MULTIPURPOSE ADVANCED NETWORKED TRAINING ARCHITECTURE
CETENA S.p.A., the Italian Ship Research Center, is a company within the FINCANTIERI Group dedicated to naval and maritime research and consultancy.

Since its foundation in 1962, CETENA has been involved in national and international research activities and has carried out research, consultancy and technical assistance for shipyards, shipowners, Navies and universities.

Cetena has improved its expertise in naval and maritime simulation cooperating with Navies, research institutes, shipyards and navigation system manufacturers providing them with analysis, design and development of virtual reality applications, technical / visual simulation and computer based training (CBT).

Production and services are an integral part of MANTA.

a FINCANTIERI company

FINCANTIERI is one of the world’s largest shipbuilding groups. It is world leader in cruise ship construction and a reference player in other sectors, from naval vessel to cruise ferries, from mega yachts to special high value-added vessels, ship repairs and conversions and offshore vessels.

Headquartered in Trieste, the Group has more than 20,000 employees, of whom 7,700 are in Italy, and 21 shipyards in four continents.

FINCANTIERI is a major western shipbuilder and the biggest in terms of diversification and presence in every high value-added sector.
MANTA is a resilient ecosystem of a suite of products in continuous evolution, catering to customer and market needs. COTS hardware and standard interfaces make the framework adaptable to any need and any future technological upgrades. It supports the latest VR HMI, articulated viewing systems, moving platforms and real devices integration fully satisfying customer requirements.

Integrated training

MANTA integrates different training methods and tools. Multi-domain symmetrical, asymmetrical and hybrid scenarios. Collaborative and competitive joint activities by training groups. Open integration protocols allow easy integration of third parties, devices and applications.

Application fields

Developed for military and civilian market in the fields of simulation, training and in the product value chain. Extremely effective in R&D as well as in the complete life cycle of the product.

- simulation and training
- port assessments
- test bed
- virtual prototyping
- product life cycle support
- human behaviour analysis
- risk assessment
- integrated system effectiveness testing
- definition and tuning of operative procedures
- planning and analysis of dangerous activities

Scalable and flexible

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Teamwork is the key word for MANTA.

The simulation architecture covers everything from large and crowded scenarios with joint operations among many entities controlled by human or artificial intelligence, to single unit operations involving vessel conduction, engine management, sub-systems and procedural training.

MANTA integrates different training methods and tools in a common scenario to meet advanced training needs, for task oriented team cooperation, coordination and human behaviour analysis in realistic stressful situations.
Operations

- Ship handling
- Usage of devices
- Search and Rescue (S.A.R.)
- Anti-piracy
- Anti-smuggling
- Harbour defence
- A2/AD
- Procedure training
- Tactical training
- Towing
- Replenishment at sea (RAS)
- Joint Operations
- Combat training
- Port assessment
- Simulation Based Design
- Mooring

Training Tools

- Full mission naval simulation
- Training manager
- Serious Games
- Computer Based Training (CBT)
- Tactical Naval Trainer
- Fast boat simulation
- Small arms firing simulation
- 3D Databases
- Unclassified Combat System
- Standard simulation protocols
- Virtual prototyping
- Communication systems
**Multipurpose Advanced Networked Training Architecture**

MANTA integrates the three main incremental simulation training models: computer based training, procedural training and real time simulation.

A modular suite, highly configurable and expandable with an open architecture providing easy integration with "real world" devices and interoperability with third-party simulators.

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**Training manager**

Training manager is a tool to follow users in the training path.
Command bridge simulator

From desktop to real scale mock-up bridge simulator.
Bridges designed for a range going from small boats to large ships.
Highly reconfigurable for simulating multiple ship types. Reusable for naval and maritime operational scenarios.
System configuration going from general purposes using simulated devices to specialized ones integrating real devices.
Ships realistic behaviour deriving from accurate algorithms specialized either for small boats or huge ships.
Precise interaction between the entities of the scenario.