Driving Digitalization of Global Trade: UNCITRAL Model Law on Electronic Transferable Records

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INTRODUCTION

The coronavirus disease (COVID-19) pandemic caused massive disruption to global trade and confirmed that the dependency on physical documents is not only outdated but also a source of significant risk to supply chains. This has served as a catalyst to the digitalization and fostering resilience in the global trading system, which is crucial to rebuilding and strengthening economies beyond the pandemic.

Global trade of physical goods, valued at $25.3 trillion in 2022 according to World Trade Organization (WTO) estimates, remains largely paper-based and process intensive. According to the Standards Toolkit for Cross-Border Paperless Trade, prepared by the International Chamber of Commerce (ICC) Digital Standards Initiative (DSI) and WTO, the average cross-border transaction involves multiple participants, along with 36 documents and 240 copies. The exchange of documents produces about 5,000 data field interactions, according to a Boston Consulting Group (BCG) analysis published in the ICC’s 2018 Global Trade Report. Most of these data fields are duplicates or redundant, serving little purpose. BCG estimates that only about 1% of these data field interactions add value.

Global trade of electronic transferable records, such as electronic bills of lading, can address this issue. The Model Law on Electronic Transferable Records (MLETR), drafted by the United Nations Commission on International Trade Law, can address this issue.

As of November 2023, eight jurisdictions had adopted MLETR, while others like Germany and the United States have passed or are in the process of passing compatible legislation.

Notes: In this publication, “$” refers to United States dollars.
ADB recognizes “China” as the People’s Republic of China.

Transformational Opportunity

An enabling legislative framework for paperless trade would be transformative, delivering:

(i) Accessibility and interoperability among stakeholders.

A digital trade ecosystem would enable interoperability between all trade and related platforms, including those used by SMEs. Moreover, digital records could be integrated with other digital systems, such as customs, ports, shipping, and logistics management systems. While some countries have domestic laws in place to recognize electronic trade documents, the documents and legislation may not be compatible and interoperable with such from other jurisdictions, which is what digitalization of global trade requires. This integration could enable automated processing, seamless data exchange, and real-time information sharing. The result will be improved
collaboration and increased operational efficiency across the entire trade ecosystem.

(ii) **Economic growth and increased competitiveness.** A comprehensive and internationally recognized regulatory framework would reduce uncertainties related to validity and enforceability. It would then be easier for businesses, including SMEs, to engage in international trade and access global markets. A secure legal framework for cross-border paperless trade would stimulate domestic industries, foster trade relationships, and attract foreign investment, boosting domestic gross domestic product (GDP). Some estimates of the potential economic benefits of trade digitalization are highlighted below.

(iii) **Faster, more secure, and streamlined trade that boosts resilience and efficiency in global trade.** Traditional trade involves many paper documents and processes. Digitalization would reduce the time and cost associated with manual handling, courier services, and delays caused by lost or misplaced documents. Digital records would be instantly and seamlessly transmitted, verified, accessed, and stored, leading to faster and more secure transactions. This would reduce the administrative burden and eliminate errors and discrepancies caused by manual data entry. According to McKinsey, digitalizing bill of lading—accounts for 10% to 30% of trade documentation costs—could save $6.5 billion in direct costs and enable between $30 billion and $40 billion in global trade.\(^2\)

(iv) **Transparency of environmental, social, and governance practices in supply chains through an auditable transaction trail.** Enhanced transparency in supply chains has the potential to reduce the risk of fraud and money laundering and would simplify the process of verifying the authenticity and integrity of records. A transparent and auditable transaction trail would enable traceability and accountability of trade flows. This would help ensure that environmental, social, and governance (ESG) commitments can be monitored by verifiable evidence. It could also help identify and address supply chain issues and potential areas for improvement. The resulting enhanced trade and supply chain visibility would help improve delivery against policy programs and priorities arising from government and regulatory authorities.

(v) **Increased financial inclusion.** The greater transparency and traceability delivered by digitalization could enhance trust and reduce risks for financiers, boosting access to financing, including for small and medium-sized enterprises (SMEs). Digitalization of trade would enhance existing financing products, in both trade and supply chain finance. It would also provide a solid framework for the development of new financing solutions, such as “Deep-Tier Supply Chain Finance.” This increased access to financing would empower SMEs to expand their businesses, seize growth opportunities, and contribute to economic development.

