B:MACS · be safe · be independent

Empowering your ship with smart automation and safety at sea
Made in Germany

BÖNING
SHIP AUTOMATION

ABOUT US

BÖNING Automation Technology

For over 45 years, Böning Automationstechnologie GmbH & Co. KG has developed and manufactured devices and equipment for ship automation for commercial ships and yachts.

Our systems are generally assembled from serial components, customized to suit each ship type‘s unique demands, and designed with the highest levels of safety and comfort in mind. We work closely with our customers to create solutions that cater to their needs, providing maximum satisfaction.

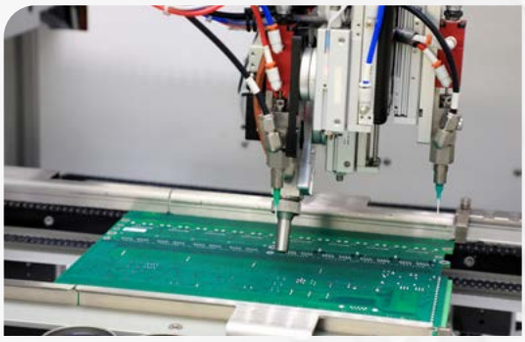
Our enterprise was founded in 1977 with the establishment of the Engineering Office BÖNING. In 1996, we became the Engineering Office BÖNING GmbH, and in 2003, we renamed the company to BÖNING Automationstechnologie GmbH & Co. KG. From the beginning, the development and production of ship automation devices and systems has been one of our primary focus areas. Our current state of development is based on years of experience gained from consistently implementing our strategy of problem-solving through collaboration with our customers.

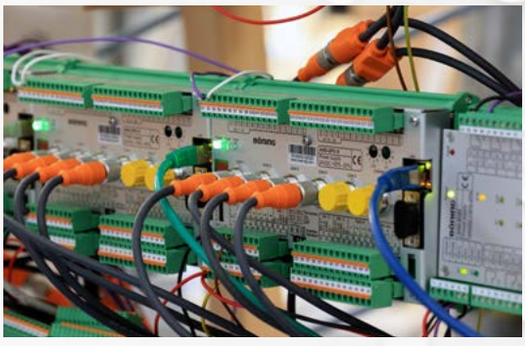
Our headquarters are located in Ganderkesee in the Greater Bremen area, and in recent years, our office and production areas have expanded to over 2500 m². Currently, more than 20 engineers are working on developing our products, while 90 skilled personnel ensure the flawless execution of our products in the production, sales, aftersales, purchasing and administrative departments.

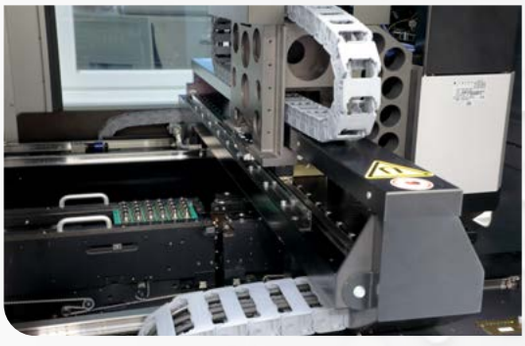
BÖNING Automationstechnologie GmbH & Co. KG also has branch offices in USA, Italy, Brazil, Croatia and Spain. We are globally active through international distribution and service partners, as well as regular participation in the industry‘s most important trade fairs. As we pursue further partnerships in the process of international expansion, it is worth noting that our company is certified in accordance with DIN EN ISO 9001:2010.

Made in Germany

with more than 45 years of experience







B:MACS - BÖNING Monitoring, Alarm and Control Systems

The Integrated Monitoring, Alarm and Control System offered by BÖNING ship electronics is ideal not only for new vessel installations or engine retrofits, but also for refit measures for used ships. BÖNING uses cutting-edge technology to manufacture durable and modular products that can be customized to meet each customer‘s specific needs and requirements. The initial outfit and retrofit solutions provided by BÖNING can be expanded when needed, making them highly adaptable.

