

Law Commission

ELECTRONIC COMMERCE: FORMAL REQUIREMENTS IN COMMERCIAL TRANSACTIONS

ADVICE FROM THE LAW COMMISSION

December 2001

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PART 1 INTRODUCTION

THE IMPORTANCE OF ELECTRONIC COMMERCE

- 1.1 Global electronic commerce revenue for 2000 was in the region of \$286 billion; a figure which was expected to increase to \$500 billion this year and to exceed \$3 trillion in 2004. This rapid increase reflects the fact that electronic commerce has a number of advantages over paper-based commerce: in particular, speed and reducing the cost of doing business.
- 1.2 The rapid rate of change which electronic commerce is bringing about means that reform of any legal obstacles to electronic commerce in the UK should be addressed as soon as possible if the UK is to enjoy the full benefits offered by electronic commerce and if UK businesses are to play a major role in the global electronic commerce markets.

THE NEED FOR A REVIEW

- 1.3 If the development of electronic commerce in the UK is not to be inhibited, it is essential that the law is reviewed to ensure that it is up to date and that it reflects both existing and anticipated developments in trading practices. If UK law does not keep up to date it may put UK companies at a competitive disadvantage, make the UK a less attractive place to do business, and mean that English law loses its status as the choice of law governing many international commercial contracts.
- 1.4 The UK's position in Europe also requires it to consider whether law reform is necessary. In particular, the UK must implement the Electronic Commerce Directive by 17 January 2002.
- 1.5 There are therefore a number of compelling reasons why a review of any legal obstacles to electronic commerce in the UK is necessary. This Advice considers the formal requirements which apply in relation to commercial matters in England and Wales, for example where the law requires 'writing', a 'signature', or a 'document', and asks whether electronic communications of various kinds are capable of satisfying these requirements or whether legislation is required.

THE INTERNATIONAL NATURE OF THE ISSUES

1.6 Electronic commerce is inherently global in nature. Many areas in which issues arise in relation to electronic commerce are governed by international conventions, rules or trade practices. Consequently, although this Advice identifies areas where domestic reform is (or may be) required, the practical impact of those domestic reforms could be limited in the absence of international reform.

THE ELECTRONIC COMMUNICATIONS ACT 2000

1.7 The Electronic Communications Act 2000 ('ECA') was the first legislation to facilitate electronic commerce generally in the UK. The purpose of the ECA was to build confidence in electronic commerce and the technology underlying it by:-

- (1) Providing a statutory approval scheme for cryptography providers.
- (2) Confirming the legal recognition of electronic signatures.
- (3) Providing (in section 8) an expeditious mechanism for removing any legal obstacles to the use of electronic communication and storage and for enabling appropriate conditions to be imposed.

THE SCOPE OF THIS ADVICE

- 1.8 This Advice focuses on the international sale and carriage of goods and the associated banking and insurance transactions. In Part 2 we summarise the approach taken in the UNCITRAL Model Laws on Electronic Commerce and on Electronic Signatures. Part 3 deals in general terms with statutory form requirements, their application to electronic communications, the UK's obligations under Article 9 of the Electronic Commerce Directive and the making of orders under section 8 of the ECA.
- 1.9 Part 4 deals with the carriage of goods by sea and, in particular, the extent to which a bill of lading has, or may in future have, an electronic equivalent. Issues arising in relation to the sale of goods are dealt with in Part 5. Carriage of goods by road, rail and air are covered in Part 6. Part 7 deals with marine insurance, with factoring being dealt with in Part 8. Part 9 then considers the most common payment mechanisms used in the international sale of goods. Our conclusions are summarised in Part 10.
- 1.10 This Advice contains a summary of our views, derived from our detailed consideration of the issues. We have set out our views in summary form to enable those views to be considered by Government before it concludes the work which it is currently undertaking in relation to Article 9 and section 8.

ACKNOWLEDGEMENTS

1.11 We gratefully acknowledge the invaluable assistance of Professor Chris Nicoll of the University of Auckland, who acted as consultant to this project. Initially Professor Nicoll's principal involvement was in relation to the carriage by sea and insurance aspects. However following the departure of Diana Faber, the Commissioner who initiated this project, Professor Nicoll kindly agreed to assist in the completion of the entire project. We are indebted to him for having done so. We would also like to thank the many other people who kindly gave up their time to contribute towards our work. The responsibility for the contents of this Advice is however our own.

This project has been carried out under Item 8 of the Law Commission's Seventh Programme of Law Reform. Initially it was envisaged that the project would take the form a Consultation Paper followed by a Report. Subsequently it was agreed that the project should instead take the form of an Advice to Government.

PART 2 THE UNCITRAL MODEL LAWS

INTRODUCTION

2.1 Most of the countries which have dealt with, or propose to deal with, the principal issues relevant to this project have based their legislation on, or have at least purported to make it consistent with, the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce. We therefore summarise below the approach taken in the Model Law, rather than comment on the position in individual countries. We also deal briefly with the UNCITRAL Model Law on Electronic Signatures, adopted in July 2001.

THE MODEL LAWS

2.2 The Model Laws deal with the use of electronic communications and signatures in the context of commercial activities. The Model Laws were developed to offer national legislators a set of internationally acceptable rules to replace their own legislation and are designed to be incorporated directly into the domestic law of those countries willing to do so.

Model law on electronic commerce

- 2.3 The objective of the Model Law on Electronic Commerce is to enable, or to facilitate, the use of electronic commerce and to ensure equality of treatment for users of paper documents and of electronic forms of communication. It is Part 1 of the Model Law which is relevant to the issues considered in this Advice.
- 2.4 Part I of the Model Law on Electronic Commerce deals with electronic commerce in general, covering such issues as the application of legal form requirements to data messages,² the evidential weight to be accorded to data messages and matters relating to the communication of data messages.³ In addressing these issues the Model Law adopts a 'functional equivalent' approach. This means that it does not attempt to define an electronic equivalent to any particular type of paper document. Instead, it singles out the basic functions of legal form requirements, with a view to providing criteria which, once they are met by data messages, enable such data messages to enjoy the same level of legal recognition as corresponding paper documents performing the same function.

We understand that those countries which are legislating on these issues are doing so because either they feel that some aspect of their domestic law is not compatible with the use of electronic communications, or they feel that there is significant uncertainty over this.

For example, where the law requires something to be 'written', 'signed', or an 'original'.

³ For example, the attribution of the message to the sender and the time and place at which data messages are sent and received.

- 2.5 In relation to writing, UNCITRAL identified the possible functions of paper-based writing requirements as including: to provide tangible evidence of the intention of parties to bind themselves; to help parties to be aware of the consequences of entering into a contract; to provide a document legible to all; to provide a permanent record of a transaction; to allow a document to be reproduced and copies to be held by all parties; to allow authentication by way of a signature; to provide a document in a form acceptable to public authorities and courts; to finalise and to record the intent of the author; to allow easy storage in tangible form; to facilitate control and subsequent auditing for accounting, tax or regulatory purposes; and to create legal rights where writing is a required element of legal validity.⁴
- 2.6 Similarly UNCITRAL identified the functions of a 'signature' in a paper-based environment as including: to identify a person; to provide certainty as to the personal involvement of that person in the act of signing; and to associate that person with the content of a document.⁵
- 2.7 The functional equivalent approach adopted by UNCITRAL does not require that an electronic equivalent fulfils every function of the paper-based requirement in every case. Indeed many functions are not fulfilled, or are only partly fulfilled, by the use of paper. Thus English law has long accepted a 'signature' in the form of an 'X' though this does not identify the 'signatory' in any real sense.
- 2.8 Having identified the range of functions which a writing or signature requirement may serve in a paper-based environment, the Model Law on Electronic Commerce adopts a flexible approach to the criteria which must be met by data messages if they are to achieve the same level of legal recognition as paper documents performing the same function.
- 2.9 In relation to writing the Model Law focuses upon the general ability of the electronic message to convey information which is accessible so as to be useable for subsequent reference.⁷
- 2.10 In relation to signatures the Model Law focuses upon the ability of the electronic signature to identify the person and to indicate their approval of the contents of the message. It also requires that the method of signature was "as reliable as was appropriate for the purpose [for which it was used]".

⁴ Guide to Enactment 1996, paragraph 48.

⁵ Guide to Enactment 1996, paragraph 53.

⁶ Guide to Enactment 1996, paragraph 50.

Model Law, Article 6. This definition may be broad enough to include EDI, even though that would not satisfy the visibility requirement associated with writing in English law: see Part 3 for a discussion of these issues.

Model Law, Article 7. Article 7 sets out criteria to be satisfied by the (electronic) signature of a data message. Whether such an (electronic) signature satisfies a statutory signature

Model law on electronic signatures

- 2.11 The objective of the Model Law on Electronic Signatures is to provide practical standards against which the technical reliability of electronic signatures may be measured. It also provides a practical link between technical reliability and the legal effectiveness that may be expected from a given form of electronic signature.
- 2.12 Article 6 is the core provision of the Model Law, containing objective criteria relating to reliability which, if satisfied, mean that an electronic signature will satisfy a statutory signature requirement. Only what are referred to as 'enhanced' or 'secure' electronic signatures will satisfy the reliability criteria found in Article 6. Of those forms of signature which we consider in Part 3, only digital signatures would fall within this category. ¹⁰

The relationship between the signature provisions of the two model laws

2.13 Where the Model Laws have been adopted, those using forms of electronic signature falling within Article 6 of the Model Law on Electronic Signatures will know, in advance, that they will have legal effect. That does not preclude other forms of signature having legal effect if they satisfy the provisions of Article 7 of the Model Law on Electronic Commerce. However, such a determination can only be made after the event.

