

TOWARDS BROADER USE OF ELECTRONIC BILLS OF LADING IN INTERNATIONAL TRANSPORT OF GOODS:

United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea (2009) – A New Incentive or an Obstacle?

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1. Introduction

Trying to make more common the use of electronic communication technologies concerning formation and execution of contracts for the international carriage of goods by sea, as well as of the key transport document issued under or pursuant to these contracts, is not such a new endeavor in international maritime transport community as it can seem to be. Although the bill of lading itself is a document of title that still provokes century old scholastic disputes, such as the one considering its legal nature and thus the one on its basic functions too,¹ since the appearance of EDI (“Electronic Data Interchange”) systems and the start of their use in commercial transactions between regular

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1 See Zekos, Georgios I. “The e-bill of lading contract: An e-standard form contract of carriage or merely an evidential document”, *Neptunus*, revue électronique, Centre de droit maritime et océanique de Nantes, Vol. 11, 2008/2, accessed on 1 February 2012, available at: http://www.droit.univ-nantes.fr/labos/cdmo/centre-droit-maritime-océanique/cdmo/neptunus/nept/nep32/32_3.pdf. In this article Zekos strongly supports some of the British authors’ century old view that a bill of lading does not only evidence contract for carriage of goods, but that it also represents a form of this contract, unless expressly stated otherwise and under a precondition that, once completed by the carrier, it is received and accepted by the shipper without any objections in consideration to its content.

business partners in early 1980s,² almost simultaneously, another dispute has emerged within the academic and business community around the world. In the beginning, it was more on whether electronic forms of transport documents should be accepted and granted equal treatment as written, meaning paper documents,³ but soon afterwards it was about the manner in which to manage to safely introduce electronic forms of transport documents, such as a bill of lading or electronic waybill in every day legal transactions. Today, a few decades later, notwithstanding enormous scientific and technological progress in the field of e-commerce and e-business in general, electronic transport documents and electronic bills of lading in particular are still not in common use and there is still no unanimous view on their key functions as documents of title, notwithstanding the fact that throughout this period there were few objections to electronic bills of lading gaining equal treatment as paper ones under the “functional equivalence approach”.⁴ On the other hand, there still are numerous efforts in this direction and it seems that their number is growing in time.

With this last tendency in mind, we could ask ourselves is there a set of specific advantages of electronic bills of lading that are directly provoking all those recent efforts on achieving equal treatment of electronic and paper bills of lading under the law? If so, what are those and what are the reasons for electronic bills of lading not becoming ubiquitous during the last few decades in spite of all the efforts and the advantages? Can we find one of the key reasons for this to be embodied in imperfect and undefined technical standards surrounding the use of electronic documents of title in our recent past? On the other side, could we consider those reasons to have derived from incomplete and poorly harmonized regulatory regimes throughout the last decades? Finally, can we consider “Rotterdam Rules”⁵ provisions on electronic commerce aspects of international transport of goods to be a step in the right direction or yet another failure to establish a comprehensive and trustworthy international regulatory framework for the safe and successful use of electronic transport documents?

These are the most important questions this article aims to address further. Of course, it would be too pretentious to try to provide definitive answers. Much larger scientific work than a mere article would be needed in order just to try to do so. Therefore, an effort will be made here to put some new light on the aforementioned dilemmas and to pinpoint some of the main directions in which the efforts for solving them could actually lead both scholars and legal practitioners in the near future.

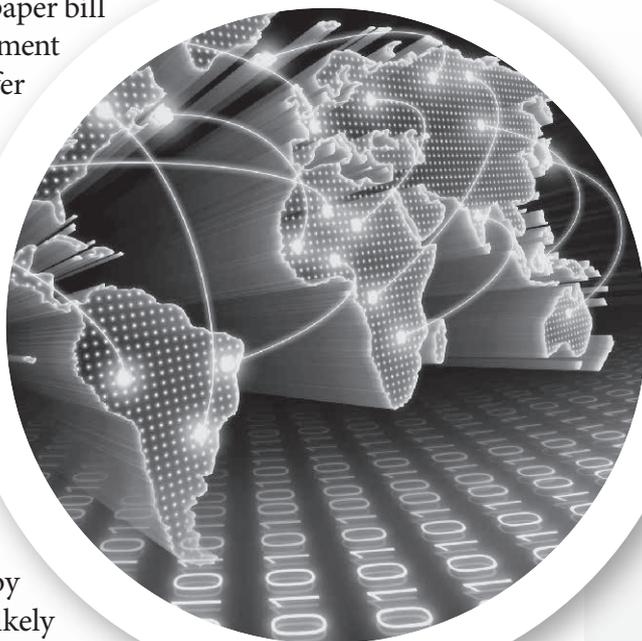
2. Electronic Bill of Lading - Strength and Weaknesses

