



Actions towards enhancing the control of operations in ports

ICT and EDI: The experience of the Port of Valencia



Bologna, 9th and 10th may 2007

Miguel Llop
ICT Director
Valenciaport Foundation
mllop@fundacion.valenciaport.com

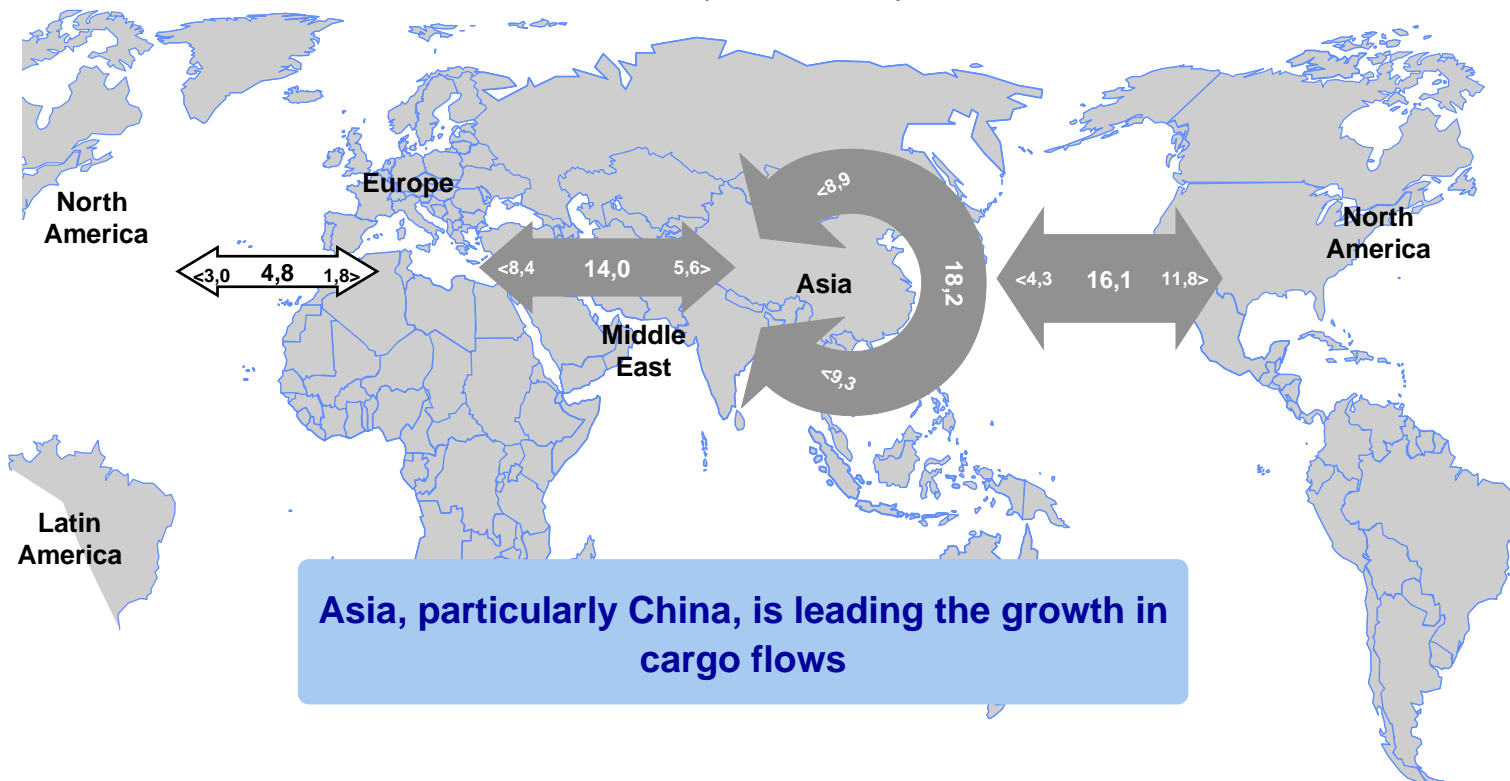
The Interreg programme has contributed in the development, analysis and dissemination of transnational good practices and in the implementation of policy measures defined at an EU level to strengthen competition and interoperability between regions.

This presentation will show the main outcomes achieved by Valenciaport through three EU Interreg IIIB MEDOCC projects:



The explosion of trade in containerized maritime transportation is increasing pressure on the leading sea ports

Traffic of main global containerized cargo routes (M TEUs 2004)



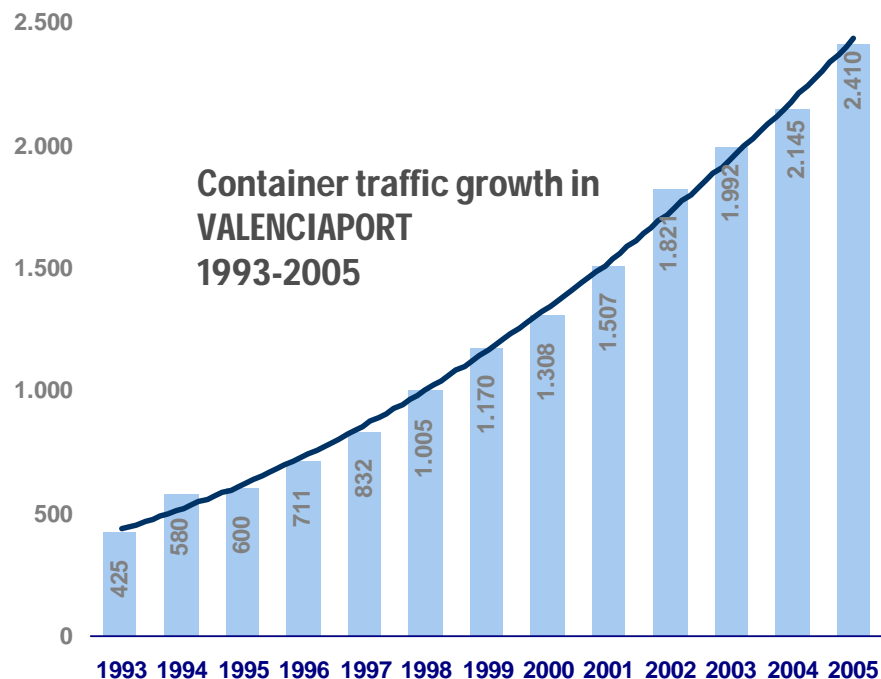
Not exhaustive Issues for leading ports

- Strong growth in containerized cargo
- Highly fragmented industry with a large number of agents
- Increased pressure to comply with international security and safety requirements
- Need for accurate information for planning and operations



Source: UNCTAD: Review of Maritime Transport; Containerization International Bologna. 9th may 2007

Main reasons for improving existing procedures and practices



POSITIVE GROWTH FORECASTS FOR THE NEXT FEW YEARS

2004

traffic	20'	40'	TEUs
FULL			
loaded	321.555	101.694	524.943
discharged	101.431	178.244	457.919
total	422.986	279.938	982.862
EMPTY			
loaded	12.560	106.675	225.910
discharged	204.276	43.587	291.450
total	216.836	150.262	517.360
TRANSIT			
transit			609.112
TOTAL			2.109.334



Forecast 2015

traffic	20'	40'	TEUs
FULL			
loaded	695.298	154.637	1.004.571
discharged	197.833	268.078	733.989
total	893.131	422.715	1.738.560
EMPTY			
loaded	65.449	302.759	670.967
discharged	480.103	76.859	633.821
total	545.552	379.618	1.304.788
TRANSIT			
transit			1.278.402
TOTAL			4.321.750

Background

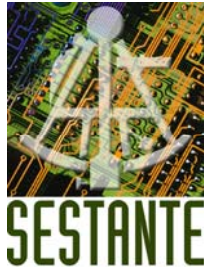
The constant growth in container traffic at the Port of Valencia has resulted in a parallel increase in the volume of container-related services and, unusually, in land transport.

