DEMATERIALIZATION & PAPERLESS PROCESSING

PART VI
VOL 2
Services to handle supporting documents using electronic means are an essential feature of a Single Window. Dematerialization of supporting documents is an indispensable part of a paperless processing environment. Technological developments, and the reduction in the cost of storage and networking, have made facilities for the electronic handling of supporting documents more accessible. To keep the cost of solutions low, it would be advisable to follow international standards.
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1. Introduction

The information that Customs and other agencies require to process import and export declarations can be obtained from several documents. These documents (referred to hereinafter as ‘supporting documents’) can be divided into the following categories: (i) transport documents, such as bills of lading, air waybills, consignment notes, rail/road manifests, etc.; (ii) commercial documents, such as invoices, purchase orders, any applicable contracts, technical documentation on products, packing lists, etc.; and (iii) regulatory documents such as licences, permits, certificates, etc.

1.1 About this Part

This Part provides guidelines on supporting documents in international trade. The guidelines highlight the role played in different business processes by supporting documents, how the documents are produced, and how they are managed. The end-to-end process will be described, as well as the life-cycle management of supporting documents.

1.2 Background

Supporting documents are a requirement of most cross-border regulatory authorities, and one of the main causes of process delays. The Single Window environment must provide a comprehensive solution to the question of handling supporting documents through digital means.

Facilitation of cross-border clearance procedures should address dematerialization to enable electronic submission and verification. To achieve this, it would be prudent to follow the steps listed below:

1. Identify all supporting documentation required at a national level for regulatory declaration, separating trade/transport and the public sector
2. Establish an inter-agency task force with a mutually defined lead agency
3. Simplify business processes between agencies
4. Address legislative/regulation issues
5. Undertake the dematerialization process, including access requirements for private sector supporting document data
6. Provide system/human access to the information, possibly via a repository service delivered by a public sector body (e.g. Agriculture, Defence or Culture), or by a private sector body

National Single Window of French Customs

French Customs is developing the national Single Window (Guichet Unique National, ‘GUN’) for administrative formalities at the border.

Customs continues to develop the GUN and strengthens its role as a referent for managing the international flow of goods.

Thanks to the GUN, available from the secure website https://pro.douane.gouv.fr, companies no longer have to travel to obtain validation of authorizations, licences or certificates required by fifteen public administrations at the time of Customs release for goods subject to special regulations (strategic goods, products of animal origin, etc.). The interconnection between Customs and public administration applications allows complete dematerialization of Customs clearance formalities. The interoperability of the information systems will simplify Customs formalities, and will help businesses save time and optimize their cash flow, while securing their procedures.

(e.g. banks, freight forwarders, brokers, individual companies or commercial secure storage companies).

Figure 1: Hard-copy documents are very expensive and time-consuming for the clearance process.

1.3 WCO’s Role in Supporting Dematerialization

The WCO Recommendation on Dematerialization of Supporting Documents (see Annex I to the current document) recommends that Customs administrations discontinue the requirement of presenting supporting documents (e.g. invoices, bills of lading, packing lists, licences and certificates) in hard copy, if they have already been presented in electronic form, and supports the use of electronic means to access and to verify the contents of those documents. The increased use of dematerialization of documents for Customs clearance works in favour of both government and trade.

The WCO Data Model offers information components that can be used to construct supporting documents such as licences, certificates, permits or other authorizations (LPCO). These information components are the same.

The WCO has forged partnerships with different international organizations to help establish the basis on which dematerialization can be made practical and achievable. The WCO continues to collaborate with the various international organizations that govern standards concerning licences, certificates and permits for cross-border trade. At the same time, it has also served as a platform to exchange information on the various WCO meetings and events concerning use of information technology tools to support dematerialization. Furthermore, the WCO has encouraged industry initiatives, such as IATA’s ‘e-freight’ project, which is an example of a global effort to eliminate the use of paper in cargo clearance.
The process of dematerialization is usually implemented over time and through a programmatic approach, but it must start with the decision of the Customs administrations to move towards paperless processes, including those involving ‘supporting documents’. Customs administrations must therefore work with various partners in industry and with other government agencies. Such a decision will encourage stakeholders to form partnerships with Customs to implement the changeover to a paperless mode of cargo clearance operations.

1.4 Advantages of Dematerialization

The following should be kept in mind:

- E-documents will be referenced in Customs declarations;
- These references will identify the permanent location of the e-document;
- Digital signatures are a means of maintaining authenticity and integrity of the data;
- The signatures and the archived information are long-lived and will be valid beyond the life-cycle of the certificate or the certifying authority;
- Customs can download e-document information as and when it needs.

The purpose of this document is to provide comprehensive guidelines in support of document dematerialization.

1.5 Paperless Processing is a Reality

Paperless clearance implies no hard-copy submission by trade to regulatory authorities and, likewise, no hard-copy responses from regulatory authorities to trade. It involves electronic transmission of all regulatory documents to Customs and to other regulatory agencies (via a Single Window, if one has been established). This eliminates the need to print and manually attach the documents to shipments. Printed or handwritten documents can cause avoidable difficulties in the processing of shipments, leading to costs and delays. Paperless processing means that regulatory authorities, also, can communicate electronically their decisions on release/hold/payment of shipments.

