Navigation Systems for Mega Yachts

We support your dreams
When deciding for Raytheon Anschütz navigation system integration, our customers decide for a professional, day by day proven solution for integrated navigation systems (INS). Advanced features ensure a safe and most comfortable cruise, whereby standardized user interfaces and harmonized product design enable the realization 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.

**Mega yacht navigation**

At Raytheon Anschütz we engineer and support superior bridge and navigation systems which serve our customers’ demands on a high performance level. Our experience from over one hundred large mega yacht projects makes us one of the most capable navigation system integrators.

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**BENEFITS AT A GLANCE**

- IMO-compliant integrated navigation system
- “Any function, any place” principle
- Built-in redundancy to enhance safety
- Advanced function of radar, ECDIS and conning
- Standardized HMI and consistent data 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 enhance safety
• INS functions such as CCRS, central target management and central alert management
• Advanced features of the navigational applications
• Enhanced situational awareness capabilities
• Precise, state-of-the-art sensors
The Synapsis 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 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 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
Synapsis 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 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.
**Synapsis ECDIS** provides a clear presentation of all information needed for safe route monitoring and anti-grounding control. The ECDIS features intelligent functions such as weather data and forecast symbol overlay, radar video overlay, autopilot remote control with curved heading line display, AIS operation and text messaging and NAVTEX data integration. Tender tracking can be included. Benefits: Better route monitoring during cruising, smaller workload during voyage planning and a strong contribution to a clear desk design.

**Synapsis Conning NX** is the centralized navigation data display for the ship’s command. It presents bridge navigation and machine status data easily 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 focuses particularly on the flexible configuration of display pages. Thereby, Conning NX software features a stock of flexible graphical elements – just like widgets – which can be selected, adapted and combined as needed. Various functions that can be activated and configured by the operator as needed.

**Synapsis Radar** features a sensitive tracker, anti-clutter technology and advanced radar functions such as enhanced integrated system-wide target management, the intuitive and unique SeaScout collision avoidance function, chart radar function, or an optional video merging mode to further increase efficiency in watch keeping and support optimal situation assessment in any operational situation and under any weather or sea state conditions.
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.
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.