This growth has been combined with the increased pressure to comply with international security and safety requirements.

This change of framework has overloaded manual procedures and practices used to handle these services and revealed how inadequate they were.

This situation has encouraged inefficient control procedures to be shelved and be replaced by other methods in which technological solutions play a key role in identifying areas for improvement.

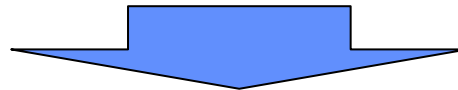
Ports, as main international trade point nodes in the European economy, have an important role in implementing solutions that can marry security and safety concerns with trade facilitation.



- SESTANTE project allowed the Port Authority of Valencia to take advantage of its previous experience in implementing Single Windows in ports with the support of IT.
- The implementation of Single Windows is now encouraged by the European Union and other international bodies. In fact the UN/CEFACT published a specific Recommendation and guidelines on establishing a Single Window in 2005.

■ During the first phase of SESTANTE the following data interchanges were identified as critical points in the administrative procedures and documental flows within the maritime transport chain:

- Reporting formalities for ships arriving and/or departing from ports.
- Notification of dangerous goods entering and departing from ports and on board vessels.
- Loading and discharge manifests.



■ These data interchanges were directly related with the three Single Windows already established in the Spanish Port System:

- Cargo Declarations
- Dangerous Goods
- Vessel Port Formalities

The state-owned Port System in Spain consists of 50 General Interests Ports, managed by 27 **Port Authorities**, with the Public Entity “**Ports of the State**” responsible for coordination and efficiency control.



Ports of the State depends on the Spanish Ministry of Transport and Public Works and is charged with the execution of Government’s port policy.

The legislation provides the Spanish port system with the necessary instruments to improve its competitive position in an open global market, setting up extending self-management faculties for the Port Authorities.

- AP A Coruña
- AP Alicante
- AP Almería
- AP Avilés
- AP Balears
- AP Barcelona
- AP Bilbao
- AP Cartagena
- AP Castellón
- AP Ceuta
- AP Ferrol-S. Cibrao
- AP Gijón
- AP Huelva
- AP Bahía de Algeciras
- AP Bahía de Cádiz



- AP Las Palmas
- AP Málaga
- AP Marín y ría de Pontevedra
- AP Melilla
- AP Motril
- AP Pasajes
- AP S.C. Tenerife
- AP Santander
- AP Sevilla
- AP Tarragona
- AP Valencia
- AP Vigo
- AP Vilagarcía de Arousa

The **Main Directorate of the Merchant Marine** is the Maritime Authority, public entity dependant on the Spanish Ministry for Transport and Public Works in charge of the Government's maritime policy.

This directorate manages **SASEMAR**, organisation responsible of search, maritime rescue and pollution prevention and the **Harbour Master's Offices** in charge of:

- Ship's clearance and application of maritime navigation regulations.
- Arrival and departure vessels' authorisations to/from Spanish territorial waters.
- Vessel and on board cargo inspections and waste disposal control.



The **Customs department** is a public organism dependant on the State Agency of the Tributary Administration (AEAT) in charge of:

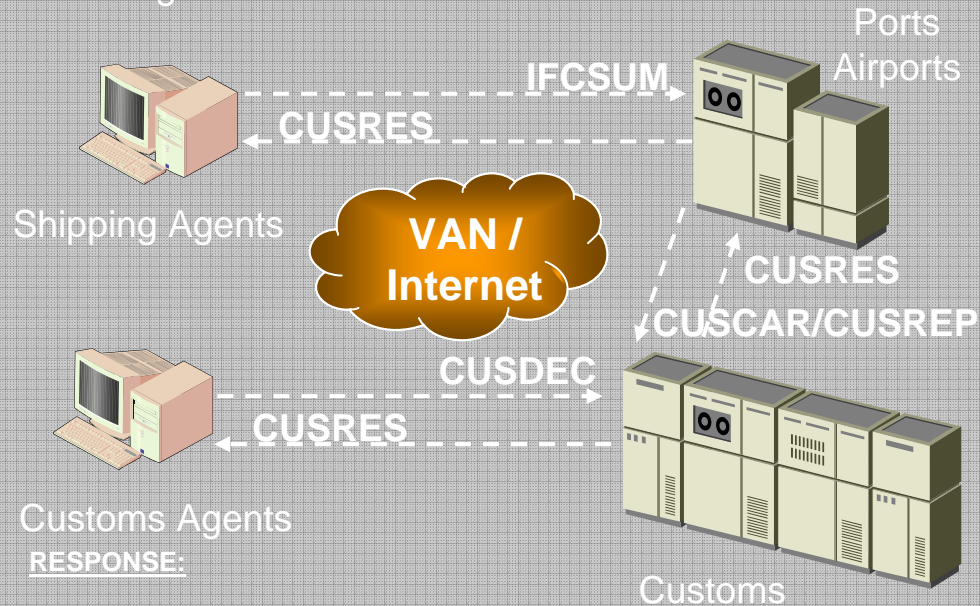
- Management and inspection of the tributes that fall on the outer traffic.
- Control of legitimate trade and coordination of the fight against customs fraud.
- Elaboration of information analysis and statistics of the data of foreign trade.



Single administrative window for summary declarations

Manifests (2454/93/CEE)

- COMPAS System
- Single Window: Cargo and Discharge Declarations
- Single Administrative Document: SAD



Administrations: Customs Department, Port Authorities.

Pilot project: Operative in Valenciaport since 1992.

Adaptation of legislation: Ministerial orders in 1995, 1998, 2001. Establishment of channels of collaboration between Administrations.

Main advantages:

- Facilitation and simplification in the proceedings of cargo declarations.
- Improvement in efficiency. Cargo is released in less than an hour after the vessel arrives.
- Improvement in the control of goods arriving/departing the Customs Territory.
- Improvement in the invoicing procedures in Port Authorities.