There is an opportunity created by recent technological developments. An increasingly ubiquitous, secure and wireless internet allows traders to submit and access documents anywhere, at negligible cost. The facility can be provided to officials working with regulatory authorities as well. Now, officers can access documentation electronically ‘on the go’, using portable, handheld devices where they happen to be, and not just at their desks.

The ‘apps’ or application programs that run on mobile computing devices are growing ever more popular, especially since they are easy to use: the user can launch them simply by choosing an icon on a touchscreen, and they are simpler to distribute, install and maintain than conventional computer applications. ‘Any time, anywhere’ availability of documentation does away with the need for copying and collating numerous pieces of paper.
Software applications are available for hosting electronic document repositories. The cost of such repositories has also come down significantly. These software applications store and manage the life-cycle of electronic documents effectively, irrespective of whether the documents are scanned images of paper documents, or formatted to contain reusable data. In the last decade, legislation concerning corporate governance, such as SOX (the Sarbanes-Oxley Act) in the US, and legislation on electronic healthcare records, has encouraged the establishment of robust electronic document management solutions. To support compliance with such legislation, industry provides ready-to-use and inexpensive solutions for electronic document management, including third-party document repository and archiving services.

Business processes and workflows that involve the ‘review and sign-off’ documents exchanged in business transactions have benefited from the recent growth in services of ‘on-demand’ online electronic signatures, making a thing of the past the difficulties associated with the cost of digital signatures based on public key infrastructure (PKI). The law in relation to the validity of these signatures is now settled in several countries. This has resulted in the mushrooming of electronic signature service providers to support the conclusion of sales contracts and real-estate purchase agreements. Together, the above developments provide for the deployment of very agile and efficient business processes that hold great promise for making dematerialization of supporting documents a practical reality.

2. What are Supporting Documents?

Supporting documents are documents required to be submitted in addition to the regulatory declarations. These documents are referred to and relied upon during the release and clearance of goods, means of transport and transport equipment.
Supporting documents can be broadly divided into two categories:

i. Key business documents that form trade and transport exchanges, such as the invoice, packing list, purchase order, delivery note, bill of lading, consignment note, etc.

ii. Regulatory documents, such as licences, certificates, permits and other – referred to in the WCO Data Model as ‘LPCO’.

A list of supporting documents is enclosed at Annex IV.

### 3. Documents or Data?

Business managers often ask how supporting documents can be relevant, given that the aim is to simplify ‘paperwork’ in a Single Window environment, and wonder whether all documents would not be converted into data. Most people do not consider small pieces of information as documents, and make a distinction between highly structured and unstructured information, associating only the former with documents. Structured data is useful for transactional purposes, while unstructured data is used for narratives.

Business processes in an automated environment relate both to data and documents. The WCO Data Model represents structured data that can be instantiated not only as meaningful units of data, but also as documents. Documents are instances of structured data that carry meaning with reference to a business process. It is well understood that business data in transactional documents has to move between documents. For instance, invoices and bills of lading contain information that ‘moves’ into regulatory documents, such as the Customs goods declaration.
The WCO Data Model identifies ‘declaration’ and ‘response’ as the main elements of cross-border regulatory transactions. The electronic declarations made to the Single Window environment contain enough information for the regulatory authorities to take regulatory decisions concerning import, export and transit of goods. The information, however, is normally based on a number of other supporting documents, whose references are provided in the declaration. These references enable the regulatory authorities to verify the declared information and help validate it by referring to external sources. Supporting documents provide solidity and certainty with regard to the information provided in the declaration. It would, of course, be preferable if regulatory authorities and businesses could get rid of references to other documents in their regulatory transactions. That, however, is far from being the practice as governments continue to insist on having access to supporting documents.

In a Single Window, routines of verification of supporting documents can be achieved by accessing the systems that host them. Such access to electronic documents is in fact access to the structured data held in automated systems. Experts therefore suggest that it is not useful to press the distinction between business data and documents.

4. The Supply Chain and Supporting Documents

The international trade supply chain is a highly complex network of business relationships and business processes. Experts have produced analytical models to depict the supply chain for different purposes.

The figure below depicts the Buy-Ship-Pay supply chain. It can be seen that, all along the supply chain, supporting documents are exchanged. They go with the goods and the means of transport from origin to destination, from the seller to the buyer, from the place of export to the place of import.
Figure 4: The different levels at which supporting documents are generated/required in the international supply chain.

From export to import, four levels can be seen:

The **first level (L1)** is the Customs level at the border. Declarations today are mostly lodged electronically by exporters/importers or their Customs brokers. This is also the regulatory level.

The **second level (L2)** is the transport level. This level may include multiple means of transportation, from the factory/works where the goods were produced and shipped to the delivery destination required by the buyer. The transport level (L2) includes the stops for controls at borders where controls are applied using automated systems operated by port or airport border management authorities for cargo control, logistics or traffic purposes. In several countries, these are often the port and airport cargo community systems. A cargo community system is a local federation of actors implementing a computerized workflow from the arrival to the departure of the goods, including the Customs clearance.