THE RELATIONSHIP BETWEEN THE MODEL LAWS AND PART 3 OF THIS ADVICE

- 2.14 The UNCITRAL Model Laws form a detailed framework which countries may wish to adopt to develop their laws in these areas. In contrast, in Part 3 of this Advice we consider the ability of electronic communications to satisfy statutory requirements for 'writing', a 'signature' and a 'document' as English law currently stands. We do this to provide a background against which the questions posed in more specific contexts, later in this Advice, can be considered.
- 2.15 The 'functional' approach of UNCITRAL is, we believe, useful for this purpose. We conclude that in most contexts e-mails (and attachments) and website trading (but not EDI) are already capable of satisfying the statutory form requirements existing in English law in the areas considered in this Advice. To that extent we suggest that there is no need to consider adoption in this country of the UNCITRAL Model Laws.

requirement (and therefore has legal validity) is to be settled under the law applicable outside the Model Law.

Whether or not such an (electronic) signature satisfies the criteria therefore depends upon persuading a tribunal (trying any dispute as to its effect) that it was sufficiently reliable in all the circumstances. This means that, in many cases, whether it satisfies the criteria can only be determined after the event.

Another example, not considered in this Advice, would be the biometric identification technology currently being developed.

2.16 However, in at least one context, 11 we suggest that it may be desirable to impose some additional electronic form requirement. It may be that, in the light of experience, it will be found desirable to impose others or to develop the law on form requirements further. In such an eventuality the UNCITRAL Model Laws may be found useful. For the moment, however, it is beyond the scope of this Advice to consider how English law in relation to form requirements should develop and, therefore, to comment upon the UNCITRAL Model Laws.

¹¹ See paragraph 3.46.

PART 3 STATUTORY FORM REQUIREMENTS

INTRODUCTION

- 3.1 This Part considers the requirements for 'writing', 'signature' and 'document' which appear in many UK statutes and statutory instruments. When enacted these form requirements generally assumed the use of paper or some other tangible medium. Although well understood in that context, their application to electronic forms of communication is less straightforward; potentially these form requirements could inhibit the use and development of electronic commerce.
- 3.2 We consider below the extent to which these form requirements are capable of being satisfied by various forms of electronic communications, as the law of England and Wales currently stands. The forms of electronic communication upon which we focus in this Part are:-
 - (1) Electronic mail systems (e-mail).¹
 - (2) Transactions conducted through a website (website trading).
 - (3) Electronic data interchange (EDI).²
- 3.3 Article 9 of the Electronic Commerce Directive³ requires all Member States to ensure that their legal systems allow contracts to be concluded by electronic means and that any legal obstacles to the contractual process are removed. The principal issue considered in this Part is the extent to which reform of the statute book is required to satisfy this obligation.
- 3.4 Section 8 of the ECA allows Ministers to amend the statute book, by statutory instrument, to authorise or to facilitate the use of electronic communications or storage. We comment below on the use of orders under section 8, in particular to resolve any conflict between the statute book and Article 9.

¹ Including both the electronic message and any electronic documents which may be attached.

We are aware that 'EDI' can be used to refer to a number of different concepts. When we use the term in this Advice we are referring to the exchange of digital information designed to be acted upon by the software of the recipient system without the need for human intervention. The most common examples of such automated systems are perhaps the stock re-ordering systems operated by large retailers and their suppliers.

Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market.

WRITING

The Interpretation Act definition

- 3.5 We consider below whether a statutory requirement that some message, typically a notice, be given in writing can, as English law stands, be satisfied by an electronic communication. In doing so we have regard to both the Interpretation Act definition and the functions of writing.⁴
- 3.6 Whilst each requirement for writing must be interpreted in its specific statutory context, we assume for these purposes that the statutory context is neutral (that is, it does not assist in determining whether or not the requirement for writing is capable of being satisfied by an electronic communication). In the absence of a context-specific definition, the Interpretation Act definition of writing will apply:-

"Writing" includes typing, printing, lithography, photography and other modes of representing or reproducing words in a visible form, and expressions referring to writing are construed accordingly. ⁵

- 3.7 We interpret the Interpretation Act definition as meaning that writing includes its natural meaning as well as the specific forms referred to. The natural meaning will include any updating of its construction; for example, to reflect technological developments.⁶
- 3.8 The phrase "words in a visible form" does however seem to limit the whole definition. That is, while typing etc. are included in writing, any writing must involve words which are visible. Electronic communications generally have a dual form: first, their display on a screen; secondly, their transmitted/stored form as files of binary (digital) information. The inclusion of "words in a visible form" means that the latter alone cannot satisfy the Interpretation Act definition of writing; the words must be in visible form.
- 3.9 As we explain below, we believe that e-mails and website trading will generally satisfy the Interpretation Act definition of writing, but that EDI will not. We believe that e-mails and website transactions fall within the natural (updated) meaning of writing if on no other basis than by falling within the category of "other modes of representing or reproducing words in a visible form".

⁴ See paragraph 2.5 for the functions of writing identified by UNCITRAL.

⁵ Interpretation Act 1978, Schedule 1.

See Bennion, *Statutory Interpretation* (3rd ed 1997) p 686. The Court of Appeal adopted this approach when interpreting the reference to a 'document' in the *Victor Chandler* case referred to in footnote 35.

This may give rise to an issue if the visible form is visible to one party, but not to another.

E-mail (and attached documents)

Our view

- 3.10 The sender of an e-mail is able to see the text which he or she has created on screen before the message is sent. The recipient will also be able to view the message on screen. A visible representation of the words which form the message is therefore available to both the sender and the recipient. The same will be true of any attachment which is sent, opened and read. The sender, or the recipient, may also choose to print out or to store the message (and any attachment). Our view is that, in such a case, the Interpretation Act definition is satisfied and the e-mail (and any attachment) will satisfy a statutory writing requirement, at least if they are visible.⁸
- 3.11 We are aware that there is however a significant, ongoing, debate as to the extent to which a requirement for writing can be satisfied by an electronic communication such as an e-mail and that our conclusions are not universally accepted. In the interests of balance we summarise below the alternative view and explain why we do not agree with it.

The alternative view

- 3.12 Some of those who hold a contrary view have referred us to Professor Chris Reed's 1996 book *Digital Information Law Electronic Documents and Requirements of Form* and to the May 1997 Report of the Legislative Working Party of the Society For Computers and Law *Digital Information and Requirements of Form.* Both suggest that digital information does not satisfy the Interpretation Act definition of writing because:-
 - (1) The digital information itself is held as a series of on/off switches in a chip or on some other form of recording medium. That is not a visible representation or reproduction of words as required by the definition.
 - (2) The digital information will only represent words after the application of a coding convention. The digital information itself is not in visible form because computers have a language of their own which is not directly accessible to humans.
- 3.13 In essence it is said that in the absence of a screen there is nothing which is in a visible form. This conclusion has been interpreted by some as meaning that, because an electronic communication has a dual form, it cannot satisfy a writing requirement.⁹

The position if the e-mail (or attachment) is not read by the recipient is discussed at paragraphs 3.21-3.22. The position if the e-mail (or attachment) is not received, or is received but cannot be read, is discussed in paragraphs 3.56(3)-(4).

On the basis that it is said that an e-mail is digital information transmitted from sender to recipient but is not, of itself, visible. The screen display is visible, but is not itself the e-mail. See, for example, Elizabeth Macdonald & David Poyton, "A particular problem for e-commerce: Section 3 of the Unfair Contract Terms Act 1977" [2000] 3 Web JCL, in

Why we disagree with the alternative view

- 3.14 However, what these commentators seem to have missed, is that both Professor Reed and the Society for Computers and Law say that a screen display is capable of satisfying the definition. Whilst the underlying digital information will not be writing, the screen display will satisfy the Interpretation Act definition.
- 3.15 We suggested in the previous paragraph that the views expressed by Professor Reed and by the Society for Computers and Law, in relation to the dual form of electronic communications, had been misinterpreted. Professor Reed has confirmed to us that it is his view that:-
 - (1) Under current English law the digital form of a communication is not writing, but its visible representation is.
 - (2) This distinction is however only relevant where no visible form is involved (for example, EDI), or where the issue is whether the transaction was undertaken in writing.¹⁰

On this basis an e-mail or a website transaction is generally capable of satisfying a writing requirement, but EDI is not.

3.16 We broadly agree with Professor Reed. Other authors have also adopted a similar approach. For example the Financial Law Panel has stated:-

The meaning and scope of 'documents, instruments, records and things in writing' does not seem to us to be an issue at all. 12

The Financial Law Panel noted that such issues had however been raised by others and that, because they were central to the law reform debate, a detailed consideration of the issues would be worthwhile.

3.17 A number of commentators have expressed the view that the Interpretation Act definition of writing requires there to be some physical memorial, meaning that

which the authors state that the most widely taken view is that Interpretation Act definition, by placing emphasis on visibility, precludes electronic writing (which is in essence a series of electronic impulses) and that standard terms of business on the Internet or contained in an e-mail are therefore not written.

- For example, was the contract created by the visible, or the digital, form of the electronic communication? However, we doubt that this will give rise to any issues in practice: specific legislation is contemplated in the few cases in which English law requires a contract to be entered into in writing (for example, in relation to dealing with interests in land and some transactions governed by the Consumer Credit Act 1974).
- We believe that these conclusions are supported by analogy to the cases involving the use of telexes and telephone facsimile (fax) communications, both of which involve a series of 'impulses' being sent. The document which is produced has long been accepted as writing: Clipper Maritime Limited v Shirlstar Container Limited [1987] 1 Lloyd's Rep 546; and Hastie & Jenkerson (a firm) v McMahon [1991] 1 All ER 254.
- Financial Law Panel, "E-Commerce Review of Legal Implications Proof and Evidence" (November 2000), p7.

an electronic communication cannot satisfy a writing requirement. We do not share this view. First, the creation of a physical memorial is just one function of paper-based writing: it is not clear that it is one of the more important functions. Secondly, in practice, both parties will usually be able to store and to print a copy of an electronic communication.

