Integrated Navigation for Mega Yachts

Integrated navigation systems acc. to IMO Performance Standards
Multifunctional workstations incl. radar, chart radar & ECDIS
Intelligent system architecture for safety and flexibility
Customer care and service

We support your dreams
Raytheon Anschütz has the expertise and experience from over one hundred large mega yacht projects, which makes us one of the leading mega yacht navigation system integrators.

When deciding in favor of Raytheon Anschütz navigation systems, our customers are choosing a professional solution, proven day by day. The new Synapsis NX series offers advanced features and a user-centered application design in order to ensure a safe and most comfortable cruise. Modern and standardized user interfaces, harmonized product design and state-of-the-art technologies enable us to realize the most advanced solutions within very individual bridge designs.

Thanks to dedicated support throughout the whole project and a close relationship with leading shipyards for mega yachts, almost any individual owner requirements can be implemented.

**Customized navigation systems**

**BENEFITS AT A GLANCE**

- IMO-compliant integrated navigation system
- "Any function, any place" principle
- Built-in redundancy to enhance safety
- State-of-the-art radar, ECDIS and conning with modern HMI and advanced functions
- Consistent data and operation concept throughout the system
- Innovative system architecture for unsurpassed flexibility
- Interfacing to automation, DP and other systems
- State-of-the-art and compact hardware design
- Easier spares logistics for fast and low-key servicing
- Remote diagnosis
GET THE FULL BENEFIT OF A PROFESSIONAL INTEGRATED NAVIGATION SYSTEM

Flexibility and design
- State-of-the-art and ultra-compact hardware design
- Superior hardware lifetime performance
- Easier spares logistics for fast and low-key servicing
- Flexibility in system design through smart system architecture
- Functions moved from panels to displays
- Interfacing to automation, DP and other systems (owner’s choice)
- Simplified installation, flexibility for updates, upgrades and extensions

Safety and performance
- IMO-certified integrated navigation system
- “Any function, any place” increases awareness and capability
- Built-in redundancy and maximum data availability
- INS functions such as CCRS, central target management and central alert management
- Advanced features of the navigational applications
- Modern HMI with user-centered design and intuitive workflows
- Precise, state-of-the-art sensors
The Synapsis NX Integrated Bridge and Navigation System (IBS/INS) covers workstations for radar, ECDIS and conning, an advanced data management, various sensors for target detection, heading, position and further navigation data, and steering control systems. Synapsis complies with the IMO and IEC standards for INS.

Synapsis NX Workstations can be easily configured according to customer’s individual requirements. Radar, ECDIS, conning and further applications can run in parallel on one computer, or alternatively a KVM switch can be used. The workstations also integrate data and operation of other navigational systems such as AIS or NAVTEX. Moving these functions from separate hardware panels to the displays is another contribution to a clean, lean and flexible bridge design.

As a standard, Synapsis NX comes with a smart “next generation” system architecture. The new system architecture reduces complexity of the system for easier installation, higher reliability and better resistance to failures. With regard to safety, the system concept is designed so that even a single point of failure leads to reduced redundancy, but not to reduced functionality.

Utilizing the benefits of modern network topology also enables decoupling of the bridge displays from PCs and other hardware components. This means almost unlimited flexibility for very lean bridge console designs – and having the hardware installed in a separate technical room offers further advantages with regard to technical maintenance, cooling, power supply and cabling.

For more information on our products, please visit our website: yacht.raytheon-anschuetz.com
SYSTEM ARCHITECTURE

Synapsis NX Workstations share information within an Ethernet network. Data is bundled, shared, locally stored and presented by the end user applications. New workstations can be easily added via LAN and receive all relevant data and configurations automatically.

All Synapsis NX Workstations are based on the ultra-compact, low-noise Small Marine Computer (SMC). The SMC features powerful processing capabilities, a solid-state disk and passive cooling to increase reliability and lifetime. With the new NautoPlex serial to LAN converters, all serial sensor data as well as status information is collected and distributed via LAN to every workstation. A high-fidelity radar video is also distributed via LAN, allowing an optimized data processing by various end-user applications, not necessarily limited to the navigation radar.
With ECDIS NX, Raytheon Anschütz offers an advanced electronic chart display and information system (ECDIS) in a modern, state of the art design. Thanks to an unparalleled intuitiveness, ECDIS NX effectively supports the daily tasks and use cases of navigators and contributes to safe ECDIS operation and navigation. Important operational functions are available at a single click, and indications can be fixed or retracted as needed, based on navigator preferences, in order to offer an optimal chart display. Optional upgrades in functionality beyond IMO-requirements include highly precise track control Cat. C, digital radar video overlay including display of merged multi-radar video sources, tender tracking, and additional chart formats such as ARCS and BSB.