The **third level (L3)** is the Single Window level. This level facilitates simplified cross-border regulatory agency procedures which use dematerialized documents and data. All official requirements, including certificate requests (origin, licences, quality, sanitary, etc.) are collected. The ‘one-stop shop’ concept can result in a reduction in the number of physical controls. Limited exchange is envisaged between Customs administrations, i.e. between L3s.

Finally, the **fourth level (L4)** is the commercial level. Sellers, buyers, banks and insurance companies exchange many supporting documents that Customs may require for the clearance of goods, or more generally after clearance.

Supporting documents ‘support’ cross-border exchanges in international trade. There are several types of cross-border exchanges that take place in the course of international trade. The figure below depicts the B2B, B2G and G2G exchanges.
Dematerialized documents can be shared within and across borders. In these cross-border exchanges, cross-border jurisdiction is an important issue. While domestic exchanges are governed by national legislation, international exchanges are regulated by international commercial law and international agreements. In the flow of data across frontiers, legal issues concerning the legality and validity of exchanges must be settled.

5. Legal Underpinnings

The question of dematerialization has been discussed in different legal texts and instruments, including those below.

5.1 Revised Kyoto Convention

The Revised Kyoto Convention (RKC) states that supporting documents play an important part in the overall checking of the goods declaration, with Customs taking the necessary steps to satisfy themselves that the declaration is correctly completed. As part of this, Customs must demonstrate that the relevant supporting documents fulfil all the prescribed conditions. The RKC thus envisages a role for supporting documents, but stresses that Customs shall require only those documents necessary: (i) to permit control of the operation, and (ii) to ensure that all requirements relating to the application of Customs law have been complied with (Standard 3.16 of the General Annex). In addition, the RKC provides flexibility to Customs administrations in prescribing the timing and manner of lodgment of supporting documents. They may be lodged electronically with Customs (Standard 3.18), lodged prior to the arrival of goods (Standard 3.25), or submitted within a specified period for reasons deemed valid by Customs (Standard 3.17).
5.2 WTO Trade Facilitation Agreement

Paragraphs 1 and 2 of Article 10 of the WTO Trade Facilitation Agreement provide guidance on how governments can simplify formalities and documentation requirements in relation to import, export and transit.

Firstly, paragraph 1 requires Members to review formalities and documentation requirements with a view to simplification. Whilst recognizing that these serve “legitimate policy objectives”, such as protection against fraud, and prevention of smuggling or tax evasion, it asks governments to factor in “changed circumstances, relevant new information, business practices, availability of techniques and technology, international best practices, and inputs from interested parties”. These factors have a bearing on what constitutes proper levels of document requirements and formalities.

When the review is undertaken, the procedures adopted and/or applied should ensure rapid release and clearance of goods, resulting in reduced time and costs of border compliance (with the least restrictive methods chosen from among the available alternatives). An important part of the obligation under the Agreement is to discontinue the documentation not required to be maintained any longer.

Figure 6: The digital revolution has ensured that documents can be shared from everywhere to every person using secure and trusted repository services.
Paragraph 2 of Article 10 requires Members, on a ‘best endeavours’ basis, to accept paper or electronic copies of supporting documents required for import, export or transit formalities. Crucially, however, paragraph 2 states that where a government agency of a Member already holds the original of such a document, any other agency of that Member shall accept a paper or electronic copy, where applicable, from the agency holding the original in lieu of the original document. (The text does not specify whether the original is an electronic version or a hard copy.) This has critical implications for dematerialization and the Single Window.

In effect, paragraph 2.2 of Article 10 of the WTO Trade Facilitation Agreement enables governments to use documents issued (in hard copy or otherwise) by any of their agencies in lieu of originals submitted by the traders. This Article reminds government agencies within an administration to share documents, if such documents are required to be produced in the course of Customs clearance. Such sharing helps reduce the burden of documentation on traders. Considering that supporting documents are unwieldy when handled in hard copy, the only option left to governments is to handle them in digital form.

Customs and other government agencies need to access regulatory documents which may be systematically controlled in order to clear goods. These are generally documents issued by an authority (other government agencies or ‘OGAs’) working in partnership with Customs.

It would be beneficial if the IT systems belonging to the main OGAs are connected and can exchange data with Customs in order to release the goods. This approach is based on the circular flow of trust between Customs and authorities such as phytosanitary and CITES authorities. Phyto and CITES certificates are two specific areas where, typically, hard-copy documents are generally used. The following would suggest that this need not be the case in future.

