

GMDSS SIMULATOR



PANGAEA R&D

polytech
Educational Systems

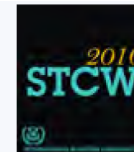




SYSTEM OVERVIEW

The **GMDSS Computer based simulation** stand-alone classroom solution, comprises of the interactive software **GMDSS simulation modules**, running on the **Instructor's station**, the **debriefing station** and the **trainee stations**.

- The Simulators are designed, built and installed in accordance with the requirements of IMO, STCW 2010 and SOLAS, while they are approved by DNV-GL to the highest Class A Standards. The provided content of the simulator, including its presentations, exercises and simulators, is adapted to the standard local educational curriculum, while following the above international training standard guidelines, recommendations and regulations.
- The simulations are designed and based on scientific and real existing equipment which apply to the marine communication technologies for creating a high precision GMDSS communication simulation and a variety of other modern Marine communication equipment.
- The simulator system is capable of supporting the full extent of training requirements and incorporates maximum design flexibility. It offers the facility of creating and enabling different simulation scenarios with incremental levels of complexity per case as students progress in the coursework.
- As part of the training process (theory delivery and simulation practice) assessment tests, take place in order to ensure that the students comprehend and perform the tasks correctly. This, step by step, process of performance evaluation covers the whole didactic content.
- The systems design offers a high degree of 2D and 3D visual effects and real marine com-equipment simulators which allows and makes available to the instructor and the trainees a digital state-of-the-art training facility for the Marine industry.
- The system offers the capability for Remote software downloading and remote version upgrading.





SYSTEM OVERVIEW

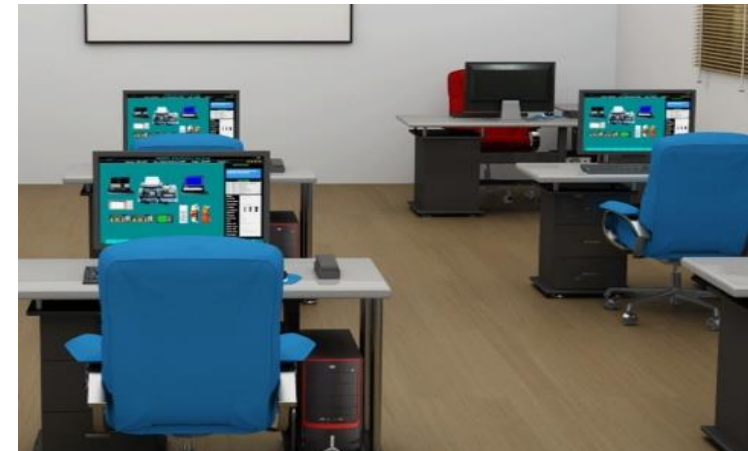
The simulator provides a highly realistic operating environment to trainees utilizing all modern digital technologies, developed and designed specifically for naval simulators and naval training and fully simulates equipment including **INMARSAT B, INMARSAT C, MF/HF with DSC, VHF with DSC, NBDP Telex over Radio, NAVTEX, EPIRB, SART and Portable Emergency VHF** as usually found onboard merchant vessels.

The **GMDSS Simulator** can be installed as a stand-alone simulator, in a multi-station classroom installation and may be completely integrated into any configuration of the ships' bridge simulator (marine and offshore) to offer a complete simulation of the communications and distress signaling equipment in an actual operating bridge.

GMDSS Simulator is a cost effective and user-friendly complete simulation solution, suitable for the training of navigators and personnel at various levels. The system has the capabilities and functionality to successfully conduct **GMDSS GOC Courses**.

The GMDSS Simulator provides an operating environment for the trainee, similar to that of operating a GMDSS station on a modern ship. It is suitable for the purpose of training navigators at all levels, including presentations, simulations, assessment tests and consolidation exercises, that cover all the modules for handling distress and routine communication at sea using satellite and terrestrial communication equipment.

The system has the capabilities and functionality to successfully conduct GMDSS, GOC Courses, as per the IMO Model Course 1.25.





