**United Nations** A/CN.9/WG.IV/WP.90

# General Assembly

Distr.: Limited
20 December 2000

Original: English

**United Nations Commission on International Trade Law**
**Working Group on Electronic Commerce**
Thirty-eighth session
New York, 12 - 23 March 2001

## Possible future work on electronic commerce

## Transfer of rights in tangible goods and other rights

### Note by the Secretariat

Contents

## Introduction

1. The possibility of future work by UNCITRAL with regard to issues of negotiability and transferability of rights in goods in a computer-based environment was first mentioned at the twenty-seventh session of the Commission, in 1994.[1] The Commission considered the matter again at its twenty-eighth session, in 1995, when it adopted the text of articles 1 and 3 to 11 of the UNCITRAL Model Law on Electronic Commerce.[2] The Commission requested the Secretariat to prepare a background study on negotiability and transferability of EDI transport documents, with particular emphasis on EDI maritime transport documents, taking into account the views expressed and the suggestions concerning the scope of possible future work that had been made at the twenty-ninth session of the Working Group.[3]

2. In accordance with the directives given by the Working Group, the study subsequently prepared by the Secretariat (A/CN.9/WG.IV/WP.69) focused on issues of transferable bills of lading in an electronic environment. On the basis of that study, the Working Group discussed the relevant issues at its thirtieth session and approved the text of draft statutory provisions designed to recognize the transmission of data messages as functionally equivalent to the main actions performed under a contract of carriage of goods, such as issuing a receipt for goods, giving instructions to a carrier, claiming delivery of goods, transferring or negotiating rights in goods (for the report on that session, see A/CN.9/421). Those draft provisions were adopted by the Commission at its twenty-ninth session, in 1996, as articles 16 and 17 of the final text of the Model Law.

3. The possibility of future work in the area of negotiability and transferability of rights in goods in a computer-based environment, beyond the relevant provisions of the Model Law, was again raised at the Commission's thirty-second and thirty-third sessions, in 1999 and 2000, respectively. At the thirty-second session, it was suggested that after completion of the uniform rules on electronic signatures (as the draft instrument was then called), the Commission and the Working Group should consider work, *inter alia*, in the areas of "electronic transfer of rights in tangible goods" and "electronic transfer of intangible rights".[4] At the thirty-third session, a suggestion was made to consider the possibility of future work on "dematerialization of documents of title, particularly in the transport industry". It was suggested that work might be undertaken to assess the desirability and feasibility of elaborating a uniform statutory framework to support the development of contractual schemes currently being developed to replace traditional paper-based bills of lading by electronic messages. It was widely felt that such work should not be restricted to maritime bills of lading, but should also envisage other modes of transportation. In addition, outside the sphere of transport law, such a study might also deal with the issues of dematerialized securities. It was pointed out that the work of other international organizations should also be monitored in respect of those topics.[5]

4. After discussion, the Commission, at its thirty-third session, welcomed the proposal to undertake studies on that topic among others then proposed for future work.[6] While no decision as to the scope of future work could be made until

further discussion had taken place in the Working Group, the Commission generally agreed that, upon completing its current task, namely, the preparation of draft uniform rules on electronic signatures, the Working Group would be expected, in the context of its general advisory function regarding the issues of electronic commerce, to examine some or all of the above-mentioned topics, as well as any additional topic, with a view to making more specific proposals for future work by the Commission. It was agreed that work to be carried out by the Working Group could involve consideration of several topics in parallel as well as preliminary discussion of the contents of possible uniform rules on certain aspects of the above-mentioned topics.

5. This note contains a preliminary study of legal issues related to the use of electronic means of communication for transferring or creating rights in tangible goods and transferring or creating other rights. It gives special attention to possible electronic substitutes or alternatives for paper-based documents of title and other forms of dematerialized instruments that represent or incorporate rights in tangible goods or intangible rights.

## Chapter I

## Transfer and creation of rights in a paper-based environment

6. Consistent with the approach taken in the preparation of the Model Law, the Working Group may wish to envisage the issues related to transfer and creation of rights in tangible goods and other rights using a functional approach. In order to consider whether and under what conditions electronic means of communication may be used to effectively transfer and create any such rights, this section sets out the main methods for the transfer of rights in tangible goods and for the transfer of other rights in a paper-based environment. This section is only concerned with the voluntary transfer of rights and does not deal with statutory transfer of property or other rights (for instance, through succession or confiscation). The following information focuses on the main methods used for creating and transferring rights in tangible goods and other rights and is not meant to provide an exhaustive review of all methods used in various legal systems.

### A. General remarks

7. As used in this note, the expression “rights in tangible goods” refers to property rights or security interests in corporeal moveable property, including particularly commodities and manufactured goods, other than the money in which the price (in case of a sales contract) is to be paid. The expression “other rights” refers to intangible assets (other than property rights in tangible goods or intellectual property rights), which have an economic value that makes them capable of being negotiated in the course of business, including in particular trade or financial receivables, investment and other securities. Section B briefly discusses methods for transferring rights in tangible goods and other rights. Section C deals with the methods for the creation of security interests in tangible goods or in intangible property.

## B. Transfer of rights in tangible goods and other rights

8. Transfer of property interests in tangible goods may serve various purposes according to the nature of the transaction between the parties. Transfer of property usually is the manner in which a debtor performs a contractual obligation, as in the case of delivery of the goods under a sales contract. However, transfer of property may also fulfill other functions, such as when the creditor accepts the transferred property as a substitute for other performance originally owed by the debtor. The same considerations apply to the assignment of other rights, such as trade receivables or investment securities.

9. For the purposes of this section, a distinction may therefore be drawn between (a) the act of transfer of the relevant rights, and (b) the contract or transaction which gives rise to the debtor's obligation to transfer such rights. Each of these instances may be subject to specific requirements, both formal and substantive ones, as regards their validity and legal effect. This section is only concerned with general methods for transferring or assigning rights and applicable requirements for the legal validity and effectiveness of such transfer or assignment. It does not deal with the conditions for the validity and effectiveness of the various contracts and transactions pursuant to which the rights are transferred or assigned.

10. Methods for transfer of property interests in tangible property are generally based on two legal concepts, namely, the principle of consent[7] and the principle of delivery.[8] Additional methods include registration and symbolic delivery. Although these additional methods are usually regarded as conceptual variants of either the principle of consent or the principle of delivery, they are presented hereafter separately for ease of reading.

### 1. Transfer by consent

11. According to the principle of consent, the property passes from the transferor to the transferee by means of a contract between them implying the transfer of property.[9] In legal systems that follow the principle of consent, all that is required for the transfer of property under a validly concluded sales contract is the parties' agreement about sale of the goods and their status as buyer and seller. However, some legal systems give special emphasis to the intention of the parties with respect to the transfer of property.[10] Those legal systems require clear evidence of the parties' agreement upon the ownership of the transferee. Such intention may be expressed in the underlying contract (such as a sales contract) but is to be understood individually. It may even be concluded without a contract of sale. However, in some of those legal systems transfers of property in general, or in respect of specific goods, while valid and effective as among the transferor and the transferee, may not be enforceable against third parties until the transfer is registered in a registry system (see paras. 13-14), or until the goods are actually delivered to the transferee (see paras. 15-16).

12. Apart from tangible goods, the consent of the parties is in many legal systems sufficient for the transfer of other property (intangibles) as well. Special rules are often found, however, in respect of assignments of payment claims (receivables). [11] Indeed, while an assignment may be valid and binding on the assignor and the assignee, it has no effects on the debtor, unless the debtor has

acquired knowledge of the assignment. In this respect, legal systems differ as to whether a notice to the debtor is required or whether any other act results in the debtor acquiring knowledge of the assignment.

### 2. Transfer by registration

13. Based also on consent is the principle of registration, which requires consent of the parties and registration by an office with statutory rights to take records.[12] The transfer is completed with the inclusion of a corresponding record of the transaction in the registry system. Registration serves to ensure legal certainty especially when the achieved ownership cannot be primarily shown by physically shifting possession (e.g. with immovables). In some jurisdictions, the consent of the parties (in some cases with the additional requirement of actual delivery of the goods) may be sufficient for the purpose of transferring the property as between the parties, but registration may be required in order for the transfer to become effective vis-à-vis third parties.

14. Transfer by registration is sometimes needed in respect of certain forms of intangible property. For example, transfer of shares or other securities issued by companies may need to be effected through appropriate records in the company's books, at least for the purpose of becoming effective vis-à-vis the company or third parties. Some jurisdictions have also established a system of filing information about assignments of trade receivables for the purpose of providing evidence of title to the receivables, notice about assignment to interested third parties or a method for determining priorities.[13]

### 3. Transfer by delivery

15. The principle of delivery is also based on consent but requires in addition the physical delivery of the asset to the transferee.[14] States take different approaches as to the relationship between the underlying consent expressed in the contract and an additional consent about the transfer of goods itself ("real agreement") which comes with the delivery. As far as the underlying contractual consent is the basis for the transfer by delivery, the validity of the transfer is affected by the validity of the contract itself.[15] On the other hand, an independent "real agreement" to transfer is not affected by the contract, the validity of the transfer is in this case determined independently (doctrine of abstraction).[16]

16. Transfer by delivery is the norm for the effective transfer of certain types of intangible property. Negotiable instruments, such as bills of exchange and promissory notes, are typically negotiated by transfer of possession, whether voluntary or involuntary, of the instrument by a person other than the issuer to a person who thereby becomes its holder. Except for negotiation by a remitter, if an instrument is payable to an identified person, negotiation requires transfer of possession of the instrument and its endorsement by the transferor. If an instrument is payable to bearer, it may be negotiated by transfer of possession alone. Article 13 of the United Nations Convention on International Bills of Exchange and International Promissory Notes reflects this principle by providing that an instrument is transferred by endorsement and delivery of the instrument by the endorser to the endorsee; or by mere delivery of the instrument if the last endorsement is in blank. The same principle can be found in articles 11 and 16 of

Annex I to the Convention Providing a Uniform Law on Bills of Exchange and Promissory Notes (Geneva, 7 June 1930).[17]

#### 4. Transfer by symbolic delivery

17. Even in countries that build on the principle of delivery, physical delivery of the goods is not always necessary. Possession of the goods can be left with the transferor or an agent of the transferor, where the parties agree on a legal relationship that assigns indirect possession to the transferee.[18] Property rights in goods may also be deemed to have been transferred when the transferee is given the means for exercising or claiming control over the goods. Examples include surrendering to the transferee the keys of a warehouse where the goods are stored or surrendering to the transferee the documents (such as a bill of lading or a warehouse receipt) necessary to claim delivery of the goods from a bailee holding such goods to the order of the holder.

