

# Navigation Systems for Mega Yachts

Synapsis Intelligent Bridge  
Control

Multifunctional Workstations  
incl. Radar, Chart radar & ECDIS

NautoSteer® Advanced  
Steering Control

Customer Care and Service

mega  
*yacht*

We support your dreams

# Mega Yacht

When deciding for Raytheon Anschütz navigation system integration, our customers decide for a professional, day by day proven solution for full Integrated Navigation Systems (INS). Our navigation solutions serve the owner's special demands on a high performance level.

Superior features ensure a safe and most comfortable cruise, whereas 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 to leading shipyards for mega yachts, any owner requirements can be implemented. Cutting edge technology leads the way, no matter which way the wind is blowing.



## Your Benefit<sup>®</sup>

### Comfortable Operation

- Multifunctional Workstations provide any function at any place
- Integration of further ship system data and operation
- Consistent data available at each workplace

### Improved Safety

- Health Monitoring of system status and performance
- Data quality and sensor selection management
- Intelligent alert management

### Simplified Watchkeeping

- Standardized HMI with central and local change of colours and brightness
- Enhanced Conning display
- Intelligent alert management

### Flexibility and Efficiency

- Simple to install and upgrade due to open architecture
- Standardized hardware improves logistics of spares
- Standardized software eases configuration and service

## Synapsis Intelligent Bridge Control

Synapsis Bridge Control is the brand new generation of Raytheon Anschütz INS. The INS covers full workstations with Radar, ECDIS and Conning, advanced data management, various sensors for target detection, heading, position and further navigation data, and steering control systems with standardized user interfaces.

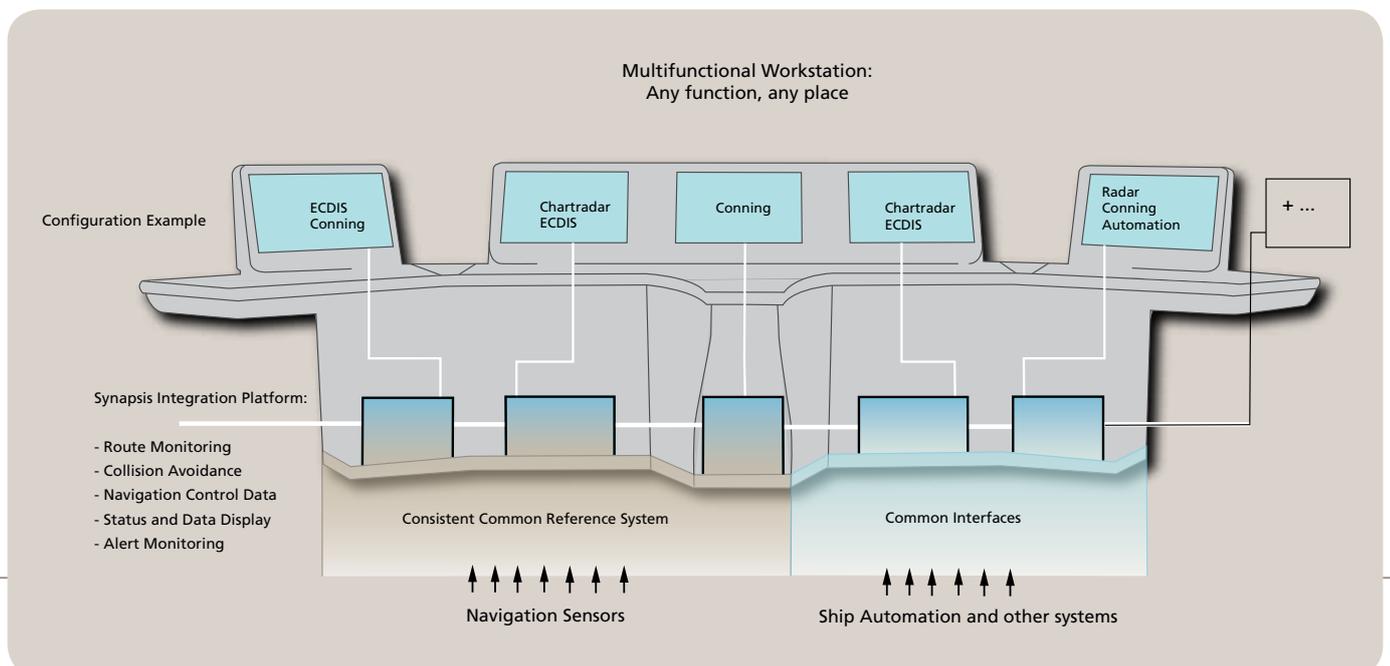
It is designed to ease installation and service, to make operation for users more comfortable, and to make navigation more efficient. A new generation of intelligent Multifunctional Workstations not only combines nautical functions such as Radar, Chart Radar, ECDIS and Conning at any dedicated position but also permits the integration of additional applications and data, such as Dynamical Positioning System, CCTV or Automation.

