



## **"The European e-Maritime initiative" (2.7), 21 May 2010, 9:00 - 10:45**

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Correspondence Group on e-Navigation

### **Speakers:**

Christos Pipitsoulis  
European Commission, Directorate General Mobility and Transport

Miguel Llop  
ICT Director, Valenciaport Foundation

Maria Lambrou  
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Dimitris Theodossiou  
Managing Director DANAOS Management Consultants SA

Heather McLaughlin  
Senior Consultant Inlecom

## Session Outline

The objectives of the session were:

- To inform stakeholders about the status of the e-maritime initiative
- To invite their participation in the consultation process
- To discuss how they can influence the development of e-maritime

The presentations focussed on:

- Sharing experience of the IMO lead e-Navigation initiative
- Discussing the objectives and potential of e-Maritime
- Highlighting good practices
  - - how e-maritime has been operating successfully in the Port of Valencia
  - - modelling and delivery of rules in electronic format to support automated compliance management
- Examining models and methodologies for achieving the e-maritime objectives
- Examining the development of e-maritime policy

### **e-Navigation** by John-Erik Hagen, Chairman of the IMO Correspondence Group on e-Navigation

e-Navigation is an International Maritime Organization Initiative which aims to improve safety of navigation. More specifically it is a concept to support humans with the management of maritime information and to improve decision making. The overall goal is to improve safety of navigation and to reduce errors.

The vision of e-navigation includes onboard, ashore and communications elements. E-navigation focuses on operational, technical, training and legal issues. E-navigation is intended to meet present and future needs through a harmonization of marine navigation systems and supporting shore services. Global standards on board and ashore will be an important element in the work.

It uses a holistic approach to determine:

- Human centralised user needs
- Operational functions and procedures (which includes identifying best practice, standardisation, harmonisation and implementation)
- Training (to improve, standardise, assess, promote and maintain)
- Technology (to improve, refine, harmonise and standardise)

The implementation strategy will be presented in 2010 at which point responsibilities to interested parties will be assigned.

The whole process requires national and international support and involvement. A number of countries and international organisations are participating in the project.

IMO eNavigation and EU eMaritime develop in complementary and synergetic manner

### **e-Maritime Objectives and Potential** by Christos Pipitsoulis, EC DGMOVE

It is important to view the eMaritime initiative as an additional EU instrument for the sustainable development of the European maritime transport. Recognising the critical role of ICT based innovation for productivity, quality and competitive advantage arising from upgraded and interoperable European maritime transport information systems, "e-Maritime" capabilities should support a more performing waterborne transport system fully integrated in the overall European transport system.

The EU e-maritime initiative is aimed at fostering the use of advanced information technologies for working and doing business in the maritime sector.

It deals not only with the interoperability of electronic systems but with processes and the human element. It is recognised that the most important challenges relate to organisational aspects and managing the change.

The ultimate goal of e-Maritime is to make maritime transport safer, more secure, more environmentally friendly and more competitive by improving knowledge, facilitating business networking and dealing with externalities.

The suggested approach for the e-Maritime initiative is the development of an e-maritime Strategic Framework and Service Oriented Architecture providing a coherent view of the way Maritime Transport could operate at some future date.

It was stressed that this programme is **stakeholder – driven and aligned with the relevant EU e-initiatives and IMOs e-navigation**. Critical to its success is

- the fact that e-maritime is seen to relate to existing interests and practices within organisations.

- There is a thorough analysis of the needs and expectations of all interested and affected parties.
- A strategic alignment of the plans of the each of the stakeholder groups.
- Active engagement of the stakeholders in the process (particularly through consultation and pilot projects)

Quality services and increased efficiency must among other objectives be based on improved cooperation between shipping parties, including public and private entities.

Stakeholder are invited and encouraged to comment on the proposed e-maritime measures by 27 June 2010 via the online questionnaire. The questionnaire consists of 19 questions but the Commission also needs facts and figures to assist in the impact assessment.

The Main Measures are as follows:

M1: Guidance, support, best practices, information on benefits of interoperable ICT systems

M2: Actions to define e-maritime standards

M3: Measures to support the implementation of National Single Windows or European Single Window

M4: Measures to support stakeholders in implementing the necessary e-maritime ICT infrastructure

Proposed support measures are:

M5: Actions to support the intelligent use of data

M6: Actions to optimise traffic in and around ports

M7: Actions to support e-services fro seafarers

M8: Measures to support ship-shore broadband communication

In terms of funding, TEN-T is seen as an important route to the actual application of e-maritime solutions in the trans-European transport network.