Website trading

3.18 English law imposes few form requirements in the contract formation context.¹³ It is therefore unlikely that writing requirements will arise very often in practice. Where such requirements are imposed, we believe that website trading will generally satisfy the Interpretation Act requirement of visibility and, therefore, any statutory writing requirement.

EDI

- 3.19 The aim of EDI¹⁴ is to improve business efficiency. One way in which this is achieved by EDI systems is to remove (or to reduce) the need for human involvement in business transactions. EDI messages are exchanged between computers according to their programming. It is not intended that the EDI message itself should be read by any person. The EDI message is not therefore in a form (or intended to be in a form) in which it can be read (other than by another computer system operating according to the same EDI protocol).
- 3.20 Because the parties are not able to view the EDI message, the Interpretation Act requirement of visibility will not be satisfied and such a message will not, in our view, be capable of satisfying a statutory writing requirement.¹⁵

An electronic message need not be read

3.21 We believe that, as with the use of paper-based systems, an electronic message need only be available to be read; it need not actually be read in order to be effective. In relation to the giving of notice by post it has been held that:-

The usefulness of a presumption of this kind [that letters duly addressed, pre-paid and posted arrive at their destination] would be destroyed if the addressee could nevertheless be heard to say: "Although I received the postal packet quite safely, I did not read the content" or "I did not examine the postal packet to see that I had extracted all that it contained". ¹⁶

In addition to land and consumer credit transactions, guarantees are required to be made, or evidenced, in writing: see paragraph 3.46.

See footnote 2.

If a visible record of the transaction can be generated, that may satisfy a requirement that a contract be evidenced in writing (but not that the contract itself be in writing). Where writing is required in a contractual context it is usually linked to a signature requirement.

Stidolph v American School in London Educational Trust Ltd (1969) 20 P&CR 802, 805, per Edmond Davies LJ.

In relation to service by fax it has been held:-

Transmission must be given a meaning which is consonant with modern communication technology and commercial practice. I would hold that "transmission" means the process from the moment that the document is despatched by the sender to a time when the complete document has been received into the recipient's fax equipment. … The fact that it may remain in the fax memory before being printed or read is to my mind irrelevant. ¹⁷

3.22 We do not believe that the ability of an electronic message to satisfy a requirement for writing is dependent upon its being read by the recipient. This is not required by the Interpretation Act definition and would be inconsistent with the principles applied in relation to the service of paper documents. In our view it is sufficient that the recipient is able to open and to read an e-mail (and any relevant attachment).¹⁸

Conclusions on writing

3.23 We believe that e-mails and website trading will generally satisfy the Interpretation Act definition and the functions of writing, but that EDI will not. However, as we have noted above, our conclusions in relation to e-mails and website trading are not universally accepted. We acknowledge the difficulties which the lack of a consensus on this issue presents when considering whether reform of the statute book is required and, if so, how that reform should be approached.

SIGNATURES

Introduction

- 3.24 There are few statutory signature requirements. Where they do exist they are almost always linked to a requirement that the document be in writing.
- 3.25 The common understanding of a signature is the writing by hand of one's full name, or initials and surname. However other forms of identification have been held to satisfy a signature requirement; for example, it is acceptable to sign with an 'X', 19 or for a person to sign using their initials only. 20 The common law takes a pragmatic approach as to what will satisfy a signature requirement. For example, provided that the 'signatory' intends to authenticate the document, it need not be the 'signatory' who actually signs. 21 A number of cases have approved

¹⁷ Anson v Trump [1998] 1 WLR 1404, 1411, per Otton LJ.

The position if the e-mail (or attachment) is not received, or is received but cannot be read, is discussed in paragraphs 3.56(3)-(4).

¹⁹ This is acceptable for those who can write their own names, as well as those who cannot.

²⁰ *Phillimore v Barry* (1818)1 Camp. 513.

²¹ In re Whitley Partners Limited (1886) LR 36 ChD 337 and Halley v O'Brien [1920] 1 IR 330, 339.

forms of signature by stamping,²² by printing,²³ by typewriting²⁴ and in other forms not applied in any 'personalised' way. An example of the courts embracing the use of new technology in connection with statutory signature requirements may be seen in *Re a Debtor*.²⁵

- 3.26 The common characteristic of the cases is that the courts looked to whether the method of signature used fulfilled the function of a signature (namely, demonstrating an authenticating intention), rather than whether the form of signature used was one which was commonly recognised.
- 3.27 Section 7 of the ECA confirms that electronic signatures are admissible in legal proceedings to determine the authenticity or integrity of any electronic communication or electronic data in which they are incorporated, or with which they are logically associated. However, section 7 does not attempt to address issues such as whether the signature is genuine, or demonstrates the necessary intent. The evidential weight to be given to an electronic signature has been left to the courts to decide. Whilst section 7 deals with admissibility, it does not provide that electronic signatures will satisfy a statutory signature requirement. It does not, therefore, assist in determining to what extent existing statutory signature requirements are capable of being satisfied electronically.

Our approach

- 3.28 The principal function of a signature is to demonstrate that the 'signatory' had an authenticating intention.²⁶ What is required therefore is something which is not purely oral and which evidences that authenticating intention.
- 3.29 Because signatures affect many areas of personal and commercial life, it is essential that the courts develop a straight-forward approach. We believe this should be by way of a purely objective test: namely, would the conduct of the signatory indicate an authenticating intention to a reasonable person? This approach is consistent with the authorities, flexible and would, over time, produce the greatest certainty.
- 3.30 Below we consider four methods of electronic signature. We have attempted to address the issues in general terms. However, as with other statutory form requirements, a signature requirement must be interpreted in its statutory context.

Ex parte Dryden (1893) 14 NSWR 77; Goodman v J Eban LD [1954] 1QB 550; and British Estate Investment Society Ltd v Jackson (HM Inspector of Taxes) [1956] TR 397.

²³ Brydges (Town Clerk of Cheltenham) v Dix (1891) 7 TLR 215.

Newborne v Sensolid (Great Britain) LD [1954] 1QB 45.

See paragraph 3.32.

See the discussion by Professor Chris Reed in "What is a Signature?" 2000(3) The Journal of Information, Law and Technology, 3.1.

Methods of electronic signature

Digital signatures

3.31 By using a public key encryption system involving a certification authority a digital signature can give a high level of assurance that an electronic communication has been sent by the person possessing the 'private key'; that it came from a particular individual; and that it was not changed en route. The choice of this method of signature will, in our view, indicate to the recipient that the signatory had the necessary authenticating intention. We believe that such a signature will therefore satisfy a statutory signature requirement.

A scanned manuscript signature

3.32 A manuscript signature may be scanned into a computer, stored in electronic form and incorporated into an e-mail or other document. In *Re a Debtor (No 2021 of 1995)* Laddie J contemplated that a document with such a signature might then be faxed to the other party. He observed:-

The fax received at the remote station may well be the only hard copy of the document. It seems to me that such a document has been 'signed' by the author.²⁹

3.33 We do not believe that the position is any different if an alternative form of electronic transmission is used. A document incorporating a scanned manuscript signature is capable of indicating to the recipient that the signatory had the necessary authenticating intention, in the same way an original manuscript signature would.

The typing of a name

3.34 The name of the signatory (or their initials) may be typed into an e-mail or other document. Alternatively a system may be set up to add the name (or initials) automatically; for example, before sending an e-mail. In our view, both are capable of indicating to the recipient that the signatory had the necessary authenticating intention and are, therefore, capable of satisfying a statutory

For an explanation of the technology involved see the *Digital Signature Guidelines* produced for the Judicial Studies Board in 2000; www.jsboard.co.uk.

As we understand it a digital signature is not visible as a signature: what is visible is the message produced by the signature authentication software which checks the validity of the digital signature and its association with the 'signed' document. We do not believe that this affects the ability of a digital signature to satisfy a statutory signature requirement. First, the authentication message is visible. Secondly, we do not believe that a signature is required to be visible: see paragraph 3.38(3).

²⁹ [1996] 2 All ER 345, 351.

- signature requirement.³⁰ This is consistent with the authorities which have held that a signature may be stamped, printed, or typewritten.³¹
- 3.35 It has long been accepted that the fact that a signature was not written in manuscript by the signatory will not deprive it of validity. Although it may be difficult to tell whether a name (or initials) typed onto a computer system is authentic, that is not an obstacle to validity: the same could be said of signing with a manuscript 'X' or one's initials (both would be easy to forge, but both have long been accepted to be valid methods of signature). Reliability is not essential to the validity of a signature.

Clicking on a website button

- 3.36 Website trading often involves the purchaser entering onto the website details of the goods which they wish to purchase, confirming payment and personal details, and 'clicking' on a 'button' to confirm the order.
- 3.37 We do not believe that there is any doubt that clicking on a website button to confirm an order demonstrates the intent to enter into that contract. That will satisfy the principal function of a signature: namely, demonstrating an authenticating intention. We suggest that the click can reasonably be regarded as the technological equivalent of a manuscript 'X' signature. In our view, clicking is therefore capable of satisfying a statutory signature requirement (in those rare cases in which such a requirement is imposed in the contract formation context).
- 3.38 It might be said that the click differs from other accepted forms of signature in that it does not produce a visible signature. However:-
 - (1) The general trend in English law is that the validity of a signature depends on its satisfying the function of a signature, not on its being a form of signature already recognised by the law.³³
 - (2) In combination with the information which will be available as to the email address of the 'clicker', a click is capable of satisfying the second and third functions identified in paragraph 2.6. The combination could be regarded as analogous to signing by way of a stamp.
 - (3) Some old authorities did suggest that a signature was required to be a 'mark' which would, by definition, be visible. We believe it is unlikely that

Such an indication may not always be apparent to the recipient. This could be clarified by the use of other words indicating that the typed name was intended as a signature and to authenticate the document (for example, the addition of 'signed' before the typed name).

