Container Consolidation and Interfacing System

Shared Information means Increased Performance

The Problem

Terminal efficiency depends on the information about the cargo to be received. If a terminal only receives a discharge order (for example COPRAR in a container terminal), no preparations for future operations are possible. Cargo is placed in storage not taking its next destination or transport in consideration.

When the terminal receives a loading order, cargo must be picked from general storage, which may lead to a significant number of container moves (the container at the bottom of a stack needs to be moved before those on top).

Information about onwards movement of cargo do exist among stakeholders in the supply chain. If such information was made available to the terminal, planning of onwards movement of cargo could be started before arrival of the goods, and cargo could be "sorted" in the terminal to make loading operations as efficient as possible.

Finding such information may not be difficult. However, the information may be in a format that is not easily accessible by the terminal.

The most significant challenge related to information sharing is when port terminals is in need for information from combined transport operators. Combined transport operators are typically using the UIRR message format, while the most, if not all, of the ports handling containers use EDIFACT messages.

There is little compatibility between the UIRR message format and EDIFACT. Hence, mapping between these two formats is non-trivial.

Furthermore, Terminal Operating Systems (TOS) are seldom flexible and implementing new message formats are typically expensive.

The Business Case

An example in the EcoHubs project is the situation in the Port of Koper (poK). poK currently receives information about cargo to be discharged at the port from the carrier (a COPRAR message). This information does not contain information about onwards movement of cargo.
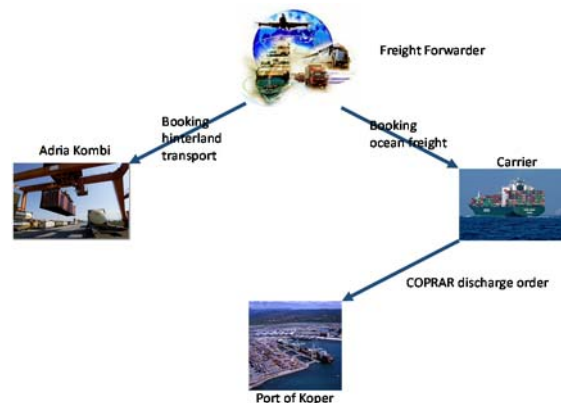
Adria Kombi is a combined transport operator and one of key poK's users. Adria Kombi has received information about the onwards movement of cargo. If this information was made available to poK before discharge of the cargo, poK operations could be much

improved (poK efficiency could be improved as much as 20%).
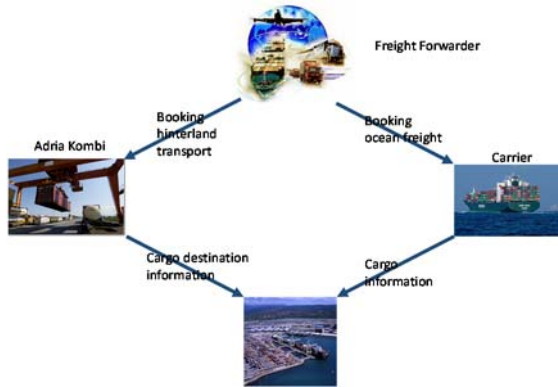
COPRAR is an EDIFACT message (discharge order). Adria Kombi has information in the UIRR data format.

Information from the COPRAR message and the relevant UIRR message need to be merged and converted to a format that the TOS of the Port of Koper can accept.

The Solution

The Container Consolidation and Interfacing System has two key capabilities:

- It may transform data (message formats) such that terminals may receive information in a format that does not require changes to the TOS.
- It may merge information from different source to provide terminals with information that enables efficient operations.

Before information can be merged, it may have to be transformed first.

To combine information from essentially incompatible formats, the CCIS uses the TEP format from ISO/IEC 19845 as an "intermediate format". Information from the outside is transformed to TEP, merged and then the message to be sent to the TOS (using a format that the TOS already accepts) is transformed from the merged TEP.

Conceptually, the CCIS sits "between" the Freight Management Systems (FMS) and the Terminal Operating System (TOS).
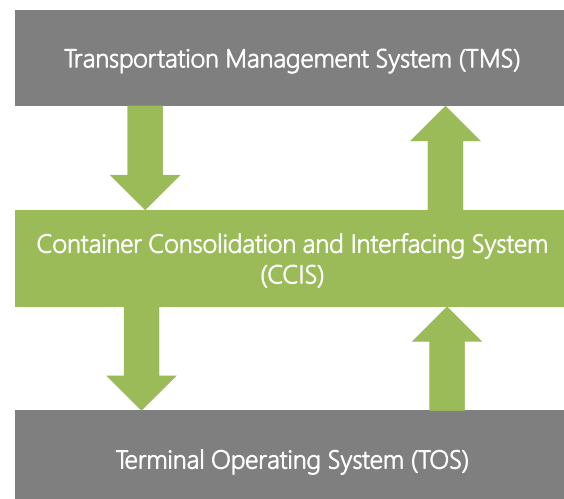
The implementation in the poK utilises existing ICT infrastructure in the form of the installed EAI (Biz Talk) to ensure privacy and to ensure that the Shipping Agent is not influenced by the changes that are being made.
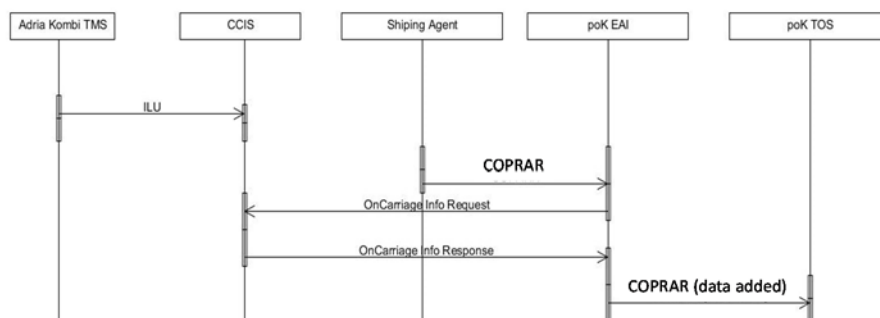
Similar considerations will be made in other situations as well. If such infrastructure is not available, the CCIS will be able to cope with all processing activities.