Programme

Development of Unmanned Surface Vessels
Progress for autonomous air and land vehicles as well as homeland security issues for ports revive developments for boat-sized unmanned surface vehicles (marine robots). A survey of various such unmanned surface vessels developed will be presented and general technical challenges given. The development of the USV MMSV III at Veers will be described.

Modularisation of Ships
The presentation will provide examples of modularisation of ships for naval and civil applications. The initiatives around the world will be reviewed, including Affordability through Commonality; SMART System; MEKO Design Concept; MOPCO Concept; French-Italian FREMM; TNSW Modular Engine Room; Modular Deckhouse; Ulstein Modular Design Strategy and Modular Ship Hull Design.

Cyberships - Artificial Intelligence for Crew reduction
Artificial Intelligence technologies are discussed particularly for combatants, with possible automation of nautical tasks. Commercial expert systems for automatic navigation including collision and grounding avoidance are on the market. Natural language interfaces and gestures allow better man-machine interaction. Machine vision is seen as a frontier technology to enable further automation. Humanoid robots appear rather useless for navy ship operation, but micro-robots and simple fixed robots may be used for assorted tasks. Virtual reality is predominantly attractive as training tool. Transponders now allow automatic ship-ship and ship-shore communication, but may also be implanted to humans as a convenient key to interact with computers.

The Speaker
Dr Volker Bertram is Professor at ENSIETA, Brest/France. He was appointed as Extraordinary Professor for fluid mechanics at Stellenbosch University in 2005. He has received a number of scholarships and awards, including Fulbright scholarship (1993); Scholarship of Studienstiftung des deutschen Volkes (1989); Kurt-Hartwig-Siemers award for best PhD thesis of Hamburg (1991); Silver medal of Werner-von-Siemens-Stiftung for PhD thesis (1991). 2nd Prize in International Competition "Futuristic Ship Design for Short Sea Shipping" (1994) and Silver Medal of Kyushu University (1995)

Professor Bertram has published more than 200 papers, largely on ship design, ship hydrodynamics, IT for ships, environmental aspects of ships. He has published two books: Ship Design (with Prof. Schneekluth in 1998) and Ship Hydrodynamics (2000). Professor Bertram is Editor of Ship Technology Research/Schifstechnik; Co-Editor of Journal Marine Science and Technology, and Journal of Engineering for the Maritime Environment.

Registration is free, but pre-registration is requested.
To register, please email your name and organisation to: evc julia@nus.edu.sg by 3 November 2006. Alternatively, you may contact Ms Juliana at Tel: 6516 2151.

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