See paragraph 3.25.

³² See the discussion of the authorities in *Goodman v J Eban LD* [1954] 1QB 550.

See the discussion by Professor Chris Reed in "What is a Signature?" 2000(3) The Journal of Information, Law and Technology, 3.1.1.

- the courts would regard such authorities as binding in modern conditions.³⁴
- (4) On most websites the purchaser's details will appear on screen (whether entered by the purchaser on that occasion, or automatically as a result of previous transactions). Sometimes this will involve the use of an individual password. The combination of the details, any password, and the click could be regarded as analogous to a manuscript signature or a typed signature.
- (5) The vendor's system may display or record the click in a visible form.
- (6) The click may generate writing; the record of the transaction in the vendor's system and any confirmatory response to the purchaser.
- (7) Even if a click is less secure than a manuscript signature, reliability is not essential to validity.

Conclusions on signatures

- 3.39 Digital signatures, scanned manuscript signatures, typing one's name (or initials) and clicking on a website button are, in our view, all methods of signature which are generally capable of satisfying a statutory signature requirement. We say that on the basis that it is function, rather than form, which is determinative of the validity of a signature. These methods are all capable of satisfying the principal function: namely, demonstrating an authenticating intention.
- 3.40 We are aware that our views in relation to electronic signatures are not universally accepted; others believe that a signature requires there to be a physical memorial. Again, we acknowledge the difficulties which the lack of a consensus on this issue presents when considering reform of the statute book.

DOCUMENT

3.41 There is a consensus that information stored in an electronic form (whatever that form) is a 'document' and would (except where the context otherwise dictates) satisfy a statutory requirement for a document.³⁵ This consensus extends to those who hold differing views in respect of other statutory form requirements. Given this consensus, we do not comment further on this issue.

CLARIFICATION BY LEGISLATION

3.42 We have concluded above that unless the statutory context dictates otherwise:-

The effect of the technology previously available was that the signature had to be visible: that is no longer the case.

This view was supported by the Court of Appeal in *Victor Chandler International v Customs* and *Excise Commissioners* [2000] 1 WLR 1296 when it held that a computer system and an electronic database were documents for the purposes of the Betting and Gaming Act 1981.

- (1) E-mails (and attachments) and website trading are capable of satisfying a writing requirement, but EDI is not.
- (2) Digital signatures, scanned manuscript signatures, typing one's name (or initials) and clicking on a website button are all methods of signature which are capable of satisfying a signature requirement.
- 3.43 We have acknowledged above that, to date, there has been some lack of consensus on these issues.³⁶ We hope that our analysis will prove convincing and that past doubts will be replaced by common agreement. We consider that legislation is not only unnecessary but risky. To attempt a global solution along the lines that 'a contract shall not be denied validity because some aspect of the contractual process was undertaken electronically' will not achieve the desired effect. For example, such global reform would not be effective where the contract document, or a notice relating to the contract, was required to be sent by post (global reform would not remove the postal requirement). Global reform might also remove form requirements which, in specific contexts, it is desirable to retain for public policy or other reasons. Further, to legislate to cover some situations may itself cast doubt upon other situations not covered by the legislation. If, in order to give absolute certainty to particular businesses or other would-be users of electronic communications in specific contexts, it is found to be necessary to legislate to remove any doubts, the legislation should be context-specific and it should be framed in such a manner that it does not cast doubt upon the ability of electronic communications to satisfy statutory form requirements in other contexts not covered. An order under section 8 ECA may be used for this purpose.³⁷

THE IMPOSITION OF FORM REQUIREMENTS

- 3.44 There may be some contexts in which writing and signature requirements are capable of being satisfied electronically but in which, for public policy or other reasons, it may be desirable to impose an electronic form requirement where none currently exists.
- 3.45 The point may be illustrated by an example which is outside the scope of this Advice, namely the making of wills. It is at least arguable that both the writing and the signature requirements found in section 9 of the Wills Act 1837 may be satisfied in relation to an electronic will. For example, the will could be typed on a computer and appear on screen, and the testator and the witnesses could add their signatures by one of the methods described above. We do not express any view as to the validity of an electronic will; such matters are beyond the scope of this Advice. But we can anticipate that the suggestion that, as the law currently stands, it may be possible to make an electronic will would surprise and concern many people, and that it might well be thought desirable to impose restrictions on the validity of 'e-wills', or even to deny their validity altogether.

³⁶ See paragraphs 3.11-3.17, 3.23 and 3.40.

³⁷ See paragraph 3.52.

3.46 Another example, which falls within the scope of this Advice, is the giving of a guarantee. A guarantee is only enforceable if it is in writing, or is evidenced in writing, and if it is signed by, or on behalf of, the guarantor. We believe that the writing requirement would be satisfied if a guarantee was entered into through website trading or by e-mail. We have also concluded above that the associated signature requirement is capable of being satisfied by 'clicking' on a 'button' on a website or by the typing of a name. The principal reason for requiring that the guarantee be in writing and signed was evidential.³⁸ However these longstanding requirements also have the effect of bringing home to the guarantor the seriousness of the commitment which they are entering into. There may be a risk that, if a guarantee is entered into through website trading, or by e-mail, the seriousness would not be as apparent to the guarantor, and they might not therefore be protected from hasty or ill-considered conduct. It might be felt appropriate that some further form requirement should be imposed to give the guarantor the opportunity for reflection before entering into the commitment. An example might be to require that the guarantor sign with a digital signature (digital signatures are likely to become associated in the public mind with the undertaking of significant or important transactions).

ARTICLE 9

3.47 Article 9 of the Electronic Commerce Directive requires that:-

Member States shall ensure that their legal system allows contracts to be concluded by electronic means. Member States shall in particular ensure that the legal requirements applicable to the contractual process neither create obstacles for the use of electronic contracts nor result in such contracts being deprived of legal effectiveness and validity on account of their having been made by electronic means.³⁹

This obligation extends to all aspects of the contractual process; it is not limited to the conclusion of the contract itself.⁴⁰

- 3.48 We make the following points in this context:-
 - (1) Requirements that a contract (or any steps required to be taken under or in relation to a contract) be in writing, evidenced in writing, or signed, are very rare in English law.
 - (2) In those rare cases, except where the statutory context otherwise dictates, the form requirements are, in our view, capable of being satisfied by emails or website trading, but not by EDI.
 - (3) It is beyond the scope of this Advice to review all the statutory contexts in which a conflict with Article 9 might arise. It is however apparent that

³⁸ Preamble to the Statute of Frauds 1677.

The Directive must be implemented by 17 January 2002.

⁴⁰ See Recital 34 of the Directive.

there are some contractual contexts in which statute does impose paper-based requirements which will not be capable of being satisfied by an electronic communication.⁴¹ Paper-based form requirements which are not capable of being satisfied electronically must be removed, or the statute book reformed to enable them to be satisfied electronically (whichever is more appropriate in each context). We deal below with the method by which such changes might be effected.

(4) Article 9 allows conditions to be imposed in relation to electronic contractual processes. 42 We suggest in paragraph 3.46 that it may be desirable for electronic form requirements to be imposed in relation to guarantees. We deal below with the method by which such conditions might be imposed.

SECTION 8 ECA

- 3.49 We have suggested above that it is only in very rare cases that the statute book will conflict with Article 9. Such cases will only occur where statute imposes a paper-based requirement, which cannot be satisfied electronically, in a contractual context. To remove the paper-based requirement, context-specific reform is required.⁴³
- 3.50 Section 8 allows Ministers to amend the statute book for the purposes of authorising or facilitating the use of electronic communications or storage. We consider below whether statutory form requirements which conflict (or which may conflict) with Article 9 may be dealt with by orders made under section 8.

The use of orders made under section 8

- 3.51 There is no doubt that, if the specific statutory context makes it clear that a form requirement cannot be satisfied electronically, the Minister may make an order under section 8 authorising the use of electronic communications for that purpose. An order would also be required to enable EDI to be used in any contractual context in which statute imposes a writing requirement. An order authorising the use of electronic communications may impose conditions upon their use.
- 3.52 We have referred in paragraph 3.43 to the possibility of legislating to remove any perceived uncertainty as to the ability of an electronic communication to satisfy a

For example, sections 63 and 64 of the Consumer Credit Act 1974 require the copy of an executed agreement and the notice of cancellation rights to be sent by post.

⁴² See Recital 35 of the Directive.

⁴³ See paragraph 3.43.

For example this would be the case if the factoring industry wished to use EDI systems to effect legal assignments, or assignments of equitable interests. However, as we explain in Part 8, we understand that factors are content to rely upon equitable assignments of legal interests and that assignments of equitable interests do not arise in practice.

⁴⁵ ECA, s8(4)(b).

statutory form requirement. Can an order be made under section 8 to resolve such doubts? Section 8 permits orders to be made for the purposes of authorising or facilitating. It appears that 'or facilitating' was intended to cover not only cases in which satisfying the form requirement electronically would be cumbersome, but also cases where there was doubt as to whether the form requirement could be satisfied electronically:-

But in other cases the law may be less clear cut. There may be room in existing legislation to argue that a statutory requirement could be met by using electronic means. In such cases the order could facilitate what was already authorised. 46

An order facilitating the use of electronic communications may impose conditions upon their use.⁴⁷

3.53 Even if it is clear that a form requirement may be satisfied electronically, that does not create a practical obstacle to the Minister making an order under section 8 because section 8(4)(m) of the ECA allows the Minister to make:-

any such provision, in relation to electronic communications or electronic storage the use of which is authorised otherwise than by an order under this section, as corresponds to any provision falling within any of the preceding paragraphs that may be made where it is such an order that authorises the use of the communications or storage.

