



Vasco Da Gama
Training for Greener
and Safer Maritime Transport



Work Package 2
“Training – Maritime Simulator”
Core Group meeting
Towards new standards of communication
between bridge and machine simulators

20th April 2015

CPMR offices – 14 Rond-point Schuman - Brussels (Belgium)

MINUTES

PARTICIPANTS

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Patrick ANVROIN, CPMR Director, Vasco-Da-Gama project coordinator, welcomed participants and opened the meeting.

SESSION 1: STATE OF THE ART OF WP2 IMPLEMENTATION

14.10 – 14.30

Giuseppe SCIACCA, Vasco-Da-Gama project manager, presented a general overview of the project and its main technical and political objectives ([see powerpoint presentation](#)).

Jean-Pierre CLOSTERMANN, Ecole Nationale Supérieure Maritime (ENSM, FR) and **Pär KARLSSON**, Kalmar Maritime Academy (SE) presented the main outcomes of the operating experience which have taken place in Kalmar from 25th to 27th March 2015. A special attention is paid to the following main conclusions and recommendations:

- Students stressed the importance of having access to training on combined scenarios deck-engine. European Union and Regions should help METs and simulators manufacturers to enhance this specific type of training and education;
- The IMO and STCW requested the implementation of training sessions on resource management. The combined scenario deck-engine fully meets the objective of enhancing resource management. It trains different crews/teams (e.g. one operating in the deck room and one operating in the engine room) to work together reproducing “real conditions”;
- Standardisation of transfer of communication between simulators made by different manufacturers still remains a barrier;
- It is important to provide simulator manufacturers with ad-hoc guidelines dealing with the basic conditions (software and hardware) requested by METs to run a combined scenario.

SESSION 2: TOWARDS INNOVATIVE SOLUTIONS FOR COMBINED SIMULATION

15.15 – 15.30

Jean-Pierre CLOSTERMANN presented the new premises of the ENSM in Le Havre ([see powerpoint presentation](#)). He explained the internal procedure followed by ENSM to conceive and select the final configuration of its new simulation plant (Combined Bridge/Engine-room). He pointed out that at the beginning of its technical reflection the ENSM was interested in the option: Select the best bridge simulator manufacturer, the best engine-room simulator manufacturer, and have them work together to obtain the best simulator. He then pointed out the complexity of the interface between the bridge and the machine simulator.

Participants showed a unanimous interest in a full-mission combined scenario deck-engine. However they stressed that many challenges should be addressed to make this exercise operational in all EU METs. A non-exhaustive list of such challenges is available here below:



- Identification of a set of general requirements/ “basic characteristics” (e.g. type of vessel and engine, contents of scenario, type of exercise etc...) for the combined scenario;
- running a combined scenario deck-machine is very expensive considering the software, hardware and human resources involved.
- there is a lack of standards for data transmission between deck simulators and engine simulators
- Even if made by the same manufacturer, a combined Bridge-engine-room simulator is a very heavy computer system, sometimes tricky to run properly...
- ...

16.30 -17.15 STORY TELLING: WHAT ARE THE MAIN CHALLENGES AND OPPORTUNITIES IN DEVELOPPING STANDARDS OF COMUNICATION?

Stefan KLUJ presented UNITEST and its hardware and software solutions for a full mission combined simulator deck-engine ([see powerpoint presentation](#))

Martin STADEN presented Rheinmetall Electronics GmbH and its hardware and software solutions for a full mission combined simulator deck-engine ([see powerpoint presentation](#))

Leif PENTTI HALVORSEN, presented Kongsberg Maritime Simulation and its hardware and software solutions for a full mission combined simulator deck-engine ([see powerpoint presentation](#))

17.15 - 18.00 BRAINSTORMING 1. This first brainstorming session aims to:

- Understand in what cases/training conditions a combined bridge/engine room simulation should be set up and run;
- Identify and classify the main current pedagogic objectives beyond a combined bridge/engine simulation;
- Identify “new” potential pedagogic objectives;
- Provide simulators manufacturers with input about new “technical” demands about combined bridge/machine simulation.

Brief summary of discussions and conclusions

Considering the cost of such scenarii, combined simulation can be only an additional training objective, at management level. It will not replace the bulk of simulation training as it is practiced today.

The main benefit is Marine Resource Management (MRM) and crisis management training.

It can really be an asset when used for reproducing real cases.

The communication is between a bridge and an engine-room in the same MET. Communication between bridge and engine-room situated in distant METs is not considered relevant here.

18.00 – 18.45 **BRAINSTORMING 2:** This second brainstorming session aims to:

- Debate and eventually identify what types of simulators should be integrated in official METs training supplies (e.g. board monitoring systems for eco-driving, safety information from monitors, stress sensors, etc...)
- Identify what are the main teaching objectives beyond the integration of such simulators in the educational offer;
- Provide simulators manufacturers with input about technical demands about “new types” of simulators (e.g. software, hardware, etc...);

Brief summary of discussions and conclusions

Depending on the manufacturers’ capabilities, many different types of simulators can be interfaced.

Considering the restrictions mentioned in Brainstorming 1, it is wise not to be over-ambitious and to clearly identify the teaching objectives to be met. Once again, the main added value by interfacing simulators, whatever they are, in order to simulate a complex system, seems to concern human factors and non-technical skills.

18.45 – 19.30 **BRAINSTORMING 3:** This third brainstorming session aims to:

- Understand what level of communication (draft classification) would be needed to achieve each of the training objectives identified in the previous sessions;
- Involve simulators manufacturers and certification companies in the technical debate about new types of simulators and/or training

Brief summary of discussions and conclusions

Two levels of communication were identified:

When the objective is to train technical skills, especially in the engine-room, the level of interfacing is rather high, with a lot of parameters to be taken into account in order to give the engineers a technically realistic situation. In such a scenario, the emphasis is on the engineers’ training.

When the objective is to train MRM, including maritime actors away from the vessel (VTS, shore Authorities, shipowners, etc.), a less sophisticated interfacing is needed between bridge and ER simulators. What is needed is the realistic replication of means of communication, intercom, VHF, SMDSM, UHF between bridge and fore-deck, etc.. In that case, even if the engine-room is needed to make the situation more complex to manage, the emphasis is put on the bridge teamwork.

Lars MARKUSSON (DNV GL) said that a standard with different levels A, B, C (like the present classification system for simulators) can be considered.

Such a standard of data transmission between bridge and ER simulators would set objectives (“should at least include”) in terms of functionalities, not parameters.

Manufacturers and the DNV agree that such a standard will exist, sooner or later. All stakeholders are ready to work together and promote such a standard, but the initial impulse should come from the METs. This gives room for the possible development of a new project in the future addressing this problematic, supported by the EU.

19.30 End of the meeting

