

## **ELECTRONIC TRANSPORT RECORDS: AN OPPORTUNITY FOR THE MARITIME AND THE LOGISTICS INDUSTRIES**

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### *Abstract*

*The current framework surrounding the bill of lading in international trade was developed in the eighteenth century and its replacement is long overdue. A new framework should be developed using electronic transport records. The objective should be to create a simple, transparent and effective process for global businesses through the standardization of e-business procedures and data, thereby improving efficiency and reducing transaction costs.*

*This paper provides a critical analysis of the legal foundation of electronic transport records that has been under development as a result of actions undertaken by UNCITRAL at the international level to provide a basis for harmonised laws in the area of electronic transport records. The paper outlines the various international initiatives for developing the law on electronic commerce, and examines the existing legal framework of negotiable transport documents. It discusses how the legal concept of a negotiable transport document can be dematerialised, and examines the consequent legal challenges that need to be met in order to effectively use electronic transport records. An analysis of existing electronic registry systems is presented as well. The requirements of the Rotterdam Rules relating to transport documents, electronic transport records and other relevant provisions are also scrutinized.*

*The paper explores the opportunities available to the maritime and logistics industries through the use of electronic transport records, and discusses the possibility of developing a global financial service through collaboration between the various actors in the international trading community. Strategic recommendations for the maritime and logistics industries are presented in the conclusion.*

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## 1. INTRODUCTION

The current framework surrounding the bill of lading in international trade was developed in the eighteenth century, and its replacement is long overdue. The development of a new framework using electronic transport records should be a high priority for shippers, carriers, and companies in the logistics industry. In spite of advances in the field of information and communication technology, paper-based documents still remain a primary method for the transfer of information involving transactions in international trade. Every year, millions of paper-based documents are exchanged as part of such transactions, involving huge costs to both governments<sup>1</sup> and the international trading community.

Generally, most discussions on the desirability of replacing paper-based transport documentation with electronic methods emphasize such benefits such as the speedy transfer of transport documents,<sup>2</sup> cost-savings,<sup>3</sup> the facilitation of settlement of transactions, enhancement of traditional payment arrangements, and increased security.<sup>4</sup> Additionally, some scholars argue that certain maritime trades, such as liner shipping and the transportation of crude oil, will greatly benefit from dematerialisation of paper documents.<sup>5</sup> However, although the use of electronic documentation has increased

<sup>1</sup> It is notable in this context that governments across the world have made progress towards adopting electronic means to reduce costs and facilitate international trade. The World Trade Organization (WTO) members recently reached consensus on a Trade Facilitation Agreement at the Bali Ministerial Conference in December 2013. The Agreement contains provisions for accepting electronic copies of documents, thus allowing faster and more efficient customs procedures through effective cooperation between customs and other appropriate authorities responsible for trade facilitation and customs compliance.

<sup>2</sup> See N. Gaskell, *Bills of Lading: Law and Contracts*, (Maritime and Transport Law Library), 2000, LLP, para 1.54: "Oil cargoes may commonly be sold 20 times on the spot market during a voyage from the Persian Gulf to Europe and many problems have occurred when the bills of lading are still stuck in the banking system while the vessel has arrived at the discharge port." See also P. Todd, "Dematerialisation of Shipping Documents", Chapter 3 in C. Reed, I. Walden and L. Edgar (eds), *Cross-Border Electronic Banking: Challenges and Opportunities*, 2000, Informa Business Publishing, 67: "for many cargoes, and in particular the carriage of bulk oil, the paper bill of lading [is] simply no longer serving its original function."

<sup>3</sup> One estimate for the Asia-Pacific region suggests that the potential savings from the widespread adoption of paperless trading could be about 3 per cent of the landed cost of goods, or about 60 billion dollars each year for total intra-Asia-Pacific merchandise trade. The savings would come from lower communication costs, fewer data entry errors, the use of common data elements, faster payment and therefore lower interest costs for trade finance, and more efficient supply chains. See "The APEC Initiative on Paperless Trade in the Asia-Pacific Region" in "Paperless Trade in International Supply Chains: Enhancing Efficiency and Security" United Nations Economic Commission for Europe, ECE/TRADE/351, at p. 19.

<sup>4</sup> R.B. Kelly, "The CMI charts a course on the sea of electronic data interchange: Rules for Electronic Bills of Lading" [1991-1992] *Tulane Maritime Law Journal* 349; P. Mallon, "The Legal Implications of Electronic Commerce in International Trade", (1997) 8 (October/November) *Computers and Law*, 24; R. Merges and G. Reynolds, "Towards a computerized system for negotiating ocean bills of lading" (1986) 6 *Journal of Law and Commerce* 36; P. Todd, *supra* note 2; A. N. Yiannopoulos, "General Report to the XIVth International Congress of Comparative Law", Chapter 1 in A. N. Yiannopoulos (ed.) *Ocean Bills of Lading: Traditional Forms, Substitutes, and EDI Systems*, 1995, Kluwer Law International, at pp. 17-19.

<sup>5</sup> See for example D. Faber, "The Commercial Importance of EDI" (1995) 6 *Computers and Law*, 15 and J. Gauthier, "The Broader Context of Electronic Commerce" [1997] *European Transport Law* 693; Todd, *supra* note 2. It is also interesting to note that recently BP Petrochemicals, in collaboration with Standard Chartered Bank, carried out a pilot project to eliminate the physical presentation of documents in documentary credit. See, Clarissa Dann, "Paperless chains", available

greatly over the past fifteen years, the use of electronic commerce still currently covers only a portion of the commercial transactions carried out all over the world.<sup>6</sup>

Thus, the current state of affairs suggests that the benefits usually discussed and outlined above are not by themselves compelling enough for the transportation industry to widely adopt electronic documentation systems that will facilitate the business of small and medium-sized shippers. Moreover, some of the arguments in favour of adopting electronic documentation may not be correct. For example, it has been argued that electronic commerce should be adopted because the processing of paper documentation has not kept pace with the increase in the speed of maritime transport; thus, the use of paper negotiable transport documents is failing to satisfactorily perform the functions for which it was originally developed.<sup>7</sup> However, during the past 50 years the speed of maritime transport has not increased substantially.<sup>8</sup> Moreover, with the current adoption of “slow steaming,” the average speed of ships is less than it was 10 years ago. It is also important to bear in mind that the overall economic benefit that may be derived through the adoption of electronic documentation may conflict with the interests of a party with greater bargaining power.<sup>9</sup>

The critical question largely remains unanswered: where do the monetary benefits lie? Attracting finance for building new infrastructure to meet the requirements of electronic commerce will only be possible when this question is answered. Although studies indicate that electronic commerce may yield savings compared to current paper-based transactions, the distributional consequences of these savings are not clear. Do the savings accrue to the consumer as a net economic benefit, to the carrier as higher profits, or to the cargo owner in the form of lower transport prices? Identifying the financial winners and losers is critical to understanding what can be done to influence the adoption of electronic commerce by shippers, carriers, and logistics companies.

It is submitted that the most compelling reason for the international trading community to embrace electronic means of doing business and promote electronic transport records is the possibility of adopting newer business models. As a result of using electronic commerce, the maritime and logistics industries can participate in the evolving area of supply chain finance. This will allow them to facilitate the transactions

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online at <http://www.swift.com/resources/documents/TFR.pdf> (accessed on 10 July 2013)

<sup>6</sup> Currently, electronic documentation is only used by large transnational corporations who ship regularly to their subsidiaries located in other countries or to customers with whom they engage in repeated transactions. Most small and medium-sized shippers still depend on paper documentation.

<sup>7</sup> See *supra* note 2.

<sup>8</sup> There was a substantial increase in the speed of transport when steam ships replaced sailing vessels. There was not a substantial increase when motor vessels replaced steam ships.

<sup>9</sup> For example, faster payment benefits the party receiving payment, but is a burden on the party that has to pay. An earlier industry experience shows that a simplified shipping documentation process designed for a certain commodity trade at the request of the dominant traders could not be made effective because the end-users of that commodity would have to pay much earlier than under the traditional process. In this trade the end-users had higher bargaining power and consequently their objections torpedoed the simplified documentation process.

of their customers through better financial risk evaluation techniques, brought about by the availability of more information that is fed through a centralised system.

To facilitate the growth of e-commerce in international trade, a new framework has to be created that is open and technology-neutral. It must be able to cater to the needs of companies, large or small, in both developed and developing nations, through the simplification and harmonization of processes and information flows; streamline administrative procedures at border crossings; integrate credit and payment systems; and improve trust assessment through better exchange of information. The objective should be to create a simple, transparent and effective process for global businesses through the standardization of e-business processes and data in the context of global trade facilitation, thereby improving efficiency and reducing transaction costs.