This enables the Minister to make an order in relation to electronic communications, the use of which are authorised other than under section 8.⁴⁸ We see no reason to doubt that this includes electronic communications which are, by their nature, capable of satisfying a writing requirement.⁴⁹

- 3.54 Section 8(4)(m) therefore envisages that an order may impose conditions upon the use of electronic communications even if their use is already authorised. In practice an order is always likely to impose some condition upon the use of electronic communications. This is because the ECA defines electronic communications very broadly including, for example, telephone systems. Any order made under section 8 may well exclude the use of telephone calls: this will amount to the imposition of a condition.
- 3.55 In our view an order may therefore be made under section 8 whatever the prior position in relation to the ability of electronic communications to satisfy a

Lord Sainsbury of Turville: Hansard (HL) 14 March 2000, vol 610, col CWH20.

ECA, s8(4)(b).

That is in circumstances where it is clear that the use of electronic communications is already authorised.

That is where the authorisation is implicit, rather than explicit.

statutory form requirement.⁵⁰ An order under section 8 may therefore be used to deal with any statutory form requirements which conflict (or which may conflict) with Article 9. Such an order may impose conditions upon the use of electronic communications.

OTHER ISSUES WHICH REQUIRE CONSIDERATION

- 3.56 We briefly mention below a number of related issues. Although beyond the scope of this Advice, we believe that they do require consideration in the context of the application of existing legal principles to the use of electronic communications:-
 - (1) An issue may arise as to the time at which e-mails are deemed to be received by a recipient. Our initial view is that the transmission process is complete when the communication reaches the recipient's Internet Service Provider (ISP).⁵¹ There are however a number of alternatives.⁵² We make no recommendation in relation to this issue, which is beyond the scope of this Advice. However uncertainty whilst this issue is resolved by the courts might inhibit the use of electronic communications: we therefore favour legislation to remove that uncertainty.
 - (2) Treating e-mails as equivalent to paper documents may create practical problems over addresses. For example, paper documents are often required to be served at the usual or last known address of the other party. We are aware that it is not unusual for an individual or business to have more than one e-mail address. Whether this raises any significant practical or legal issues, which do not arise in the context of a business or individual having more than one postal address, requires consideration.
 - (3) We have argued in paragraphs 3.21-3.22 that an electronic message will be effective as a form of 'written notice' provided that it is read by the recipient, or it is capable of being read by the recipient. The sender will however be at risk if an e-mail (or attachment) is not received, is corrupted prior to receipt, or if the format in which it is received renders it unreadable, or illegible, to the recipient. This may give rise to an issue as to what steps a 'reasonable recipient' could be expected to take to enable an e-mail (or attachment) to be opened or read. For example, would these extend to seeking advice or assistance, obtaining additional software, or contacting the sender?
 - (4) A person serving a document by post has the benefit of a statutory presumption that, unless the contrary is proved, service of the document

That is an order can be made where it is clear that an electronic communication can or cannot be used, or where the position is uncertain.

It is at this stage of the transmission process that the recipient will be able to access the message either by downloading it into their own system or by reading it on the ISP's server.

For example, when the message enters the recipient's computer system; or when it reaches the inbox of the individual addressee; or when it is read by the recipient.

is deemed to have been effected at the time at which the letter would have been delivered in the ordinary course of the post. Until a presumption of receipt arises, or is created by statute, the sender of an e-mail (or attachment) will remain at risk. No such presumption has yet been applied to service by fax. It may therefore be some time before Parliament regards e-mail (or other forms of electronic communication) as being sufficiently reliable to justify a presumption of receipt being applied to their use. The use of electronic communications may be inhibited in the meantime.

(5) Should the consent of the recipient be required before a statutory notice can be served upon them electronically? We do not believe that the consent of the recipient is required as the law stands and our initial view is that such a requirement should not be imposed: to do so would unnecessarily inhibit the use of electronic communications. However we make no recommendation in relation to this issue, which is beyond the scope of this Advice.

PART 4 CARRIAGE BY SEA

INTRODUCTION

4.1 In this Part we consider the issues arising from the use of electronic contracts for carriage by sea in the place of traditional, paper, bills of lading.¹

ELECTRONIC CONTRACTUAL SCHEMES

- 4.2 We are aware of three schemes which have used electronic communications in the context of contracts for carriage by sea. The first, Seadocs, was launched in 1983. This was a hybrid scheme in that it retained the paper bill of lading, which was deposited with a third party, with the right to its possession being dictated by electronic communications.
- 4.3 In 1990 the International Maritime Committee (CMI) issued Rules for Electronic Bills of Lading. These rely upon a series of attornments by the carrier to each new holder of the 'electronic bill'. The system is theoretically open to anyone to use: the CMI Rules will apply when the parties contract that they should do so.
- 4.4 Finally, in late 1999, the Bolero scheme went live. Bolero is based upon a multilateral contract in the form of a Rule Book, to which all participants are parties. Bolero also relies upon attornments by the carrier, giving these full contractual effect (by way of novation) through the Rule Book and a central Title Registry which maintains records in relation to each Bolero bill of lading (BBL).

FUNCTIONS AND STATUS OF A BILL OF LADING

- 4.5 A bill of lading evidences the terms of the contract for carriage, is a receipt for the goods, and is a document of title. Delivery of the bill of lading effects a transfer of constructive possession of the goods; possession of the bill evidences the entitlement to delivery of the goods. The essence of the bill of lading is that the rights and obligations which it embodies are transferable without reference to the carrier or any independent registrar.³
- 4.6 The bill of lading effectively operates as an attornment in advance to all subsequent holders. It allowed goods to be traded whilst at sea at a time when ships were not in instantaneous contact with the rest of the world.⁴ In contrast,

The issues which might arise in relation to sea waybills are beyond the scope of this Advice.

² The Bolero Rule Book is governed by English law.

³ The Carriage of Goods by Sea Act 1992 also gives the lawful holder of the bill of lading rights of suit under the contract for carriage.

⁴ At the destination the carrier delivered the goods to the holder of the bill of lading.

both Bolero and the CMI Rules rely upon the ability to communicate instantaneously with many carriers.

FUNCTIONS AND STATUS OF 'ELECTRONIC BILLS OF LADING'

- 4.7 All three functions of a paper bill of lading may be achieved electronically through the use of the CMI electronic bill or the BBL. However they are not true equivalents because they require the participation of the carrier or the registrar on each transfer:⁵ a true electronic equivalent would not require such involvement. They achieve the same result by means of a direct attornment by the carrier, or by the registrar on the carrier's behalf, to the new 'holder', together with a direct contract between them incorporating the terms of the original contract for carriage. It is therefore more accurate to refer to them as electronic contracts for carriage.
- 4.8 Technology may in the future be capable of providing the commercial world with a true electronic equivalent of a paper bill of lading. However there is no working equivalent now. Nor, as we understand it, is there likely to be in the near future. 6
- 4.9 Because electronic contracts for carriage are not bills of lading, and do not satisfy the narrow common law definition of a 'document of title',⁷ they are not within the ambit of the Carriage of Goods by Sea Act 1971 (which applies the Hague-Visby Rules to the contract for carriage) or the Carriage of Goods by Sea Act 1992 (which gives the holder of the bill of lading rights of suit under the contract for carriage). However the provisions of these Acts can be replicated by contract, if parties using electronic contracts for carriage choose to do so.

IS THERE A NEED FOR REFORM?

4.10 The absence of an electronic bill of lading, and the existence of adequate legal provision for contractual schemes, mean that there is no immediate need for domestic reform. There may be a need for reform in the longer term if an electronic bill of lading is created. It may also be appropriate for the domestic position to be reconsidered when UNCITRAL and the CMI have completed the project which they are currently undertaking on all aspects of the international carriage of goods by sea.

The Bolero 'bills of lading' are referred to as BBLs because the proprietors of the scheme consider that they are not bills of lading.

⁶ We are told that there is currently no market demand for such an equivalent.

Mercantile custom and usage has recognised only a (paper) bill of lading as satisfying the narrow common law definition of a 'document of title'.

PART 5 SALE OF GOODS

INTRODUCTION

- 5.1 English law on the sale of goods does not impose any contractual form requirements. This Part therefore focuses upon the interaction between the Sale of Goods Act 1979 (SGA) provisions concerning the passing of property, and the use of electronic contracts for carriage by sea.
- 5.2 A number of SGA provisions envisage the use of paper documents and may not be applicable to the use of electronic systems. Whilst these provisions do not affect the validity of a transaction, they may determine its consequences. We consider below two areas in which SGA provisions fall into this category.

DISPLACING THE PRESUMPTION THAT DELIVERY OF THE GOODS TO THE CARRIER PASSES PROPERTY TO THE BUYER

- 5.3 The passing of property depends upon the intention of the parties. That intention may be express, or implied into the contract. Mercantile custom and usage was that delivery of the goods to a common carrier created a presumption that it was intended that property should pass at that time. This was not conclusive, however, as conduct demonstrating an intention on the part of the seller to retain the right of disposal would displace the presumption.
- 5.4 Section 19 of the SGA reflects two circumstances in which mercantile custom and usage had established that the presumption was displaced: namely where a bill of lading accompanying goods was made out to 'seller or order', and where a documentary bill of exchange was dishonoured by the buyer.
- 5.5 We do not believe that there is any need for reform of these provisions. First, the intention of the seller could be shown equally where an electronic contract for carriage was used. Secondly, reform would be premature until firm patterns for the use of electronic systems have been established.