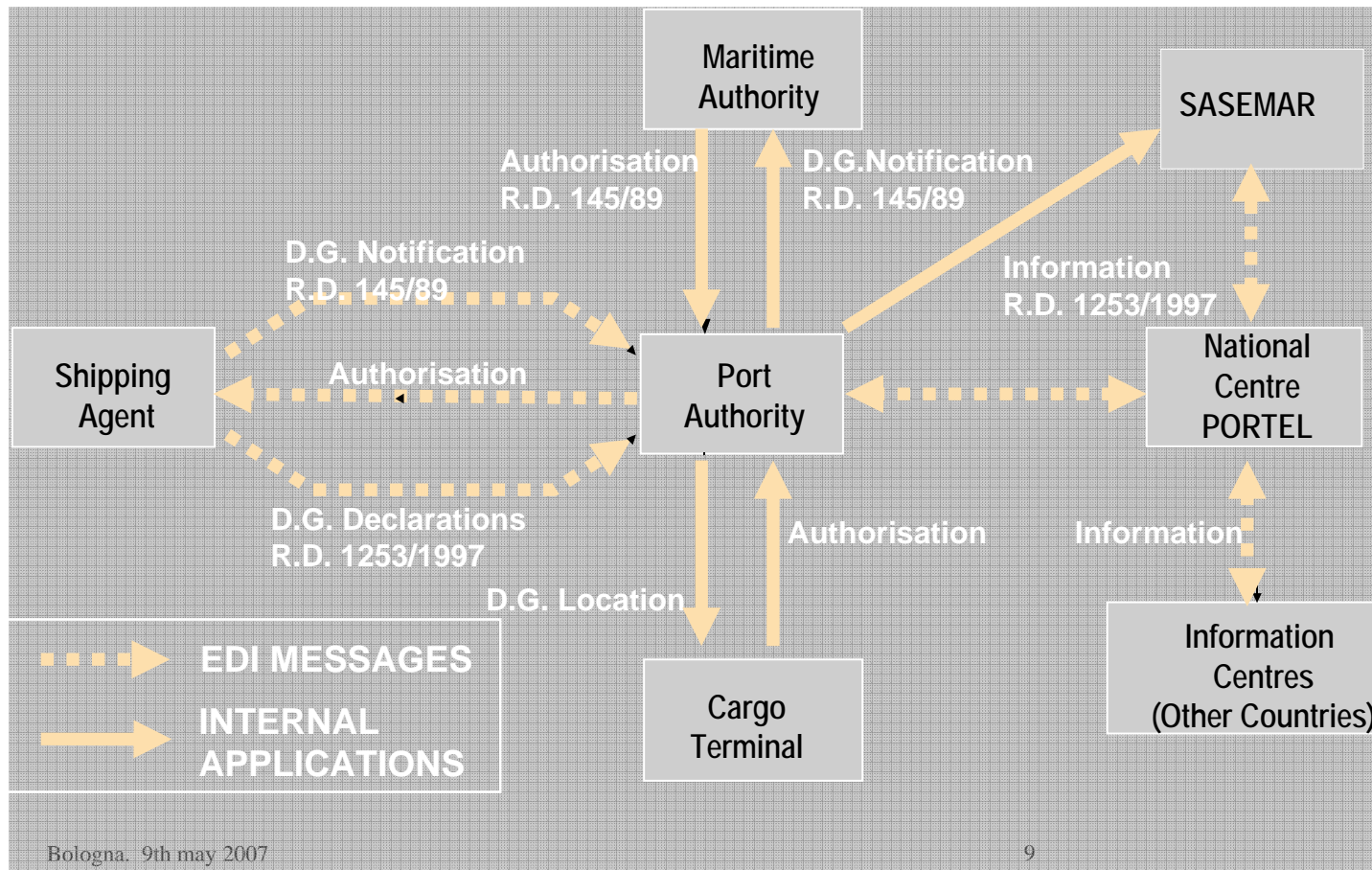
Single administrative window for dangerous goods

Dangerous goods

- Admission, manipulation and storage of dangerous goods in ports (RD. 145/1989)
- HAZMAT Directive (93/75/CEE -> 2002/59/CE)

Administrations: Port and Maritime Authorities.

Pilot project: Operative in Valenciaport since 1995.



Adaptation of legislation: National legislation has not been modified yet. HAZMAT Directive include this type of proceedings.

Main advantages:

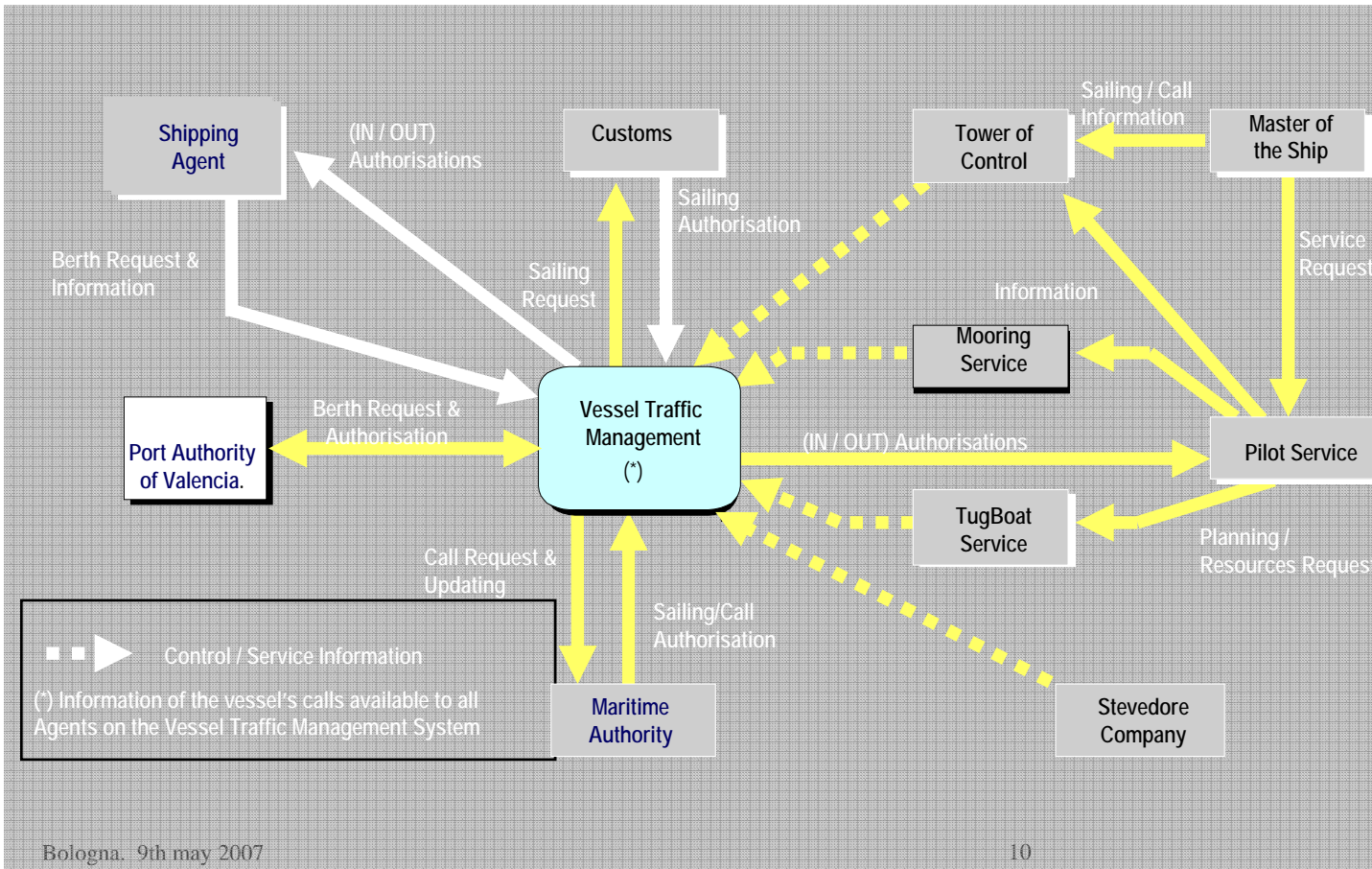
- Facilitation and simplification in the proceedings of dangerous goods declarations.
- Improvement in efficiency.
- Improvement in the control and management of dangerous goods.