The decision to use electronic means has to be accepted by the business community rather than just by lawmakers. The law may provide the legal basis to facilitate electronic commerce, but it is the trading community that will eventually determine whether the availability of, and the economic incentives for, such electronic processes outweigh concerns over privacy and the safeguarding of trade secrets; for accuracy of information; and for security of transactions. Such concerns require technological rather than legal solutions.<sup>10</sup>

Following this introduction, Section 2 deals with the legal framework of electronic transport records. It first provides a summary of recent initiatives taken by UNCITRAL at the international level to provide a basis for harmonised laws in the area of electronic records. Then, a brief examination of the existing legal framework for negotiable transport documents is presented from an English law perspective.<sup>11</sup> This section also explores how a negotiable transport document can be dematerialised and examines the legal challenges that need to be met in order to use electronic transport records. An review of the existing electronic registry systems is presented as well. Section 3 then scrutinizes the provisions of the Rotterdam Rules relating to transport documents, electronic transport records and other relevant provisions under those Rules. Section 4 presents the case for opportunities available to maritime and logistics industries through the use of electronic transport records, including a discussion of the possibility of developing a global service through collaboration within the transportation industry. Section 5 provides a conclusion with strategic recommendations for the maritime and logistics industries.

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<sup>10</sup> See A. N. Yiannopoulos, *supra* note 4, at p. 14.

<sup>11</sup> English law is discussed because English law applies to a substantial portion of international sale and carriage contracts .

## 2. LEGAL FRAMEWORK FOR ELECTRONIC TRANSPORT RECORDS

### 2.1. International Initiatives For Developing Law On Electronic Commerce

The replacement of paper-based trade documentation with electronic records requires the development of criteria defining the conditions under which electronic records can be regarded as equivalent to paper documents for legal purposes. To achieve this goal, the United Nations Commission on International Trade Law (UNCITRAL) adopted, in 1996, the UNCITRAL Model Law on Electronic Commerce (MLEC).<sup>12</sup> This was followed in 2001 by a more specific text, called the UNCITRAL Model Law on Electronic Signatures (MLES).<sup>13</sup> The MLEC received widespread acceptance; several states subsequently used it as a basis for their e-commerce legislation.<sup>14</sup> These two model laws were supplemented in 2005 by the United Nations Convention on the Use of Electronic Communications in International Contracts (ECC), which is aimed at further harmonising domestic laws and addressing form requirements established in international conventions.<sup>15</sup> The basic principles on which the two model laws and the ECC are based have become widely accepted criteria for the legal recognition of electronic records.<sup>16</sup> Documents of title and negotiable instruments were not dealt with in detail in any of the

<sup>12</sup> United Nations Publication, Sales No. E.99.V.4, available online at [http://www.uncitral.org/pdf/english/texts/electcom/05-89450\\_Ebook.pdf](http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf). Legislation based on this model law has been adopted in 54 jurisdictions; for a detailed list, see [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/1996Model\\_status.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/1996Model_status.html) (both sites accessed on 23 June 2013).

<sup>13</sup> United Nations Publication, Sales No. E.02.V.8, available online at <http://www.uncitral.org/pdf/english/texts/electcom/ml-elecsig-e.pdf>. Legislation based on this model law has been adopted in 26 jurisdictions; for a detailed list see [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/2001Model\\_status.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2001Model_status.html) (both sites accessed on 23 June 2013).

<sup>14</sup> United Nations Publication, Sales No. E.07.V.2, available online at [http://www.uncitral.org/pdf/english/texts/electcom/06-57452\\_Ebook.pdf](http://www.uncitral.org/pdf/english/texts/electcom/06-57452_Ebook.pdf). This convention entered into force on 1 March 2013 and has so far received 2 ratifications and 1 accession; for a detailed list see [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/2005Convention\\_status.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Convention_status.html) (both sites accessed on 23 June 2013).

<sup>15</sup> For a summary of the preparatory work, see *ibid*, paras. 21-43.

<sup>16</sup> UNCITRAL promotes the “functional equivalence approach” which is based on an analysis of the purposes and functions of the traditional paper-based requirements in order to determine how those purposes or functions could be fulfilled through electronic techniques. See ECC, Explanatory Note, para. 51. This approach “does not attempt to define a computer-based equivalent to any particular kind of paper document.” Instead, it singles out the basic functions of the primary paper-based form requirements, and sets out criteria that, if satisfied, enable electronic records to enjoy the same level of legal recognition as corresponding paper documents. See ECC, Explanatory Note, para. 51. By doing so, it also allows States to enforce electronic transactions in accordance with existing laws “without necessitating the wholesale removal of the paper-based requirements themselves or disturbing the legal concepts and approaches underlying those requirements.” See ECC, Explanatory Note, para. 52. UNCITRAL also promotes the principle of “technology neutrality,” which holds that the law should not discriminate between different technologies, i.e., the law should neither require nor assume the adoption of a particular technology. The goal of technology neutrality is important to ensure that development of any technology is not stifled and to avoid unfairly favouring one technology over another. Strictly adhering to the principle of technology neutrality will maximize the ability to accommodate all possible present and future models. This principle has been reflected in the MLEC, MLES and ECC.

model laws and were expressly excluded from the scope of the EEC.<sup>17</sup> The main aim of the EEC was simply to ensure the equivalence between paper documents and their electronic forms. Issues related to documents of title and negotiable instruments extended far beyond that purpose.<sup>18</sup>

In 2008, the United Nations General Assembly adopted the “United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea,”<sup>19</sup> otherwise referred to as the “Rotterdam Rules.” One of the objectives of the Rotterdam Rules is to facilitate e-commerce by establishing a legal framework for the electronic equivalents of paper transport documents.<sup>20</sup> In fact, the desirability of a new transport convention grew out of the deliberations of UNCITRAL Working Group IV on Electronic Commerce. In the mid-1990s, one item on the agenda of Working Group IV was to develop electronic equivalents of documents of title. The Working Group concluded that the virtualization of documents of title was not feasible because of the formal function of the paper document. Instead, it was concluded that the functions of a document of title could be incorporated into the structure of electronic messages.<sup>21</sup> The provisions on electronic transport records in chapters 3 and 8 of the Rotterdam Rules were specifically designed to fill the gap in the area of carriage of goods in relation to e-commerce. The Rules also contain three separate chapters dealing with delivery of the goods, the rights of a controlling party, and the transfer of rights, which are key to solving the problem of how to provide for negotiable electronic transport records.<sup>22</sup>

In October 2011, Working Group IV of UNCITRAL undertook the task of creating harmonized rules for electronic transferable records,<sup>23</sup> in order to benefit the promotion

<sup>17</sup> Pursuant to Article 2(2) of the ECC, the Convention does not apply to bills of exchange, promissory notes, consignment notes, bills of lading, warehouse receipts or any transferable document or instrument that entitles the bearer or beneficiary to claim the delivery of goods or the payment of a sum of money.

<sup>18</sup> See ECC, Explanatory Note, paras. 80-81.

<sup>19</sup> United Nations Publication, Sales No. E.09.V.9, available online at [http://www.uncitral.org/pdf/english/texts/transport/rotterdam\\_rules/09-85608\\_Ebook](http://www.uncitral.org/pdf/english/texts/transport/rotterdam_rules/09-85608_Ebook) (accessed on 23 June 2013). The creation of the Rotterdam Rules was initiated by the Comité Maritime International (CMI) and was subsequently passed on to the UNCITRAL Working Group III (Transport Law). The principal goal underlying the development of the Rules is the creation of a modern and uniform law concerning the international carriage of goods by sea, in order to reduce transaction costs, increase predictability and stability, and engender greater commercial confidence in international maritime commerce. The Rotterdam Rules have so far received 25 signatures and 2 ratifications, by a mix of developing and developed countries, including strong seafaring and trading nations, as well as traditional carrier and shipper nations. Sweden is one of the signatories. See “Status of the Rotterdam Rules” available online at [http://www.uncitral.org/uncitral/en/uncitral\\_texts/transport\\_goods/rotterdam\\_status.html](http://www.uncitral.org/uncitral/en/uncitral_texts/transport_goods/rotterdam_status.html) (accessed on 06 February 2014). Pursuant to article 94, the Convention requires ratification or accession by at least 20 states to enter into force.

<sup>20</sup> Consistent with the Rotterdam Rules, the author uses the term “negotiable transport documents” to refer to bills of lading, and the term “non-negotiable transport documents” to refer to sea waybills, etc. The author uses the term “electronic transport records” to refer to the electronic equivalent of bills of lading. The meaning of these terms was adopted by the author in order to avoid confusion, since these terms are so defined in the Rotterdam Rules.