DOCUMENTS OF TITLE AND AUTHORITY TO SELL

5.6 The general principle is that a buyer cannot acquire a better title to goods than that which the seller had.⁴ The SGA reflects two circumstances in which mercantile custom and usage had established exceptions to this principle. First, the purchase by an innocent buyer from a seller with possession of the goods, or of a document of title to the goods, despite property having already passed to an

¹ This presumption is now found in the SGA, s18 Rule 5(2).

² SGA, s19(2).

³ SGA, s19(3). (A documentary bill is a bill of exchange accompanied by the bill of lading.)

⁴ This 'nemo dat' rule is reflected in the SGA. s21.

earlier buyer.⁵ Secondly, the purchase by an innocent buyer from a buyer with possession of the goods, or of a document of title to the goods, despite property not having passed to the earlier buyer.⁶ Whether such an innocent purchaser will be protected if an electronic contract for carriage is used depends upon whether the electronic contract for carriage can be construed as a document of title.⁷

5.7 Mercantile custom and usage has recognised only a (paper) bill of lading as satisfying the narrow common law definition of a 'document of title'. However a wider definition can be found in section 1(4) of the Factors Act 1889.⁸ An electronic contract for carriage will satisfy this definition if it is:-

... used in the ordinary course of business as proof of the possession or control of goods, or authorising or purporting to authorise, either by endorsement or by delivery, the possessor of the document to transfer or receive goods thereby represented.

- 5.8 It is arguable that electronic contracts for carriage (such as BBLs) are documents of title within this broader statutory definition. We say this on the basis that the requirement for a 'document' is not a barrier, that electronic contracts are used for the purposes referred to in the statutory definition, and that they are used "in the ordinary course of business" in the context of electronic systems.
- 5.9 We do not believe that there is any need for reform of sections 24 or 25. If an electronic contract of carriage is a document of title for the purposes of the SGA, an innocent purchaser will receive the protection of those sections.
- 5.10 We appreciate that, on the face of it, an innocent purchaser's protection depends upon an affirmative answer to the (unresolved) issue identified in the previous paragraphs. However our understanding is that a combination of contractual terms and security measures will protect purchasers within the context of the only currently viable schemes. For example, in relation to a sale under Bolero:-
 - (1) Bolero does not deal with the passing of title: it is based upon the right to possession of the goods. Title to the goods will pass in accordance with the usual principles.
 - (2) When goods are sold by a Bolero seller, the buyer will be designated as the 'to order party' in relation to the BBL (the equivalent of the indorsee of a paper bill of lading). Although the seller may remain the 'holder' of the BBL (the equivalent of the party having physical possession of the

⁵ SGA, s24.

⁶ SGA. s25.

This issue will arise where the innocent purchaser buys from a vendor who does not have possession of the goods, but who is in possession of an electronic contract for carriage relating to the goods.

⁸ SGA, s61(1) applies the same definition to the SGA.

⁹ See paragraph 3.41.

- operative paper bill of lading),¹⁰ it will not be able to 'sell' the same goods again using the BBL. The possibility of a subsequent innocent purchaser buying from a seller in possession of the BBL should not therefore arise.
- (3) It is possible that a Bolero buyer will become the 'to order party' before title has passed to it. Where, as is often the case, a documentary credit is used in connection with the purchase, the buyer would not be expected to be designated the 'holder' of the BBL until the issuing bank has debited its account (that is until it has paid). It is only at this stage that the buyer can transfer the BBL to other buyers. Subsequent innocent purchasers will be protected; before the buyer has become the 'holder' of the BBL it cannot transfer the BBL to other parties.
- (4) It may be that a documentary credit is not used in connection with a sale of the goods. We anticipate that in such a case the Bolero seller would designate the buyer as the 'to order party' until the buyer paid, at which stage the buyer would also be designated the 'holder' of the BBL. If the seller designated the buyer as the 'holder to order' before receiving payment the seller would, as we understand the Rule Book, be precluded from denying the right of the buyer to designate a subsequent buyer as the 'to order party'. The subsequent innocent purchaser will therefore be protected.¹²
- (5) Where the goods are to be sold to a purchaser outside Bolero, unless a member agrees to act as the purchaser's agent, a paper bill of lading (to which the SGA provisions will apply) will be generated.
- 5.11 In time it may be necessary to amend the law to provide greater assurance to purchasers but, in our judgment, it would be premature to do so now. First, the courts may confirm the status of electronic contracts for carriage as documents of title. Secondly, no practices have developed, or look likely to develop in the near future, which will leave innocent purchasers unprotected.

CONCLUSION

5.12 We do not believe that reform of the SGA provisions concerning the passing of property is required in the context of electronic contracts for carriage by sea.

In fact the buyer will often designate the confirming bank as 'pledgee holder' at this stage.

See the note 'Legal Aspects of a Bolero Bill of Lading' at www.bolero.net.

We understand that the position would be the same (and that a subsequent innocent purchaser would therefore be protected) if, in the context referred to in the previous paragraph, the buyer was designated as the 'holder' of the BBL at any stage prior to the issuing bank debiting its account.

PART 6 CARRIAGE BY ROAD, RAIL AND AIR

INTRODUCTION

6.1 Contracts for carriage by road, rail and air are dealt with separately from carriage by sea because of the differences in the use and legal effect of the paper evidence of these contracts. The transfer of such documents does not amount to a transfer of the constructive possession of the goods carried by road, rail or air: a pledge of such documents is not a pledge of the goods, but only of the documents.¹

CARRIAGE BY ROAD

- 6.2 International carriage is governed by the Convention on the Contract for the International Carriage of Goods by Road 1956 (CMR). Consignment notes under the CMR are not documents of title, but provide evidence of the contract and the condition of the goods received for carriage. The wording of Article 5, which lays down the requirements for a consignment note, strongly suggests that a material object is required and that an electronic communication will not suffice.
- 6.3 We were told by road haulage industry representatives that there was no pressure for the CMR to be amended to permit the use of electronic consignment notes. It appeared that this was due to a range of factors including satisfaction with the current system; the need for the consignment note to accompany the goods;³ the small size of many road haulage companies;⁴ and a feeling that the use of electronic communications would not increase efficiency or lead to significant costs savings.
- 6.4 We therefore make no recommendation for reform in this area. However, because a demand to allow the use of electronic consignment notes may arise in the future, we suggest that Government should raise this issue when potential changes to the CMR are next discussed.

CARRIAGE BY RAIL

6.5 International carriage is governed by the Uniform Rules Concerning the Contract for International Carriage of Goods by Rail (CIM), which form Appendix B to the Convention Concerning International Carriage by Rail 1980

Such documents may however be 'documents of title' as defined in the Factors Act 1889, s1(4). They may, for example, be used in the ordinary course of business to prove entitlement to control goods: see *Official Assignee of Madras v Mercantile Bank of India Ltd.* [1935] AC 53, 59.

Given force in the UK by the Carriage of Goods by Road Act 1965.

³ Required by CMR Article 5 and for the purposes of police and customs checks.

⁴ Meaning that economies of scale would not be achievable.

- (COTIF).⁵ Consignment notes under the CIM are not documents of title, but evidence the terms of the contract and the condition of the goods received for carriage. The wording of the CIM again strongly suggested that the consignment note had to be a material object.
- 6.6 However, amendments to COTIF were agreed in 1999. These include provisions designed to allow the use of electronic functional equivalents of consignment notes. As the law relating to international carriage by rail has already made provision for the use of electronic equivalents of the consignment note, we make no recommendations for reform in this area.

CARRIAGE BY AIR

- 6.7 International carriage is governed by the Warsaw Convention System.⁸ Air waybills under the Warsaw Convention are evidence of the conclusion of the contract, the acceptance of the cargo and the conditions of carriage. The wording of the Warsaw Convention again strongly suggested that the air waybill had to be a material object.
- 6.8 Subsequent amendments to the Warsaw Convention System included the Montreal Protocols. The fourth Montreal Protocol has been given force in UK law. This Protocol allows other means of preserving a record of the carriage (which would include the use of electronic communications) to be substituted for the air waybill, but only with the agreement of the consignor.
- 6.9 Under the Convention for the Unification of Certain Rules for International Carriage by Air,¹² the agreement of the consignor to the use of 'other means' of recording the carriage will no longer be required.¹³ However this has not yet come into force,¹⁴ and has not yet been ratified by the UK.
 - ⁵ Given force in the UK by the International Transport Conventions Act 1983.
 - See the Protocol for the Modification of the Convention Concerning International Carriage by Rail of 9 May 1980 (Protocol 1999) Cmnd No 4873. It is anticipated that the amended Convention will be ratified by and implemented in the UK.
 - ⁷ Title II, Article 6(9).
 - The Warsaw Convention was concluded in 1929 and was significantly amended by the Hague Protocol 1955. The revised Convention which resulted was given effect in the UK by the Carriage by Air Act 1961.
 - ⁹ Signed at Montreal on 25 September 1975.
 - The Carriage by Air (Parties to Protocol No. 4 of Montreal 1975) Order 2000: SI 2000 No 3061.
 - ¹¹ Article 5(2) of Schedule 1A.
 - ¹² Signed at Montreal on 28 May 1999.
 - The consignor will however be able to require the issue of a (paper) cargo receipt: Chapter VI, Article 4(2).
 - Not having been ratified or acceded to by the requisite thirty states.

