

Synapsis

Intelligent bridge control

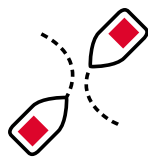


Safe navigation.
Simple and scalable.
Synapsis NX



Synapsis NX is a state-of-the-art integrated navigation system (INS), combining all relevant navigation sensors and systems in a modular, user-centered system for safer and more efficient bridge operations. Navigators benefit from less distraction, superior situational awareness, decision support and less human error risk.

Key Benefits



Superior situational awareness

Right decision making through a clear picture of the prevalent situation.

- Seamless operation of any function or sensor from any workplace
- Standardized, clearstructured user interfaces and a common, user-centered presentation of data and information
- Navigators receive a validated picture of the prevalent situation for right decision making
- Reliable sensors and helpful features support navigation in critical situations



Safe and efficient navigation

Safety through high data quality and availability of systems and functions.

- Just a single, harmonized system, less distraction and workload for users
- Integrated continuous plausibility checks of sensor data
- Consistent use of data and designations, system-wide target association and management
- Intelligent, central alert management
- Safe in operation through managed configuration control and integrated redundancies (hot standby)

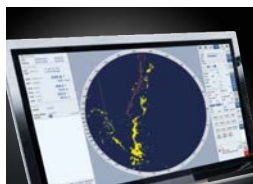


Secure and future-proof investment

State-of-the-art components and modular design make future-proof bridge systems.

- Built on standardized, future-proof hardware and operating system
- Modern, intuitive software allows quick familiarization of crews
- Modular system design for easier updates and extensions
- Compliance with latest standards such as IEC61162-450 (LWE), prepared for future ECDIS standards and others
- Global service network in case you need help

Learn more



Integrated Bridge Systems

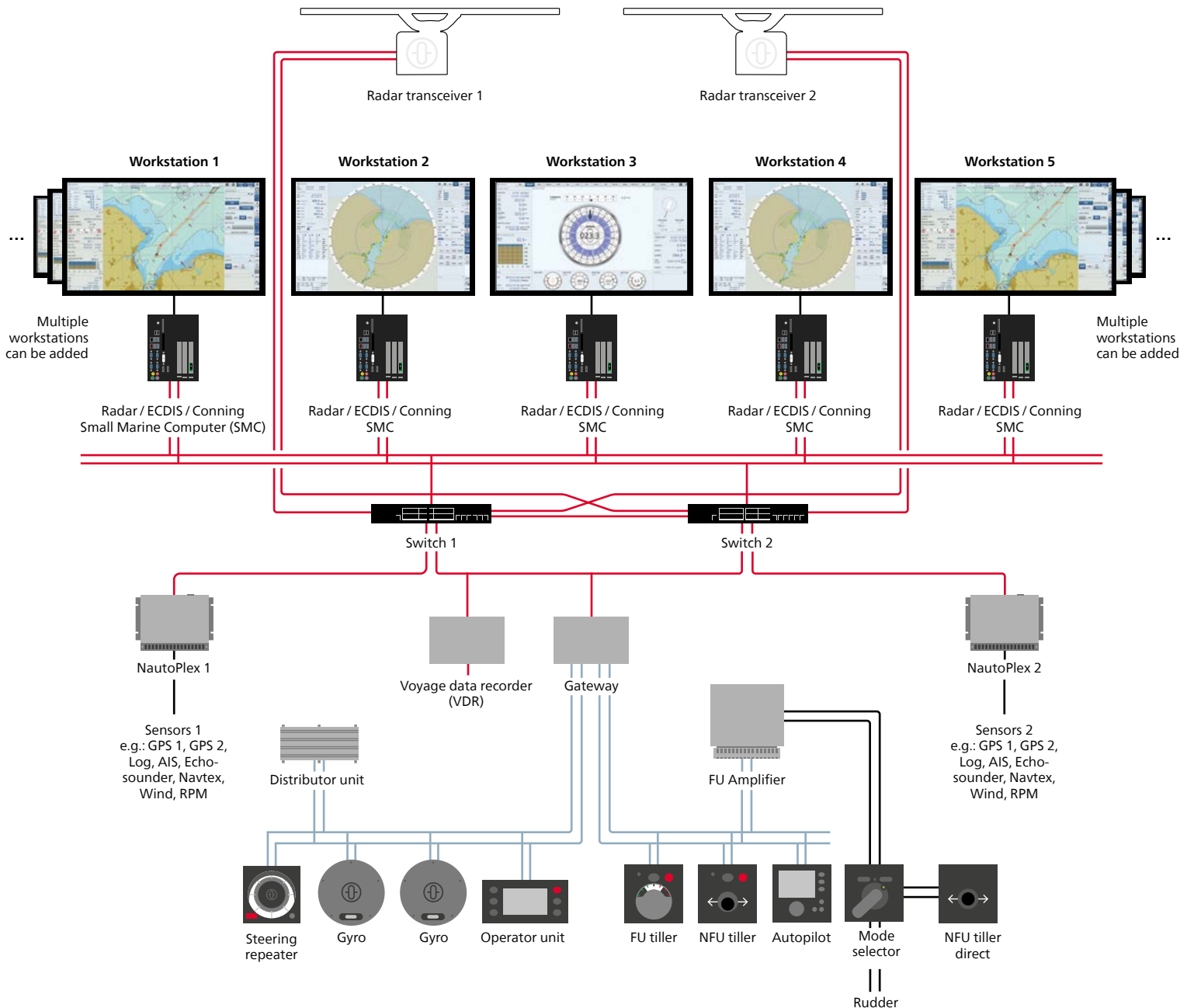
Synapsis NX offers an integrated navigation capability for any ship type, from standardized to customized bridge systems.