In essence, the digitalization of trade offers numerous benefits, and paves the way for a more efficient, inclusive, and resilient global trading system. The resulting simplification of operating models, risk profiles, and overall cost reduction has the potential to incentivize new business models. It could also enhance ESG and sustainability practices and can foster global inclusion as well as reduce trade and SME financing gaps. This could enable more effective competition in global markets, including for SMEs, and, ultimately, drive economic growth.

With most of the world still yet to embrace trade digitalization, reliable data on its economic benefits are scarce. However, some countries and international groupings have estimated the potential economic benefits of trade digitalization. These include:

- Across Commonwealth countries, $1.1 trillion in economic benefits by 2026 and a 75% average reduction in costs for Commonwealth exporters.\(^3\)
- Across the G7, an increase in trade of nearly $9 trillion (or 43%) on 2019 values by 2026. Also, an estimated $267 billion in additional exports compared to base forecast by 2026 with a 76% cost reduction as a share of total trade.\(^4\)
- In the United Kingdom (UK), the impact assessment of the Electronic Trade Documents Bill, published in December 2022, estimated the nominal values (not adjusted for inflation or discounted) for the net benefit of the adoption of electronic trade documents by the UK at a best estimate case scenario of a £1.137 billion and low and high scenarios of £249.8 million and £2.049.7 billion, respectively. There would also be an estimated 50% reduction in costs associated with paper documents, the assessment found.\(^5\)

**What Needs to Be Done**

There are two key impediments to the digitalization of trade in respect to goods and services. The first is a lack of harmonized and adopted standards for electronic trade documents to enable digital information to move seamlessly across borders and between supply chain players. These include exporters, shippers, ports, customs, warehousing and/or logistics, finance, insurance, and buyers. The second is a lack of legislation enabling legal recognition of electronic transferable records.

Leadership on a global scale is required to address these impediments. DSI, co-founded by the Asian Development Bank (ADB) and the Government of Singapore, and part of ICC, was created to bring global stakeholders together and drive consensus and adoption to overcome these two impediments to digital trade.\(^6\)

DSI’s objectives are to: (i) drive global adoption of digital standards and (ii) promote and facilitate the worldwide adoption of legislation required to recognize electronic documents for trade (Model Law on Electronic Transferable Records [MLETR] or equivalent).

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\(^3\) Commonwealth Secretariat. 2022. *Quantitative Analysis of the Move to Paperless Trade.*

\(^4\) ICC United Kingdom. 2022. *Creating a Modern Digital Trade Ecosystem.*


\(^6\) ICC Digital Standards Initiative.
To accomplish its mandate, DSI created the Industry Advisory Board (IAB) and the Legal Reform Advisory Board (LRAB). The IAB brings together global stakeholders in the trade ecosystem to ensure harmonization of standards for trade documents. The LRAB, consisting mostly of multilateral institutions, such as ADB, the World Bank, the United Nations Commission on International Trade Law (UNCITRAL), and others, advocates for the adoption or harmonization of legislation aligned with MLETR, enabling recognition of electronic documents for trade (electronic transferable records).8

To support the development of a legislative framework for paperless trade, ADB has partnered with ICC, DSI, other multilateral development banks, UNCITRAL and other international organizations to promote adoption of, or alignment with, MLETR.

**UNCITRAL MODEL LAW ON ELECTRONIC TRANSFERABLE RECORDS**

Model Law on Electronic Transferable Records [MLETR] creates an enabling legal framework for paperless trade. It provides an international framework to align national laws and enables the legal use of electronic transferable records both domestically and across borders.

In addition, MLETR allows the electronic use of transferable records by recognizing the electronic version of these instruments as equivalent to their paper-based counterparts.9

MLETR builds on three key principles underpinning all UNCITRAL texts on electronic commerce:

(i) **Non-discrimination against electronic records.** This principle ensures that an electronic record is not denied legal effect, validity, or enforceability solely on the basis that it is in electronic form. It thus gives legal recognition to electronic transferable records.

(ii) **Technological neutrality.** This principle ensures that the law does not mandate or favor the use of any specific technology or method. It enables the use of modern technologies, thereby making legislation future-proof.