5.3 ePhyto

Electronic phytosanitary certification (ePhyto) is the electronic version of a phytosanitary certificate in XML format. A valid document should be produced in accordance with a globally harmonized approach to ePhyto, based on Appendix 1 to International Standard for Phytosanitary Measures (ISPM) No 12. The electronic format contains all the necessary information that can be found on a paper phytosanitary certificate. ePhytos can be handled securely in a digital format, or printed out on paper when required. They can be shared between countries’ regulatory authorities (National Plant Protection Organizations – NPPOs) and the traders to whom the certificate is issued.1

Under the aegis of the International Plant Protection Convention (IPPC), the Commission on Phytosanitary Measures (CPM) by approving the format of ePhyto under ISPM 12 has also set up a Steering Group to foster the ePhyto hub.

The IPPC considers that an ePhyto shared through an international hub would reduce incidents of fraudulent certificates, eliminate duplicate data entry, and improve security and efficiency. A global usage would ensure harmonized development. The Appendix which has been developed based on UN/CEFACT standards has also been harmonized with the WCO Data Model, as part of which a Derived Information Package has been developed.

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1The outline is provided on the IPPC website, [https://www.ippc.int/en/ephyto/](https://www.ippc.int/en/ephyto/).
5.4 CITES ePermits

The Conference of Parties to CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) has developed and is promoting an electronic permitting toolkit. The web-based toolkit provides advice on the use of common information exchange formats, protocols and standards for use with electronic permitting systems.

The toolkit was first published in 2010. In 2013, the CITES Secretariat and the World Customs Organization (WCO) reached agreement on the inclusion of standards related to the development of CITES e-permitting systems in Version 3.3 of the WCO Data Model. The agreement has helped further the use of electronic methods in paperless processing of documentation for “sustainable and traceable trade in CITES-listed species”\(^2\).

For example, a CITES certificate is issued by the exporting CITES authority. This information is sent to the CITES authority on the importing side. The exporting Customs needs to access the dematerialized CITES permit identifier mentioned in the export declaration. The same applies for the importing Customs. The Customs can also update the CITES database, modifying the exported/imported quantity.

![Diagram showing the sharing of permit information between CITES or sanitary authorities and Customs.](image)

Figure 7: CITES or sanitary authorities share permit information. The exporter and the importer are assured that Customs at both ends of the supply chain have access to the electronic permitting information and can release goods after verification.

A pilot is under way between the Swiss and UK authorities with the objective of using dematerialized CITES certificates. Customs could engage with such initiatives in order to analyse and find a new reprocessing solution.

The question of document content was discussed above. A standard permit has been developed for CITES, which is maintained by the United Nations Environment Programme (UNEP). The eCert standard developed by UN/CEFACT may also be borne in mind.

\(^2\)CITES Secretariat, 2013.
6. Strategy and Tactics

A strategy for dematerialization and paperless processing should have the following elements:

- The declarant should submit regulatory transactional data electronically via declarations, along with references to supporting documents.
- Where it is necessary to submit supporting documents, the declarant should provide electronic access; such access should be embedded within the electronic declaration.
- Supporting documents should be used for verification purposes, and the decision on verification should be driven by the principles of risk management.
- There is no need to routinely verify supporting documents to release the goods.
- Checks are required only for regulatory documents such as licences and certificates, which are legally mandated, or in cases where the risk assessment system requires verification.
- All supporting documents should be presented in dematerialized formats, which should be available in secure and trusted repositories for electronic documents.
- The following three modes of dematerialization have been identified:
  - Verification through access to online databases containing records pertaining to supporting documents. In this case, supporting documents could be generated at the instance of the transaction and the necessary verification accomplished automatically through electronic queries exchanged between the participating IT systems.
  - Supporting documents can be presented as portable electronic files to Customs in standard pre-assembled electronic formats. Data contained in these electronic files can be queried electronically and the required verification can be accomplished automatically.
  - Supporting documents are presented as digitally scanned images of supporting documents, where access is in electronic mode but verification routines are manual.
- Online verification through OGA databases and electronic documents held in trusted repositories should be preferred.
- When Customs/regulatory authorities require the presentation of a supporting document, officers should invariably access the information through an access key embedded in the electronic declarations.

The text box below describes the tactical actions that can be pursued to promote dematerialization of supporting documents.

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3 Strategy and tactics have been discussed in detail in the WCO bodies. This Section draws extensively on Documents PM0306 and PM0280 of the WCO Permanent Technical Committee.
TACTICAL ACTION ON SUPPORTING DOCUMENTS

☑ Review, Assess, Reduce & Reuse Documents required for clearance
☑ Specify requirements HS-wise.
   ✔ Published information should answer the following question should be answered clearly:
   What documents must be provided for importing or exporting the item?
☐ Relax requirements on Supporting documents for some categories:
   ✔ AEOs, Others(?)
☐ Provide access to participating agencies that require access to the where same documents
☐ Exchange/accept native electronic documents/ messages to reduce load and size
☐ Carry out online automatic verification where supporting documents stored securely as electronic records in trusted/government systems
☐ Scanning for digitization is the LAST RESORT; provide technical support for uploading.
☐ Create trusted repositories within the framework

6.1 Preparatory Steps

In order to achieve dematerialization of supporting documents, it would be prudent to follow the steps listed below:

- identify all supporting documentation required at a national level for regulatory declaration, separating trade/transport and the public sector;
- establish an inter-agency task force with a mutually defined lead agency;
- simplify business processes between agencies;
- address legislative/regulation issues;
- undertake the dematerialization process, including access requirements for private sector supporting document data.

