

SINAVY<sup>CIS</sup> OBTS/LBTS is the intelligent solution for hands-on automation systems training of ship crews. The original automation software is used for the training. Mathematic models realistically simulate physical processes.

The Human Machine Interface for training sessions is identical to the actual automation system on board. As a result, it is possible to precisely simulate functionality and system behavior during the training. The training system can be utilized on board (OBTS: On Board Training System) and on shore (LBTS: Land Based Training System).

### SINAVY<sup>CIS</sup> OBTS/LBTS – commanding ever more complex systems

In the marine industry, machines, devices and processes are also becoming increasingly more complex and difficult to understand as a result of constant technological progress. Today, automation systems support the crew in handling several complex processes. In order to safely utilize and operate the possibilities of these systems, however, operators require periodic training.



### Three good reasons for SINAVY<sup>CIS</sup> OBTS/LBTS

- Training of the personnel during harbor and high operations
- Training system constantly available to train realistic situations, and assists in lowering training costs
- Extremely life-like simulation of processes and system behavior, capable of being put directly into practice

## SINAVY<sup>CIS</sup> OBTS/LBTS

Realistic training on board and on shore

Marine Solutions

**SIEMENS**

## SINAVY<sup>CIS</sup> OBTS/LBTS – our solution in detail

SINAVY<sup>CIS</sup> OBTS/LBTS enables the training of the navigation crew with original systems on board the vessel, and while operations are in progress. Physically removed from the actual process, the crew can be trained on the automation system, and familiarized with the control functions of the system. In the process, SINAVY<sup>CIS</sup> OBTS/LBTS is able to very quickly switch between actual operations and training mode.

During training, the personnel utilizes the original user interface from actual operations. All actions are thus practiced in the same way that they will be put into practice after the training in reality.

Permanent training facilities on shore, e.g. in the naval academies, can be configured with the same automation/simulation software, and set-up with training center PCs. Thereby, the same functions as on board can be reproduced. Future ship crews will be able to prepare themselves in advance for their automation tasks on board.

## SINAVY<sup>CIS</sup> – Completely Integrated Solutions for the Navy

As a comprehensive specific solution for naval vessels, our SINAVY<sup>CIS</sup> product family integrates all the products and services you need for sustained maximization of your ship's performance.

For each particular task, a solution has been defined that

- **horizontally** improves all of your ship's operations
- **vertically** integrates the ship's information and security management end-to-end, helping to make better-founded decisions
- and, at the same time, is designed for optimum vessel-specific maintenance and comes with assured further development **over the whole life cycle**.

Due to this unique combination of horizontal, vertical and life cycle dimensions, our solutions all carry the genes of an exhaustive and sustained plant productivity in their very core.

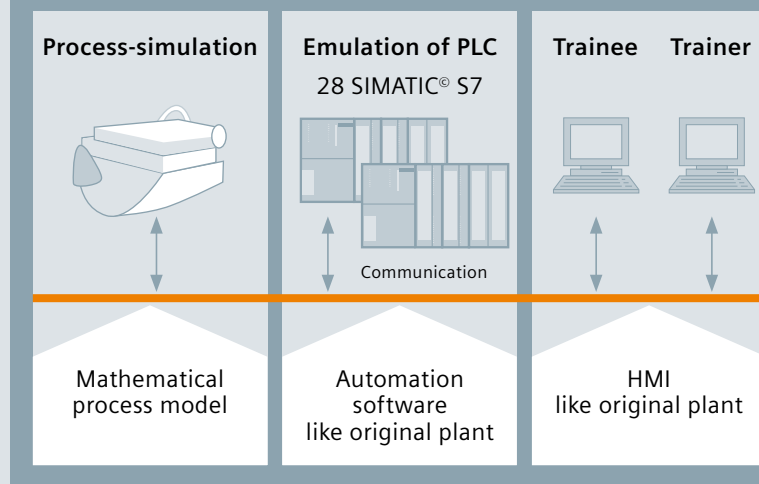
**For More Efficiency. More Performance. More Power.  
Completely Integrated Solutions from Siemens.**

Siemens AG  
Industry Sector  
Industry Solutions Division  
Marine Solutions  
P.O. Box 105609  
20099 Hamburg, Germany

E-mail: [marine@siemens.com](mailto:marine@siemens.com)

©Siemens AG 2009  
All rights reserved  
Order No.: E10001-P19-A11-V4-7600  
Printed in Germany  
Dispo No.: 16600 K No.: 37306  
**11XXXXX C-IP SMA520M08 PA 05091.**  
Subject to change without prior notice

## Training-simulator



## Always close to the real thing

For the training, the process control software utilized on board for programmable controls such as SIMATIC® S7 is emulated on a PC (SoftPLC), while SIMIT® simulates the individual subsystems and the electronic components using mathematical models. As a result, it is possible to emulate the behavior of these systems in various operational situations very realistically.

The entire drive chain consisting of the diesel and/or the gas turbine, the gearing, the clutch and the propeller are simulated for the propulsion system.

In addition to the diesel generator, the electrical system comprises the main network including the switchgear, the shore connection, the transfer switches and the generator circuit breaker.

In addition, ship systems such as the Fuel Transfer System, the Fuel Consumption System, the Fresh Water System and the Sea Water Fire Fighting System are also integrated.

Special instructor functions support the training process. Therefore, it is possible to record training sessions and to analyze them with the trainees afterward. In addition, the instructor can precisely define and manipulate process states, simulate system failures and create entire training programs. With the help of remote control, the instructor can monitor the actions of the trainees and, if necessary, intervene to correct them.

SINAVY<sup>CIS</sup> is a trademark of Siemens AG.  
CIS = Completely Integrated Solutions

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.