

**The New Electronic Transactions Law in Singapore:
Paving the Way for Electronic Bills of Lading?**

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Abstract:

The Electronic Transactions Act of Singapore has been amended to adopt, with modifications, the UNCITRAL Model Law on Electronic Transferable Records. The new law is intended to help electronic bills of lading (among other things) get off the starting blocks after previous efforts have not been successful so far. This article takes a look at the new law and makes a few comments.

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A. Second-Best Solutions

- 1 There are solutions which are so well established that it is easy to forget they do not eliminate the problem, but only circumvent it.
- 2 Shelf companies, for example, fill a need in jurisdictions where it takes longer to set up a company than many businesses can wait. If it takes days or weeks to incorporate a new company, but you need a company right away, then you can buy the shares of a company that already exists. This way you get your company faster. The real, systemic problem – the long time it takes to form a company – does not get addressed this way. Rather, involving the third-party founder of the shelf company increases the overall cost of the transaction.
- 3 Another example from the law on carriage of goods by sea: indemnities. Actually, the carrier is obliged to hand over the cargo only on presentation of an original bill of lading. However, since in modern international trade bills of lading pass through many hands and the goods they certify are often traded on during transport, it is rare nowadays for a bill of lading to be waiting at the port of discharge when the goods arrive. More often, the carrier will hand over the cargo if, instead of a bill of lading, he is given written indemnity releasing him from the risks of handing over the cargo without taking a bill of lading.¹ The actual problem – the paper bill of lading is not at the port of discharge in time – does not get addressed. Instead, obtaining an indemnity letter increases the overall cost of the transaction.
- 4 Indemnity letters are the shelf companies of shipping law.

B. The Promises of Electronic Bills of Lading

- 5 It is the paper. If the original bill of lading were electronic, it could be transferred quickly enough to be presented at the port of discharge when the ship arrives, no matter how many hands it has passed through. An indemnity letter would no longer be necessary.²
- 6 An electronic bill of lading would have other benefits as well. For example, it would be cheaper to split cargo subsequently. Incorrect entries would be easier to correct, and cancellations and reissues would be made more quickly.³ Unlike a bill of lading on paper, an electronic bill of lading cannot be lost.⁴

¹ Yee, Of Letters of Indemnity and ‘Spent’ Bills of Lading, [\[2019\] SAL Prac 30](#).

² Norton Rose Fulbright, [E-bills of lading](#), February 2018.

³ Norton Rose Fulbright, [E-bills of lading](#), February 2018.

⁴ Wang, [Blockchain Bills of Lading and Their Future Regulation](#), 1 April 2021, p. 9.

- 7 It would be most impressive if an electronic bill of lading also posed less of a risk of forgery and fraud. This cannot be said, though. At any rate, a bill the access to which is secured by audit trails, electronic signatures or PINs probably is not as easy to forge as a paper bill that passes from hand to hand.⁵ But criminal hackers could take on these hurdles, too, albeit with more energy. Thus, an electronic bill of lading would not eliminate the risk of forgery and fraud. It would just take this risk with it into the electronic realm.
- 8 In short, compared to a paper bill of lading, an electric bill of lading would have many benefits, which would not be outweighed by its disadvantages. The bottom line is electronic charging slips promise significant cost reductions.⁶ Why are they not already widely in use?

C. Regulatory Readiness and State Of the Art

- 9 Some legislators would have wanted this for a long time. Since 2013, Section 516(3) of the German Commercial Code authorises the Federal Ministry of Justice and Consumer Protection to regulate the details of an electronic bill of lading by statutory order.⁷ In Singapore, the same legislative spirit emerged much earlier. Since 1994, the Bills of Lading Act – premised on bills of lading and other shipping documents on paper – empowered the Minister to make regulatory provisions for the application of this Act to IT bills of ladings based on telecommunications or information technology.⁸ Neither in Singapore nor in Germany has such subsidiary legislation ever been enacted.⁹
- 10 Because technically we were not there yet. For the longest time, the infrastructure required for electronic bills of lading did not exist. There was no compelling solution to guarantee the authenticity and singularity of an electronic bills of lading – in other words ensure one could not easily make a lossless copy an original electronic bill of lading. There was no integrity-proof transmission method either – meaning a method of transmitting a

⁵ Norton Rose Fulbright, [E-bills of lading](#), February 2018.

⁶ Safety4Sea, [Shipping could save billions through electronic bills of lading](#), 20 May 2020.