18. Transfer of property through symbolic delivery is typically an exception to the general requirement of physical delivery of the goods. Accordingly, in order for a transfer of property to take place, no act by the parties may substitute for failed delivery, except for those symbolic acts to which the law attributes the same function. In other words, the parties typically are not free to create methods of transfer other than those provided in the law.

### C. Security interests in tangible goods and in intangible property

19. This section briefly describes the main methods for creating and perfecting security interests.[19] For that purpose, it is important to distinguish between formal requirements, if any, for a security agreement to be binding as between the parties and those requirements that need to be met in order for the security creditor to be able to enforce the security against third parties.

20. Except for a few jurisdictions that dispense altogether with form requirements for all or at least for certain kinds of security interests, such as purchase money, security agreements are in most cases subject to certain form requirements and typically need to be in writing.[20] In some legal systems, the security agreement can be oral if the secured party has possession of the collateral. Where a security agreement needs to be done in writing, various additional formalities may be required under the applicable law. Such statutory requirements primarily deal with the form of the contract, but occasionally also with its terms. In most cases, there is no single form requirement for types of security interest, and the law provides for a varying level of formality, according to the amount of the secured claim or the nature of the collateral.

21. In most legal systems, a formal contract, whilst necessary, does not exhaust the legal requirements; it must be supplemented by other means of publication. If the secured party does nothing more than enter into the security agreement with the debtor, that security interest is “unperfected”. An unperfected security interest may be completely valid and enforceable against the debtor, but may not be effective against third parties or may be subordinate to the rights of certain third parties, such as the trustee in a bankruptcy proceeding or creditors of the debtor. The ways in which a security interest can be perfected typically depend

on the nature of the collateral and the underlying transaction.

### 1. Perfection by possession

22. Transfer of possession used to be (and in some legal systems still is) the main method for perfecting security interests in tangible goods. The secured party usually has possession from the moment the collateral is in its physical possession or in the physical possession of a third person who holds it for the secured party's account. Perfection by possession serves two important purposes. Firstly, possession by the secured creditor serves as a notice to third parties that the creditor has a security interest in the goods in its possession. Secondly, because no two persons can physically possess the same goods at the same time, perfection by possession effectively avoids the creation of conflicting security interests in the same goods, thus guaranteeing the singularity of the creditor's security interest.

23. However, perfection by possession poses a serious limitation to the debtor's ability to trade the goods pledged as security. For this reason, in many legal systems, perfection by possession has been increasingly replaced with other methods, and has become of reduced commercial significance. Nevertheless, even in such legal systems, transfer of possession remains essential for the creation of security interests in respect of negotiable instruments, bills of lading, warehouse receipts and other negotiable documents of title. In each case possession of the paper document creates a security interest in the claim, the rights or the goods represented by that document.

### 2. Perfection by registration

24. Another method for perfecting security interests is registration. Generally, a security agreement that is otherwise in accordance with the appropriate requirements has the effect of giving rise to a legal relationship between the contracting parties even before registration. However, registration, where required, is typically a condition precedent for giving effect to a security interest vis-à-vis third persons.[21]

25. A recent study conducted by the Secretariat indicates that "[m]ost new legislation accepts, at some level, the idea of registration of non-possessory security interests as a means of giving publicity" (A/CN.9/475, para. 38). One reason for this preference is that registration facilitates searches by third persons. It also avoids, on the part of the creditor, all doubts about the proper place of registration, and avoids refiling in case of removal of the debtor's domicile or the location of the goods.

### 3. Other methods

26. Formalities other than a contract or registration mainly take the form of marking the encumbered goods or of advertising the security interest. Marking of the encumbered goods with the secured creditor's name is prescribed for certain goods in some jurisdictions either in addition to, or in place of, registration; rarely is it the exclusive method of publication. Much the same way as the registration of security interests, marking of encumbered goods is intended to warn third parties against the existence of security interests; it may also help to prevent unauthorized

dispositions by the debtor. In some countries private systems of collecting and publishing information on security interests seem, in effect, to combine registration with advertisement. Indeed, in some countries the registration of security interests is published in private trade journals. Advertisement of security interests may serve as the basis of private registers kept by credit agencies.

## Chapter II

## Transfer or creation of rights by electronic means of communication

### A. General legal obstacles

27. Legal obstacles to the electronic transfer of property rights in tangible goods and intangible property or to the creation of security interests in either type of property may result from form requirements for the validity, effectiveness or proof of the agreements to transfer or create the rights in question. Additional obstacles may relate to difficulties in establishing the functional equivalence between the transfer or creation method in a paper-based environment and its electronic analogous.

#### 1. Writing, signature and original

28. All the methods for transferring both property rights in tangible goods and intangible property or for creating security interests in either type of property presuppose at least the agreement of the parties on the transfer of such property or creation of the security interest. That agreement may be subject to specific form requirements either as a condition for the validity of transfer under the substantive applicable law, or pursuant to the applicable rules on evidence. The spectrum of form requirements may range from a written document signed by the parties, which in some jurisdictions may be made by a stamp or mechanical means as well as by hand, to a public deed drawn by a notary public. Intermediate requirements include other formalities, such as a certain number of witnesses or authentication of signatures by a notary public. In some legal systems, a statutory contract form is required.

29. The replacement of paper-based methods for transferring rights in tangible goods, transferring intangible property or creating security interests in tangible goods or intangible property with electronic equivalents presupposes therefore the resolution of the following legal issues: the satisfaction of writing and signing requirements; the evidential value of electronic communications; the determination of the place of contract formation.

30. Among such legal obstacles, those arising from the existence of writing and signature requirements and the probative effect of electronic communications have already been settled in articles 5 to 10 of the UNCITRAL Model Law on Electronic Commerce. Matters pertaining to contract formation in an electronic environment are settled in articles 11 to 15 of the Model Law. Also, issues related to the use of electronic means of identification to meet signature requirements have been addressed in article 7 of the UNCITRAL Model Law on Electronic Commerce and are further dealt with in the draft UNCITRAL Model Law on Electronic Signatures, which is expected to be adopted by the Commission at its

thirty-fourth session, in 2001.

### 2. Registry function: authority, liability and privacy issues

31. In addition to general issues such as those referred to above, the establishment of electronic equivalents to paper-based registration systems raises a number of particular problems. They include the satisfaction of legal requirements on record-keeping, the adequacy of certification and authentication methods, possible need of specific legislative authority to operate electronic registration systems, the allocation of liability for erroneous messages, communication failures, and system breakdowns; the incorporation of general terms and conditions; and the safeguarding of privacy.

32. Possible legal obstacles arising out of legal requirements on record-keeping may be removed by means of legislation implementing the principles set forth in articles 8 and 10 of the UNCITRAL Model Law on Electronic Commerce. The incorporation of terms and conditions is addressed in article 5*bis* of the Model Law. However, the Model Law does not address other issues specifically relevant for the functioning of electronic registration systems.

### 3. Meeting legal requirements on delivery and symbolic delivery

33. Where the law requires physical delivery of goods for the purpose of transferring property or perfecting security interests in such goods, a mere exchange of electronic messages between the parties would not be sufficient for effectively transferring property or perfecting security interest, however evident the parties' intention to transfer the property or perfect the security interest might have been. Therefore, even in jurisdictions where the law recognizes the legal value and effectiveness of electronic messages or records, no such message or record could alone effectively transfer property or perfect a security interest without an amendment of the law governing transfer of property or perfection of security interests.

34. The prospects for developing electronic equivalents of acts of transfer or perfection might be more positive where the law has at least in part dispensed with the strict requirement of physical delivery, for instance, by attributing to certain symbolic acts the same effect as the physical delivery of certain goods. One such example may be where the law attributes to the transferee or secured creditor the constructive possession of the goods transferred or pledged by virtue of an act of the parties that confers on the transferee the means for claiming control over the goods. Conceivably, the law could attribute the same effect to the entry of the transfer agreement into a registry system administered by a trusted third party or to an acknowledgement sent by the party in physical possession of the goods that these are held to order of the transferee or the secured creditor.