As the law relating to international carriage by air has already made provision for

PART 7 INSURANCE

INTRODUCTION

7.1 Most contracts for the insurance of goods in transit are inspired by, or have their origins in, forms of marine insurance currently, or formerly, placed in the London Market. In this Part we consider the interaction between the Marine Insurance Act 1906 (MIA) and the use of electronic communications.

RELEVANT PROVISIONS OF THE MIA

- 7.2 The following provisions of the MIA are relevant to this discussion:-
 - (1) A contract of marine insurance is inadmissible in evidence, and therefore unenforceable, unless it is embodied in a marine policy (section 22).
 - (2) A marine policy must be signed by or on behalf of the insurer (section 24).
 - (3) A number of warranties are implied by the MIA.² Other, express, marine insurance warranties must be included in, written upon, or incorporated by reference into, the marine policy (section 35).³
 - (4) A marine policy may be assigned by indorsement on the policy, or in other customary manner (section 50).⁴
 - (5) A broker may exercise a lien over a marine policy (section 53(2)).⁵
- 7.3 It should be noted that the MIA draws a clear distinction between the 'marine policy' and the 'marine insurance contract'; the terms are not interchangeable.
 This means that, for example, the statutory dispensation allowing assignment applies only to the policy, not to the underlying contract.

There is no comparable requirement for non-marine insurances. We understand that, in practice, policies frequently remain unissued: however, by convention, the insurer will issue the policy if a dispute arises.

For example, as to seaworthiness (s39) and legality (s41).

Marine insurance warranties are contractual conditions that must be precisely complied with, otherwise the insurer is discharged from liability as from the date of the breach. This requirement is imposed because of the serious repercussions of breaching such a warranty.

⁴ This is an exception to the usual rule that indemnity insurances are incapable of assignment because they are personal contracts.

This reflects the fact that the broker is generally directly responsible to the insurer for the premium (s53(1)). There can be two separate liens: the first is a particular lien over the policy for unpaid premium and charges, the second a general lien covering any outstanding balances due to the broker in relation to insurance business.

⁶ See, for example, s21.

THE USE OF ELECTRONIC COMMUNICATIONS

7.4 We understand that there is a clear demand for the increased use of electronic communications in the insurance market. The most obvious obstacle to the use of electronic communications in the context of contracts governed by the MIA is the requirement for the marine policy. We explore below whether an electronic document is capable of satisfying the requirement for a marine policy and, if not, how the MIA might be reformed to remove this obstacle.

CAN A MARINE POLICY BE AN ELECTRONIC DOCUMENT?

- 7.5 We do not believe that the signature requirement in section 24 precludes the use of an electronic document.
- 7.6 The MIA does not expressly require that a marine policy be in writing. It is however arguable that such a requirement is implicit in the MIA.⁸ If writing is required, we do not believe that this precludes the use of an electronic document.⁹
- 7.7 Nor do we believe that the reference in section 35 to marine insurance warranties being written upon the marine policy precludes the use of an electronic document.
- 7.8 The ability to assign in section 50 depends upon 'indorsement' of the marine policy. It is unclear whether this precludes the use of an electronic document.¹⁰
- 7.9 The general concept of a lien is not clearly defined as liens arise in specific situations. Where liens are found, whether as a creature of common law or statute, they are exercised over something tangible. The fact that section 53(2) provides that a marine policy is capable of being subject to a lien suggests, in our view, that a tangible object is required and that an electronic document will not therefore suffice. 12
- 7.10 We believe that our conclusion in relation to the lien, combined with the uncertainty in relation to indorsement, mean that a marine policy cannot be an

⁷ See the discussion of signatures in Part 3.

It is arguable that this is the effect of the provisions referred to in paragraphs 7.5, 7.7 and 7.8. See also the references to "executed and issued" in section 22 and to "this writing" in Schedule 1 (section 30 provides that the marine policy may be in the form in Schedule 1).

⁹ See the discussion of writing requirements in Part 3.

¹⁰ An indorsement usually refers to something which is written or printed on the back of a document. It is difficult to apply this concept to an electronic document.

For example, a solicitor's lien over a client's papers.

Some form of electronic functional equivalent of a lien may be devised and sanctioned by law in the future. However we believe that the fact that no such equivalent currently exists implies that a marine policy must be a tangible (paper) object. (There are a number of other provisions of the MIA which it could be argued also imply that the marine policy is required to be a tangible object.)

electronic document in the absence of reform of the MIA. This prevents a marine insurance transaction being entirely electronic.

IS THERE A NEED FOR REFORM?

- 7.11 The fact that a marine policy cannot be an electronic document means that the insurance market's desire to increase its use of electronic communications may be inhibited or frustrated in the absence of reform of the MIA.
- 7.12 The Bolero scheme (see Part 4) has had to address the issue of the insurance associated with the goods which are the subject of the electronic contract for carriage. Insurance policies will, at least initially, be outside the Bolero scheme. Bolero may record the details of the policy, as well as copies of any insurance certificates, for information purposes and presentation under letters of credit. Bolero envisages that the insurance obtained will be expressed to cover all the relevant parties (for example the seller, the buyers and any pledgee). Such cover would provide a practical solution to the difficulties arising from any requirement that an assignment of the benefit of the insurance between the parties be in writing or on paper.
- 7.13 The Bolero approach does not however provide a general solution to the issues arising from the requirement for the (paper) marine policy. We therefore believe that reform is required to enable the increased use of electronic communications in the insurance market. Reform should also enable an electronic marine insurance contract/policy to be used in conjunction with traditional, paper, bills of lading, or with other electronic systems.

OPTIONS FOR REFORM

- 7.14 Reform should recognise existing methods, and facilitate the development of further methods, which allow marine insurance contracts to be created and dealt with in the course of trade. We believe that reform of the MIA should dispense with the rule that the contract for marine insurance is only enforceable once it is embodied in a (paper) marine policy. Reform must however enable the marine insurance contract to continue to fulfil its essential role in international trade.
- 7.15 We have identified two options for reform, both of which would be capable of achieving these objectives. Because the (paper) marine policy is no longer required for the collection of stamp duty, ¹⁶ the first option is to dispense with the marine policy as a legal document under the MIA. The second option is to retain

The proprietors of the scheme note that policies are generally required to be on paper.

The proprietors of the scheme note that certificates are not generally required to be on paper, especially where they are issued under a 'block policy'.

The parties to the letter of credit will have to agree to vary the terms of UCP 500 to permit electronic presentation: see Part 9.

No insurances now incur stamp duty.

- the marine policy as a legal document under the MIA, defining it to include an electronic equivalent.
- 7.16 Either option would effectively do away with the broker's lien.¹⁷ As we understand it the lien is seldom employed in practice, so this should not be a significant concern.¹⁸ This may therefore be an appropriate time at which to abolish it.
- 7.17 Either option would need to be combined with further reform of the MIA to allow the assignment of marine insurance contracts (or electronic marine policies). The assignment mechanism to be adopted should be the subject of discussion with the insurance market. This further reform, and the assignment mechanism chosen, should be considered with regard to the role of marine insurance in international trade (for example the interaction with UCP 500).
- 7.18 The first option would do away with the statutory requirement that the policy specify the subject matter of the contract and the identity of the insured, and mean that a marine insurance warranty would be enforceable if it formed part of the marine insurance contract, which could be entirely oral. ¹⁹
- 7.19 The second option would maintain the minimal content requirements for the marine policy, and allow marine insurance warranties to be recorded in an electronic marine policy. The signature requirement in section 24 of the MIA would apply to an electronic marine policy. In Part 3 we concluded that a number of methods of electronic signature are capable of satisfying a statutory signature requirement. We anticipate that the market would soon establish a practice as to the acceptable method(s) of signature in the context of an electronic marine policy: legislative intervention is unlikely to be necessary in this context.

The first option would do away with the marine policy over which the lien is exercised. The second option would allow the marine policy to be electronic, thereby doing away with the requirement for a physical object over which the lien could be exercised. Although the second option would also allow the continued use of paper marine policies, we anticipate that they would quickly fall into disuse.

Our inquiries suggest that the lien has been relegated to an insignificant role.

It would therefore be possible that the insured could be fixed with the (potentially serious) consequences of breaching a warranty of which no durable record has been received. In practice we do not believe that this would be a significant concern. First, under the current law, a warranty may be contained in a contract, but not be effective until it is incorporated into a marine policy. As that may be issued some time later, there is now a period in which the insured may have no durable record of the warranty. Secondly, in practice, there will almost invariably be some form of written evidence (for example the 'placing slip').

We do not believe that this would give rise to any practical concerns for the insured. First, a warranty recorded on paper is no more cogent than a warranty contained in an electronic message which can be viewed on a screen. The authenticity of both can be called into question: but these are matters of evidence and beyond the existing policy of legislative intervention. Secondly, there would continue to be a heavy evidential burden on any underwriter seeking to rectify a contract in a case in which it was alleged that an agreed warranty had been omitted from an electronic marine policy issued subsequently.

CONCLUSIONS

7.20 Reform of the MIA is required to facilitate the use of electronic communications. We recommend that Government consult with the insurance market as to the preferred option for reform and as to the details of its implementation.

PART 8 FACTORING

INTRODUCTION

8.1 Factoring is used by businesses to improve their cash-flow. The transfer of ownership of the debts to the factor is effected by an assignment. We understand that factors and their clients are using EDI and e-mail systems. We consider below the extent to which these are capable of satisfying the statutory form requirements associated with assignments. In England and Wales, an assignment may be either legal or equitable and may relate to either a legal or an equitable interest.¹

ASSIGNMENTS

Legal assignment of a legal interest

8.2 Such an assignment must satisfy section 136 of the Law of Property Act 1925:-

Any absolute assignment by writing under the hand of the assignor² ... of any debt ... of which express notice in writing has been given to the debtor ... is effectual in law....