(iii) **Functional equivalence.** This principle lays out criteria for electronic communications that satisfy form requirements applicable to paper-based documents such as “writing,” “original,” and “signed.”

The **Importance of the Functional Equivalence Principle**

The key challenge to legally enabling the electronic use of transferable documents and instruments is to allow possession and delivery in a virtual environment.10 Possession of a paper-based transferable document or instrument allows the identification of the person entitled to claim performance, while delivery permits the transfer of that entitlement. However, possession and delivery are legal notions that presume the existence of paper-based documents.

The conditions for functional equivalence between a transferable document or instrument and an electronic transferable record are:

(i) The electronic transferable record shall contain all the information required in the corresponding paper-based transferable document or instrument. MLETR does not require more information than that contained in a paper transferable document or instrument for the issuance and use of an electronic transferable record.

(ii) A reliable method should be used to identify the electronic transferable record and to render that electronic record capable of being subject to control throughout its life cycle, retaining its integrity. The electronic transferable records management system must protect the debtor and other concerned parties from multiple claims for the same performance. This is done to ensure it is not possible to issue more than one electronic transferable record entitled to claim that performance and that it is not possible to transfer control against the will of the person in control. A non-repudiation “safety clause” prevents a party from challenging the reliability of a method that has in fact fulfilled its intended function.

(iii) The agreement of the parties. Although not listed, this may also be a relevant factor for determining the reliability of the method used with respect to the relevant parties.

**Other Key Characteristics**

(i) **It enables changes of medium.** It provides for the replacement of an electronic transferable record with a transferable document and vice versa as the needs of a transaction require. Enabling change of medium is critical for the wider acceptance and use of electronic transferable records, especially when used across borders. This is important, given the different levels of acceptance of electronic means and readiness for their use in different countries, regions, and business communities.

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7 ICC DSI Industry Advisory Board; ICC DSI Legal Reform Advisory Board.
9 Transferable documents or instruments are paper-based documents or instruments that entitle the holder to claim the performance of the obligation indicated therein and that allow the transfer of the claim to that performance by transferring possession of the document or instrument. The definition of “transferable document or instrument” focuses on the key functions of transferability and of providing a title to performance. The law of each jurisdiction will determine which documents or instruments are transferable. Key transferable documents or instruments, sometimes called “documents of title” typically include bills of exchange, bills of lading, promissory notes, and warehouse receipts.
10 This is addressed by MLETR’s articles 10 and 11.
(ii) **It does not modify existing law.** MLETR does not aim to modify existing law, which is referred to as “substantive law.” Therefore, the same substantive law applies to both paper-based and electronic transferable documents provided they contain the same information. MLETR focuses on the transferability of the record and not on its negotiability (this falls under substantive law).

(iii) **MLETR and laws on electronic signatures.** MLETR contains functional equivalence rules for the paper-based notions of “writing” and “signature.” However, these rules may already exist in the enacting jurisdiction, including when other UNCITRAL texts have already been adopted. In that case, general rules on electronic signatures may apply also to electronic transferable records. For instance, in the European Union (EU) provisions on electronic signatures and other trust services of the electronic identification and trust services (eIDAS) regulation apply.

(iv) **Accreditation schemes for electronic transferable records services.** MLETR does not explicitly foresee such a scheme but is compatible with it. Some jurisdictions that have enacted MLETR have introduced an accreditation scheme, which is, however, not yet operational as the relevant technical standards are being developed. The accreditation scheme should not result in technological discrimination or restrict the number of market players.

### STATUS OF ADOPTION

DSI monitors progress on policy reform worldwide, both MLETR-based or MLETR-compliant legislation. This is based on the following criteria:

- socialization among relevant policy makers;
- political support;
- domestic analysis to identify legal gaps;
- a readiness assessment on laws requiring amendment;
- stakeholder consultation;
- legislative drafting;
- passage of legislation; and
- the entry into force of relevant law.

DSI publishes the information on a tracker on its website.11 This tracker reflects information as known to DSI. Stakeholders are invited to share any additional information that may be relevant to update it.