<sup>21</sup> See “Possible Future Work on Transport Law”, UN Doc A/CN.9/497, at p. 3.

<sup>22</sup> Chapters 9, 10 and 11 of the Rotterdam Rules, respectively. A detailed discussion follows in section 3 of this paper.

<sup>23</sup> The term “electronic transferable record” is used in this paper as an electronic equivalent of a transferable instrument (negotiable or non-negotiable) or a document of title. Transferable instruments are financial instruments that may contain an unconditional promise to pay a fixed amount of money to the holder of the instrument, or an order to a third party to pay

of electronic communications in international trade and to address some specific issues such as assisting in the implementation of the Rotterdam Rules. In July 2012, the Secretariat was requested to prepare draft provisions for consideration of the Working Group, which would eventually be presented in the form of a model law, without prejudice to the decision on the form of its work to be made by the Working Group.<sup>24</sup> The Working Group has planned biannual sessions alternating between New York in the spring and Vienna in the fall. The Working Group completed the first reading of the draft provisions during the forty-seventh session at New York from 13-17 May 2013 and continued with the second reading during the forty-eighth session at Vienna from 9-13 December 2013.<sup>25</sup>

One of the contentious issues within the Working Group has been to define the scope of application of the draft instrument. In discussing draft article 1, the Working Group deliberated as to whether instruments that existed only in an electronic environment should be included in the draft provisions. Several delegations were of the view that instruments that exist only in electronic form should be excluded, because the mandate of the Working Group was limited to transposing what existed in the paper-based environment into an electronic environment and to providing rules that would achieve functional equivalence. It was further mentioned that a discussion on those instruments would entail matters of substantive law. However, a few delegations expressed the view that instruments that existed only in an electronic environment should be included, based on a functional approach. In other words, as long as those instruments performed the same or similar functions as a paper-based transferable document or instrument, they should be included in the scope of the draft provisions. It was asserted that such an approach would provide more flexibility to address modern business practices

Before exploring the dematerialisation of the legal concept of a negotiable transport document and analysing the consequent legal challenges that must be met, a brief examination of the existing legal framework of negotiable transport documents is presented from an English law perspective.

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the holder of the instrument. Examples of transferable instruments include promissory notes, bills of exchange, cheques, and certificates of deposit. They may also include chattel paper (e.g. retail instalment sales contracts, promissory notes secured by an interest in personal property, and equipment leases). Documents of title are documents which in the regular course of business or financing are treated as adequately evidencing that the person in possession of such document is entitled to receive, hold, and dispose of the document and the goods indicated therein (subject to any defences to enforcement of the document). Examples of documents of title include certain transport documents, bills of lading, dock warrants, dock receipts, warehouse receipts, or orders for the delivery of goods. See "Legal issues relating to the use of electronic transferable records", Working Group IV (Electronic Commerce), Forty-fifth session (Vienna, 10-14 October 2011), (A/CN.9/WG.IV/WP.115), para 3.

<sup>24</sup> Report of Working Group IV (Electronic Commerce) on the work of its forty-sixth session (Vienna, 29 October-2 November 2012), (A/CN.9/761), para 93.

<sup>25</sup> The author attended these UNCITRAL Working Group IV sessions as an accredited observer representing the Swedish government.

## 2.2. Existing Legal Framework For Negotiable Transport Documents Under English Law

Legal scholars often consider the unavailability of a paper negotiable transport document at the destination port as the principal reason for adopting electronic transport records. When a negotiable transport document is used to deal in the goods while they are on board a ship, the paper document generally gets delayed in reaching the final buyer. Under such circumstances the carrier is likely to be compelled to deliver the goods in the absence of the transport document. This renders the carrier potentially liable to the rightful holder for misdelivery.

The consequences of misdelivery are two fold, as explained by Lord Denning in *Sze Hai Tong Bank v Rambler Cycle Co.*,<sup>26</sup> where the person entitled to delivery may seek damages for breach of the contract of carriage<sup>27</sup> and under the tort of conversion.<sup>28</sup> However, under the modern commercial practice, the carrier delivers the goods without the presentation of the negotiable transport document against a letter of indemnity. The letter of indemnity indemnifies the carrier for any losses incurred for delivering the cargo in the absence of the negotiable transport document.<sup>29</sup> It has been said that letters of indemnity have the legal status of an independent binding agreement.<sup>30</sup> However, whether such an indemnity amounts to a contract of guarantee or a contract of indemnity can also be important and will be a matter of construction.<sup>31</sup> Traditionally, common law courts have been less liberal in accepting letters of indemnity than their civil law counterparts. There may be difficulties in enforcing an indemnity if it purports to be fraudulent and liability attaches for the tort of deceit. However, there are no recently reported cases of indemnities not being honoured because they give rise to fraud, at least

<sup>26</sup> [1959] AC 576, 586. In this case it was held that “[i]t is perfectly clear law that a shipowner who delivers without production of the bill of lading does so at his peril. The contract is to deliver, on production of the bill of lading, to the person entitled under the bill of lading.... The shipping company did not deliver the goods to any such person. They are therefore liable for breach of contract unless there is some term in the bill of lading protecting them. And they delivered the goods, without production of the bill of lading, to a person who was not entitled to receive them. They are therefore liable in conversion unless likewise so protected.” See also *Mediterranean Shipping Company SA v Trafigura Beheer BV (The MSC Amsterdam)* [2007] EWCA Civ 794; [2007] 2 Lloyd’s Rep 622.

<sup>27</sup> In *East West Corporation v DKBS 1912 and AKTS Svenborg* [2002] EWHC 83 (Comm), it was held that in the case of a misdelivery of goods there is a “contractual right as against the carrier to demand delivery against presentation of the bill of lading and hence the right to possess.”

<sup>28</sup> See *APL Co Pte Ltd v Voss Peer* [2002] 2 Lloyds Rep 707; *Chabbra Corpn Pte Ltd v Jag Shakti (Owners) (The Jag Shakti)* [1986] AC 337; *Bristol and West of England Bank v Midland Railway Co* [1891] 2 QB 653; *London Joint Stock Bank Ltd v British Amsterdam Maritime Agency Ltd* (1910) 16 Com Cas 102. See Paul Todd, “The Bill of Lading and Delivery: The Common Law Actions” [2006] LMCLQ 539, 540-52; Simon Baughen, “Bailment or Conversion? Misdelivery Claims Against Non-contractual Carriers” [2010] LMCLQ 411.

<sup>29</sup> See *China Shipping Development Co Ltd v State Bank of Saurashtra* [2001] 2 Lloyd’s Rep. 691. For the problems banks face in issuing letters of indemnity, see J.P. Mattout, “Letters of Indemnity in Shipping Transactions: Legal Aspects”, (1991) 6 *Journal of International Banking Law*, 320.

<sup>30</sup> See *The Stone Gemini* [1999] 2 Lloyd’s Rep. 255. The enforceability of the indemnity may not be guaranteed, and even where it is enforceable, the rightful holder may arrest the ship in the course of proceedings against the carrier. Moreover, lengthy litigation may be necessary before the indemnity may be enforced.

<sup>31</sup> See *Moschi v Lep Air Services* [1973] AC 331, 349 per Lord Diplock.



where these indemnities have been offered in return for delivering cargoes without an original negotiable transport document.<sup>32</sup>

A negotiable transport document performs three functions: it serves as evidence of the contract of carriage, a receipt for the goods, and a document of title. All these three functions must be replicated in electronic form when electronic transport records are substituted for paper documents. The first two functions are easily replicated electronically as they essentially relate to transfer of information. The challenge lies in replicating the document of title function.

Negotiable transport documents embodied with the title function have served various essential practical purposes in the commercial world for several centuries. Traditionally, negotiable transport documents acquired their powers to transfer rights represented in them through mercantile usage.<sup>33</sup> This usage transcended national barriers. The use of such documents achieved the same result in different jurisdictions across the world, which was necessary if cross-border trade was to proceed smoothly. The advent of a negotiable transport document responded precisely to the requirements of the business community, and became a tool that the domestic laws of various countries eventually came to recognise to achieve the effects that the *lex mercatoria* attributed to it.<sup>34</sup>

The title function denotes three uses of a negotiable transport document.

First, possession of the document constitutes constructive possession and control over the goods. Transferable paper makes an abstract notion real by representing the obligation of the carrier to deliver goods as written in a document to the rightful possessor, *i.e.*, the holder. The written document itself is tangible, but its value does not lie in its physical characteristics. Rather, its value is in the rights embodied in the paper. Thus, possession of the transferable paper is generally required to enforce the rights.