⁷ Article 1 no. 42 of the Act on the Reform of Maritime Trade Law of 20 April 2013 (*Gesetz zur Reform des Seehandelsrechts vom 20. April 2013*), Federal Law Gazette I p. 831; see also section 443(3) of the German Commercial Code and article 1 no. 24 b) of the Act on the Reform of Maritime Trade Law of 20 April 2013 (*Gesetz zur Reform des Seehandelsrechts vom 20. April 2013*), Federal Law Gazette I p. 831.

⁸ Section 1(5) and (6) [Bills of Lading Act \(Cap. 384\) 1994 RevEd](#).

⁹ Otte, in: Staub, HGB, 5th ed. 2017, § 443 no. 91; Tan Lee Meng, Law on Carriage of Goods by Sea, 3rd ed. 2018, para. 07.078 to 07.084.

bill of lading in such a way that an unauthorised person could not easily change it.

- 11 Not surprisingly, different ideas that were tested by solution providers did not convince enough participants in the merchant shipping industry to sign up. Banks did not accept these electronic bills of lading either, not to mention customs and excise officials.¹⁰

D. The Next Attempt

- 12 Today, things look different from a technical point of view. Circumstances have changed, many things that did not work before are possible now.¹¹ So Singapore Parliament felt the time had come to make the law of paper bills applicable to electronic bills of lading. May the industry adopt these.
- 13 For this purpose, the Minister could have used his authority to make regulatory provisions of 1994. But since then, there has been the worldwide realisation that the technological progress achieved does not only benefit the idea of electronic bills of lading, but the idea of electronic instruments at large, especially electronic order instruments, meaning instruments which, like their paper counterparts, certify private rights which are exercised and transferred by presenting the relevant order instrument somehow.
- 14 In fact, the United Nations Commission on International Trade Law (UNCITRAL) has issued an entire model law on the subject, the UNCITRAL Model Law on Electronic Transferable Records (Model Law). This law specifies when electronic transferable records are equivalent to traditional transferable documents or instruments (functional equivalence).¹²
- 15 The Singapore legislator has taken this model law and, with some modifications, integrated it into the Electronic Transactions Act. Specifically, it has provided for the application to conforming electronic bills of lading, bills of exchange and promissory notes.
- 16 Consequently, the ministerial power to make regulatory provisions on this matter in the Bills of Lading Act could be deleted.
- 17 The amended Electronic Transactions Act took effect on 19 March 2021.¹³

¹⁰ Tan Lee Meng, *Law on Carriage of Goods by Sea*, 3rd ed. 2018, para. 07.080.

¹¹ Tan, Jacqueline/Laura Starr, [Electronic Bills of Lading – An Update](#), 26 March 2020.

¹² No. 10 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

¹³ [Act 5 of 2021 – Electronic Transactions \(Amendment\) Act 2021](#).

E. The Incorporation into Singapore Law

- 18 In essence, the adoption of the Model Law and its inclusion in the Electronic Transactions Act¹⁴ has gone as follows.
- 19 Before its amendment, the Electronic Transactions Act excluded the digital signing of electronic bills of lading, bills of exchange and promissory notes (and the like). To open the field for them, the relevant provision – entry in the First Schedule to the Act¹⁵ – had to be deleted.
- 20 A new section 3(h) now clarifies that the Electronic Transactions Act is also to be construed in terms of the Model Law, irrespective of whether the electronic transferable record is issued or used in Singapore or outside Singapore. To be sure, this only applies to the extent that the Model Law governs electronic transferable records and – a general limitation of section 3 – consistently to the extent that it is commercially reasonable in the circumstances.
- 21 Thereafter, a new part IIA consisting of six divisions and nineteen sections has been inserted. It forms the bulk of the incorporation of the Model Law.

I. General Provisions

- 22 The new part IIA repeatedly uses legal terms which are first, in division 1 and the new section 16A(1), legally defined with effect for part IIA alone.

1. Definition: Electronic Record

- 23 This includes the term electronic record taken from article 2 of the Model Law. This is somewhat unpleasant, because a different definition of this term is to be found in section 2(1).
- 24 The same legal term applied to different facts – unfortunately, we see this in other laws as well. The Securities and Futures Act, for example, used to contain two different definitions of securities, in section 2(1) and in the now deleted section 214.¹⁶ The International Arbitration Act contains two different definitions of arbitral tribunal, in section 2(1) and in article 2(b) of the First Schedule (also the result of the adoption of a UNCITRAL Model Law, the Model Law on International Commercial Arbitration).¹⁷

¹⁴ [Electronic Transactions Act](#), current version effective since 19 March 2021.

