



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



Collaborative Information Services for Container Management

How can I use COMCIS?

Authors: Frank Knoors (Logit One), Matthijs Punter (TNO), Paolo Paganelli, Lorenzo Pondrelli (Bluegreen), Sebastian Seidel (DHL), Patrick Geerinck (Cargo Community System)

Date: 1st January 2014

Driven by demands from a strong industry consortium (global freight forwarder DHL and container terminal operator ECT), COMCIS has developed tools & services that mobilise global freight data for situational awareness along global supply chains in support of enhanced logistics services.

These services were demonstrated to raise the predictability of ocean freight logistics (DHL) and take the extended gateway to the next level (ECT). Although piloted on industry leaders, they can also be used by SME too, directly or through business communities (e.g. port communities).

COMCIS has not resulted in isolated solutions. The key objective was to be able to deliver an integrated service experience based on combining best-of-breed components.

How can you use the tools implemented in COMCIS?

These tools, originating from various previous EU-projects, were used in business cases with both DHL and ECT and tailored to the specific needs of these industrial users. Both organizations consider the tools relevant and strategic to their business. In the future, a further rollout of the provided integrated solutions is foreseen as part of broader strategies for providing visibility and e-services. The providers of tools (as part of the COMCIS project) are candidates for this rollout.

The target group of the tools provided by COMCIS is broader than just the industrial parties involved in the project. Similarly, other companies might also provide tools that fit into the stack of tools foreseen by COMCIS. Therefore, based on the confidential assessment, generic models for exploitation were defined for each of the layers in the COMCIS architecture.

Key-findings of these generic exploitation models are:

- COMCIS provides three distinct generic value propositions:
 - *Data consolidation*: consolidating data in one environment, providing operational or strategic insight by intelligently connecting different data types.
 - *Data standardization*: translating data into generic standardized formats, e.g. the Common Framework standards.
 - *Data aggregation*: providing a 'one-stop-shop' for a certain type of data, e.g. AIS-data from vessels, without having to connect to multiple different systems or providers.
- Each of the *tool providers* implements one or more of these value propositions. COMCIS *solutions* consist of multiple tools working together, to implement specific customer requirements. Since the tools are highly configurable and interoperable, deployment is easy and straightforward, requiring little implementation effort.
- There is a clear market for solutions allowing organizations to share logistic data to others and to capture and integrate and consolidate this data. Different actor-groups in the market require a slightly different exploitation strategy:
 - *Business communities*, such as port communities, that could implement the COMCIS tool and provide it as a service to the community. This is not just an opportunity. It might also be a difficult market, since it requires a shared business model and governance strategy on a

- community level. This might be a barrier for the adoption of COMCIS solutions. COMCIS solution providers could generate revenue for implementation, licensing and (possibly) use.
- *Individual companies and SMEs* could benefit from the COMCIS tools when they are offered as an online service and a ‘one-stop-shop’ with easy implementation. Revenue is primarily generated by usage fees and licensing.
 - *Large multi-national organizations* usually have their own platforms and services and might be a difficult market for COMCIS solution providers. The market is limited to very specific functionality and the business model varies.
- The parties within COMCIS are already taking their tools to the market. Sometimes tool providers collaborate to provide integrated solutions; sometimes they compete (since multiple tool providers can provide similar functionality). But even with this being the case, it is shown that the tools can be interoperable. As a result, there is an open ecosystem of tool suppliers, already accepted by the market. Tool suppliers have concluded that therefore, an integrated ‘COMCIS-branded’ exploitation strategy is not necessary. In communication however, the COMCIS-concepts can be used to explain interoperability and to show the success of integrated solutions in practice.

Looking back, the tool suppliers in general conclude that COMCIS has effectively helped to take concepts from previous R&D-projects to exploitable integrated results.

COMCIS Tools

All solution providers in the COMCIS project were to provide – confidentially – their business model. These models show how they expect to further exploit the specific tools and services they provide as part of the COMCIS project.