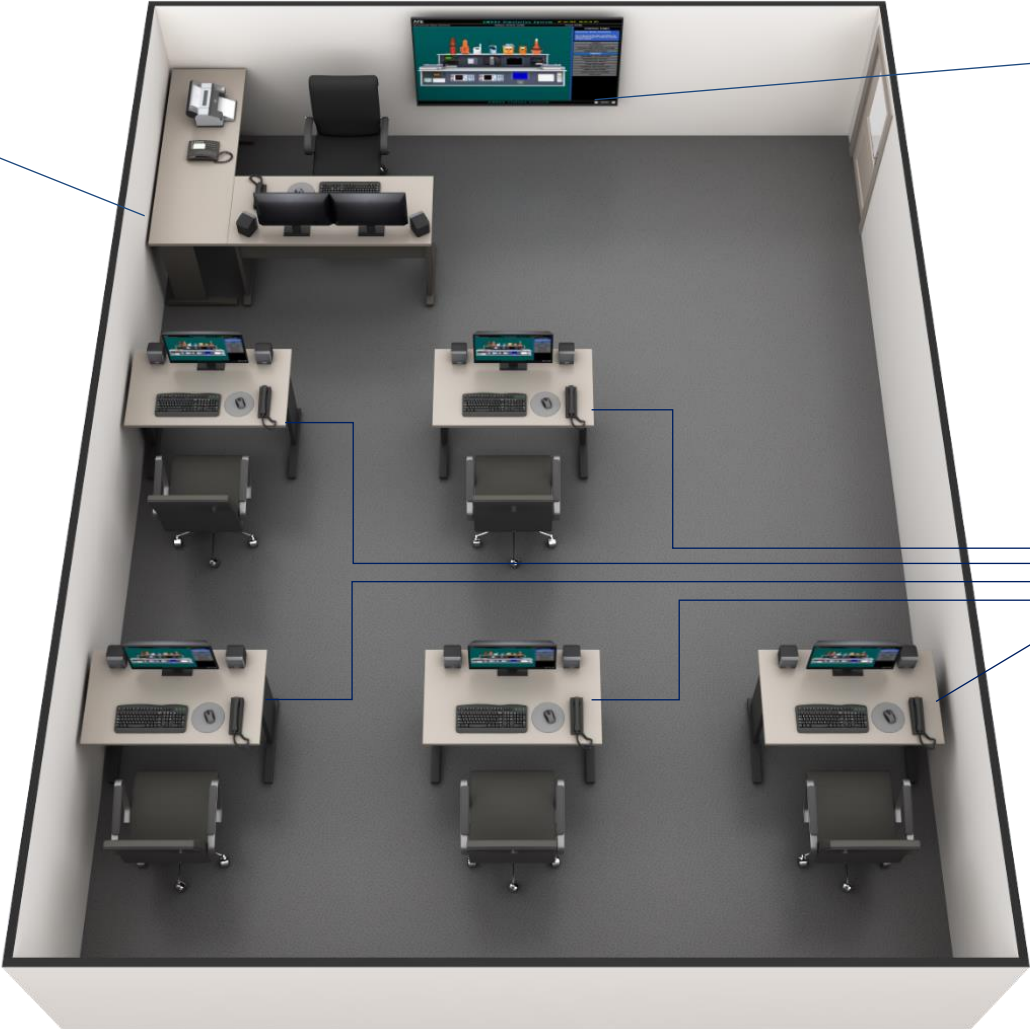
EDUCATIONAL COURSE WORK

1. GMDSS Radio-Log
2. Radio Communication – Terrestrial and Satellite
3. Radio Regulations, Certificates
4. Distress, Urgency and Safety Procedures
5. Operational procedures for GMDSS Sub-Systems
6. Retrieval / Usage of required information from ITU publications and ALRS Volumes
7. Detailed practical training on the simulator for the operation of VHF and MF/HF Digital Selective Calling (DSC), VHF R/T MF/HF SSB Radio, INMARSAT- B/C/F77, NAVTEX, EPIRB, SART, Portable Hand-held VHF
8. Practical training on Licensed RF equipment's
9. GMDSS Radio-Log
10. AIS, LRIT & SSAS
11. False Distress Alerts
12. Voyage Communications Planning - SRRs, Ship reporting Systems
13. Antenna arrangements & Maintenance, Sources of energy - Batteries: Radio Survey



