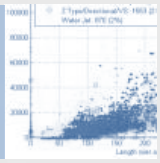
Intuitive operation and pilot training when using marine azimuthing control devices

AZIPILOT

Presentation of work



1

Conference style, formal presentation of work from each of the four AZIPILOT work packages, with a chance to report findings of completed tasks.

Simulation Facilities tour

2

An excellent chance to have firsthand experience of azimuthing control devices, in a full simulation environment.

Expert discussion

3

An open discussion of *'hot topics'* detected in the course of the project, together with feedback from experts.

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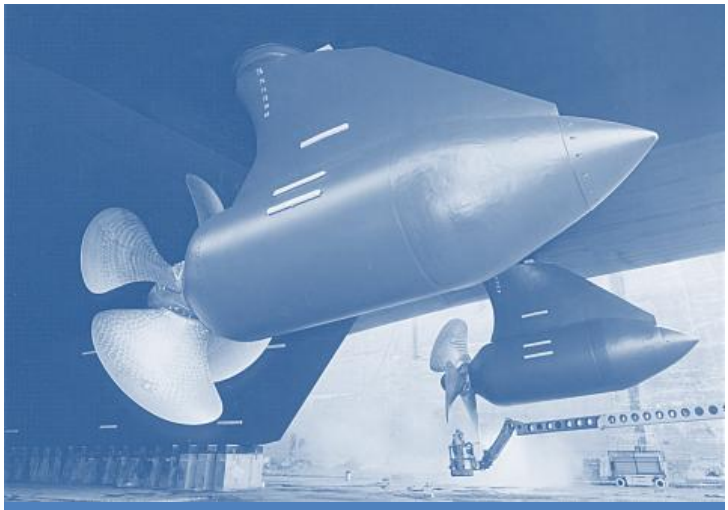
Conference & Workshop

The AZIPILOT project conference and workshop, was successfully held in Rotterdam on 24th February 2011. The aim of the day was to involve leading experts in azimuthing control devices (ACDs) with the wider audience to help increase awareness about azimuthing technology.

The idea behind the workshop was to disseminate knowledge from the AZIPILOT project to a wider audience, and a total of 64 people attended, including 49 not directly involved with the project. The conference/workshop was hosted by STC at their premises in Rotterdam, making use of this excellent central European location and giving delegates the opportunity to visit the simulator facilities on site.

The agenda was developed in order to allow maximum time for audience participation and feedback. The morning's presentations were kicked off with a welcome to all attendees by Jakob Pinkster (STC-Group), the host of this event.



Work package presentation

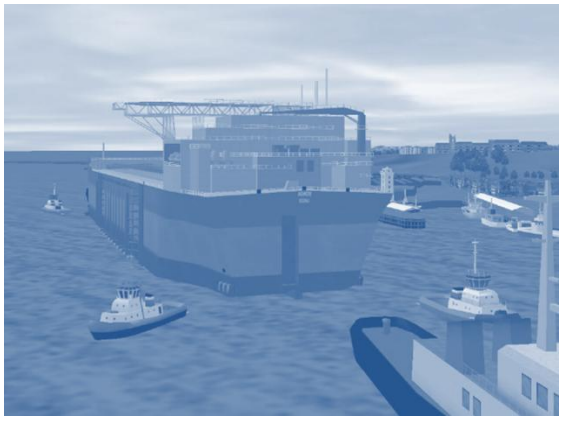
After a short introduction by the host, the morning session officially began with a presentation by the AZIPILOT project co-ordinator Michael Woodward (Newcastle University), outlining in detail the aims and objectives of the project, its structure, and the composition and competencies of the project partners.

Erland Wilske (SSPA) next gave a presentation on the work of Work Package (WP) 1 which looks at Hydrodynamic Modelling. He described the main activities and findings of the completed tasks so far and highlighted research surrounding the issues of speed-power prediction, prediction of structural load and manoeuvring predictions.

Marielle Labrosse (Mettle), representing WP2 (Marine Simulation), showed a presentation summarising the achievements of WP2, concluding with the aims of the ongoing activities of WP2, generating recommendations for ongoing best-practice. She also described the project's vision for the future landscape of research and development within the field of Marine Simulation.

Jakob Pinkster (STC) returned to describe the efforts of WP3 in the field of Maritime Training. The presentation discussed the style of maritime training for ACDs, including who receives the training and what operational scenarios can be included, for example, overloading conditions.

The presentation also discussed other areas of research including manned model tests and data collected in the course of the activities performed within this Work package.



WP3 presentation also including a simulation

Finally, the WP4 (Operational Practice) leader, Gareth Rees (UKMPA) examined the existing recommendations and criteria, surrounding ACDs. He also presented a review of existing operational practice, and a summary of the limitations. The outcomes concerning the work performed, highlighting feelings and considerations from users of ACD devices.

