Improving the port-hinterland interface in the Mediterranean

ICT in Supply Chain Management

(Sponsored by FUTUREMED)

ICTs for Integrated Port-Hinterland Intermodal Corridors

Thessaloniki, 18th Nov 2014
Rail transport is becoming increasingly more important for the strategy of ports, shipping companies and operators. The Port Authority of Valencia and the Valenciaport Foundation are working for its improvement from different perspectives:

- **PHYSICAL LEVEL – INFRASTRUCTURE**
- **OPERATIONAL LEVEL – OPERATIONS MANAGEMENT**
- **INFORMATION LEVEL – ICTs, PCS**

Working groups with ADIF to increase capacity

Quality group of work (involved stakeholders)

Working group (Port authorities + Puertos del Estado)
ICTs for Integrated Port-Hinterland Intermodal Corridors

~ 4.4 millions of TEUs

Railway transport:
~ 5% of I/E traffics
~ 50 trains/week
~ 3-4 RU

Railway infrastructure
Internal:
> 22 km rail tracks
External:
Support Shunting terminal (3km far)
Maritime-rail operations involve a large number of stakeholders who interact at seaports and inland terminals or dryports. Process standardisation and the advanced management of information flows will be key factors to better coordinate and enhance the efficiency of logistic chains.
At seaport and dryport activities we can find **different commercial relations** and a **different involvement of stakeholders**.

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<thead>
<tr>
<th></th>
<th>Recopilación, maniobras y composición de trenes</th>
<th>Carga y descarga de trenes</th>
<th>Recopilación y entrega de contenedores</th>
<th>Posicionado para inspecciones</th>
<th>Depósito de contenedores vacíos</th>
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<tbody>
<tr>
<td>Terminal ferroviaria</td>
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**ICTs for Integrated Port-Hinterland Intermodal Corridors**

At seaport and dryport activities we can find **different commercial relations** and a **different involvement of stakeholders**.
Main problems and shortfalls identified when analysing maritime-rail operations and the related information flows are:

- SCARCE COLLABORATION BETWEEN DIFFERENT INVOLVED STAKEHOLDERS
- LACK OF CLEARLY ESTABLISHED PROCESSES
- LACK OF STANDARDIZED PROCESSES (diversity and randomness)
- INTENSIVE PAPERWORK
- LOW QUALITY COMMUNICATION CHANNELS AND NON-AUTOMATED INFORMATION EXCHANGES (intensive use of fax, phone and e-mail)
- DIFFICULTIES AND CONFUSION IN THE IDENTIFICATION OF THE STAKEHOLDERS INVOLVED IN THE PROCESS (roles, responsibilities, relationships, …)
- DUPLICITY OF INFORMATION
- ACCUMULATION OF ERRORS IN THE INFORMATION
- LACK OF ANTICIPATED INFORMATION FOR BETTER RESOURCE PLANNING
- UNCERTAINTY OF TIME OF OPERATIONS AND INEFFECTIVENESS

THIS SITUATION IS NOT SUSTAINABLE IF RAIL TRAFFIC INCREASES AS IT IS DESIRED.
ICTs for Integrated Port-Hinterland Intermodal Corridors

Import: maritime-rail-road

Maritime transport contract – import operation (port to door)

Inland transport contract (import operation)

Container gate-in order (full containers)

Container gate-in confirmation (full containers)

Train loading list

Train loading confirmation

Train discharge list

Train discharge confirmation

Train discharge confirmation

Instruction for empty container delivery

Gate-out order (full container)

Transport order (gate-out full container / gate-in empty container)

Gate-out order (empty container)

Gate-out order information

Customs ‘transit’ validation

Gate-out order information

Gate-out confirmation (full container)

Gate-in confirmation

Train loading list

Train arrival notice

Train discharge list

Train arrival notice

Train discharge confirmation

Gate-in (empty container)

Customs gate-out validation

Gate-in order information

Gate-in confirmation
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1. Importación (descarga del tren y salida por puertas)

- Terminal de contenedores
- Terminal ferroviaria de destino

- Operador ferroviario
- Empresa ferroviaria
- Terminal ferroviaria
- Depositante
- Agente Marítimo

1. Lista de contenedores a descargar
   - COPRAR

2. Lista de contenedores en tren
   - COPRAR
   - Confirmación de descarga en tren
   - COARRI

3. Órdenes de entrega lleno
   - COREOR

4. Confirmaciones de entrega lleno
   - CODECO

5. Órdenes de admisión vacío
   - COPARN

6. Confirmaciones de admisión vacío
   - CODECO

Standard messages proposal for import operations at dryports
Standard messages proposal for export operations at dryports
PCS are technological platforms that integrate different stakeholders in port operations and maritime transport providing an efficient management of information flows around main transport and trade procedures. PCS may play a key role integrating as well maritime-rail operations among their services, simplifying this way the implementation of the standards proposed.

In order to do this dryports, railway operators and railway undertakings should be integrated in the PCS and new PCS services should be developed to satisfy their needs.
The FUTUREMED Spanish Port Hinterland Intermodal Information System (SPHIIS) pilot case study will allow to test new solutions with this integrated approach at the Valencia-Zaragoza corridor.

The proposed solution involves:

- The facilitation of a number of IT tools addressed to SMEs (Messages editor tool, Web services tool, Process configuration tool)
- The integration of railway operators, railway undertakings and dryports in the PCS
- The adaptation and/or development of new PCS services providing support to all the involved stakeholders and their relations or information exchanges:
Import maritime-rail-road - Railway Operator

Maritime Agent

Container release notice (COPARU)

PCS

Railway Operator

Railway Undertaking

Port Terminal

Dryport

Haulier

opt: Inew PCS service/application for railway operations

Train loading list (COPMCO or COPRAV)

Train loading list (COPRAV)

Train loading list (COPRAV)

Train loading list final (COPRAV)

Train loading list final (COPRAV)

Train loading confirmation (COCDECO or COARR)
Agree the procedures with the involved stakeholders:

• Martime Agents will send notice of container release / pre-announcement (COPARN) for railway operations to the PCS.
• Railway operators & undertakings will send and receive train loading/unloading lists (COPINO // COPRAR) and confirmation.
• Port terminals will confirm the container delivery/receipt (CODECO) for railway operations to the PCS, and/or train loading/unloading (COARRI).
• Extend this approach to inland terminals or dryports.
Technical developments:

• Develop a new service/application in the PCS web/windows application for the creation of train loading/unloading lists based on notices for container release/pre-announcement. (Assignment of containers to trains).

• Develop an utility to facilitate the submission and confirmation of loading/unloading lists to the PCS from different systems and formats (from Excel to XML COPRAR/COARRI).

• Develop a number of IT tools addressed to SMEs for modelling processes, editing and sending electronic messages.

Main drivers:

flexibility and facilitation for systems integration (technology, msg standards, etc.)
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Messages schema editor
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Messages editor

Zaragoza, FUTUREMED Project meeting, 21-22 /10/ 2013
Road haulage service – general – (screen shot)
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Road haulage service – container details – (screen shot)
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Railway operations service – documents list – (screen shot)
### ICTs for Integrated Port-Hinterland Intermodal Corridors

Railway operations service – loading list – (screen shot)

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<th>Tipo</th>
<th>Lleno o Vacío</th>
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Salvador Furió / Director of Logistics

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