¹⁵ [Section 4, First Schedule no. 2 Electronic Transactions Act](#), previous version effective until 18 March 2021.

¹⁶ [Securities and Futures Act](#), previous version effective until 7 October 2018.

¹⁷ [International Arbitration Act](#); for how this does not facilitate the interpretation and application of the law, see Dahm, [Enforceability of Foreign Emergency Awards in Singapore](#), 26 August 2019.

It is perhaps tolerable that this is not worthy of a literary prize. Above all, though, it makes the application of the law more difficult and invites misunderstandings, even mistakes.

- 25 The definition in section 2(1) Electronic Transactions Act is very general and aims at electronic transactions. It defines an electronic record as a record generated, communicated, received or stored by electronic means in an information system or for transmission from one information system to another.
- 26 In contrast, under section 16A(1), an **electronic record** is a record generated, communicated, received or stored by electronic means, including (where appropriate) all information logically associated with or otherwise linked together so as to become part of the record, whether generated contemporaneously or not.
- 27 When you read this definition, an electronic bill of lading appears before your inner eye, as it were. The definition is clearly made with a view to electronic transferable records; it is specific. What was wrong with a slightly different, less ambiguous term, which still would have been recognisable as originating from the Model Law, for example *qualified* electronic record?
- 28 For the sake of accuracy, henceforth, when referring to an electronic record within the meaning of section 16A(1), we shall refer to it as a **(qualified) electronic record**.

2. Definition: Electronic Transferable Records Management System

- 29 The heart of the new part IIA, the term electronic transferable record, has been given its own section 16H (see below). But the Act provides for a management system for such records, thus electronic transferable records management system is defined as an information system for the issuance, transfer, control, presentation, and storage of electronic transferable records.

3. Definition: Provider

- 30 A provider, in relation to an electronic transferable records management system, is a person that provides to another person the use of an electronic transferable records management system.

4. Definition: Transferable Document or Instrument

- 31 The definition of transferable document or instrument determines what can be considered an electronic transferable record in the first place. It is a document, or an instrument issued on paper that entitles the holder to claim the performance of the obligation indicated in the document or in-

strument and to transfer the right to performance of the obligation indicated in the document or instrument through the transfer of that document or instrument. A bill of exchange, a promissory note and a bill of lading are listed by way of example and not exhaustively.

5. Definition: Bill of Lading

- 32 The definition of bill of lading (and of bill of exchange and promissory note) is flexible and covers both documents issued in and outside Singapore. In Singapore, a bill of lading is what the Carriage of Goods by Sea Act¹⁸ or any other rule of law says it is (for bills of exchange and promissory notes, the Bills of Exchange Act¹⁹ applies). For a bill of lading issued outside Singapore, it is what the law applicable there says it is.
- 33 This ensures the inclusion of legally valid foreign bills of lading (and bills of exchange and promissory notes) under the term transferable instrument.

6. Rules of Interpretation

- 34 Section 16A(2) sets out certain rules of interpretation for part IIA of the Electronic Transactions Act. Regard is to be had to the international origin of the Model Law and the need to promote uniformity in its application. As far as purposive statutory interpretation (set out in the Interpretation Act²⁰) is concerned, the *travaux préparatoires* as well as the explanatory notes of the Model Law are relevant documents.
- 35 Any question concerning matters governed by this Part which are not expressly settled in this Part are to be settled in conformity with the general principles on which the Model Law is based.

7. Non-exhaustiveness of the Law, Additional Information, Requirement of Consent and Derogability

- 36 The definitions are followed by some categorical statements.
- 37 Section 16B(2) provides that, unless otherwise provided, part IIA does not prevent the application of other law relating to transferable documents or instruments to an electronic transferable record. Therefore, other material law or private international law relating to transferable documents or instruments may extend to electronic transferable records.

¹⁸ [Carriage of Goods by Sea Act](#), current version effective since 30 May 1998.

¹⁹ [Bills of Exchange Act](#), current version effective since 1 March 2009.

²⁰ [Section 9A of the Interpretation Act](#), current version effective since 1 March 2021.