### 4. Particular issues concerning documents of title and negotiable instruments

35. As noted in an earlier study by the Secretariat,[22] surmounting the issues of writing and signature in an electronic context does not solve the issue of negotiability which has been said to be "perhaps the most challenging aspect" of

implementing EDI in international trade practices. [23] Rights in goods represented by documents of title are typically conditioned by the physical possession of an original paper document (the bill of lading, warehouse receipt, or other similar document). Analyses of the legal basis for the negotiability of documents of title have indicated that "[t]here is generally no statutory means in place by which commercial parties, through the exchange of electronic messages, can validly transfer legal rights in the same manner possible with paper documents."[24] This conclusion is also essentially valid for rights represented by negotiable instruments. Moreover, "the legal regime of negotiable instruments ... is in essence based on the technique of a *tangible original paper document*, susceptible to immediate visual verification on the spot. In the present state of legislation, negotiability cannot be divorced from the physical possession of the original paper document." [25]

36. Thus, it has been said that one challenge in developing law to accommodate electronically transmitted documents of title "is to generate them in such a way that holders who claim due negotiation will feel assured that there is a document of title in existence, that it has no defects upon its face, that the signature, or some substitute therefor is genuine, that it is negotiable, and that there is a means to take control of the electronic document equivalent in law to physical possession."[26]

37. The development of electronic equivalents to documents of title and negotiable instruments would therefore require the development of systems by which transactions could actually take place using electronic means of communication. This result could be achieved through a registry system, where transactions would be recorded and managed through a central authority, or through a technical device based on cryptography that ensures the singularity of the relevant data message. In the case of transactions that would have used transferable or quasi-negotiable documents to transfer rights which were intended to be exclusive, either the registry system or the technical device would need to provide a reasonable guarantee as to the singularity and the authenticity of the transmitted data.

## B. International initiatives on transfer of rights through electronic means

38. The following paragraphs provide an overview of recent initiatives for transferring property rights and other rights through electronic means. This information focuses on a few selected examples and is not intended to be an exhaustive account of current or earlier attempts to develop electronic means for transferring rights.

### 1. Electronic registration of real estate transactions

39. One of the most significant advantages of electronic records and communications is the potential for reducing the physical storage needs for transaction records, expediting the conclusion of transactions and facilitating searches of title. Although the present note does not cover real estate transactions, this information is provided to illustrate how electronic registration systems may be used for transferring property rights.

40. The Land Registration Reform Act 1990 (Ontario) introduced the

automation of the land registration system in the province of Ontario, Canada. The system builds upon the databases previously developed under the Province of Ontario Land Registration Information System (POLARIS). The automated system created a paperless electronic record-keeping system and the capability to remotely access the electronic system in order to obtain, create or amend information within that system. Under the new system, documents intended for registration will be drafted, approved, exchanged and registered electronically. Remote access to the systems, among other services, is provided by Teranet Land Information Services, Inc., a joint venture of the Ministry of Consumer and Commercial Relations of Ontario and a consortium of private companies.

41. Each person using the system needs to obtain from Teranet a personalised floppy diskette containing the user's encrypted pass phrase. Both must be used in conjunction to access the system. Each user must be registered with the entity maintaining the central registry and must be authorized under a law firm's or an individual's account to access the system. Security within the system is maintained by an audit trail of all transactions and the party (identified by the pass phrase used) who performed them. There are essentially four levels of access:

(a) *Create/update*. This function allows a user to view and make changes to a document that has been drafted in the system, prior to registration of the document;

(b) *Complete/approval*. This function allows a user to indicate that the document is in a form acceptable for registration. If the document contains statements as to conclusions of law (as defined in the regulations under the *Land Registration Reform Act)*, the *complete* signal will only be accepted from a user who is identified as a lawyer authorized to practice in Ontario;

(c) *Release/registration*. This function allows the user to indicate that the document is being released for registration. The signal to effect the *release/registration* function may be indicated by the person who completed the document or may be delegated to a conveyancer or other user. Both the *complete* and *release* signals must be affixed to a document before it can be accepted by the system for registration;

(d) *Search*. This function only allows the user to view the document.

42. Transactions through the automated system are governed by a Document Registration Agreement, available to be signed by the parties.[27] It should be noted that the Document Registration Agreement only deals with the rights and obligations of the parties in respect of the act of registration and not with the rights and obligations of seller and purchaser under the purchase agreement. Accordingly, section 9 of the standard Document Registration Agreement the purchase contract overrides the Document Registration Agreement in case of conflict. The contents of the electronic document depends on the nature of the transfer and is prescribed in sections 4 to 41 of Electronic Registration Ontario Regulation 19/99.

43. A real estate transaction using the electronic registration system may be

described as follows: The seller and purchaser of the land give their respective lawyers, who need to have a registration account with the system, [28] permission to act on their behalf by signing standard "Acknowledgement and Direction" documents available through the system. Once both lawyers are able to participate in the system, one of the lawyers is selected as being responsible for registration. The funds and closing documents are sent to the parties who will retain those funds and documents after the transfer. The respective parties' lawyers then hold the funds and documents in escrow. Upon receipt of the funds and closing documents to his or her satisfaction, the lawyer not registering the transfer electronically releases for registration the appropriate electronic documents. Upon receipt of the funds and closing documents to his or her satisfaction, the lawyer registering the transfer electronically registers the appropriate electronic documents.[29] All documents must be electronically signed by the intervening lawyers. Once the registration is entered, the system reveals if there are any problems with the transfer, for example the subsearch reveals that some document or instrument has been registered against the title to the property which the purchaser has not agreed to accept. In this case, the lawyer with responsibility to register the transfer notifies the other party's lawyer that he or she cannot proceed with the transfer. If there is no problem with the transfer, the lawyer who has registered the documents notifies the other party's lawyer of the registration particulars. Both lawyers then release the funds and documents from escrow.

44. The Land Registration Reform Act confirms that, under the system, the electronic documents transferring the property are not required to be in writing or to be signed by the parties but have the same effect as a document that is in writing and is signed by the parties.[30] If a document is registered in an electronic format and the document exists in a written form that is not a printed copy of the electronic document, the electronic document prevails over the written form of the document in the event of a conflict.[31]

### 2. Dematerialized securities

45. The system of using dematerialized securities essentially seeks to enable transactions of securities to be conducted and completed electronically using a system of account transfers without any physical exchange of items, such as share certificates and transfer deeds. Dematerialization has become an essential feature of modern trade in securities by settlement systems such as Euroclear in Brussels, Cedel in Luxembourg, the Depository Trust Corporation in the United States, CREST and the Central Gilts Office in London, SICOVAM in France, Monte Titoli in Italy and numerous comparable systems elsewhere, e.g. in Canada, Denmark, Germany, Netherlands, the Republic of Korea and Singapore.

46. These securities systems are designed to reduce the paperwork, expense and risks associated with physical documents, which are replaced with records in electronic form. Besides the basic system of using dematerialized securities as mentioned above, some securities systems also offer an immobilization system~~s~~, that is, they retain the physical security in a vault and give the holder dematerialized rights to the security by virtue of the holder being the account-holder.

47. Dematerialized securities consist of certain essential components in the

form of information stored in a central register at a depository. These normally include the security's identification code, the name of the issuer of the security, a designation of the issuer's liability arising out of the security, par values and dates. Additional information which may be recorded by the depository includes rights and restrictions in relation to the securities, such as restrictions on transferability, ban on disposals, third party rights if any including liens, pre-emptive rights, options to purchase and entitlement to dividends and other yields.

48. Although there are variations between jurisdictions, the key participants in a dematerialized securities system are the depository (sometimes also referred to as "custodian"), the issuer, trading intermediaries and the investor. The depository is an organization whose primary function is to maintain an electronic system of accounts in a central registry. This central registry contains a record of the holdings of dematerialized securities and the rights and restrictions arising therefrom, which are held by depositary participants on behalf of investors at any time. Trading intermediaries are normally financial institutions, brokers and other entities authorized to be members of the depository and who hold accounts with the depository.

49. Generally, when an issuer of securities desires or is otherwise compelled to dematerialize its securities, the issuer will provide the depository with the relevant consent to henceforth hold and account for those securities in its central register while the issuer continues to meet all liabilities towards the holders of their securities. The issuer will also provide the depository with all relevant information, which includes the essential components of a dematerialized security and the names of the beneficiaries of each security, as well as fulfill any other requisite pre-conditions.

50. Apart from maintaining the central registry and any immobilization of securities, the depository may also undertake the function of clearing and settlement where this is not undertaken by another organization. Clearing refers specifically to the processing of a trade and establishing what the investors owe each other as a result of that trade. Settlement refers to the transfer of value between the investors so as to complete the transaction. If a separate organization is used for clearing and settlement, the role of the depository is limited to the maintenance of the central register of information. In the United States, for example, a separate organization known as the "National Securities Clearing Corporation" has been set up to undertake this function.

51. In any securities transaction, investors who trade in dematerialized securities through their trading intermediaries will do so in a recognized securities market such as the stock exchange. Details of these transactions on any given day will normally be transmitted automatically to the depository for clearing and settlement and, if not, trading intermediaries will inform the depository on their own accord. Once details of these transactions are transmitted to the depository, the clearing and settlement process begins and trading intermediaries will begin to deal directly with the depository.

52. The clearing and settlement process is normally based on a delivery versus payment principle to be settled on a specified number of days after the trading day. In some jurisdictions, settlement may take place on the third day, in others on the

fifth day after the trading day ("settlement day"). This implies that. on the third or fifth day, payments will have to be made by the buying investors and securities will have to be transferred from the selling investors to the buyers while the end result is reflected in the central register.

53. In the interim period prior to settlement day, the depository will transmit computerized reports to all trading intermediaries. These reports are legally binding documents containing every buy and sell order made on the day of trading reported by the securities market and the trading intermediary. The purpose of this is to allow the depository participants to confirm and make corrections. The depository will then proceed to process the net securities being traded by multiple trading intermediaries and the net amounts due by each trading intermediary, or rather the balance of securities and payments due or owed by each trading intermediary on behalf of their respective investors. This net settlement information is also transmitted to the trading intermediaries.

54. The transmission of instructions and information during the clearing and settlement process is conducted through various secure communication networks such as S.W.I.F.T. or Cedcom. These instructions may be checked against validation rules such as the International Securities Identification Number (ISIN) to ensure its accuracy. ISIN is a code that uniquely identifies a specific securities issue. The organization that allocates ISINs in any particular country is the National Numbering Agency (NNA), which is typically a recognized stock exchange.