There are literally hundreds of definitions of an electronic document, but after decades of scholarly articles and other scientific work dealing with various legal aspects of e-business it hardly seems necessary to spend much energy in defining any specific electronic document. That having been said, this author finds that there should be no great mystery in defining an electronic bill of lading, and

- 2 See Chandler, George F. “Maritime Electronic Commerce for the Twenty-First Century”, *Tulane Maritime Law Journal*, Summer 1998: pp. 443 – 446; Pejović, Časlav “Main Legal issues in the Implementation of EDI to Bills of Lading”, *European Transport Law*, No. 2 (1999): p. 163 – 186; Muthow, Erik “The Impact of EDI on Bills of Lading – A Global Perspective on the Dynamics Involved,” MA Dissertation, University of Cape Town, 1997.
- 3 At that point in time terms “written document” and “paper document” were mostly treated as synonyms, which is not the case today, when both electronic and paper form documents, as a general rule, are considered to be written documents for the purpose of their equal treatment under numerous regulatory regimes.
- 4 Functional equivalence is one of the most important, if not the most important principle that current regulatory regimes, both national and supranational, are using as a basis for stipulating equal legal treatment of paper and electronic form of various documents, such as contracts and bills of lading. See Savković, Vladimir “Pravni aspekti elektronske trgovine – elektronsko ugovaranje”, PhD dissertation, University of Montenegro, 2008: p. 40; John Livermore and Krailerk Euarjai, “Electronic Bills of Lading and Functional Equivalence,” *Journal of Information Law and Technology*, Issue no. 2 (1998), accessed 4 January, available at: http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/1998_2/livermore/.
- 5 “Rotterdam Rules” is a commonly accepted name within the academic global community for United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, primarily thanks to fact that the signing ceremony was organized in Rotterdam on 23 September 2009.

thus it should be considered to represent no more than a simple record recording all the required information and stored in a digital form on a computer or any other suitable medium.

Moving further, addressing the first one belonging to the set of questions indicated above, nowadays, almost three decades after electronic commerce became business reality, a keen eye could easily spot that by its very nature an electronic bill of lading has certain obvious advantages over its paper pre-descendent. Most obvious and one of the most important advantages derives from one of the most important functions that a bill of lading can perform. It is the transfer of possession and other rights concerning the cargo entrusted to the carrier by the shipper to be transported from place of dispatch to the place of receipt,⁶ with the other two key bill of lading functions being to certify that goods are received by the carrier and to evidence a contract of carriage.⁷ Namely, to transfer the rights incorporated in a paper bill of lading one needs to physically transfer this paper document to another person. Obviously, it is much easier to transfer a document in its electronic form than it is to transfer it in its paper form. Not so long ago, ships were much slower than they are today, hence it is not impossible to imagine situation in which the cargo ship arrived in port of discharge as its final destination before the consignee acquired possession of the paper bill of lading that needed to be presented to the carrier in order to enable him to execute the final phase of the contract. Furthermore, this was one of the main reasons for the decrease in use of bills of lading in recent decades and more frequent use of non-negotiable transport documents, such as the sea waybill. On the other hand, it is obvious and frequently underlined by various authors that this kind of problem is by far less likely to happen in cases in which electronic transport documents are used.⁸ Another big advantage of an electronic bill of lading over its paper equivalent is that the former should be much more cost effective than the latter one.⁹ However, one should have in mind that in order for this to occur, as well as for the previous advantage to become evident, cost effective and reliable specialized networks and according technical procedures for the use of electronic transport documents need to be established and put to use. Speaking of reliable networks, along with the aforementioned advantages, another one will be stressed here. Although this electronic commerce general advantage and characteristic is still not undisputed, this author finds that it should be emphasized here that the use of electronic transport documents can bring to international transport of goods more secure procedures and accordingly a significantly higher level of legal certainty for the parties to the contract involving such documents. Namely, if a system



6 It is needless to say that this goes only for the negotiable, i.e. transferable bills of lading.

7 As mentioned earlier in this article, there are authors that support the standpoint under which a bill of lading is more than just evidence and that it represents a contract (see footnote 1) for carriage of goods. However, although there are strong arguments to support this, for the purpose of further analyses in this article, we will accept the traditional civil law view and consider the bill of lading to be no more than a transport document evidencing contract for carriage of goods.

8 See e.g., Chan, Felix W.H., "In Search of a Global Theory of Maritime Electronic Commerce: China's Position on the Rotterdam Rules", *Journal of Maritime Law & Commerce*, April 2009: p. 186; Mallon, Paul, "The Legal Implications of Electronic Commerce in International Trade", *Computers and Law* (1997) 8 (October/November): p. 24.

