



## **UNeDocs: Stable Data Architecture for Single Window Implementation**

### Information Note

#### **I. Background**

The efficiency of international trade transactions depends on the availability, quality, and reliability of information associated with the movement of goods and related services across the borders for international trade transactions. The growth of global trade, the congestion of the ports and airports, and more stringent security requirements have amplified the need for trade information standards and technologies.

Many Governments are preparing to implement Single Window platforms to strengthen their trade efficiency and export competitiveness. A Single Window allows all parties involved in an international trade transaction to submit standardized information and documents to a single entry point, to meet export, import and transit regulatory requirements. The implementation of a national Single Window requires substantial investments and efforts in terms of buy-in, institutional support, legislation, infrastructure, system development, and maintenance. The electronic systems that exchange and process the information are crucial components of a Single Window. A Single Window, if successfully implemented, makes a major contribution to the national capacity to export to the world's markets. The reliability and variability of its data processing systems is as important for the export performance of a country as the national transport sector.

#### **II. Data Structures: the Foundation of the Investment in Single Windows**

A key criterion for the security of investments in the electronic system of every Single Window is the quality of the standards on which its trade data exchange is based. Trade data forms the basis for the whole business process model and the application systems of the Single Window. Any change of these standards is likely to introduce serious costs and disruptions throughout the system.

The choice of sound data structures is not trivial, as they must meet a whole set of often competing criteria<sup>1</sup>. In addition, the data standard for the Single Window needs to encompass the data requirements of all parties such as regulatory agencies and

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<sup>1</sup> To mention just a few of the requirements, the data structures must be stable, maintenance friendly, precise, flexible, reusable, unique, extensible, modular, cross-sectoral, internationally agreed, compatible with national requirements, technology neutral, and compatible with existing and (unknown) future technologies.

economic operators that will be the users of the Single Window. This includes the very diverse data requirements of the banking sector, insurance, transport and logistics, the Government agencies including Customs, and the different manufacturing sectors, both for the known participants in the immediate future and for those participants that will join in further extension phases of the Single Window. Because of the crucial importance of the data standards, it is sound practice for a Single Window to use accepted, international data standards. International standards provide common internationally agreed bases for similar trade data used by different countries and regions. Therefore they cater for integration and harmonization at the global and regional level.

### **III. A UN Standard to Safeguard the Investments in Single Window developments**

To provide a stable basis for Governments' implementation of Single Window systems, the United Nations electronic Trade Document (UNeDocs) standard enables the development of simple low-cost solutions to support the generation and exchange of standardised paper and/or electronic international trade documents by implementing existing standards and recommendations.

UNeDocs supports:

- The harmonization of national data requirements
- The development of electronic equivalents of paper documents (paperless trade)
- Cross-border data exchange.

UNeDocs International Trade Data Model is based on ISO 15000 Part 5 (eXML) and UNTDED/ISO 7372, from which document data models can be derived, providing the ability to move between paper and digital documents at any point in the international trade transaction and maximizing semantic interoperability.

The UNeDocs Data Model is specifically tailored to the needs of Single Window facilities. It is capable of supporting the full range of Business-to-Government (B2G), Government-to-Business (G2B) and Government-to-Government (G2G) data exchange, including Customs data requirements. Using UNeDocs, the complete set of national trade documents can be integrated into a single solution for simplification, standardization and automation.

### **IV. UNeDocs and Customs Data Exchange**

The UNeDocs Data Model enables an integrated end-to-end solution for information exchange in the supply chain, integrating the information requirements of all participants in international trade transactions. Customs authorities are an important part of these supply chains. National Single Window systems are typically designed around a core IT solution which connects Customs declarants with the Customs authorities. The data model of the Single Window must therefore meet the standards of the national Customs authorities.

National Customs authorities work together in the World Customs Organization (WCO) to develop standards and best practice for their business domain. WCO actively promotes the use of UN standards in the Customs domain such as UN/EDIFACT, UN code lists for trade documents, and aligned trade documents. In many countries, the Customs authorities champion the national implementation of UN standards for trade.

The WCO Data Model project is an initiative to specify the data requirements of the Customs and related Government agencies. The Data Model simplifies Customs data requirements and provides the basis for integration in the data exchange of the overall supply chain. The WCO Data Model is under development<sup>2</sup>. The UNeDocs and WCO Data Models share a common basis for Customs and Government agencies as both use UNTED/ISO 7372.

The UNeDocs Data Model has been designed to support the possible full integration of the data requirements of Customs to enable seamless information exchange along the entire supply chain. In this work the WCO Data Model has been used as reference for compatibility.

To ensure and test the full observation of WCO data requirements, the UNeDocs Data Model has been mapped to the latest available publication of the WCO Data Model. This mapping ensures that any information exchange in a Single Window can be converted to WCO-defined message structures. The UNeDocs project team is committed to repeating this compatibility test with future publications of the WCO Data Model.

Single Window operators can use UNeDocs as a blueprint for an end-to-end data exchange in the supply chain including the domains of Customs and other border agencies. The relevant data requirements of the WCO Data Model and the Revised Kyoto Convention are met. As a service for Governments, UNECE provides a specific mapping example, the UNeDocs Customs Extension module, which demonstrates the mapping.

## **V. Asia-Pacific Regional Perspective**

UNeDocs is currently in the final step of approval as an international standard. It is now in an UN/CEFACT implementation and verification phase being carried out in six countries in Europe, North America and Asia-Pacific. After completion of this phase, it will be published as a UN standard. UNECE and ESCAP have joined their efforts to recommend to Governments that they adopt and implement this standard.

The Asia-Pacific region is one of the richest regions in the setting up of electronic Single Window with almost all sea-linked economies operating such systems. For example, Japan, the Republic of Korea, Singapore, Malaysia and Hong Kong, China, all have such systems already in place. At a subregional level, the ASEAN Single Window, is expected to become operational in 2012. It will enable exchange of trade data among all ten nations of ASEAN. Adoption of Single Window is vital for

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<sup>2</sup> The most recent version of the WCO data model is version WCO 2.0, based on TDED ISO 7372

landlocked countries, as an electronic data submission and exchange can compensate for distance and remoteness.

A close collaboration between UNECE and ESCAP in promoting the implementation of UNeDocs plays an important role. Such collaboration can be channelled through the regional network of experts for paperless trade, which is planned under the new joined project between the two regional commissions. The network of experts will aim to build a critical mass of expertise for paperless trade in order to implement UNeDocs and other related standards and tools in the Asia-Pacific region. The role of UNECE would be to provide an international expertise on UNeDocs, while ESCAP would use its convening power and mobilize the regional expertise to promote the region-wide implementation of this future standard so as to ensure interoperability between trade data exchanged among the individual countries and subregions.