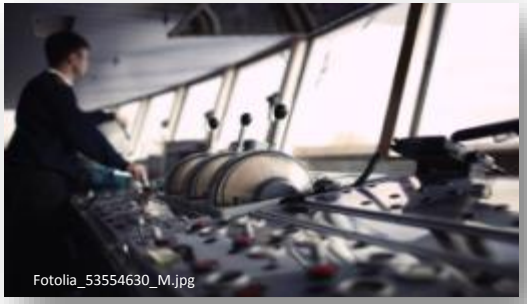

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Work Package 2

"Training – Maritime Simulator"

Core Group meeting

Towards new standards of communication between bridge and machine simulators

20th April 2015 - Brussels

This project is co-funded by the European Union

SESSION 2:

TOWARDS INNOVATIVE SOLUTIONS FOR COMBINED SIMULATION

This project is co-funded by the European Union

TOWARDS A NEW COMBINED BRIDGE – ENGINE-ROOM SIMULATOR

WHAT KIND OF SPECIFICATIONS MUST BE TAKEN ON BOARD ?

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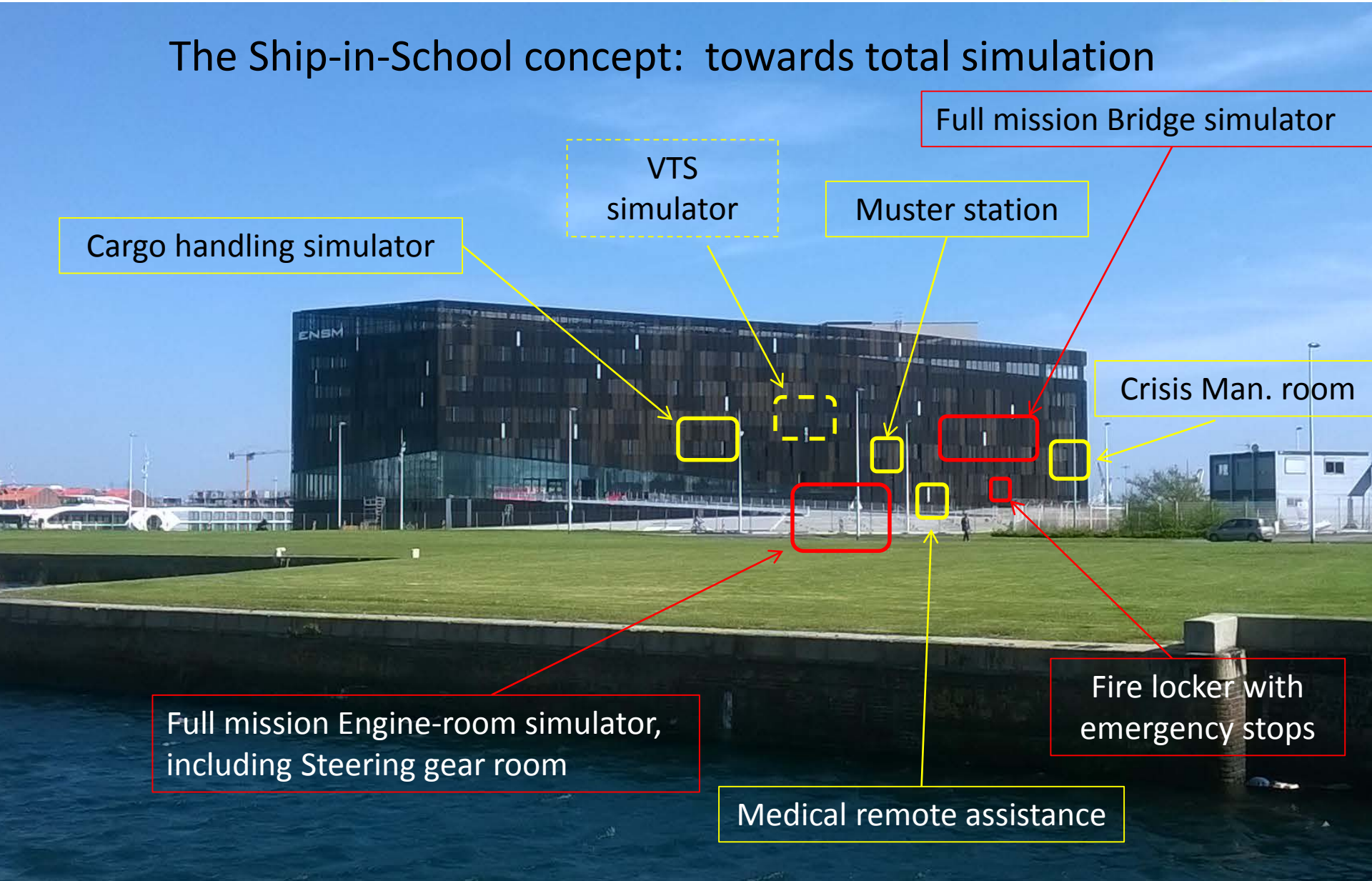