6.2 Collecting Data on Supporting Documents

A comprehensive list of supporting documents used in international trade may be prepared nationally. Customs authorities should collect the following data in regard to these documents.

i. Name of the document
ii. Issuing authority/agency
iii. Location of the issuing authority/agency
iv. What is the primary legislation and regulation governing the supporting document?
v. Does the regulation prescribe the format of the paper form and/or electronic form? Are there data standards that govern the electronic form? Can the issuing authority be expected to conform with the standard electronic form?
vi. At what point in the business process is the supporting document issued?
vii. At what point in the business process is the document relied upon?
viii. Does the supporting document hold deductible amounts or quantities?
ix. What is the frequency of use of the document?
7. Dematerialization Process

An important consideration in the dematerialization project is the availability of the supporting documents to regulatory authorities in real time, at an address on the web. Instantaneous access with a mouse-click will greatly facilitate control and cross-checking. To achieve this, the following is suggested.

7.1 Referencing Supporting Documents in a Declaration

Customs declarations, such as goods declarations and cargo reports filed by actors at the transport and business levels, will include references to supporting documents. The WCO Data Model contains a data grouping called ‘Additional Document’ for supporting documents. In the WCO Data Model, information on supporting documents may be provided at different levels, e.g. at the level of the declaration, at the means of transport level, at the level of the shipment, as part of the regulatory goods item, and at the level of the product. Table 1 in Annex IV provides information regarding the data elements that capture information on supporting documents which could be included in cross-border regulatory declarations.

7.2 Secure Electronic Repository of Supporting Documents

These electronic documents are required to be stored securely in a trusted facility. That facility should meet the accessibility, security and reliability needs of the parties involved. To formalize secure storage arrangements, the issuer or submitter of the supporting document may enter into a legal agreement with the subscribing party or the relying party in respect of the document. The validity of secure access must be coterminous with the validity of the original declaration to the regulatory authority. For instance, the repository service provided by the exporters/importers/Customs brokers or their trusted service providers must keep the document accessible in repositories for all regulatory entities, including the Customs authorities and their designated IT systems, as long as the goods declaration is legally valid.

This repository service can be provided by a public sector body (e.g. Agriculture, Defence, Culture) or a private sector body (e.g. banks, freight forwarders, brokers, individual companies, or commercial secure storage companies). The access to private repositories could be aligned with trusted trader preferences.

When considering port or airport cargo community systems, documents or data concerning transport will be made available to authorities.

A global repository service can also be maintained by the national Single Window in charge of gathering all documents which go with goods. The interface between the cross-border regulatory service IT systems and these storage providers should be defined (e.g. secure protocols).
7.3 Content of Supporting Documents

This guide does not include electronic formats for supporting documents. There exist several internationally accepted electronic formats to represent supporting documents. The documents can be stored in the standard format. The metadata about the document layout will provide the means for the subscribing parties to access data items in the document. If necessary, the entire content of the document can be downloaded into the regulatory authority system. Where electronic documents are not present, some parties may need scanned images of the supporting documents. In such cases, the content of the supporting documents cannot be processed by a machine as they are not dematerialized.

Today, the control of authenticity and integrity of many paper documents is based on a rubber stamp (with ink) or dry stamp. The visa is stamped by the relevant authority on the export side.

When considering dematerializing theses kind of documents, the stamp needs to be replaced by something equivalent in terms of value. Every paper-based document issued by an authority (or delegated to an authority) on the export side and presented to another authority on the import side can be identified (for example, preferential and non-preferential certificates of origin (COs), certificates of conformity, and textile import licences).

7.4 Accessing Supporting Documents

The supporting documents stored in the secure repository can be accessed through a secure URL link mapped to the new data element ‘Document Location’.
7.5 Electronic Signature of Supporting Documents

When supporting documents are submitted for use during processing of import and export declarations, it is useful to have the submitter endorse the documents using electronic signatures. In this way, the submitting and the relying parties enhance the credibility and trustworthiness of documents handled.

PKI-based digital signatures are just one of the means of signing electronic documents. Other types of electronic signature can be used. As well as keeping electronic signatures, the regulatory authorities should keep a time and date-stamped fingerprint of the document to protect its integrity during its life-time. An incorrect fingerprint indicates that the document has been modified/corrupted since it was fingerprinted.

7.6 Retention and Transitional Arrangements

Generally, Customs do not request certain commonly used supporting documents, such as invoices or transport documents. Instead, the Customs regulations usually provide that the importer/exporter (or other entity responsible for paying Customs dues) must provide these documents at the request of Customs, and keep them for x years (depending on the regulations), giving Customs officers the opportunity to scrutinize them as part of a post-control audit.

There will invariably initially be situations where paper cannot be dropped from the business process as the existing laws and procedures require official seals and signatures. A policy on dematerialization must address the question of transitional arrangements, with a view to using scanned paper documents, and to persuading the document issuing authority to move towards an e-document.