9 This is obviously another important issue. A good example of this is that, according to the United Nations Economic and Social Council, around 7% of the international trade total value goes to paper based administrative procedures. See United Nations Economic and Social Council, "Emerging Issues and Developments at the Regional Level: Managing Globalization", accessed on 2 February 2012, available at: <http://www.unescap.org/59/e/E1273e.pdf>



using public key cryptography is properly maintained and coordinated by a trusted third party, there is very little place and in most cases far less space for fraud and abuse than there is in situations in which traditional paper document oriented procedures are followed.¹⁰

Finally, looking over the shoulder, one should be able to designate two main obstacles in clearing the road for the use of electronic documents in international maritime transport of goods for the last few decades. The first one is the lack of adequate systems and according procedures for the safe use of electronic transport documents. In the past, first there was a considerable lack of trust in electronic commerce in general and electronic forms of documents in particular, which, having in mind the traditionalism as one of the most prominent characteristics of maritime law, was easy

to understand. Then there was a lack of e-commerce technologies providing the required level of security for the legal transactions executed through electronic means. Finally, the lack of awareness on how important increasing the effectiveness of maritime transport e-commerce technologies can actually be was another reason for the policy makers in this transport branch not to push hard enough in order to establish adequate systems for the safe use of electronic bills of lading. However, with the progress made in other fields of e-business during the late 1990's, they have become more aware of all the e-business advantages and during the last decade serious efforts have been made to make use of electronic bills of lading a common thing in international maritime transport of goods. In that respect, probably the most prominent effort is the Bolero ("Bill of Lading Electronic Registry Organization") Project, which was initially started by the European Union in the late 1990s, but even this project, although it did have some significant results during the last few years, especially in satisfying the highest quality technical requirements, did not yet succeeded in making the use of electronic bills of lading a common business decision. On the other hand, bearing in mind the seriousness of the parties involved and the accomplishments made so far, chances are that this project will make steady progress in the future.¹¹

As we have already noticed, for years now it is safe to say that there are electronic communication technologies capable of supporting high-level security procedures for the issuance and everyday safe use of electronic bills of lading. Obviously, technology is not such a big problem anymore. What is it then? What is this other problem or other obstacle as we mentioned earlier? This author supports the view that it can only be the lack of unified or at least harmonized national regulatory regimes supporting the use of electronic alternatives to documents of title issued in paper form. Namely, neither BOLERO, nor any other similar initiative could overcome all the legal problems deriving from

10 See Savković, Vladimir "Pravni aspekti...": pp. 215 – 222.

11 BOLERO International Ltd. is a company jointly owned by SWIFT ("Society for Worldwide Interbank Financial Transactions") and TT Club ("Trough Transport Mutual Insurance Association Ltd.") and it was originally funded by the EU Commission, which initially set it up as pilot project for establishing the feasibility of electronic bills of lading. Today it is a company providing the possibility of doing business through electronic means, more precisely via a closed network that can be used only by its members, entities accepting the Bolero Rule Book. This service heavily relies on public key cryptography, thus ensuring the security and privacy of parties communicating through it. It is, however, only the "hottest" of the similar projects at this moment, with others being the Seadocs Project, the International Maritime Committee Rules on Electronic Bills of Lading, etc. See Dubovec, Marek "The Problems and Possibilities for Using Electronic Bills of Lading as Collateral", *Arizona Journal of International and Comparative Law*, Spring 2006: pp. 450 – 459; Carr, Indira "International Trade Law", New York: 4th edition, published by Routledge & Cavendish (2009): pp. 203-204;

various legal obstacles on the road to securing electronic bills of lading identical legal treatment as the ones issued in paper form have under even more various national legal systems in different phases of its use under the contracts for carriage of goods. National courts, for example, are obliged to follow and implement imperative norms such as the one stipulating standards that need to be satisfied in order for an electronic record to be recognized as adequate replacement for a paper document under the functional equivalent approach. These standards, however, are varying from one jurisdiction to another and no national or international autonomous legislation can make these differences disappear along with the inevitably accompanying legal uncertainty. Thus, notwithstanding the benefits of using electronic bills of lading, for the contracting parties it was often easier to play it safe with their paper pre-descendants and avoid these and other similar potential legal problems. Finally, although it is not something that has passed completely unnoted so far,¹² it is even more evident today that the lack of uniform or harmonized national laws and accompanying legal uncertainty are the key obstacle on the road towards achieving common use of electronic bills of lading.