- **Logit Systems BVBA** develops solutions for supply chain visibility. The company combines advanced logistics management concepts combined with practical solutions for freight & transport management. Logit Systems BVBA provides an end-to-end web-based visibility service, integrating data from existing systems and platforms. It provides control towers with more transparency on logistics process and enables customers to deliver more efficient and high-quality logistics services.
- **Descartes** aims to enable logistics-intensive organizations to save money by improving the productivity and performance of their operations. They focus on bringing together shippers, transportation carriers, freight forwarders and government agencies and other logistics intermediaries, and encourage them to work together to create standardized business. The company provides the Descartes Global Logistics Network, an international platform for data exchange between organizations in the logistic sector, creating a global logistics community. Additionally network services and applications in the domain of transportation management, Customs and regulatory compliance, forwarder and broker systems, mobile, routing & telematics are provided, making use of the network. Within COMCIS the GLN is used for data standardization and aggregation. Use cases include the exchange of data of container security devices (neutral layer), customs filings (ICS-security filing application) and the sharing of operational data between shippers, carriers, container terminals and hinterland operations.

- **Inlecom** is an R&D focused company. It combines expertise in three areas, including strategic management, software engineering and transport solutions. The company has developed the kBOS knowledge management platform (www.kbos.net), which provides organisational, business and information modelling tools. The company also uses the zAppDev model driven environment for application integration and development. Within COMCIS, Inlecom is involved in the R&D track focused at the Next Generation Single Window for Customs, based on the Common Reporting Schema (CRS). This covers both data consolidation and data standardization.

The table below shows an overview of the technology providers, their tools and how they relate to the generic value propositions in COMCIS.

		<i>Data consolidation</i>	<i>Data standardization</i>	<i>Data aggregation</i>
Logit Systems BVBA	Visibility service	x	x	(x)
Descartes	GLN (generic)	(x)	x	x
	ICS (specific)		x	x
Inlecom	Next Generation Single Window	x	x	

What are typical customers?

Customer segments can be defined in different ways:

- Type of business
 - Freight forwarders
 - Authorities, particularly customs
 - Shipping lines / carriers
 - Terminal operators
 - Shippers & beneficial cargo owners
- Size
 - Large companies
 - SMEs
- Location
 - Business communities, e.g. port communities
 - Global operations
 - Local operations (one point), e.g. a terminal or warehouse

How SMEs can benefit in similar ways as large players?

As shown in the exploitation models for the various generic value propositions, SMEs are a clear target market for COMCIS tools and solutions.

Traditionally, the type of solutions COMCIS offers, have a high entry-barrier:

- Technically complicated to set-up
- Complex contracts and agreements required
- Building on top of an existing IT-infrastructure (that SMEs lack)

COMCIS significantly lowers this entry-barrier.

- Most tools are provided as an online software-as-a-service offering. This reduces the need for complex IT-infrastructures.
- Tools are easily configurable and very fast to deploy, requiring little implementation effort.
- Business models support the use by SMEs by allowing them to pay per transaction or per container, making costs manageable for smaller companies.

For SMEs there are then in general three ways to use COMCIS tools and solutions:

- Directly, by buying/subscribing from one or more of the vendors.
- Together in a business community (e.g. a port community, see paragraph 5).
- By connecting to the service of a large customer or large supplier (e.g. DHL or ECT).

What can be the role of port communities?

Port Community Systems come in various settings throughout Europe with regard to

- Ownership and composition: Some are local government driven, others are more initiated by the private sector and some are a combination or collaboration between government and private sector.
- Functioning and services: Some can be considered more as clearing centres, others also keep data stored in local databases, and some enrich and combine the data and act as a single window.
- The scope they cover: Some are more customs oriented, others more cargo oriented and some look more at maritime access and safety and security and information exchange on e.g. dangerous goods.