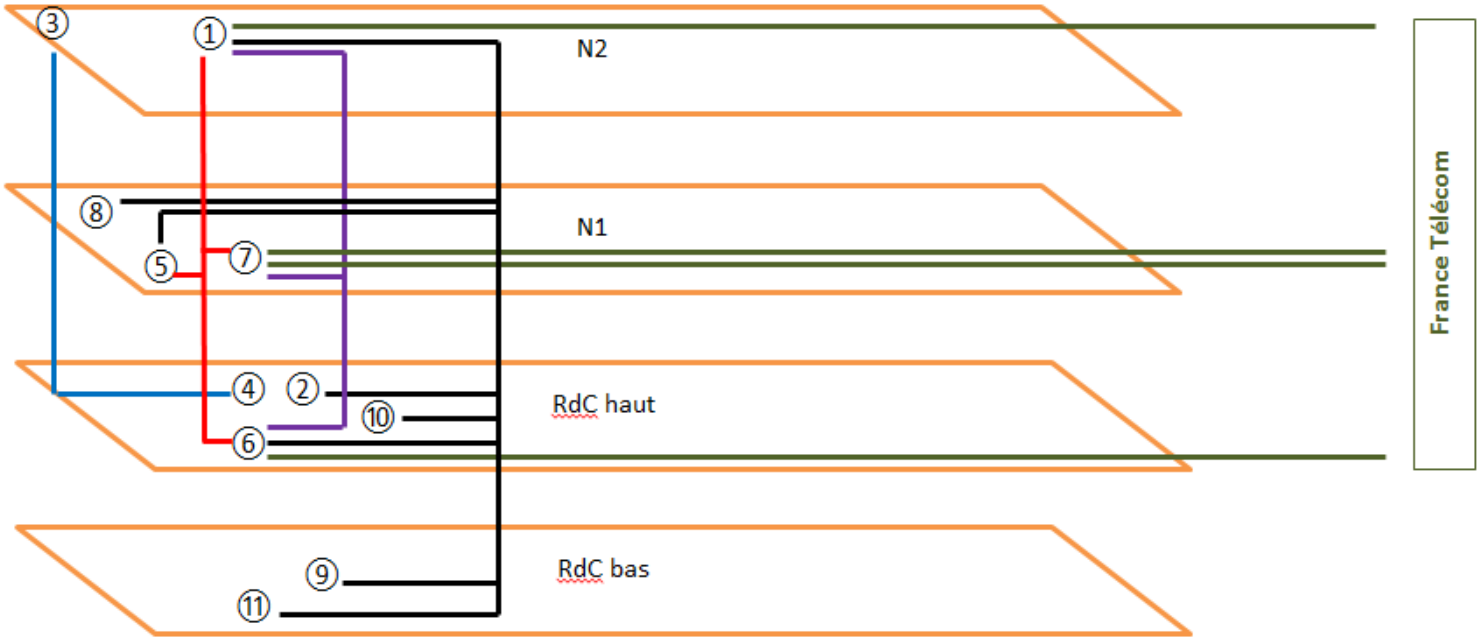
The Ship-in-School concept: towards total simulation



Communications are paramount

Niveaux du ship-in-School et emplacement des prises téléphoniques et éthernet



Réseau éthernet séparé permettant la connection de PC symbolisant les INMARSAT C et la visio pour consultation télémédicale

Liaison téléphonique poste instructeur passerelle – poste instructeur machine

Liaison téléphonique symbolisant les INMARSAT B

Liaison téléphonique bord

Liaison téléphonique avec accès au réseau France-Télécom

What data transmission ?