### Jurisdictions that have fully adopted the Model Law

MLETR adoption has been slow and, as of November 2023, only eight jurisdictions have fully adopted it: (i) Abu Dhabi Global Market, (ii) Bahrain, (iii) Belize, (iv) Kiribati, (v) Papua New Guinea, (vi) Paraguay, (vii) Singapore, and (viii) the UK.

In its *Practical Guide to Legal Reform to Enable Electronic Transferable Records and Optimise Cross-border Trade*, DSI summarizes the enacting process in jurisdictions that have adopted MLETR. This summary can be found in Appendix 1, Section A of this brief.

### Singapore’s Approach to the Domestic Adoption of the Model Law

Singapore has a long-standing history of leadership on electronic commerce. It enacted its Electronic Transactions Act (ETA) in 1998, becoming one of the first countries adopting the 1996 UNCITRAL Model Law on Electronic Commerce (MLEC).12

In February 2021, Singapore passed an amendment to the ETA, the Electronic Transactions (Amendment) Bill, to adopt MLETR with minor adjustments. Owing to the careful design of MLETR, there was no need to amend the substantive underlying legislation already applicable to paper-based transferable records.

An interesting feature of Singapore’s approach is the inclusion of a provision that enables the government to introduce, if necessary, an accreditation framework for providers of an electronic transferable record (ETR) management system.13 Though not a requisite feature of text adopting MLETR, a declaration of an accrediting body is one of the potential methods of assuring reliability that is enumerated in the general reliability standard found in Article 12 of the ETA.

Following the enactment of the ETA, Singapore has piloted successful use cases to facilitate digital trade transactions using TradeTrust, which enables the exchange of digital trade documents on a public blockchain.14 Some of the cases can be found in Appendix 2 and 3 of this brief.

### Jurisdictions that have aligned, or are in the process of aligning, domestic legal frameworks to the Model Law

Despite the low uptake of MLETR adoption to date, there is a clear increase in momentum as more countries move toward alignment with MLETR. These efforts are structured around three key pillars:15

(i) **G7+ countries.** In April 2021, Canada, France, Germany, Italy, Japan, the UK, and the United States (US), and the EU agreed on the G7 Digital and Technology Ministerial Declaration that promotes the adoption of legal frameworks compatible with MLETR.16 This commitment

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11 MLETR Progress Tracker.
12 The ETA was repealed and reenacted in 2010 to adopt the United Nations Convention on the Use of Electronic Communications in International Contracts in 2010.
14 TradeTrust.
15 This section is a compilation of updates provided by DSI, ICC, and UNCITRAL.
was renewed in 2022. The “double endorsement” of MLETR by the G7+ has started a process of possible MLETR alignment among G7+ members, with Germany, the UK, and the US leading the way. More details on the approach taken by some of these countries can be found in Appendix I, Section B of this brief.

(a) **Germany.** In 2013, Germany passed laws recognizing the use of electronic transport documents but leaving the door open to providing additional clarity for industry implementation through implementing regulations. In January 2023, the Bundestag extended the application of the law to certificates of insurance. In October 2022, ICC Germany, with 10 other organizations, submitted a proposal to complement the existing legal framework for ETR with the adoption of MLETR in the regulations.

(b) **United Kingdom.** In October 2022, the Electronic Trade Documents Bill was introduced in the UK Parliament. In January 2023, the bill progressed to the House of Lords, where experts offered views, opinions, and evidence on the proposed legislation. The Bill became law in July 2023 and took effect in September 2023. The Electronic Trade Documents Act, which is based on the Law Commission’s recommendations and draft legislation and influenced by MLETR, allows for the legal recognition of electronic trade documents, which have the same legal status as their paper-based equivalents. The Act thus removes all legal barriers to the digital commercial trade documents in a manner aligned with MLETR.

(c) **United States.** The Uniform Commercial Code (UCC) and other laws of the United States contain provisions on electronic transferable records similar to those of MLETR.

(d) **France.** A white paper discussing the business and legal impact of MLETR adoption, including a proposal for MLETR to be incorporated into French law, was launched in July 2023. Work on its implementation is ongoing as of November 2023.

(e) **Japan.** Already has legislation on e-promissory notes in place. The Japanese Ministry of Justice has set up a study group for e-bills of lading that is considering MLETR adoption with adjustments.