On the other hand, for more than a decade now, we have witnessed commendable national, regional and globally oriented efforts on enabling e-commerce through stipulating equal treatment of electronic and paper documents. For instance, in European Union countries there is the so called “Directive on electronic commerce” (Directive 2000/31/EC of the European Parliament and of the Council), a document that secured regulatory recognition of equal treatment of electronic and paper bills of lading in member countries, except for the small number of those not issued in B2B (“business to business”) transactions. Together with the Bolero Rulebook this regional legal instrument will provide the necessary regulatory “infrastructure” for legally safe and efficient use of electronic bills of lading through the use of the Bolero Project technological solutions. However, this is just one good example and it is, regrettably so, restricted to a specific and relatively small geographic region. However, on the global level the situation is different. Various national legal systems are far from being harmonized in most aspects and electronic commerce regulatory regimes are no exception to this. Interestingly enough, even the 2005 United Nations Convention on the *Use of Electronic Communications in International Contracts* expressly excluded its application on bills of lading (article 2.). One could argue that the obvious reason for this was the fact that under the auspices of UNCITRAL (“United Nations Commission for International Trade Law”) the work on the other international regulatory instrument specifically dealing with international contracts for carriage of goods by sea was well under way at this point in time, but another, even more likely reason was the fact that there had been still a great deal of uncertainty on how to achieve efficient transfer of rights through transfer of possession over negotiable bills of lading forwarded in electronic form. Thus, it was both convenient and logically justifiable at that point in time to leave this task to be accomplished a few years later by the forthcoming new UNCITRAL Convention, at which time, supposedly, the very subject of regulation would be more understandable and better defined.

3. Electronic bills of lading in the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea

The United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by the sea¹³ (further on referred as: “Convention”) embraces a functional equivalence approach in order to set foundations for equal effect under that regulatory regime of both paper and electronic

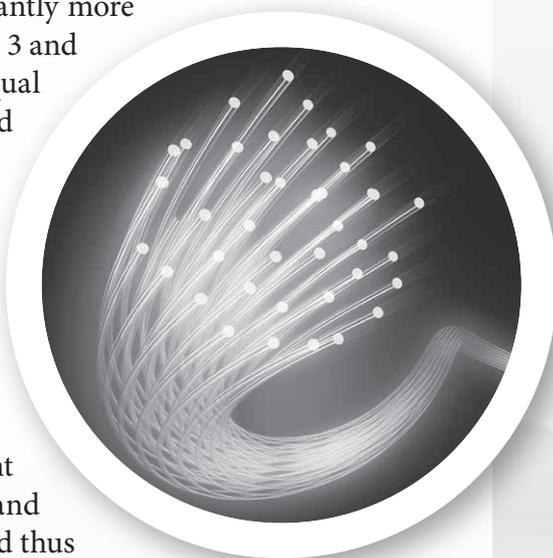
¹² See Pejović, Časlav “Main Legal issues...” p. 164.

¹³ On 11 December 2008 the UN General Assembly adopted the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea and authorized an official signing ceremony that was held on 23 September 2009.

transport documents, thus trying to satisfy the needs and demands of the business community in the international transport of goods industry. The manner in which electronic and paper form equality is being stipulated in this Convention, however, has some quite interesting features and appropriate emphasis will be made when considering them further on.

The core provisions of the Convention considering the use of electronic transport documents in particular and electronic communication technologies in general are the ones in article 3 and article 8 of the Convention. While article 3 provisions are basically stipulating that all types of communication (notices, confirmations, consent, agreement, declarations, etc.) that need to be in writing are still considered to be in writing if electronic communication is used for these purposes, provided that the use of such means is with the consent of the person by which it is communicated and of the person to which it is communicated, article 8 stipulates that anything that is to be in or on a transport document under the Convention may be recorded in an electronic transport record, provided the issuance and subsequent use of an electronic transport record is with the consent of the carrier and of the shipper. There are two specific aspects of these definitions that should attract our immediate attention. The first aspect doesn't concern the substance or the specific features embodied in these definitions. Rather, it concerns the form, or better yet, the place of these definitions in the text of the Convention. Precisely, it seems that the notion of functional equivalence would be served better if the unique definition of the term "in writing" and of the term "transport document" had been stipulated to include explicitly both electronic and paper form in one "universal" provision. If nothing else, it would show more decisiveness in providing for the equal treatment of both of these forms in the Convention. Nevertheless, it is safe to say that the chosen definition structure of basic terms in the Convention should not significantly influence the implementation process and the according efforts to achieve its perceived results.