7.7 Managing a New Chain of Trust

The dematerialization project will have only limited effect if undertaken solely at a national level. To be more successful, the management of the chain of trust should be addressed at a more global level.

For example, in the case of dematerialization of CITES permits, sanitary certificates or certificates of origin, etc. until the connection between the exporting and importing authority is available, the importing authority may have to formalize an understanding with the exporting authority to guarantee the authenticity of an electronically signed document circulating between export and import.

An e-doc is trusted if its digital signature is valid, in other words, if:

- the e-doc has not been altered (integrity), and
- the issuer of the e-doc is safely authenticated.

It is easy to check the integrity of the e-doc, but a trust scheme is needed in order to authenticate the signer. As mutual recognition of CA signature is still a long way off, an e-document by e-document/issuer by issuer approach, using a valid certificate list (VCL), is proposed for answering the question of who is allowed to sign what.
Computerized checks which would lead to reconsideration of time-intensive (and often unexecuted) controls of paper documents are:

- the signature is cryptographically correct;
- the certificate used for the signature belongs to the VCL;
- none of the certificates of the certification path are revoked (CRL).

The VCL – storing all the approved e-certificates – can be implemented on the export or the import side, and used to certify the authenticity of the signatory.

Figure 9: Customs has access to e-docs and integrity authenticity controls.

7.8 Some Ground Rules

The following ground rules should be kept in mind:

- E-documents will be referenced in Customs declarations;
- These references will identify the permanent location of the e-document;
- Electronic signatures are a means of maintaining authenticity and integrity of the data;
- The relying parties (origin and destination countries) agree on the limited question of accepting the certificates of the national certifying authority (CA) issued to the e-document issuing authority;
- The signatures and the archived information are long-lived and will be valid beyond the life-cycle of the certificate or the certifying authority;
- Customs can download e-document information as and when it needs.
Annex: Standards and Cases for Dematerialization of Supporting Documents

I - WCO Recommendation

RECOMMENDATION OF THE CUSTOMS CO-OPERATION COUNCIL\(^4\) ON THE DEMATERIALIZATION OF SUPPORTING DOCUMENTS

(June 2012)

THE CUSTOMS CO-OPERATION COUNCIL,

ACKNOWLEDGING that the Customs administrations by and large have introduced automated systems for cargo clearance and have committed to apply information technology to support Customs operations, where it is cost-effective and efficient for Customs and for the trade,

CONSIDERING that the use of paper-based documentation in international trade is expensive, time-consuming and prone to error and malpractice,

HAVING REGARD to provisions of Chapter 3 of the General Annex to the revised Kyoto Convention\(^5\) with regard to electronic lodgement of the supporting documents with Customs,

RECOGNIZING the rapid development of cost-effective, secure and trusted solutions for electronic document management and repository services, and extensive adoption of these solutions by the industry and administrations,

RECOGNIZING that international organizations, government agencies, and industry associations are increasingly introducing standard formats for electronic documents such as licences, certificates, and permits, and are promoting their use in the entire course of the international trade transaction,

AIMING to promote paperless transactions for Customs clearance as an alternative to paper-based documentary requirements,

DESIRING to reduce the cost of trade and to simplify trade procedures by alleviating the burden of delivering, storing, and presenting original paper-based supporting documents during Customs procedures, and

DESIRING to enhance Customs control through the effective use of automated verification and by adopting the principle of risk management,

RECOMMENDS that Members of the Council and all members of the United Nations Organization or its specialized agencies, and Customs or Economic Unions should as far as possible:

\(^4\) Customs Co-operation Council is the official name of the World Customs Organization (WCO).

\(^5\) International Convention on Simplification and Harmonization of Customs Procedures (as amended).
(1) identify supporting documents that are normally required to accompany the cargo and goods declarations and examine the need for those documents for Customs clearance with a view to eliminating them;
(2) discontinue the requirement of presenting supporting documents in hard copy, if they have already been presented in electronic form;
(3) process the release and clearance of cargo based only on electronic declaration and automated verification;
(4) enable automated Customs clearance systems to automatically verify information contained in dematerialized supporting documents where such information is accessible electronically in:
   (a) Other government agencies’ databases
   (b) Single Window environments (and Cargo Community Systems)
   (c) Private repositories.

REQUESTS Members of the Council and members of the United Nations Organization or its specialized agencies, and Customs or Economic Unions which accept this Recommendation to notify the Secretary General of the Council of the date from which they will apply the Recommendation and of the conditions of its application. The Secretary General will transmit this information to the Customs administrations of all Members of the Council. He will also transmit it to the Customs administrations of the Members of the United Nations Organization or its specialized agencies and to Customs or Economic Unions which have accepted this Recommendation.
II - The French Customs Pilot Project

The pilot project carried out by French Customs involves the following stages:

Figure 1: Stage 1 – The exporter asks the issuing agency for an e-doc (package PDF file + signed XML file).

Figure 2: Stages 2 and 3 – The exporter sends it (for example, by email) to his client, the importer.

