of delegations did not agree with Singapore and Canada's push to delete Art 9(3)(*b*), UNCITRAL introduced a new sub-para (*b*)(ii) to Art 9(3) to address the concerns raised.[48] Article 9(3) now reads:

> Where the law requires that a communication or a contract should be signed by a party, or provides consequences for the absence of a signature, that requirement is met in relation to an electronic communication if:
>
> (*a*) A method is used to identify the party and to indicate that party's intention in respect of the information contained in the electronic communication; *and*
>
> (*b*) The method used is either:

44 See Singapore's written comment at A/CN.9/578/Add.10.

45 Report of the Working Group on Electronic Commerce on the work of its 42nd session (Vienna, 17–21 November 2003) (A/CN.9/546), at paras 48 and 54–57.

46 Article 6(3) of the UNCITRAL Model Law on Electronic Signatures has been criticised as being premised on public key infrastructure ("PKI") technology, and therefore was not technologically neutral.

47 For a detailed discussion of the problems associated with the "general reliability requirement" in Art 9(3)(*b*), see Singapore's written comment and Canada's written comment at UN Documents A/CN.9/578/Add.10 and A/CN.9/578/Add.15 respectively.

48 A/60/17, *supra* n 5, at paras 65–67.

> (i) As reliable as appropriate for the purpose for which the electronic communication was generated or communicated, in the light of all the circumstances, including any relevant agreement; *or*
>
> (ii) Proven in fact to have fulfilled the functions described in subparagraph (a) above, by itself or together with further evidence.

[emphasis added]

34 In the new Art 9(3), a legal requirement for a signature is met by an electronic signature if Art 9(3)(*a*) is satisfied, and either Art 9(3)(*b*)(i) or Art 9(3)(*b*)(ii) is satisfied. Article 9(3)(*b*)(i) can be understood as prescribing "reliability in theory", whereas Art 9(3)(*b*)(ii) can be understood as prescribing "reliability in fact". We are of the view that, in practice, the "exception" in Art 9(3)(*b*)(ii) is likely to swallow the original "rule" in Art 9(3)(*b*)(i), thereby avoiding the problems associated with Art 9(3)(*b*)(i). This is therefore a significant improvement over both Art 7 of the UNCITRAL Model Law on Electronic Commerce as well as Aart 6(3) of the UNCITRAL Model Law on Electronic Signatures.

35 Article 9(4) provides a new rule for the electronic functional equivalent of an original document. The Working Group had initially included a provision on the electronic functional equivalent of an original in order to cover electronic arbitration agreements under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards[49] ("New York Convention"). However, the Working Group eventually felt that it would be useful to extend the provision to cover other original documents as well.[50] Article 9(4) provides that a legal requirement for an original is met by an electronic communication if (a) there exists a reliable assurance as to the integrity of the information it contains from the time when it was first generated in its final form, as an electronic communication or otherwise; and (b) where it is required that the information it contains be made available, that such information is capable of being displayed to the person to whom it is to be made available.

49 1958, New York. Under Art II of the New York Convention, a party seeking to enforce a foreign arbitral award must submit the original or duly certified copy of the arbitration agreement.

50 A/60/17, *supra* n 5, at para 71.

(7) Time and place of dispatch and receipt

36 Article 10 of the Convention contains rules on the time and place of dispatch and receipt of electronic communications. Significantly, the rules on the time of dispatch and the time of receipt of electronic communications are both different from the equivalent rules in the UNCITRAL Model Law on Electronic Commerce.

37 Article 10(1) of the Convention provides that the time of dispatch of an electronic communication is the time when it *leaves* an information system under the control of the originator, or, if the electronic communication has not left an information system under the control of the originator, the time when the electronic communication is received. This first limb of Art 10(1) conforms closely to the concept of dispatch in a non-electronic environment, and is more intuitive than the rule in Art 15(1) of the Model Law on Electronic Commerce.[51] The first limb of Art 10(1) is also more appropriate, taking account the technological developments since the Model Law on Electronic Commerce was developed about ten years ago. Many of the provisions in the Model Law on Electronic Commerce were premised on EDI technology, and these provisions do not fit well with the Internet and other more modern technologies. The second limb of Art 10(1) provides a special rule for scenarios where an electronic communication is dispatched to the addressee by means such as posting on an Internet website, or where the originator and addressee are both using the same information system.

38 Article 10(2) of the Convention contains a set of two rules for the determination of the time of receipt of an electronic communication, and an evidentiary presumption to assist the application of the rules. Where the addressee has designated an *electronic address* for the receipt of electronic communications, the time of receipt is the time when the electronic communication becomes capable of being retrieved at the designated electronic address. Where the addressee has not designated an electronic address, or where the electronic communication is received at an electronic address other than the designated electronic address, the time of receipt of an electronic communication is the time when it becomes capable of being retrieved at that address *and* the addressee

51 In contrast, Art 15(1) of the Model Law on Electronic Commerce provides that the time of dispatch of a data message is the time when the data message enters an information system outside the control of the originator.

becomes aware that the electronic communication has been sent to that address. The requirement that the addressee must actually be aware that the communication has been sent to the non-designated electronic address significantly narrows the rule and discourages bad faith attempts to bind another party by sending a communication to an electronic address other than the one chosen by the party.[52] To assist the application of these two rules, Art 10(2) also provides that an electronic communication is presumed to be capable of being retrieved by the addressee when it reaches the addressee's electronic address. Therefore, for a designated electronic address, the time of receipt would be the time when an electronic communication reaches the addressee's electronic address, unless it is shown that it was not capable of being retrieved.[53]

39 We are of the view that the rules on the time of receipt in Art 10(2) of the Convention are a significant improvement from the rules in Art 15(2) of the Model Law on Electronic Commerce. Firstly, the new concept of "electronic address" in Art 10(2) is a functional equivalent of a physical address, and is more specific and useful than the concept of "information system" in Art 15(2) of the Model Law on Electronic Commerce. It should be noted that "electronic address" encompasses more than just electronic mail addresses, and includes other electronic addresses such as facsimile numbers and mobile phone numbers (for phone text messages). Secondly, fixing the time of receipt in Art 10(2) at the point when the electronic communication is capable of being retrieved, is arguably fairer than the rule in Art 15(2)(*a*)(i) of the Model Law on Electronic Commerce which fixes the time of receipt as the time when the data message enters an information system. This is especially so in cases where technological tools such as spam filters and anti-virus software render an electronic communication incapable of being retrieved.[54] Thirdly, the rule in Art 10(2) which states that the time of receipt of an electronic communication at an electronic address other than that designated by the addressee is the time when it becomes capable of being retrieved and the addressee becomes aware of the electronic

52 A/CN.9/571, *supra* n 10, at paras 155 and 156.

53 It should be noted that the presumption that a communication is capable of being retrieved when it reaches the addressee's electronic address is a rebuttable presumption. The effect of firewalls or filters could be that blocked communications cannot be presumed to be capable of retrieval. If the addressee is able to show that the communication was not capable of being retrieved by reason of being blocked by the firewall or filter, the presumption is rebutted and there is no receipt under Art 10(2). See A/CN.9/571, *supra* n 10, at para 149.

54 *Ibid*.

communication, is fairer than the rule in Art 15(2)(*a*)(ii) of the Model Law on Electronic Commerce which states that such data messages are received when the addressee retrieves the data message. The rule in Art 15(2) of the Model Law on Electronic Commerce is capable of being abused by addressees who refuse to retrieve the electronic communication after learning of its existence. Fourthly, the rule in Art 10(2) which states that the time of receipt of an electronic communication where no electronic address is designated is the time when it becomes capable of being retrieved and the addressee becomes aware of the electronic communication, is fairer than the rule in Art 15(2)(b) of the Model Law on Electronic Commerce which states that the time of receipt in such a case is when the data message enters the information system of the addressee.

40 Article 10(3) provides that an electronic communication is deemed to be dispatched at the place where the originator has its place of business, and is deemed to be received at the place where the addressee has its place of business. This rule is similar to that in Art 15(4) of the Model Law on Electronic Commerce. This rule makes it clear that the location of a party's server does not determine the place of dispatch or receipt. Article 6 of the Convention provides a set of rules to facilitate the determination of the place of business of a party.

41 Although Art 10(3) may be criticised on the ground that it creates special rules for electronic communications, which do not exist for conventional paper communications, the Working Group recognised that where substantive rules were required beyond mere reaffirmation of the principle of functional equivalence in order to ensure the effectiveness of electronic communications for transactional purposes, they should not hesitate to formulate substantive rules. The receipt and dispatch of electronic communications was cited as one such area. This is because the use of electronic communications makes it difficult to ascertain the time and place of receipt and dispatch of information.[55] In particular, the location of parties is not always clear in the case of electronic communications.

55 A/CN.9/527, *supra* n 36, at para 81, and Guide to Enactment of the UNCITRAL Model Law on Electronic Commerce, available online at <http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf> (accessed 12 April 2006), at para 100.

C. Significance of the Convention

42 The Convention establishes a new international standard for electronic commerce legislation, and is a landmark legal instrument. Contracting States to the Convention would be required to amend their domestic electronic commerce legislation to align them with to the rules contained in the Convention. When adopted, the rules in the Convention are intended to supersede the relevant rules in domestic electronic commerce legislation on the areas covered, including rules derived from the UNCITRAL Model Law on Electronic Commerce, the UNCITRAL Model Law on Electronic Signatures and the EU Directive on Electronic Commerce.

43 Although the Convention technically only applies to cross-border transactions, Contracting States may wish to consider adopting Convention rules for domestic transactions as well as cross-border transactions, in order to avoid a duality of regimes which would be confusing and may be potentially costly for businesses. Especially when transacting over the Internet, businesses are able to reach both domestic as well as international markets, and it is arguably more efficient and practical for a single legal regime to be applicable for both domestic and cross-border transactions. Contracting States are required to amend their domestic law applicable to cross-border transactions to be aligned with the Convention provisions, but there is nothing preventing a Contracting State from applying the Convention rules to domestic transactions as well.

44 Although the Convention only applies to cross-border transactions involving international contracts, the Convention rules are capable of domestic application as well. The limited scope of application of the Convention stems from the paternity of the Convention. The mandate of UNCITRAL is in the area of international trade, and therefore the Convention as an UNCITRAL instrument is necessarily confined in scope to transactions involving international trade. However, many of the rules in the Convention are equally capable of application to domestic transactions, and even to non-contractual situations. For example, Art 6 on location of the parties, Art 8 on legal recognition of electronic communications, Art 9 on form requirements, Art 10 on time and place of dispatch and receipt, Art 11 on invitations to make offers, Art 12 on use of automated message systems and Art 14 on the effect of input errors in electronic communications, are all equally capable of general application, irregardless of whether the contract or transaction is domestic or international in nature.

45 Consumer contracts (referred to as "contracts concluded for personal, family or household purposes") were excluded from the scope of the Convention due to the nature of the Convention as an instrument for the harmonisation of international trade law, and due to the Working Group's recognition that consumer protection rules were domestic in nature and varied greatly from jurisdiction to jurisdiction. However, there is nothing to prevent a Contracting State from extending the Convention rules to cover domestic consumer contracts, despite the exclusion in Art 2(1)(*a*). Furthermore, a Contracting State that wishes to apply the Convention rules to international consumer transactions may do so either by excluding Art 2(1)(*a*) by way of a declaration under Art 19(2) of the Convention, or alternatively by simply extending the Convention rules to cover international consumer contracts without the need to exclude Art 2(1)(*a*) of the Convention.[56]

46 In our view, these possible extensions in the scope of application of the Convention mean that the Convention is likely to have a much wider reach than it appears on an initial reading of the provisions of the Convention.

47 The Convention only provides for almost a bare minimum in terms of the necessary legal rules for electronic transactions. In every legal jurisdiction, we would expect that the legislature would enact further legal rules that either cater to other areas or impose additional requirements on top of what the Convention provides. Examples include legal rules relating to information requirements, consumer protection, network security and data protection.

56 We suggest that a Contracting State (or for that matter, any State) is entitled to determine the scope of application of its legislation, and is entitled to decide to apply a given set of rules (*ie*, the Convention rules) to international consumer contracts, notwithstanding that by its own terms, the Convention does not extend to international consumer contracts. As Art 2(1)(*a*) of the Convention does not create any binding obligation, but merely delineates the subject matter scope of application of the Convention, a Contracting State would not be in breach of any binding obligation by extending the Convention rules to the subject matter described in Art 2(1)(*a*).

II. Comparison between the Convention and the UNICTRAL Model Law on Electronic Commerce and the UNCITRAL Model Law on Electronic Signatures

A. Convention provisions that are different from the Model Laws

48 In this section, we highlight a number of Convention provisions that are different from either the UNCITRAL Model Law on Electronic Commerce or the UNCITRAL Model Law on Electronic Signatures.

(1) Terminology

49 Whereas the provisions of the UNCITRAL Model Law on Electronic Commerce were focused on "data messages", the Convention focuses on the new concept of "electronic communication". Article 4(*b*) of the Convention defines "electronic communication" as "any communication that the parties make by means of data messages". This new term "electronic communication" establishes a link between the *purposes* for which electronic communications might be used, and the notion of "data messages" which was important to retain since it encompassed a wide range of techniques beyond purely "electronic" techniques.[57] The Convention has retained the definition of "data message" as used in the Model Law on Electronic Commerce.[58]

50 In Art 15(2) of the UNCITRAL Model Law on Electronic Commerce, the time of receipt of a data message is determined in terms of the time a data message enters the "information system" of an addressee. During the deliberations on the draft Convention provision for the time of receipt (of an electronic communication) that was based on Art 15, the Working Group encountered much difficulty in interpreting the meaning of "information system", which was felt to be ambiguous.[59] The Convention introduces the new concept of "electronic address" as an electronic functional equivalent of a physical address, and this concept of "electronic address" plays an important role in the new rules on time of receipt in Art 10(2) of the Convention. The Working Group noted that

57 A/CN.9/571, *supra* n 10, at para 80.

58 In the definition of "data message" in Art 4(*c*) of the Convention, the word "magnetic" has been inserted into the list of means by which information in a data message can be generated, sent, received or stored. See A/CN.9/571, *id*, at paras 81–82.

59 A/CN.9/546, *supra* n 45, at paras 63 and 68; and A/CN.9/571, *supra* n 10, at para 146.

the term "electronic address" refers to a portion or location in an information system that a person uses for receiving electronic messages.[60]

(2) Legal recognition of electronic signatures

51 It has already been noted in paras 32 to 34 above that Art 9(3) of the Convention establishes a new definition for electronic signature, and a new set of criteria for the legal recognition of electronic signatures. This new definition for electronic signature and the new criteria for the legal recognition of electronic signatures are different from both Art 7 of the UNCITRAL Model Law on Electronic Commerce and Art 6(3) of the UNCITRAL Model Law on Electronic Signatures. As stated above, we suggest that the new Art 9(3) of the Convention is a significant improvement over the previous formulations contained in the two Model Laws.

(3) Time of dispatch and receipt

52 Article 15(1) of the UNCITRAL Model Law on Electronic Commerce provides that the dispatch of a data message occurs when it *enters* an information system outside the control of the originator or of the person who sent the data message on behalf of the originator. The Guide to Enactment to the UNCITRAL Model Law on Electronic Commerce explains that "[a] data message should not be considered to be dispatched if it merely reached the information system of the addressee but failed to enter it".[61] We suggest that the formulation of Art 15(1) was influenced by the state of technology at the time the Model Law was developed.

53 At the 44th session, the Working Group felt that it was more logical to provide that a message was deemed to be dispatched when it *left* the originator's sphere of control, *ie*, when it left an information system under the control of the originator.[62] Article 10(1) of the Convention reflects this change in thinking. In our view, this is a welcome and timely change that better reflects the realities in today's technological environment.