The use of modern communication media, such as user-friendly touch screen displays, powerful panel PCs, and redundant safety systems, on the bridge ensures that the skipper has easy and clear access to all operationally and safety relevant data.

Choose Any Feature for Increased Ship Comfort

- **Navigation Lights** — Monitoring and lamp/group switching
- **Signal Horn** — With pre-programmed signals
- **Searchlights** — Direction control
- **Tank Levels** — Capture and visualization
- **Fluid Transfer** — Monitoring/switching pumps and valves
- **Bilge System** — Monitoring and pumps control
- **Door Access** — Custom access and open door alarm
- **On Duty System** — Engineer call panels and visualization
- **Fire and Gas Detection** — Monitoring detectors on every deck
- **Air Conditioning** — Infinitely variable control
- **Lights** — External and internal lighting control
- **Window Blinds** — Individual lighting in every room
- **Remote Access** — Monitoring/service from any location
- **iPad® Web and Log** — Accessing the ship's data via Wi-Fi
- **Generators** — Detailed data from each genset
- **Battery Chargers** — Status monitoring
- **Power Distribution** — Monitoring, switching and control
- **Hydraulics** — Winches control and pressure states
- **Thrusters** — With joystick control panel
- **Trim Tabs** — For economical cruising
- **Conning** — Navigation data via NMEA 2000®
- **Radar and Maps** — Integration of plotter software
- **Video Surveillance** — Camera control and visualization
- **Windshield Wipers** — Fast access with various setting options
- **Engines Start/Stop** — Decentralized engine control
- **Blowers** — Engine room or cabin blowers control
- **Data Logging** — Presentation and storage
- **Alarm Messenger Unit** — SMS alerts to your mobile

BRIDGE SOLUTION COMPONENTS

Custom Helm Controls

The helm control panel plays a crucial role in ship electronics, serving as the central hub from which the captain and crew operate the vessel‘s many systems. It is widely regarded as the most important human machine interface on board.

However, modern bridge consoles can be cluttered with devices from multiple manufacturers, each with their own unique approach to marine controls, making it complicated and difficult to operate. To ensure optimal ease of use and safety during operation, it is highly recommended to provide a unified interface. This is why the integrated bridge is not only a trend, but the logical next step in the evolution of bridge design.

To address this issue, Böning strives to increase the level of integration of third-party equipment as much as possible. Our goal is to create bridge consoles that are easy to use and don‘t intimidate the user with complexity, but instead invite them to carry out tasks comfortably. Our panel electronics feature micro switches that can last at least a million operations, providing clear tactile feedback when a button is pressed. The front foil is made of polyurethane with a velvet finish and is silkscreen printed on its reverse side and bonded with milled aluminum sheet metal, making it highly durable, UV resistant, scratch proof, and resistant to most cleaning agents, making it suitable for both indoor and outdoor use.

With over 30 years of experience in supplying aluminum foil panels, we have vast experience in feasibility and customer demand.