55. On settlement day, the depository causes the accounts of each trading intermediary to reflect the net settlement of securities by re-allocating securities from the accounts of the net sellers to the net buyers by electronic means. Trading intermediaries also meet the net financial obligations of each investor by wiring funds between designated settling banks. The intended transfer of dematerialized securities is completed when the latest securities holding information is entered into the central register at the depository but the transfer of ownership is recognized as of the date of the transaction.

56. A study on issues of cross-border securities settlements prepared by the Bank for International Settlements in 1995[32] points out that there are considerable differences among countries with regard to the legal framework applying to the ownership, transfer and pledging of securities. The legal framework for multi-tiered systems falls into one of two general types: one applies the conventional legal framework for securities to book-entry systems by presuming the existence of physical securities; the other builds a new legal framework for "dematerialized" securities that are issued solely in electronic form. The first type of arrangement relies on a legal fiction to fit book-entry securities into a paper-based legal theory. The law pretends that the securities exist in physical form. Ownership rights and the transfer and pledging of book-entry securities are then explained in terms of "possession" and "delivery" through the mechanisms of immobilization or global certificates, in which physical securities are deemed to be deposited and kept in fungible (interchangeable) form. An investor shown on the books of the intermediary is regarded as having "physical possession" of the respective securities and, as a consequence, acquires a "property interest" in them. The completion of book entries is deemed to have the same effect as physical delivery

of the relevant securities.

57. A legal arrangement created for entirely dematerialized securities, in turn, may take one of several approaches. The fungible nature of book-entry securities may be explicitly recognized, leading to a new characterization of the investor's property interest. The investor may be treated as a co-owner of all the securities of the type it has purchased that are held by the intermediary. The investor then retains a specific property interest in the securities but can only claim it on a proportional basis. However, where a different model is used, the legal arrangement may instead deprive the investor of its property interest in the securities and place it in a debtor/creditor relationship with the intermediary. In that case, the deposit of securities becomes analogous to a bank deposit with special characteristics. In such an arrangement, the investor's interest may be further refined. The investor's claim may be secured with the specific assets held for the investor serving as collateral for the claim. Alternatively, the investor may become part of a preferred class of creditors, with a claim that is secured generally by all securities held by the intermediary for customers.

58. The expanding trade in dematerialized securities has raised various questions regarding the nature of the securities and the relationships between the parties involved. In some instances, the new medium has led to a redefinition of legal concepts traditionally applied in securities transactions, including, in some cases by legislative action. A study conducted by the French National Council of Credit and Securities[33] has identified the following main issues, and the answers, as appropriate, that have been given to them in practice:

(a) *Legal nature of securities*. Investment securities issued in paper form had traditionally been regarded as corporeal moveable goods that incorporated or represented certain rights (e.g. a credit against the issuing company or shareholder's rights). Without the paper support, it became necessary to reclassify investment securities as intangible property;

(b) *Nature of rights established by a book entry.* As long as investment securities were regarded as tangible property, the rights of the holder in the securities were typically regarded as property rights. That understanding was questioned in the case of dematerialized securities, which often are not individualized, being sometimes not even susceptible of being individualized;

(c) *Effect of book entry.* The introduction of an intermediary between the issuer of the securities and their holder has raised the question as to whether the record of issuance or transfer of the securities in the depository's accounts (book entry) was simply a means of evidencing the rights of the holder or whether it was constitutive of such rights;

(d) *Nature of contract between depository and investor.* As long as investment securities were represented by paper documents, it had been held that the relationship between the holder and the depository of the certificates was assimilated to the relationship between a bailor and a bailee. The absence of a tangible instrument capable of being physically or constructively possessed by either party has given rise to doubts as to the nature of the contract between depository and investors and the extent of the latter's remedies in case of breach by

the depository.

59. The aforementioned study by the Bank for International Settlements[34] indicates that market participants have made considerable efforts to simplify the flow of securities across borders through the development of global custody networks, international central securities depositories (ICSDs) and links between national central securities depositories (CSDs). The availability of book-entry settlements makes it possible for settlement systems, CSDs and custodians to offer comparable settlement services in a wide range of national markets. However, the comparability of settlement services masks important distinctions between the legal frameworks that may be applied to the same securities in different countries. That study has identified a number of important legal issues that arise in connection with cross-border securities settlements.[35] The main issues of direct relevance for the purposes of this note are briefly summarized below:

(a) *Involvement of intermediaries.* Most securities transactions involve multiple intermediaries for the settlement and custody of securities, which are interposed between the issuer of a security and the ultimate investor. The involvement of each of these intermediaries creates new legal relationships and risks. The intermediaries may become insolvent, act negligently or commit fraud. The issuer seeks discharge of its obligations, but risks performing to the wrong party. The investor risks diversion of the issuer's performance to creditors of one of the many intermediaries involved along the way;

(b) *Accounting practices.* The accounting practices and safekeeping procedures employed by the custodian and sub-custodians may be the most important factors in determining the investor's risk of loss. Separation (segregation) of the investor's assets from the assets of the custodian and other investors is often the key to protecting the investor's interests. This separation can be accomplished in a number of ways. Traditionally, segregation involved the physical separation of securities certificates in the custodian's vault. However, the prevalence of book-entry securities and immobilized global certificates has increased reliance on accounting entries to identify and separate customer interests. There is a risk that custodians and sub-custodians, although making appropriate debits and credits to the investor's accounts, may not have sufficient securities to support the total number of accounting entries they make. Shortfalls in custodial holdings may develop for a number of reasons: inefficiencies in the settlement process, poor accounting controls, or intentional fraud. If the custodian is solvent, the risk of loss from direct acts of the custodian may be small. If, however, the custodian is insolvent, or the shortfall arises from fraud or insolvency on the part of a sub-custodian or depository, the investor's risk of loss may be severe;

(c) *Legal nature of securities.* The wide variation among countries in their legal treatment of securities raises significant issues for cross-border securities transactions. For example, dematerialized securities issued in one country may be handled in the book-entry system of a second country that relies on an immobilization scheme and the legal fiction of possession. In that case, it may be unclear whether the dematerialized securities qualify as securities in the second country. If they do not, the transferee of the dematerialized security may acquire a legal interest, which is significantly different from the one it expected. The question of a security's status under the law becomes critical if an intermediary

becomes insolvent. Further difficulties arise in connection with depository receipts. These are instruments that are issued in one country to establish entitlement to a security held in custody in another country. Depository receipts are then traded and settled in the domestic market in place of the foreign securities that they represent. However, the legal status of these "quasi-securities" is not always clear. For example, a depository receipt may not entitle the investor to make a claim on the issuer of the original securities; it may only symbolize a claim on the intermediary or serve as evidence of a debtor/creditor relationship between the intermediary and the investor. Moreover, it is not clear what happens to depository receipts if the underlying securities are invalid, or if depository receipts are over-issued relative to the amount of the underlying securities.

60. In addition to the issues mentioned above, the study of the Bank for International Settlements discusses a number of other problems in connection with cross-border securities settlements, including systemic risks, conflict-of-laws problems, difficulties in establishing finality of delivery and payment and problems related to the bankruptcy of participants in the system. Although these problems are not specifically related to or caused by the use of electronic records or messages, they are aggravated by the complexities of dematerialization.

### 3. Electronic warehouse receipts

61. Another recent experience with electronic substitutes for paper-based instruments was the introduction of electronic warehouse receipts in some jurisdictions within the United States. Producers of agricultural commodities in the United States usually store their product in public warehouses. Warehousing of agricultural commodities in most cases involves a grain dealer who trades in the same stored commodities in the ordinary course of business.

62. Public warehouses typically operate under licenses issued by the United States Department of Agriculture under the United States Warehouse Act, or by a state agency under the pertinent state warehousing licensing law. In 1990, the United States Congress authorized the Secretary of Agriculture to create a central filing system for electronic warehouse receipts for cotton. The system was not made mandatory for federally licensed cotton warehouses, but those warehouses that had the required technology could use the central filing system. In 1992 the Secretary's authorization was broadened so as to include electronic receipts issued by state-licensed warehouses. The electronic warehouse receipt system for cotton began to operate on a commercial basis at the start of the cotton crop year 1995-1996.

63. Electronic warehouse receipts are computer records of the information that is required on a paper-based warehouse receipt. That data record is stored on the disk of a secure computer system operated by a provider that has to be approved by the United States Department of Agriculture, through the Farm Agency Service, as meeting specific operating standards. Electronic warehouse receipts may only be created through an approved provider. Specific regulations governing electronic warehouse receipts are contained in Chapter VII, Part 735, of the United States Code of Federal Regulations.

64. Initially, a warehouse creates a file of receipt records and transmits that file via telephone to the provider's computer system. The records become legal receipts when stored on the computer. The warehouse is the initial holder and can transmit instructions to the provider to make another party the new holder. The provider sends confirmation of these transactions to the sending and to the receiving holders. An electronic warehouse receipt can have many holders during its existence but can only have one holder at any specific moment. The electronic warehouse receipt comes to an end when a shipper-holder transfers his receipts back to the issuing warehouse (who then becomes the holder) along with instructions regarding shipment of the physical bales. As the warehouse ships the bales, it sends instructions to the provider's computer to cancel the appropriate electronic receipts. Based on these directions from the warehouse, the provider marks the receipt record as canceled and a legal receipt no longer exists.

65. In accordance with the United States Code of Federal Regulations, § 735.101, electronic warehouse receipts issued thereunder "establish the same rights and obligations with respect to a bale of cotton as a paper receipt." It provides further that with the exception of the requirement that warehouse receipts be issued on paper, all other requirements applicable to paper warehouse receipts shall apply to electronic warehouse receipts.