All the presentations and videos shown are available to download at: http://pilot.ncl.ac.uk

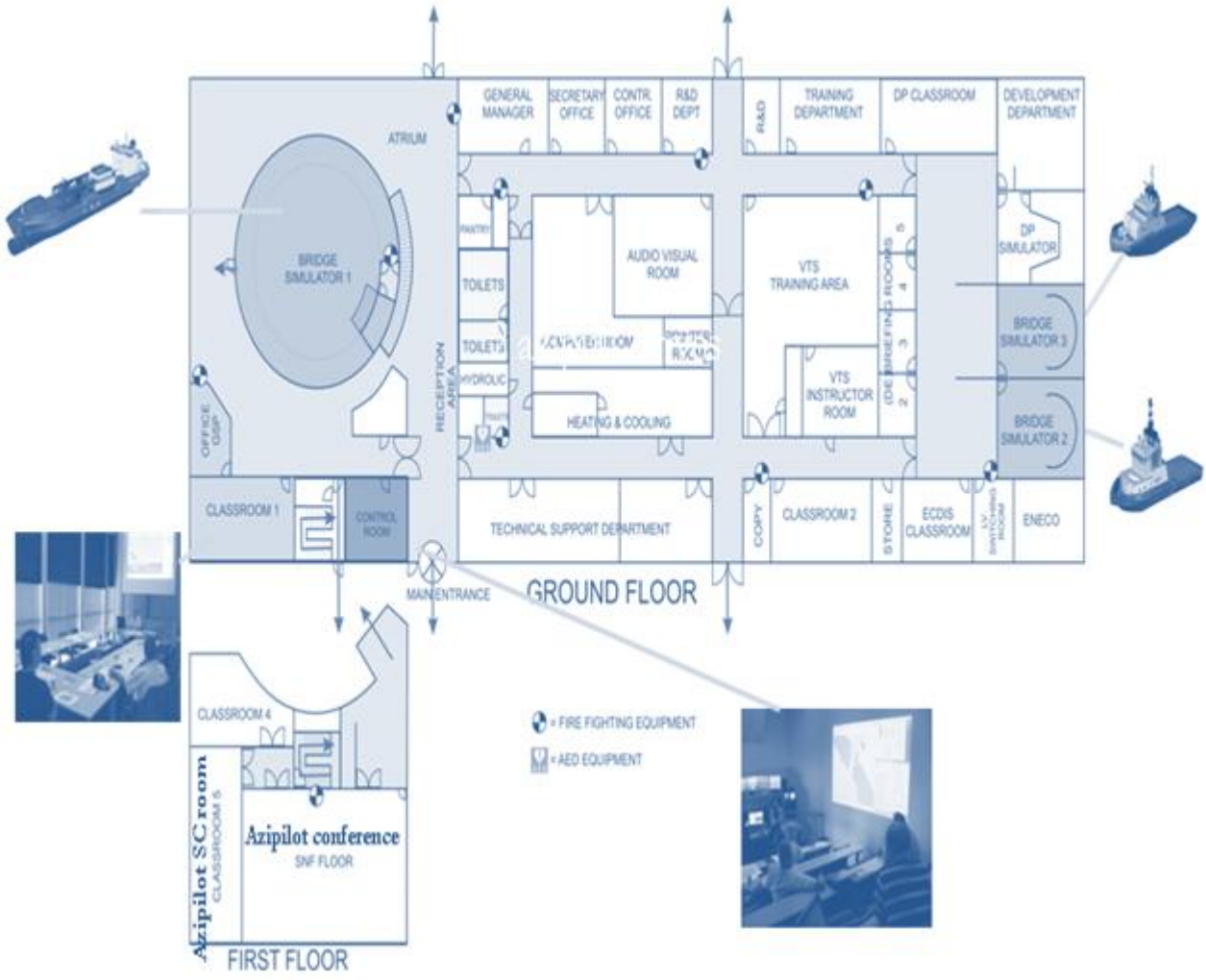
Visit to the STC Simulation facilities.

Next on the agenda was an expert guided tour of STCs onsite simulation facilities in small groups. The groups were introduced in each room to the type of simulation and the control room where all parameters (type of ship, location, visibility, density of traffic, etc.) are set to run the simulation.

The tour included visits to the following Full Mission Bridges (FMB):

- Full mission bridge 1 (with LNG tanker/2 azipull drives),
- Full mission bridge 2 (with ASD tug boat/2 azipush drives)

At both full mission bridge simulations it was possible for a number of the delegates to sail either an LNG tanker or a tug boat, both with ACD propulsion. This was an excellent chance for many of those attending to have firsthand experience of handling an ACD. A number of experienced ACD pilots also undertook the chance to use the simulator and found the models to be very realistic.



A floor plan of the STC Simulation facilities.