Port formalities

- IMO FAL Forms (Directive 2002/6/CE)
- Single Document of Call (FOM/3056/2002)

Administrations: Port Authorities, Maritime Authorities and Customs Department.

Pilot project: Operative in Valenciaport since 1996.



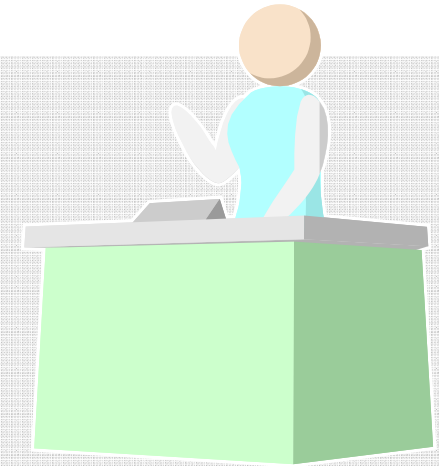
Adaptation of legislation: Ships' clearance (2000), Single Document of Call (2002)

Main advantages:

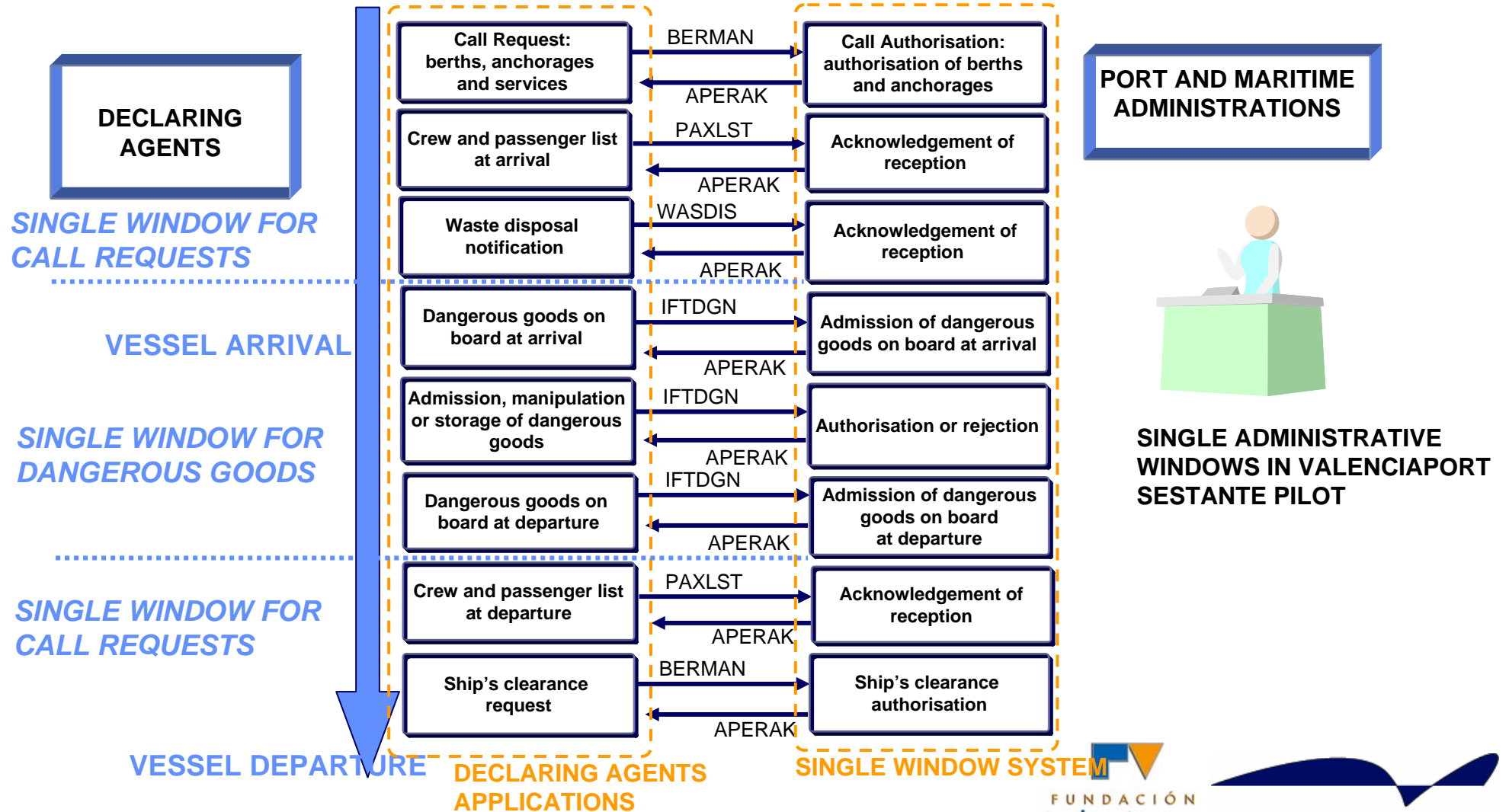
- Facilitation and simplification in the proceedings on port formalities.
- Improvement in efficiency.
- Improvement in the control and management of vessel operations.

▶ The Valenciaport experience

- ▶ A **strong commitment and a clear will** to create single window services is required by the Administrations that take part in this process.
- ▶ A **pilot experience** that demonstrates the viability and convenience of the single window is required in the case that its creation does not come determined by legislation.
- ▶ The **amendment of legislation** is often required.
- ▶ **Interoperability** is a critical aspect in the effective adoption of single windows.
- ▶ **User adoption** is an important issue in consolidating these procedures. Solutions taken in Valenciaport:
 - ▶ Well defined approval process between Port Authority and declaring agents to ensure correct use of the system.
 - ▶ Discounts in port taxes (up to 3%)
 - ▶ Free distribution of applications.