66. Each receipt record is associated with a party (the "holder") who has access to that receipt record. The identity of the holder must be included as additional information for every electronic warehouse receipt. An electronic warehouse receipt may only designate one holder at any one time. The person identified as the "holder" of an electronic warehouse receipt is entitled to the same rights and privileges as the holder of a paper warehouse receipt. Only the holder of the receipt may transfer the receipt to a new holder. This is accomplished by the holder informing by computer the provider as to who the new holder should be.

67. Holders and licensed warehousemen may authorize any other user of a provider to act on their behalf with respect to their activities with such provider. Such authorization must be in contained in a paper document, acknowledged, and retained by the provider.

68. An electronic warehouse receipt may only be issued to replace a paper receipt if the current holder of the warehouse receipt agrees. An electronic warehouse receipt may not be issued for a bale of cotton if another receipt, paper or electronic, on such bale is outstanding. No two warehouse receipts issued by a licensed warehouse may have the same receipt number.

69. Licensed warehousemen may cancel or correct information on the electronic warehouse receipts only when they are the holder of such receipts. Prior to issuing electronic warehouse receipts, each warehouseman shall request and receive from the Service a range of consecutive warehouse receipt numbers, which the warehouseman shall use for the electronic warehouse receipts it issues. If a warehouseman has a contract with a provider, all warehouse receipts issued by the warehouseman shall initially be issued as electronic warehouse receipts.

70. The Code of Federal Regulations, § 735.102, sets forth the provider requirements and standards for applicants. All providers to be approved must have

a net worth of at least $25,000, and maintain two insurance policies; one for "errors and omissions" and another for "fraud and dishonesty"; each policy with a minimum coverage of $2 million. Providers are also required to enter into a provider agreement with the Farm Service Agency, which must, *inter alia*, contain provisions on the retention period for records, the liability of the provider and security standards. The Secretary of Agriculture reserves the right to suspend or terminate a provider's agreement for cause at any time.

71. Providers are required to submit to the Secretary of Agriculture an annual audit level financial statement and an electronic data processing audit. The electronic data processing audit must result in an evaluation as to current computer operations, security, and disaster recovery capabilities of the system. The provider has the responsibility for maintaining the integrity of the system. Security devices typically include a series of identification codes and passwords utilized to ensure that only authorized holders have access to their receipts. Providers are required to maintain security copies of the system off-site and to maintain both on-site and off-site record security in case the provider's primary system fails.

72. The new system has also simplified trading on the New York Cotton Exchange (NYCE). Prior to the introduction of electronic warehouse receipts, the traders at NYCE settled their futures contracts by tendering paper-based receipts. The paper receipts had to be sorted by hand and the data manually keypunched into computers, since the document was not designed to be used with a computer card reader. Thus, paper receipts actually had to be physically transported to New York City for delivery among traders. NYCE kept records of when receipts were issued, whether they were tenderable and when they were canceled. Under the new system, instead of physically moving paper receipts to NYCE, cotton traders use an electronic receipt provider, to deliver so-called "certified receipts" to the Commodity Clearing Corporation, which is the clearing arm of NYCE. The Commodity Clearing Corporation then forwards the receipts to the appropriate party. In order to help track such receipts, NYCE receives both daily and weekly summary reports directly generated by the provider.

73. The provider's electronic receipt system has been adjusted to enable traders to identify those receipt deliveries involving only certified receipts.[36] "Certified receipts" represent bales of cotton which already have been classified by one of the Agricultural Marketing Services of the United States Department of Agriculture as meeting the highly specific criteria required for trading in the NYCE. Only such bales are "tenderable" on the NYCE and can be used to close out a futures contract position on the NYCE futures when that cotton contract becomes due. Certified receipts can only be issued by warehouses approved by the New York Cotton Exchange.

74. The experience with electronic warehouse receipts appears to have been highly positive. Since the introduction of the system, it is estimated that about 45% of the cotton crop in the United States have been handled with electronic receipts. One of the first providers of electronic warehouse receipts, a private company established in 1994 by a group of leaders from the warehouse and merchandising segments of the cotton industry, is reported to have handled over 5.7 million receipts - 30 percent of the crop - in its first six months of operations.[37] Following the successful use of electronic warehouse receipts for the storage and trade in

cotton, consideration is being given to extending the system to other agricultural commodities as well. The laws of at least three jurisdictions enable generally the use of electronic warehouse receipts not only for cotton, but also for other agricultural commodities.[38]

### 4. Electronic equivalents of bills of lading: the Bolero project and other developments

75. During the past few years, many attempts have been made by a number of international organizations, whether intergovernmental or non-governmental, and by various groups of users of electronic communication techniques to reproduce the functions of a traditional paper-based bill of lading in an electronic environment. The following paragraphs focus on the progress made in recent years with the Bolero System.[39]

76. The initial "Bill of Lading for Europe (Bolero)" pilot project was funded in part by the European Union in the context of its Infosec Program (DGXIII) and in part through commercial partners. It constitutes one of the latest attempts "to replicate the negotiable bill of lading electronically by employing sophisticated electronic security measures." According to the authors of the project, "[i]n handling all additional trade documentation Bolero offers the shipping world the opportunity to have completely paperless systems with attendant cost savings and customer service improvements." The Bolero system became operational in September 1999.

77. The potential users of a Bolero system, including exporters, importers, shipping companies, freight forwarders and banks have allocated central functions to two distinct corporate entities, the Bolero Association and Bolero International Limited:

(a) *Bolero Association*. The Bolero Association is comprised of all users of the Bolero System and is mainly responsible for the ongoing development of the System, including its legal-infrastructure components. The Bolero Association also fosters development of common functional standards and interoperability among Bolero users in cooperation with Bolero International. To ensure that all users are subject to the same set of rules, the Bolero Association acts on behalf of all users in contractually obligating a new user to comply with the system rules. The Bolero Association further determines the eligibility of applicants for enrolment into the Bolero System and is responsible for ensuring compliance with the rules of the system;

(b) *Bolero International*. Bolero International operates the central technological components of the Bolero System such as the messaging system, the transaction centre for electronic bills of lading, user and system administration tools, and other similar functions. Bolero International carries out most of the work of fostering new enrolments and informing prospective users about the Bolero System. All transactions in the Bolero System pass through a common gateway operated by Bolero International, which ensures that all participants are subject to the system-wide rules and that all transactions meet minimum agreed requirements regarding security and interoperability.

78. The Bolero system is based on international standards such as X.400 telecommunications standard, X.500 Directory standard and EDIFACT messaging and also the CMI Rules for electronic bills of lading. The Bolero system relies on a store-and-forward messaging system, with users communicating with each other through a central registry application with standard EDI messages. The Bolero System is a closed system in that only subscribers are permitted to use it.

79. Users of the Bolero System are required to accept the terms of the Bolero Rulebook. Appended to the Rulebook are the Operating Procedures, which is a detailed description of Bolero System operations with a few specific and technical rules to ensure that the technology and legal infrastructure mesh together without gaps or inconsistencies. Operational Service Contracts provide for the services that Bolero International supplies, as well as for system security, information dissemination and retention, and similar rights and duties involved in a central information service. A service contract governs the rights and obligations of the Bolero Association and its members and participants.[40]

80. One of the key components of the Bolero system is a registry for Bolero Bills of Lading (BBLs), which will store data on behalf of the users of the Bolero system. A Bolero Bill of Lading is designed to replicate the essential business functions of a bill of lading via fast, efficient electronic messaging tracked in a central database operated by a trustworthy third party. A Bolero Bill of Lading consists of two components, both of which are entirely electronic:

(a) *Bolero Bill of Lading.* The Bolero Bill of Lading is a document in electronic form similar to a conventional bill of lading as issued by a carrier to a shipper. This document may be claused or clean, indicate receipt on board or for shipment, and so on, in accordance with usual maritime practices. It can incorporate the carrier's general terms and conditions by reference;

(b) *Title Registry Record.* The Title Registry is a register of holders of rights under the Bolero Bill of Lading, not of legal title of the cargo. Accordingly, the registry holds a record for each consignment, which is updated when secure instruction messages are received from the holders of rights to the consignments. In addition to providing the mechanism for exchanging information in the form of electronic data, the registry records the details of Bolero Bills of Lading and is intended to permit the transfer of rights over goods in transit. The Registry is a passive store of the electronic data and only the holder of the rights is able to transfer those rights to another user. The Registry authenticates the identity of the originator of the data and the holder of the rights and provides a security structure to prohibit interference with the data. The Title Registry Record carries out transactions involving the Bolero Bill of Lading after it is created. The Bolero Bill of Lading may be transferred by changing the roles that users have in the Title Registry Record. Users also surrender the Bolero Bill of Lading or switch it to paper through entries in the Title Registry Record.

81. The legal relationships among all parties involved are set forth in the Bolero Rulebook,[41] which deals, *inter alia*, with the validity of electronic transactions and the legal effect of Bolero Bills of Lading. The Bolero Rulebook establishes security procedures to ensure that the entitlements were generated, authenticated and transferred only by the authorized holder. For instance, Section

2.2.1 of the Rulebook requires all users of the Bolero system to digitally sign their messages, which is done by using private keys duly certified for use within the system. By adhering to the terms of the Rulebook, Bolero users agree to accept the evidential admissibility of electronic data and messages and are estopped from repudiating Bolero messages they send. The Rulebook makes it possible to incorporate, directly or by reference, the provisions of underlying contracts, notably the carriage contract and the letters of credit, so as to bind parties who are liable and to benefit those intended to receive the rights.