- 38 Section 16C states that part IIA does not preclude the inclusion of any information in an electronic transferable record in addition to any information contained in a transferable document or instrument. This is illustrated by two examples.
- 39 For an example, an electronic transferable record may contain additional information that is included due to its electronic nature such as metadata or a unique identifier.
- 40 Or an electronic transferable record may contain additional dynamic information, that is, additional information that may change periodically or continuously, based on an external source, for example the price of a publicly traded commodity or the position of a vessel.
- 41 Section 16D establishes that nothing in part IIA requires a person to use an electronic transferable record without the person's consent, which be inferred from the person's conduct. It also provides that parties who do not consent to the use of an electronic transferable record may only derogate from part IIA in its entirety. It is not possible to derogate from its provisions in part.

II. Functional Equivalence

- 42 After these statements, division 2 gets down to the practical details. It regulates when electronic transferable records are legally equivalent to transferable documents.

1. Legal Recognition of Electronic Transferable Record

- 43 First, section 16E clarifies that an electronic transferable record is not to be denied legal effect, validity, or enforceability solely on the ground that it is in the form of a (qualified) electronic record.
- 44 Of course, this does not mean electronic transferable records, or the information contained therein are automatically legally effective, valid, or enforceable simply because they consist of a (qualified) electronic record.
- 45 It only means that the format of the (qualified) electronic record cannot be used as the sole reason for denying legal effect, validity, or enforceability to an electronic transferable record. Whether an electronic transferable record is effective, valid, or enforceable indeed is a separate issue.
- 46 Section 16E is necessary because without it section 16B(2) would permit that which it prohibits. In other words, section 16E is a case of 'unless otherwise provided' within the meaning of section 16B(2).

2. Requirement for Writing

47 Section 16F then provides, by way of declaring section 7 applicable, how a requirement for writing in a rule of law works for an electronic transferable record.

48 Where a rule of law requires information to be written, in writing, to be presented in writing or provides for certain consequences if it is not, a (qualified) electronic record satisfies that rule of law if the information contained therein is accessible to be usable for subsequent reference.

3. Requirement for Signature

49 Section 16G takes a similar approach in relation to statutory written form requirements.

50 Where a rule of law requires a signature of a person or provides for certain consequences if a transferable document or instrument is not signed, that requirement is met with respect to an electronic transferable record if a reliable method is used to identify that person, and to indicate that person's intention in respect of the information contained in the electronic transferable record.

51 Reliable procedure – we will see this term more often from now on.

4. Transferable Documents or Instruments

52 Perhaps section 16H, together with section 16I, can be described as the heart of part IIA. The section sets out when a (qualified) electronic record is legally equivalent to a negotiable instrument.

53 Where a rule of law requires a transferable document or instrument, that requirement is met by a (qualified) electronic record if the electronic record contains the information that would be required to be contained in the transferable document or instrument.

54 Further, a reliable method is to be used to identify that (qualified) electronic record as the authoritative electronic record constituting the electronic transferable record.

55 A reliable method is also to be used to render that (qualified) electronic record capable of being subject to control from its creation until it ceases to have any effect or validity.

56 Furthermore, a reliable method is to be used to retain the integrity of that (qualified) electronic record. The integrity of a (qualified) electronic record is retained if the information contained in it, including any authorised change that arises from its creation until it ceases to have any effect or validity, has remained complete and unaltered apart from any change that arises in the normal course of communication, storage, or display.

5. Requirement for Possession or Transfer Of Possession

- 57 Since the possession or non-possession of a transferable document can have legal effects, the functional equivalence of electronic transferable records had to be regulated in this regard too.
- 58 This is done in section 16I, which determines when there is possession, so to speak, of an electronic transferable record and how that possession may be transferred.
- 59 Where a rule of law requires the possession of a transferable document or instrument or provides for certain consequences if a transferable document or instrument is not possessed, that requirement is met with respect to an electronic transferable record if a reliable method is used to establish exclusive control of that electronic transferable record by a person.
- 60 Further, a reliable method is to be used to identify that person as the person in control.
- 61 Where a rule of law requires the transfer of possession of a transferable document or instrument or provides for certain consequences if possession of a transferable document or instrument is not transferred, that requirement is met with respect to an electronic transferable record through the transfer of control over the electronic transferable record to another person identified as described.
- 62 By imposing the requirement exclusive control, section 16I seems only to allow sole control of an electronic transferable record to be equivalent to possession of a transferable instrument. On the one hand, this sounds rational.
- 63 However, bills of lading especially are often handled by more than one (natural or legal) person at the same time, so that the question arises as to how practicable the requirement of sole control is for 'possession' of an electronic transferable record.
- 64 The explanatory notes to the Model Law provide some guidance on this. They recognise that control and possession can be exercised by more than one person at the same time. However, as both control and possession implied exclusivity of exercise, the characteristic of exclusivity were included.²¹
- 65 This seems reasonable for an electronic bill of lading, whose originals should only be in circulation in one version at a time.