Second, the document may be used to transfer title to the goods. Because transferable paper is recognized as the single embodiment of certain rights, the

<sup>32</sup> See Stephen D. Girvin, *Carriage of Goods by Sea*, 2011, Oxford University Press, USA, 2nd edition, para. 10.25. In a recent case, *Standard Chartered Bank (SCB) v Dorchester LNG (2) Limited (The "Erin Schulte")* [2013] EWHC 808 (Comm), the Admiralty Court considered the requirements for becoming the lawful holder of a bill of lading under COGSA 1992, and in particular whether a confirming bank under a letter of credit becomes the lawful holder of a bill indorsed and sent to the bank as part of a presentation, before the bank has made payment under the letter of credit. Teare J held that the claimant bank became the holder of the bill, and had vested in it all rights of suit under the contract of carriage, as soon as it accepted physical delivery of the duly indorsed bill, regardless of when payment was made under the letter of credit.

<sup>33</sup> *Bechuanaland Exploration Co v. London Trading Bank Ltd* [1898] 2 QB 658 and *Edelstein v. Schuler & Co* [1902] 2 KB 144 provided judicial support to this mercantile usage under English law.

<sup>34</sup> See W.P. Bennett, *The history and present position of the bill of lading as a document of title to goods: being the Yorke Prize essay for the year 1913*, 1914, Cambridge University Press; CB McLaughlin "The Evolution of the Ocean Bill of Lading" (1925-1926) 35 *Yale Law Journal* 548; MD Boole, *The Bill of Lading: A Document of Title to Goods – An Anglo-American Comparison*, 1997, LLP, London and W. Twining, "The Lex Maritima" Chapter 4 in T. Carbonneau (ed.) *Lex Mercatoria and Arbitration*, 1998, Transnational Juris Publications.

mechanism used to transfer the rights in transferable papers is physical delivery to the transferee of the paper itself, usually coupled with the transferor's signed declaration of intent to transfer, written on the document itself. This typically constitutes evidence of the transferee's right to enforce the underlying obligation.

Third, the document is used to provide security in the goods to financial institutions involved in providing credit to international sale transactions. It also provides certainty to carriers who deliver the goods to the holder as legitimated by the document discharging its obligations under the contract of carriage. This aspect of the document is usually referred to as the "legitimation feature" of the negotiable document. It is the paper itself that identifies the person who is entitled to the rights incorporated in the document. Therefore, the presenter of this paper can only be (i) a person named in the document as shipper or as consignee, (ii) the final endorsee when there is an uninterrupted list of endorsements on the back of the document, or (iii) anyone, when the document is a bearer document or it is endorsed in blank.<sup>35</sup>

The question that arises is: how can the legal concept of a negotiable transport document be dematerialised? The answer lies in understanding the essential features of the document of title function of a negotiable transport document, which has effects both for the purposes of contract law and property law.

Under English contract law, the consequences of issue or transfer of a document of title are linked to contractual performance between issuer and holder and/or between transferor and transferee. The performance is determined by the terms of the relevant agreement. In the event of a dispute if the question arises as to whether the agreement applies between the parties, possession of the document of title may indicate that the holder is a party to the relevant agreement and has the right to enforce it.<sup>36</sup>

According to English property law, the contract of sale has the power to transfer the property in the goods. However, the transfer of a negotiable transport document transfers to the transferee title in the goods that it represents.<sup>37</sup> If the transfer of the document affects the property rights of third parties which may not be consistent with those of the holder of the document, then the law will determine whose rights take priority. Possession of a negotiable transport document creates a presumption of the right of

<sup>35</sup> See Michael F. Sturley, Tomotaka Fujita and Gertjan van der Ziel, *The Rotterdam Rules*, Sweet & Maxwell (2010), paras 8.008 and 8.009, at pp. 242-243.

<sup>36</sup> See Miriam Goldby, "Legislating to facilitate the use of electronic transferable records: A case study, Reforming the law to facilitate the use of electronic bills of lading in the UK", paper presented at the UNCITRAL Colloquium on Electronic Commerce, 2011, New York, at p. 3, available online at [http://www.uncitral.org/pdf/english/colloquia/EC/Legislating\\_to\\_facilitate\\_the\\_use\\_of\\_electronic\\_transferable\\_records\\_-\\_a\\_case\\_study\\_.pdf](http://www.uncitral.org/pdf/english/colloquia/EC/Legislating_to_facilitate_the_use_of_electronic_transferable_records_-_a_case_study_.pdf) (accessed on 10 July 2013).

<sup>37</sup> It was held in *Enichem Anic SpA v Ampelos Shipping Co Ltd (The Delfini)* [1990] Lloyd's Rep. 252, 268 that "[the bill of lading] is a document which, although not itself capable of directly transferring the property in the goods which it represents, merely by endorsement and delivery, nevertheless is capable of being part of the mechanism by which property is passed."

property in the goods by virtue of the maxim *possessio vaut titre*. This principle is applicable in cases where the holder receives the document for valuable consideration, in good faith and without notice of his transferor's defect in title.<sup>38</sup>

### 2.3. Legal Challenges To Be Addressed For Using Electronic Transport Records

The key characteristics of paper-based negotiable transport documents raise several issues that represent obstacles to the creation, use, transfer, and enforcement of electronic transferable records.<sup>39</sup> Some of these issues relate to writing and signature, uniqueness and guarantee of singularity, and physical possession. These are discussed briefly in the remainder of this section.

To facilitate the development of electronic alternatives, it is essential to address these issues in order to ensure compatibility between existing legal concepts and the electronic medium. These legal issues must be resolved uniformly in different jurisdictions, because the appeal of negotiable transport documents in cross-border trade lies in the fact that they are universally recognised and similarly interpreted. Furthermore, because custom is a source of law, the rules laid down in legislation need to sit well with emerging commercial practice and allow for technological innovation. Finally, because transfer of title may affect rights of third parties, clarity and certainty are key to justice being done.<sup>40</sup>

There are also a number of additional challenges to be met for using electronic transport records. These include the satisfaction of legal requirements on record-keeping; the adequacy of certification and authentication methods; and the possible need for specific legislative authority to operate electronic registry systems. Other key issues involve the allocation of liability for erroneous messages; communication failures and system breakdowns; the incorporation of general terms and conditions; and the safeguarding of privacy.<sup>41</sup>

#### 2.3.1 Writing and Signature

Issues relating to writing and signature has been addressed in detail under the UNCITRAL instruments mentioned above. Provisions relating to writing and signature requirements and the probative effect of electronic communications can be found in

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<sup>38</sup> Goldby, *supra* note 36, at p. 4.

<sup>39</sup> For a discussion on how the Rotterdam Rules attempts to address the legal challenges for using electronic transport records, see Gertjan van der Ziel, "The legal underpinning of e-commerce in maritime transport by the UNCITRAL Draft Instrument on the Carriage of Goods by Sea", JIML 9 [2003] 5, at pp. 461-469. Also note that some portions of the text in this sub-section of the paper are gleaned from the note prepared by UNCITRAL, A/CN.9/WG.IV/WP.115, *supra* note 23, at pp. 4-17. It provides basis for the analytical discussion presented in the later sections of this paper.

<sup>40</sup> Goldby, *supra* note 36, at p. 5.

<sup>41</sup> A/CN.9/WG.IV/WP.115, *supra* note 23, at p. 9.

articles 5 to 10 of the MLEC.<sup>42</sup> Matters pertaining to contract formation in an electronic environment are to be found in articles 11 to 15 of the MLEC.<sup>43</sup> Matters relating to electronic signatures are dealt with in the MLES. Most of these issues are also similarly addressed in Articles 8, 9, 10 and 12 of the ECC.<sup>44</sup> However, the ECC expressly excludes electronic transferable records from its scope.<sup>45</sup>

### 2.3.2. *Concept of “Uniqueness” and “Guarantee of Singularity”*

Once a negotiable transport document has been issued, rights in the goods can only be exercised by the use of this document, to the exclusion of any other traditional non-documentary manner of exercising rights in the goods. In other words, the system of the negotiable transport documents (including endorsements, presentation, etc.) may not be circumvented by the use of other legal instruments or doctrines to transfer rights in the goods or to acquire control/possession of the goods (such as assignment, attornment, bailment, ownership, etc.).

“Uniqueness” does not refer to a single document that represents the rights embodied in the transferable paper, such that any transfer or assignment of such rights by the holder requires the physical transfer of that single document. In fact, it is almost standard practice that a paper-based negotiable transport document is issued in at least three originals. “Uniqueness” has, surprisingly, never been an issue for paper transport documents. Electronic transport records will end the practice of multiple originals.