Visit: www.raytheon-anschuetz.com/radar-nx

Scalable system architecture

Synopsis NX features a modular and flexible network infrastructure. Standardized hardware and LAN components provide the backbone for the system. Workstations and applications are added and configured with high flexibility.

Synopsis NX is type-approved according to IMO performance and IEC test standards MSC.252(83)/IEC 61924-2 for INS. It fulfills basic IMO requirements as well as highest class notations such as NAUT (AW) and NAUT (OSV).



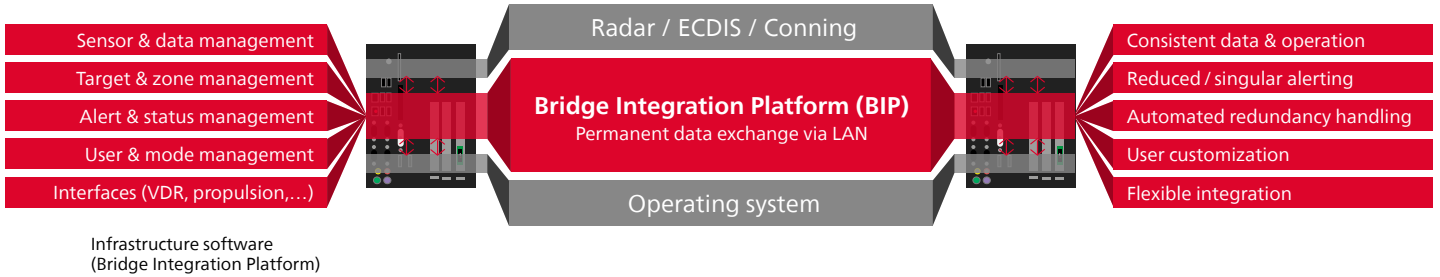
- High performance small marine computers and displays, or alternatively marine panel-pcs are the hardware for the workstations. Multiple workstations can be added to the system.
- The workstations share all data and the radar raw video via the redundant navigation LAN.
- Sensor data is, where required, converted to LAN by the NautoPlex data collectors.

- The function of a workstation is defined by software modules, e.g. radar or ECDIS, or any combination.
- Multifunctional workstations allow operation of a variety of functions and sensors directly on the screen.
- Options on request: integration of individually selected third-party applications, or installation of hardware components in 19" racks off the wheelhouse.