²¹ No. 111 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

III. Use of Transferable Record

66 The third division of part IIA deals with specific issues relating to the use of electronic transferable records.

1. Indication of Time and Place

67 Section 16J provides for the display of time and place information in a functionally equivalent manner.

68 Where a rule of law requires the indication of time or place with respect to a transferable document or instrument or provides for certain consequences if time or place is not indicated with respect to a transferable document or instrument, that requirement is met if a reliable method is used to indicate that time or place with respect to an electronic transferable record.

2. Indorsement

69 Section 16K then sets out how an electronic transferable record is to be endorsed functionally equivalent.

70 Where a rule of law requires the indorsement in any form of a transferable document or instrument or provides for certain consequences if a transferable document or instrument is not indorsed, that requirement is met with respect to an electronic transferable record if the information required for the indorsement is included in the electronic transferable record in compliance with the requirements for writing and signature in sections 16F and 16G, respectively.

3. Amendment

71 Section 16L concerns the functionally equivalent amendment of an electronic transferable record.

72 Where a rule of law requires the amendment of a transferable document or instrument or provides for certain consequences if a transferable document or instrument is not amended, that requirement is met with respect to an electronic transferable record if a reliable method is used for the amendment of any information in the electronic transferable record so that the amended information is identified as such.

4. Change Of Medium from Transferable Document or Instrument to Electronic Transferable Record

73 There may be good reasons for switching an order document from paper to electronic, especially in the long series of transactions that constitute the global value chain. To this end, the functional equivalence following such a change of media had to be established.

- 74 According to section 16M, an electronic transferable record may replace a transferable document or instrument without affecting any rights or obligations therein if a reliable method for the change of medium in accordance with this section is used.
- 75 For this change of medium to take effect, the following two requirements must be satisfied.
- 76 All the information contained in the transferable document or instrument must be accurately reproduced in the electronic transferable record that replaces the transferable document or instrument. Remarkably, this requirement is not found in the Model Law.
- 77 Further, a statement indicating a change of medium must be inserted in the electronic transferable record that replaces the transferable document or instrument.
- 78 Upon the issuance of the electronic transferable record as described, the transferable document or instrument ceases to have any effect or validity and must be made inoperative. In the case of a bill of lading, this should mean destruction or stamping as invalid.
- 79 At first glance, the provision does not seem to be free of contradictions, especially regarding the requirement of accurate reproduction, which is not provided for in the Model Law. On the one hand, reliable procedure always implies a certain degree of inadequacy – as with paper, one hundred per cent security cannot be had electronically. On the other hand, section 16M strictly requires the satisfaction of the requirements necessary for the recognition of the change of medium. How do the two reconcile?
- 80 Does it mean every property of the transferable document to be replaced which is graspable as information – the optical, haptic, and olfactory perception of every paper fibre and every molecule of ink (and who knows what else) – must be reproduced, accurately at that?
- 81 It cannot be assumed that section 16M asks for scientifically unchallengeable satisfaction of the two requirements it sets out. Hence, to avoid a conflict of values – what is reliable and what does satisfied mean? –, satisfaction should be considered given when reliability is given. Read in this way, section 16M merely asks for an approximation towards full satisfaction within what part IIA (in section 16O, see below) still tolerates as reliable. Even so, this is no easy task.
- 82 For a bill of lading, this should mean that at least its written content should be reproduced completely and accurately in its electronic counterpart.

5. Change Of Medium from Electronic Transferable Record to Transferable Document or Instrument

- 83 There may be just as many good reasons for converting an electronic order document into paper format. For functional equivalence, this change of medium must be effected in accordance with section 16N.
- 84 A transferable instrument may replace an electronic transferable record without affecting any rights or obligations therein. The reliable procedure required for this is the same as that for a change from paper to electronic under section 16M, only in the reverse direction and with the exception that additional information in the sense of section 16C need not be accurately reproduced in the replacing transferable instrument.
- 85 This makes sense. When moving from an electronic bill of lading to a paper bill of lading, electronic metadata, unique identifiers, or dynamic information from an external source such as prices or ship positions should not have to be reproduced. Except for metadata, it should be impossible to reproduce this kind of data anyway, so it would be unfortunate if the law asked for the impossible.

