



dcsa

Streamlining international trade

by digitalising end-to-end documentation





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Antiquated, paper-based processes introduce complexity and delays into shipping

To complete an international shipment, several documents must be exchanged between multiple parties, from booking to shipment release.

Currently, these documents are not standardised, and the majority are not available digitally, requiring physical hand-off between participants. The manual handover of paper documents is inefficient, expensive and error prone, which contributes to rising prices and supply chain bottlenecks. These issues have never been more widespread or apparent than at the start of the COVID-19 pandemic. Paper-based B/L processes broke down as cargo in ports could not be gated out because original bills of lading (B/Ls), or title documents, were stuck elsewhere due to airfreight delays caused by grounded airplanes.

Despite these issues, adoption of the electronic bill of lading (eBL) is currently extremely

limited, largely due to a lack of legislative and technical interoperability caused by a lack of standardisation. In 2020, DCSA estimated that 16 million original bills of lading were issued by ocean carriers. Paper B/Ls cost the industry about US\$11 billion per year, yet less than 0.3% were eBL.¹

For shipping customers, the frustration goes beyond cargo getting stuck when paper B/Ls are not in the right place at the right time. With all the required trade documents that are part of the B/L documentation process (carrier and authority certificates, import/export licenses, and certificates of origin), it is common to find 50 sheets of paper in a package of shipping documents that must be exchanged between, in some cases, 30 different parties. This creates inefficiencies that slow

trade down and hamper growth and innovation.

Of course, the waste of printing paper and flying or couriering thick envelopes around the world is a serious sustainability concern. In 2020, ocean carriers alone issued 16 million original B/Ls which were flown or driven around the world, from shipment origins to destinations, between carriers and their customers, banks and insurers, consuming more fuel and creating tons of greenhouse gas emissions. Economic and Social Commission for Asia and the Pacific (ESCAP) research suggests that the emissions savings from fully digitalising regulatory procedures around trade could save between 32 and 86 kg of CO₂ equivalents per end-to-end transaction.

¹ DCSA research based on data collected from DCSA carrier members. The financial calculation includes costs for carriers, freight forwarders, shippers and financial institutions mainly around manual administration and courier fees.

Benefits of digitalising documentation

Amazingly, the bill of lading has changed little since the 1700s, but undoubtedly, the world has.

\$4B.

estimated potential annual savings at 50% adoption rate for container shipping industry

<2%

containers physically checked by customs

Hence, standardising B/L processes and creating a digital native version of the B/L and all associated documentation will drive benefits not only for the industry and its stakeholders, but for the world at large.

For the world, it will make the industry more sustainable by eliminating tons of paper and all gas-powered means of moving it around the globe. Partly because of this, the cost of processing B/Ls will also decrease significantly. DCSA research forecasts that the industry can potentially save more than \$4 billion per year if 50% eBL adoption is achieved.

Universal eBL will also help fight crime. Currently, only 2% of containers are physically inspected by customs. If customs officials had the data in digital format from end to end, they could better spot inconsistencies in shipping documentation from origin to destination and target their checks for potential crimes involving the trafficking of guns, narcotics, illegal wildlife and timber (the 4th largest organised crime in \$\$ terms).

COVID-19-induced supply chain bottlenecks have awakened consumers to the importance of keeping global supply chains

running smoothly. Establishing a universal eBL is key to making international trade more seamless, agile, reliable, and secure, even in the face of disruption on the level of a global pandemic.

Digitalisation will also benefit the individual parties involved in an international trade transaction. A dramatically simplified and streamlined B/L process will enable carriers to become more efficient while providing a better experience for shippers. And every stakeholder will benefit from increased efficiency, accuracy and reduced administration costs.

Major factors driving eBL and current obstacles to adoption

The industry must aim to enable widespread acceptance and adoption of a universal electronic bill of lading, which will ultimately lead to paperless international trade and all its associated benefits.

To achieve this, three major factors that drive adoption need to be addressed.

1. Robust technology

Achieving acceptance of electronic documentation for something as critical as the bill of lading requires maintaining the integrity and uniqueness of the document as it makes its way along the supply chain. In the past, technological limitations have made this difficult in a digital format, partly due to the negotiable properties of the B/L. Today, new technologies such as Blockchain and other forms of distributed ledger technology (DLT) offer potential solutions for eliminating the risk of a single catastrophic failure or attack that would compromise eBL security.

However, regardless of which technology is used to secure an eBL, it must be run on an interoperable technology foundation or risk creating a “walled garden”, which diminishes its value to users and the industry at large. End-to-end data model and transmission standards need to be in place for an eBL to be delivered seamlessly across carriers and stakeholders, regardless of pre-existing relationships.

Digital standards will enable interoperability between all stakeholders, including system providers, shippers, carriers, banks and regulators. With eBL, different parties can be involved in a transaction as long as they have implemented the standards.

2. Acceptance by governments, regulatory authorities, banks and insurers

The B/L is a document of title which is not only used as a document of transport, but as collateral for bank financing and a requirement for insurance. Currently, there are only a few jurisdictions where an eBL is accepted as legally equivalent to a paper document. There are even jurisdictions where the title document must be on paper to be valid, bi-lateral eBL usage agreements are not accepted.





As a result, gaining widespread acceptance and adoption of a universal eBL requires all countries to ultimately adopt MLETR, which is driven by the UN. In the meantime, bylaws are used to work around the absence of legislation, enabling different parties to agree to use an eBL. As of 2021, 7 technology platform providers approved by the IGP&L for the exchange of eBLs have done just that, defined their own specific legal frameworks to accommodate disparate eBL regulations in different jurisdictions. However, this proprietary approach leads to walled gardens, and as we will discuss further, the lack of interoperability has been cited as a major reason for not

adopting eBL by several large shippers DCSA interviewed.