The importer or his Customs broker saves the signed PDF and/or XML file in a repository and then proceeds with the import Customs declaration. Customs (or another authority) can have an access to the XML/PDF file and control it.
Figure 3: Stage 4 – The arrangement between administrations and the trust scheme.

(1) Either: The importing authority checks the authenticity and integrity of the PDF/XML file, based on a valid certificate list (VCL of authorized agencies) and the e-signature properties (recognition of the export CA is mandatory); or

(2) The authority requests the exporting Single Window to confirm the authenticity and integrity of the file.

(3) The importer can check the PDF file by a request on the export Single Window website.
III - U.S. CBP Document Image System

U.S. Customs and Border Protection (CBP) has transitioned to a paperless workflow in the Automated Commercial Environment (ACE). To support transactions, filers can submit supporting documentation to the government during the import process and for export manifests through the Document Image System (DIS). Instead of providing a physical copy of a form, users submit an electronic version (i.e. PDF or JPEG). This process allows government personnel to receive and review documentation in a more timely manner than with paper counterparts.

DIS allows participating trade partners to submit document images and associated descriptive data to CBP electronically. Messages are transmitted in XML format using secure web services, FTP or MQ. The documents are securely stored and made available for review by CBP and Participating Government Agencies (PGAs). Documents submitted via DIS are in lieu of paper documents. The initial phase provides basic document image submission and management capabilities.

Specifically it:

- Allows trade partners to submit document images and associated descriptive meta data to CBP and PGAs in an automated manner, using EDI communication
- Stores all submitted documents in a secure centralized CBP data store and maintains associations with related data such as entry and bill numbers
- Allows authorized users to retrieve, view and annotate documents via a web-based user interface
- Provides basic security, authorization and auditing
- Offers back-end services that facilitate search and reporting capabilities to trade partners to verify the receipt of documents
- Provides capabilities for CBP client representatives to view raw received messages

More details can be found at https://www.cbp.gov/document/forms/dis-implementation-guide.

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6This case study is based on a U.S. CBP publication which can be accessed at https://www.cbp.gov/sites/default/files/documents/ACE%20Basics%20-%20DIS_0.pdf.
Figure 4: The Document Imaging System and the flow of information in the processing of entry summary declarations.

The Document Imaging System plays a big part in the overall paperless processing strategy in the U.S. CBP ACE and Single Window.
## IV - WCO Data Model and the Metadata for Supporting Documents

<table>
<thead>
<tr>
<th>WCO ID</th>
<th>Code/Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>185</td>
<td>Additional document name</td>
<td>Free text name of an additional document</td>
</tr>
<tr>
<td>263</td>
<td>Additional document amount</td>
<td>The amount covered by the additional document</td>
</tr>
<tr>
<td>275</td>
<td>LPCO expiration (expiry) date</td>
<td>The expiry date of the licence, visa, permit, certificate, or other document</td>
</tr>
<tr>
<td>276</td>
<td>LPCO effective date</td>
<td>The effective date of the licence, visa, permit, certificate</td>
</tr>
<tr>
<td>313</td>
<td>Additional document quantity</td>
<td>Quantity specified on the additional document</td>
</tr>
<tr>
<td>360</td>
<td>LPCO exemption code</td>
<td>Type of exemption from a licence, permit, certificate, or other document (LPCO) or indication that no LPCO is required</td>
</tr>
<tr>
<td>389</td>
<td>Additional document issuer</td>
<td>Name [and address] of the party having issued the document</td>
</tr>
<tr>
<td>D001</td>
<td>Additional document issuer, coded</td>
<td>Identifier of the party having issued the document</td>
</tr>
<tr>
<td>D002</td>
<td>Additional document issuing date</td>
<td>Date on which an additional document was issued and, when appropriate, signed or otherwise authenticated</td>
</tr>
<tr>
<td>D003</td>
<td>Additional document issuing place</td>
<td>Name of a location where a document was issued</td>
</tr>
<tr>
<td>D004</td>
<td>Additional document issuing place, coded</td>
<td>Place at which an additional document was issued and, when appropriate, signed or otherwise authenticated</td>
</tr>
<tr>
<td>D005</td>
<td>Additional document reference number</td>
<td>Identifier of a document providing additional information</td>
</tr>
<tr>
<td>D006</td>
<td>Additional document type, coded</td>
<td>Code specifying the name of an additional document</td>
</tr>
<tr>
<td>D028</td>
<td>Additional document name</td>
<td>Free text name of an additional document</td>
</tr>
<tr>
<td>DXXX</td>
<td>Additional document image</td>
<td>Binary image of the additional document</td>
</tr>
<tr>
<td>DXXY</td>
<td>Document location</td>
<td>Online location of the document in a URI/URL</td>
</tr>
</tbody>
</table>

Parties associated with Additional Documents

<table>
<thead>
<tr>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticator</td>
</tr>
<tr>
<td>Insurance Company</td>
</tr>
<tr>
<td>Submitter</td>
</tr>
<tr>
<td>LPCO Authorized Party</td>
</tr>
</tbody>
</table>

Table 1: Additional Document Class – information on supporting documents in WCO Data Model Version 3.0.
The WCO Data Model provides the ability to report supporting documents at different levels. The diagrams below illustrate this.