IV. General Liability Standard

- 86 After abstractly providing for the functionally equivalent use of electronic transferable records in the third division of part IIA, the fourth division, consisting of only one section 16O, determines when a method is to be considered reliable within the meaning of sections 16G, 16H, 16I, 16J, 16L, 16M and 16N.

1. Reliable Method

- 87 First, a method is reliable if it can be proven in fact that it fulfils the function by itself or together with any further evidence.
- 88 Alternatively, a method is reliable if it performs its function as reliably as appropriate in the light of all the relevant circumstances. Relevant circumstances may include: any operational rules that are relevant to the assessment of reliability; the assurance of data integrity; the ability to prevent unauthorised access to and use of the system; the security of hardware and software; the regularity and extent of audit by an independent body; the existence of a declaration by a supervisory body, an accreditation body, or a voluntary scheme, regarding the reliability of the method; any applicable industry standard.

2. Circular Reasoning

- 89 The reliability standard in section 16O(1) – taken from article 12 of the Model Law – may lead to circular reasoning. For example, section 16H(1)(b)(iii) requires a reliable method to preserve the integrity of a

(qualified) electronic record whereas section 16O(1)(a)(ii) declares the preservation of data integrity to be a relevant circumstance for the assessment of reliability. Combined, this results in the conclusion that a method for preserving data integrity be reliable if it performs its function as reliably as possible in view of the preservation of data integrity. Such a tautologic sentence is funny, but as a rule it runs the risk of complicating the interpretation and application of the law.

- 90 The explanatory notes of the Model Law do not make it any easier.
- 91 According to the explanatory notes, the reference to ensuring data integrity in article 12 of the Model Law was based on an absolute understanding of integrity, as data integrity could not be described in a gradual manner. In this respect, integrity as an element in the assessment of the general reliability standard differed from the concept of integrity in article 10 of the Model Law, which defined the concept of an electronic transferable record.²²
- 92 When applied to the Electronic Transactions Act, this rationale says integrity within the meaning of section 16O(1)(a)(ii) were not the same as integrity within the meaning of section 16H(1)(b)(iii).
- 93 This is surprising because the explanatory note to article 10 of the Model Law – section 16H of the Electronic Transactions Act – also states that the concept of integrity was an absolute concept because an electronically transferable record either had integrity or it had not. However, in the specific case of article 10 of the Model Law – section 16H of the Electronic Transactions Act – the reference to the reliable method used to maintain integrity was relative, as the assessment of the reliability of any method had to be made in the light of the specific function pursued using that method. The general reliability standard contained in article 12 of the Model Law – section 16O of the Electronic Transactions Act – was applicable to the assessment of this procedure.²³
- 94 The concept of integrity contained in article 12 of the Model Law – section 16O of the Electronic Transactions Act – was applicable (additionally?) if integrity was relevant in fact (read: without explicit mention in a provision)

²² No. 129 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

²³ No. 100 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

for assessing the reliability of the method used, and ultimately for achieving functional equivalence. As such, this term was also relevant to articles other than article 10 of the Model Law.²⁴

95 Whether all this is convincing, let alone makes sense, is a moot point. Article 12 of the Model Law and section 16O of the Electronic Transactions Act are supposed to clarify the vague legal concept of reliable method, to substantiate it and thus make it more manageable – albeit *ex post* only for disputes.²⁵ Therefore, what can be said is that in this respect, the wording and legal reasoning of these provisions leave much to be desired. As far as *ex ante* considerations by contracting parties are concerned – acknowledged by the explanatory notes²⁶ –, the provisions are not well suited for it.

3. Distributed Ledger Technology

96 Criticism notwithstanding, reading the reliability criteria alongside the provisions of divisions 2 and 3 of part IIA almost inevitably makes you think of distributed ledger technology. Arguably, this technology can meet all the legal requirements for functional equivalence of transferable electronic records with transferable documents or instruments.