But what they all have in common is the fact that numerous actors in the respective ports have existing connections to this port community system and exchange information today already with the local port authorities, with each other and with other involved parties.

As demand for information is constantly increasing, it would be therefore be logical to look at first instance to these port community systems to act as a gateway at least since this gateway already exists, but also investigate if the gateway function cannot be enhanced by applying the COMCIS services.

The need for accurate, complete and constantly updated information is very important for a port that wants to function in an efficient and effective way. This information enables the actors to organise their supply chain activities and monitor them at all times, while at the same time being able to inform their customers constantly of the whereabouts and status of their goods. Any deviation of both whereabouts and status should be reported so that their customers can take the necessary corrective and preventive actions in order not to disturb their own activities like production or customer delivery. This constant "awareness" is key in this process.

The COMCIS tools can contribute to this in a significant way since COMCIS is aimed at the access, standardisation, consolidation & delivery of information from multiple data sources and parties:

- Firstly COMCIS aggregates data from multiple sources, each with their own format and frequency, making it easier to access data that is spread throughout the supply chain.
- Secondly COMCIS standardises the data so that it can be processed by value-added services, independent of its original source and format.

- Thirdly COMCIS consolidates the data to create on time, qualified and derived information that can support operational decisions: Delivering the right information to the right person, at the right time, in a user-friendly way.

Core strength of the COMCIS concept is that it can be implemented across a wide range of situations, from an operationally driven, hinterland-focused case like ECT to a strategically driven, global case like DHL – and everything in between.

COMCIS creates holistic views of supply chains, beyond the boundaries of a single actor's operational responsibilities, and offers information services that can benefit logistics service providers, terminal operators, ocean carriers, port authorities and customs administrations in their respective activities.

Regardless of what specific setting a Port Community System is working under, the COMCIS services can be used, whether it's merely by aggregating and consolidation data or by combining this data and act as a Single Window. By implementing and using the standards used by COMCIS, the Port Community Users benefit immediately from the COMCIS added value.

Integrating the COMCIS "engine" into a Port Community System, using the common reporting scheme and granting access to this information in a secure and user controlled way, can even lift the role of a Port Community System to a higher level. Integrating this in the Port Community System avoids every user having to do this by themselves.

All connected parties: every actor in the supply chain, from shipper to receiver, all concerned government authorities, local and national, can benefit from the Single Window function, the aggregation, standardisation and consolidation functionalities and avoid in this way costly and inefficient setup of bilateral information exchange and having to aggregate and consolidate the information themselves.

Therefore, as a conclusion, we may clearly state that the COMCIS functionalities and services can be of major importance and contribution to the added value of the functioning of every Port Community System in Europe. Consequently, all the actors in the supply chain can benefit from these by COMCIS enhanced Port Community Services directly or indirectly.

Interoperability

The project used the Common Framework¹ supporting interoperability between ICT systems in logistics. This ensures that solutions can be integrated with legacy systems and external services, as has been demonstrated by the project.

¹ See http://www.comcis.eu/downloads/common_framework.pdf.

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 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.

Where to get COMCIS tools & services? COMCIS tools & services can be used as individual components or as part of an integrated service offering like a 'one stop shop' for situational awareness information. In the latter case the user is offered one point of contact for commercial terms & conditions, incl. pricing model and service level agreement (SLA). These services can be offered on a transaction basis such that no extensive upfront investment is required. The project has carefully investigated quantified benefits and ensured that these outweigh costs, such that a positive business case can be offered.

For more information on how to use COMCIS tools & services

Contact:

Frank Knoors, Managing Director at Logit One NV (f.knoors@logit-one.com)

For more information on the COMCIS exploitation model based on the Osterwalder Canvas

Contact:

Matthijs Punter, TNO (matthijs.punter@tno.nl)

For more information on COMCIS

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

Frank Knoors, Managing Director at Logit One NV (f.knoors@logit-one.com)