# SYNAPSIS

Intelligent Bridge Control

All information is stored at each workstation and distributed across the dual navigation network allowing access to any desired function from any work place connected to the network. The advanced data management features a Consistent Common Reference System (CCRS) to ensure the most reliable navigation data available at any workstation.

The use of standard hardware and standard software not only makes possible the design of very individual bridge systems and ensures future expandability with highest flexibility, but also simplifies and fastens maintenance and service of the navigation system. To allow Synapsis Bridge Control meeting extraordinary demands, we continuously push forward the development of new products and functions that are in particular suited for mega yacht customers.





## Multifunctional Workstations

Multifunctional Workstations are tailored to integrate the nautical functions of (Chart-) Radar, ECDIS, Conning and AIS data in any desired combination to allow full control and full data access at any workplace. All solutions efficiency assist the crew in their tasks of collision avoidance, route planning and track control. Customer-specific applications can be added within each single project.

Optionally further ship systems such as CCTV, Engine Automation or the DP system can be controlled on the workstations and share data with the entire system. Thereby, solutions of the most varied partners can be considered, having the focus on a high-performance bridge and navigation system which fully correspond to the owner's specific needs.

Six different colour schemes are available to provide optimized visibility with regard to the prevalent lightning. Central switch-over of colours and central dimming is possible from any workplace on the bridge. All workstations are delivered with wide-screen displays, which include large and clear structured user interfaces for optimized watch keeping and further improved safety at sea.

- Full navigation data control at any workstation simplifies watch keeping
- Easy operation through common operating philosophy ("look and feel")
- Redundancy of equipment leads to additional safety
- Efficiency in spare parts logistics through standardized hardware
- Integration of Anschütz steering control and track keeping system



## Synapsis ARPA Radar and Chart Radar System

### Latest technology for efficient collision avoidance and highest standards of safety.

With its Synapsis Radars Raytheon Anschütz presents one of the most sensitive Radars even under rough weather conditions, supported by a patented anti-clutter function. The tracker even detects tiny targets such as wooden stakes or small buoys.

Brilliant performance goes hand in hand with ease of use. The intelligent functionality of Synapsis Radars exceeds the basic IMO standards and provides effective support in collision avoidance. Apart from conventional Radar features such as automatic tracking, echo expansions, target trails and storage of user settings, superior functions are available to efficiently assist the crew in their collision avoidance task.

- High Performance Synapsis Radar
- AIS targets are integrated on Radar screen
- The SeaScout anti-collision function further increases safety
- Chart Radar with range rings simplifies watch keeping



## Advanced Synapsis ECDIS

### Advanced ECDIS for voyage planning and route monitoring with intelligent functionality.

The advanced Synapsis ECDIS provides all needed information for the planning and the monitoring of safe routes. It features a clear display design, easy-to-operate menu structures and comfortable server functionalities. The comprehensible and intuitive handling is supported by the use of the well-known menu structure of windows applications. The system architecture enables the integration of weather information.

Synapsis ECDIS provides intelligent functions which outrun the basic IMO requirements. The ECDIS offers, in interaction with other bridge navigation systems, effective support for the ship's safe navigation. In combination with Anschütz NautoPilots, autopilot remote control is available to enable changing the course of the ship directly from the ECDIS workstation. The Synapsis ECDIS displays the course change as a "curved heading line", offering always an immediate override with manual steering controls.

- Synapsis ECDIS simplifies voyage planning and voyage monitoring
- Automatic Route Planning creates safe routes with a handful of clicks
- Private Tender Tracking function for ECDIS
- High precision automatic track keeping with ECDIS



## Synopsis Conning and Data Management

### Enhances Situational Awareness – Eases Watch Keeping

Synopsis Conning is the centralized navigation data display for the ship's command. It makes available all bridge navigation and machine status data easily at a glance and hence contributes to efficient and safe navigation in accordance with operation philosophy. The combination of different instruments and indications at a central display increases situational awareness even in the critical situations of manoeuvring and docking and provides efficient help in decision making for the operator.

Synopsis Conning offers various functions that can be activated and configured by the operator as needed. In addition to standard display pages for navigation, environmental data, docking or track control, the configuration of various and even project-specific display pages is always possible.

- Synopsis Conning combines important navigation data at a glance
- Synopsis Conning allows integrating CCTV video
- Full flexibility to integrate navigation, environmental or machine data according to individual owner demands

## Captain's Display

The Captain's Display is linked to the dual navigation Ethernet network with a single wire connection and combines selected navigational data on a flat-screen.

- Radar and ECDIS video from selected workstations
- Heading and position
- Steering mode
- Rudder angles, rate-of-turn
- Water speed and bottom speed
- Current depth
- Relative and true wind
- Temperature, air pressure and humidity
- Water temperature

It makes navigational information available in the Captain's cabin, but can also be installed at any other location on board of the mega yacht. Thanks to an individual configurability of the display, a live experience of navigation can also be provided within crew areas and even to passengers and guests on board.