The second thing that catches the eye seems to be significantly more important than the first one. It concerns the wording of article 3 and within it the consent precondition for the use and for the equal treatment of all electronic communication with paper based communication, and a similar consent precondition when it comes to equal treatment of electronic transport records and transport documents issued in paper form, which has been stipulated in article 8 of the Convention. It seems that by stipulating prior consent for the use of electronic communication and electronic form of transport documents such as the bill of lading, in a certain way, the Convention cast a shadow on the proclaimed equivalence between electronic and paper form. More precisely, the presence of the prior consent requirement itself is implying that electronic means of communication and electronic transport record, e.g. bill of lading, are less likely and thus a less desirable choice for the parties to the contract. Bearing in mind all of the above noted advantages of electronic bills of lading over their paper form equivalents, we can only come to the conclusion that the ratio behind the provision stipulating the consent requirement was to remind parties to the contract, as well as the others entering into legal relation with the contract parties, that the use of electronic forms of communication and of the electronic forms of document entails more security risks than paper based communication and transport documentation. Although there are scholars justifying this regulatory approach by emphasizing the importance of the contracting party's right to choose to avoid eventual legal complications immanent to the use of



electronic communication technologies,¹⁴ it seems to this author that the consent requirement in its stipulated form will not bring significant progress in achieving a higher level of legal certainty for the contracting parties and others being in a legal relation to the former two in the contract of carriage context, such as the consignee or the performing party. Namely, despite the fact that, based on the provisions stipulating the absence of the consent by the parties not to use transport documents as a precondition for the recognition of the documentary shipper's right to request their issuance by the carrier,¹⁵ we could try to draw some conclusions of our own, such as the one that consent could be implied, as well as that it can be given expressly. The simple fact remains that it is not clearly defined in what manner may the consents stipulated in article 3 and article 8 be given in order to be considered valid under the Convention. Accordingly, this fact alone may prove to be one of the legal loopholes that could cause a significant amount of hesitation on the side of contracting parties, especially in the very beginning of the implementation process. This possibility of hesitation is even greater in case of other natural or legal persons whose consent is a precondition for the valid use of electronic communication and electronic transport records, since they need not enter into contract for the carriage of goods before they start using electronic commerce technologies. Hence, in their case, it is even less clear what could serve as a form of required consent. If all this proves to be the case, there is a good chance that achieving one of the key objectives of the Convention, enabling equal treatment and effect under the adopted regulatory regime of electronic communication and electronic transport documents (e.g. bill of lading), may be slowed down if not generally endangered by the imprecise wording of the consent requirement in this international regulatory instrument. Adding to this, it is particularly unclear why the person by whom the electronic communication has been initially communicated is obliged to give consent to the use of electronic communication under article 3 of the Convention, and what could then be the form of that consent. Shouldn't the very act of usage of electronic communication technologies be enough to signify the consent of the person using them to communicate under the objective contract formation theory? Finally, notwithstanding the above mentioned difficulties that may or may not be provoked by them in the implementation phase, by the very fact that they exist when it comes to electronic form and that they don't in case of paper form, described consent requirements raise a certain amount of doubt on whether the media neutrality approach has been consistently implemented in the wording of the Convention and that is hardly a good thing to begin with.

Of course, the consent requirement is not the only one that could be defined as specific to electronic communication in this Convention. The very definitions of electronic communication and of the electronic transport record, both non-negotiable and negotiable, contain a number of other requirements that need to be met in order for electronic messages and transport records to be given the same effect as paper ones. Hence, an electronic message, i.e. communication, apart from being sent, received, stored by electronic, optical, digital or similar means, needs to be accessible and usable for subsequent reference,¹⁶ whereas an electronic transport record has to be in the form of one or more electronic messages that are evidencing carriers or the performing parties' receipt of goods under a contract of carriage, and that are evidencing or containing a contract of carriage.¹⁷ In addition to these requirements, a negotiable electronic transport record has to indicate that the

14 "The concern not to burden the parties with unintended form obligations or other requirements is also grounded on the inconvenience of imposing the validity of electronic means and forms on any of the parties in cases where there is a justified reason for either side not to submit to their use." See Alba, Manuel, "Electronic Commerce Provisions in the UNCITRAL Convention on Contracts for the carriage of Goods Wholly or Partly by the Sea", *Texas International Law Journal*, Spring 2009: p. 402.

15 See article 35 of the Convention starting with the following wording: "Unless the shipper and the carrier have agreed not to use a transport document or an electronic transport record, or it is the custom, usage or practice of the trade not to use one..."