Making the bridge smart

The Bridge Integration Platform (BIP) is an infrastructure software that serves as the "brain" of Synopsis NX. It manages sensor data, routes, charts, and targets, and also performs the central services of the system like the system health monitoring or the central, intelligent alert management. At any workstation, the navigator interacts through standardized user interfaces and has access to consistent and validated data.

The BIP networks the available data from the navigation system more intelligently than conventional bridge systems. Instead of the navigator monitoring and operating many individual systems, he only interacts with a single overall navigation system. Clear and consistent presentation of data and information at any display on the bridge, and a reduction of unnecessary alarms means a strong contribution to situation awareness and safety.



Main Features

Trustful data, clear situational analysis, less distraction

- Central management, analysis and distribution of sensor data**
 Synopsis NX provides central monitoring and integrated continuous plausibility checks of sensor data with regard to availability, integrity and reliability. Corrupted sensor data, as well as malfunction and disturbance, is detected, marked and excluded from selection and distribution.
- Advanced target and zone management**
 Target management associates targets between S-band radar, X-band radar and AIS. From this, system-level targets are created, which are further processed and used in the system (e.g. for CPA alerts).
- Central, intelligent alert management**
 Alert management collects and analyzes alerts and determines, with regard to system configuration and status, whether the situation is sufficiently critical to set off an alarm, or whether the watch officer should only receive an alert of lower priority. Furthermore, any alert integrated into the system can be viewed and silenced at any workstation acc. to bridge alert management standard MSC.302(87).



Applications Synopsis NX series, 05.xx.xx

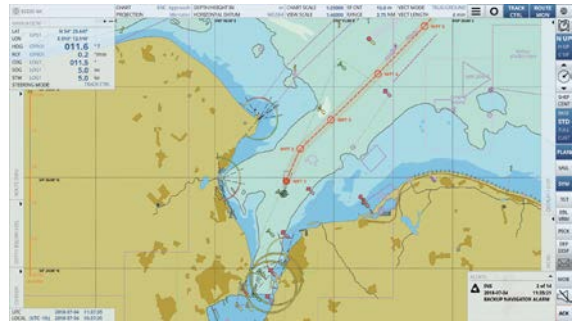
Synopsis NX stands out with modern and extremely intuitive user interfaces (UI). The UI was designed in an agile process under continuous participation of pilots, crews and experts for “human-centered” software design.

Synopsis NX navigational software has well-arranged, standardized menus, and Wizard-guided workflows. A clear presentation of the prevalent situation supports right assessment and decision making, and increases safety.

ECDIS NX

ECDIS NX is a modern, user-defined electronic chart display and information system (ECDIS) that effectively supports the daily tasks and use cases of navigators. A broad range of standard features and options include individual retractable panels to maximize view of the chart, a quick access bar for essential functions, smart and wizard-guided tools for route planning, ETA calculation and speed of advance for individual waypoints, radar video overlay, geo object events and many more.

www.raytheon-anschuetz.com/ecdis-nx

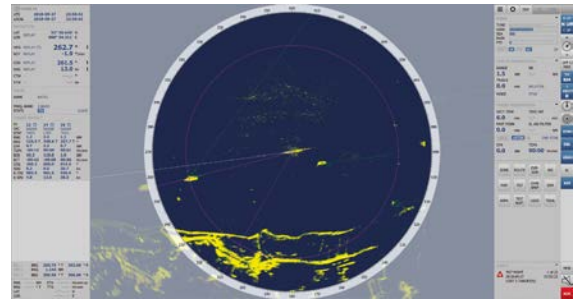


Radar NX

Radar NX features raw data processing, advanced target tracking and unique automatic clutter suppression to deliver full situation awareness and high-performance collision avoidance assistance under any condition.

Radar NX also stands out with a crisp chart radar capability, a seamless 360° radar video merging, a mode for helicopter guidance and other industry-leading functionalities (incl. naval radar options).