- 8.3 The legal assignment (which must be in writing and signed) therefore takes effect from the date on which written notice is received by, or on behalf of, the debtor. If any of the requirements are not met, the assignment only takes effect in equity.
- 8.4 On the basis of our analysis of the form requirements issues in Part 3, e-mail could be used to effect and to give notice of such an assignment, but EDI could not. However, this need not prevent the use of EDI systems in relation to factoring: the parties may be content to rely upon an equitable assignment of the debt.

Equitable assignment of a legal interest

- 8.5 Equity looks to the intent, rather than the form, of an action. There is no requirement that an equitable assignment be in writing or signed, or that notice of it be given to the debtor. The factor may however wish to give notice to the debtor to crystallise the position between them.³
- 8.6 An equitable assignment, in respect of which notice has been given to the debtor, has the same effect as a legal assignment; the difference between them is purely

In this context we focus upon the assignment of a debt (a legal interest).

[&]quot;Under the hand of" requires that the assignment is not only written, but also signed.

In contrast to a legal assignment, any form of notice suffices provided that the fact of the assignment is brought to the attention of the debtor.

- procedural. We understand that factors are therefore generally prepared to accept equitable assignments from their clients.
- 8.7 The absence of form requirements means that no issues arise where electronic communications (including EDI) are used to effect, and to give notice of, equitable assignments of legal interests.

Assignment of an equitable interest

- 8.8 Section 53(1)(c) of the Law of Property Act 1925 requires all dispositions of an equitable interest to be in writing, signed by the person disposing of it. If a factor were to assign a debt which had been assigned to it in equity, that second assignment would therefore have to be in writing and signed.
- 8.9 On the basis of our analysis of the form requirements issues in Part 3, e-mail could be used to effect such an assignment, but EDI could not. This should not however give rise to any issues in practice: we are told that factors do not generally assign debts, as to do so would be contrary to the expectations of their clients.

CONCLUSIONS

- 8.10 An e-mail is capable of satisfying the statutory form requirements in connection with legal assignments, but EDI is not. If the requirements for the legal assignment of a legal interest (such as a debt) are not satisfied, for example because EDI was used, the assignment will take effect in equity. Factors are generally content to rely upon such equitable assignments.
- 8.11 Both e-mail and EDI may be used in connection with equitable assignments of legal interests, which do not require compliance with any form requirements.
- 8.12 An e-mail is capable of satisfying the statutory form requirements in connection with assignments of equitable interests, but EDI is not. However factors do not generally assign such equitable interests.
- 8.13 Reform of the statutory form requirements associated with assignments is not therefore required in the context of factoring.

PART 9 PAYMENT MECHANISMS

INTRODUCTION

9.1 In this Part we identify the issues which may arise from the existing and future use of electronic communications and trade documentation, in the context of the most common payment mechanisms used in the international sale of goods.

DOCUMENTARY CREDITS

- 9.2 Bankers' documentary credits were developed to meet the needs of sellers and buyers (that is, the seller would know that they would receive payment, but only when the buyer knew that goods stated to comply with the credit would be received). Almost all documentary credits incorporate, as contractual terms, the Uniform Customs and Practice for Documentary Credits (UCP 500) published by the International Chamber of Commerce (ICC). UCP 500 is based upon the presentation of original, paper, documents: it is the unanimous view of those who we consulted that it does not permit the electronic transmission and presentation of documents.
- 9.3 The ICC Banking Commission acknowledges that the rapid development of electronic commerce may have a significant impact upon the next revision of the UCP. Pending that revision, parties to a documentary credit are free to agree that UCP 500 should be varied to allow the electronic presentation of documents. Given that UCP 500 is to be updated, there is no need for reform in this area

BILLS OF EXCHANGE

- 9.4 The widespread use of bills of exchange is due to their status as negotiable instruments. Bills of exchange are used for commercial purposes because many jurisdictions impose complex legal restrictions on assignments of debt. These are avoided by embodying the debt in a piece of paper which passes by delivery.
- 9.5 The fact that bills of exchange can be made payable at a fixed future date means that they are ideally suited to international sales, where the buyer may not wish to pay immediately on shipment. Because bills of exchange must be in paper form, their use in a documentary credit would be a barrier to fully electronic credits.

The definition of a bill of exchange in the Bills of Exchange Act 1882, s2 includes a number of paper-based concepts. We believe that their cumulative effect is that the definition cannot be satisfied by a series of electronic messages which might perform, in effect, the same functions. Our discussions with consultees suggest that this view is generally accepted.

Bills of exchange are used in sight, negotiation and acceptance credits. It is possible that the use of these forms of credit will increase following *Banco Santander SA v Bayfern Ltd and others* [2000] Lloyd's Rep Bank 165, which highlighted the fraud risk borne by the discounting bank under a deferred payment credit.

- 9.6 It is possible that the functions of a bill of exchange could be replicated electronically by way of a series of promises to pay. Whilst such promises could be made contractually enforceable, they would be outside the scope of the Bills of Exchange Act 1882.³ They would not therefore provide the protection which the Act gives to bona fide purchasers for value: a statutory protection incapable of being created by contract.
- 9.7 We are not however aware of any demand to create an electronic equivalent of a bill of exchange, with negotiable status. If such a demand did arise, reform should be approached internationally. 5

PLEDGE

- 9.8 A pledge of the documents provides security to a bank making a payment under a documentary credit. A pledge is a security based upon possession. It amounts to a transfer of the possession of goods by way of security, but with the ownership of the goods remaining with the pledgor. A pledge may be created by:-
 - (1) Delivery of physical possession of the goods.
 - (2) Constructive delivery of the goods by delivery of a bill of lading.
 - (3) Constructive delivery of the goods by way of attornment.
- 9.9 The first method will be unaffected by electronic communications. As there is no foreseeable prospect of an electronic bill of lading being developed, this will preclude the creation of an electronic pledge by the second method.⁶
- 9.10 Electronic trading will be conducted through multilateral contractual systems, such as Bolero, for the foreseeable future. Contractual systems are capable of providing protection to participating banks through their terms, the use of a central registry, and the ability of carriers to create a pledge by attorning. The creation of a pledge by attornment may therefore become increasingly significant. Adequate legal provision already exists for these purposes: there is therefore no need for reform.
 - And of similar legislation in other jurisdictions. We understand that promissory notes, which are also subject to the regime of the Act, do not play a significant role in international sales.
 - ⁴ This may reflect the fact that it is currently difficult, if not impossible, to ensure that the holder could not transmit the same electronic bill of exchange to more than one party. This problem will need to be overcome if an electronic bill of exchange is to be developed.
 - It is desirable that the uniformity of the laws on bills of exchange world-wide is maintained.
 - ⁶ The law merchant will not apply to, for example, a BBL under Bolero.
 - Which can guarantee the 'uniqueness' of an electronic document.
 - ⁸ Under the Bolero scheme carriers appoint Bolero International as their agent for the purposes of attorning to 'holders' of the BBL.
 - The fact that many ships are now in instantaneous electronic contact with the outside world makes it much easier for pledges to be created by an attornment of the carrier.

PART 10 SUMMARY OF CONCLUSIONS

STATUTORY FORM REQUIREMENTS (PART 3)

- 10.1 Although there has been some lack of consensus on these issues, statutory requirements for 'writing' and a 'signature' are generally capable of being satisfied by e-mails and by website trading (but not by EDI).
- 10.2 Because English law seldom imposes such form requirements in a contractual context, it is only in very rare cases that the statute book will conflict with the obligation imposed by Article 9 of the Electronic Commerce Directive.
- 10.3 General reform of the statute book is not therefore required. If, in order to give absolute certainty to businesses and other would-be users of electronic communications in specific contexts, it is necessary to legislate to remove any doubts, the legislation should be context-specific and it should be framed in such a manner that it does not cast doubt upon the ability of electronic communications to satisfy statutory form requirements in other contexts.
- 10.4 Orders under section 8 may be made where it is clear that an electronic communication can or cannot satisfy a form requirement, or where the position is uncertain. It will be possible to use an order under section 8 of the ECA to deal with form requirements which conflict (or which may conflict) with Article 9, to provide such clarification as may be required, and to impose such conditions as may be appropriate.

CARRIAGE BY SEA (PART 4)

10.5 The absence of an electronic bill of lading and the existence of adequate legal provision for 'contractual' schemes (such as Bolero) mean that there is no immediate need for domestic reform. Reform may be required if an electronic bill of lading is created. The domestic position may also need to be reconsidered when work currently being undertaken internationally has been completed.

SALE OF GOODS (PART 5)

10.6 Reform of the Sale of Goods Act 1979 provisions concerning the passing of property is not required in the light of current arrangements for carriage by sea using electronic contracts.

CARRIAGE BY ROAD, RAIL AND AIR (PART 6)

10.7 Provision for the use of electronic communications has been made in the Conventions governing carriage by rail and by air. We are not aware of any demand to create an electronic consignment note in relation to carriage by road. However, because such a demand may develop, this issue should be considered when the opportunity next arises to consider changes to the relevant Convention.

INSURANCE (PART 7)

10.8 Reform of the Marine Insurance Act 1906 is required to prevent the requirement for a marine policy from inhibiting or frustrating the desire of the insurance market to increase its use of electronic communications.

FACTORING (PART 8)

10.9 Reform of the statutory form requirements associated with assignments is not required in the context of factoring.

PAYMENT MECHANISMS (PART 9)

10.10 There is no need for reform of domestic law in the context of documentary credits, bills of exchange, or the creation of a pledge.

(Signed) ROBERT CARNWATH, Chairman HUGH BEALE STUART BRIDGE MARTIN PARTINGTON ALAN WILKIE

MICHAEL SAYERS, Secretary 3 December 2001