16 See Convention, article 2, paragraph 17.

17 *Id.* article 2, paragraph 18.

goods have been consigned to the order of the shipper or to the order of the consignee, unless it is marked as non-negotiable, when it has to be treated as such an electronic transport record.¹⁸ One specific requirement concerning the issuance of an electronic transport record is stipulated for the carrier. He is obliged to use his electronic signature to sign the electronic bill of lading and in doing so to verify his identity and signify his authorization of the electronic transport record.¹⁹ Ultimately, an electronic transport record is subjected to procedures that must provide the specific issuance and transfer method, an assurance that the negotiable transport record retains its integrity, the manner in which the holder is able to demonstrate that he is the holder, and the manner of providing reliable confirmation that delivery to the holder has been effected.²⁰ Although there are certain specifics concerning confirmation of electronic message delivery and retention of the electronic record integrity in case of electronic bills of lading, these are more or less common preconditions for the use of electronic commerce technologies to be permitted in almost any given transaction today. On the other hand, both the manner in which the holder of an electronic transport document is able to demonstrate that he is its holder, and specific issuance and transfer methods for these documents should be considered as specific and key requirements in many aspects. Therefore, they deserve to be addressed more thoroughly in this paper.

Since our starting point in the above analysis was always the notion of functional equivalence, the first effort we should make in trying to answer a question on how a holder of an electronic transport record can demonstrate, i.e. prove the very fact that he is the holder, is to remind ourselves on how it has been done for centuries by the holder of the bill of lading forwarded in paper form. It is being done quite simply, as a matter of fact. The holder has actual possession of that paper document, which is a tangible and movable good. That makes him the one to control its substance, as well as its very existence in the physical world. Now, getting back to the “e-world”, first of all, we should always have in mind that physical is not the same as virtual reality and that, accordingly, the notion of possession from the former one could not be literally transposed into the latter one. But the question of how we can prove the actual possession over an electronic transport record remains, nevertheless. However, at this point, it seems that simultaneous analysis of the specific issuance and transfer method for electronic transport records, being the other one out of two procedural requirements that will be scrutinized here, could actually help better understand both of them. More precisely, since the holder of an electronic transport record is defined in the Convention as “the person to which a negotiable electronic transport record has been issued or transferred in accordance with the procedures referred to in article 9, paragraph 1”,²¹ in order to better understand this important definition one obviously needs to understand what is behind this issuance and transfer method requirement. Luckily, specific definitions of these two notions are provided in the Convention. The issuance of a negotiable electronic transport record is defined as the “issuance of the record in accordance with procedures that ensure that the record is subject to exclusive control from its creation until it ceases to have any effect or validity”,²² whereas its transfer is defined as “the transfer of exclusive control over the record”.²³ Obviously, both of these definitions are pointing towards the concept of exclusive

18 Id. article 2, paragraphs 19 and paragraph 20.

19 Id. article 38, paragraph 2. It is interesting to note here that no reference is made in the Convention to advanced electronic signatures, i.e. digital signatures. Hence the wording of the Convention remained technology neutral in this context. On the other hand, further analysis will show that other stipulated safety requirements practically demand the use of public key cryptography and that digital signatures technology application, accordingly, is practically imperative at this point of time, as well.

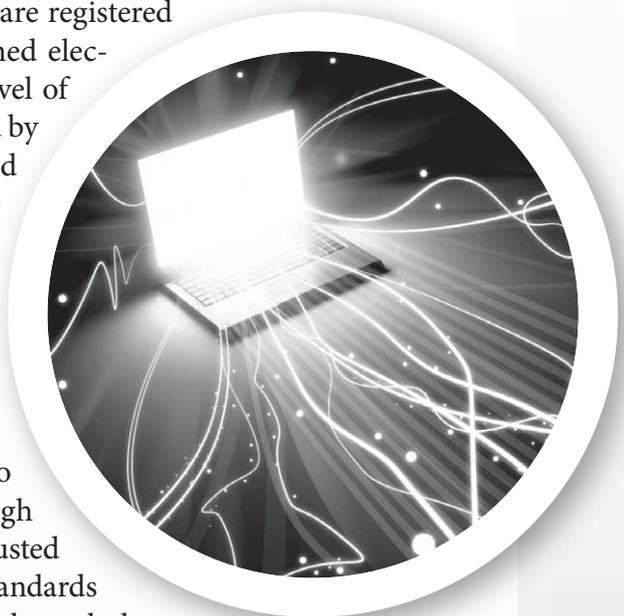
20 Id. article 9, paragraph 1.