Expert discussion

The afternoon was an opportunity to discuss further on some of the *'hot topics'* detected in the course of the project. The session was chaired by Nigel Allen (UKMPA), a representative of the project partner and Pilot in Southampton. He was supported by the following experts:

- Aidan Fleming: (Dublin Port Company);
- Paul O'Regan: (Port of Cork);
- Leif Carlsson: (Capt. in Bröstrom and also partner of the AZIPILOT project);
- Thomas Lindner: (Hamburg Port Services).

This session started with a video of an interview to Capt. Arnolf Remo. In the short film, the Captain briefly describes some ACD instruments and their functions; he also described how the ACD are used for certain types of manoeuvres. In particular he highlighted the situation, of entrance into port in the presence of wind; in the interview he explained how he deals with the wind effect by properly using pods.

Nigel Allen then gave a short presentation of the most interesting and disputed typical themes concerning ACD's these are as follows:

- Terminology used (usually very different according to the Company);
- Power reduction;
- Pod rotation speed;
- DP – Dynamic Positioning;
- Pod RPM blanking at various angles;
- Pod seal and bearing problems.

The workshop was an excellent opportunity for both those who did not have experience of ACD to better understand the operating procedure, and those operating vessels with ACD to ask questions to other users of ACD's. Overall the workshop promoted greater awareness of key differences between ACD and conventional propulsion systems.

Topics discussed

1. "How do we train Ship Masters? And pilots?"
2. "How can we get the industry to standardise terminology for all ACD vessels?"
3. "Do we need controls with feedback, if we attempt something (operationally) undesirable?"
4. "Are verbal commands for pods (especially multi-pods) just too complicated?"
5. "Do ACD vessels require specialist certificated training, as for Dynamic Positioning?"
6. "How can a Master know that a Pilot is competent in handling ACDs?"
7. "How can a Pilot know that a Master is competent in handling ACDs?"
8. "What makes ACD vessels different?"
9. "Do ACD vessels require a different safe operating envelope and, if so, what criteria/parameters would determine this envelope?"
10. "How do Port Authorities control the movement of ACD vessels in extreme weather?"
11. "How does an ACD vessel undertake a crash stop from high speed?"

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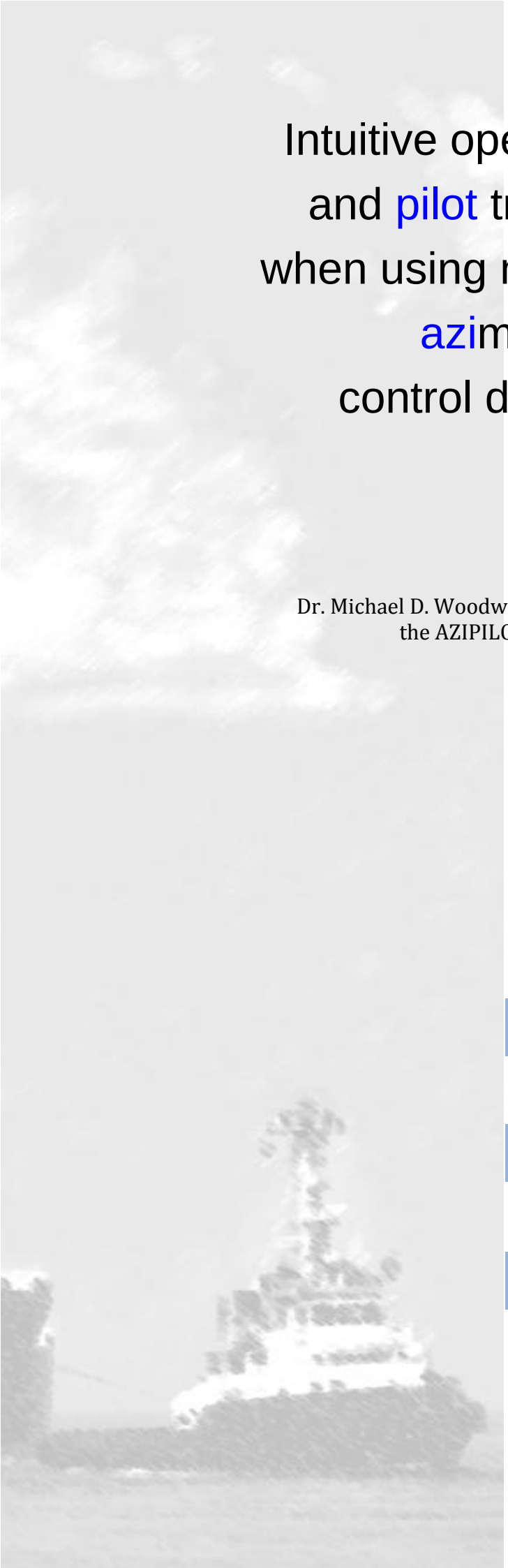

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