82. A Bolero Bill of Lading is designed to replicate the functions of a physical bill of lading as evidence of a contract of carriage, a receipt for the goods, and a document representing the entitlement to possession of the goods. A Bolero Bill of Lading is also intended to offer a means of transferring the contract of carriage. Transfer of the shipper's interest in the goods is effected through attornment, that is, the transfer by the bailor of its rights in the bailed property. As bailor, the shipper is held to have "constructive possession" of the goods. For that transfer, the current constructive possessor attorns its interest in the bailed goods to a successor. Section 3.4.1(1) of the Bolero Rulebook provides that the transfer of constructive possession of the goods, after the creation of a transferable Bolero Bill of Lading, shall be effected by the designation of a new holder (either as a new "holder-to-order", "pledgee holder", "bearer holder", or "consignee holder"). The designation of a new holder becomes effective, as provided in Section 3.4.1(2), by means of an acknowledgement, by the carrier, that from that time on it holds the goods described in the Bolero Bill of Lading to the order of such new holder. It is envisaged that transfer of the contract of carriage evidenced by a Bolero Bill of Lading is achieved through novation. Each carrier in the Bolero System appoints Bolero International to act as its agent, and Bolero International re-makes each contract of carriage on behalf of the carrier with each new transferee.

83. Thus, an example of a sale of goods financed with a documentary credit using the Bolero system may be as follows: Upon receipt of the cargo from the seller, the carrier creates a Bolero Bill of Lading and designates the seller as the "shipper and holder" of the Bolero Bill of Lading and the importer as the "to order party". The seller sends a message to the registry designating the confirming bank of the documentary credit as the pledgee holder of the Bolero Bill of Lading and sends on the required documents via digitally signed Bolero messages. The confirming bank examines the Bolero Bill of Lading, finds it in order, credits the seller's account, and designates a bank that issued the documentary credit as the new pledgee holder. The issuing bank performs any additional checking of the documents that it requires and charges the importer's account. The issuing bank then relinquishes its pledge and, by message to the registry, designates the importer as the holder of the Bolero Bill of Lading. The importer is already "to order party" for the bill, and now, as holder also, can transfer the bill. On behalf of the carrier, Bolero International notifies the importer that the carrier holds the goods to its order. The importer sells the goods in transit. Accordingly, the importer designates the buyer as the "holder-to-order" (i.e. both holder and "to order party") of the Bolero Bill of Lading. On behalf of the carrier, Bolero International notifies the holder-to-order that the carrier holds the goods to its order. The goods arrive at the destination port and the buyer surrenders the Bolero Bill of Lading. No further Bolero-based transactions are now possible for the Bolero Bill of Lading. Bolero International gives notice of surrender to the carrier and confirms surrender to the

buyer. The buyer's representative appears at the port with the proof of identification required by the carrier or port. The carrier delivers the goods to the buyer's representative.

84. The liability of Bolero International Ltd. is subject to the limitations and conditions set forth in the Operational Service Contract, which is entered into between individual users and Bolero International Ltd. Liability in connection with misdirection or loss of messages, delay in sending messages, alteration, incorrect identification, false creation, breach of confidentiality or other errors in connection with messages processed by Bolero International Ltd. is generally subject to a limit of US$ 100,000 per user per occurrence. The same limit applies to errors and service failures in connection with certificates issued by Bolero International Ltd. However, in the event that all certificates issued by Bolero International become unreliable or unsuitable for usage as stated in their documentary forms, and, as a direct result, the user suffers loss, Bolero International undertakes to pay damages to the user up to the limit of US$1,000,000. The aggregate limit of loss per calendar year is US$ 10,000,000.00 irrespective of the number of claims or of the number of users entitled to claim in any calendar year

85. The Bolero Rulebook is governed by English law, with a non-exclusive submission to the jurisdiction of the English courts. Where disputes relate solely to breach or non-compliance with the Rulebook, the jurisdiction of the English courts is exclusive. The legal feasibility of the Bolero System is said to have been the subject of an extensive study involving many of the world's principal trading jurisdictions.[42]

86. In addition to the Bolero System, other systems are being developed to provide electronic equivalents to replace paper documentation in international trade transactions. One such system is the Trade and Settlement EDI (TEDI) System, which is led by a project consortium composed of industrial, financial and commercial transnational corporations from Japan that are active in international trade transactions. According to the information available to the Secretariat, TEDI is a web-based system that allows participants to communicate and exchange data messages relevant to trade transactions through the Internet. Similarly to the Bolero System, TEDI contemplates the existence of third party service providers that maintain records of data messages transmitted though the system and maintains records of the status of cargo shipments to which those messages pertain. Data messages exchanged among participants in the TEDI system are intended to reproduce the functions of paper-based bills of lading. In order to ensure security and reliability of the system, data messages are attributed to participants through public key certificates issued by recognized certification authorities.

### 5. Attempts to develop an electronic equivalent of negotiable instruments: the United States Uniform Electronic Transactions Act

87. The Uniform Electronic Transactions Act (1999) was drafted by the National Conference of Commissioners on Uniform State Laws of the United States and approved and recommended by it for enactment in all the States. The Uniform Electronic Transactions Act (UETA) includes a provision on electronic equivalents of negotiable instruments.

88. The rationale for such a provision is explained in the official commentary to UETA as follows:

> "Paper negotiable instruments and documents are unique in the fact that a tangible token - a piece of paper - actually embodies intangible rights and obligations. The extreme difficulty of creating a unique electronic token which embodies the singular attributes of a paper negotiable document or instrument dictates that the rules relating to negotiable documents and instruments not be simply amended to allow the use of an electronic record for the requisite paper writing. However, the desirability of establishing rules by which business parties might be able to acquire some of the benefits of negotiability in an electronic environment is recognized by the inclusion of this section on Transferable Records."

89. Section 16, "Transferable records" of UETA establishes the criteria for the legal equivalence of electronic records to notes or records under Articles 3 and 7, respectively, of the Uniform Commercial Code. The essential criterion for such equivalence is that the electronic record needs to be of such nature that a person may exercise "control" over the record. Under Section 16 acquisition of "control" over an electronic record serves as a substitute for "possession" of an analogous paper negotiable instrument. More precisely, "control" under Section 16 serves as the substitute for delivery, endorsement and possession of a negotiable promissory note or negotiable document of title. Section 16(b) allows control to be found so long as "a system employed for evidencing the transfer of interests in the transferable record reliably establishes [the person claiming control] as the person to whom the transferable record was issued or transferred." The key point, as indicated in the official commentary, is that "a system, whether involving third party registry or technological safeguards, must be shown to reliably establish the identity of *the* person entitled to payment."

90. A person is considered to have control of a transferable record "if a system employed for evidencing the transfer of interests in the transferable record reliably establishes that person as the person to whom the transferable record was issued or transferred". This requirement is further elaborated as follows:

> "(c) A system satisfies subsection (b), and a person is deemed to have control of a transferable record, if the transferable record is created, stored, and assigned in such a manner that:
>
> > "(1) a single authoritative copy of the transferable record exists which is unique, identifiable, and, except as otherwise provided in paragraphs (4), (5), and (6), unalterable;
> >
> > "(2) the authoritative copy identifies the person asserting control as the person to which the transferable record was issued; or the authoritative copy indicates that the transferable record has been transferred, the person to which the transferable record was most recently transferred;
> >
> > "(3) the authoritative copy is communicated to and maintained by the person asserting control or its designated custodian;

> "(4) copies or revisions that add or change an identified assignee of the authoritative copy can be made only with the consent of the person asserting control;
>
> "(5) each copy of the authoritative copy and any copy of a copy is readily identifiable as a copy that is not the authoritative copy; and
>
> "(6) any revision of the authoritative copy is readily identifiable as authorized or unauthorized."

91. A person having control of a transferable record acquires the status of holder of the record, for the purposes of Section 1-201(20) of the United States Uniform Commercial Code (UCC), and has the same rights and defenses as a holder of an equivalent record or writing under the UCC, including the rights and defenses of a holder in due course, a holder to which a negotiable document of title has been duly negotiated, or a purchaser, respectively. Delivery, possession, and endorsement are not required to obtain or exercise any of the rights under this subsection.

92. The definition of transferable record is limited in two significant ways. Firstly, only the equivalent of paper promissory notes and paper documents of title can be created as transferable records. Therefore, Section 16 of UETA does not impact the systems that relate to the broader payments mechanisms related, for example, to checks. The official commentary explains the rationale for the limitation as follows: "[i]mpacting the check collection system by allowing for 'electronic checks' has ramifications well beyond the ability of this Act to address. Accordingly, this Act excludes from its scope transactions governed by UCC Articles 3 and 4." Secondly, not only is Section 16 limited to electronic records which would qualify as negotiable promissory notes or documents if they were in writing, but the issuer of the electronic record must expressly agree that the electronic record is to be considered a transferable record. The purpose of such a restriction is to assure that transferable records can only be created at the time of issuance by the obligor. The possibility that a paper note might be converted to an electronic record and then intentionally destroyed, and the effect of such action, was not intended to be covered by Section 16.

93. The official commentary suggests that control requirements may be satisfied through the use of a trusted third party registry system, but "a technological system which met such exacting standards would also be permitted under Section 16."

94. According to the official commentary, section 16 "provides legal support for the creation, transferability and enforceability of electronic note and document equivalents, as against the issuer/obligor." The certainty created by the section provides "the requisite incentive for industry to develop the systems and processes, which involve significant expenditures of time and resources, to enable the use of such electronic documents." Thus far, no existing system appears to fully meet the stringent standards set by UETA section 16. An evaluation of UETA section 16 has come to the following conclusions:

> "Meeting those standards will not be an easy task, and will require a carefully designed and supervised set of systems and practices. The key element will be data integrity. Courts evaluating the control of a transferable record may be expected to focus on the systemic protections – e.g. division of labour, complexity of backup systems, activity logs, security of copies stored offsite to verify content – which make it difficult to tamper with the record without detection." [43]

**Conclusions**

95. As noted earlier, developing electronic equivalents of traditional, mainly paper-based, methods for transferring or creating rights in or tangible goods or intangible property may face serious obstacles where the law requires physical delivery of goods or of paper documents for the purpose of transferring property or perfecting security interests in such goods or in the rights represented by the document (see paras. 33-37). The particular problem presented by electronic commerce is how to provide a guarantee of uniqueness (or singularity) equivalent to possession of a document of title or negotiable instrument.