## NautoSteer® Advanced Steering Control

NautoSteer AS is the latest generation of Anschütz steering control. The advanced system is based with all its components on CAN-Bus technology.

- Proven Anschütz steering performance
- Built-in reliability with CAN-bus technology
- Fail-to-safe principle with integrated steering failure and wirebreak monitoring
- Integrated data integrity monitoring
- Comfortable operation with take-over or give-over of steering positions
- User-friendly intuitive and standardized design of all controls
- Central alarm reset and central dimming
- Flexible integration of further steering controls such as joysticks or DP systems
- Ease of installation with simplified wiring and computer-based commissioning

### The brandnew Anschütz NautoPilot® 5000 comes as an integral part of NautoSteer AS

The NP 5000 features a 5.7" TFT colour display with touch screen operation. A selection of six different day and night modes are available, which fit perfectly with the screen design of all the other bridge displays. Apart from the proven steering performance, most advanced features for a safe and comfortable cruise are included.



## Common look and feel on the bridge

A well thought out bridge design meets the demands of the owner and the interior designer regarding an attractive wheel-house surrounding, making the bridge a public area covering only indispensable devices for navigation and control.

Raytheon Anschütz conducts individual design studies in close cooperation with shipyards, designers and 3D modeller for all its bridge projects. The merit of this cooperation is to offer various visualizations of individual bridge arrangements which take into consideration technical feasibility as well as ergonomics and attractive design.

- Seamless design of thruster and azimuth controls
- Common lighting, same colors, fonts and soft keys
- Intelligent solutions for space saving bridge layout



## Customer Care and Services

At Raytheon Anschütz, a 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.

The competence team is an experienced and specialized point of contact for all mega yacht customers, which offers competent and immediate support with regard to the special characteristics and needs, which may arise during a mega yacht project and later on, during operation.

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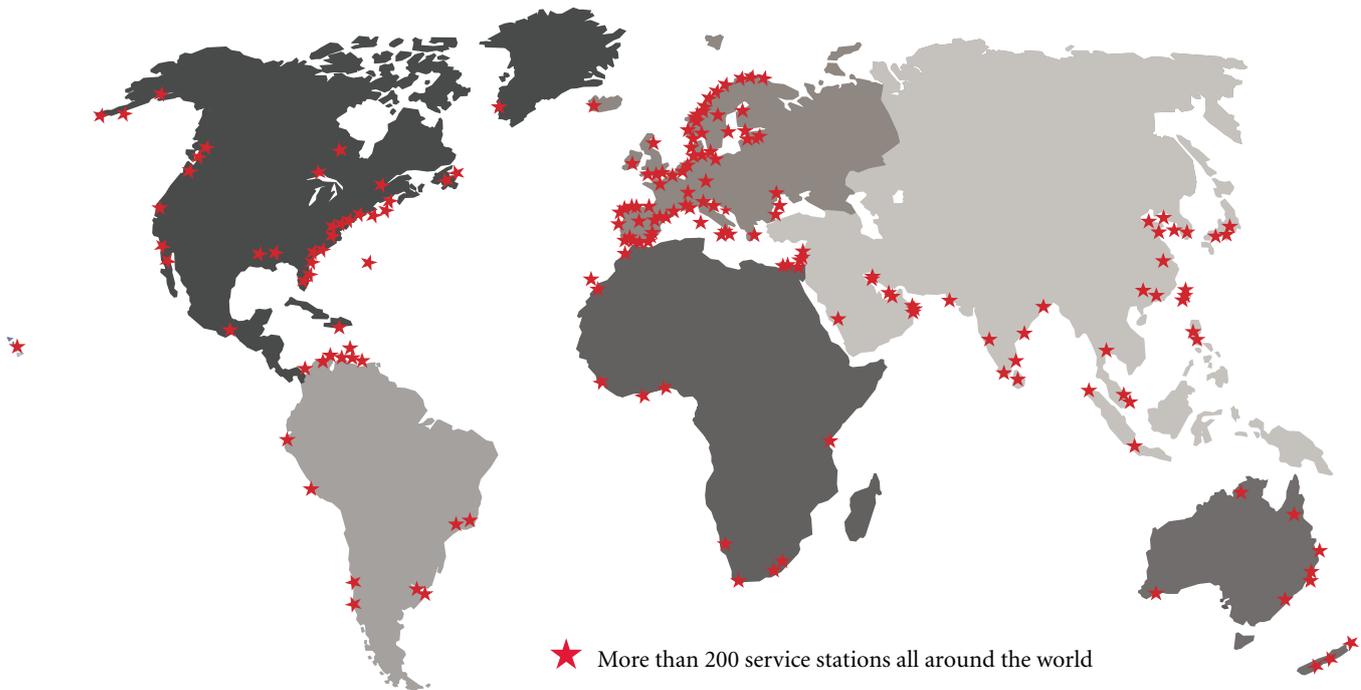
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