60 A/CN.9/571, *supra* n 10, at para 157.
61 Guide to Enactment of the UNCITRAL Model Law on Electronic Commerce, *supra* n 55, at para 104.
62 A/CN.9/571, *supra* n 10, at para 142.

54 Article 15(2) of the UNCITRAL Model Law on Electronic Commerce provides a set of rules on the time of receipt of a data message, which differ depending on whether the addressee has designated an information system for the purposes of receiving data messages, and whether the data message was sent to a designated information system. The rules on time of receipt in Art 10(2) of the Convention retain the dichotomy between cases where the electronic communication is received at a designated electronic address, and those where the electronic communication is received at some other electronic address. However, the rule on time of receipt for the case where an electronic communication is sent to an electronic address other than the designated electronic address (Art 15(2)(*a*)(ii) of Model Law), and the rule for the case where no electronic address had been designated (Art 15(2)(*b*) of Model Law), have been merged into one single rule in the second limb of Art 10(2) of the Convention. This new rule on time of receipt at a non-designated address is simpler since the same test applies regardless of whether the recipient had actually designated another electronic address or had not designated any electronic address at all. As stated above, we feel that the new rules on time of receipt in Art 10(2) of the Convention are fairer than the corresponding rules in Art 15(2) of the UNCITRAL Model Law on Electronic Commerce.

(4) Invitation to make offer

55 Article 11 of the Convention, which clarifies and confirms the legal effect of an invitation to treat, has no equivalent in the UNCITRAL Model Law on Electronic Commerce.

(5) Errors in electronic communications

56 Similarly, Art 14 of the Convention which provides a limited right of withdrawal in cases of input error, also has no equivalent in the UNCITRAL Model Law on Electronic Commerce.

B. Model Law provisions omitted from the Convention

57 In this section, we highlight and discuss a number of provisions from the UNCITRAL Model Law on Electronic Commerce that were selectively omitted from the Convention.

(1) Retention of electronic communications

58 Article 10 of the UNCITRAL Model Law on Electronic Commerce provides that a requirement of law for the retention of

documents, records or information is met by a functionally equivalent retention of data messages. The Working Group was of the view that legal requirements relating to the production or retention of original records were typically in connection with rules of evidence in court proceedings and in exchanges with public administration, and it was not felt that a functional equivalence rule of that type was needed in the draft Convention which dealt only with exchanges of a commercial nature.[63]

(2) Attribution of electronic communications

59 Article 13 of the UNCITRAL Model Law on Electronic Commerce contains a series of rules concerning the attribution of data messages. This provision has its origin in Art 5 of the UNCITRAL Model Law on International Credit Transfers, which defines the obligations of the sender of a payment order.[64] The Guide to Enactment of the Model Law on Electronic Commerce[65] explains the purpose of Art 13 as follows:

> Article 13 has its origin in article 5 of the UNCITRAL Model Law on International Credit Transfers, which defines the obligations of the sender of a payment order. Article 13 is intended to apply where there is a question as to whether a data message was really sent by the person who is indicated as being the originator. In the case of a paper-based communication the problem would arise as the result of an alleged forged signature of the purported originator. In an electronic environment, an unauthorized person may have sent the message but the authentication by code, encryption or the like would be accurate. The purpose of article 13 is not to assign responsibility. It deals rather with attribution of data messages by establishing a presumption that under certain circumstances a data message would be considered as a message of the originator, and goes on to qualify that presumption in case the addressee knew or ought to have known that the data message was not that of the originator.

60 At its 42nd session, the Working Group considered the question of whether an attribution provision similar to Art 13 of the UNCITRAL Model Law on Electronic Commerce should be introduced into the draft Convention. Whilst there was some support for such a provision, there were strong objections in view of the difficulty in finding an acceptable solution for the legal issues related to attribution of data messages. The

63 A/CN.9/546, *supra* n 45, at para 53.

64 Note by the Secretariat on Legal Aspects of Electronic Commerce, Electronic Contracting: Background Information, Addendum 3 (A/CN.9/WG.IV/WP.104/Add.3), at para 9.

65 *Supra* n 55, at para 83.

Working Group decided not to include an attribution provision in the draft Convention as there was no consensus on the need for such rules on attribution.[66]

61 At the 42nd session, the Working Group had before it a research paper[67] by the UNCITRAL Secretariat containing a comprehensive survey and discussion of the different approaches to rules on attribution adopted by different States around the world. The research clearly showed that there was no uniformity of approach. While a number of States had enacted rules on attribution based on Art 13 of the UNCITRAL Model Law on Electronic Commerce,[68] others have only adopted the general rules in Art 13 that a data message is that of the originator if it was sent by the originator itself or by a person acting on its behalf, or by a system programmed by or on behalf of the originator to operate automatically.[69]

62 Significantly, some other States that have implemented the UNCITRAL Model Law on Electronic Commerce have *not* included any specific provision based on Art 13.[70] These States have taken the position that no specific rules on attribution of data messages was necessary, and that the same legal rules concerning proof that are applicable to paper communications are equally applicable to electronic communications. Upon closer analysis, it is clear that the question of attribution is a question of the proof of the legal link between the act and the actor, and this should be a question of mixed law and fact to be decided by the court or other trier of fact. It is also important to note that electronic signatures are not the only method of identification recognised by law to attribute documents and records to a person.[71] Attribution can result from information within the electronic communication, instead of a signature, as in the case of a facsimile attributed to a person because of information regarding the sending machine printed across the top of the facsimile. It

66 A/CN.9/546, *supra* n 45, at paras 125 and 127.
67 A/CN.9/WG.IV/WP.104/Add.3, *supra* n 64, at paras 8–17.
68 Countries that adopted Art 13 of the UNCITRAL Model Law on Electronic Commerce include Colombia, Ecuador, Jordan, Mauritius, the Philippines, Republic of Korea, Singapore, Thailand and Venezuela. See A/CN.9/WG.IV/WP.104/Add.3, *id*, at footnote 8.
69 Such countries include Australia, India, Pakistan, Slovenia and the Hong Kong Special Administrative Region of China. See A/CN.9/WG.IV/WP.104/Add.3, *id*, at footnote 11.
70 Such countries include Canada, France, Ireland, New Zealand and South Africa. See A/CN.9/WG.IV/WP.104/Add.3, *id*, at footnote 12.
71 A/CN.9/WG.IV/WP.104/Add.3, *id*, at para 14.

is also possible that an established course of dealing between parties may result in a finding of attribution.[72]

63 We suggest that the approach taken by the States that have chosen not to include any specific rule on attribution is the better approach. This approach is also more consonant with the principles of functional equivalence and non-discrimination of electronic communications which have guided the drafting of the Convention. If electronic communications are to be accorded the same level of legal recognition as non-electronic communications (and no higher), then there should be no special rules on attribution of electronic communications. When considering various issues, the Working Group had on many occasions consciously decided that it should avoid creating a duality of regimes, where different rules would be applied to electronic communications as compared to non-electronic communications.[73] We suggest that the need to avoid a duality of regimes is equally applicable to the question of whether there should be specific rules on attribution of electronic communications.

(3) Acknowledgment of receipt

64 Article 14 of the UNCITRAL Model Law on Electronic Commerce provides rules concerning the use of acknowledgment procedures. At the time of drafting of the Model Law on Electronic Commerce, it was felt that the Model Law should address these legal issues in view of the commercial value of a system of acknowledgement of receipt and the widespread use of such systems in the context of electronic commerce.[74] However, Art 14 is not intended to deal with the legal consequences that may flow from sending an acknowledgement of receipt, apart from establishing receipt of the data message.[75] The intended effect of Art 14 is in fact very limited. The acknowledgment of

72 *Ibid*.

73 See for example, the Working Group's decision to delete a draft article on the use of data messages in contract formation, in an earlier version of the draft Convention, in A/CN.9/546, *supra* n 45, at paras 117–121.

74 Guide to Enactment of the Model Law on Electronic Commerce, *supra* n 55, at para 93.

75 The example given at para 93 of the Guide to Enactment of the Model Law on Electronic Commerce, *id*, is where an originator sends an offer in a data message and requests acknowledgement of receipt; the acknowledgement of receipt simply evidences that the offer has been received. Whether or not sending that acknowledgement amounted to accepting the offer is not dealt with by the Model Law but by contract law outside the Model Law.

receipt merely creates a rebuttable presumption that the related data message was received by the addressee. It does not imply correspondence of content between the message sent and that received.[76] Article 14(3) deals with the situation where the originator has stated that the data message is conditional on receipt of an acknowledgement, whereas Art 14(4) deals with the more common situation where an acknowledgement is requested, without any statement being made by the originator that the data message is of no effect until an acknowledgement has been received. It was felt that such a provision was needed to establish the point in time when the originator of a data message who had requested an acknowledgement of receipt is relieved from any legal implication of sending that data message if the requested acknowledgement had not been received. Article 14(4) does not create any obligation binding on the originator, but merely establishes means by which the originator, if it so wishes, can clarify its status in cases where it has not received the requested acknowledgement.[77]

65 Although UNCITRAL adopted provisions on the time and place of dispatch and receipt of electronic communications in the Convention, there is no indication that they considered the inclusion of any provision on acknowledgment of receipt although such a provision may be seen as complementing the provisions on time and place of dispatch and receipt. It was possibly felt that such a provision was not sufficiently central or essential to electronic contracting to overcome the objections to the inclusion of substantive provisions that tend to discriminate between paper documents and electronic communications.[78]

66 Another possible reason for its omission from the Convention is that it conflicts with the new rules on time of dispatch under Art 10 of the Convention. The effect of non-acknowledgement is expressed in Art 14 of the UNCITRAL Model Law on Electronic Commerce in terms of the message being treated "as though it had never been sent". This closely complements the rule on time of dispatch in Art 15 of the UNCITRAL Model Law on Electronic Commerce, which states that the time of dispatch is the time when a data message *enters* an information system outside the control of the originator. Under Art 10 of the

76 *Id*, at paras 93–99.
77 *Id*, at para 96.
78 *Cf* the inclusion of rules on time and place of dispatch and receipt of electronic communications in the Convention, A/CN.9/527, *supra* n 36, at para 81, and Guide to Enactment of the Model Law on Electronic Commerce, *supra* n 55, at para 100.

Convention, the new rule on time of dispatch of electronic communications is instead linked to the time that the communication *leaves* an information system under the control of the originator. We suggest that in this new context, it is both unnecessary and undesirable to resort to the fiction that the communication had never been sent. General law is well equipped to determine the effect of conditional communications and courts should not be prevented from considering the true facts of the case, including the fact that the communication was actually sent. Courts can then assign the appropriate legal effect to the communication based on all of the surrounding facts, including the originator's statement that the communication is conditional on receipt of acknowledgment.

III. Adoption of the Convention in Singapore – Issues arising from and comparison between the Convention and the Electronic Transactions Act

67 In this Part III, we discuss various legal and implementation issues that lawmakers contemplating the adoption of the Convention will face, with particular reference to the Singapore context. Although specific reference is made to the Singapore context, most of the issues discussed are of general relevance to all States that wish to adopt the Convention. As the Electronic Transactions Act[79] ("ETA") in Singapore is based on the UNCITRAL Model Law on Electronic Commerce, these issues would be particularly relevant to States that have previously adopted the UNCITRAL Model Law on Electronic Commerce.

A. Duality of regimes

68 In accordance with Art 1(1) of the Convention, the Convention applies to the use of electronic communications in connection with the formation or performance of *international contracts*, that is, contracts between parties whose places of business are in two different States.

69 When adopting the Convention, a State is obligated to align its domestic laws to apply the rules contained in the Convention to international contracts. However, there is nothing to prevent the State from extending the scope of application of the Convention rules to cover domestic contracts, or non-contractual transactions as well. There are

79 Cap 88, 1999 Rev Ed.

essentially two options available to a State when adopting the Convention. The first option is to adopt the Convention rules for international contracts only, while enacting a separate set of rules for domestic contracts and non-contractual transactions. This would create a duality of regimes. The second option is to adopt the Convention rules for *both* international contracts and domestic contracts, and even non-contractual transactions where appropriate.

70 The first option may be considered where the State has to cater to domestic conditions and vested interests which render it difficult to repeal its existing domestic electronic commerce legislation in order to adopt the Convention rules for domestic transactions as well. For example, the EU Directive on Electronic Commerce, which is binding on the member States of the EU, is significantly different in content and approach from the Convention, even though all the Convention rules are essentially consistent with the rules contained in the EU Directive on Electronic Commerce.[80] In order for the Convention rules to apply to domestic transactions within the EU, in addition to international contracts (*ie*, the second option), the EU Directive on Electronic Commerce would need to be amended significantly. If the EU is unable to get the support of its member States to adopt the second option, it may have to consider the first option of applying the Convention rules to international contracts only.

71 The second option is relatively easy to implement for States that do not have existing electronic commerce legislation. Such States can easily apply the Convention rules to both international contracts, as well as domestic transactions. However, for States that already have existing electronic commerce legislation, the application of the Convention rules to also cover domestic transactions will necessarily entail possibly wide-ranging amendments to the existing electronic commerce legislation. Such States will have to decide whether to adopt the Convention rules in relation to domestic transactions and, if so, to what extent.

80 We note that the definition of "place of business" in Art 4(*h*) of the Convention is indeed different from the corresponding definition in the EU Directive on Electronic Commerce, and is a compromise formulation incorporating both the definitions in the EU Directive and the UNCITRAL Model Law on Electronic Commerce. Excluding the definition of "place of business", the remainder of the Convention is arguably consistent with the EU Directive on Electronic Commerce.

72 We are of the view that there are strong practical and commercial reasons for a State to pursue the second option. Most jurisdictions would ideally wish to avoid having a duality of regimes, that is, one legal regime applicable to domestic transactions and another legal regime applicable to international contracts. If there is a duality of regimes, merchants wishing to engage in electronic commerce would have to ensure that their business processes comply with both legal regimes, in order to cater to both a domestic market as well as international market. This means additional business compliance costs. Furthermore, it may not be an easy task for the online merchant to ascertain whether the other contracting party has a place of business in a different State, in order to determine which legal regime is applicable to that contracting party. This results in uncertainty and increased risk.

73 Furthermore, the contracting parties may be unaware of the differences in legal treatment between domestic and international contracts, and may not even know, or care to know whether their contract is characterised as domestic or international. There is therefore a real danger that parties will be taken by surprise by differences in the legal treatment of their contracts which turn on the characterisation of their contracts as international or domestic.

74 We submit that there are obvious and clear advantages in pursuing the second option of harmonising the electronic commerce legislation applicable to domestic and international contracts, and avoiding a duality of regimes.

75 We note that the substantive rules of the Convention were developed to apply in the context of international contracts due to the paternity of the Convention as an UNCITRAL instrument. However, these substantive Convention rules are equally applicable to domestic contracts. On the whole, they represent the basic common-sense rules that can govern domestic contracts as well as international contracts. There is nothing in the nature of the substantive rules that require the contract to have an international element in order for the rules to be applicable. There seems to be little justification for distinguishing between domestic and international contracts in the context of

implementing the Convention, especially in the context of a globalised economy such as Singapore.[81]

76 There is a further dimension to the debate on the issue of duality of regimes for jurisdictions such as Singapore, where the existing electronic commerce legislation governs not only electronic commerce, but also non-contractual electronic transactions. Such legislation is not confined to contractual communications, but also extends to record-retention practices, statutory requirements relating to the handling of information and government operations. Some of the rules in the Convention that were developed for contractual transactions may not be appropriate for such other transactions as the nature of such transactions and the relationships, expectations and needs of the parties involved in such transactions are likely to differ from those in a contractual transaction. Furthermore, such non-contractual transactions differ widely in context. Some of the Convention rules are obviously relevant only in the context of contracts.[82] However, we conclude in our discussion below that most of the Convention rules are capable of application to non-contractual transactions as well.