Synapsis Conning NX is the centralized navigation data display for the ship's command. It presents bridge navigation and machine status data conveniently at a glance and hence contributes to efficient and safe navigation. Conning NX is a versatile and extremely capable software. It was developed on the valuable feedback from users and customers and focusses particularly on the flexible configuration of display pages. Thereby, Conning NX software features a stock of flexible graphical elements – like widgets – which can be selected, adapted and combined as needed. Various functions can be activated and configured by the operator as needed.

Synapsis NX offers smart functions as a standard with any new Synapsis NX Workstation in order to support navigators and contribute to better situational awareness:
• CCRS: sensor data is checked for integrity, validity and plausibility
• Corrupted / manipulated data is detected and excluded automatically
• Consistent data and target designations are used at any connected workstation
• Health monitoring takes place with automated switch-over
• Intelligent central alert management (CAM) reduces stress and directs attention to critical alerts

Raytheon Anschütz introduces the next generation radar software, Synapsis Radar NX. Consistent with the human centered software design, a team of experienced marine radar users, UI experts and skilled SW developers created a remarkably intuitive user interface. Optimized grouping of data and current settings allow a superior overview and instant determination of the situation and interpretation of the radar picture. The quick access bar makes the most often used operations and functions available at a fingertip, including touch operation. Radar NX features an advanced tracker to offer high performance in tracking and anti-clutter processing. A wide range of functions, including radar video merge, is available.

Synapsis ECDIS NX

Synapsis NX Chart Radar

Synapsis ECDIS NX
A harmonized, seamless bridge design is a key demand of owners, designers and architects. However, a common look and feel is also a strong contributor to ease of operation and safety.

BlackVelvet Advanced Design is a modular and customizable wheelhouse control panel solution designed and manufactured by Raytheon Anschütz. The panels feature newly engineered, flexibly programmable interfaces to connect with third-party operation devices including horn, window wiper, lights, thrusters, or engine remote control.

As an alternative, the new 12” Synapsis Touch Panels can be used to control and actuate the respective hardware interfaces of these operation devices. With the Synapsis Touch Panels the operator interfaces are provided in the standardized look and feel of the navigational applications and can be easily adapted to changing requirements.

The Standard 22 gyro compass is the world’s most popular gyro compass and has proven its reliability in more than 18,000 installations. With the newly developed NautoScan NX radar transceivers Raytheon Anschütz also presents a state-of-the-art radar sensor based on network technology that makes raw radar video data available throughout the network. Based on this innovation the Synapsis Radar offers excellent target detection and unlimited flexibility for bridge layout and applications.

Anschütz autopilots are well known in the market for their excellent steering performance, accuracy and reliability. The adaptive NP 5000 features a 5.7” color touch screen display for most intuitive operation and includes advanced functions for safe and economical steering. NP5000 seamlessly integrates with NautoSteer AS, which is latest generation of Anschütz steering control. All important components are connected via redundant CAN bus systems, providing most secure data communication. All controls offer a user-friendly intuitive and standardized design and comfortable take-over functionality.
We are proud to work with some of the world’s most prestigious shipyards:

LÜRSSEN

ABEKEN & RASMUSSEN

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AMELS

NOBISKRUG

FINCANTIERI

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KUSCH

YACHTS

BENETTI

PUSH EXCELLENCE INTO BUSY

MARIOTTI

RMKMARINE

TURQUOISE

YACHTS INC

DEDICATED PROJECT SUPPORT

At Raytheon Anschütz, our competence team has the mission to further enhance the dedicated care for customers of mega yacht projects, starting with early consultancy and design suggestions through customer requirement engineering to setting in operation and after sales service. To allow Synapsis Intelligent Bridge Control to meet extraordinary demands, we continuously push forward the development of new products and functions that are particularly suited for mega yacht customers.

Please visit our website for more information about our mega yacht navigation solutions and our individual project support under:
yacht.raytheon-anschuetz.com