



**THEME [GC.SST.2011.7.11]
E-freight solutions and supply chain management**



Collaborative Information Services for Container Management

Common Framework Summary

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1 Introduction

Integration between IT systems in transport and logistics remains a cumbersome and resource intensive activity. This is not really facilitated by the existing standards available: There are many standards with many local variations. For SMEs it is practically impossible to really endorse those standards and engage in full digital collaboration, and large players are using expensive integration processes to lock-in existing business relationships.

The 'Common Framework' enables companies to exchange data and share processes with other companies. It is a set of specifications and guidelines that allow interaction between different data exchange systems used by clients and providers of transport & logistics services. The 'Common Framework' enables information systems of different organisations to work together and catalyses co-modal transportation. This includes publishing, ordering, and reporting status on the execution of transport & logistics services.

The transport & logistics domains are complex environments where a huge number of parties, activities, technologies etc. interact. In order to attempt to manage this complexity the Common Framework has broken these down to elementary roles, processes and interfaces that support information exchange between them. This simplification aims to reduce costs and provides for a more agile approach to integration.

The Framework consists of roles, business processes and electronic documents.

It contains the following architectural components:

- A set of **Roles**, each role having its particular responsibilities;
- A set of **Processes** defining relevant workflows for functions performed by the roles;
- A set of **Interfaces** describing relevant information flow between the roles.

The Common Framework Reference model is illustrated in Figure 1.

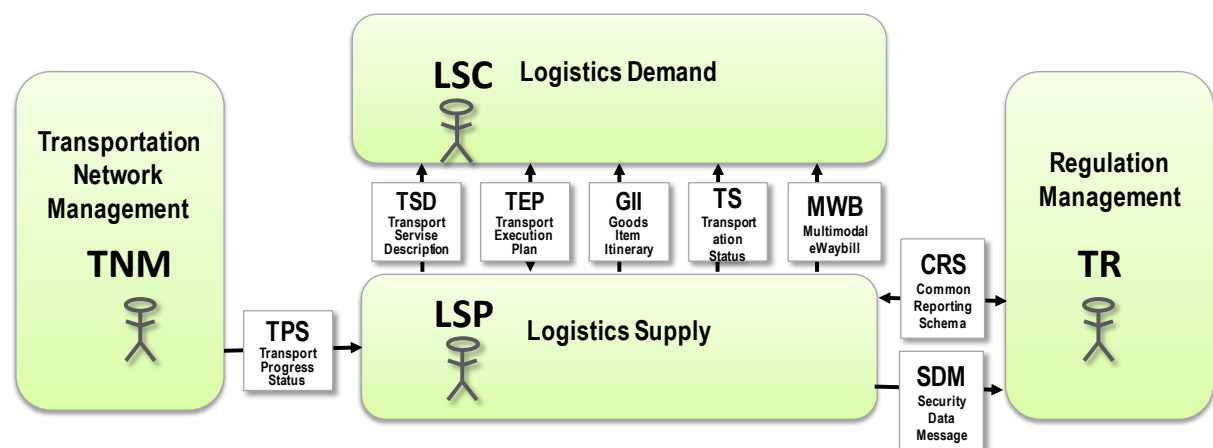


Figure 1 The Common Framework Reference Model

2 Roles

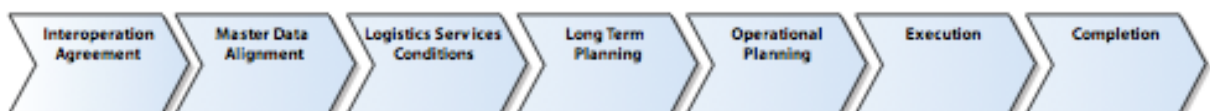
As we all know roles represent responsibilities. There are a number of stakeholders involved in transport and logistics. A stakeholder may be a person, a team, or an organization and will have one or more responsibilities. Roles may be performed by commercial companies or by public authorities and for the process of intermodal freight to be efficient, all roles need to interact and cooperate efficiently.