B. Mode of adoption of the Convention

77 In the context of dualist legal jurisdictions (like Singapore) where treaties are not automatically received into domestic law and enacting legislation is required to adopt treaties, there are broadly two modes of incorporating the treaties into the body of domestic law. The first mode is to enact adopting legislation which simply makes reference to or reproduces the entire text of the treaty. The second mode is to painstakingly incorporate the provisions of the treaty into existing domestic legislation. In Singapore, the ETA is the existing domestic legislation on electronic commerce. We now consider which mode of adoption of the Convention is to be preferred, in the event that Singapore decides to be a signatory to the Convention.

81 In the Infocommunications Development Authority of Singapore ("IDA") and the Attorney-General's Chambers of Singapore ("AGC") Joint Public Consultation on the Review of the ETA – Stage III: *Remaining Issues* (LRRD No 1/2005), available at <http://statutes.agc.gov.sg/agc/Publications/ConsultnPap/ETA_StageIII_Remaining_Issues_2005.pdf> (accessed 18 April 2006), at para 5.3, it was recognised that a duality of regimes would be undesirable.

82 For example, Art 11 of the Convention concerning invitations to treat clearly relate to contractual transactions only.

78 In Singapore, the Legislature has previously employed both modes of adoption of treaties. The CISG[83] was adopted by reproduction of the text of the treaty in the Schedule to the Sale of Goods (United Nations Convention) Act.[84] In contrast, the US-Singapore Free Trade Agreement was adopted by specific amendments to existing legislation. The biggest advantage of adopting the Convention by reference or reproduction is that perfect consistency of language between the enacting legislation and the Convention will be assured. This advantage is most effective when the treaty that is adopted by reproduction of its text is a self-contained *corpus* of law in that particular subject area. However, this advantage is largely illusory in the case of the Convention as the parties will still need to make reference to the provisions of the ETA dealing with areas that are not covered by the Convention, and hence will still need to reconcile the different terminology in the ETA with the terminology used in the Convention.[85] In view of the fact that the Convention does not provide a comprehensive legal framework for all issues related to electronic commerce, and the ETA contains additional provisions which are applicable over and above the Convention rules, we suggest that the first mode of adoption by enacting legislation making reference to or reproducing the Convention (and extending it to cover domestic transactions), is not advisable.

79 In our view, the law will be much clearer if the provisions of the Convention are incorporated into the ETA. In any case, if the Convention rules are to be extended to cover domestic transactions, the ETA would have to be amended to harmonise the legal regime for domestic contracts with that for international contracts. Having separate legislation for domestic contracts and international contracts (even if the provisions are harmonised as far as possible) would mean that parties will first have to ascertain whether their contract is domestic or international, in order to determine which piece of legislation is applicable. This would result in effort, expense and confusion by the parties, which can be avoided.[86] We

83 *Supra* n 14.

84 Cap 283A, 1996 Rev Ed.

85 For example, s 9 ETA on retention of records and s 13 ETA on attribution of data messages.

86 Another interesting question arises in the event a duality of regimes is created: Would parties to an international contract be able to choose the Singapore law applicable to domestic contracts to be the governing law for their transaction by means of a choice of law clause? If this is permitted, would Singapore be in breach of its Convention obligations? We do not examine this issue further here as it is beyond the scope of this article.

therefore suggest that incorporation of the Convention rules into the ETA would be the preferred mode of adoption of the Convention.

C. Necessary modifications to the Electronic Transactions Act

80 We proceed to examine in greater detail the modifications to the ETA that would be required in order to adopt the Convention. We begin with a discussion of the differences in terminology used in the ETA and the Convention, followed by a discussion of exclusions from scope of application and party autonomy. We then continue with an article-by-article discussion of various main provisions of the Convention.

(1) Terminology

81 There are obvious differences between the terminology used in the ETA and the Convention. As already mentioned above, the Convention introduces some terminology that is different from the UNICTRAL Model Law on Electronic Commerce. Furthermore, although the ETA is based on the UNICTRAL Model Law on Electronic Commerce, the ETA contains some terminology that is different from the UNICTRAL Model Law on Electronic Commerce.

82 Notably, the ETA refers to "electronic records"[87] while the UNCITRAL Model Laws use the term "data messages"[88] and the Convention uses the term "electronic communication" (which is a

87 Section 2 ETA provides:

> "electronic record" means a record generated, communicated, received or stored by electronic, magnetic, optical or other means in an information system or for transmission from one information system to another;
>
> ...
>
> "information" includes data, text, images, sound, codes, computer programs, software and databases;
>
> ...
>
> "record" means information that is inscribed, stored or otherwise fixed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form[.]

88 Article 2(*a*) of the UNCITRAL Model Law on Electronic Commerce provides that:

> "Data message" means information generated, sent, received or stored by electronic, optical or similar means including, but not limited to, electronic data interchange (EDI), electronic mail, telegram, telex or telecopy[.]

composite term based on "data message").[89] All these definitions are essentially compatible with each other, even though there are slight differences in formulation. One significant difference in the term "electronic communication" lies in its restriction to the context of the formation or performance of a contract. Both the term "electronic record" in the ETA and the term "data message" in the UNCITRAL Model Laws are not so restricted to the context of the formation or performance of a contract, and are applicable to non-contractual transactions.

83 As some of the provisions of the ETA extend to electronic records in a context where they are not communicated, the terms "data message" and "electronic communication" cannot be adopted across the board in the ETA. For example, s 6 of the ETA provides that "it is declared that *information* shall not be denied legal effect, validity or enforceability solely on the ground that it is in the form of an electronic record" [emphasis added]. Section 6 of the ETA provides for the legal recognition of an electronic record in the nature of "information", as opposed to a "communication or contract" in Art 8 of the Convention. Therefore, the ambit of the ETA is wider than the Convention in that it covers non-contractual transactions and electronic records that are not communicated. Furthermore, even though the definition of "electronic record" in the ETA and the definition of "data message" in the UNCITRAL Model Law on Electronic Commerce are very similar, we suggest that the term "data message" is inconsistent with the notion of an electronic record that was merely generated and retained, but never communicated or received.[90] Such an electronic record could not be considered a "message". It is arguable that s 9 of the ETA on the retention of electronic records would cover an electronic record that was never communicated or received, and hence a simple substitution of the term

89 Article 4 of the Convention provides:

> (*a*) "Communication" means any statement, declaration, demand, notice or request, including an offer and the acceptance of an offer, that the parties are required to make or choose to make in connection with the formation or performance of a contract;
>
> (*b*) "Electronic communication" means any communication that the parties make by means of data messages;
>
> (*c*) "Data message" means information generated, sent, received or stored by electronic, magnetic, optical or similar means, including, but not limited to, electronic data interchange, electronic mail, telegram, telex or telecopy;
>
> …

90 An example of an electronic record that was generated and retained, but never communicated or received, would be staff attendance records stored in a database on a stand-alone computer, that are created ("generated") daily and stored in the database, but are not transmitted ("communicated") across any computer network.

"data message" for "electronic record" in s 9 of the ETA would be inappropriate. A careful review will have to be conducted to identify the provisions that should properly apply to data messages or electronic communications and those that should include electronic records that are not communicated. Generally, it would be appropriate to substitute "electronic communication" for "electronic record" in the provisions in Part IV of the ETA dealing with Electronic Contracts.[91]

84 The Convention introduces a new term "automated message system", which was not previously used in the UNCITRAL Model Laws.[92] This term is introduced as a result of Art 12 of the Convention, and can be adopted in the ETA without difficulty.

85 The Convention uses the term "information system", which is defined in Art 4(*f*) of the Convention as "a system for generating, sending, receiving, storing or otherwise processing data messages". The term "information system" was also used in the UNCITRAL Model Law on Electronic Commerce. The ETA does not include a definition for "information system", although the rules on time of dispatch and receipt in s 15 of the ETA are centred around the entry of an electronic record into an information system. Given the equally central role the term "information system" plays in the Convention, it is suggested that the addition of the definition for "information system" in the ETA would add clarity and certainty.

86 Similarly, the Convention uses the terms "addressee" and "originator", which are derived from the UNCITRAL Model Law on Electronic Commerce. The definitions of "addressee" and "originator" in

91 A related question arises as to whether Part IV of the ETA applies only to "Electronic Contracts", as the title of Part IV suggests. Some of its provisions (*eg* s 13 on "Attribution", and s 15 on "Time and place of despatch and receipt") are also applicable in the context of non-contractual communications. Although the term "communication" (and hence "electronic communication") in the Convention is restricted to the context of the formation or performance of a contract, it is suggested that this restriction is due to the paternity of the Convention as an international trade law instrument. With appropriate modifications to the definition, the term "electronic communication" can be applied to non-contractual communications as well.

92 Article 4(*g*) of the Convention provides that:

> "Automated message system" means a computer program or an electronic or other automated means used to initiate an action or respond to data messages or performances in whole or in part, without review or intervention by a natural person each time an action is initiated or a response is generated by the system[.]

the Convention[93] are similar to the corresponding definitions in the UNCITRAL Model Law on Electronic Commerce.[94] The ETA does not include definitions for "addressee" and "originator", although the rules on time of dispatch and receipt in s 15 of the ETA refer to these terms. It is also suggested that the addition of definitions for these two terms in the ETA would add clarity.

(2) Interpretation (Art 5)

87 Article 5(1) of the Convention urges that the Convention is to be interpreted having regard to "its international character and to the need to promote uniformity in its application and the observance of good faith in international trade". Article 5(2) further states that:

> Questions concerning matters governed by this Convention which are not expressly settled in it are to be settled in conformity with the general principles on which it is based or, in the absence of such principles, in conformity with the law applicable by virtue of the rules of private international law.

88 Section 3 of the ETA currently provides that the ETA is to be "construed consistently with what is commercially reasonable under the circumstances" and is to give effect to a number of listed purposes, generally, the facilitation of electronic communications, electronic commerce and electronic government services by means of reliable electronic records and the elimination of uncertainties over writing and signature requirements. It would suffice to add in s 3 an additional

93 Article 4(*d*) of the Convention provides that:
> "Originator" of an electronic communication means a party by whom, or on whose behalf, the electronic communication has been sent or generated prior to storage, if any, but it does not include a party acting as an intermediary with respect to that electronic communication[.]

Article 4(*e*) provides that:
> "Addressee" of an electronic communication means a party who is intended by the originator to receive the electronic communication, but does not include a party acting as an intermediary with respect to that electronic communication[.]

94 Article 2(*c*) of the UNCITRAL Model Law on Electronic Commerce provides that:
> "Originator" of a data message means a person by whom, or on whose behalf, the data message purports to have been sent or generated prior to storage, if any, but it does not include a person acting as an intermediary with respect to that data message[.]

Article 2(*d*) provides that:
> "Addressee" of a data message means a person who is intended by the originator to receive the data message, but does not include a person acting as an intermediary with respect to that data message[.]

purpose, namely, a reference to the purpose of implementing the Convention. This would give adequate grounds (and a visible reminder) to refer to the principles of interpretation for the Convention, as well as any relevant guides published by UNCITRAL, in interpreting the amended ETA where international contracts are concerned.

(3) Excluded matters

89 Section 4 of the ETA provides that certain specified categories of matters are excluded from the application of Parts II and IV of the ETA.[95] These exclusions will need to be reviewed in the light of the exclusions contained in Art 2 of the Convention.[96] We agree with the approach taken in the joint IDA-AGC Consultation Paper on *Exclusions under Section 4 of the ETA,* that favours a wide application of the ETA provisions. We would argue that the ETA provisions should be applicable to all categories of subject matter, unless there are overriding reasons why they should not apply in a particular context.[97] Having a broad scope of application in the ETA would serve to promote the adoption of electronic commerce.

90 We note that the UNCITRAL has also kept the number of excluded categories of matters in Art 2 to a minimum, so as to achieve the widest possible scope of application at the outset, but allowing Contracting States to make declarations under Art 19(2) excluding further specified categories of matters from the scope of the Convention. As noted at para 17 above, the three specified exclusions concern matters for which UNCITRAL felt that a system of global exclusions was necessary.

91 We also note that the Convention is on its own terms only applicable to international contracts. Contracting States are free to apply the Convention rules to domestic contracts and non-contractual transactions, and are also free to extend the Convention rules to cover

95 Parts II and IV of the ETA contain provisions that give electronic records and signatures functional equivalence with paper records and signatures. Part IV relates specifically to electronic contracts.

96 The joint IDA-AGC Consultation Paper on the Review of the ETA – Stage II: *Exclusions under Section 4 of the ETA* (LRRD No 2/2004) has already discussed the exclusions from the ETA in some detail. This Consultation Paper was prepared in June 2004, prior to the finalisation of the text of the Convention by the Working Group IV at its 44th session. It is available online at <http://statutes.agc.gov.sg/agc/Publications/ConsultnPap/ETA_StageII_Exclusions_Section_4_2004.pdf> (accessed 18 April 2006).

97 *Ibid*, at para 2.3.1.

domestic contracts dealing with the three excluded categories of matters. Nonetheless, a Contracting State would take into account UNCITRAL's rationale for the three excluded categories of matters in Art 2 of the Convention, in deciding whether these exclusions should be made applicable to the same extent for domestic contracts and non-contractual transactions.

92 We note that the exclusion in Art 2(2) of the Convention is partly reflected in s 4(*b*) of the ETA which excludes negotiable instruments. As for the exclusion of consumer contracts and financial services transactions in Arts 2(1)(*a*) and 2(1)(*b*) of the Convention respectively, there are no equivalent exclusions in the ETA. There should be no difficulty implementing in the ETA the exclusions contained in Arts 2(1)(*b*) and 2(2) for international contracts. As for the question of whether the exclusions contained in Arts 2(1)(*b*) and 2(2) should be extended to cover domestic contracts, we would suggest that a careful review, in consultation with representatives from the relevant business sectors, would be necessary to determine whether domestic contracts concerning these two categories of matters should be excluded from the application of the ETA.

93 The exclusion of consumer contracts (referred to as contracts for "personal, family or household purposes") in Art 2(1)(*a*) of the Convention was largely a result of the nature of the Convention as an UNCITRAL international trade law instrument.[98] Other UNCITRAL instruments similarly exclude contracts for "personal, family or household purposes".[99] There was general agreement within UNCITRAL that a number of rules in the Convention would not be appropriate in the context of consumer contracts.

98 It was noted in the Report of the 38th UNCITRAL plenary session that the term "personal, family or household purposes" is not limited to consumer contracts and could cover, for example, communications related to contracts governed by family law and the law of succession, such as matrimonial property contracts. See A/60/17, *supra* n 5, at para 29. However, the first author notes that this portion of the Report is erroneous as the UNCITRAL had merely decided at the 38th session that the commentary reflect the deliberations of the Working Group. At the 44th session of the Working Group, it was the clear and unambiguous understanding of the Working Group that the phrase "personal, family or household purposes" is meant consumer contracts, and is to have the same meaning as in the CISG, *supra* n 14. This understanding was communicated to the delegates at the 38th UNCITRAL session.

99 *Eg* CISG, *supra* n 14, Art 2(*a*).

94 We suggest that there is no necessity to exclude consumer contracts from the scope of application of the ETA. Such an exclusion would deny consumers and affected businesses the benefit of the ETA, and this would run contrary to the ETA's objective of promoting electronic commerce. In our view, the rules contained in the Convention are fair and sensible, and are equally capable of application to consumer contracts. It should be noted that the rules on time of receipt of electronic communications in Art 10(2) of the Convention merely determine the time of receipt, but do not determine the legal validity or efficacy of the electronic communication concerned, which is determined by general law outside the Convention. Where consumers are conferred certain legal protections under consumer protection legislation, these legal protections would not affect the operation of the rules contained in the Convention. Neither would the operation of the Convention rules affect the applicability of the consumer protection legislation. For example, Singapore's Consumer Protection (Fair Trading) Act[100] provides consumers with some protection in this regard.[101]

95 As s 4 of the ETA currently excludes certain other matters (*eg*, wills, powers of attorney, transactions involving immovable property) that are not excluded from the Convention, Singapore will need to make declarations under Art 19(2) of the Convention if it is intended to retain such other exclusions. The responses to the joint IDA-AGC public consultation on *Exclusions under Section 4 of the ETA*[102] did not reveal much support for the removal of any of the existing exclusions under s 4, except in relation to implied trusts.[103]

96 We note that in the process of incorporating the Convention rules into the ETA, it will also be necessary to decide whether the exclusions (be they derived from the Convention or existing ETA exclusions) should relate only to provisions adopted from the

100 Cap 52A, 2004 Rev Ed.

101 In appropriate circumstances, the Consumer Protection (Fair Trading) Act provides relief to consumers where the supplier has engaged in an unfair practice, for example, by taking advantage of a consumer if the supplier knows or ought reasonably to know that the consumer is not in a position to protect his own interests (s 4(*c*) of the Act).