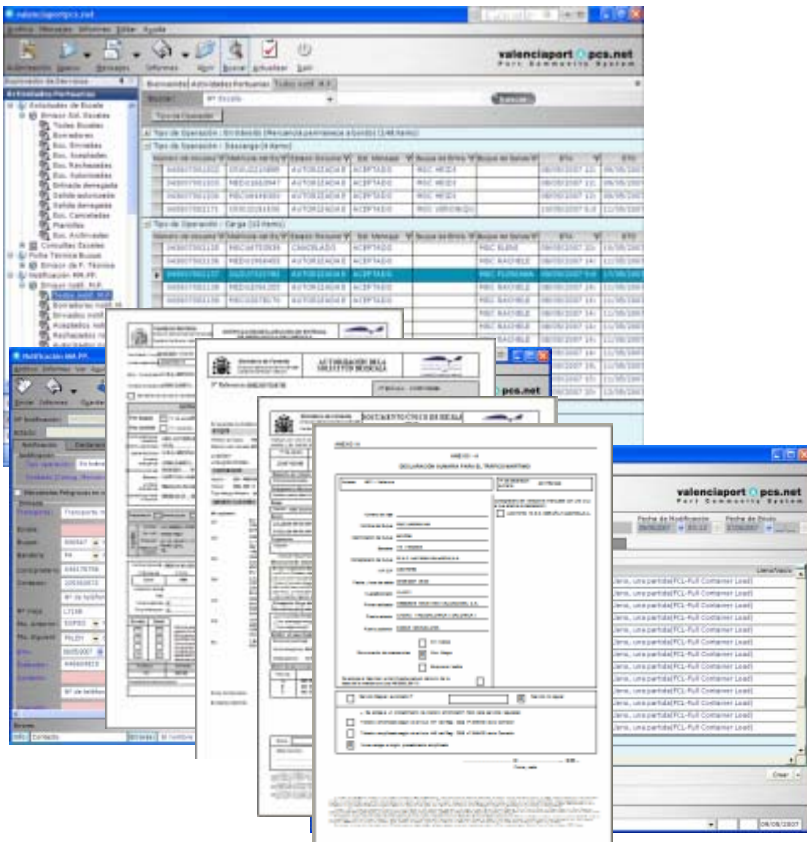


One of the main aims of the SESTANTE is to create a tool to simplify the interoperability of different existing ICT user systems.





- These applications were developed using the interoperability requirements established in SESTANTE and considering all existing applicable normative and identified best practices available in the EU.
- The applications were constructed using the technology of valenciaportpcs.net, the port community system of Valenciaport.

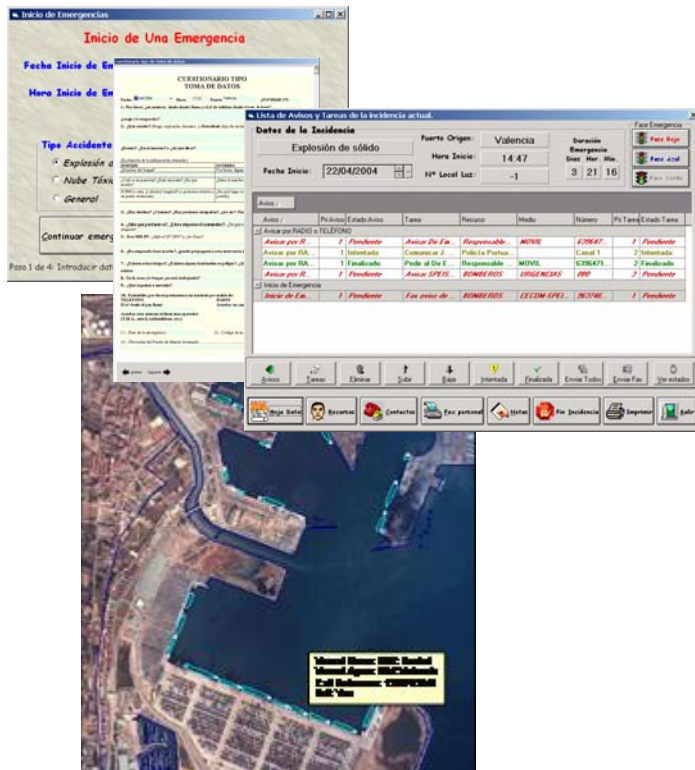


- Valenciaport SESTANTE pilot project aimed to demonstrate the viability of implementing Single Windows in ports that improve the relationships between agents and the different administrations involved in the flow of goods.
- The creation of such Single Windows allows the optimisation of the procedures and information flows required for the appropriate transport of goods complying with all the formalities required by administrations to guarantee safety, control and coordination among EU ports.
- The application allows the electronic submission of more than 14 forms between agents and administrations.



- MADAMA project aims to understand and harmonize actions needed to control dangerous goods transport chain and improve the security and risk control and management by the use of ICT tools in order to obtain a sustainable mobility and better environment in the Mediterranean Area.

- Risk management means the systematic application of management policies, procedures and practices to the tasks of analyzing, evaluating, controlling and communicating about risk issues.



Within the context of dangerous goods , the availability of the required data through electronic means has been enhanced in the Port of Valencia through the SESTANTE applications.

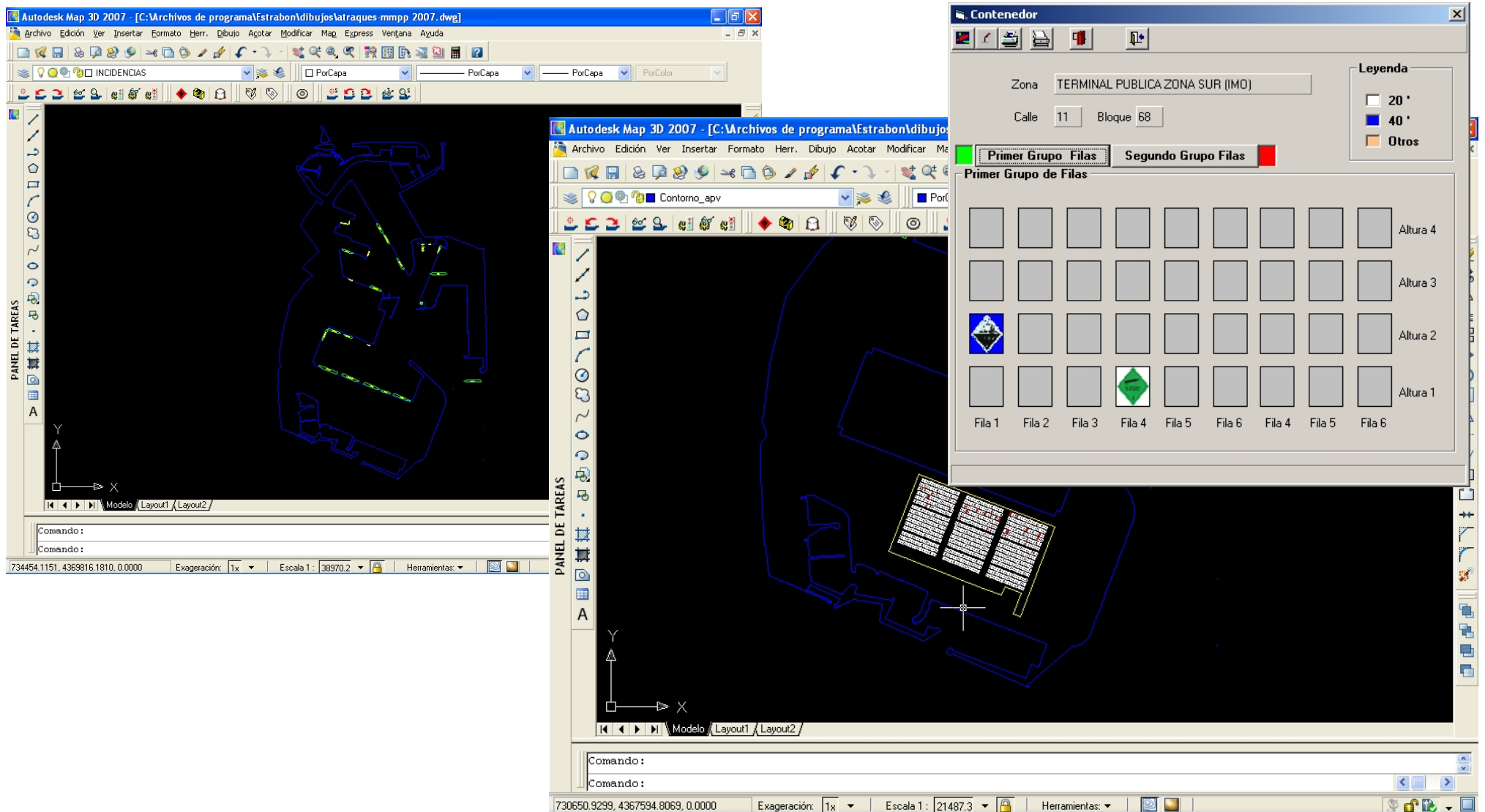
However, more operational data and effective tools are required to accurately control the flow of dangerous goods in the port and support the management of emergencies.