97 This leads us to blockchain-based bills of lading.²⁷

4. Rebuttable Presumption of Reliability

98 Section 16O(2), which is not found in the Model Law, sets out a rule of evidence for proceedings involving electronic transferable records. In such proceedings, if an electronic transferable record is issued, transferred, controlled, presented and stored by means of an accredited electronic transferable records management system provided by a provider that is registered, licensed, accredited or recognised in accordance with regulations made under section 16Q, it is presumed, unless evidence to the contrary is

²⁴ No. 129 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

²⁵ No. 124 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

²⁶ No. 124 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

²⁷ Yang, [Applicability of Blockchain based Bill \[sic\] of Lading under the Rotterdam Rules and UNCITRAL Model Law on Electronic Transferable Records](#), Journal of Korea Trade, Vol. 23, No. 6, October 2019, p. 113 to 130; Wang, [Blockchain Bills of Lading and Their Future Regulation](#), 1 April 2021.

adduced, that the methods used by the electronic transferable records management system to fulfil the requirements under this Part in relation to the electronic transferable record are as reliable as appropriate.

- 99 However, under section 16O(3), which is also not found in the Model Law, this presumption only applies only if the electronic transferable record is issued, transferred, controlled, presented and stored by means of the accredited electronic transferable records management system provided by the provider during the period in which the provider is registered, licensed, accredited or recognised under part IIA.

V. Cross-Border Recognition of Electronic Transferable Record

- 100 The fifth division of part IIA, which consists of only one section, addresses an important point for international users. It extends the regulation made in section 16E to cross-border electronic transferable records.

Non-discrimination of Foreign Electronic Transferable Records

- 101 According to section 16P, an electronic transferable record is not to be denied legal effect, validity, or enforceability solely on the ground that it was issued or used outside Singapore. However, nothing in part IIA affects the application to an electronic transferable record of any rule of private international law governing a transferable document or instrument.

VI. Accreditation, Etc., Of Provider of Electronic Transferable Records Management Systems

- 102 At the end of part IIA, division 6 deals with relevant administrative aspects.

1. Power to Make Regulations

- 103 Section 16Q contains a general authorisation for the Minister to make regulations concerning the issues in part IIA.
- 104 The following purposes are listed indicatively but not exhaustively: the registration, licensing or accreditation of providers of an electronic transferable records management system; the accreditation of electronic transferable records management systems that satisfy the requirements of providing a reliable method under section 16O for the fulfilment of the requirements in relation to an electronic transferable record under part IIA; to prescribe the accounts to be kept by a provider of an electronic transferable records management system that is registered, licensed or accredited under part IIA; to provide for the appointment and remuneration of an auditor for the audit of a provider of an electronic transferable records management system that is registered, licensed or accredited under part IIA, and for the costs of an audit carried out under the regulations; to provide

for the use of any accreditation mark in relation to the activities of a provider of an electronic transferable records management system in relation to such system, and for controls over the use of such accreditation mark; to prescribe the duties and liabilities of a provider of an electronic transferable records management system that is registered, licensed or accredited under part IIA in respect of its customers; to provide for the conduct of any inquiry into the conduct of any provider of an electronic transferable records management system and its authorised representatives and the recovery of the costs and expenses involved in such an inquiry; to prescribe the forms and fees applicable for the purposes of part IIA.

105 Further, the Minister may make regulations to provide for the cross-border recognition of a provider of an electronic transferable records management system that is incorporated, formed or established in a country or territory outside Singapore (foreign provider) where the foreign provider is registered, licensed or accredited under a particular registration, licensing or accreditation scheme (as the case may be) established outside Singapore, and carries on its business relating to the electronic transferable records management system in accordance with requirements that are at least equivalent or comparable to the requirements applicable to a provider of an electronic transferable records management system that is or would be registered, licensed or accredited under part IIA.

106 The regulatory power extends to penal provisions providing for a fine of up to S\$50,000 or imprisonment of up to twelve months, or both, for contravention of regulations made under section 16R.

2. Controller's Right of Direction to Providers

107 Further, under section 16R, the Controller has a right of direction.

108 The Controller may, by written notice, direct a provider of an electronic transferable records management system that is registered, licensed, or accredited under part IIA, or any of its officers, employees or authorised representatives, to take any measure or stop carrying on any activity specified in the notice that is necessary to ensure compliance with part IIA.

109 Any person who fails to comply with any direction specified in such a notice shall be guilty of an offence and shall be liable on conviction to a fine not exceeding S\$50,000 or to imprisonment for a term not exceeding twelve months or to both.