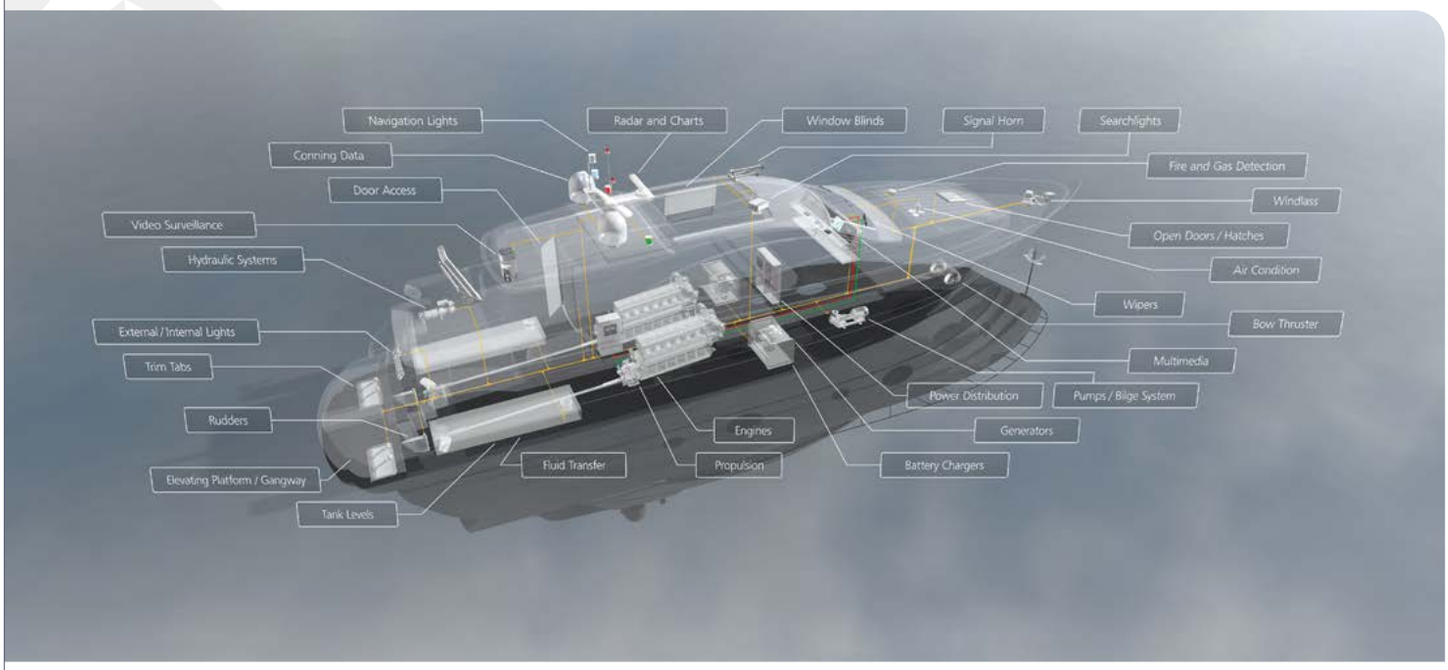
Features at a glance

- Unified helm design
- Simplified vessel operation
- Less clutter from the diversity of types of equipment
- Durable operation built to last
- Unobtrusive design, fitting any interior style
- single manufacturer benefits
- Unique custom controls - switch whatever you want
- Integration of almost every third party system

SMART BRIDGE

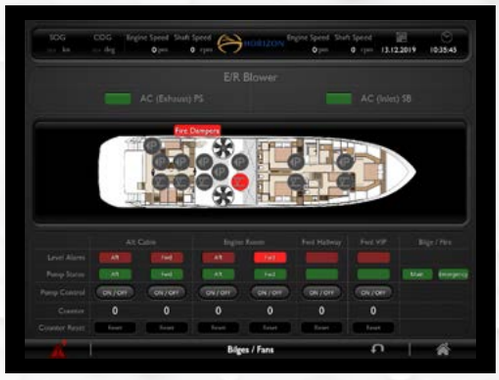
Modularity in a monolithic and light design
A small but smart space for managing the entire ship.

The powerful Böning ship automation system connects to almost any system and sensory device on board. With the integrated concept the skipper gets an overall solution at a central point. Irreplaceable external devices like VHF, autopilot, weather fax or any else can be concealed under the console. Control of all systems is performed by touch screen or customized operation panels.



B:MACS PE – Plotter Edition

The B-MACS PE is a recently developed solution that aims to provide users with more flexibility when selecting a chart plotter. By utilizing a new compact black box gateway, users are now able to use displays from major manufacturers in conjunction with our processing units, while still taking advantage of our customized monitoring solutions. This application has been fully integrated into the user interface of your chosen plotter, while the gateway handles all automation data preparation. Currently, our solution supports displays from Garmin, Raymarine, and Furuno.



