European e-Freight capabilities for co-modal transport

Next Generation National Single Windows

e-Freight receives funding from the EC's FP7 Sustainable Surface Transport Programme

Introduction

The Next Generation Single Window (NG SW) concept for trade and transport is proposed by the e-Freight project as a means of integrating and unifying the many Single Window developments for dealing with regulatory information management at both National and EU levels.

The goal is to provide a *unified* solution allowing:

- business to submit regulatory information for both trade (customs) and transport, independent of mode and transportation route, and
- authorities to share information for policy implementation and particularly for the purpose of co-operation in security, safety and environmental risk management.

The **Next Generation National Single Window (NG NSW)** aims to *integrate* and *harmonise* information exchange performed by existing National Single Windows (NSWs) and legacy systems within a Member State, and at the same time present a single, standardised interface through which trade and transport can lodge regulatory information, regardless of transport mode or route.

In tandem with the NG NSW, a number of **Central EU National Single Window Support Services** are proposed to support the central management of NG NSWs, facilitating the exchange of regulatory information on an EU level and offering the capability of providing additional services to both EU and national authorities.

Further to these proposals, the e-Freight project is developing the concept of the **Common Reporting Schema**. This is a standard form which contains all the information which is necessary and sufficient for reporting to authorities for all modes and in all Member States.

The benefits of these proposals are threefold:

1. Wherever and whenever businesses must report to authorities, the format in which the information must be provided will be the same, regardless of mode or transportation route
2. Businesses must only manage an interface with one system for all reporting requirements in each Member State
3. Authorities are able to exchange information on EU and national levels, and with neighbouring countries, to enhance safety, security and environmental risk management

This paper briefly summarises the background and context to the NG SW proposals, giving an overview of current policies, practices and associated challenges. The e-Freight reference solution for a multimodal National Single Window is then outlined.

Background and Context

Explosion of global trade in the last decade has resulted in increased complexity of regulation. Freight trade and transport related authorities have established an extensive range of agency and country-specific regulatory requirements for international trade and transport with little coordination

amongst each other at national, European or international levels[1]. A cross border shipment typically involves 35 documents exchanged between 25 parties. There are more than 600 laws and 500 trade agreements to be considered. Even describing commodities according to applicable standards (e.g. Harmonized Tariff Schedule) is a tedious and costly exercise.

Traders and transport operators are therefore faced with a complex set of duplicative and redundant reporting requirements and related systems (forms, messages, software applications, etc.). Consequently, businesses are forced to develop and maintain interfaces with many different systems to manage compliance with different national systems[2]. Transport and logistics operators and national organisations have to develop adaptors (often with limited useful life) to integrate with the plethora of different systems they encounter in their day to day operations. This adds significant costs to all parties, both financially and in terms of problems associated with managing timeliness and accuracy of reporting data. SMEs are particularly affected by this situation because they need access to information systems that are often closed and different from country to country and for different authorities.

Single Windows

The Single Window is a concept for overcoming inefficiencies in mandatory reporting and associated regulatory control processes in trade and transport. Over the last twenty years, the two main Single Window development streams – namely SWs for trade facilitation (e-Customs) and SWs for transport (for monitoring vehicle and cargo movements) – have been developing independently (with the latter being developed particularly by maritime authorities).

The current situation is therefore characterised by multiple developments at national level serving the specific interests and strategies of different countries, and at EU level serving the implementation of different EU policies. Particularly important are mode-specific interoperability standards: the TAF/TSI initiative[3] provides the EC-approved specifications for interoperability in telematic applications for rail-based freight, and the River Information Services[4] (RIS) standards are used to ensure compatibility and interoperability between current and new RIS systems at European level and to achieve effective interaction between different information services on waterways.

Recently, there is increased recognition that it is both feasible and necessary to consider ways for improving interoperability between the many Single Window-like systems that now exist or are under development at national, EU and international levels. The e-Freight challenge is to develop a coherent solution bringing order to the highly fragmented landscape in the field of regulatory information management for trade and transport.