**Port of Valencia – e-maritime in action** by Miguel Llop, Valenciaport Foundation

The Port of Valencia is a state owned public entity which manages 3 ports – Sagunto, Valencia and Gandia - located along 80 kilometres of the eastern border of the Spanish Mediterranean coastline.

The Port has focussed on using technology to improve efficiency i.e. adding value through IT. Applications have been seen in

- Port Community as a whole
- Vessel Operation
- Cargo load/unload
- Container Gate in/out

- Security and Control – customs and other authorities

ICT integration can help transform the port community from local to global in 4 stages

Phase 1 Isolated port

Target – to automate internal procedures (internal information systems)

Phase 2 Connected port

Target – to establish connections with port agents for key trading procedures

Phase 3 Port Community

Target – creating communities both at landside and seaside

Phase 4 Port Community connected worldwide

Target

- to increase effectiveness by operations automation in paperless procedures
- to modernise logistics management
- to improve communication by total integration with external agents
- to boost integration connecting Maritime- Port- Landside operations and improving collaboration with Port Communities
- Strengthen ties with partner ports

In order to achieve this it is important to speak the same data language.

Valenciaportpcs.net has become the one stop shop for all the port community to share information.

- Public Administration- Single window: customs, Port Authority, Maritime Authority, Quarantine Inspection. Dangerous Good: customs declaration, cargo manifest
- Port Operations – vessel load/unload lists, crossed information with Public Administration
- Port Logistics – Road and Rail transport e-management. Linked to carriers using INTRA and GTNexus

For **vessel operations** the PCS Single Window deals with berth and anchorage requests and authorisation, pilots, tugs and mooring requests, links to all public administrations. This is used on 99.5% of vessel calls. This PCS is also synchronised with the Vessel Traffic System

For **container loading and unloading** each carrier can work with any terminal with the same link and standards. Cargo lists are fed with no carrier or terminal info for the purposes of customs authorisations and port authority permissions etc. Customs Police receive cargo export

lists at the same time as the Container Terminal. The list can be cross checked with the customs declarations authorisations in an SDA link with Spanish Customs with no authorisation paper required. Checking a list of 5000 movement take only 3 minutes (compared to 4 hours with the previous system)

99% of the **Gate in/out** movements in Valencia are managed electronically. The result is no queue at the terminal gates. All the information is in the Terminal system before the arrival of the truck. The average time at the gate has been reduced from 5 minutes to 35 seconds. Terminal throughput has been substantially improved.

For better **Security and Control**, OCR gates are linked with Customs through the PCS. By the time the truck reaches the gate, any queries have been raised. If all is well the truck does not even have to stop.

Valenciaport represents an excellent case study of e-maritime in action and the way that it has improved efficiency.

### **Next Generation e-Maritime Services** by Maria Lambrou, University of Aegean

These next generation services look to improve, transform and/or redefine transactions and information exchange between maritime stakeholders by developing and enacting virtual organisational arrangements dedicated inter organisational systems and institutional arrangements. It is important that such systems reflect stakeholder interests, perceptions and aspirations.

The process involves the development of

- E-maritime Strategic Framework which comprises
  - Legal
  - Technology
  - Human factors
  - Change management which lead to
    - Standards and Policies
    - Administration and Business processes

Stakeholder requirements feed into this through surveys. The impact of the various measures is assessed using a cost benefit analysis

- E-maritime support platform comprises
  - Enabling technologies
  - Software engineering tools to provide
    - EU level value adding information services
    - Dynamic integration with other EU platforms

This requires ICT Development surveys

- E-maritime Reference Applications covering the administrations and business domains

#### Administrative

- Safety, security, Environment risk and compliance management
- National Single Windows
- Promotion of seafaring and shipping

#### Business

- Port applications
- Ship applications
- Logistics chain application

This requires Application requirement surveys and transport services improvement evaluation.

It is recognised that stakeholder are a key part of the process but may need incentives. These include:

- Policy incentives (the need for compliance)
- Technical incentives (emerging technical advances)
- Operational incentives (cost and efficiency)

As the e-maritime field is seen to evolve at the intersection of management, law, engineering, information technology and operations research disciplines, robust and applicable methodologies, techniques and tools of the above areas should be employed in order to broaden the e-maritime research agenda, improve our understanding and help us gain insight in emerging e-maritime services.