If a person is to receive possessory title to an electronic transport record, the addressee has to be satisfied that no identical message has been sent to any other person by any preceding party in the chain transaction. In other words, the potential consequences of unauthorized duplication of any electronic transferable record that entitles the bearer to claim the delivery of goods make it necessary to develop mechanisms to provide a guarantee of singularity of those records. The function of uniqueness or singularity is to provide adequate assurance that only one creditor may claim the entitlement to the performance of the obligation embodied in the document by

<sup>42</sup> See MLEC, Article 5, Legal recognition of data messages; Article 6, Writing; Article 7, Signature; Article 8, Original; Article 9, Admissibility and evidential weight of data messages; Article 10, Retention of data messages.

<sup>43</sup> See MLEC Article 11, Formation and validity of contracts; Article 12, Recognition by parties of data messages; Article 13, Attribution of data messages; Article 14, Acknowledgement of receipt; Article 15, Time and place of dispatch and receipt of data messages.

<sup>44</sup> See ECC, Article 8, Legal recognition of electronic communications; Article 9, Form Requirements; Article 10, Time and place of dispatch and receipt of electronic communications; Article 12, Use of automated messages for contract formation.

<sup>45</sup> See ECC, Article 2, paragraph 2. This was done “because the potential consequences of unauthorized duplication of ... any transferable instrument that entitles the bearer or beneficiary to claim the delivery of goods or the payment of a sum of money make it necessary to develop mechanisms to ensure the singularity of those instruments,” and because the “need for ensuring their uniqueness go beyond simply ensuring the equivalence between paper and electronic forms, which is the main aim of the ECC.” See ECC, Explanatory Note, paras. 80-81. Also note that article 9 of the Rotterdam Rules contain the requirements for the use of negotiable electronic transport records. However, that text does not discuss the details of those documents.

eliminating the possibility that multiple enforceable documents embodying the same entitlement could circulate.

The MLEC recognizes uniqueness as a critical requirement for electronic transport records. However, those provisions only allude to technological and business solutions, leaving it to the parties to agree on the method to be used.<sup>46</sup> This has been done because lawmakers acknowledge that overcoming this challenge requires a combination of legal, technological and business solutions, which are still being developed and tested. However, article 9 paragraph 1 (a) – (c) of the Rotterdam Rules addresses three specific issues, which taken as a whole make the notion of uniqueness and singularity as a separate requirement superfluous.

The key challenge faced in designing a legal regime to accommodate electronic transferable records is to define a functionally equivalent mechanism that addresses the requirement of uniqueness or singularity of those records. It is technologically possible to create a truly unique electronic record that cannot be copied.<sup>47</sup> However, most laws<sup>48</sup> on this matter have been written on the assumption that the problem of guaranteeing the uniqueness of a record cannot be solved at the level of the design of the record itself; or in any event, that the concept of a truly unique electronic record is not a reality. Thus, it is assumed that a different approach is required. Generally, such laws take the view that it is not necessary that an electronic transport record possess any intrinsic characteristic that makes it truly “unique” in the sense that identical copies cannot exist. Instead, the focus is on establishing the functional equivalence of uniqueness through requirements designed, first, to ensure the integrity and availability of at least one copy of the electronic transport record by designating an authoritative copy; and second, to identify the holder of that electronic transport record. This approach underlines the fact that the concept of “singularity” does not pose a particular challenge in the development of electronic transport records. The requirement of “singularity” translates into these two specific sub-requirements that have to be addressed. When that is properly done, the requirement of “singularity” or ‘uniqueness’ can be resolved.

Designating an authoritative copy of an electronic transport record can address concerns regarding the integrity of the record without the need for the existence of a unique record. Approaches to designation of an authoritative copy include the following:

- (a) Designation based on storage in a specific secure system:

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<sup>46</sup> Article 17 of the MLEC recognizes the need to address the issue of uniqueness in the context of electronic transport documents, but does not specify how this is to be done: it simply requires that “a reliable method is used to render such data message or messages unique.”

<sup>47</sup> See Robert E. Kahn, Patrice A. Lyons: Representing Value as Digital Objects: A Discussion of Transferability and Anonymity. *JTHTL* 5(1): 189-198 (2006)

<sup>48</sup> The term “laws” in this context includes international convention instruments, model laws and domestic legislation.

The first approach involves storing a copy of the electronic transport record designated as the authoritative copy on a specific secure computer system designed for such purpose and protected by appropriate security and access controls. The designated authoritative copy of the electronic transport record remains on the system for its life cycle, and a related registry tracks the identity of the holder. Under this approach, uniqueness of an electronic record is established through the design of a secure environment within which a copy of the electronic record can be kept. Controls on the system ensure that the integrity of such electronic transport record remains assured, regardless of where or how the record is stored on the system, or how many copies the system maintains.

This type of electronic transport record system does not emulate the functions of a negotiable transport document, but an electronic transfer of rights and obligations system. If the negotiable transport document immediately upon issuance is buried in a vault, then the essence of the negotiable transport document is lost.<sup>49</sup>

(b) Designation based on verifiable content or location:

The alternative approach allows the specific copy that constitutes the authoritative copy, and the computer system on which it is stored, to change over time. This is often done through the use of a registry that tracks the location where the authoritative copy is stored, and/or that maintains a digital fingerprint of the authoritative copy so that it can be readily determined whether the integrity of the copy maintained by or for the holder is intact and matches the original. Sometimes referred to as a “registry model,” this approach allows for the creation, issuance, storage and transfer of the electronic transferable record on a variety of distributed information systems, with certain information transmitted to and recorded in a central registry. The designated authoritative copy of the electronic transferable record is not necessarily stored in the registry, but any copy can be verified as accurate by reference to the registry. In some systems the registry holds the authoritative copy as well as the identity of the person in control of it. In other systems, the registry simply holds only the digital signature of the authoritative copy, which is then available to verify the integrity of any copy the person in control later seeks to enforce.

*2.3.3. Possession And The Concept of “Control”*

The concept of “possession” is part of the broader concept of singularity. A key challenge in implementing electronic transport records is to define a functionally equivalent mechanism to address the requirement for possession of the electronic transport record. This requires devising a process whereby a holder who claims due

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<sup>49</sup> This in essence is similar to the Seadocs system developed in 1985 which used a bank as a depository for the paper bill and a central registry for the recording of transfers.

negotiation of an electronic transport record will be assured that there is a unique electronic transport record in existence, and that there is a means to take control of that electronic transport record in a manner that is functionally equivalent in law to physical possession.

Control when used as a substitute for possession must have a method for identifying the current party in control of a specific electronic transport record. This may be accomplished by having evidence of the identity of such person integrated into the authoritative copy itself, or by having the authoritative copy logically associated with a method for tracking the identity of such person through a registry, so that a person viewing the authoritative copy is also alerted, and has access, to the evidence of control. Thus, the concept of control typically focuses on the identity of the person entitled to enforce the rights embodied in the electronic transferable record.

The key point is that a system, whether involving third-party registry or technological safeguards, must be shown to reliably establish the identity of the person entitled to delivery of goods. Legal systems using “control” as a replacement for “possession” often specifically recognize that the control requirements may be satisfied through the use of a trusted third-party registry system. Other technological approaches may also be available to achieve the same goal.

In general, the primary approaches<sup>50</sup> that have been advanced to establish the identity of the person to whom the electronic transferable record was issued or transferred, *i.e.*, the person in control, include the following:

(a) Person in control identified in a separate registry (registry model): A registry model allows for the creation, issuance and transfer of electronic transferable records based on information transmitted to and recorded in a central registry. Access to the registry might be controlled and might be subject to acceptance of contractual provisions. A registry can be used to assist in the designation of the authoritative copy of an electronic transferable record in order to provide a functionally equivalent approach to uniqueness. It can also be used to identify the person that controls an electronic transport record for purposes of providing a functionally equivalent approach to possession.

Registries are a common feature of most recent initiatives involving electronic transport records. Registry systems may be divided into three main categories:

(i) Governmental registries: An agency of the State records transfers as public records, and may authenticate or certify such transfers. For public policy reasons, the State agency is usually not liable for any errors, and the cost is borne through user fees. For

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<sup>50</sup> For a detailed discussions of current practices, see N. Gaskell, “Bills of lading in an electronic age” [2010] *Lloyd’s Maritime and Commercial Law Quarterly* 233-284 and M. Goldby “A Re-Assessment of the CMI Rules for Electronic Bills of Lading in the Light of Current Practices” [2008] *Lloyd’s Maritime and Commercial Law Quarterly* 56-70.

example, the Korea Trade Net (KTNET), which was designated as the registry operator for the purposes of the South Korean Presidential Decree on the Implementation of the Electronic Bill of Lading Provisions of the Commercial Act of 2008,<sup>51</sup> achieves exclusive control through this title registry.