(ii) **Asia.** The domestic adoption of, or alignment with, MLETR is being pursued across multiple jurisdictions in Asia and the Pacific region with support from ADB. This support includes capacity building as well as technical assistance in the form of grants, to facilitate adoption of, or alignment with MLETR.

(a) **Georgia.** The Georgia Revenue Service (GRS) co-hosted with ADB, the Central Asia Regional Economic Cooperation (CAREC) Program, DSI, and UNCITRAL a capacity building event and follow-up discussion with relevant government stakeholders on the importance of MLETR to enable digitalization of trade. GRS and ADB are working together to create a legislative framework in Georgia for digital trade. Georgia will be a pioneer in the region in terms of recognizing key documents for trade in digital form.

(b) **People’s Republic of China.** In December 2022 and August 2023, the People’s Republic of China (PRC) Ministry of Commerce (MOFCOM) co-hosted with ADB, the CAREC Program, DSI, and UNCITRAL two capacity building sessions to promote understanding of MLETR and its benefits, and to share experiences from jurisdictions that have already aligned, or are in the process of aligning, their domestic legislative frameworks with MLETR.

(c) **Thailand.** The Electronic Trade Documents Bill has been drafted and is in the review stage before going to the Thai Parliament. The Center for Digital Trade and Innovation (C4DTI) and ADB will provide technical assistance to Thailand to support the removal of legal barriers and alignment of national law with MLETR.

(iii) **Other drafting initiatives.** Some countries may autonomously engage in legislative drafting exercises to enact MLETR. Some of these initiatives, particularly in the Caribbean and in the Pacific, are supported by the UNCITRAL Secretariat.

Reference to the Model Law on Electronic Transferable Records in International and Regional Framework Agreements

Two key components are:

(i) The United Nations Economic and Social Commission for Asia and the Pacific Framework Agreement on the Facilitation of Cross-Border Paperless Trade in Asia and the Pacific (CPTA). The CPTA, entered into force in February 2021, aims to accelerate the implementation of digital trade. Encouragingly, the CPTA provides a framework conducive to the adoption of MLETR. This suggests that the CPTA may serve as a powerful driver of MLETR adoption in Asia and the Pacific.

(ii) The WTO Joint Statement Initiative (JSI) on E-commerce. Proposals were put forward so that the resulting instrument on e-commerce would encourage members to recognize the importance of accepting the legal validity of electronic commerce (MLETR) in their national laws and regulations.

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17 Legislation applicable to electronic promissory notes, i.e., the Electronically Recorded Monetary Claims Act, is not based on MLETR.
18 The CAREC Program is a committed partnership of 11 countries and development partners, working together to promote development through regional cooperation.
transferrable records and, therefore, to work toward the recognition of electronic transferrable records consistent with the principles of MLETR.

Alignment with MLETR is also encouraged in:

(i) Other regional trade agreements, such as the Digital Economy Partnership Agreement (DEPA) and the Singapore–Australia Digital Economy Agreement (SADEA).
(ii) The Commonwealth Trade Ministers Meeting Outcome Statement.20
(iii) Regional work plans such as those of the Association of Southeast Asian Nations (ASEAN) or the Pacific Islands Forum Secretariat (PIFS).
(iv) Diagnostic tools and studies such as the UNCTAD eTrade Ready; the ESCAP Paperless Trade Readiness Assessment; and the tools and studies prepared by the Economic Commission for Latin America and the Caribbean (ECLAC); WTO; the European Investment Fund (EIF); European Bank for Reconstruction and Development (EBRD) and others may also identify a case for MLETR adoption.

CONCLUSION

The adoption or alignment with UNCITRAL MLETR transcends mere legal formality; it represents a pivotal step in transforming the way global trade would be conducted: the transition from paper to data.

Within today’s paper-based trading system, inefficiencies are plenty, disproportionately affecting SMEs in emerging economies and exacerbating supply chain vulnerabilities. Alignment with MLETR can help address these challenges and serve as a catalyst to unleash significant productivity gains and a boost to global GDP; it has the potential to reduce financial burden on SMEs, fostering economic growth and development. Digitalization of global trade would bolster supply chain resilience and transparency.