21 Id. article 2, paragraph 10(b).

22 Id. article 2, paragraph 21.

23 Id. article 2, paragraph 22.

control, a concept that authors of the Convention, it is evident at this point, tried to impose as the “e-world” functional equivalent of the possession requirement in the physical world. Unfortunately, the meaning of the exclusive control concept hasn’t been provided in the Convention text, but it is hardly a speculation to conclude that it entails a kind of exclusivity on the part of the alleged holder when it comes to change of substance, i.e. wording of the electronic transport document, such as the bill of lading, as well as exclusivity concerning termination of the validity of such document. Therefore, a key requirement could be considered to be that, except for its holder, no other person is able to replicate the electronic record being recognized as a bill of lading in a manner that it would make this replica indistinguishable from the original document, as well as that no other person may dispose of that record.²⁴ This author believes that, with one “small” alteration, the above described standard may be satisfied today through the use of existing electronic communication technologies and within already established systems, such as the one functioning within the Bolero Project. The alteration mentioned concerns the involvement of the third party, whose main purpose is to ensure that there is a trusted registry system enabling parties that are registered to transfer and receive electronic messages and the attached electronic documents, as well as to do that with the highest level of confidence in each communication approved and supervised by this trusted third party. Under such system all the registered members should be confident to the highest possible degree that the message they received has been created by a physical or legal person that this message is indicating as the one that communicated it, as well as that the registered members who communicated the message should be confident that it will reach exactly the other registered member that it has been addressed to. Equally important, it would be due to the same system that all of the registered members are confident that no unauthorized person tampered with the message sent through the closed network, which is created and maintained by the trusted third party. The fact worth underlining here is that security standards under the Bolero System and other such systems are satisfied through the use of public key cryptography,²⁵ which is presently the only one that can satisfy each of the above noted stringent requirements for the legal recognition of electronic form of documents used in executing contracts for international carriage of goods. Authors of the Convention most certainly had this in mind at the time of drafting its electronic commerce provision. Consequently, it is obvious that they decided to fully synchronize the Convention with the present level of technological development. Accordingly, by avoiding further “speculation” on the exclusive control concept and leaving it open to interpretation, intentionally rather than unintentionally, authors of the Convention left the door open for the involvement of a third trusted party in facilitating the use of electronic commerce technologies in legal transactions deriving from international transport of goods



24 See Zekos, Georgios “Documentation in the 2007 Draft convention on the carriage of goods wholly or partly by sea”, *Neptunus*, revue électronique, Centre de droit maritime et océanique de Nantes, Vol. 14, 2008/1: p. 19 – 21, accessed on 7 January 2012, available at: <http://www.droit.univ-nantes.fr/labos/cdmo/centre-droit-maritime-oceanique/cdmo/neptunus/nept/nep40/zekos.pdf>.

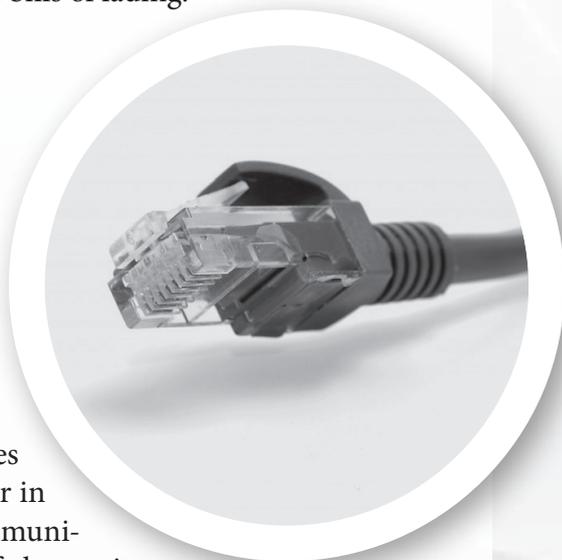
25 Public key cryptography enables secure exchange of encrypted messages and identification of the sender through verification of its digital signature. This process, of course, is overlooked and facilitated by a trusted third party (e.g. Bolero International Ltd.), keeping for the whole time the register of every individual transaction (exchanged electronic communication and electronic transport record), as well as of the public and private keys issued to its members. See Ghafur, Hamid A. and Maung, Khin S., “The Legal Implications of Electronic Bills of Lading: How Imminent is the Demise of Paper Documents?” *Journal of the Malaysian Bar* XXXIII No 3 (2004): pp. 12 – 15, accessed on 14 February 2012, available at: http://www.malaysianbar.org.my/index.php?option=com_docman&task=doc_view&gid=138.

by sea. In other words, it seems that they have created space for extensive and creative interpretation of the exclusive control requirement in order to enable the above described third party involvement in the process. Furthermore, by stipulating specific security requirements and avoiding at the same time the making of reference to any specific technology capable of satisfying them, the Convention successfully promoted the principle of technological neutrality, meaning that the Convention allows the possibility that some new technology could and probably will be devised and successfully used in the near future for the purpose of satisfying stipulated security requirements even more efficiently than the one its authors had in mind when they were drafting it. Finally, by accepting and including the principle of technological neutrality in its text, having in mind the dynamics in the field of the new electronic communication technology development, authors of the Convention laid down one of the key foundations for its long term future.