The Common Framework identifies several roles:

- **Logistics Service Provider (LSP)** is the role that plans, markets and executes logistics services. The requirements for the services are collected from the Logistics Service Client as well as from the regulatory domain, represented by the Transport Regulator. The Logistics Service provider communicates with the Transportation Network Manager and the Transport Regulator during planning and execution of the logistics services in order to receive and communicate infrastructure information and regulatory information respectively. The Logistics Service Provider is responsible for providing the Logistics Service Client with status information during the execution of the transport services.
- **Logistics Service Client (LSC)** is the role representing anyone that searches for logistics services; books logistics services and follows up the execution of logistics services. The Logistics Service Client also provides the Logistics Service Provider with instructions and detailed information about the cargo and logistics units to be included in the logistics services.
- **Consignor** is in a contract of carriage the sender of an order to be delivered whether by land, sea or air. The Consignor may undertake the role as a Logistics Service Client, the role responsible for requesting logistics services.
- **Consignee** is in a contract of carriage the receiver of the order. The Consignee may also be a Logistics Service Client.
- **Transportation Network Manager (TNM)** is the role that extracts all information available regarding the infrastructure (static or dynamic) related to planning and executing transport and makes this information available to the Logistics Service Provider.
- **Transport Regulator (TR)** is the role that receives all mandatory reporting (and checks if reporting has been carried out) in order to ensure that all transport services are completed according to existing rules and regulations.

3 Business processes

The Common Framework supports both long-term agreements and shorter term or single contract arrangements. Some of these processes are inspired by the GS1 Logistics Interoperability Model (LIM) that in particular has paid attention to standardization of the process of establishing long-term agreements. The set of business processes that will be supported by the Common Framework is illustrated below:



Operational planning is the process that leads to the final agreement on the logistics services to be used (one or several in combination) and as well on the associated terms and conditions. If Interoperation Agreement, Master Data Alignment and Logistics Services Conditions have been agreed between Logistics Services Provider (LSP) and Logistics Services Client (LSC), terms and conditions from these are being used as a basis for

operational planning. If no such agreements exist, more in-depth negotiation between LSC and LSP may be required.

This process of Execution is about performing the services that have been agreed between LSC and LSP, monitoring their performance, quality and security and providing information about status when agreed (on request, regularly or if there are deviations). During Execution there will be interaction with Transport Regulators and possibly Transportation Network managers.

4 Interfaces

The Common Framework has defined a set of interfaces covering information exchange between the actors involved in the abovementioned business processes. The interfaces support the exchange of documents that all are rooted in the same conceptual information structures, hence using the same terminology and data types. The interfaces used in COMCIS are (see the reference model in Figure 1):

- Between LSC and LSP:
 - ✓ TSD (Transport Service Description), used by LSPs for describing the transport services provided - a standard way of describing transport services such that they will be “searchable” and such that individual services may be automatically connected into transport (supply) chains..
 - ✓ TEP (Transport Execution Plan), the “ticket” for cargo to move from origin to destination. The TEP contains all the information needed for LSC and LSP related to the execution of a transport service. A TEP can be developed through one or several steps, dependent upon agreements already in place and the complexity of the service to be executed. The execution of a service can start when both parties have confirmed the TEP.
 - ✓ TS (Transportation Status), providing information about the status of cargo movement throughout the chain, referring to the TEP. The TS reports progress and state of cargo and load unit.
 - ✓ TPS (Transport Progress Status), providing information about the status of the movement of a transport means (e.g. barge) through a transport network.

- Between LSP and TR is:
 - ✓ CRS (Common Reporting Schema), a standardised format for reporting to all authorities (customs, maritime and other mode-related authorities, veterinary etc.) covering all modes. Authorities also use CRS to respond back to the LSP.
 - ✓ SDM (Security Data message), a standard message to provide information from container security devices.

Three of the abovementioned Common Framework interfaces (TSD, TEP, TS and TPS) will be included as standardised electronic documents in the OASIS UBL standard version 2.1. The Common Reporting Schema (CRS) is currently being discussed as a potential work item in CEN 278 WG 2 (Freight and Fleet Management Systems) and in UN/CEFACT. The SDM has been validated by CEN in a so-called “collaborative workshop agreement (CWA)”.

About COMCIS

COMCIS was a two-year project to explore the possibilities and commercial viability of employing situational awareness tools to solve problems of data fragmentation, delay and inconsistency throughout the global supply chain. The project used the Common Framework supporting interoperability between ICT systems in logistics and deployed a three-layer architecture based on:

- 1) Aggregating data from multiple sources without requiring changes to the underlying IT systems;
- 2) Standardising data so that it could be processed by value-added services, independent of its original source and format;
- 3) Consolidating data to create on time, qualified and derived information that could support operational decisions by delivering the right information to the right person, at the right time, in a user-friendly way.

The COMCIS project ended in September 2013, but the ideas and technologies continue to be developed by the participants. COMCIS was co-funded by the European Commission.

For more information about COMCIS

Go to <http://www.comcis.eu> or contact:

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For more information about the Common Framework

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