96. It should be noted that this is not the first time the Working Group considers these issues. In fact, substantive discussion on the matter took place during the preparation of the Model Law on Electronic Commerce.[44] In an earlier Note by the Secretariat conveying a proposal by the United Kingdom of Great Britain and Northern Ireland[45] it was pointed out that modern technology makes it possible to transmit information in electronic form satisfactorily down a chain of parties. The same process could conceivably be used by any of the parties to transmit the information that it renounces its title in favour of another person, thus amounting to an endorsement of the instrument. However, if a person is to receive an exclusive benefit, such as possessory title, by receiving a particular electronic message, the addressee will need to be satisfied that no identical message could have been sent to any other person by any preceding party in the chain, creating the possibility of other claimants to the title. It is true that no electronic message can be actually the very same message as another; but so long as it is technically possible for a message, with no possibility of detection, to be replicated exactly and sent to someone else, there could be no guarantee of singularity.

97. That note acknowledged that techniques, such as those based on a combination of time-stamping and other security techniques, had come close to proving a technical solution to the problem of singularity. But until an entirely satisfactory solution was found, electronic equivalents of paper-based negotiability had to rely on "central registry" systems, in which a central entity managed the transfer of title from one party to the next.[46]

98. The Working Group may wish to consider the desirability of developing harmonized rules to support the development of electronic registry systems, which, in the absence of a technical solution guaranteeing the singularity of data messages, are a common feature of all recent initiatives for developments for transferring property rights and other rights through electronic means (see paras. 39-94). Such registry systems may be divided into three main categories, as pointed out in an earlier Note by the Secretariat conveying proposals for future work by the United States of America:[47]

(a) *Governmental registries.* An agency of the State records transfers as public records, and may authenticate or certify such transfers, as in the case of the electronic registration of real estate in Canada. For public policy reasons, the State is usually not liable for any errors, and the cost is borne through user fees;

(b) *Central registries.* Central registries are established where a commercial group conducts its transactions over a private network (such as SWIFT), accessible only to its members. This type of registry, which has been used for the various securities settlement systems, has been found necessary where security and speed are critical. Its limited access permits party verification to be done quickly thereby facilitating speed and enhancing security. Access to the actual records of the transactions is usually limited to the users, but summaries of the transactions can be reported publicly in summary form (as in securities trading). The rules of the network usually govern the liabilities and costs. Depending on the jurisdiction concerned, such rules may be of a contractual nature or may have regulatory character by way of legislative endorsement;

(c) *Private registries.* These registries are conducted over open or semi-open networks, where the issuer of the document, its agent (as in the systems of electronic warehouse receipts in the United States) or a trusted third party (as in the Bolero System) administers the transfer or negotiation process. The records are private, and the costs may be borne by each user. Liability parallels the present practice with paper, in that the administrator is obliged to deliver to the proper party unless excused by another party's error, in which case local law may apply. Such systems may be based exclusively or primarily on contractual arrangements (as in the Bolero System) or be derived from enabling legislation (as in the systems of electronic warehouse receipts in the United States).

99. International experience has shown that these categories of registry are complementary, rather than mutually exclusive. Indeed, different types of transactions may require the development of different registry systems. Therefore, the Working Group may wish to focus on the areas that are more likely to benefit from an internationally harmonized legislative framework, rather than on the type of registry system used.

100. One possible area might include general or asset-specific registries of transfers of title or security interests in international transactions. In that connection, the Working Group may wish to take note of other ongoing projects of the Commission and other organizations. One such project is the draft Convention on assignment of receivables in international trade, which envisages, in its annex, the establishment of a registration system for the registration of data about assignments covered by the draft Convention. The draft Convention is expected to be adopted by the Commission at its thirty-fourth session, in 2001. In addition to the draft Convention, the Secretariat is currently preparing a study on legal problems in the field of secured credit law, including security interests in investment securities, and the possible solutions for consideration by the Commission at its thirty-fourth session, in 2001. Pursuant so a suggestion made at the Commission's thirty-third session, in 2000, that study might consider issues related to the establishment of an international register of security rights.[48] Another initiative that the Working Group may wish to take into account, is the draft

convention on international interests in mobile equipment currently being prepared by the International Institute for the unification of Private Law (Unidroit) ("the draft Unidroit convention") and other organizations.[49] The draft Unidroit Convention and the protocols thereto deal in an industry-specific way with remedies upon default of the debtor and introduce a priority regime based on international, equipment-specific registries. The Working Group may wish to await the outcome of those ongoing projects in order to evaluate better the need for specific rules dealing with electronic registries that might cover secured transactions.

101. Another possible are of work relates to registry systems for securities transactions. The analysis of the legal issues that arise in connection with cross-border transactions in dematerialized securities (see paras. 58-59) indicates that the functioning of central registries might benefit from the development of an internationally harmonized legislative framework. However, most of the legal problems that have thus far been identified in connection with dematerialized securities are not primarily a function of the use of electronic messages, as they are closely related to conflicts of law or to substantive law issues regarding, for instance, the legal nature of dematerialized securities or the rights and obligations of the various categories of intermediaries. In this connection, the Working Group may wish to consider the following:

(a) *Conflict-of-laws issues.* The Working Group may wish to note that the Special Commission on General Affairs and Policy of the Hague Conference on Private International Law, which met from 8–12 May 2000 in The Hague, recommended, *inter alia*, that "the question of the law applicable to the taking of securities as collateral" be included, with priority, in the Conference's agenda for future work.[50] Following that recommendation, the Secretary General of the Hague Conference has convened a group of experts to meet from 15 to 19 January 2001 in order to examine the possibility of preparing and adopting, through a "fast-track" procedure, a new instrument dealing in particular with the issue of the law applicable to the proprietary aspects of collateral transactions effected through indirect holding systems.[51]

(b) *Substantive law issues.* Pursuant to a request by the Commission,[52] the Secretariat is currently preparing a study on legal problems in the field of secured credit law, including security interests in investment securities, and the possible solutions for consideration by the Commission at its thirty-fourth session, in 2001. Issues more specifically related to the use of electronic means of communication (such as conditions for cross-border recognition of records; standards of trustworthiness of registry keepers and certification services providers; liability) are inseparable from policy concerns on matters such as capital market regulation, inter-bank settlements and monetary policy. The Working Group may thus wish to consider whether such a wide range of issues may be accommodated within the mandate that it has received from the Commission.

102. A third area for possible work relates to registry systems established to administer the transfer and registration process of documents of title such as warehouse receipts and bills of lading. The review of international practice has indicated a preference for the use of private registries in those cases. It is conceivable that similar systems might be developed for negotiable instruments,

which is anticipated by section 16 of the Uniform Electronic Transactions Act of the United States. Transfer of title to tangible goods, or creation of security interests in tangible goods often requires transfer of physical or symbolic possession of such goods (see paras. 15-18 and 22-23). The development of documents that represent such goods has greatly facilitated the movement of goods in international trade. That result was legally possible by legislative recognition of the function of transport and warehousing documents as substitutes for physical delivery of the goods. A similar conclusion may be reached in connection with the function of the endorsement of negotiable instruments such as letters of exchange and promissory notes. Systems whereby title to goods and receivables might be transferred by means of electronic messages, without creation and circulation of paper documents, might result in significant savings in the overall cost of trade transactions. To a large extent, practical solutions may be crafted by contractual arrangements binding upon the users of any such systems. However, voluntary rules, upon which some systems may be based, "give way when they conflict with a State's laws"[53] and may not be enforceable against or binding upon third parties.

103. The Working Group may therefore wish to consider the extent to which voluntary systems by which parties to commercial transactions agree to use the services of a trusted third party to administer the transfer or negotiation process in respect of tangible goods and other rights might be supported by, or benefit from, the development of internationally harmonized legislative provisions.

104. Initial steps towards an internationally harmonized regime for electronic equivalents of paper-based documents of title were made with articles 16 and 17 of the Model Law on Electronic Commerce. Article 16 of the Model Law identifies key actions in connection with a transport of carriage of goods that might be performed by the transmission of electronic messages. Article 17, paragraph (3), of the Model Law lays down the essential requirements for the use of electronic messages as a substitute for paper documents in connection with the grant of rights or acquisition of obligations under a contract of carriage of goods. Consistent with the principle of technological neutrality, paragraph (3) does not require the use of any specific method or system for transferring rights by means of data messages, "provided that a reliable method is used to render such data message or messages unique."

105. "Creating a unique electronic document is challenging," as indicated in the annotations to Part 3 of the Uniform Electronic Commerce Act, which was adopted in 1999 by the Uniform Law Conference of Canada.[54] This difficulty, and the relatively limited experience with the technical solutions thus far developed, may explain why, with the exception of Canada and Colombia, most jurisdictions that have so far enacted the Model law on Electronic Commerce have chosen not to adopt provisions modeled after its articles 16 and 17. The Working Group may wish to consider the desirability of developing a more detailed set of rules for the implementation of the general principles set forth in these provisions of the Model Law. The Working Group may also wish to focus, at least initially, on issues relating to the functioning of electronic registry systems, which, in the absence of a technical solution guaranteeing the singularity of data messages, are a common feature of all recent initiatives for developments for transferring property rights and other rights through electronic means (see paras. 39-94).