INDICATIVE ROOM LAYOUT

Instructor Station



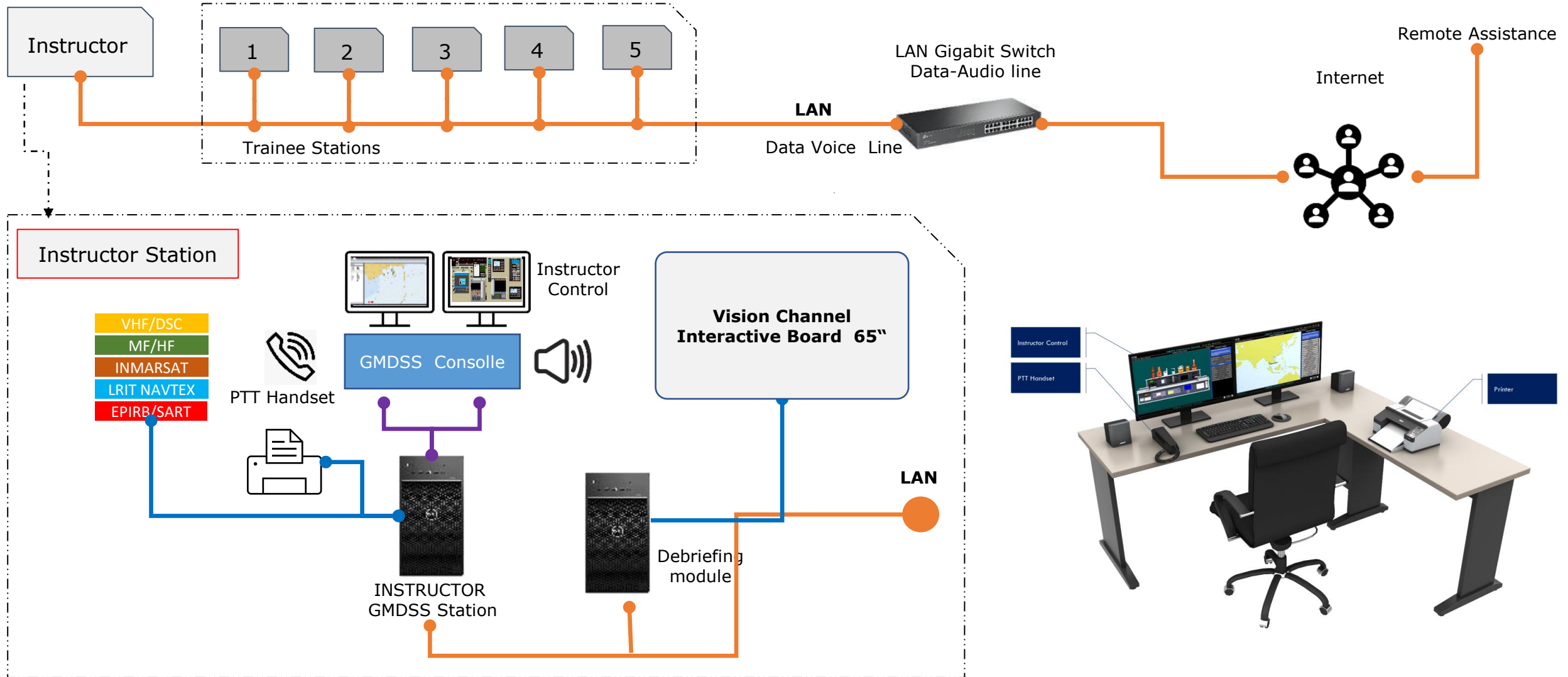
Debriefing

5x Trainee Stations

Configuration: 1 Instructor, Debriefing & 5 Trainee stations

Note : Furniture are not included in the technical offer

GMDSS Simulator Instructor Station Network Diagram and Peripheral Equipment Links



Instructor workstation

The Instructor workstation consists of:

- Instructor simulator software
- GMDSS PTT Handset (dedicated hardware)
- Standard Hardware:
 - ❑ 1 GMDSS PC with keyboard & mouse
 - ❑ 2 displays
 - ❑ 1 set of speakers
 - ❑ 1 printer
 - ❑ 1 Debriefing PC with mouse, keyboard and interactive board 65"



**Image is indicative of an instructor's workstation.
Furniture not included.*



SOFTWARE LICENSE FOR INSTRUCTOR STATION

GMDSS Software comprises the following emulated communication equipment and features:

- VHF
- VHF DSC Controller and Watch Keeper (with Printer capability)
- MF/HF SSB Transmitter
- MF/HF DSC Controller and Watch Keeper (with Printer capability)
- NBDP Terminal with Printer
- INMARSAT C Terminal (Data and Distress capability)
- Ship Security Alert System
- LRIT
- Fleet 77
- Fleet Broadband
- NAVTEX Receiver
- EPIRB
- VHF DSC EPIRB
- SART (RADAR)
- SART (AIS)
- Portable UHF
- Portable VHF
- AERO VHF
- Fax
- Battery Panel
- Main Feeder Switchboard
- Reserve Feeder Switchboard
- Remote Distress Alarm Panel
- Intercom & PA
- Ability to operate as SHIP or SHORE STATION (for terrestrial or Satellite segment communication)
- Ability to introduce operational faults
- Analyzer module for trainee assessment
- Integrated with customized MMSI of ship stations
- Trainee Action Log
- Recording & Replay

Each Instructor Station Software License includes:

- the emulated communication equipment and features as listed in above
- the debriefing module



DATA SHEET FOR EACH INSTRUCTOR STATION

Computers

Instructor, 1. GMDSS 2. Debriefing	Dell OptiPlex 3000 Small Form Factor Intel Core i5-12500 (6 Cores/18MB/12T/3.0GHz to 4.6GHz/65W), Internal Speaker, Dell Wired Keyboard-KB216, Dell Optical Mouse-MS116, 180 W internal power supply unit (PSU), Waves Maxx Audio, AMD Radeon 550 2GB LP (DP/DP), 16GB (1x16GB) DDR4 non ECC memory, M.2 2230 512GB PCIe NVMe Class 35 Solid State Drive, Win11/Win10 Pro DGR Natl Aca STANDARD. K12 EDU only.
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Monitors/Projector

Instructor/ Server	Dell 24 Monitor - SE2422H- 60.5cm (23.8'')
Debriefing Projector	Dell 65 4K Interactive Touch monitor - C6522QT

Networking and Accessories

Network Switch	TP-Link 24-Port Gigabit Switch, 24 Gigabit RJ45 Ports, 1U 13-inch Rack-mountable Steel Case - TL-SG1024D
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Printer and Cables

Printer	Epson ECOTANK L1250 - A4 color printer USB Wi-Fi
Cables	As Required



SOFTWARE LICENSE FOR EACH TRAINEE STATION

Trainee software comprises the following emulated communication equipment and features:

- VHF
- VHF DSC Controller and Watch Keeper (with Printer capability)
- MF/HF SSB Transmitter
- MF/HF DSC Controller and Watch Keeper (with Printer capability)
- NBDP Terminal with Printer
- INMARSAT C Terminal (Data and Distress capability)
- Ship Security Alert System
- LRIT
- Fleet 77
- Fleet Broadband
- NAVTEX Receiver
- EPIRB
- VHF DSC EPIRB
- SART (RADAR)
- SART (AIS)
- Portable UHF
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- Fax
- Battery Panel
- Main Feeder Switchboard
- Reserve Feeder Switchboard
- Remote Distress Alarm Panel
- Intercom & PA