- For what purpose ?
  (brainstorming 1)
- With what level of integration ?
  (brainstorming 3)

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Training for Gree

Dynamic data exchange (sample)

ID	Sent by ECR to NAV	UNITS	Sent by NAV to ECR	UNITS	COMMENTS
	Propulsion				
1	Answer: Port Propeller RPM	RPM	Request: Port Propeller Torque	Nm	NAV provides ECR with a Torque request expressed in Nm. ECR answers the request by providing RPM to NAV. If there is limited power, the RPM will be limited. NAV will provide ECR with a negative torque in case of a request for reverse power.
2	Answer: Stbd Propeller RPM	RPM	Request: Stbd Propeller Torque	Nm	Same comment as above
3	Answer: Port Propeller Power	kW	Request: Port Power Percent	-100% +100%	NAV provides ECR with a power request expressed in % (as per the lever position, full ahead would be 100%, full astern would be -100%). ECR answers the request by providing power in KW to NAV.
4	Answer: Stbd Propeller Power	kW	Request: Stbd Requested Power Percent	-100% +100%	Same comment as above
5	Answer: Port Azimuth Rotation	0-360 (0 if no azipod on vessel)	Request: Port Azimuth Rotation	0-360 (0 if no azipod on vessel)	If the propulsion comes from an azipod, NAV sends rotation request, ECR provides rotation angle achieved
6	Answer: Stbd Azimuth Rotation	0-360 (0 if no azipod on vessel)	Request: Stbd Azimuth Rotation	0-360 (0 if no azipod on vessel)	Same comment as above
	Thrusters				
7	Answer: Bow Thruster 1 RPM	RPM	Request: Bow Thruster 1 Torque	Nm	NAV provides requested torque, ECR provides RPM
	Answer:		Request:		

Static data exchange (sample)

ID	Sent by ECR to NAV	UNITS	Sent by NAV to ECR	UNITS	COMMENTS
	Emergency Engine telegraph				
21	Port "Full Ahead" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Full Ahead Button	Int (1 - Pressed, 0 - Released)	NAV provides ECR with an integer if button is pressed or released. ECR acts on the input and sends back an integer for the state of the telegraph light (off/on/flashing). Flashing shows a discordance between state requested by NAV and actual state of device. Flashing is coupled with an audio signal (bell, buzzer, etc.)
22	Port "Half Ahead" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Half Ahead Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
23	Port "Slow Ahead" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Slow Ahead Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
24	Port "Dead Slow Ahead" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Dead Slow Ahead Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
25	Port "Stop" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Stop Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
26	Port "Dead Slow Astern" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Dead Slow Astern Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
27	Port "Slow Astern" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Slow Astern Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
28	Port "Half Astern" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Half Astern Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
29	Port "Full Astern" Light	Int (0 - Off, 1 - On, 2 - Flashing)	Port Full Astern Button	Int (1 - Pressed, 0 - Released)	Same comment as above.
	Port "Emergency	Int (0 - Off, 1 -	Emergency	Int (1 -	

What kind of bidder ?

A single manufacturer (1 offer) ?

3 offers (1 for the bridge, 1 for the E/R, 1 for the integration) ?

A consortium (1 offer for the lot) ?
Who should be the leader ?

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WHO IS RESPONSIBLE FOR WHAT?

How To Share Responsibility Between Involved Actors?

- During the installation phase
- During the working phase (10 years ?)
- For the maintenance
- For the updating

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STORY TELLING:

WHAT ARE THE MAIN CHALLENGES AND OPPORTUNITIES IN DEVELOPING STANDARDS OF COMMUNICATION?

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BRAINSTORMING 1: COMBINED SCENARIO

- **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**

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Training objectives ?

Level of training ?

When should it take place ?

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BRAINSTORMING 2: TOTAL SIMULATION

- 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…)

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What simulators could it include ?

Should it include also the school building itself ?

One stiff block, or bits & pieces spread all over the place ?

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BRAINSTORMING 3: INTEGRATION

- 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

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What level of communication ?

What level of data transmission ?

At what cost ?

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THANK YOU

FOR YOUR ATTENTION

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