(ii) Central registries: Central registries are established where a commercial group conducts its transactions over a private network, accessible only to its members.

(iii) Private registries: These registries are conducted over open or semi-open networks, where the issuer of the document, *i.e.*, a trusted third party, as in the Bill of Lading Electronic Registry Organisation (Bolero) system, administers the transfer or negotiation process.<sup>52</sup> The records are private and costs may be borne by each user. Liability parallels the present practice with paper, in that the administrator is obliged to deliver to the proper party unless excused by another party's error, in which case local law may apply.

(b) Person in control identified in electronic transferable record itself (token model):

Under the token model, the identity of the person in control of the electronic transferable record is contained in the electronic transferable record itself, and changes in ownership (*e.g.*, assignments) are noted by modifications made directly to the electronic transferable record. Under this approach, establishing the owner of the electronic transferable record requires a system to maintain careful control over the electronic record itself, as well as the process for transfer of control. In other words, like transferable paper, there may be a need for technological or security safeguards to ensure the existence of a unique "authoritative copy" that cannot be copied or altered,<sup>53</sup> and that can be referenced to determine the identity of the owner as well as the terms of the electronic transferable record itself.

Electronic Shipping Solutions (ESS) Databridge achieves exclusive control by limiting access to the electronic record. ESS-Databridge replaces the physical transfer of original paper documents by limiting access to ESS original eDocs to the appropriate document owner. In other words, the Exchange replaces ownership of a paper-based title document with a right to access an original eDoc. ESS-Databridge enables users to access the Exchange and IT platform to electronically and legally transact eDocs. Like

<sup>51</sup> For a discussion of the content and workings of this legislation, see *Present and possible future work on electronic commerce* United Nations Commission on International Trade Law, 15<sup>th</sup> April 2010, A/CN.9/692, paragraphs 26-47.

<sup>52</sup> Bolero is set up under English Law and is governed by its own private law framework, namely, the Bolero Rulebook. In view of the fact that English law does not at present recognise the equivalence of "possession" and "exclusive control" for the purposes of replacing bills of lading with electronic alternatives, from the legal perspective the transfer of rights is effected through the concepts of novation and attornment which is discussed later in this paper. For an explanation see R. Caplehorn "Bolero.net – The Global Electronic Commerce Solution for International Trade", (1999) 10 *Butterworths Journal of International Banking and Financial Law*, 421.

<sup>53</sup> This might be accomplished by the technology used to create the record (which may not yet exist), or by keeping the record under such security that no one can copy or modify it.



Bolero, this system operates under a private law framework, the ESS-Databridge Services and Users Agreement (DSUA). The DSUA is governed by English law but where the contract of carriage in question is governed by U.S. law, transfer of title to the goods under the DSUA is governed by the law of the State of New York including the New York Uniform Commercial Code and the United States Uniform Electronic Transactions Act 1999. Access is limited through a token system for granting exclusive control.<sup>54</sup> In the ESS closed system, users have control in the same way that they have control with paper originals. Only one party has access to the originals at any time, and control is passed by endorsing and sending the electronic original to the next user in the chain. The ESS-Databridge system, which has already experienced considerable success in the sector of oil transportation and trading, took great pains to design the system in response to its customers' preferences. As a result, information is visually presented to look just like a bill of lading, complete with stamps and endorsements. The system distinguishes between the single original and the copy and records are marked in various ways depending on their status, e.g. "issued", "transferred," or even "accomplished".<sup>55</sup>

(c) Person in control defined as person with exclusive access: Where the authoritative copy of an electronic transferable record is stored on a specific secure computer system designed for such purpose and protected by appropriate security and access controls, it may also be possible to define the person in control, *i.e.*, the holder as the single person given access to the electronic transferable record in question. In such case, a transfer of control would require a transfer of the exclusive means of secure access, such as a unique access token.

### **3. PROVISIONS FACILITATING ELECTRONIC COMMERCE UNDER THE ROTTERDAM RULES**

The role of international conventions is important, in order to harmonize maritime law and to encourage the development of appropriate national legal regimes in the maritime field. For maritime electronic commerce, such an international convention already exists, namely, the Rotterdam Rules. At present, whether or not the Rules will be successful is a matter of calculated optimism at best and speculative pessimism at worst.

A discussion of the legal aspects of electronic transport records would not be complete without an examination of the relevant provisions of the Rotterdam Rules. The Rules codify the contractual relationship between the parties to a contract of carriage regardless of the type of document issued, or even if no document has been issued. The uncoupling of the law related to negotiable transport documents and the use of a document is a significant feature of the new regime and has been done to facilitate e-commerce.

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<sup>54</sup> Goldby, *supra* note 36, footnote 32, at p. 6.

<sup>55</sup> *Ibid.*, footnote 33, at p. 7.

The emphasis of the Rotterdam Rules is on the contract of carriage and not on the document. The proponents of the contractual approach advocated the adoption of a regime that would be more systematic than the existing Hague/Hague-Visby regimes. In their view, the instrumentality of contract is an integral part of the *lex mercatoria*, the basic principles of which are similar in all jurisdictions.

In the Rotterdam Rules there is no specific reference to the bill of lading; the term used is “transport document.” There are provisions governing equivalent “electronic transport records,”<sup>56</sup> which is a defined term. Two types of documents are addressed in the Rules: negotiable transport documents<sup>57</sup> and non-negotiable transport documents.<sup>58</sup>

Notably, the existing carriage of goods regimes do not have any provisions on electronic commerce because when these regimes were negotiated, there was no commercial need to address the topic. The Rotterdam Rules have made an effort to establish a legal framework that will enable the maritime industry to participate in electronic commerce.

Chapter 3 of the Rotterdam Rules deals with electronic transport records. Article 8 of the Rules emphasises the necessity for consent when the parties use an electronic transport record. The drafters of the Rules have tried to avoid imposition of electronic transport records on a party who will need a paper document for legal reasons, such as where one of the parties to the carriage contract is from a state that is not a party to the new convention and whose law does not recognise the effect of electronic communications. Article 9 of the Rules further emphasises the role of the parties in setting up a system that allows electronic recording and communication of data constituting the transport record. It lays down the minimum requirements for procedures for the use of negotiable electronic transport records and leaves the rest to the parties. Both articles 8 and 9 are medium- and technology-neutral, leaving the exact standard to be determined under national law or by commercial parties.<sup>59</sup> All types of systems,

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<sup>56</sup> Article 1(18) of the Rotterdam Rules defines “electronic transport record” as information in one or more messages issued by electronic communication under a contract of carriage by a carrier, including information logically associated with the electronic transport record by attachments or otherwise linked to the electronic transport record contemporaneously with or subsequent to its issue by the carrier, so as to become part of the electronic transport record, that: (a) evidences the carrier’s or a performing party’s receipt of goods under a contract of carriage; and (b) evidences or contains a contract of carriage.

<sup>57</sup> Article 1(15) of the Rotterdam Rules defines “negotiable transport document” as a transport document that indicates, by wording such as “to order” or “negotiable” or other appropriate wording recognized as having the same effect by the law applicable to the document, that the goods have been consigned to the order of the shipper, to the order of the consignee, or to bearer, and is not explicitly stated as being “non-negotiable” or “not negotiable”.

<sup>58</sup> Article 1(16) of the Rotterdam Rules defines “non-negotiable transport document” as a transport document that is not a negotiable transport document.

<sup>59</sup> Medium- and technology-neutral means that the new convention must be able to adapt to all types of systems, not only those such as Bolero which is a registry based system. It must be suited to systems operating in a closed environment (such as an intranet), as well as those operating in an open environment (such as the internet). The drafters of the Rotterdam Rules have been careful not to limit the scope of the text to the technology or medium presently in use. They

including any new ones that may be developed in the future, whether or not based on a registry system, will be recognised as having the desired effect so long as the minimum requirements stated in articles 8 and 9 are satisfied.<sup>60</sup>

Chapter 8 of the Rotterdam Rules deals with transport documents and electronic transport records. Article 35 provides for the issuance of a transport document or electronic transport record by the carrier<sup>61</sup> or performing party.<sup>62</sup> Such issuance is mandatory upon delivery of the goods for carriage unless the shipper and the carrier have agreed not to use a transport document or electronic transport record, or unless it is the custom, usage or practice in the trade not to use one. Article 36 of the Rules lists the contract particulars,<sup>63</sup> which must be included in the transport document or electronic transport record referred to in article 35. Details are given in article 40 as to how the description of goods in the contract particulars may be qualified by the carrier, in such a way that the carrier does not assume responsibility for the accuracy of the information furnished by the shipper. Article 38 deals with signature. Electronic signature is not separately defined.<sup>64</sup>

Article 41 deals with the evidentiary value of the transport document or electronic transport record. It provides that it is always *prima facie* evidence of the carrier's receipt of the goods as described in the contract particulars, but proof to the contrary by the carrier in respect of any contract particulars is not admissible when they are included in a negotiable transport document or a negotiable electronic transport record that is transferred to a third party acting in good faith. This is so unless the contract particulars contain a qualifying clause that complies with the requirements of article 40. In such case, the transport document or electronic transport record does not constitute *prima facie* or conclusive evidence to the extent that the description of the goods is qualified by the

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were aware that technology evolves rapidly and that what appears impossible today is probably already on the current agenda of software developers. See "CMI Draft Instrument on Transport Law", *CMI Yearbook 2001*, at p.533.

