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VOYAGER
FURUNO BRIDGE SYSTEM



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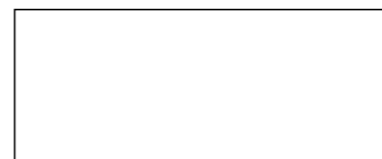
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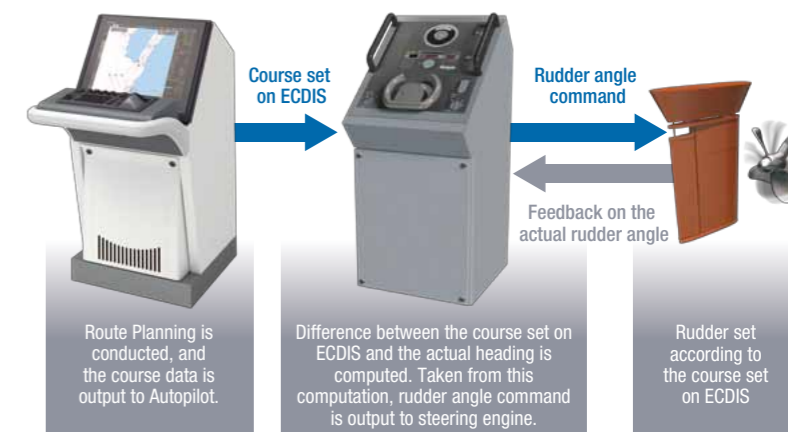
FURUNO VOYAGER, next-generation bridge system, has been designed using our decades of expertise in sensor devices, network integration and software development. FURUNO VOYAGER bridge system offers multifunction workstations with seamless display of Radar/Chart Radar, ECDIS, Conning and Alert Management System data. FURUNO VOYAGER bridge systems have been developed with a completely new and intuitive user interface and in strict accordance with the most up-to-date safety and navigation standards in mind.

Track Control System permits automatic steering along the set route

FURUNO VOYAGER features Track Control System through integration of ECDIS and autopilot. This enables the vessel to keep on the plotted route automatically with minimum intervention from the navigator. This has been achieved through:

- Flexible steering control
- route planning on ECDIS
- enhanced position reliability through multi-tiered data validation process

The operator is alerted to navigational warnings and potential dangers before the vessel is at risk.



FURUNO VOYAGER, the next-generation bridge system

Total network sensor integration delivers enhanced situational awareness to the mariner. An uncomplicated display presentation simplifies and streamlines navigational tasks. Common responsibilities such as route planning, navigation status monitoring, log-keeping, alarm awareness and day-to-day chart management are made easy through common workstation layout and redundancy of display and control. Watchstanders will enjoy reduced workload and significant freedom to move about the bridge, with all necessary information available in a variety of displays and locations.

FURUNO's new user interface delivers straightforward, task-based operation

Stress-free operation with the well-designed control units



- A** Common key assignment is arranged for the common tasks, such as EBL, VRM controls, on the control units of ECDIS and Radar/Chart Radar
- B** Operation scheme close to a PC with the use of the trackball.
 - Trackball:** to move the cursor and select an object
 - Left-click:** to perform/confirm the action related to the selected object
 - Right-click:** to display contextual menu while cursor is on the display area, and to cancel action done on the selected object
 - Scrollwheel:** to select menu items

Contextual menu

Contextual menu contains all the available actions related to the position of the cursor, hence providing quick access to tasks required.



Task-based user interface realized by combination of Status bar and InstantAccess bar providing quick access to the needed tasks/functions

FURUNO VOYAGER user interface includes carefully organized operational tools designed to make navigational tasks simple and easy. The "Status Bar" at the top of the screen clearly indicates operating mode and status and offers direct single-click control of the navigator's principle tasks. The "Instant Access" bar at the left of the screen provides direct control of the features and attributes of the on-screen presentation. These on-screen tools deliver straightforward, task-based operation with all multi-function display information in view at all times. The operator can quickly perform navigational tasks without having to enter intricate menus, thus losing situational awareness.



FURUNO VOYAGER onboard navigation network system

FURUNO VOYAGER integrates the following two separate networks that link all the onboard navigation equipment, including multifunction displays and various sensors: Network for Integration and Interswitch and Network for Sensor Integration.