To this end an electronic channel of communication has been established between the Port of Valencia and the different cargo/container terminals.

By the other hand, cargo/container terminals report all the internal and external movements of dangerous goods for its subsequent control with the aid of a GIS (Geographic Information System).

This risk management system is achieved in Valenciaport through the ESTRABON and GESMER applications.

ESTRABON: GEOGRAFIC INFORMATION SYSTEM FOR CONTROLLING D.G.



- MADAMA project is currently under development with the following specific objectives:
 - To create the conditions for a relevant modal shift, through a cooperative approach based on the definition of new policies and the application of innovative risk management solutions.
 - To face the process of dangerous goods transport and logistics in terms of methodologies, organizational procedures and innovative tools.
 - To support the cooperation among all the private and public parties involved in the logistics chain of dangerous goods transport.
 - To promote the exchange of experiences and transfer of expertise from different regions in managing the whole dangerous goods transport chain and using ICT defined solutions.
 - To organize education/training courses for the technicians of the involved companies and authorities.

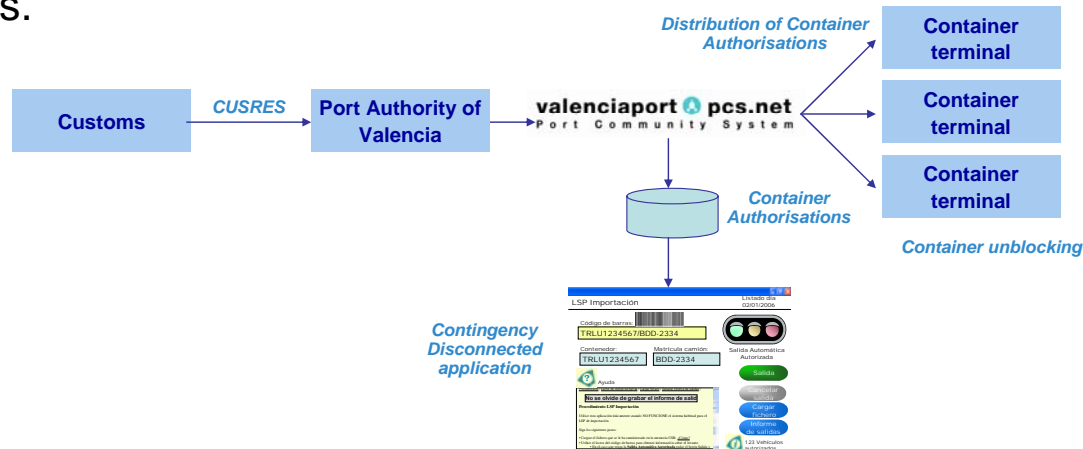


- After the finalisation of SESTANTE pilot project, the Port Authority of Valencia has carried several adjustments in these applications and has adapted its internal risk management systems to the new security and safety environment.
- On 7th may these services have successfully started its real operation and are being used by all the shipping agents in Valenciaport.
- The setting off of these services is being supported by MADAMA project through the delivering of several training seminars.



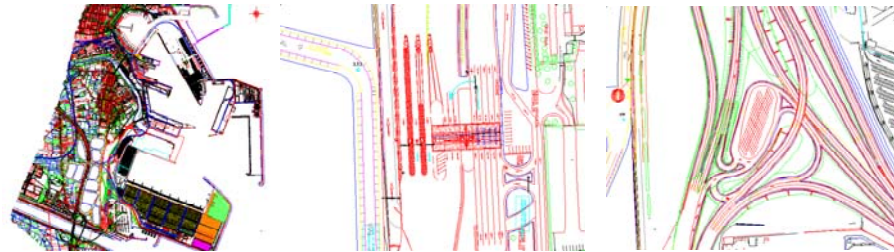
- **MATAARI** aims to the definition of ICT tools to achieve the **improvement of the transport services accessibility** and the **management of the information on the network**
- During the execution of MATAARI project, a clear improvement in accessibility of the transport in the port was to enhance the control of import containers by the cross-border police.

- Customs controls affect directly in the mobility of container transport through the port. In particular, it is the responsibility of the customs and the cross-border police that full cargo containers do not leave the port without the proper customs clearance and authorisations.
- MATAARI developed the tools to provide the cross border police with a high available solution to check the proper authorisations of containers and to distribute these authorisations to container terminals.

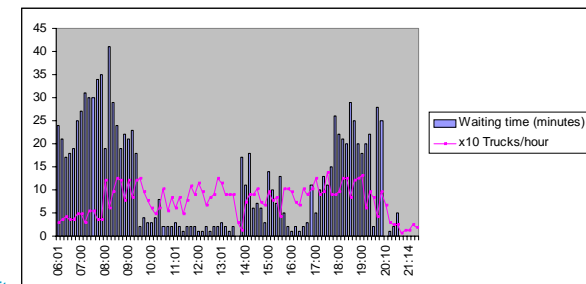
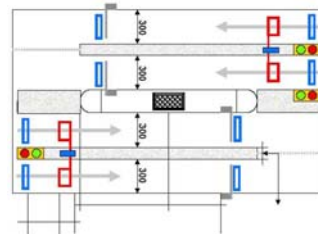


- The MATAARI project has additionally developed the following studies and pilots to enhance the control of operations in the Port of Valencia:

Dynamic model for port internal traffic simulation: This simulation model will allow evaluating the impact of the different control points in the traffic behaviour.