To unlock these benefits, it is imperative that governments, policymakers, and regulatory authorities establish a harmonized legal framework that recognizes the use of electronic transferrable records, such as e-bills of lading. The momentum toward alignment to MLETR, or adoption of equivalent legislation, has never been more apparent. As multiple jurisdictions turn to MLETR, the benefits of harmonizing legal frameworks become increasingly evident, and jurisdictions will not want to be left behind.

For further information on ADB Trade Digitalization Initiative, contact Carmen Ramirez (cramirezortiz.consultant@adb.org) and/or Nigel C. Chin (nchin@adb.org).

This brief has benefited from review inputs from Steven Beck, head of ADB Trade and Supply Chain Finance Program; Nigel Chin, principal counsel at ADB Office of General Counsel; Cyn-Young Park, director of ADB Regional Cooperation and Integration and Trade; Thomas Abell, director of ADB Digital Technology for Development Division; and Alexander Malaket, senior special projects advisor (consultant) at ADB Trade and Supply Chain Finance Program. It refers and/or benefits from MLETR-related publications from ADB, DSI, EBRD, ICC, IMDA, the Government of the United Kingdom, and UNCITRAL.

Data from ADB, Coriolis Technologies, ICC, IMDA, and WTO are used throughout this brief.

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20 Common Wealth Trade Minister Outcome Statement.
Jurisdictions that have fully adopted the Model Law

(i) Abu Dhabi Global Market
The Abu Dhabi Global Market is a free trade zone and international financial center with its own law-making authority for commercial matters. In September 2020, a public consultation was launched proposing to adopt electronic transaction regulations based on United Nations Commission on International Trade Law (UNCITRAL) texts. Several replies suggested incorporating the Model Law on Electronic Transferable Records (MLETR). Electronic Transactions Regulations 2021 was enacted on 25 February 2021. Part 5 of the Regulations enacts MLETR without significant variations. The application of MLETR will initially be in trade financing and financial technology (fintech).

(ii) Bahrain
The Bahrain was the first country in the world to enact MLETR, adopting Law No. (55) of 2018 with Respect to Electronic Transferable Records. The law was adopted as part of a broader effort to create an enabling legal environment for fintech and digital trade, led by the Bahrain Economic Development Board. That law reform exercise included updating the Electronic Communications and Transactions Law, adopting Legislative Decree No. 56 of 2018 in Respect of Providing Cloud Computing Services to Foreign Parties, and becoming a party to the United Nations Convention on the Use of Electronic Communications in International Contracts.

The Electronic Transferable Records Law explicitly identifies the paper-based documents it applies to. These are bills of lading; letters of credit; warehouse receipts; and any other document of title, in respect of an obligation to deliver goods indicated in the document, specified in the regulation.

In October 2021, the Central Bank of Bahrain announced the world’s first system of e-checks, underpinned by MLETR.

(iii) Belize
In September 2021, Belize adopted the Electronic Transactions Act, drafted by the Economic Development Council of Belize and the Compete Caribbean Partnership Facility. It is a comprehensive piece of legislation dealing with the general principles of electronic transactions, electronic contracts, and electronic signatures. It incorporates the substantive provisions of the United Nations Convention on the Use of Electronic Communications in International Contracts. Part VII of the act enacts MLETR without significant variations. Inception to adoption of the bill took 1 year.

(iv) Kiribati
In August 2021, the Parliament of Kiribati adopted the Electronic Transactions Act. The Ministry of Tourism, Commerce, Industry and Cooperatives drafted the act with the support of UNCITRAL and the Enhanced Integrated Framework for the Least Developed Countries, a global development program. A main objective of the act is to promote paperless trade.

The Act provides a comprehensive legal framework for electronic transactions, contracts in electronic form, and electronic signatures based on UNCITRAL texts.

(v) Papua New Guinea
The Parliament of Papua New Guinea adopted a comprehensive Electronic Transactions Act in November 2021. The adoption of the act is an important step in the promotion of economic development and mitigation of the effects of the COVID-19 pandemic. The act had been finalized with the support of the Facilitation 2.0: Trade and Investment in the Digital Age project funded by the Government of Australia and managed by the World Economic Forum, with technical input from UNCITRAL.