3. Open collaboration

Currently, all eBLs are transferred and received within walled gardens. In other words, via proprietary eBL platforms that have their own closed environments, data formats and interfaces. As a result, an eBL can only be transferred within such a platform when all stakeholders (carriers, shippers, banks, consignees) are onboarded. Adopting multiple eBL platforms is time consuming and expensive, so most shippers and banks stick with paper B/Ls to avoid carrier (and platform) lock-in, which is a key reason for the low eBL adoption rate.

To eliminate walled gardens, the industry needs an underlying framework of open eBL standards that ensures interoperability. An interoperable international shipping environment will enable anyone who has adopted the standards, regardless of which technology platform they use or which carriers/stakeholders they are partnered with, to participate in a standards-based eBL transaction.



The DCSA eDocumentation initiative

The need for digital documentation is now widely accepted among industry stakeholders.



To address this need, DCSA has initiated an eDocumentation program that will mitigate the challenges involved in standardising and digitising international trade documents. The ultimate goal is a highly streamlined documentation process and establishment of a secure, universal eBL. Once a standard eBL is available, it will also be easier for banks and insurers to accept the eBL as a viable alternative to paper.

Scope of standardisation required for the industry

Achieving end-to-end digital documentation requires standardising and digitising several key aspects in the

documentation process (especially regarding original B/L transfer) including:

1. Data formats

Standardised data fields and data structures across platforms enable the alignment of data inputs and outputs for various shipping documents from booking to shipment release.

2. Bylaws

Bylaws are required to ensure a digital B/L is equivalent to a paper B/L. Currently, all solution providers have their own bylaws, which creates fragmented legal frameworks. Standardising bylaws will enable carriers and customers to agree to one set of bylaws that can be used for

B/L transfer across all digital platforms independent of the solution provider (provided the solution provider has adopted them).

3. Digital identity

Identity standards are an integral part of digital documentation. Documents that are digitally signed with a unique identifier are indisputably linked to the signer. Identity standards can be defined for legal entities and employees to harmonise identification of legal entities across digital platforms. Several methods of validating digital identity can be implemented to ensure the security and uniqueness of an eBL.



4. Cross-platform titleholder verification

A standards-based notary framework will enable real-time, independent verification of the integrity of an original eBL and the identity of the title holder.

Industry collaboration is key to gathering requirements from each stakeholder group on these topics and aligning on a standardised approach to ensure interoperability and vendor neutrality.

DCSA's progress to date

First, digitalising the B/L

In 2020 and 2021, the focus of the DCSA eDocumentation program has been to develop

standards for the main steps in the end-to-end (e2e) documentation process, i.e., preparing the B/L (based on shipping instructions) and issuing the B/L. In addition, DCSA released interface standards with API definitions for these processes. These allow B/L data to be digitalised in a standardised way, enabling shippers and other stakeholders to process an eBL from all carriers that have implemented the standards.

Next, booking and shipment release

Beginning in 2022, the focus for DCSA will be to complete standardised digitisation of the end-to-end shipping transaction

by creating standards with API definitions for the booking and shipment release processes. Standardising the booking request and confirmation process will dramatically reduce human error and improve both carrier efficiency and the customer experience by ensuring data can be input once and re-used throughout the documentation process.

Digitising shipment release will require standardising the B/L surrender process, arrival notice, delivery order (to hauliers) and the release message to terminals to secure the handover of containers.



Collaborating with industry stakeholders to achieve alignment

Customers of ocean carriers and financial institutions

DCSA is actively collaborating with industry alliances representing key stakeholder groups, such as ICC, BIMCO, FIATA, SWIFT, and IGP&I, to ensure widespread alignment and support for a standardised approach from end to end.

Governments, standards authorities and regulatory bodies

DCSA aligns with and actively contributes to the work of international regulatory organisations such as the United Nations (UN), the International Maritime Organisation (IMO), the World Customs Organization (WCO), the UK Law Commission, and the G7. Our work with regulators is critical

to keeping international trade moving by ensuring industry standards meet regulatory trade requirements.

The long-term objective of these activities is to gain inclusion of digital title documents into national law across all major jurisdictions. The vehicle to achieve this is the UNCITRAL MLETR, the UN convention on adopting model law to enable digital transference of records. We foresee that the adoption process will be ongoing for the next 5 to 10 years and are currently seeing positive movement in the EU, Singapore, and the USA.

Technology solution providers

To ensure standards are easy to adopt, DCSA is also engaging with solutions providers to understand their needs and address topics such as standardising bylaws. This will simplify the

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Find more information about the DCSA eDoc initiative here: <https://dcsa.org/initiatives/edocumentation>

customer onboarding process for solution providers and thereby increase eBL adoption. Having to support multiple eBL platforms is an unattractive proposition for shippers and banks. Interoperability through standards is the only clear path to industry-wide eBL adoption and global acceptance.

You can help digitally transform container shipping

Get involved by adopting DCSA digital standards and demanding your partners and other industry stakeholders do the same.

Eliminating paper from the shipping transaction will make every aspect of commercial container shipping better, faster, cheaper, more secure and environmentally friendly. By adopting DCSA standards, carriers and ecosystem partners can achieve faster time to market, reduce technology costs and increase innovation of new products and services. The result will be greater transparency and reliability of container shipping services, a significantly improved customer experience, and a far more digital industry.

Through this initiative, DCSA, along with its members and collaborators, aims to generate awareness about the importance of common data standards and common legislative conditions across international jurisdictions and platforms. The ultimate goal is to facilitate acceptance and adoption of an eBL by regulators, banks and insurers, and to unify communication between these organisations and customers, carriers and all other stakeholders involved in an international shipping transaction.

