

## Proceedings - Euromind Dissemination Meeting - 22 april 2008

### Programme

1. Introduction to the EUROMIND project - *Mr. P. 't Hart, Holland Shipbuilding*
2. Usage of CAD Techniques - *Mr. Smidt, Nordseewerke*
3. Best practices found in Euromind - *Mr. M. Ulrich, Normstelle für Schiffs- und Meerestechnik (NSMT)*
4. Demonstration of Production Process improvement - *Mr. G. van der Bles, Delft University of Technology*
5. Industry case - *Mr. L. van Ruiven, Croon Electrotechniek*
6. Cost benefit analysis - *Mr. M. Kuijer, Bucomar*

### Introduction

Mr. Pieter 't Hart of the Dutch shipbuilders' association VNSI introduces the meeting, in which the first results of the Euromind project are presented. Euromind is about standardization, or better said about interoperability. The European Commission has recognized that when aiming at interoperability we need open software and standardization, an approach that can help achieve competitive advantage as well.

The objective of Euromind is: Improving the European Shipbuilding Supply Chain Collaboration by connecting Digital Systems via Open Standards.

Mr. 't Hart refers to the European e-business Report of 2007 (<http://www.ebusiness-watch.org>) by the European Commission, that deals with the status of e-business in Europe. The report contains a section on standardization in shipbuilding. In 10 sectors several fields of ICT application and e-business have been investigated by consultants. Shipbuilding ends second to last in the e-business watch!

Yards are struggling with e-business. Smaller companies tend to be more involved in standardization than larger companies. Mr. 't Hart emphasizes that if we do not achieve interoperability between systems and standards we cannot grow in E-business. Interoperability involves the shipbuilding supply- and production chain as a whole.

*"It is important to get insight in business processes to know what information can be exchanged."*

To become interoperable, various kinds of data will be exchanged, and standards need to be aligned:

1. Business Processes
2. Data elements
3. Classification
4. Communication protocols - facilitate the exchange of information without loss of information
5. Network - technical communication protocols, e.g. internet protocols

### Usage of CAD Techniques, Mr. Smidt, Nordseewerke

*"We need a good solution to handle component information for a ship, how can we import this information on the yard from suppliers. It is hard to arrange the available information!"*

Mr. Smidt of Nordseewerke explains the general usage of CAD techniques and NET-S. In shipbuilding, at every stage input from the customer is used. The customer in the shipbuilding process is different from customer goods like cars: shipbuilding is a design to order process which involves more customer interaction. Here we talk about product configuration and product development. Control of the communication flow is needed for free communication. Mr. Smidt explains that the concept of a common product model can be valuable in standardization. This common product model must not be seen as an operational model; it may not be usable because certain production information will be missing. This product model should be seen as a library which can be used to derive information, e.g. for

sales. Information can be used in various systems. The same rules are applied to different ships, however product structures may vary.

### **Best Practices found in Euromind, Mr. Ullrich, NSMT**

*"What kind of data does a manufacturer need from a supplier to work with their models?"*

Mr. Malte Ullrich of NSMT presents the content of an e-business standard for shipbuilding industry. In the development of the design process of vessels, computer systems and digital information get more and more important. The design evolves from handwritten designs, to computer-based but printed designs, to fully computer-based designs – and even further: models form currently the highest stage in design.

Current state of digital businesses:

1. Analog - handwritten designs – 20% of businesses
2. Digital/Analog - Standardized information flow – 60% of businesses
3. Digital – 15% of businesses (e.g. IGES, STEP)
4. Model driven – 5% of businesses

It is foreseen that in the ICT an ERP and PDM system play a central role, while simulation- and CAD drawing systems interconnect to these systems. Euromind, a project that brings standards and reference models together, considers the reference models of ETIM, E-Class, and IFC being the most promising ones.

### **Demonstration of Production Process Improvement, Mr. G. van der Bles, Delft University of Technology**

*"Our goal is to specify a better engineering package, that improves the production process for a change-not the engineering process."*

In the production process, Product data is exchanged between suppliers and yards. This involves communication between PDM systems of the yard and its supplier (PDM to PDM communication). TU Delft performed a pilot on data exchange with a HVAC supplier (heating, ventilation, airconditioning) and a shipyard. For demonstration purposes a central database was developed for exchange (called Unitbase), which contains only the information used in the exchange. In this way, the yard and supplier kept their own systems, and exchanged only the information (using Excel sheets).

*"In exchange, the shipyard and supplier only choose little information for exchange - because the shipyard does not need all data that the supplier can deliver and vice versa. In the exchange process, it is also important to know when data has changed – so the supplier or yard can accept or reject the change, using building constraints."*

First step is making it possible to exchange data; for the demonstrator of Unitbase information was analyzed and marked for exchange. Second is to know when data has changed. This change management (which includes agreement and disagreement to proposals) should be tracked as well.

### **Industry Case, Mr. Leo van Ruijven, Croon Electrotechniek**

*"ISO 15288 is actually a standard with which an idea like unitbase can actually be implemented!"*

Mr. van Ruijven presents a business case in which information management is performed with the standards ISO 15926 (data integration standard) and ISO 15288 (Systems Engineering) on the technical

installations of the Coentunnel project, from design to built, finance and maintenance. ISO 15926 is a new step in defining, store and retrieve information in an explicit, unambiguous, traceable way. Goal of the ISO 15288 standard is to have a controlled process (on top of data integration).

"Not every engineer will be accepting this approach. And, you have to draw a roadmap: can we handle this in our organization, because engineers are not used to work with explicit information. Progress in standardization is mainly defined by the culture of the organization."

In addition to the data integration standard of ISO 15926, Croon uses Generic Engineering Language (Gellish). For exchange of data, XML/RDF/OWL (web ontology language) are foreseen to be used. Currently, all project partners use the same database/system, so this exchange function is not in use (yet).

"Conclusion: standards are available, don't start an activity to define a new standard!"

**Cost Benefit analysis, Mr. Michel Kuijjer, Bucomar**

*"An attempt to quantify the costs and revenues of the application of standards for digital product data exchange in the shipbuilding industry"*

Mr. Kuyer presents a calculation of benefits at macro-economical level, supposing we implement standards in shipbuilding industry. It is foreseen that standardization implies 4 years of investments without or with little return on investment; after that, financial benefits may raise to 30% or even higher.