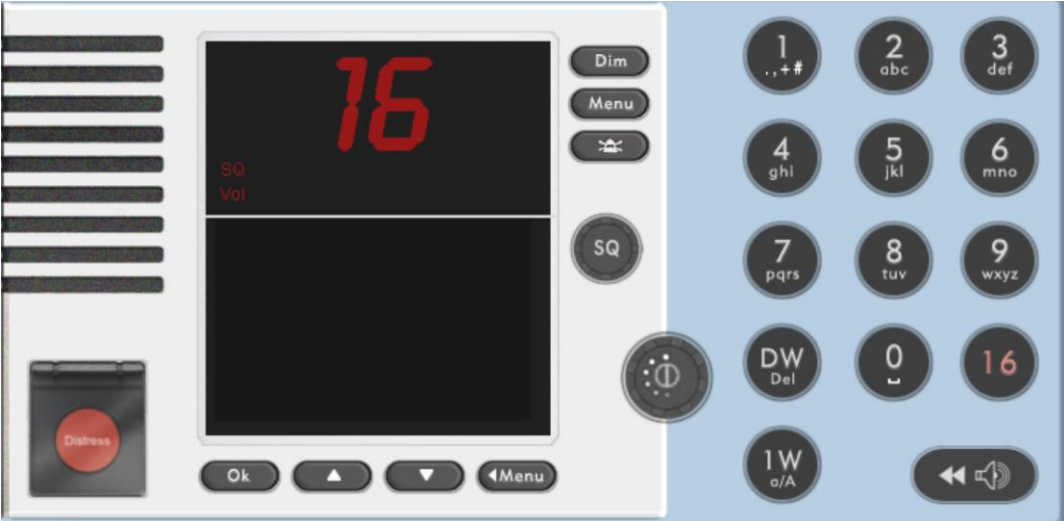
VHF with DSC simulated Screen

Each Trainee Station Software License includes:

- GMDSS Trainee Station Software includes the emulated communication equipment and features as listed in above.