Key aspects of the e-Freight approach are:

1. Supporting the implementation of *all* related EU policies
2. Facilitating exchange of regulatory information across modes and authorities

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[1] Regulatory Framework for Maritime and Intermodal Transport – SKEMA Report - http://www.eskema.eu/defaultinfo.aspx?areaid=26&index=1

[2] Kyeongrim Ahn, Keunyoung Youn & Sunho Park, "The Study of Interface Standard for Single Window System," ncm, pp.824-828, 2009 Fifth International Joint Conference on INC, IMS and IDC, 2009

[3] International Union of Railways http://www.uic.org/spip.php?rubrique882

[4] Directive 2005/44/EC on harmonised river information services (RIS) on inland waterways in the Community

3. Improving visibility of statistics for transportation CO_2 footprint and other sustainability indicators
4. Managing the highly dynamic nature of changes in regulatory requirements and support applications

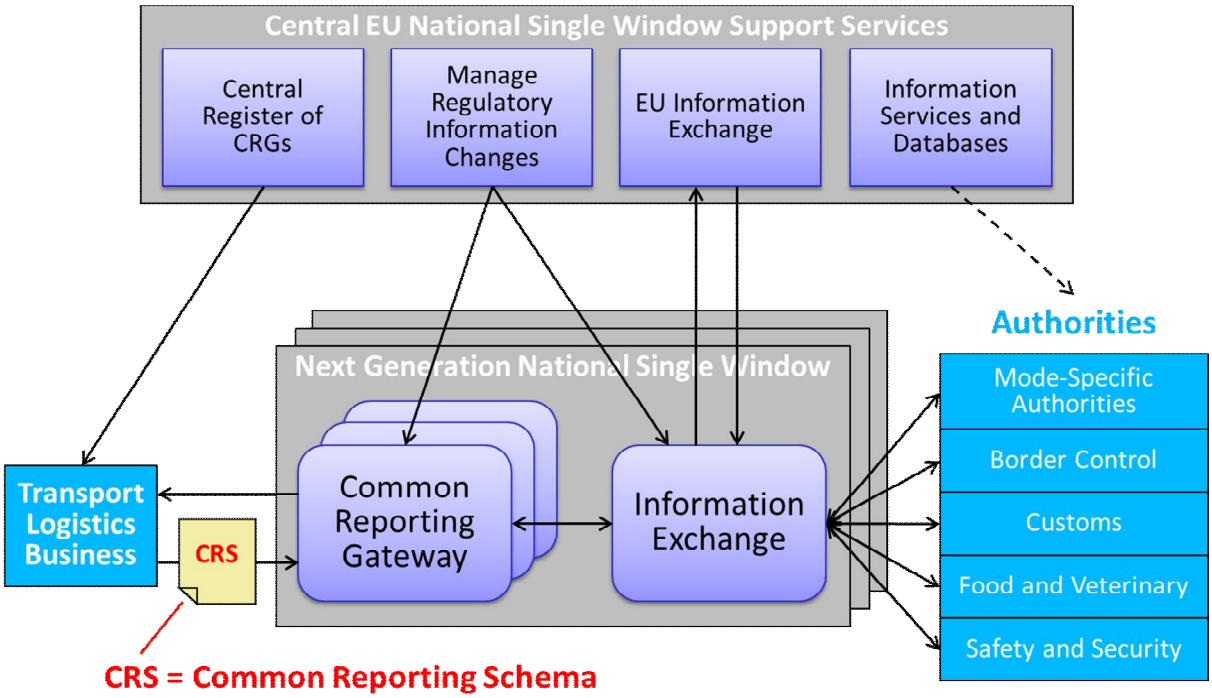

Figure 1: The e-Freight Next Generation Single Window Concepts

Next Generation Concepts

The e-Freight project aims to alleviate problems associated with the current Single Window landscape by creating the "next generation" of Single Windows, which differ from current implementations in two key ways. Firstly, the e-Freight approach advocates a National Single Window system in each Member State, providing a single, standardised interface for the submission of all transport logistics regulatory information, regardless of mode or transport route. Secondly, the e-Freight NG NSW facilitates the exchange and sharing of information between national authorities and administrations within the Member State and with neighbouring countries.