102 Responses to the joint IDA-AGC Consultation Paper on *Exclusions under Section 4 of the ETA*, *supra* n 96, are available on the IDA website at <http://www.ida.gov.sg/idaweb/pnr/infopage.jsp?infopagecategory=infoecon:pnr&versionid=1&infopageid=I2927> (accessed 18 April 2006).

103 Constructive and resulting trusts are already expressly excepted from the exclusion in s 4(1)(*c*) of the ETA.

Convention, or to specific Parts of the ETA,[104] or to the entire ETA as a whole. It may be that the extent of each exclusion will need to be tailored to its particular context.

97 A further consideration is whether any such exclusions continue to be relevant given developments in the common law which demonstrate the willingness of courts to recognise electronic records and electronic signatures as the functional equivalent of their corresponding conventional paper forms, even for matters that are excluded from the application of the ETA.[105] Judicial willingness to confer legal recognition to electronic communications in matters that are excluded from the application of the ETA may signal that public acceptance of electronic transactions in Singapore has attained a high level. The Singapore Government originally adopted the exclusions in s 4 out of caution as it was felt that "e-commerce [was] in an early stage of development". In his second reading speech during the passage of the Electronic Transactions Bill, the Minister for Trade and Industry stated that "[e]ventually, when public confidence in electronic transactions grows, the Bill may be widened to include such documents".[106] However, the responses to the joint IDA-AGC public consultation[107] did not reveal much enthusiasm for the removal of the existing exclusions in the ETA. Perhaps at least in areas where it is felt that continued regulation is required to protect the parties to the transaction or the public, caution should continue to prevail and the ETA should continue to exclude such areas, leaving the legal recognition of electronic forms to specific legislation or common law developments.

(4) Scope of application of the Convention

98 In addition, Singapore will need to consider other possible exclusions under Arts 19(1) and 20 of the Convention. Given our preference that the ETA should have as broad a scope of application as possible, we do not think that it is necessary for Singapore to limit the scope of application of the Convention in the manner permitted by Art 19(1).

104 For example, Part IV relating specifically to electronic contracts.

105 The Singapore High Court decision in *SM Integrated Transware Pte Ltd v Schenker Singapore (Pte) Ltd* [2005] 2 SLR 651 is a case on point.

106 Mr Lee Yock Suan, *Singapore Parliamentary, Debates, Official Report* (29 June 1998), vol 69 at col 254.

107 Responses to the joint IDA-AGC Consultation Paper on *Exclusions under Section 4 of the ETA* are available on the IDA website, *supra* n 102.

99 Article 20(1) of the Convention extends the application of the Convention to contracts under certain other international conventions. Singapore is a party to two of the listed conventions, namely, the New York Convention[108] and the CISG.[109] Article 20(2) of the Convention further extends the application of the Convention to any other international convention, treaty or agreement to which Singapore is or will become party unless Singapore "opts out" by way of a declaration under Art 20(2) of the Convention. Depending on whether Singapore makes any declarations under Art 19(1) and 20 on the scope of application of the Convention, appropriate provisions will need to be included in the ETA to reflect the choices made in any such declarations.

(5) Party autonomy and variation (Art 8(2))

100 Article 8(2) of the Convention provides that "[n]othing in [the] Convention requires a party to use or accept electronic communications, but a party's agreement to do so may be inferred from the party's conduct". There is no equivalent provision in the ETA. UNCITRAL noted that while the UNCITRAL Model Law on Electronic Commerce does not contain an equivalent provision, similar provisions have been included in a number of national laws relating to electronic commerce to highlight the principle of party autonomy and make it clear that parties are not obliged to use or accept electronic communications.[110] However, if the party did agree to use or accept electronic communications, Art 8(2) provides that such agreement may be inferred from the party's conduct. Examples of a party's conduct by which the party's agreement to use or accept electronic communications may be inferred include the handing out of a business card with a business electronic mail address, and the designation of an electronic mail address as the point of contact on a commercial Internet website.

101 The issue of adopting a party autonomy provision along the lines of Art 8(2) and its interaction with the existing variation provisions in s 5 of the ETA were previously discussed in the joint IDA-AGC consultation paper on *Electronic Contracting Issues*.[111] In a couple of responses to the

108 *Supra* n 49.
109 See *supra* n 14.
110 A/60/17, *supra* n 5, at para 52.
111 Joint IDA-AGC Consultation Paper on the Review of the ETA – Stage I: *Electronic Contracting Issues* (LRRD No 1/2004), available at <http://statutes.agc.gov.sg/agc/Publications/ConsultnPap/ETA_StageI_Electronic_Contracting_Issues_2004.pdf> (accessed 18 April 2006), at Part 2.

consultation paper, it was observed that such a party autonomy provision may be unnecessary because the requirement of consent may already exist under general law.[112] Under general law, there are many rules to determine whether a contract or a communication related to contract (such as an offer or acceptance) is legally effective, valid or enforceable. One of the main elements of these rules is that the formation of the contract must be in a manner which the parties can be taken to have agreed. It follows that if the parties did not agree to use electronic communications as a mode of contract formation, the contract would not be validly formed by the use of electronic communications.

102 On the other hand, it has been noted that the requirement of a party's prior consent in order for electronic communications to be used or accepted, can lead to absurd or unintentional results. Dr Alan Davidson[113] argues that "the effect of the Australian consent provisions removes the desirability of functional equivalence while also leading to absurd and unintentional results" because:

> Where consent cannot be determined in advance, the offeror cannot enforce a contract on receiving an email "acceptance". Second, the "acceptor" sending the email knows that the acceptance cannot be enforced against him or her, to the same extent that the "acceptor" knows that an oral acceptance cannot be enforced.

We note that the second limb in Art 8(2) which provides that "a party's agreement to [use or accept electronic communications] may be inferred from the party's conduct", addresses this problem of uncertainty where consent cannot be determined in advance. For example, in accordance with Art 8(2), where an offeror makes an offer via electronic mail, another party may send an acceptance via electronic communication with confidence that the acceptance will not be denied validity on the sole ground that it was in the form of an electronic communication, as the offeror's agreement to accept electronic communications may be inferred from the offeror's own conduct of using electronic communications.

112 Joint response from Prof Andrew Phang (as he then was) and Assoc Prof Mary Wong and response from Mr Rama S Tiwari, available at IDA website <http://www.ida.gov.sg/idaweb/pnr/infopage.jsp?infopagecategory=consultpapers:pnr&versionid=2&infopageid=I2684> (accessed 18 April 2006).

113 Paper presented at Singapore Academy of Law seminar on "International Developments in Electronic Commerce", 22 July 2005, at p 9.

103 One potential issue that may arise from the adoption of Art 8(2) of the Convention is a possible misinterpretation that Art 8(2) may create a new substantive requirement for agreement or consent by the parties as to the form of their communications, or that Art 8(2) overrides any existing requirements for agreement or consent.[114] In this regard, one means of clarifying the issue may be to include a provision to the effect that nothing in the ETA affects any rule of law requiring the agreement or consent of parties as to the form of a communication or record. Such a savings provision has the same effect as Art 8(2) of the Convention, but it avoids any possible misinterpretation that Art 8(2) might create a new substantive requirement for agreement or consent by the parties as to the form of their communications, or that Art 8(2) overrides any existing requirements for agreement or consent. This alternative formulation would also be capable of applying to non-contractual contexts, which may therefore be more appropriate in the context of the ETA since the ETA extends beyond contractual transactions. Although such a provision differs from the formulation in Art 8(2) of the Convention, we suggest that it sufficiently implements Art 8(2) as the provision would achieve the effect intended by Art 8(2).

104 A related issue is how a party autonomy provision along the lines of Art 8(2) will interact with any provision allowing parties to vary provisions of the ETA. Article 3 of the Convention provides that the parties may exclude the application of the Convention or derogate or vary the effect of any of its provisions. Currently, s 5 of the ETA allows parties involved in generating, sending, receiving, storing or otherwise processing electronic records to vary any provision in Part II or IV of the ETA by agreement. The joint IDA-AGC consultation paper on *Electronic Contracting Issues* discussed this issue in some detail.[115] We are of the view that the party autonomy provision and variation provisions are complementary to each other. In essence, a party is not required to use electronic communications (party autonomy), but if the party so chooses to use electronic communications, the party can vary the content of the Convention rules applicable to the transaction (variation).

114 Mr Rama S Tiwari's response expressed concern that such an Art 8(2), would (a) deem to nullify the detailed system of rules and standards in place in common law, (b) cause confusion as to whether the common law rules and standards should apply to determine consent since the exception in Art 8(2) is that of by conduct, or (c) result in the courts paying lip-service to the requirement of consent and reverting back to the detailed system of rules and standards in place in common law. Available at IDA website, *supra* n 112.

115 LRRD No 1/2004, *supra* n 111.

105 UNCITRAL has clarified that party autonomy applies only to provisions that create rights and obligations for parties, and not to the provisions of the Convention that are directed to Contracting States.[116] It is also generally accepted that party autonomy does not extend to setting aside statutory requirements that impose, for instance, the use of specific methods of authentication in a particular context.[117] Derogations from the Convention rules do not need to be explicitly made but could be made implicitly, for example by parties agreeing to contract terms at variance with the provisions of the Convention.[118]

(6) Treatment of electronic communications and contracts

(a) Legal recognition of electronic communications (Art 8)

106 Article 8(1) embodies the principle of functional equivalence and was inspired by a similar provision contained in Art 5 of the UNCITRAL Model Law on Electronic Commerce.[119] The paragraph reflects the non-discrimination rule and is not intended to provide conditions for the legal validity of electronic communications.[120] The validity of electronic communications will still be governed by the substantive rules of the domestic law. For example, the principles of contract law will still apply to determine whether an electronic communication constitutes a valid offer. If based on such principles of contract law, the offer would be valid, the offer will not be denied validity merely because it is in electronic form. Article 8(1) of the Convention finds equivalents in ss 11(2) and 12 of the ETA. Except possibly for the substitution of the term "electronic communication", no significant modifications to ss 11(2) and 12 of the ETA will be required to adopt Art 8(1) of the Convention.[121]

(b) Use of automated message systems (Art 12)[122]

107 Article 12 of the Convention has no counterpart in the ETA. We suggest that this provision can be usefully adopted in the ETA. It would clarify any uncertainty there may be as to whether the requisite intention to create legal relations is present where a computer has been

116 A/CN.9/571, *supra* n 10, at para 75.
117 *Id*, at para 74.
118 See *supra* n 23.
119 A/60/17, *supra* n 5, at para 52.
120 A/CN.9/571, *supra* n 10, at para 119; and A/CN.9/546, *supra* n 45, at para 41.
121 See discussion at para 78 of the main text above.
122 See LRRD No 1/2005, *supra* n 81, at Part 5.14.

programmed to make or accept offers. On one view, such intention is evinced by the user of the computer where a computer is programmed to make or accept offers in predetermined circumstances. On the other hand, however, it may be argued that such intention is inadequate as it only generally relates to the computer system and not specifically to the transaction. It has also been observed that the more sophisticated the automated system, the more difficult would be the task of linking contractual intent to the person.[123]

(c) Invitation to make offers (Art 11)[124]

108 Article 11 of the Convention has no counterpart in the ETA. It has been noted that this provision addresses an underlying concern that a presumption of binding intention would be detrimental to sellers in a case of a general proposal made by electronic means. If such proposals are treated as immediately binding, sellers holding limited stocks would find themselves bound to fulfil all purchase orders from an unlimited number of buyers. We suggest that this clarificatory provision should be adopted in the ETA as it provides certainty by establishing a default position which is consistent with commercial practice[125] and general law.[126]

109 Departure from the default position under Art 11 requires a clear indication that the party making the proposal intends to be bound in case of acceptance. A question has been raised whether there might be a difficulty in making such an indication in the context of electronic proposals.[127] We do not think that sellers will encounter any significant problems with this requirement in practice. Sellers can quite easily indicate their intention to be bound by an express statement to that effect. In our view, Art 11 does not, however, require an express statement in every case. Article 11 only requires that the intention to be bound be clearly indicated, and the party's intention will necessarily be determined

123 See LRRD No 1/2004, *supra* n 111, at Part 6.2, footnote 79, referring to David Castell, "Electronic Contract Formation", accessed at <http://www.jurisdiction.com/ecom3.htm>.

124 See LRRD No 1/2005, *supra* n 81, at Part 5.13.

125 See LRRD No 1/2004, *supra* n 111, at para 4.2.4, where it was noted that it is already a common practice by businesses to include express statements to the effect that proposals made in electronic advertisements are not intended to be binding.

126 Under common law, an advertisement published to the public at large would usually be treated as an invitation to treat since the intention to be bound would be considered to be lacking. This was noted to be the position generally by the Working Group IV at its 39th session, see its report (A/CN 9/509), at para 76.

127 See LRRD No 1/2004, *supra* n 111, at para 4.2.4.

in the light of the circumstances of each case. It has been held by case law that offers in "click-wrap" agreements and Internet auctions are regarded as binding.[128] In our view, Art 11 does not change this position as the intention to be bound will continue to be found in appropriate situations. For example, in the case of a click-wrap agreement involving products or services for immediate delivery by the seller or immediate enjoyment by the customer, the intention of the seller must necessarily be that the acceptance should be immediately binding. Similarly, auctions are usually conducted on terms of a binding commitment to sell to the highest bidder.

(d) Error in electronic communications (Art 14)[129]

110 Article 14 of the Convention has no counterpart in the ETA. We have already discussed the application and effect of Art 14 at paras 29 and 30 above.

111 The condition in Art 14(1)(*b*) of an earlier draft of the Convention[130] (requiring the party to take reasonable steps to conform with the other party's instructions *eg*, to return or to destroy the goods or services) was deleted by the Working Group at its 44th session. Only two conditions remain in the final text of Art 14(1) of the Convention, namely: (a) to notify the other party of the error as soon as possible after having learnt of it, and (b) not to have used or received any material benefit of value from the goods or services. These conditions have the effect of limiting the time within which an electronic communication can be withdrawn pursuant to Art 14. Under Art 14(1), the right of withdrawal is only available if the notification of the input error is made "as soon as possible" after the party had learnt of the error, and, the party "has not used or received any material benefit or value from the goods or services" received.[131] Although the previous condition, requiring the party seeking withdrawal to return or destroy the goods or services, had been deleted by the Working Group, the spirit of that condition is retained in the current Art 14(1)(*b*), in that a party would have used or received benefit or value from the goods or services received if the party did not

128 Note by the Secretariat on Legal Aspects of Electronic Commerce – Electronic Contracting: Background Information (A/CN.9/WG.IV/WP.104/Add.1) paras 11 to 17.

129 See LRRD No 1/2005, *supra* n 81, at Part 5.15.

130 See A/CN.9/571, *supra* n 10, at para 182.

131 See A/60/17, *supra* n 5, at paras 102 and 103.

return or destroy the goods or services received, and would not be entitled to exercise the limited right of withdrawal. Certain transactions in electronic commerce can be concluded nearly instantaneously and generate immediate value or benefit for the party purchasing the relevant goods or services. The right of withdrawal would therefore not be available in such cases.