<sup>60</sup> For a detailed discussion see Miriam Goldby, The performance of the bill of lading's functions under UNCITRAL's draft Convention on the Carriage of Goods: unequivocal legal recognition of electronic equivalents, (2007) 13 JIML, at pp.162-163. See also, Jose Angelo Estrella Faria, "Electronic Transport Records" in Alexander von Ziegler, Johan Schelin and Stefano Zunarelli (eds.), *The Rotterdam Rules 2008: Commentary to the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea*, Wolters Kluwer (2010), at pp. 51-69; Michael F. Sturley, Tomotaka Fujita and Gertjan van der Ziel, *supra* note 33, at pp. 47-57.

<sup>61</sup> Article 1(5) of the Rotterdam Rules defines "carrier" as a person that enters into a contract of carriage with a shipper.

<sup>62</sup> Article 1(6) of the Rotterdam Rules defines "performing party" as a person other than the carrier that performs or undertakes to perform any of the carrier's obligations under a contract of carriage with respect to the receipt, loading, handling, stowage, carriage, care, unloading or delivery of the goods, to the extent that such person acts, either directly or indirectly, at the carrier's request or under the carrier's supervision or control. It further states that a "performing party" does not include any person that is retained, directly or indirectly, by a shipper, by a documentary shipper, by the controlling party or by the consignee instead of by the carrier.

<sup>63</sup> Article 1(23) of the Rotterdam Rules defines the term "contract particulars" as any information relating to the contract of carriage or to the goods (including terms, notations, signatures and endorsements) that is in a transport document or an electronic transport record.

<sup>64</sup> See UN Doc A/CN.9/WGIII/WP.56, footnote 147 at p. 34 where a reference is made to the definition of electronic signature in the MLES.

clause. Thus, the provisions of chapter 8 of the Rotterdam Rules preserve the receipt function in a negotiable transport document or electronic transport record.

To retain the character of the negotiable transport document as a document of title, the Rotterdam Rules deals with symbolic or constructive possession in articles 47 and 51. The issue of transfer of title to the goods from transferor to transferee of the negotiable document or electronic transport record is not addressed by the Rules.<sup>65</sup>

It is submitted that chapters 9-11 of the Rules dealing with delivery of the goods, rights of the controlling party, and transfer of rights, are key to solving the problem of how to provide for negotiable electronic transport records. The relevant provisions on rights of the controlling party fill a gap in the law of many jurisdictions, thereby aiming at harmonizing and modernizing the international law in this field. Because these provisions are most important when the carrier does not issue a physical piece of paper qualifying as a negotiable bill of lading, which is exactly the situation in an electronic commerce transaction, this chapter constitutes an important part of the Rules' indirect facilitation of electronic commerce.

It is notable in this context that the Bolero and ESS Databridge initiatives in most cases operate under English law based on multiparty agreements that effectuate the desired transfer of rights through the concepts of novation and attornment.

At common law, novation terminates an old contract between two contracting parties and substitutes a new contract involving one of the original contracting parties and a new contracting party. It therefore creates not only a transfer of rights but also of obligations from the original contracting party to the new contracting party. In other words, novation is a process whereby the old contract between the carrier and the previous holder is terminated and a new one, on the same terms, comes into existence between the carrier and the new holder. The concept of novation is part of one of several existing doctrines that describe the legal position of the consignee in the event that no negotiable transport document has been issued. The Rotterdam Rules do not refer to any specific doctrine when addressing the position of the consignee. The Rules rather sets out actual legal provisions on this subject.

Attornment consists of an undertaking by the bailee of the goods, *i.e.*, the carrier, to the new holder that he will deliver the goods to him, thus giving the latter constructive possession of the goods. The notion of attornment is important because it provides the basis for transfer of property that is in the hands of another person other than the transferor or transferee. Under Roman law this property transfer was referred to as *traditio longa manu*, and in many jurisdictions it is still known under this name. The

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<sup>65</sup> The United States delegation during the preparation of the Rotterdam Rules mentioned that the Rules should not be further complicated as the instant issue is not a matter for transport law but for the law of sale, which is better dealt with under national law.

essence of this method of transferring property is the requirement that the holder (keeper, custodian, bailee, trustee, or whatever legal label this third party may have) of the goods receives notice from the transferor or transferee that property has passed, and that he should hold the goods for the transferee. Upon receipt of this notice, the third party undertakes to hold the goods for the new owner.

The ability of a transport document to represent the goods as a token had to be invented for the purpose of transfer of property. In the old days, a merchant wishing to transfer ownership of goods in transit had no practical way to send a notice to a carrier, who often was the captain of the sailing ship. Now, with instant communication possible all over the world, the use of a negotiable transport document for transferring property is no longer needed and a simple notice of such transfer to the carrier would suffice if such a practice is developed. This notice is manifested in the notice to transfer the right of control provided under the Rotterdam Rules.

It is submitted that the creation of international standards and practices is the best way to eliminate uncertainties regarding the ability of electronic systems to perform the functions of negotiable transport documents. By laying down clear requirements and conditions for the recognition of functional equivalence, the Rotterdam Rules have the potential to facilitate innovation by carriers and service providers, which can increase confidence in prospective users and thereby allow them to trade electronically.

#### **4. OPPORTUNITIES FOR THE MARITIME AND LOGISTICS INDUSTRIES**

The evolving landscape of e-commerce poses new challenges for the maritime and logistics industries. The transportation industry wonders what to do: should we just stand by and watch, or should we respond more pro-actively? I believe that there are strategic areas of opportunity and actions for maritime carriers and cargo consolidators to use electronic transport records to forge closer relationships with their customers as part of an evolving business relationship where transport is part of the larger supply chain. The use of electronic transport records can fundamentally change the maritime transportation and logistics industries and strengthen carrier-shipper relationships.

Specifically, there is an emerging trend known as supply chain finance (SCF), which goes hand in hand with supply chain management. Indeed, the two are two sides of the same coin.<sup>66</sup> SCF is an upcoming approach at the intersection of logistics, supply chain management and financing.

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<sup>66</sup> Since the recent economic and financial crisis of 2008-09, companies have had to rethink their optimization efforts especially with regard to financials. This crisis clearly underscored that a supply chain is only as financially strong as its weakest link. In this context, the concept of SCF has been seen by companies as a suitable solution to reduce counterparty risk and sustainably stabilize the different links in the supply chain, to prevent the disruption of whole production lines resulting from financial problems of one important party, and to optimize total costs within the supply chain. In a broader

In early 2013, the banking industry released a unique set of legal and technological standards to unlock the potential of the supply chain finance market.<sup>67</sup> The transportation industry, which has the best view of the location of goods being transported, is not accustomed to sharing this information. The transportation industry has developed its own practices involving the tracking of goods, but the transportation industry has not thought about turning this knowledge into an opportunity to develop related financial services. This is a huge missed opportunity for both carriers and consolidators involved in international trade as well as the banks that finance international trade transactions. In addition, if more information is available on the fluctuating value of goods while they are being transported, banks and transportation companies will also have the possibility to offset collateral against capital, thus turning the entire supply chain into a financial asset. While there is an opportunity for banks to work with transportation companies using global information systems like the Global Positioning System (GPS), the development of supply chain finance services by carriers and consolidators would mean that those companies would have to change their business practices.

The positive aspect for carriers and cargo consolidators is that they can adapt to the evolving market conditions and develop an electronic transport record system that acts as a channel to access information that is owned by and run by the carrier, which can then be shared with banks. Therefore, carriers and cargo consolidators should actively seek to expand their electronic transport record capability. A unique value proposition can turn electronic transport records into a cost-saving and revenue-generating channel through increased loyalty of shippers towards carriers. This means carriers and cargo consolidators should invest more in resources.