Figure 1 depicts the Next Generation Single Window concepts as proposed by the e-Freight project. The basic principles are as follows:

1. Businesses who must report to authorities submit regulatory information electronically to **Next Generation National Single Windows (NG NSW)** residing in Member States. Each Member State will have one such NG NSW system, comprising of two components, the **Common Reporting Gateway (CRG)** and the **Information Exchange (IE)**. A NG NSW system can be developed by Member States and tailored to their individual needs by composing services from the CRG and IE and integrating them with existing National Authority systems.

2. The Common Reporting Gateway presents a common standardised reporting interface to business and relays regulatory information to the Information Exchange, which facilitates the exchange and sharing of information between Authorities within and across Member States, and with EU level systems.

3. All information required for reporting to customs and other authorities is submitted to the CRG using the **Common Reporting Schema (CRS)**. The CRS can be thought of as a standardised, configurable form which contains fields for all the information that is necessary and sufficient for reporting to customs and other authorities across all modes and in all Member States. Furthermore, it can be generated automatically from existing operational data in systems which have adopted other e-Freight Framework concepts (TEP, GII etc.), reducing the current complex, paper-based reporting procedures to the click of a button.

4. A number of central EU level services are also proposed to support the operation, maintenance and compliance of National Single Windows in Member States. The most important of these is the **Manage Regulatory Information Changes** module which allows updates to CRG and IE applications to be made centrally and then automatically propagated to the applications in each Member State. This means that any changes in regulatory requirements, practices and policies will be automatically captured and transformed into updated NG NSW solutions. The module will also maintain central specifications for the CRG and IE applications as part of the e-Freight Framework, incorporating the required interfacing to "standard" process models under development by TAXUD for e-Customs, and EU information sharing models (e.g. European Border Surveillance System - EUROSUR).

5. The **Central Register of CRGs** acts as an address book for businesses to locate electronic reporting interfaces (e.g. web address, web service endpoint). The register also manages new NG NSW systems and updates to contact details.

6. A central **EU Information Exchange** provides similar functionality to the national level IE application by facilitating the exchange and sharing of regulatory information on an EU level to support administrations in different countries co-operating in safety, security and environmental risk management.

7. By exploiting the increased information exchange and level of interoperability between systems, a number of additional **EU Services and Databases** may be provided, for example the provision of statistical information to authorities or businesses, or a database of registered operators within the EU.

Conclusions

The e-Freight Next Generation Single Window concept satisfies the need to integrate and unify the many Single Window developments for dealing with regulatory information management at both

national and EU levels. In particular, the Common Reporting Schema serves to harmonise reporting requirements across all modes and Member States whilst the Next Generation National Single Window concept integrates existing Authority systems.

With these proposals, wherever and whenever businesses must report to authorities, the format in which the information must be provided is the same, regardless of mode or transportation route. Furthermore, by adopting the e-Freight Framework and using the Common Reporting Schema, the complex paper-based process of reporting to authorities can be reduced to the click of a button. In addition to this, businesses must only manage an interface with one system for all reporting requirements in each Member State and Authorities are able to exchange information on EU and national levels to enhance safety, security and environmental risk management.

The current strategy for Single Window development within the e-Freight project is focussed around the implementation of a reference solution of the NG NSW for Latvia, scheduled for initial deployment at the end of October 2011. This will include integration with existing systems in customs, coast guard, immigration and security police organisations. The pilot implementation will be used to test the use of the Common Reporting Schema for reporting and the exchange of information between authorities.

Following deployment of the Latvian National Single Window, initial solutions for the central EU level support services will be developed (December 2011). These will be interconnected with the Latvian solution to evaluate and refine the designs. Throughout 2012, further evaluation driven refinements will take place, driven by interconnection with other existing systems. Currently planned are interfaces with the Irish Maritime Administration, Via Donau, the Finnish Transport Agency, PORTBASE, SOGET, Port of Valencia, STENA, Acciona Trasmediterranea, Schenker and Jan de Rijk.