112 Article 14(2) clarifies that the specific remedy provided in respect of input errors was not intended to interfere with the general doctrine of error that exists in national laws.[132] The provision therefore complements the common law of mistake applicable in Singapore. The factual determination as to whether or not an input error has actually occurred will be determined by courts in the light of the evidence and circumstances of each case, including the overall credibility of the party's assertions.[133] It may be added that once the withdrawal of the erroneous portion of the communication has been allowed, the issue of mistake may no longer be relevant. The issue that will then remain will be one of contract formation.

113 A question arises as to the effect of a withdrawal made pursuant to Art 14. For example, where the erroneous communication formed part of an offer and the automated message system of the other party accepted that offer prior to receiving notice of the withdrawal; under the normal rules of contract formation, a contract would have been formed upon the acceptance. If the withdrawn portion contained some essential term of the contract, what would be the effect of the withdrawal? There are two possible effects of the withdrawal. Firstly, the effect of a withdrawal of the erroneous portion could be that the electronic communication is to be regarded as never having contained that erroneous portion. Secondly, the effect of the withdrawal of the erroneous portion could be that the electronic communication is to be regarded as having been sent with the erroneous portion, which portion was subsequently withdrawn. In the former case, it would mean that for example, an offer containing an error in the quantity of goods, would be regarded as an offer which never contained any quantity of goods at all. Such an offer would probably not give rise to a valid contract. On the other hand, in the latter case, if the same offer containing an error in the quantity of goods was already accepted, and the erroneous portion is subsequently withdrawn, it raises a

132 See A/60/17, *supra* n 5, at para 104.
133 See A/CN.9/571, *supra* n 10, at para 186.

nice legal question as to the effect of such an withdrawal on a concluded contract. It is noted that Art 14 would not be necessary if the offer containing the error had not been accepted yet, as the offeror can withdraw such an offer at any time.

114 At first glance, the answer to the question as to the effect of a withdrawal made pursuant to Art 14 appears to be the former. The *travaux preparatoires* for the Convention appears to address this issue obliquely. In discussing why it was decided not to adopt a right to "correct" input errors, one of the reasons given was that "withdrawal equated to *nullification* of a communication, while correction required the possibility to modify the previous communication".[134] The reference to *nullification* of the communication suggests that the erroneous portion of the communication is to be treated as if it had never been made. On the other hand, the language of the Convention is clear, that the erroneous portion may be "withdrawn" by the person making the input error. If the drafters of the Convention had intended the effect to be that the erroneous portion is to be regarded as never having been sent, they could have used language to that effect. As for the alternative of treating the erroneous portion of the communication as withdrawn only from the time of its withdrawal, it is unclear what the legal effect would be on the concluded contract. Existing contract law would seem to provide no easy analogy since this is not a situation that could arise under the normal contractual principles. It is noted that this tricky legal issue arises only when the withdrawn portion contains an essential term of the contract, thereby raising the issue of the valid formation of the contract.

115 Article 14 does not establish the consequences of the withdrawal of the erroneous portion on the underlying communication or transaction. Depending on the circumstances, the withdrawal may invalidate the entire communication or render it ineffective for the purposes of contract formation.[135] The effect of the withdrawal on the transaction will be determined by the applicable contract formation rules. For example, if a person mistakenly typed "11" when he intended to order just one item, the order will not be corrected so as to take effect as an order for one item. Under the former scenario, he will instead have the right to withdraw the quantity "11". Since the withdrawn portion relates to the quantity of goods, there would probably be insufficient certainty

134 A/60/17, *supra* n 5, at para 98, emphasis added.
135 *Id*, at para 100.

for a contract to be concluded. If, however, the withdrawn portion dealt with a non-essential element of the contract, it may not necessarily invalidate the contract.

116 It has been pointed out that Art 14 applies only to "input" errors, that is, errors relating to inputting the wrong data, and not other kinds of errors such as a misunderstanding of the terms of the contract or simply poor business judgment.[136] Further, as the provision applies only if "the automated message system does not provide the person with an opportunity to correct the error", it will not affect a large percentage of transactions since most established online transaction systems today do provide an opportunity for the correction of input errors. The opportunity to correct may, for example, simply involve a display of the data that the person has inputted, and a request to click to confirm, with the opportunity to return to the previous stage to re-enter the correct data.[137] It is already a common business practice to provide such a correction mechanism in electronic commerce websites.

117 It will be useful to adopt Art 14 in Singapore, as under the common law of mistake, a person is likely to be held to his erroneous bargain unless it would have been obvious to the other party that that person had made a mistake.[138] By allowing the person to withdraw his erroneous communication, the provision will allow the applicable contract formation rules to determine the effect of the withdrawal on the transaction. This provision will have the effect of encouraging the adoption of error correction functionalities by businesses operating automated message systems, while providing merchants with safeguards against abusive allegations of mistake in relation to input error. It also balances the need for certainty in commercial relationships and the need to protect consumers from unfair trade practices.[139] For these reasons, we suggest that this provision should be adopted in the ETA.

136 A/CN.9/571, *supra* n 10, at paras 188 and 190.

137 See LRRD No 1/2005, *supra* n 81, at para 5.15.4.

138 *Cheshire, Fifoot and Furmston's Law of Contract* (Andrew Phang Boon Leong ed) (Butterworth Asia, 2nd Singapore and Malaysian Ed, 1998), at pp 413–430, especially at p 422.

139 See LRRD No 1/2005, *supra* n 81, at para 5.15.5.

(7) Form requirements

(a) Electronic signatures (Art 9(3))[140]

118 Section 8 of the ETA, which currently provides for the functional equivalence of electronic signatures, differs significantly from the provisions in Art 9(3) of the Convention. In particular, the ETA does not impose any "reliability test"[141] for the recognition of electronic signatures, which is contained in Art 9(3)(*b*)(i) of the Convention. The exception in Art 9(3)(*b*)(ii) permits legal recognition of an electronic signature if the "method used" is proven in fact to have identified the party and indicated that party's intention, by itself or together with further evidence. As pointed out in para 34 above, this exception in Art 9(3)(*b*)(ii) is likely to swallow the original rule in Art 9(3)(*b*)(i). In our view, it is inconceivable that an electronic signature could be appropriately reliable within the meaning of Art 9(3)(*b*)(i), if it could not be proven in fact to have fulfilled the functions of an electronic signature as described in Art 9(3)(*a*). Conversely, once an electronic signature has been proven *in fact* to have fulfilled its functions as described in Art 9(3)(*a*), any challenges to the theoretical reliability of the electronic signature would be hollow. This is recognised in Art 9(3)(*b*), which permits legal recognition of electronic signatures upon the satisfaction of theoretical reliability or the proof of reliability in fact. Therefore, in practice, the effect of Art 9(3) of the Convention will not be so different from the position under the existing s 8 of the ETA, which allows an electronic signature to be "proved in any manner".

119 Another point to note is that Art 9(3)(*a*) of the Convention refers to "[a] method … used to identify the party and to indicate that party's intention in respect of the information contained in the electronic

140 See discussion of Art 9(3) at paras 32 to 34 above of the main text. See also LRRD No 1/2005, *supra* n 81, at Part 5.10.

141 At the 38th UNCITRAL plenary session, the "reliability test" in Art 9(3)(*b*)(i) of the Convention was retained in view of strong support for it by many delegations, despite forceful arguments made in favour of deleting it. Nevertheless, the provision was reformulated as there was general agreement at UNCITRAL that the Convention should prevent recourse to the "reliability test" as a means of invalidating a contract in those cases where the actual identity of the party and its actual intention could be proved. See A/60/17, *supra* n 5, at para 67, and paras 60 to 66 (for discussions on concerns with the reliability test). See discussions on the reliability test in paras 33 and 34 of the main text above.

communication".[142] The Convention provision concerns the satisfaction of a signature requirement *in relation to an electronic communication* but there is no express requirement that the *method* referred to be an electronic signature. Unlike s 8 of the ETA, which is confined to the effect of *electronic* signatures, Art 9(3) enunciates a test that can conceivably be used to validate signatures in any form, whether electronic or non-electronic, in relation to electronic communications. In practice, of course, signature methods applied to electronic communications are likely to be in electronic form.[143] In our view, this technology neutral approach in Art 9(3)(*a*) of the Convention has much to commend it. In applying the new test, there is no longer any need to determine whether or not a signature comes within the definition of an "electronic signature". This will be an advantage if new signature technologies are developed which blur the line between what is electronic and non-electronic.

120 The ETA, unlike the Convention, adopts a two-tiered framework for the recognition of electronic signatures. Parts V and VI of the ETA contain provisions on secure electronic signatures and secure digital signatures.[144] The ETA applies certain legal presumptions to electronic records signed by such signatures. The utility of such provisions is that it gives a measure of certainty to the adequacy of certain types of electronic signatures. The business community can use such signatures with the confidence that they will be given legal recognition. This need for certainty will be even more important with the adoption of the reliability test in Art 9(3)(*b*)(i) of the Convention. The objection to having such detailed provisions granting legal recognition to certain types to signatures, is that they tend to bias the development of technology in

142 There was general agreement at UNCITRAL that sub-para 3(*a*) should not be understood to the effect that an electronic signature always implied a party's approval of the entire content of the communication to which the signature was attached. The word "approval" in the earlier draft was therefore replaced by the word "intention". See A/60/17, *supra* n 5, at paras 63 and 64.

143 As far as currently-known new signature technologies that are used with electronic communications are concerned, *eg*, biometric signatures, we are of the view that these may all be characterised as "electronic signatures" as they in fact employ electronic technology at crucial stages of the signature process.

144 Referred to as "advanced electronic signatures" in the legislation of some other jurisdictions, *eg* Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures (Brussels, 13 December 1999), English version available at Official Journal of the European Communities, L13/12, available at <http://europa.eu.int/information_society/eeurope/i2010/docs/esignatures/esignatures_en.pdf> (accessed 20 April 2006).

favour of the types of signature that have been granted legal recognition. This may hamper the development and adoption of other types of electronic signatures which may be equally suited for their purposes. This objection need not form an obstacle to adopting a two-tiered system if the relevant legislation can keep pace with technological advances. We suggest that a jurisdiction adopting such two-tiered framework will be capable of being Convention compliant if (a) the signatures recognised as secure signatures in fact satisfy the reliability test; (b) the legal presumptions applied to such signatures are rebuttable in the event that a particular signature does not satisfy that test; and (c) the use of such signatures is voluntary. As discussed in the following paragraphs, these requirements can be satisfied under Singapore's existing framework for secure electronic signatures and secure digital signatures.

121 Sections 16 and 17 of the ETA recognise as secure electronic signatures any "prescribed security procedure" or "commercially reasonable security procedure agreed to by parties" if certain criteria are satisfied. It is arguable that those criteria are adequate to ensure the reliability of the signatures. It is therefore possible to view secure electronic signatures and secure digital signatures as instances where the "reliability test" in the Convention is presumed to have been met. Arguably, a "commercially reasonable security procedure agreed to by the parties" will, by definition, be a method that is "[a]s reliable as appropriate for the purpose for which the electronic communication was generated or communicated, in the light of all the circumstances, *including any relevant agreement*" for the purposes of the Convention.[145] As regards "prescribed security procedures", the relevant authorities must ensure that they prescribe only signatures that would satisfy the reliability test for the purposes of ss 16 and 17 of the ETA.[146] In this regard, it is advantageous that the "prescribed security procedures" are to be prescribed by means of subsidiary legislation instead of primary legislation as this will allow the authorities to take quick and nimble steps to recognise new security procedures or to modify any recognition

145 Art 9(3)(*b*)(i) of the Convention, emphasis added.

146 We suggest that it is unnecessary to expressly impose a reliability requirement on the exercise of the power to prescribe such security procedures for the purposes of ss 16 and 17 of the ETA. Convention obligations will be satisfied as long as any methods prescribed *in fact* satisfy the reliability requirement. It would however be useful to include a reference to this requirement in parliamentary material as a reminder, for example in the Explanatory Statement to the relevant Amendment Bill or in the Second Reading Speech.

already given should the need arise.[147] Similarly, secure digital signatures fulfilling the requirements of s 20 of the ETA would satisfy the requirements of secure electronic signatures and obviously satisfy the reliability test.

122 It is noted that s 18 of the ETA provides for certain rebuttable evidentiary presumptions relating to secure electronic signatures, including digital signatures.

123 A further point will need to be considered. Article 9(3)(*a*) provides a *de facto* definition of "electronic signature". The term "electronic signature" is currently defined in s 2 of the ETA to mean "any letters, characters, numbers or other symbols in digital form attached to or logically associated with an electronic record, and executed or adopted *with the intention of authenticating or approving* the electronic record" [emphasis added]. The definition of "electronic signature" in the ETA will need to be amended for conformity with Art 9(3)(*a*), which refers to "[the] party's intention in respect of the information contained in the electronic communication".[148] The presumptions relating to secure electronic signatures and secure digital signatures in Parts V and VI respectively will also need to be reviewed in the light of Art 9(3)(*a*) of the Convention.[149]

124 As stated in para 120 above, the adoption of secure electronic signatures should remain voluntary. The objective of Art 9(3) of the Convention is to enunciate the necessary and sufficient criteria for the legal recognition of signatures used in relation to electronic communications. As mentioned in para 47 above, although the Convention permits and expects the Contracting States to enact further legal rules that either cater to other areas or impose additional requirements on top of what the Convention provides, we suggest that a legislature should be sparing in imposing such additional requirements, as imposing standards that exceed the minimum standards set by the Convention may thwart the harmonisation objective of the Convention. Jurisdictions that recognise only secure digital signatures will need to

147 For example, modifications may be necessary if previously unknown security flaws are discovered in respect of a prescribed security procedure.

148 See *supra* n 142.

149 For example, the reference in s 18(2)(*b*) of the ETA to the "intention of signing or approving the electronic record".

amend their laws to accept all other reliable electronic signatures if they are to become Convention compliant.

(b) Originals (Arts 9(4) and (5))

125 Articles 9(4) and 9(5) are identical to the provisions in Art 8 of the UNCITRAL Model Law on Electronic Commerce, apart from minor drafting amendments.[150] The ETA does not currently contain any provision on originals. The joint IDA-AGC consultation paper on *Remaining Issues*[151] proposed the adoption of a provision on originals modelled on the Convention provision. This proposal was made even though respondents to an earlier consultation[152] showed little enthusiasm for such a provision, advocating caution and noting that private parties could be left to make their own arrangements for the acceptance of originals. Notwithstanding that it was recognised that the technology and practice in this area were still evolving, the consultation paper proposed the adoption of a provision on originals in order to achieve consistency with legislation in other jurisdictions internationally and in order to provide useful guidance on this nascent issue and facilitate the adoption of technology for electronic originals as it develops. It was also noted that a provision on originals would complement Singapore's existing provisions on the retention of documents.[153] We suggest that Arts 9(4) and 9(5) of the Convention should be adopted in Singapore.

126 UNCITRAL had envisaged that a main application of this provision would be in relation to the recognition and enforcement of foreign arbitral awards under the New York Convention, which requires an original or duly certified copy of the arbitration agreement to be submitted.[154] This is relevant to Singapore which is a party to the New York Convention. It can also apply to other trade documents such as weight certificates, agricultural certificates, quality and quantity certificates, inspection reports, insurance certificates, *etc*.[155] Another major

150 The words "made available" were substituted for "presented" at the 38th UNCITRAL plenary session.

151 LRRD No 1/2005, *supra* n 81, at Parts 5.11 and 4.11 (in relation to the use of originals for Electronic Government purposes).

152 LRRD No 1/2004, *supra* n 111, at Part 7.2. See responses to the public consultation on *Electronic Contracting Issues*, *supra* n 112.