IMAGES OF SIMULATED MARINE COMMUNICATIONS EQUIPMENT



VHF with DSC Screen



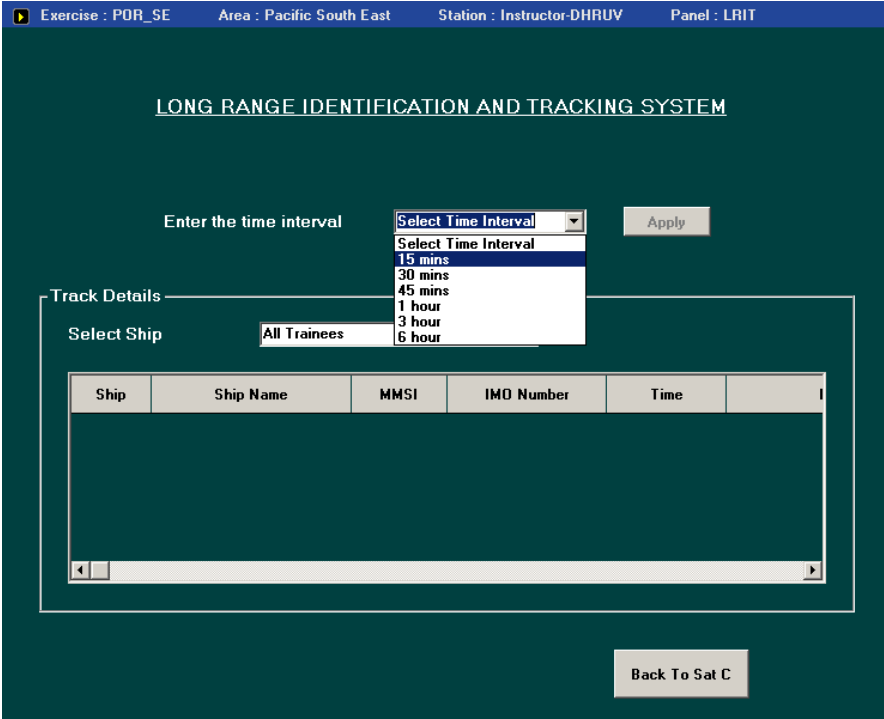
MF/HF Screen with DSC



IMAGES OF SIMULATED MARINE COMMUNICATIONS EQUIPMENT



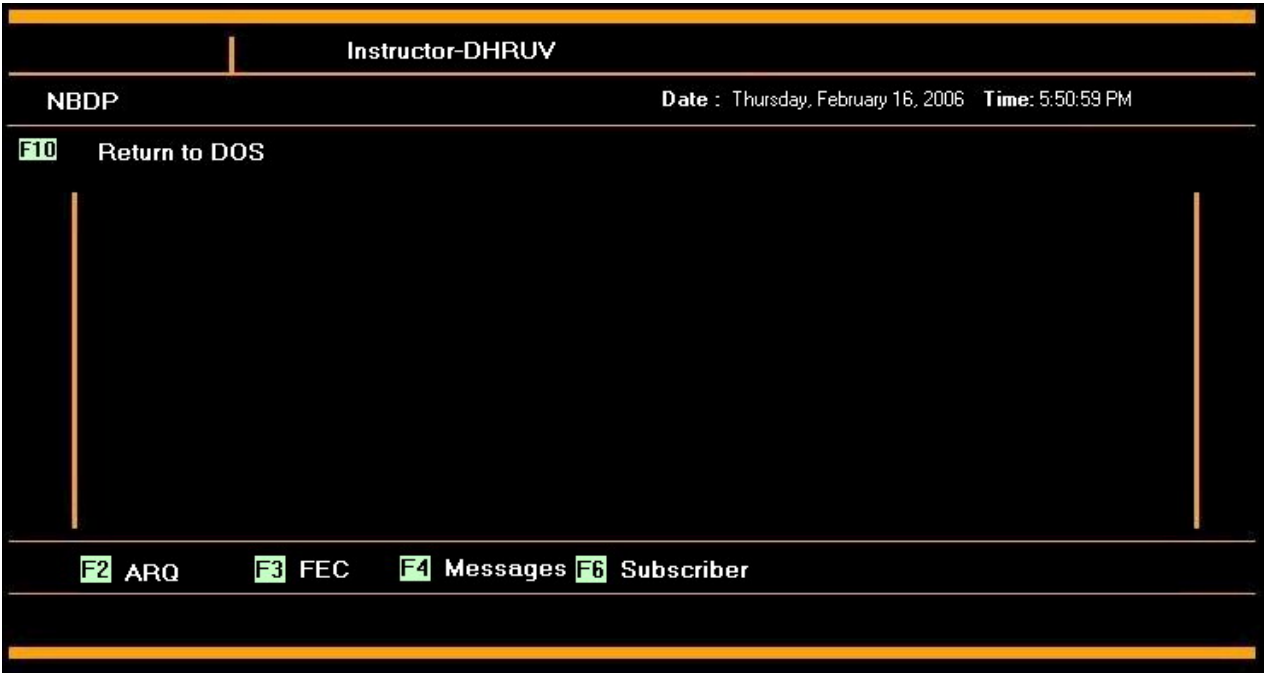
INMARSAT-C Screen



Long Range Identification & Tracking Screen



IMAGES OF SIMULATED MARINE COMMUNICATIONS EQUIPMENT



NBDP



FLEET 77 Display



IMAGES OF SIMULATED MARINE COMMUNICATIONS EQUIPMENT



FLEET BROADBAND Display



NAVTEX Display



IMAGES OF SIMULATED MARINE COMMUNICATIONS EQUIPMENT



EPIRB Display



VHF DSC EPIRB Display

Trainee WorkStations

Each trainee Workstation for three or five seats consists of:

- GMDSS Simulator Trainee software
- GMDSS PTT Handset (dedicated hardware)
- Standard PC Hardware:
 - ❑ 1 PC with keyboard and mouse
 - ❑ 1 display
 - ❑ 1 sets of speakers

Trainees will gain theoretical knowledge and practical skills in:

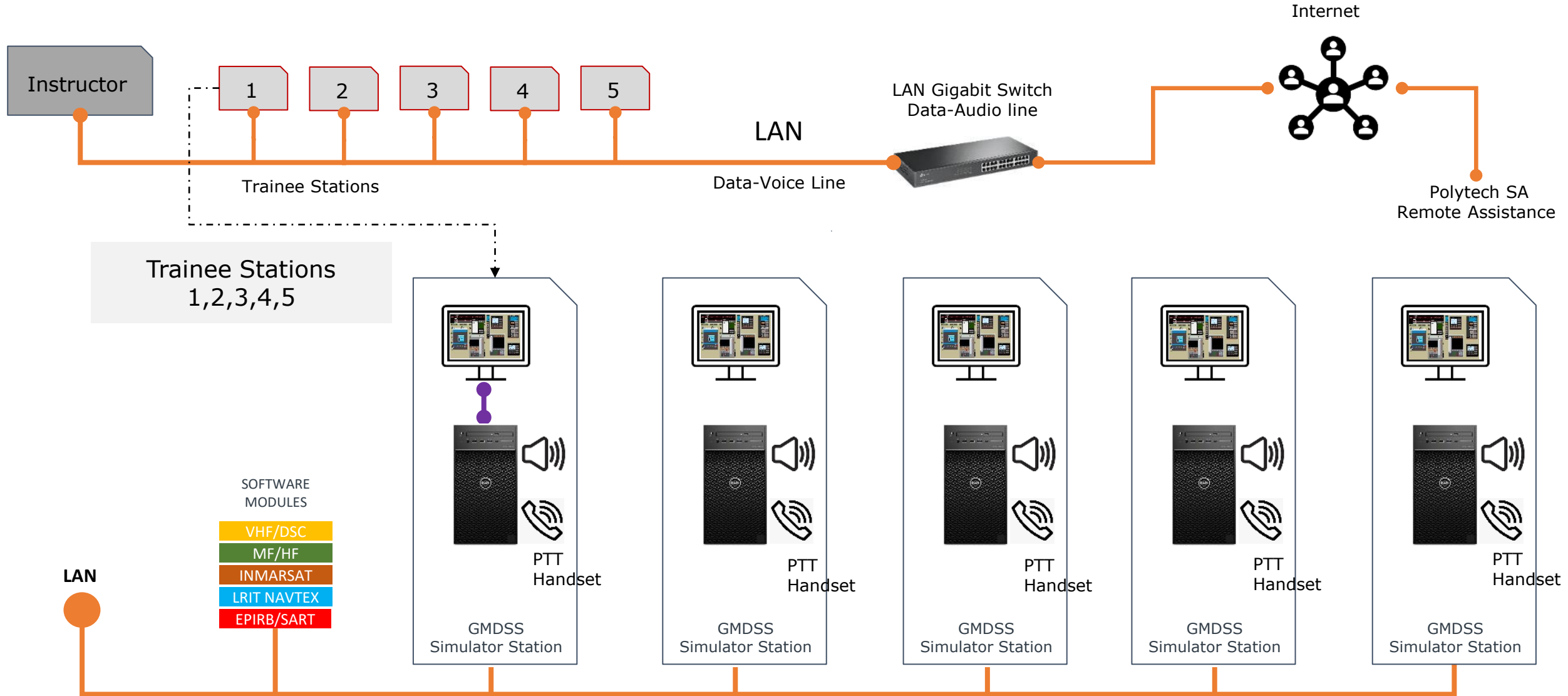
- the basic concepts of GMDSS
- the principles of GMDSS radio communication & alerting systems.
- the uses of Maritime Mobile & Maritime Mobile-Satellite services.
- use of GMDSS radio equipment & documents for emergency procedures, Maritime Safety Information & general communications.
- actions in the event of false distress alert transmission.



**Image is indicative of a trainee workstation with a Conning console. Furniture not included.*



GMDSS Simulator Trainee Workstations Network Diagram and Peripheral Equipment Links





DATA SHEET FOR EACH TRAINEE STATION

Computers

Trainee Station	Dell OptiPlex 3000 Small Form Factor Intel Core i5-12500 (6 Cores/18MB/12T/3.0GHz to 4.6GHz/65W), Internal Speaker, Dell Wired Keyboard-KB216, Dell Optical Mouse-MS116, 180 W internal power supply unit (PSU), Waves Maxx Audio, AMD Radeon 550 2GB LP (DP/DP), 16GB (1x16GB) DDR4 non ECC memory, M.2 2230 512GB PCIe NVMe Class 35 Solid State Drive, Win11/Win10 Pro DGR Natl Aca STANDARD. K12 EDU only.
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Networking and accessories

Alarm Sound	Desktop Speaker With USB Power OR (Use TFT/ Machine Built - in speaker)
Cables	As Required

Visual System Monitors

Trainee Station	Dell 24 Monitor - SE2422H- 60.5cm (23.8'')
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Installation Training and Support

- **Installation** and **commissioning** of the simulator systems will be performed by a certified (of the simulators manufacturer) territorial integrators POLYTECH SA and PANGAEA R&D
- Prior to any installation, a detailed **study of requirements** will be provided for the network and power facilities for each site of delivery.
- **Training the trainers:** Simulator operation training and instructor certification for training completion will be provided by a manufacturer's certified instructor, after installation is completed per site.
- With each system, a complete **3 set of documents** will be delivered in electronic form, containing all the appropriate technical, operational and didactic material for each simulator system and its components.
- Assigned, certified system integrator for the territory of Greece: POLYTECH SA