Evaluation of a system to assess the road access quality through RFID tags installed on trucks: The objective of this system has been to determine the quality of the accessibility to the port premises starting by a data acquisition at the container terminal gates for measuring potential congestions.



SeguriPort
Programme for the improvement of security,
Accessibility and mobility within the port premises

Conceptual design of a system for monitoring security and accessibility: This study is aligned with the EU Directive on enhancing port security.

TransportTag

Radiofrequency truck movements detection



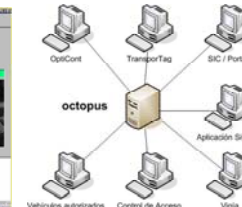
OptiCont

Optical recognition of container numbers and vehicle plates



Octopus

Integrated vision of databases and port security systems



- The Port Authority of Valencia is collaborating with the Customs Office of Valencia in enhancing the control of cargo flows through by an integral re-engineering plan.

- Projects in the framework of Single Windows:

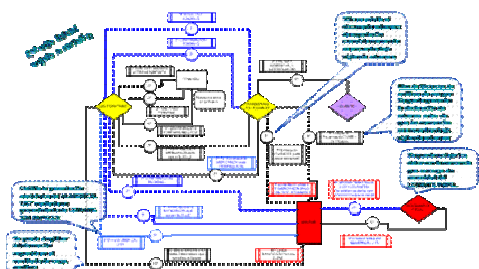
- Summary discharge declarations and its electronic submission
- Loading manifests and its electronic submission
- Automatic transshipment
- Amendments of summary declarations and its integral management
- Paperless customs release of containers in import operations (LSP-import)
- Paperless customs release of non-containerised cargo in import operations (SIGRA)
- Electronic phytosanitary inspection certificate (SIFI)

- Control enhancement projects

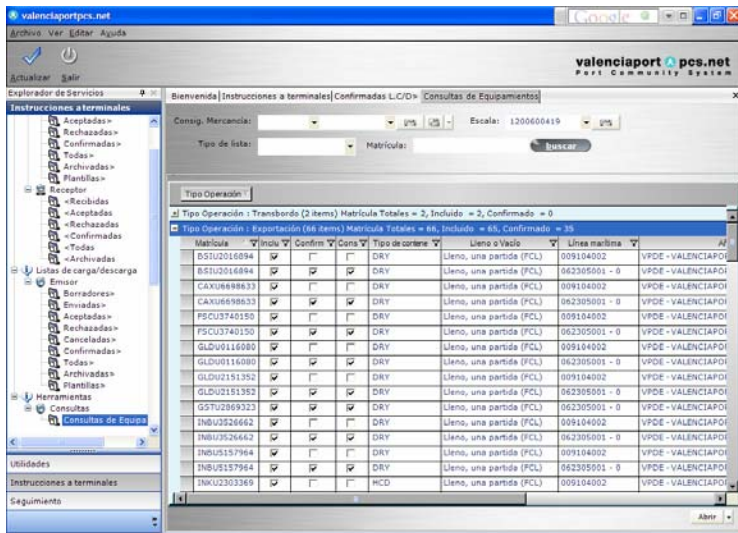
- Introduction of barcodes for the paperless customs release of containers (LSP-import)
- Introduction of barcodes for the paperless customs release of non-containerised cargo

- Projects in the framework of valenciaportpcs.net

- Control enhancement projects:
 - Contingency procedure for LSP-import (MATAARI)
 - Control enhancements of container export operations by the cross border police.
- Integral control management of the port customs area:
 - Import container release system in container terminals (MATAARI)
 - Paperless customs release of containers in export operations (LSP-export)

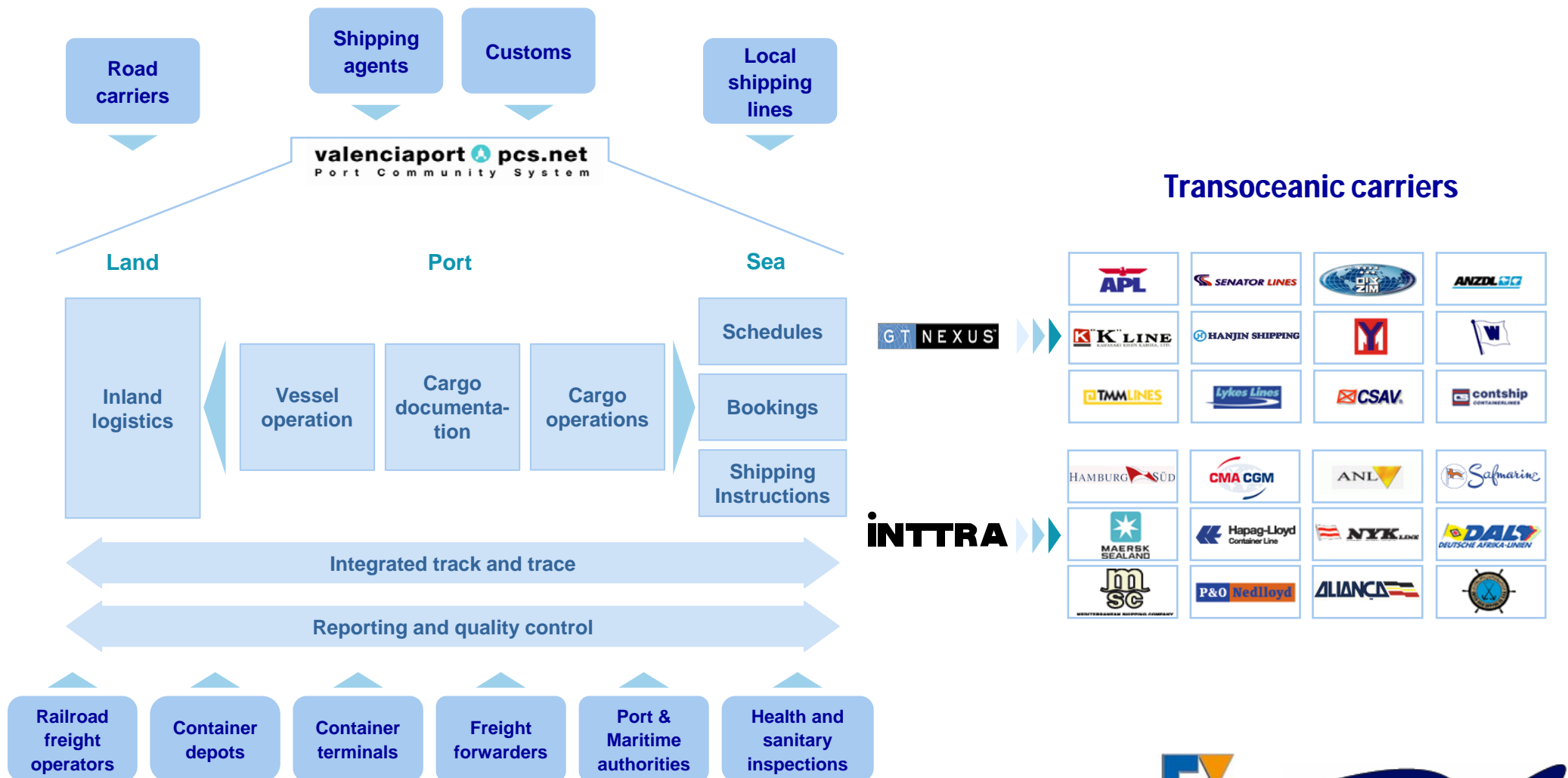


- The work started in MATAARI with the Customs Office in Valencia will continue with a subsequent research and development of a prototype to simplify the current customs procedures by the establishment of a paperless export authorisation system.