Like other legislation based on UNCITRAL texts, the act provides a comprehensive legal framework for electronic transactions, contracts in electronic form, and electronic signatures. It does not foresee an accreditation mechanism for services provided by trusted service providers and by electronic transferable records management system operators. Such a mechanism, in case of need, may be adopted at a later stage.

(vi) Paraguay
In Paraguay, the Law on Trust Services was passed by parliament in December 2021 and came into force in May 2022. The Law on Trust Services replaces the previous law on electronic transactions with a comprehensive text that incorporates several elements of the European Union’s Electronic Identification and Trust Services (eIDAS) Regulation and updates the rules on electronic contracting.

The Law on Trust Services reproduces most MLETR articles (articles 78–94). It foresees the adoption by a dedicated implementation authority of technical norms that complement general reliability standards for electronic transferable records (articles 87(2) and 95).

(vii) Singapore
In February 2021, Singapore enacted MLETR by adopting the Electronic Transactions (Amendment) Act 2021. The provisions of MLETR have thus been incorporated in the Electronic Transactions Act, which was already based on UNCITRAL texts.
Singapore conducted two public consultations, in March 2017 and June 2019, on the adoption of MLETR. The consultations papers are available to the public and contain valuable information on MLETR drafting options.

The act foresees an optional accreditation mechanism for national and foreign ETR management system operators (section 16Q).

**Jurisdictions that have adopted legislation compliant with its principles**

The MLETR builds on existing texts of UNCITRAL, including articles 16 and 17 of the UNCITRAL Model Law on Electronic Commerce (MLEC), and the relevant provisions of the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea (New York, 2008) (the “Rotterdam Rules”). Both the MLEC and the Rotterdam Rules legally enable the use of electronic bills of lading.

However, only a few of the countries that have enacted the MLEC have included articles 16 and 17 in the laws. Countries that have done so, such as Canada, Colombia, Guatemala, and the Philippines, have laws that are compatible with MLETR as far as electronic bills of lading are concerned. The same can be said of countries such as Germany and Spain that have reformed maritime law based on the provisions of the Rotterdam Rules.¹

As previously noted, the United Kingdom passed the Electronic Trade Documents Act (ETDA) in July 2023. The act shares several elements with the MLETR, such as requirements of singularity, control, and integrity and the circumstances relevant for the determination of the reliability of the method used in managing the electronic transferable record. The main difference between the two laws is that, while the MLETR applies the functional equivalence principle, the ETDA declares that intangibles may be possessed. The practical impact of that statement may be limited.

Last, but not least, various pieces of United States (US) legislation such as state enactments of the Uniform Commercial Code (UCC) and of the Uniform Electronic Transactions Act, as well as the E-SIGN, a federal act, enable the use of electronic transferable records. Provisions that have influenced the MLETR include: UCC 7-105 Reissuance in Alternative Medium; and UCC 7-106 Control of Electronic Document of Title. The US legislation may therefore be likewise considered compliant with MLETR principles.

¹ The Rotterdam Rules as a treaty have not yet entered into force.
APPENDIX 2: SUCCESSFUL USE CASES OR PILOT PROJECTS FROM THE INFOCOMM MEDIA DEVELOPMENT AUTHORITY THAT FACILITATE DIGITAL TRADE

(i) **Singapore–Abu Dhabi Global Market**

In November 2021, Singapore’s Infocomm Media Development Authority (IMDA), the Monetary Authority of Singapore, and the Financial Services Regulatory Authority of Abu Dhabi Global Market, in collaboration with commercial banks (DBS Bank, Emirates NBD, and Standard Chartered), successfully concluded the world’s first cross-border digital trade financing pilot.¹

The pilot used IMDA’s TradeTrust framework to facilitate the transfer of electronic records between these two Model Law on Electronic Transferable Records (MLETR)-compliant jurisdictions. This harmonizes the legal recognition of digital documents such as electronic bills of lading across both jurisdictions.

(ii) **Singapore–Rotterdam**

Singapore and Rotterdam, the two major transhipment ports on the trade route between Asia and Europe, completed a shipment using an electronic bill of lading to shadow a live shipment. This consisted of processed cashew nuts from Qui Nhon in Viet Nam to Rotterdam in the Netherlands via transhipment in Singapore. The title transfer and surrender capability on the digital platforms used were enabled by the TradeTrust digital utility. This trial demonstrated that interoperability is possible as electronic bills of lading issued by one digital platform can be verified and processed by another.