153 LRRD No 1/2005, *supra* n 81, at paras 5.11.7 and 5.11.11.

154 A/60/17, *supra* n 5, at para 71.

155 Guide to Enactment of the Model Law on Electronic Commerce, *supra* n 55, at para 63.

area of application of this provision, if adopted in the ETA, will be the requirement for originals for government purposes.

127 A proposal was made to the Working Group to exclude from the application of Arts 9(4) and 9(5) original documents required to be presented to claim payment under letters of credit and bank guarantees. However, the proposal was not adopted in the face of strong objections as it was felt that Contracting States that wished to exclude this category of documents should do so by way of declarations under Art 19 of the Convention.[156] We are of the view that that such an exclusion is unnecessary as the documents to be presented for payment under a letter of credit or a bank guarantee are likely to have been agreed on between the parties.

128 In some jurisdictions the concepts of "writing", "original" and "signature" may overlap, though the overlap may not be exact. The Convention approaches them as three separate and distinct concepts. An interesting question arises as to how the provision on originals interacts with other provisions providing for functional equivalence in respect of writing and retention requirements. For instance, would a requirement for the production of an original document, which is in fact in writing, be interpreted both as a requirement that the original be made available, as well as a requirement for writing? The first requirement is met by satisfying the twin criteria for functional equivalence with originals, namely the integrity of the information from the time it was first generated in its final form and (since it is required that the information it contains be made available) that the information is capable of being displayed to the person to whom it is to be made available. The second requirement is met by satisfying the functional equivalence criterion for writing requirements, namely, that the information contained therein is accessible so as to be usable for subsequent reference. A similar position may arise in respect of a requirement to retain an original.[157] The

156 A/60/17, *supra* n 5, at para 76; and A/CN.9/571, *supra* n 10, at para 138.

157 The Convention provision on originals applies where the law requires a communication or contract should be "made available or *retained*" in its original form. Unlike the Model Law on Electronic Commerce, however, it does not contain any separate provision on the retention of data messages. The Model Law provision on retention requires that the information be accessible so as to be usable for subsequent reference, that the data message be retained in the format in which it was generated, *etc,* or a format which can be demonstrated to represent accurately the information generated, *etc*, and that it enables the identification of the origin and destination and date and time of sending or receipt of the data message: Art 10. Section 9 of the ETA also provides in similar terms.

Convention provision on originals is presumably not intended to oust the criteria for functional equivalence in these other provisions on writing and retention requirements.[158] The additional requirement for accessibility for subsequent reference would not, however, be appropriate where an original is merely required for once-off validation.[159]

129 It has also been noted that the additional requirement that electronic originals must be capable of being retained may pose difficulties where a document necessitating a singular electronic original (*eg*, a negotiable instrument) is involved.[160] In such circumstances, it should be recognised that the other provisions requiring retention should not apply. In most cases of originals, the requirement to allow retention would not cause any difficulty. UNCITRAL has noted that whereas uniqueness was in fact an important condition for an effective system for negotiability in relation to certain transport documents or negotiable instruments, other documents could retain their character as "original" documents even if they were issued in several "original" copies. The essential requirement for all purposes other than transfer and negotiation of rights evidenced by or embodied in a document is the integrity of the document and not its uniqueness.[161]

130 As noted above, there is an overlap between the provision on originals and provisions on retention of electronic records. The ETA currently contains a provision on the retention of electronic records modelled closely on the Model Law provision, except for an additional

158 The joint IDA-AGC consultation paper on *Remaining Issues*, *supra* n 81, at para 4.12.5, presumes this to be the case.

159 The New Zealand Electronic Transactions Act 2002 (No 35) interestingly limits its provision on originals to the legal requirement to "compare" a document with an original document: s 32. This requirement is met by satisfying just the integrity criterion. The Act has a number of specific provisions dealing with legal requirements to retain or provide or produce documents or information (distinguishing whether the document or information was created in electronic form) which adopt the "readily accessible so as to be available for subsequent reference" test. The "capable of being displayed" test is not used. Possibly it was thought that the test need not be mentioned in s 32 because capability of display is inherent in the process of comparing. It may also allow for the use of technical means of comparing the document.

160 We note that Art 2(2) of the Convention has excluded negotiable instruments, bills of lading and other documents necessitating a singular original from the scope of application of the Convention; See response to joint IDA-AGC consultation paper on *Remaining Issues* from Standard Chartered Bank, at <http://www.ida.gov.sg/idaweb/pnr/infopage.jsp?infopagecategory=consultpapers:pnr&versionid=1&infopageid=I3454> (accessed 18 April 2006).

161 A/60/17, *supra* n 5, at para 72.

requirement for the consent of the relevant government department or agency to such retention, express savings for rules of law expressly providing for such retention in the form of electronic records, and additional requirements by government departments and agencies. The joint IDA-AGC consultation paper on *Remaining Issues* proposed to remove the consent requirement so as to make it the default position that Government agencies would accept the electronic retention of documents.[162] In view of the close connection between the two provisions, any such modifications should apply equally to both the provision on originals and that on the retention of electronic records.

(8) Retention

131 Section 9 of the ETA provides that a requirement of law for the retention of documents, records or information is met by a functionally equivalent retention of electronic records. Section 9 is closely based on Art 10 of the Model Law on Electronic Commerce. As discussed in para 58 above, this provision was omitted from the Convention as the Working Group was of the view that legal requirements relating to the production or retention of original records were typically in connection with rules of evidence in court proceedings and in exchanges with public administration, and it was not felt that a functional equivalence rule of that type was needed in the draft Convention which dealt only with exchanges of a commercial nature.[163]

132 We suggest that s 9 should be retained in the ETA as the rules contained therein are fundamentally sound, and the ETA covers both commercial and non-commercial transactions. However, as noted in para 130 above, attention should be given to ensuring consistency between s 9 and the new provision on originals.

162 LRRD No 1/2005, *supra* n 81, at para 4.10.5.
163 A/CN.9/546, *supra* n 45, at para 53.

(9) Attribution

133 Section 13 of the ETA[164] contains an attribution provision based on Art 13 of the Model Law on Electronic Commerce. In view of the fact that UNCITRAL deliberately omitted to include an attribution provision in the Convention, it is necessary to examine the reasons for the omission, and to consider whether s 13 should be retained in the ETA.

134 The reasons why the Working Group decided not to include an attribution provision in the Convention have been discussed in paras 60 to 63 above. It has also been observed that provisions similar to s 13 of the ETA are "in some instances, … contradictory to existing domestic law rules in many countries".[165] Further, the attribution rules were developed in the context of the closed and heavily regulated area of funds transfer, which was heavily based on EDI systems. Many of its provisions apply only where an authentication system had been previously agreed upon and were not intended to apply to an open system environment, such as

164 The effect of s 13 was summarised in Andrew Phang & Daniel Seng, "The Singapore Electronic Transactions Act 1998 and the Proposed Article 2B of the Uniform Commercial Code" (1999) 7 Int J Law Info Tech 103 at 110 as follows:

> Section 13 of the ETA deals with the issue of attribution with the following series of escalating rules:
>
> > Rule 1: If A (the party who allegedly sent the electronic message – referred to in the ETA as the 'originator') *did in fact send* the message to B (... – referred to in the ETA as the 'addressee'), the message is A's.
> >
> > Rule 2: If not, and B receives a message allegedly sent by A, it will be deemed to be A's message if it was *sent by A's agent*.
> >
> > Rule 3: Alternatively, if B receives a message allegedly sent by A, it will be deemed to be A's message if it was *sent by a computer system programmed by A, or programmed by A's agent*.
> >
> > Rule 4: Otherwise, if B receives a message allegedly sent by A, B is entitled to regard it as A's *if B applied a procedure*, either previously agreed to by A or implemented by someone related to A, for verifying that the message is A's.
>
> Section 13 contains some necessary reference to agency law in general and the issue of authorization in particular; all this is consistent with the general law of agency, although s 13(8) expressly states, *ex abudante cautela*, that '[n]othing in this section shall affect the law of agency or the law on the formation of contracts' ...
>
> [emphasis in original]

The article also noted that the presumption is intended to apply only to the extent that the recipient exercised reasonable care (s 13(6)) and that draft article 2B of the US Uniform Commercial Code affirms substantially the application of the four rules.

165 Jeffrey Chan Wah Teck, "Legal Issues in E-Commerce and Electronic Contracting: The Singapore Position", a workshop paper presented at the 8th ASEAN Law Association General Assembly 2003, at p 241, available at <http://www.aseanlawassociation.org/docs/w5_sing.pdf> (accessed 18 April 2006).

the Internet.[166] We had suggested in para 63 above that the approach taken by States that have chosen not to include any specific rule on attribution is the better approach.

135 On the other hand, the rules are, in themselves, not necessarily unfair. In the context of agreed authentication procedures, UNCITRAL generally felt when preparing the Model Law that the risk of perhaps some injustice should be accepted, in view of the need to preserve the reliability of agreed authentication procedures.[167] As for Arts 13(5) and 13(6), whether they place an unfairly heavy responsibility on an originator in the context of an open environment such as the Internet, would depend on how the courts apply the requirement that the addressee must exercise reasonable care in relying on a communication. These requirements will provide adequate protection to the originator if the courts interpreting these provisions give appropriate consideration to the context in which the transactions took place.

136 Articles 13(1) and 13(2) enunciate principles that are self evident and consistent with the law of agency. In the context of the prevailing unfamiliarity and uncertainty in the 1990s as regards the rules applicable to electronic communications, the adoption of the attribution provisions appear to have provided useful assurance to users of electronic communications. It may however be argued that it is no longer necessary to state such obvious rules in today's context.

137 There may nevertheless be practical reasons why Singapore may wish to retain the attribution provision in s 13 of the ETA. This is partly an issue of legacy – the ETA has contained an attribution provision since its enactment in 1998. In the public consultation on *Electronic Contracting Issues,*[168] the question of whether s 13 should be retained was posed. The majority of respondents to the question supported its retention, citing its usefulness in providing guidance to courts and certainty to parties and the fact that the assumption of responsibility must, in the final analysis, fall on someone.[169] However, it would be fair to observe that both the courts and the business community have become

166 *Eg*, Art 13(3)(*a*) of the Model Law on Electronic Commerce. See Guide to Enactment of the Model Law on Electronic Commerce, *supra* n 55, at para 86.

167 *Id*, at para 89.

168 LRRD No 1/2004, *supra* n 111, question 12. Six respondents were in favour of retention, with three respondents against.

169 Responses to the joint IDA-AGC public consultation on Electronic Contracting Issues may be accessed at the IDA website, *supra* n 112.

more comfortable with the use of electronic transactions since the enactment of the ETA in 1998[170] and it may be that these rules are no longer necessary in today's context.

(10) Time and place of dispatch and receipt (Art 10)

138 The provisions on time and place of dispatch and receipt in Art 10 of the Convention differ significantly from the existing provisions in s 15 of the ETA. The provisions of Art 10 have been explained in paras 36 to 40 above. The discussion of the differences between Art 10 of the Convention and Art 15 of the UNCITRAL Model Law on Electronic Commerce in paras 52 to 54 above apply equally to s 15 of the ETA, which is closely based on Art 15 of the Model Law.

139 We suggest that the provisions in Art 10 of the Convention should be adopted in place of the existing provisions in s 15 of the ETA. Article 10 provides improved rules which are fairer and more attuned to the Internet environment in which many electronic communications now take place.

(11) Acknowledgment of receipt

140 As noted in paras 64 to 66 above, the Convention does not contain any provision on acknowledgment of receipt. Possible reasons for its omission have also been discussed. A question therefore arises as to whether the ETA should retain such a provision in view of the possible objections to such a provision, as evidenced by its omission from the Convention.

141 The provision on acknowledgment of receipt in s 14 of the ETA is modelled on Art 14 of the Model Law on Electronic Commerce. It has been a part of our law since the enactment of the ETA in 1998.

142 It was noted in para 64 above that the intended effect of Art 14 was in fact very limited. Under those rules, an acknowledgment of receipt merely sets up a rebuttable presumption that the related data message was received by the addressee. It does not imply correspondence of content

170 Singapore courts have recently handed down landmark decisions touching on electronic contracts *eg*, *Chwee Kin Keong v Digilandmall.com Pte Ltd* [2004] 2 SLR 594 (HC), [2005] 1 SLR 502 (CA); *SM Integrated Transware Pte Ltd v Schenker Singapore (Pte) Ltd*, *supra* n 105.

between the message sent and that received. At best, such a provision merely restates the common-sense position under common law. Further, we also pointed out in para 66 above that Art 14 is inconsistent with the new rule on time of dispatch under Art 10 of the Convention.

143 We therefore suggest that s 14 of the ETA should be repealed in view of the adoption of the new rules on time of dispatch and receipt of electronic communications in Art 10 of the Convention. It may no longer be necessary to have such a provision in the ETA since courts and parties are now more comfortable with electronic communications and may not need the assurance provided by s 14.[171]

(12) Savings (Arts 7 and 13)

(a) Availability of contract terms (Art 13)

144 Article 13 of the Convention provides that the Convention does not affect any rule of law requiring a party to make contract terms available to the other party in a particular manner. This saving provision was included by UNCITRAL as a reminder to parties that the interpretative rules in the Convention do not relieve parties from the need to comply with domestic legal requirements that may require the party to make available contractual terms in a particular manner. For instance, domestic regulatory regimes governing the provision of online services and consumer protection regulations may impose such legal requirements.

145 As a saving provision, Art 13 does not contain any substantive content. As such, there is no necessity to include in the ETA a provision in terms of Art 13. We indeed note that there is nothing in the Convention that speaks on the subject of requiring a party to make contract terms available to the other party in any manner. There is currently no general express provision in the ETA on the availability of contract terms, though several provisions of the ETA do expressly preserve the possibility of government agencies imposing additional requirements as to the form of electronic records.[172]

171 Singapore courts have recently handed down landmark decisions touching on electronic contracts. See *supra* n 170.

172 *Eg*, ss 9(4)(*b*) and 47(2) of the ETA.

(b) Information requirements (Art 7)

146 Article 7 of the Convention is a saving provision preserving the application of rules of law requiring the disclosure of information concerning the parties' "identities, places of business or other information".[173] The adoption by the Working Group of this provision in the form of a saving provision instead of a positive disclosure requirement reflects the view that the obligations to disclose certain information would be more appropriately placed in international standards and guidelines or domestic regulatory regimes governing the provision of online services, rather than in an international convention dealing with electronic contracting.[174]

147 As in the case of Art 13 of the Convention, the phrase "any rule of law" in Art 7 has the same meaning as the words "the law" in Art 9 of the Convention. The phrase "rule of law" encompasses statutory, regulatory and judicially created laws as well as procedural laws, but does not cover laws that had not become part of the law of the State, such as *lex mercatoria*, even though the expression "rules of law" was sometimes used in that broader meaning.[175] As noted above, obligations to disclose certain information would often be found in international industry standards or guidelines.[176] Such industry standards and guidelines would not normally constitute a rule of law unless they have been adopted into domestic law. It is more likely that such standards and guidelines will bind parties as a result of bilateral or multilateral agreements with the standards bodies responsible for those standards or guidelines. Of course, parties are at liberty to subscribe to further disclosure requirements contained in such standards and guidelines, and there is no necessity for a saving provision such as Art 7 in order for parties to do so. In the event that such standards and guidelines contain any rules that are inconsistent with the Convention rules, parties would still be at liberty to subscribe to such rules by virtue of the party autonomy and variation provisions in the ETA.[177]

173 If adopted in domestic legislation, it is likely that the wording of the provision would be read *ejusdem generis*, that is, the words "other information" may be read restrictively to refer only to general business information relating to the location or identity of the parties.