E-maritime foresight efforts are important. Applying and testing innovative business models such as the integrated transport and logistics e-marketplace and the (one -stop) administrative single window based on technological advances such as semantics technology and service oriented computing (ref to E-Freight 7FP DGTREN Project) are important and need to be complemented with further interdisciplinary R&D efforts.

**E-Rules – Potential delivery of rules in electronic format to support automated compliance management** by Dimitris Theodossiou, DANAOS Management Consultants SA

The Flagship project concluded that e-Rules are:

- Technically feasible

- Justified
- Acceptable by the shipping industry

Such rules are required by a variety of industry actors.

#### Vessel Masters

- Automation in preparation of paperwork
- Reminders on tasks to be performed

#### Vessel Managers and Operators

- To be alerted in the case of non compliance
- Assistance to mitigate the non compliance

#### Inspection Authorities

- Information about the compliance status of each vessel
- Alerts on non compliance for immediate action

#### Ruling Bodies

- Conflict alerts for new or existing rules/regulations
- Information about the compliance status of each vessel

E rules can make an important contribution to areas such as

- Increased energy efficiency and reduced emissions
- Better decision support
- Improved nautical operation and bridge decision support
- Enhanced alarm filtering
- Automatic support for rule compliance
- Improved cargo handling

E rules can offer the common language to support information exchange and interoperability.

### **Development of e-maritime policy by Heather McLaughlin, Inlecom**

e-maritime was the subject of a Periodic Study in the SKEMA project (7<sup>th</sup> Framework programme). The study covered the following tasks:

- ▶ Task 1 Maritime Overview
- ▶ Task 2 State of the Art Review
- ▶ Task 3 E-Maritime Policy
- ▶ Task 4 Stakeholder Surveys

The focus of this discussion is Task 3 e-maritime Policy which examined e-maritime in relations to:

- ▶ Safety and security
- ▶ Increasing the competitiveness of the EU maritime transport industry by better administration

- ▶ Creating a better environment for ship operators
- ▶ Supporting the development of European Ports as key logistics hubs
- ▶ Improving seafaring and the promotion of the profession

Policy options include:

- ▶ Directives
- ▶ Taking no action
- ▶ Providing information or guidance
- ▶ Using market based instruments
- ▶ Co-regulation
- ▶ Self-regulation
- ▶ Issuing recommendations
- ▶ Flexible Directives

Policy must be seen in the light of a number of Influencing factors

- ▶ Industry characteristics – transparency/competitiveness/fragmentation
- ▶ Monitoring
- ▶ Technical complexity
- ▶ Stakeholder buy-in
- ▶ Potential risk
- ▶ Existing policy

For each of these areas policy options were considered and assessed in terms of efficiency, effectiveness, and negative effects

The results of the analysis revealed that some elements of a framework are already in place through the

- Integrated Maritime Policy
- European Maritime Space without barriers

Areas where more work/policy is needed

- ▶ To address areas of concern particularly over data security and protection.
- ▶ To achieve the necessary level of standardisation
- ▶ To persuade stakeholders of the benefits and thus ensure wide adoption of the e-maritime approach.

### **Discussion: Focus on Stakeholders**

A common theme amongst all the presentations is the important role of stakeholders in the development of the e-maritime initiative.

- ▶ How can you contribute to e- maritime initiative?
- ▶ How can we best work together

- ▶ To create the right culture?
- ▶ To highlight best practice?
- ▶ To achieve smooth and effective implementation?

The discussion highlighted some areas where e-maritime was operating effectively. Efficient Sea (operated by the Danish Maritime Safety Authority) was given as a good example of an application that could be expanded and adapted to other areas.

There was a consensus that sharing best practice is a good way forward. However, in developing Port Community Systems it is important to solve local problems before expanding to a global model. Single windows do differ in each member state but that there are many common elements that could be exploited.

On a wider level, the development of standards was seen as key to interoperability and effective process management. Integration cannot be achieved without standards.

In terms of stakeholder involvement and buy-in, it is important that information exchange adds value as well as dealing with issues of safety and security.

**Links to presentations and speeches by speakers, and other documentation relevant for the workshop:**

<http://www.eskema.eu/defaultinfo.aspx?areaid=44&index=2>

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[http://ec.europa.eu/transport/maritime/index\\_en.htm](http://ec.europa.eu/transport/maritime/index_en.htm)