106. In that connection, the Working Group may wish to note that the Secretariat, in cooperation with the *Comité Maritime International* (CMI), is currently conducting a broad investigation of legal issues arising out of gaps left by existing national laws and international conventions in the area of the international carriage of goods by sea (a summary of that work is contained in A/CN.9/476). Those issues include questions such as the functioning of bills of lading and seaway bills, the relation of those transport documents to the rights and obligations between the seller and the buyer of the goods and the legal position of the entities that provided financing to a party to the contract of carriage. A report on the progress of that project since the 33rd session of the Commission will be presented by the Secretariat at the next session of the Commission (Vienna, 25 June-13 July 2001). The Working Group may wish to consider possible common and complementary elements between its mandate and that other ongoing project.

## Notes

[1] Official Records of the General Assembly, *Forty-ninth Session, Supplement No. 17* (A/49/17), para. 201.
[2] Ibid., *Fiftieth Session, Supplement No. 17* (A/50/17), para. 306.
[3] Ibid., para. 309.
[4] Ibid., *Fifty-fourth Session, Supplement No. 17* (A/54/17), para.317.
[5] Ibid., *Fifty-fifth Session, Supplement No. 17* (A/55/17), para. 386.
[6] Ibid., para. 387.
[7] Transfer by consent is the prevailing method in common law legal systems and, within the civil law tradition, in jurisdictions influenced by French law (for a comparative overview of methods of transferring moveable property, see Rodolfo Sacco, "Le transfert de la propriété des choses mobilières détérminées par acte entre vifs", *General Reports to the 10th International Congress of Comparative Law* , Péteri and Lamm, eds. (Budapest, Akadémiai Kiadó, 1981), pp. 247-268; see also Ulrich Drobnig, "Transfer of Property", *Towards a European Civil Code*, Hartkamp and others eds., 2nd ed. (The Hague/London/Boston, Kluwer, 1998), pp. 495-510; information on various legal systems may further be found in Alexander von Ziegler and others eds., *Transfer of Ownership in International Trade*, (Paris/New York, Kluwer,1999)).
[8] Transfer by delivery is the general rule in civil law jurisdictions that follow the Roman law distinction between title (*titulus*) and form (*modus*) of transfer, such as most Ibero-American legal systems, and in jurisdictions influenced by the German law or in codifications inspired by the German Civil Code.
[9] E.g. France (Code Civil, Articles. 1138, 1583, 938); Italy (Codice Civile, Art. 1376), Japan (Civil Code, Art. 176).
[10] This is particularly the case in common law jurisdictions, such as Australia (Alexander von Ziegler, *op. cit.*, p. 12), the common law provinces of Canada (*ibid.*,, p, 83), England (*ibid.*, p. 135).
[11] Legal Aspects of receivables financing: report of the Secretary-General (A/CN.9/397), para. 30 (*Yearbook of the United Nations Commission on International Trade Law,* Volume XXV: 1994 (United Nations publication, Sales No. E.95.V.20), part two, chap. V, sect. A).
[12] E.g. Germany (Bürgerliches Gesetzbuch (BGB), § 873 sect. 1) for immovable property.
[13] A/CN.9/397 (see endnote 8), para. 30.
[14] E.g. Austria (Allgemeines bürgerliches Gesetzbuch (ABGB), § 426, Germany (BGB, § 929 sect. 1), Greece (Civil Code Art. 1034), Netherlands (Dutch new Civil Code book 3, Art. 3:84 para. 1), Russian Federation (Civil Code, Art. 223, sect. 1), South Africa (Alexander von Ziegler, *op. cit.*, p. 330), Spain (Código Civil, Art. 609), Switzerland (Civil Code, Art. 714, sect.1).
[15] Netherlands.
[16] Germany.
[17] League of Nations, *Treaty Series*, vol. CXLIII, p. 259, No. 3313 (1933-1934).
[18] E.g. Austria (ABGB, § 427), Germany (BGB, § 930).
[19] The information provided in this section draws on conclusions reached at an earlier study by the Secretariat on security interests (A/CN.9/131, *Yearbook of the United Nations Commission on International Trade Law,* Volume VIII: 1977 (United Nations publication Sales No. E.78.V.7), part two, chap. II, sect. A) and on an earlier note by the Secretariat on article 9 of the Uniform Commercial Code of the United States of America (*Ibid*., part two, chap. II, sect. B). Although some details of the information contained in those documents may be dated, the review conducted by the Secretariat while preparing this note allows the conclusion that the basic principles and concepts set out in those documents are still relevant.
[20] A/CN.9/131, (*UNCITRAL Yearbook* 1977), p. 180.
[21] Ibid., p. 182.
[22] A/CN.9/WG.IV/WP.69 (*UNCITRAL Yearbook* 1996), part two, chap. II, sect. B), para.
[23]See Jeffrey B. Ritter and Judith Y. Gliniecki, "International Electronic Commerce and Administrative Law: The Need for Harmonized National Reforms", *Harvard Journal of Law and Technology*, vol. 6 (1993), p. 279.
[24]Ibid.
[25] See K. Bernauw, "Current developments concerning the form of bills of lading - Belgium", *Ocean Bills of Lading: Traditional Forms, Substitutes and EDI Systems*, A.N. Yannopoulos, editor (The Hague, Kluwer Law International, 1995), p. 114.
[26] Donald B. Pedersen, "Electronic data interchange as documents of title for fungible agricultural commodities", *Idaho Law Review*, vol. 31 (1995), p. 726.
[27] Law Society of Upper Canada, *Practice Directives for Electronic Registration of Real Estate Title Documents*, available at: www.lsuc.on.ca/edrdraftdirectives_en.shtml
[28] Electronic Registration (Ontario Regulation 19/99) section 2(2).

[29] Ibid., section 3.
[30] *Land Registration Reform Act* (1990), section 20.
[31] *Land Registration Reform Act* (1990), section 21.
[32] Cross-border Securities Settlement (Bank for International Settlements, March 1995), p. 50.
[33] Conseil National du Crédit et du Titre, *Problèmes juridiques liés à la dématéralisation des moyens de payement et des titres* (Paris, Banque de France, 1997), p. 122.
[34] Cross-border Securities Settlement (Bank for International Settlements, March 1995), p. 46.
[35] Ibid., p. 47-57.
[36] J.T. Smith, "Electronic cotton receipts are making trading efficient", 10 January 1998 (at http://www.texnews.com/1998/biz/jt0110.html)
[37] William Zarfoss, "Electronic cotton warehouse receipts increase efficiency", C*otton Grower* (May 1996).
[38] Georgia, State Warehouse Act, Title 10 Section 4-19; Indiana, Grain Buyers and Warehouse Licensing & Bonding Law, Section 25; South Carolina, State Warehouse System Law and Regulations, Section 39-22-80.
[39] Information on earlier initiatives, such as the Sea Docs experiment and the CMI Rules for Electronic Bills of Lading is provided elsewhere (see A/CN.9/WG.IV, WP.69) (*UNCITRAL Yearbook* 1996), part two, chap. II, sect. B).
[40] The documents mentioned are online at http://www.bolero.net/enrol/dow_docs.php3 and http://www.boleroassociation.org/dow_docs.htm.
[41] http://www.boleroassociation.org/downloads/rulebook1.pdf
[42] Copies of the study report are available from http://www.bolero.net/downloads/legfeas.pdf.
[43] R. David Whitaker, "Rules under the Uniform Electronic Transactions Act for an Electronic Equivalent to a Negotiable Promissory Note", *The Business Lawyer*, vol. 55 (November 1999), p. 449.
[44] See, in particular, A/CN.9/421(*UNCITRAL Yearbook* 1996), part two, chap. II, sect. A).
[45] A/CN.9/WG.IV/WP.66 (*UNCITRAL Yearbook* 1995), part two, chap. II, sect. D, No. 3), Annex II, para. 8.
[46] Ibid., para. 10.
[47] A/CN.9/WG.IV/WP.67 (*UNCITRAL Yearbook* 1995), part two, chap. II, sect. D, No. 3), Annex.
[48] Official Records of the General Assembly, *Fifty-fifth Session, Supplement No. 17* (A/55/17), para. 462.
[49] A summary of the work done thus far by Unidroit, and the latest English and French versions of the draft Convention and Protocols thereto are available on http://www.unidroit.org/english/internationalinterests/main.htm.
[50] See the *Conclusions of the Special Commission of May 2000 on General Affairs and Policy of the Conferenc*e, prepared by the Permanent Bureau of the Hague Conference, Preliminary Document No 10 of June 2000, for the attention of the Nineteenth Session, pp. 25-26 and 27; these Conclusions are available on the website of the Hague Conference (http://www.hcch.net) under the heading *Work in progres*s. See also Annex VI to the Conclusions, reproducing Working Document No 1 which introduced the joint proposal made by the Experts of Australia, the United Kingdom and the United States for the Hague Conference to develop a "short multilateral Convention clarifying applicable law rules for securities held through intermediaries" (p. 1 of Annex VI).
[51] Hague Conference on Private International Law, *Report on the Law Applicable to Dispositions of Securities Held Through Indirect Holding Systems*, prepared by Christophe Bernasconi (Prel. Doc. No 1 of November 2000 for the attention of the Working Group of January 2001), p. 61(available from http://www.hcch.net/e/workprog/securities.html).
[52] Official Records of the General Assembly, *Fifty-fifth Session, Supplement No. 17* (A/55/17), para. 463.
[53] A/CN.9/WG.IV/WP.67 (*UNCITRAL Yearbook* 1995), part two, chap. II, sect. D, No. 3), Annex.
[54] http://www.law.ualberta.ca/alri/ulc/current/euecafa.htm#3.