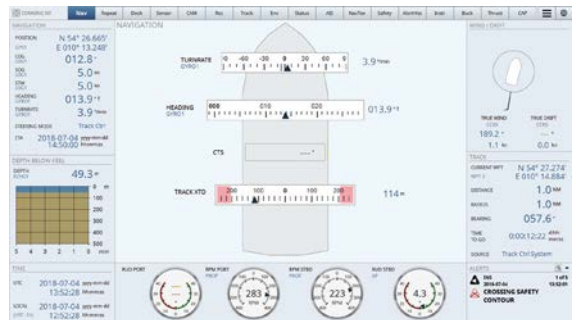
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Conning NX

Conning NX is a centralized navigation data display for the ship's command. It features flexible graphic elements – like widgets – which can be selected, adapted and combined as needed. This makes Conning NX a versatile, and very capable application.

On pre-defined pages, Conning NX presents bridge navigation and machine status data conveniently at a glance. Conning NX also provides a dedicated Docking Display integrating an electronic sea chart.



Conning NX applications

On a 12" panel-pc with touch screen, Conning NX can provide the human-machine interface (HMI) for a centralized alert management of the INS, on bridge level or as a bridge alert management system for DNV Class Notation NAUT(OSV).

On request, Conning NX can also be used as digital indicator (e.g. rudder angle indication in ceiling consoles), or integrate switchable elements to control other devices like window wipers or nav lights.



Synapsis NX components

Besides the navigational software applications, Raytheon Anschütz can provide any sensors and systems from the entire range of an Integrated Bridge System, including but not limited to:

Autopilot and track control system

NautoPilot 5000 is the top-of-the-range Anschütz autopilot. It is well recognized for precise steering performance and reliability, and also offers a multitude of unique functions that support safe and fuel-saving autopilot operation. NP5000 seamlessly integrates into Synapsis NX, and forms a type-approved Track Control System with ECDIS NX.



Autopilot remote control (curved heading line)

Autopilot remote control and a curved heading line display in ECDIS NX and Radar NX are possible with NP5000. A Conning NX application on a 12" panel-pc is used for remote control in front of any task-related workplace.



Radar sensors

NautoScan NX navigation radars (X-/S-band) are state of the art and distribute a raw radar video via redundant Gigabit LAN. Raw data processing on workstation level ensures high flexibility and optimized performance. Alternatively, Synapsis NX is also type-approved in combination with compact to sophisticated solid-state radars for most advanced target detection and maintenance-free operation.



Gyro compass

Synapsis NX uses proven Anschütz gyro compasses as heading sensors. Standard 30 MF is a maintenance-free gyro compass and attitude reference system based on Hemispherical Resonator Gyros for superior reliability and accuracy over lifetime. Standard 22 NX is well known as the world's most popular gyro compass, designed for high accuracy, reliability and operational safety even under harshest environmental conditions and in high latitudes.



Steering gear control system

NautoSteer AS is a modular manual steering gear control system for customers that require reliability, safety and an outstanding functional range. NautoSteer AS is characterized by reliable CAN-bus technology with a comfortable take-over function or give-over function of steering control positions, a direct NFU mode for emergency steering, and integrated safety features such as wire break monitoring.

Why decide for working with Raytheon Anschütz?

Raytheon Anschütz has strong expertise in navigation technology and navigation system integration. Raytheon Anschütz also stands for flexible handling of customer requirements, reliability and continuity in customer relations and excellence in customer service.

When deciding for Raytheon Anschütz, customers will always benefit from individual and dedicated customer service. After sales, customers can rely on a variety of services including highly qualified technical support – worldwide, wherever they navigate.

Dedicated project management

- Experienced individual support from early system layout to setting in operation
- Coordination and project planning in project-specific engineering teams
- Competent advice regarding IMO and class requirements
- Intimate knowledge in products and technical feasibility
- Firm, reliable project processing and delivery as promised
- Technical support with the know-how of a manufacturer
- Total system design including wiring, circuit and connection diagrams
- Meticulous product and system testing
- Approvals, factory acceptance test, setting to work

Worldwide first-class technical support

- 365/24/7 service coordination and support for all products delivered
- High transparency and regular updates about service status
- Reduced administrative workload for customers
- Global network with own hubs in Germany, Singapore and Panama
- Performance monitoring and training program for more than 200 service stations
- Proven spare part supply chain with 20+ large depots
- Maximum uptime thanks to highest first time fixed rates
- Customer-orientated after sales management
- Maintenance contracts