174 A/CN.9/509, *supra* n 126, at para 63.

175 A/60/17, *supra* n 5, at para 94.

176 See para 146 of the main text above.

177 See paras 19, and 100 to 105 of the main text above.

148 Being a saving provision, Art 7 does not have any substantive content. We indeed note that there is nothing in the Convention that speaks on the subject of requiring a party to disclose its identity, place of business or other information. However, an argument may possibly be made that the reference in Art 6(2) of the Convention to a party not indicating a place of business, suggests that there is no requirement for a party to indicate the place of business. Nevertheless, we suggest that it is unnecessary to adopt in the ETA a provision along the terms of Art 7, as the neutral language in Art 6(2) of the Convention cannot be read to absolve a party of the need to comply with a specific rule in another law imposing an informational requirement.

(13) Transitional provisions (Art 24)

149 Article 24 of the Convention provides that the Convention (and any declaration made) applies only to electronic communications made after the Convention (or declaration) enters into force or takes effect in respect of each Contracting State. The Convention enters into force on the first day of the month following the expiration of six months after the deposit of the third instrument of ratification, acceptance, approval or accession or, if the State ratifies, accepts, approves or accedes to the Convention after the third ratification, six months after the deposit of its instrument of ratification, acceptance, approval or accession.[178] A Contracting State is obligated to ensure that the Convention rules are applied as part of its domestic law to all relevant electronic communications made after the date the Convention takes effect in respect of that State. The Convention is intended to apply only prospectively.[179]

150 Article 24 makes reference to the point of time when electronic communications are "made". At first glance, a question arises as to whether this refers to the "sending" of the electronic communication, or whether this encompasses the "generation" of the electronic

178 Article 23 of the Convention.
179 A/60/17, *supra* n 5, at para 153.

communication as well.[180] There are two possible interpretations. On the first interpretation, an electronic communication is first "generated" as a draft or intended communication, before it is sent out. The electronic communication would be "made" when it is first "generated" as a draft. This interpretation arises as a result of the inclusion of the term "generated" in the definition of "data message" in Art 4(*c*) of the Convention. On the second interpretation, an electronic communication is "made" only when it is actually sent or attempted to be sent. Prior to the sending of the electronic communication, the "intended communication" is not a communication, but merely an electronic record. Therefore, an electronic communication is properly "generated" only when it is sent or attempted to be sent, thereby assuming the character of a communication. On this second view, there is still a conceptual and practical difference between the generation of the communication and the sending of that same communication. In a case where technical difficulties prevent the electronic communication from being successfully "sent", the electronic communication would nonetheless have been "generated" as such during the attempt of sending. We suggest that the second interpretation is more congruent with the concept of the making of a communication, and is the better view.

151 Although a Contracting State is only obligated to ensure that the Convention rules are applied as part of its domestic law to electronic communications made after the date the Convention takes effect in respect of that State, since the Convention rules will be made applicable as part of the domestic law of the Contracting State, a Contracting State can choose to enact and bring into effect its implementing legislation even prior to the Convention coming into force. A Contracting State can also bring into effect the implementing legislation in respect of electronic records even prior to the time they are communicated, for example, when an electronic record is generated. In other words, a Contracting State can bring the Convention rules into effect earlier than the time required in Art 24. The advantages and disadvantages of applying the new

180 Under Arts 4(*a*) and 4(*b*) of the Convention, an "electronic communication" means any statement, declaration, demand, notice or request, including the offer and acceptance of an offer, that the parties are required to make or choose to make by means of data messages in connection with the formation or performance of a contract. Article 4(*c*) of the Convention defines "data message" as "information *generated*, *sent*, received or stored by electronic, magnetic, optical or similar means, including, but not limited to, electronic data interchange, electronic mail, telegram, telex or telecopy" [emphasis added].

Convention rules from any particular point will need to be carefully considered.

152 As most of the substantive changes arising from the adoption of the Convention, at least in the context of the Singapore ETA, seem to apply to electronic records that *are* communicated, the natural "triggering event" for the application of the new provisions would be the communication of the electronic record. For example, the Convention provisions on time and place of dispatch and receipt (Art 10), invitation to make offers (Art 11), use of automated message systems (Art 12) and error in electronic communications (Art 14) all clearly, by their context, relate to the communication of electronic records.

153 However, some of the Convention rules are capable of applying to electronic records that may not necessarily be communicated. Examples would include the provisions on signature requirements (Art 9(3)) and originals (Arts 9(4) and 9(5)). A signature may be required on a document that does not need to be communicated, or at least does not need to be communicated immediately. The provision on originals refers to the requirement to make available or to *retain* a communication in its original form. An original document may satisfy a requirement to be retained without ever being communicated. A "triggering event" other than "communication" would therefore be needed where there is no communication of the electronic record.

154 Further, using the date of communication as the only triggering event may give rise to uncertainty in the case of electronic records generated, after the Convention has taken effect, that are not immediately communicated but are subsequently communicated, as the pre-existing law would have applied to steps taken prior to that date of subsequent communication. For example, a person signing an electronic record would wish to ascertain the legal validity of his signature method at the time of signing. If the communication is the only triggering event, the pre-existing ETA rules would apply to determine the legal recognition given to the signature method used to sign the uncommunicated electronic record. When the signed electronic record is subsequently communicated, the new Convention rules would apply to determine the legal recognition given to the signature method used. This would be an undesirable situation. Similarly, a person retaining an original in electronic form needs to know that his method of retention is legally valid and will remain valid. As retention is a continuing obligation, it would be highly undesirable if a person subsequently has to change his method of retention in order to satisfy a set of new rules. Indeed, it may

not always be possible for a person to take remedial action to ensure the continued validity of actions taken prior to communication.[181]

155 One possible solution is to use the point of generation of an electronic record as another "triggering event" in addition to the making of a communication. This would allow the same set of rules to apply to an electronic record throughout its existence, from the time of its generation as an electronic record, to the time it is sent and it takes on the character of a communication. There is however some uncertainty as to what constitutes the *generation* of an electronic record. Would making a copy of an electronic record constitute the generation of a distinct electronic record? Indeed, is a new electronic record created every time an electronic record is opened, accessed or sent? It may be necessary to clarify that the generation of an electronic record refers to the time when it was first generated in its final form.[182] However, a problem would still remain in respect of electronic records that are generated before the date the new rules are brought into effect. The old rules would govern such electronic records until a subsequent "generation" or "communication" of the electronic record occurs after the new rules have come into effect.

156 The difficulties discussed in para 154 above arise in the context of the application of the new rules to a particular record or communication upon a single triggering event. One alternative formulation of the transitional provisions is to make the new rules applicable to a "transaction". However, we are of the view that the application of the new rules on a whole transaction basis is likely to give rise to serious definitional difficulties as to which electronic records constitute a transaction. In our view, greater certainty and clarity would be achieved by adopting different "triggering events" depending on the context of the provision to be applied. For example, it would be more appropriate to apply the legal rules existing at the time of signing in determining whether an electronic signature is legally recognised since those are the legal rules that the signor would be expected to apply.

157 Another possible solution to this problem is to include a saving provision for actions taken prior to the application of the new rules, to ensure that those actions will remain legally recognised notwithstanding

181 In Singapore, such a transitional problem may not arise in relation to originals since there is no pre-existing provision in the ETA on originals, but there are pre-existing provisions on the retention of electronic records in s 9 of the ETA.

182 Compare with Art 9(4)(*a*) of the Convention on originals.

the new rules, if they were legally recognised under the pre-existing law. A possible formulation is to state that if an action (*eg* electronic signature) takes place prior to the coming into effect of the new set of rules, and is given legal recognition under the pre-existing ETA rules, that action is deemed to satisfy the corresponding provision under the new set of rules.

158 Remaining silent on the transitional arrangements is another alternative that may be considered. Given the wide range of circumstances which attract the question of which set of legal rules is applicable, there is a risk that any transitional provisions enacted may not be able to provide for every conceivable situation. In the absence of express transitional provisions, the courts would have greater flexibility to ensure a fair outcome in unexpected circumstances. We note that this option would give rise to uncertainty and unpredictability, and may occasion unnecessary expense if parties attempt to comply with both the old and new set of rules in order to be assured of the legal validity of their subject matter.

159 In view of the difficulties in the various approaches discussed above, we suggest that a combination of the multiple triggering event approach referred to in para 155, together with appropriate savings provisions as described in para 157, would probably provide a suitable solution.

IV. Conclusion

160 The UN Convention on the Use of Electronic Communications in International Contracts sets a new global standard for the content of national electronic commerce legislation. When widely adopted, the Convention will achieve harmonisation of electronic commerce legislation amongst State parties, and will remove barriers to cross-border electronic commerce arising from disharmony in national electronic commerce legislation which result in uncertainty regarding the legal status of electronic communications.

161 In this article, we have highlighted the main features of the Convention, and have explored legal and implementation issues that will be faced by lawmakers in States that intend to adopt the Convention, with particular reference to the Singapore context. We hope that this article will provide a useful introduction to this important Convention, and provide lawmakers with a better appreciation of the meaning and effect

of the Convention. With thoughtful and informed implementation of the Convention by a broad spectrum of States in the world, the Convention would be able to serve the purpose it was developed to achieve.

APPENDIX A

Resolution adopted by the General Assembly
[on the report of the Sixth Committee (A/60/515)]

60/21. United Nations Convention On The Use Of Electronic Communications In International Contracts

The General Assembly,

Recalling its resolution 2205 (XXI) of 17 December 1966, by which it established the United Nations Commission on International Trade Law with a mandate to further the progressive harmonization and unification of the law of international trade and in that respect to bear in mind the interests of all peoples, in particular those of developing countries, in the extensive development of international trade,

Considering that problems created by uncertainties as to the legal value of electronic communications exchanged in the context of international contracts constitute an obstacle to international trade,

Convinced that the adoption of uniform rules to remove obstacles to the use of electronic communications in international contracts, including obstacles that might result from the operation of existing international trade law instruments, would enhance legal certainty and commercial predictability for international contracts and may help States gain access to modern trade routes,

Recalling that, at its thirty-fourth session, in 2001, the Commission decided to prepare an international instrument dealing with issues of electronic contracting, which should also aim at removing obstacles to electronic commerce in existing uniform law conventions and trade agreements, and entrusted its Working Group IV (Electronic Commerce) with the preparation of a draft,[1]

Noting that the Working Group devoted six sessions, from 2002 to 2004, to the preparation of the draft Convention on the Use of Electronic Communications in International Contracts, and that the Commission considered the draft Convention at its thirty-eighth session in 2005,[2]

1 Official Records of the General Assembly, Fifty-sixth Session, Supplement No 17 and corrigendum (A/56/17 and Corr 3), paras 291–295.
2 *Ibid*, Sixtieth Session, Supplement No 17 (A/60/17), chap III.

Being aware that all States and interested international organizations were invited to participate in the preparation of the draft Convention at all the sessions of the Working Group and at the thirty-eighth session of the Commission, either as members or as observers, with a full opportunity to speak and make proposals,

Noting with satisfaction that the text of the draft Convention was circulated for comments before the thirty-eighth session of the Commission to all Governments and international organizations invited to attend the meetings of the Commission and the Working Group as observers, and that the comments received were before the Commission at its thirty-eighth session,[3]

Taking note with satisfaction of the decision of the Commission at its thirty-eighth session to submit the draft Convention to the General Assembly for its consideration,[4]

Taking note of the draft Convention approved by the Commission,[5]

1. *Expresses its appreciation* to the United Nations Commission on International Trade Law for preparing the draft Convention on the Use of Electronic Communications in International Contracts;[5]

2. *Adopts* the United Nations Convention on the Use of Electronic Communications in International Contracts, which is contained in the annex to the present resolution, and requests the Secretary-General to open it for signature;

3. *Calls upon* all Governments to consider becoming party to the Convention.

53rd plenary meeting
23 November 2005

3 A/CN.9/578 and Add.1–17.
4 Official Records of the General Assembly, Sixtieth Session, Supplement No 17 (A/60/17), para 167.
5 *Ibid*, annex I.

Annex
United Nations Convention on the Use of Electronic Communications in International Contracts

The States Parties to this Convention,

Reaffirming their belief that international trade on the basis of equality and mutual benefit is an important element in promoting friendly relations among States,

Noting that the increased use of electronic communications improves the efficiency of commercial activities, enhances trade connections and allows new access opportunities for previously remote parties and markets, thus playing a fundamental role in promoting trade and economic development, both domestically and internationally,

Considering that problems created by uncertainty as to the legal value of the use of electronic communications in international contracts constitute an obstacle to international trade,

Convinced that the adoption of uniform rules to remove obstacles to the use of electronic communications in international contracts, including obstacles that might result from the operation of existing international trade law instruments, would enhance legal certainty and commercial predictability for international contracts and help States gain access to modern trade routes,

Being of the opinion that uniform rules should respect the freedom of parties to choose appropriate media and technologies, taking account of the principles of technological neutrality and functional equivalence, to the extent that the means chosen by the parties comply with the purpose of the relevant rules of law,

Desiring to provide a common solution to remove legal obstacles to the use of electronic communications in a manner acceptable to States with different legal, social and economic systems,

Have agreed as follows:

Chapter I
Sphere of application

Article 1
Scope of application

1. This Convention applies to the use of electronic communications in connection with the formation or performance of a contract between parties whose places of business are in different States.

2. The fact that the parties have their places of business in different States is to be disregarded whenever this fact does not appear either from the contract or from any dealings between the parties or from information disclosed by the parties at any time before or at the conclusion of the contract.

3. Neither the nationality of the parties nor the civil or commercial character of the parties or of the contract is to be taken into consideration in determining the application of this Convention.

Article 2
Exclusions

1. This Convention does not apply to electronic communications relating to any of the following:

(*a*) Contracts concluded for personal, family or household purposes;

(*b*) (i) Transactions on a regulated exchange; (ii) foreign exchange transactions; (iii) inter-bank payment systems, inter-bank payment agreements or clearance and settlement systems relating to securities or other financial assets or instruments; (iv) the transfer of security rights in sale, loan or holding of or agreement to repurchase securities or other financial assets or instruments held with an intermediary.

2. This Convention does not apply to 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.

Article 3
Party autonomy

The parties may exclude the application of this Convention or derogate from or vary the effect of any of its provisions.

Chapter II
General provisions

Article 4
Definitions

For the purposes of this Convention:

(*a*) "Communication" means any statement, declaration, demand, notice or request, including an offer and the acceptance of an offer, that the parties are required to make or choose to make in connection with the formation or performance of a contract;

(*b*) "Electronic communication" means any communication that the parties make by means of data messages;

(*c*) "Data message" means information generated, sent, received or stored by electronic, magnetic, optical or similar means, including, but not limited to, electronic data interchange, electronic mail, telegram, telex or telecopy;

(*d*) "Originator" of an electronic communication means a party by whom, or on whose behalf, the electronic communication has been sent or generated prior to storage, if any, but it does not include a party acting as an intermediary with respect to that electronic communication;

(*e*) "Addressee" of an electronic communication means a party who is intended by the originator to receive the electronic communication, but does not include a party acting as an intermediary with respect to that electronic communication;

(*f*) "Information system" means a system for generating, sending, receiving, storing or otherwise processing data messages;

(*g*) "Automated message system" means a computer program or an electronic or other automated means used to initiate an action or respond to data messages or performances in whole or in part, without review or intervention by a natural person each time an action is initiated or a response is generated by the system;

(*h*) "Place of business" means any place where a party maintains a non-transitory establishment to pursue an economic activity other than the temporary provision of goods or services out of a specific location.

Article 5
Interpretation

1. In the interpretation of this Convention, regard is to be had to its international character and to the need to promote uniformity in its application and the observance of good faith in international trade.

2. Questions concerning matters governed by this Convention which are not expressly settled in it are to be settled in conformity with the general principles on which it is based or, in the

absence of such principles, in conformity with the law applicable by virtue of the rules of private international law.

Article 6
Location of the parties

1. For the purposes of this Convention, a party's place of business is presumed to be the location indicated by that party, unless another party demonstrates that the party making the indication does not have a place of business at that location.