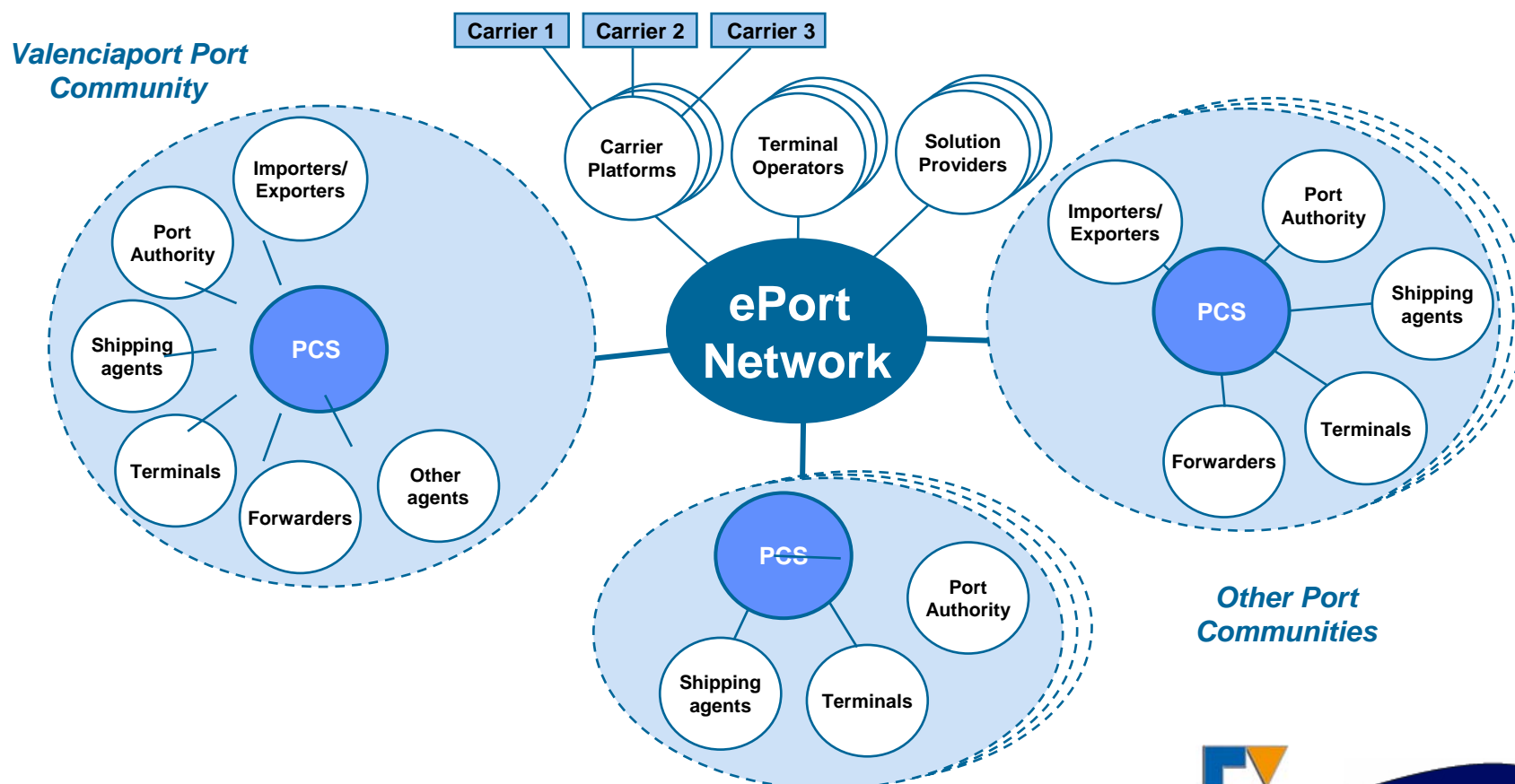
- The objective of this system will be to automatically assign the maritime transport used for the departure of goods to the associated authorised export declarations before and after the execution of this operation.
- This system will improve the control performed in the export operations and, at the same time, reduce the associated logistics costs and maximise the efficiency of container terminal loading operations.
- This is one of the targets of the ECS (Export Control System) in the eCustoms initiative.
- Currently these controls are performed manually by the cross-border police and customs based on cross-checks between paper copies of the loading container lists and authorised export SADs (Single Administrative Documents).
- This system will be based on the valenciaportpcs.net system used by the transport business community and controlling authorities to plan, execute, monitor and control container movements.

valenciaportpcs.net provides complete coverage of land, port and sea and is linked with major transoceanic carriers

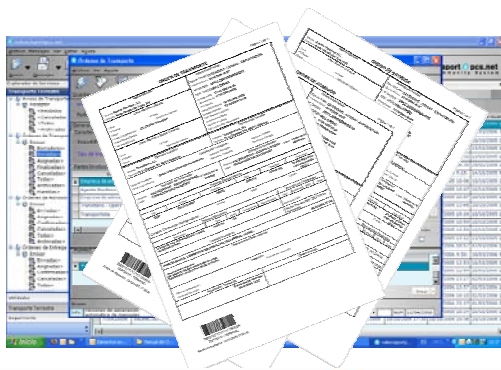


The vision of the ePort network is to create a global alliance of port communities connected through their PCS that will create competitive advantage for its members

ePort network - A Port Community Connected to the World



- In conclusion, the actions that are being taken at the Port of Valencia towards enhancing the control of container operations at ports are oriented to reduce logistics costs and to maximise the efficiency, safety and security of the whole supply chain in global and European intermodal container shipment by improving the following topics:



valenciaport pcs.net
Port Community System



- Using technologies to enable a continuous monitoring and control of containers and the customs status of cargo.
- Taking advantage of communication systems and platforms (valenciaportpcs.net) used by the transport business community and controlling authorities.
- Defining supportive innovative procedures and processes in ports and terminals with the aim to establish seamless and high capacity container transport flows in the European global supply chains.

Surprisingly, this objective has already been established in the Activity 7.2.2 of the first call of the Sustainable Surface Transport programme of the VII FP that will be closed in 5th of June.