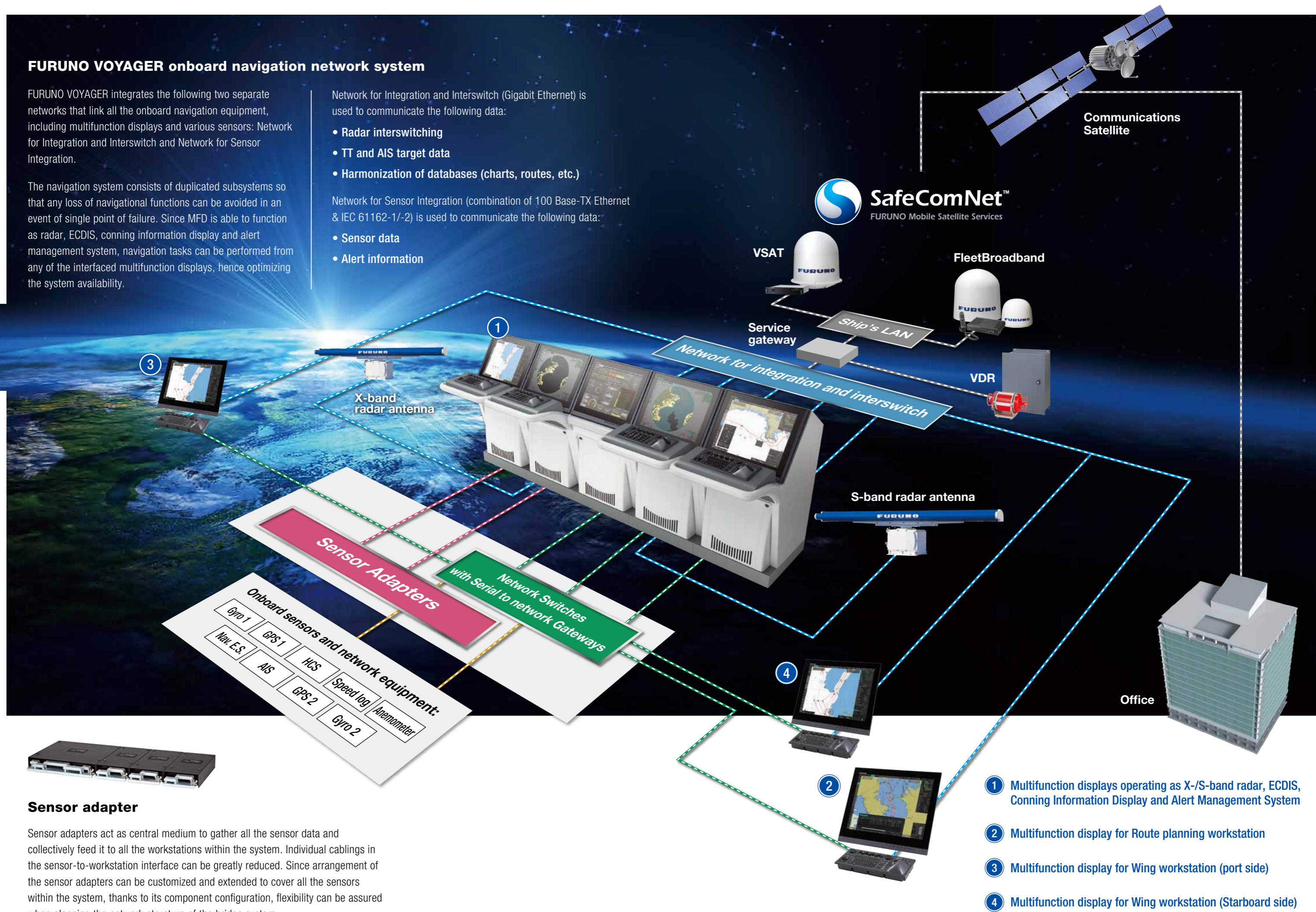
The navigation system consists of duplicated subsystems so that any loss of navigational functions can be avoided in an event of single point of failure. Since MFD is able to function as radar, ECDIS, conning information display and alert management system, navigation tasks can be performed from any of the interfaced multifunction displays, hence optimizing the system availability.

Network for Integration and Interswitch (Gigabit Ethernet) is used to communicate the following data:

- Radar interswitching
- TT and AIS target data
- Harmonization of databases (charts, routes, etc.)

Network for Sensor Integration (combination of 100 Base-TX Ethernet & IEC 61162-1/-2) is used to communicate the following data:

- Sensor data
- Alert information



Sensor adapter

Sensor adapters act as central medium to gather all the sensor data and collectively feed it to all the workstations within the system. Individual cablings in the sensor-to-workstation interface can be greatly reduced. Since arrangement of the sensor adapters can be customized and extended to cover all the sensors within the system, thanks to its component configuration, flexibility can be assured when planning the network structure of the bridge system.

- 1 Multifunction displays operating as X-/S-band radar, ECDIS, Conning Information Display and Alert Management System
- 2 Multifunction display for Route planning workstation
- 3 Multifunction display for Wing workstation (port side)
- 4 Multifunction display for Wing workstation (Starboard side)