**Generic Goods Declaration WCO DM V3**

- **Declaration**
  - **Goods Shipment**
    - **Consignment**
    - **Government Agency Goods Item**
      - **Commodity**

Structure supports
Customs goods declaration or
Harmonized Cross-Border Regulatory Declaration

**Supporting Documents in Customs Declaration or Harmonized regulatory declaration**

- **Declaration**
  - **Additional Document**
  - **Goods Shipment**
    - **Additional Document**
    - **Consignment**
    - **Government Agency Goods Item**
      - **Additional Document**

Information on Additional Document can be supplied at four different levels
The position of Additional Document can be supplied at four different levels

Additional Document class
- Critical Regulatory
  - Supporting Document’s information

Additional Document includes
  - Regulatory supporting documents
    - Eg License, Permit, Certificate, others or
  - Or Commercial/Logistics supporting documents such as invoice packing list, consignment note Waybill.
I. Additional Document class
   = Critical Regulatory
   ‘Supporting Document’ information

II. Additional Document Class ≠
    Electronic ‘Supporting Document’

III. Additional Document Class can support

   Binary images or the

   URI location of the electronic ‘Supporting Document’
V - Regulatory Data Harmonization

Regulatory data harmonization involves combining the data requirements of different regulatory agencies into a single declaration. The process is described below. Harmonization of data ensures the elimination of redundant submission of data, but still requires the trader to submit supporting documents.

Regulatory Data Harmonization

Regulatory Declarations are used in exchanges Starting from R1 to R9 and L1, and R1 to R16
### VI - Top Supporting Documents (France)

<table>
<thead>
<tr>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial invoice</td>
</tr>
<tr>
<td>Movement certificate of origin EUR.1</td>
</tr>
<tr>
<td>Master air waybill</td>
</tr>
<tr>
<td>T2LF Certificate of Customs status</td>
</tr>
<tr>
<td>Pro-forma invoice</td>
</tr>
<tr>
<td>Packing list</td>
</tr>
<tr>
<td>External Community transit declaration/common transit, T1</td>
</tr>
<tr>
<td>Bill of lading</td>
</tr>
<tr>
<td>Certificate of origin Form A</td>
</tr>
<tr>
<td>Declaration of preferential origin on an invoice or other commercial document</td>
</tr>
<tr>
<td>Air waybill</td>
</tr>
<tr>
<td>Declaration of particulars relating to Customs valuation method 1</td>
</tr>
<tr>
<td>ATR certificate</td>
</tr>
<tr>
<td>Excises document</td>
</tr>
<tr>
<td>Authorization to use a Customs procedure with economic impact end-use</td>
</tr>
<tr>
<td>Textile documentary proof of origin</td>
</tr>
<tr>
<td>Production file</td>
</tr>
<tr>
<td>Quality control certificate</td>
</tr>
<tr>
<td>Universal certificate of origin</td>
</tr>
<tr>
<td>Freight note</td>
</tr>
<tr>
<td>Common veterinary entry document (CVED)</td>
</tr>
<tr>
<td>Imported personal belongings list</td>
</tr>
<tr>
<td>Airworthiness certificate</td>
</tr>
<tr>
<td>Declaration of non-preferential origin on an invoice or other commercial document</td>
</tr>
<tr>
<td>Road consignment note</td>
</tr>
<tr>
<td>CMR note</td>
</tr>
<tr>
<td>Internal Community transit declaration T2</td>
</tr>
<tr>
<td>Registration number</td>
</tr>
<tr>
<td>Export licence AGREX</td>
</tr>
<tr>
<td>House moving certificate</td>
</tr>
<tr>
<td>T2L Certificate of Customs status</td>
</tr>
<tr>
<td>TIR carnets</td>
</tr>
<tr>
<td>Phytosanitary import certificate</td>
</tr>
<tr>
<td>Movement certificate EUR.1 (Switzerland)</td>
</tr>
<tr>
<td>Phytosanitary certificate</td>
</tr>
<tr>
<td>CE compliance note</td>
</tr>
<tr>
<td>Information document</td>
</tr>
<tr>
<td>T5 control copy</td>
</tr>
<tr>
<td>Transit T document</td>
</tr>
<tr>
<td>Champagne certificate</td>
</tr>
<tr>
<td>Main bill of lading</td>
</tr>
<tr>
<td>Military goods export authorization</td>
</tr>
<tr>
<td>Export note</td>
</tr>
<tr>
<td>CAP import licence AGRIM</td>
</tr>
<tr>
<td>Acquit-a-caution</td>
</tr>
<tr>
<td>Declaration of preferential origin on an invoice or other commercial document (Switzerland)</td>
</tr>
<tr>
<td>CITES certificate</td>
</tr>
<tr>
<td>Dual use export authorization</td>
</tr>
</tbody>
</table>