2. If a party has not indicated a place of business and has more than one place of business, then the place of business for the purposes of this Convention is that which has the closest relationship to the relevant contract, having regard to the circumstances known to or contemplated by the parties at any time before or at the conclusion of the contract.

3. If a natural person does not have a place of business, reference is to be made to the person's habitual residence.

4. 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 the formation of a contract are located; or (*b*) where the information system may be accessed by other parties.

5. The sole fact that a party makes use of a domain name or electronic mail address connected to a specific country does not create a presumption that its place of business is located in that country.

Article 7
Information requirements

Nothing in this Convention affects the application of any rule of law that may require the parties to disclose their identities, places of business or other information, or relieves a party from the legal consequences of making inaccurate, incomplete or false statements in that regard.

Chapter III
Use of electronic communications in international contracts

Article 8
Legal recognition of electronic communications

1. A communication or a contract shall not be denied validity or enforceability on the sole ground that it is in the form of an electronic communication.

2. Nothing in this Convention requires a party to use or accept electronic communications, but a party's agreement to do so may be inferred from the party's conduct.

Article 9
Form requirements

1. Nothing in this Convention requires a communication or a contract to be made or evidenced in any particular form.

2. Where the law requires that a communication or a contract should be in writing, or provides consequences for the absence of a writing, that requirement is met by an electronic communication if the information contained therein is accessible so as to be usable for subsequent reference.

3. Where the law requires that a communication or a contract should be signed by a party, or provides consequences for the absence of a signature, that requirement is met in relation to an electronic communication if:

(*a*) A method is used to identify the party and to indicate that party's intention in respect of the information contained in the electronic communication; and

(*b*) The method used is either:

(i) As reliable as appropriate for the purpose for which the electronic communication was generated or communicated, in the light of all the circumstances, including any relevant agreement; or

(ii) Proven in fact to have fulfilled the functions described in subparagraph (*a*) above, by itself or together with further evidence.

4. Where the law requires that a communication or a contract should be made available or retained in its original form, or provides consequences for the absence of an original, that requirement is met in relation to an electronic communication if:

(*a*) There exists a reliable assurance as to the integrity of the information it contains from the time when it was first generated in its final form, as an electronic communication or otherwise; and

(*b*) Where it is required that the information it contains be made available, that information is capable of being displayed to the person to whom it is to be made available.

5. For the purposes of paragraph 4 (*a*):

(*a*) The criteria for assessing integrity shall be whether the information has remained complete and unaltered, apart from the addition of any endorsement and any change that arises in the normal course of communication, storage and display; and

(*b*) The standard of reliability required shall be assessed in the light of the purpose for which the information was generated and in the light of all the relevant circumstances.

Article 10
Time and place of dispatch and receipt of electronic communications

1. The time of dispatch of an electronic communication is the time when it leaves an information system under the control of the originator or of the party who sent it on behalf of the originator or, if the electronic communication has not left an information system under the control of the originator or of the party who sent it on behalf of the originator, the time when the electronic communication is received.

2. The time of receipt of an electronic communication is the time when it becomes capable of being retrieved by the addressee at an electronic address designated by the addressee. The time of receipt of an electronic communication at another electronic address of the addressee is the time when it becomes capable of being retrieved by the addressee at that address and the addressee becomes aware that the electronic communication has been sent to that address. An electronic communication is presumed to be capable of being retrieved by the addressee when it reaches the addressee's electronic address.

3. An electronic communication is deemed to be dispatched at the place where the originator has its place of business and is deemed to be received at the place where the addressee has its place of business, as determined in accordance with article 6.

4. Paragraph 2 of this article applies notwithstanding that the place where the information system supporting an electronic address is located may be different from the place where the electronic

communication is deemed to be received under paragraph 3 of this article.

Article 11
Invitations to make offers

A proposal to conclude a contract made through one or more electronic communications which is not addressed to one or more specific parties, but is generally accessible to parties making use of information systems, including proposals that make use of interactive applications for the placement of orders through such information systems, is to be considered as an invitation to make offers, unless it clearly indicates the intention of the party making the proposal to be bound in case of acceptance.

Article 12
Use of automated message systems for contract formation

A contract formed by the interaction of an automated message system and a natural person, or by the interaction of automated message systems, shall not be denied validity or enforceability on the sole ground that no natural person reviewed or intervened in each of the individual actions carried out by the automated message systems or the resulting contract.

Article 13
Availability of contract terms

Nothing in this Convention affects the application of any rule of law that may require a party that negotiates some or all of the terms of a contract through the exchange of electronic communications to make available to the other party those electronic communications which contain the contractual terms in a particular manner, or relieves a party from the legal consequences of its failure to do so.

Article 14
Error in electronic communications

1. Where a natural person makes an input error in an electronic communication exchanged with the automated message system of another party and the automated message system does not provide the person with an opportunity to correct the error, that person, or the party on whose behalf that person was acting, has the right to withdraw the portion of the electronic communication in which the input error was made if:

(*a*) The person, or the party on whose behalf that person was acting, notifies the other party of the error as soon as possible after

having learned of the error and indicates that he or she made an error in the electronic communication; and

(*b*) The person, or the party on whose behalf that person was acting, has not used or received any material benefit or value from the goods or services, if any, received from the other party.

2. Nothing in this article affects the application of any rule of law that may govern the consequences of any error other than as provided for in paragraph 1.

Chapter IV
Final provisions

Article 15
Depositary

The Secretary-General of the United Nations is hereby designated as the depositary for this Convention.

Article 16
Signature, ratification, acceptance or approval

1. This Convention is open for signature by all States at United Nations Headquarters in New York from 16 January 2006 to 16 January 2008.

2. This Convention is subject to ratification, acceptance or approval by the signatory States.

3. This Convention is open for accession by all States that are not signatory States as from the date it is open for signature.

4. Instruments of ratification, acceptance, approval and accession are to be deposited with the Secretary-General of the United Nations.

Article 17
Participation by regional economic integration organizations

1. A regional economic integration organization that is constituted by sovereign States and has competence over certain matters governed by this Convention may similarly sign, ratify, accept, approve or accede to this Convention. The regional economic integration organization shall in that case have the rights and obligations of a Contracting State, to the extent that that organization has competence over matters governed by this Convention. Where the number of Contracting States is relevant in this Convention, the regional economic

integration organization shall not count as a Contracting State in addition to its member States that are Contracting States.

2. The regional economic integration organization shall, at the time of signature, ratification, acceptance, approval or accession, make a declaration to the depositary specifying the matters governed by this Convention in respect of which competence has been transferred to that organization by its member States. The regional economic integration organization shall promptly notify the depositary of any changes to the distribution of competence, including new transfers of competence, specified in the declaration under this paragraph.

3. Any reference to a "Contracting State" or "Contracting States" in this Convention applies equally to a regional economic integration organization where the context so requires.

4. This Convention shall not prevail over any conflicting rules of any regional economic integration organization as applicable to parties whose respective places of business are located in States members of any such organization, as set out by declaration made in accordance with article 21.

Article 18
Effect in domestic territorial units

1. If a Contracting State has two or more territorial units in which different systems of law are applicable in relation to the matters dealt with in this Convention, it may, at the time of signature, ratification, acceptance, approval or accession, declare that this Convention is to extend to all its territorial units or only to one or more of them, and may amend its declaration by submitting another declaration at any time.

2. These declarations are to be notified to the depositary and are to state expressly the territorial units to which the Convention extends.

3. If, by virtue of a declaration under this article, this Convention extends to one or more but not all of the territorial units of a Contracting State, and if the place of business of a party is located in that State, this place of business, for the purposes of this Convention, is considered not to be in a Contracting State, unless it is in a territorial unit to which the Convention extends.

4. If a Contracting State makes no declaration under paragraph 1 of this article, the Convention is to extend to all territorial units of that State.

Article 19
Declarations on the scope of application

1. Any Contracting State may declare, in accordance with article 21, that it will apply this Convention only:

(*a*) When the States referred to in article 1, paragraph 1, are Contracting States to this Convention; or

(*b*) When the parties have agreed that it applies.

2. Any Contracting State may exclude from the scope of application of this Convention the matters it specifies in a declaration made in accordance with article 21.

Article 20
Communications exchanged under other international conventions

1. The provisions of this Convention apply to the use of electronic communications in connection with the formation or performance of a contract to which any of the following international conventions, to which a Contracting State to this Convention is or may become a Contracting State, apply:

Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 10 June 1958);

Convention on the Limitation Period in the International Sale of Goods (New York, 14 June 1974) and Protocol thereto (Vienna, 11 April 1980);

United Nations Convention on Contracts for the International Sale of Goods (Vienna, 11 April 1980);

United Nations Convention on the Liability of Operators of Transport Terminals in International Trade (Vienna, 19 April 1991);

United Nations Convention on Independent Guarantees and Stand-by Letters of Credit (New York, 11 December 1995);

United Nations Convention on the Assignment of Receivables in International Trade (New York, 12 December 2001).

2. The provisions of this Convention apply further to electronic communications in connection with the formation or performance of a contract to which another international convention, treaty or agreement not specifically referred to in paragraph 1 of this article, and to which a Contracting State to this Convention is or may

become a Contracting State, applies, unless the State has declared, in accordance with article 21, that it will not be bound by this paragraph.

3. A State that makes a declaration pursuant to paragraph 2 of this article may also declare that it will nevertheless apply the provisions of this Convention to the use of electronic communications in connection with the formation or performance of any contract to which a specified international convention, treaty or agreement applies to which the State is or may become a Contracting State.

4. Any State may declare that it will not apply the provisions of this Convention to the use of electronic communications in connection with the formation or performance of a contract to which any international convention, treaty or agreement specified in that State's declaration, to which the State is or may become a Contracting State, applies, including any of the conventions referred to in paragraph 1 of this article, even if such State has not excluded the application of paragraph 2 of this article by a declaration made in accordance with article 21.

Article 21
Procedure and effects of declarations

1. Declarations under article 17, paragraph 4, article 19, paragraphs 1 and 2, and article 20, paragraphs 2, 3 and 4, may be made at any time. Declarations made at the time of signature are subject to confirmation upon ratification, acceptance or approval.

2. Declarations and their confirmations are to be in writing and to be formally notified to the depositary.

3. A declaration takes effect simultaneously with the entry into force of this Convention in respect of the State concerned. However, a declaration of which the depositary receives formal notification after such entry into force takes effect on the first day of the month following the expiration of six months after the date of its receipt by the depositary.

4. Any State that makes a declaration under this Convention may modify or withdraw it at any time by a formal notification in writing addressed to the depositary. The modification or withdrawal is to take effect on the first day of the month following the expiration of six months after the date of the receipt of the notification by the depositary.

Article 22
Reservations

No reservations may be made under this Convention.

Article 23
Entry into force

1. This Convention enters into force on the first day of the month following the expiration of six months after the date of deposit of the third instrument of ratification, acceptance, approval or accession.

2. When a State ratifies, accepts, approves or accedes to this Convention after the deposit of the third instrument of ratification, acceptance, approval or accession, this Convention enters into force in respect of that State on the first day of the month following the expiration of six months after the date of the deposit of its instrument of ratification, acceptance, approval or accession.

Article 24
Time of application

This Convention and any declaration apply only to electronic communications that are made after the date when the Convention or the declaration enters into force or takes effect in respect of each Contracting State.

Article 25
Denunciations

1. A Contracting State may denounce this Convention by a formal notification in writing addressed to the depositary.

2. The denunciation takes effect on the first day of the month following the expiration of twelve months after the notification is received by the depositary. Where a longer period for the denunciation to take effect is specified in the notification, the denunciation takes effect upon the expiration of such longer period after the notification is received by the depositary.

DONE at New York, this […] day of […], 2005, in a single original, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic.

IN WITNESS WHEREOF the undersigned plenipotentiaries, being duly authorized by their respective Governments, have signed this Convention.

APPENDIX B – TABLE OF COMPARISON BETWEEN PROVISIONS IN THE CONVENTION, THE TWO UNCITRAL MODEL LAWS AND THE ELECTRONIC TRANSACTIONS ACT

	UN Convention on the Use of Electronic Communications in International Contracts	UNCITRAL Model Law on Electronic Commerce	UNCITRAL Model Law on Electronic Signatures	Electronic Transactions Act
Terminology	**Article 4.** Definitions	**Article 2.** Definitions	**Article 2.** Definitions	**Section 2.** Interpretation
Interpretation	**Article 5.** Interpretation	**Article 3.** Interpretation	**Article 4.** Interpretation	**Section 3.** Purposes and construction
Scope of application	**Article 1.** Scope of application **Article 19.** Declarations on the scope of application **Article 20.** Communications exchanged under other international conventions	**Article 1.** Sphere of application	**Article 1.** Sphere of application	
Excluded matters	**Article 2.** Exclusions	NA	NA	**Section 4.** Application
Party autonomy	**Article 3.** Party autonomy	**Article 4.** Variation by agreement	**Article 5.** Variation by agreement	**Section 5.** Variation by agreement
Location	**Article 6.** Location of the parties	NA	NA	NA
Treatment of electronic contracts: • Legal recognition	**Article 8.** Legal recognition of electronic communications **Article 9**(1). Form requirements	**Article 5.** Legal recognition of data messages **Article 11.** Formation and validity of contracts	NA	**Section 6.** Legal recognition of electronic records **Section 11.** Formation and validity of contracts

		Article 12. Recognition by parties of data messages		**Section 12.** Effectiveness between parties
• Invitations to make offers	**Article 11.** Invitations to make offers	NA	NA	NA
• Use of automated message systems for contract formation	**Article 12.** Use of automated message systems for contract formation	NA	NA	NA
• Incorporation by reference	NA	**Article 5 bis.** Incorporation by reference	NA	NA
• Error in electronic communications	**Article 14.** Error in electronic communications	NA	NA	NA
Form requirements: • Writing	**Article 9(2).** Form requirements	Article 6. Writing	NA	**Section 7.** Requirement for writing
• Signature	**Article 9(3).** Form requirements	**Article 7.** Signature	**Article 3.** Equal treatment of signature technologies **Article 6.** Compliance with a requirement for a signature **Article 7.** Satisfaction of article 6 **Article 8.** Conduct of the signatory	**Section 8.** Electronic signatures **PART V.** Secure electronic records and signatures **Section 16.** Secure electronic record **Section 17.** Secure electronic signature

			Article 9. Conduct of the certification service provider **Article 10.** Trustworthiness **Article 11.** Conduct of relying party **Article 12.** Recognition of foreign certificates and electronic signatures	**Section 18.** Presumptions relating to secure electronic records and signatures **PART VI.** Effect of digital signatures **Section 19.** Secure electronic record with digital signature **Section 20.** Secure digital signature **Section 21.** Presumptions regarding certificates **Section 22.** Unreliable digital signatures **PART VII.** General duties relating to digital signatures **Section 23.** Reliance on certificates foreseeable **Section 24.** Prerequisites to publication of certificate **Section 25.** Publication for fraudulent or unlawful purpose **Section 26.** False or unauthorised request

				PART VIII. Duties of certification authorities **Section 27.** Trustworthy system Section 28. Disclosure **Section 29.** Issue of certificate **Section 30.** Representations upon issuance of certificate **Section 31.** Suspension of certificate **Section 32.** Revocation of certificate **Section 33.** Revocation without subscriber's consent **Section 34.** Notice of suspension **Section 35.** Notice of revocation **PART IX.** Duties of subscribers **Section 36.** Generating key pair **Section 37.** Obtaining certificate **Section 38.** Acceptance of certificate

				Section 39. Control of private key **Section 40.** Initiating suspension or revocation of certificate **PART X.** Regulation of certification authorities **Section 41.** Appointment of Controller and other officers **Section 42.** Regulation of certification authorities **Section 43.** Recognition of foreign certification authorities **Section 44.** Recommended reliance limit **Section 45.** Liability limits for licensed certification authorities **Section 46.** Regulation of repositories