(iii) **Singapore–Shenzhen, People’s Republic of China**

For quicker Singapore–Shenzhen trade financing transactions, the Singapore–China (Shenzhen) Smart City Initiative enacted a policy innovation trial between the two cities in October 2021. Enabled by IMDA’s TradeTrust digital utility, banks, shipping lines, buyers, sellers, platform service providers, and fintech companies conducted successful trials on trade financing using simulated electronic bills of lading (footnote 1):

(a) UOB, together with its Shenzhen branch in the People’s Republic of China (PRC), and their clients have successfully concluded two digital trade financing technical trials.

(b) DBS Singapore, DBS China, and their clients have also conducted a third successful technical trial.

(c) Other banks, including Bank of China’s Singapore and Shenzhen branches, the Industrial and Commercial Bank of China’s Shenzhen and Singapore branches, and MUFG Bank will also be launching trade financing pilots in the coming months.

The successful trials demonstrate how key maritime trade documents like electronic bills of lading could be used across different trade financing platforms and jurisdictions.

(iv) **China Yangtze River Delta (Zhejiang) Joint Innovation Call Programme**

Following a roundtable between Singapore and Zhejiang government agencies and companies, a consortium of companies from Zhejiang province (Zhejiang Mercantile Exchange, Wuchan Zhongda International Group, and Sino Commodities International) and Singapore (DBS Singapore, DBS China, PIL, GUUD, banco by RootAnt, and Bank of China’s Singapore branch) were formed to conduct digital trade financing pilots using the TradeTrust Framework. This will enable the digitalization and authentication of important trade documents such as the bill of lading in cross-border trade financing. Through these bilateral ties, companies from Singapore will look for new opportunities in the greater Yangtze River Delta region, while Zhejiang companies can continue to leverage Singapore as a launchpad to explore opportunities in Southeast Asia.²

(v) **Singapore–Thailand**

In May 2023, IMDA announced the completion of a trade transaction between Singapore and Thailand using an Electronic Transferable Record, an electronic bill of lading (eBL).³ The trade was conducted using Singapore’s TradeTrust framework with the participation of industry partners.⁴ The eBL was legally supported solely by statutory law without the use of any contract law or rulebook, demonstrating that an eBL issued using the TradeTrust framework can be used in a non-UNCITRAL MLETR jurisdiction, such as Thailand.

(vi) **Singapore–India**

Singapore and India have successfully started the first live transaction using the TradeTrust Framework.⁵ This project was implemented in close partnership between government agencies (Ministry of Trade and Industry, the National Institute for Transforming India [NITI], Aayog, Enterprise Singapore, and the IMDA) and industry partners (DBS, ICICI Bank, Maptrasco, Jindal Stainless, and A.P. Moller–Maersk).

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¹ Infocomm Media Development Authority.
⁴ In the transaction, ExxonMobil Asia Pacific Pte. Ltd. was the shipper, Bunkerchain was the digital platform provider, and VLK was the vessel owner.
APPENDIX 3: LIVE APPLICATIONS OF THE MODEL LAW ON ELECTRONIC TRANSFERABLE RECORDS, THE FIRST ELECTRONIC BILL OF LADING TRANSACTION UNDER SINGAPORE LAW

The paperless trade solutions provider essDOCS (now ICE Trade) has enabled the first electronic bill of lading transaction governed by Singapore law. This is a significant milestone in the digitalization of global trade, as it is the first electronic bill of lading issued under, and in accordance with, Singapore’s Electronic Transactions Act, granting it the same legal status as its paper counterpart.

This transaction took place between BHP and Jinchuan Group and involved the sale of nickel. Interestingly, while this shipment is between non-Model Law on Electronic Transferable Records jurisdictions, i.e., Australia and the People's Republic of China (PRC), the choice of Singapore law as applicable, enables the issuance of electronic bills of lading.

2 The cargo was shipped by Ocean Network Express from Australia to the PRC and it was supported by the National Australia Bank (Hong Kong, China branch), BHP’s advising bank, and a leading PRC trade finance bank, acting on behalf of Jinchuan.