There are obviously some more interesting conclusions to be drawn from the above made analyzes, but before we move to concluding remarks it should be stressed that, except for the dubious consent pre-request, all of the requirements noted in this part of the article seem to be resulting from specific features of electronic communication technologies and ultimately should be considered as characteristics that an electronic communication, an electronic record or the very system enabling their use should pose in order for them to perform same functions and provide, at the very least, for the same level of legal certainty as paper documents and paper communications do. Thus, there is no obvious reason to consider any of them as a future obstacle to one of the Convention's overall objectives, such as the more frequent and safe use of electronic bills of lading.

4. Conclusion

This article argues that the Convention generally presents a fine effort to establish high level security standards for systems enabling and encouraging the use of electronic bills of lading in maritime transport of goods, but it also points out that a few very important issues have remained open, nevertheless. Two of them were particularly emphasized and more thoroughly analyzed in the article. The first one of these two is the consent requirement. As we elaborated earlier, its wording leaves an important question open. What is the form, i.e. the manner in which the consent can be given for the use of electronic communication to supplement the one based on paper or for the use of electronic transport records instead of their paper equivalent? We have seen that this issue opens a number of other questions that finally lead to the ultimate one. Notwithstanding the fact that it is better to have prior agreement on any matter that may become a problem in some later stage of legal relations development, was the stipulation of the consent requirement really necessary? From the point of view supported by the analysis made in this article, it simply seems that the option of leaving out the requirement at hand represented less potential danger to the very purpose this requirement serves, than the option eventually chosen. However, since the Convention does stipulate this requirement, it also seems that some kind of authentic interpretation that would reduce the space for misinterpretation and the accompanying legal uncertainty would be more than welcome before this international legal instrument comes into force. In an attempt to restrain from far reaching speculation on what this interpretation could bring, we shall conclude with the following. It should not be a surprise if it is revealed that this requirement has been stipulated with virtually mandatory use of trusted third



party services in mind and that, accordingly, the act of becoming a member, i.e. accepting the terms of use of third party services, was contemplated as a desired and logical fulfillment of the consent requirement.

The other issue that hasn't been fully "elaborated" in the Convention is the notion of exclusive control. However, the above analyses showed that, at least for the time being, its practical form, i.e. its implementation process, can be contemplated and defined with considerably more certainty than is the case with the consent requirement. Nevertheless, it seems that finding and using adequate technology to establish and maintain exclusive control over electronic communication and electronic documents is going to remain one of the biggest challenges when it comes to using electronic bills of lading. In this respect, public key cryptography seems to be the solution for the time being, but we have also seen that its use calls for a very creative interpretation of the Convention in order to include third party involvement in the whole process.

Returning to the Convention itself, notwithstanding the above open issues, it generally seems to make fine balance between the currently available technology and necessity to establish a comprehensive and detailed regulatory regime that will significantly diminish the space for misinterpretation by reducing the number of legal loopholes and other regulatory inconsistencies. More precisely, it raises safety and other technical standards to be satisfied by systems enabling the use of electronic bills of lading and other electronic transport documents to the highest level presently achievable, thus implicitly promoting the use of public key cryptography, since this is the only technology that can meet stipulated technical requirements at this moment. However, while at the same time it raises safety standards to the level that will secure the potential users' trust in the systems applying them, the Convention doesn't go beyond stipulating those stringent technical and safety standards and, in doing so, it remains technology neutral, thus leaving the door open for the use of other even more efficient technologies to come.

Finally, one of the key statements this article is trying to make is that a comprehensive and e-commerce friendly international regulatory regime is an essential prerequisite for achieving broader use of electronic communication technologies in the international transport of goods by sea, as well as it is essential for achieving considerably more frequent use of electronic transport documents, such as electronic bills of lading. Practical experience over the last decade or so showed that autonomous regulation by itself is not enough to remove legal uncertainty surrounding the use of electronic bills of lading. Thus, the only way this legal uncertainty can be removed is through harmonization of numerous national legal regimes, particularly the part of them regulating e-commerce and transport law. It is exactly the Convention that aims to achieve even more than that. It aims to unify national regulatory regimes by supplementing them for the most part. Whether it will succeed in this is going to stay an open issue in the time to come, since it is still a long way from coming into force. However, the fact remains that this one or a similar international regulatory instrument that may provide a high level of harmonization, or better still, unification of national regulatory regimes, is necessary to give key directions in which the systems (technical standards and autonomous law) enabling the use of electronic transport documents should develop to the point at which they will become both consistent with national regulatory regimes and highly safe and cost efficient to use by the common customer.