This is also a collaborative opportunity for the transportation industry. Many smaller and medium-sized carriers will be looking to deploy an electronic transport record channel to connect with their customers. Carriers and cargo consolidators should consider making a bold move to develop electronic transport record solutions. Carriers should partner with logistics service providers and banks. Carriers and cargo consolidators should consider developing a global service for an electronic transport records solution in which each company can participate.

Such a service should be transparent and compelling: it should not be built on a platform that utilizes a patchwork of multiple bilateral systems, but should be a single and consistent offering. It should be based on an Application Programming Interface

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sense SCF is a combination of technology solutions and services that link suppliers, buyers, financial institutions and service providers optimizing visibility, financing costs, availability, delivery of cash and improved working capital on the occurrence of one or several supply chain events. For a detailed discussion on SCF see, Erik Hofmann, "Research on Supply Chain Finance - A Review, A Framework and Suggestions for the Future."

<sup>67</sup> See, André Casterman, "A New Start for Supply Chain Finance", SWIFT White Paper, available online at [http://www.swift.com/assets/swift\\_com/documents/about\\_swift/SWIFT\\_Whitepaper\\_Supply\\_Chain\\_Finance\\_201304.pdf](http://www.swift.com/assets/swift_com/documents/about_swift/SWIFT_Whitepaper_Supply_Chain_Finance_201304.pdf) (accessed on 12 July 2013)

(API), which allows carriers and cargo consolidators to insert their electronic transport record services, and should be open to other providers as well. The service should also be simple to use and brand-neutral, allowing for differentiation while providing a common infrastructure in which each carrier or consolidator can brand and differentiate its service for its customers. Carriers and cargo consolidators may decide to buy an existing platform instead of building a new one. Adoption of a pragmatic approach is extremely important. Although the system might be owned by the transportation companies, the service could be run as a commercial company to have the necessary execution and deployment agility.

E-commerce in maritime transport must be developed industry-wide. However, maritime carrier-based organizations like INTTRA<sup>68</sup> and the Baltic and International Maritime Council (BIMCO)<sup>69</sup>, which may be in a position to develop something, have not shown much activity in the field as yet. These organizations have to follow the views of their members/stakeholders who, generally, are conservative and operationally-minded. Some maritime carriers may look at the concept of right of control as set forth in the Rotterdam Rules primarily from an operational point of view. Their concern may be that, if a controlling party would exercise its right of control, this may interfere with their operations. It is certainly true that smooth operations are extremely important to liner carriers for reasons of cost control and competitiveness, and that smooth operations are difficult to achieve. However, these operational considerations should not impede maritime carriers' long term interest in developing e-commerce systems. This is particularly so because container liner shipping is a mature industry. Given this situation, the pressure on the carriers to develop e-commerce systems may well come from their shipper customers.

Developing an electronic system that circumvents the need for negotiable documents in both paper or electronic form will be the way forward, because control of the goods during carriage, which is needed to facilitate the exercise of rights in the goods, may be effected through the possession and transfer of the right of control as provided under the Rotterdam Rules. Current variations in contracts of carriage, for example through the COSCON Bill of Lading Rulebook or the OOCL "Change of Destination Request Form," reveals that the shipper does not sufficiently control its own cargo.<sup>70</sup> It is submitted that the shipper should in fact be in control of the goods for legal reasons.

The advantages of the right of control concept as formulated under the Rotterdam Rules will address some of the problems associated with these practices. Under the

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<sup>68</sup> See [www.intra.com](http://www.intra.com). This organization has its roots in the container liner industry and provides electronic booking services for its members.

<sup>69</sup> See [www.bimco.org](http://www.bimco.org). This is a maritime carrier-wide organization that traditionally focuses on standard documentation for almost all types of maritime transportation and related activity.

<sup>70</sup> See Liang Zhao, "Control of goods carried by sea and practice in e-commerce", *Journal of Business Law*, J.B.L. 2013, 6, 585-597, at p. 588.

Rotterdam Rules, the usual payment term under a sales contract, which is currently executed through payment against documents, will be replaced by payment against transfer of control.<sup>71</sup> Carriers can put the documentary data in an electronic record and keep this record in an electronic system, while granting the controlling party exclusive electronic access to the record as well as the option to have this access transferred to another person.

The electronic notification of any transfer of the right of control to the carrier, made by the old controlling party upon acceptance of the transfer by the new controlling party, should trigger the carrier's transfer of exclusive access to the cargo data record to the new controlling party. This would not be difficult to achieve since most carriers currently give their customers access to their electronic systems for tracing and tracking purposes. In fact, a few carriers go further and allow their customers to draw up transport documents in their systems. Moreover, the shipper is in better control of the cargo during the voyage; this will provide the banks financing the transaction with better security. An additional advantage of such an electronic system is that, at any point in time during the carriage as well as after arrival at destination, the identity of the controlling party is known to the carrier. As a result, communication between the carrier and the controlling party could be established where the consignee fails to turn up at the port of destination to receive the cargo and the carrier needs further instructions on what to do with the cargo.<sup>72</sup> The proposed arrangement will allow the international trading community to replace the out-dated and expensive bill of lading system, which will lead to a decrease in costs for both carriers and shippers. In such a way a secured open system can replace the expensive closed systems such as Bolero and ESS.

Since international trade involves various actors, questions will arise as to the suitability of carriers taking centre stage in the information game. In addressing such concerns it could be questioned whether, for example, the International Organization for Standardization (ISO), which has a global, cross industry representation, takes the role that the carriers are asked to perform. It is doubtful whether ISO would be successful in this case, since it is chiefly concerned with standardisation and thus perhaps not best situated to initiate commercial adoption. The role of a third party platform vendor may also be excluded, as they can perhaps not be inclusive enough.

Therefore, there is a strong case for carriers to get together to work on creating an electronic system for using electronic transport records at a global level. The suggested approach has been seen in other industries, such as the mobile network operator community, which cooperates through the Groupe Speciale Mobile Association (GSMA). It has global coverage and actively represents the interests of mobile operators.

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<sup>71</sup> See G J van der Ziel, "Delivery of the goods, rights of the controlling party and transfer of rights", (2008) 14 JIML at p. 606.

<sup>72</sup> *Ibid.*



Similarly, in the interbank world, the Society for Worldwide Interbank Financial Telecommunication (SWIFT) supplies secure messaging services and interface software to wholesale financial entities. It operates globally and has a track record of cooperation.

In conclusion, electronic transport records will provide strong growth potential to the various actors involved in international trade. Many maritime carriers and logistics service providers have developed their electronic tracking services. Many non-carriers have also developed innovative e-commerce solutions.<sup>73</sup> The carriers and consolidators need to take stock of all the various services existing in the market and create an electronic system that can take centre-stage and feed information into the systems of various players, thereby adding value to the entire international trade framework.

## 5. CONCLUDING REMARKS

The implementation of electronic transport records can be carried out through collaboration between the various actors in the international trading community. Carrier interests stand to gain commercially by creating an electronic system. It can be reasonably expected that ship-owners and logistics service providers would be keen to be involved. The banking industry is already involved in developing registry systems such as Bolero, which caters to a broad spectrum of corporate customers providing multi-bank solution for trade and trade finance processes.<sup>74</sup> Under the registry system, the concept of control and the associated concerns regarding security focus primarily on the registry rather than the transferable record itself. On the other hand, under a token model such as the one created by ESS Databridge, the person in control is identified in the electronic transferable record itself; or under an unique access system; thus, the person in control exercises exclusive access to the electronic transferable record. Carriers can use the right of control concept under the Rotterdam Rules without the need for a separate title registry and position themselves at the centre of the information game in international trade.

Legislation is not a bottleneck for the development of e-commerce systems in maritime transport. The typical aspects of electronic contracting generally have been addressed in the relevant UNCITRAL legislation. The Rotterdam Rules cover the typical e-commerce issues for maritime transport. For the rest, the current law of sale, property, etc., whether at international or national level, will continue to apply in an e-commerce environment.

The reason that e-commerce developments in maritime trade are so slow is the conservatism and operational-mindedness of the commercial parties involved. The

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<sup>73</sup> For example, GT Nexus, which is a cloud supply chain platform provider, runs an on-demand global supply chain management platform that is used by organizations to manage global logistics and trade processes. <http://www.gtnexus.com/>

<sup>74</sup> Bolero's product offerings include export letter of credit, import letter of credit, guarantees/standby letter of credit, electronic document presentation, bank payment obligation (BPO) and electronic bill of lading.

development of e-commerce systems in maritime transport requires investment and changes in practices. When the demand for these changes and investments does not come from the commercial parties directly involved, third parties that offer these services, such as Bolero and ESS, will have limited effect. The use of electronic transport records undoubtedly has a promising future, but the efforts that are already under way to meet the intended aims and objectives must be relentlessly continued and sustained until success is achieved.

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