3. Controller's Power to Investigate

110 Lastly, section 16S grants the Controller (or an authorised officer) power to conduct investigations.

- 111 The Controller or an authorised officer may investigate the activities of a provider of an electronic transferable records management system that is registered, licensed, or accredited under part IIA, or any of its officers, employees, or authorised representatives, in relation to their compliance with part IIA.
- 112 For the purposes such an investigation, the Controller may issue a written order to the provider or any of its officers, employees, or authorised representatives, to further an investigation under this section or to secure compliance with part IIA, including an order to produce records, accounts, data, and documents kept by the provider, and to allow the Controller or an authorised officer to examine and copy any of them.
- 113 Section 16S does not contain a specific penal provision. However, the general provision in section 31 of the Electronic Transactions Act declares it an offence to obstruct, impede, assault or interferes with the Controller or any authorised officer in the performance of his functions under this Act.
- 114 Section 33 provides that any person guilty of such an offence shall be liable on conviction to a fine not exceeding S\$20,000 or to imprisonment for a term not exceeding six months or to both.

F. Reading the Tea Leaves

- 115 The Model Law and part IIA are drafted in a technology-neutral manner,²⁸ but it was probably distributed ledger technology's move into the limelight a few years ago that gave the long-cherished idea of electronic bills of lading (and their ilk) the current legislative push.
- 116 After realising that the technical prerequisites are now in place, Singapore has implemented a legal framework for electronic bills of lading (and the like), with Part IIA of the Electronic Transaction Act.
- 117 But a law in one country – albeit one relevant for shipping – will not help electronic bills of lading achieve a breakthrough. Nor does the fact that with Singapore, after Bahrain and the United Arab Emirates (but only for the Abu Dhabi Global Market free trade zone), three states have now ratified the Model Law,²⁹ ensure a critical mass that users of bills of lading cannot ignore. To meet the new opportunities, more countries will have to adapt their laws.

²⁸ No. 18 Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records.

²⁹ [UNCITRAL Model Law on Electronic Transferable Records](#) dated 13 July 2017 – [Status](#).

- 118 Which is not to say that interested parties should not already accept the still small but existing proposition. On the contrary, a successful use of Bahraini, Abu Dhabi, or Singapore law – that is, the successful application of the Model Law in practice – could in time motivate other businesses and states to turn to electronic bills of lading (and the like).
- 119 For this to happen, though, further work needs to be done on the necessary technical infrastructures. Where these already exist, they may have to be adapted to the state of the art and the law. Where this may already be the case – the Singapore TradeTrust system comes to mind – the application should be kept as simple as possible. If an electronic bill of lading were more difficult to handle than a paper bill of lading, one might as well stick with paper. Note: just because something is electronic does not mean it is smart.
- 120 All this would lower the entry barrier. But even if this continuous adjustment work is done: How quickly the market adopts electronic bills of lading, *if* it adopts them, is another story.
- 121 They say Rome wasn't built in a day. Bills of lading are a concept that has been practised for centuries, compared to which the concept of distributed ledger technology is only a blink of an eye old and – above all – not very widespread in practice yet. The specific form and handling of bills of lading have also been established for a long time, whereas electronic bills of lading are the new kids on the blockchain.
- 122 On the other hand, they also say there is nothing as strong as an idea whose time has come. Let it be repeated: electronic bills of lading cannot get lost. They would make it easier, faster, and cheaper to subsequently reallocate cargo, correct errors and make cancellations and reissues.
- 123 Moreover, legally supported, blockchain-based bills of lading at last promise to solve the old problem to which, despite its banality, only a fallback solution has been available so far: indemnity letters. That is, the problem of the original bill of lading not being there when the cargo arrives at the port of discharge.
- 124 It would be a pity if electronic bills of lading were to remain a make-shift solution like any other shelf company.

G. About the Author

Patrick Dahm is a German attorney-at-law (*Rechtsanwalt*) based in Singapore. He takes appointments as arbitrator, tribunal secretary, mediator, or legal expert witness.

Patrick belongs to the small number of ‘foreign practitioners’ in Singapore. These are foreign lawyers qualified under and admitted to practise Singapore law.

In more than twenty years’ professional practice in law, fourteen years of which as an attorney, Patrick has represented parties in multiple court and arbitral proceedings under various procedural and substantive laws (both common law and civil law) and arbitration rules (SIAC, DIS, UNCITRAL).

As an arbitrator and mediator, he is empanelled and accredited by several institutions including the Singapore International Arbitration Centre (Reserve Panel), the Chinese Arbitration Association in Taipei (CAA), the Vienna International Arbitration Centre (VIAC), or the Court of Arbitration for Art in The Hague (CAfA).

He also practises as arbitration counsel and advises on commercial, shipping and IT law at [YSL Legal](#).

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