- Modular solution with full alarm system functionality
- Visualization on chart plotters of leading manufacturers
- Compatible with Garmin, Raymarine and Furuno displays
- State of the art network connection via HTML5 protocol
- Individual graphical visualization
- Extensive options for connecting on board systems
- Large number of supported data protocols

ENGINE MONITORING

ENGINES, ANALOG

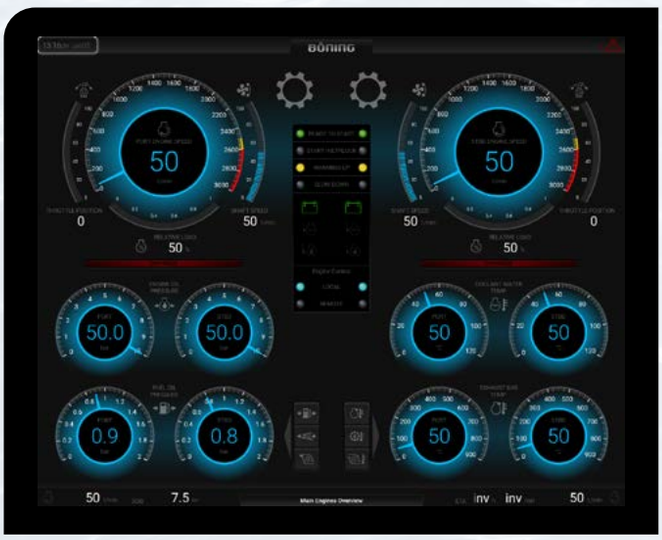
Similar to your car, the engine‘s condition can be monitored through a display that utilizes familiar display systems. The engine data is presented through round instruments and numerical displays.

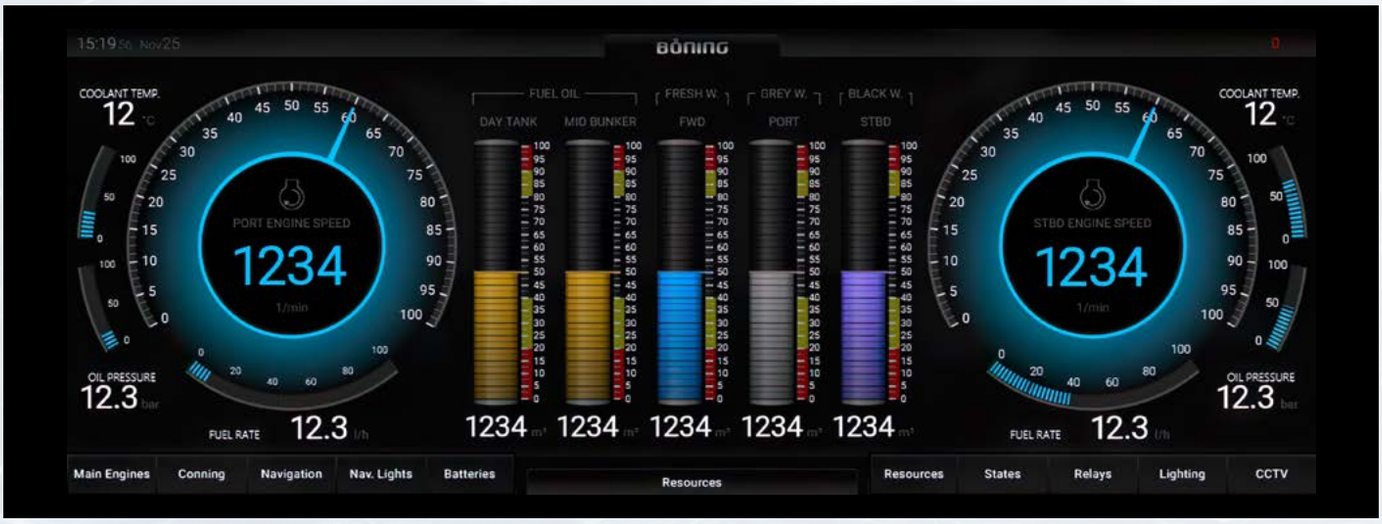
ENGINES, BARGRAPHS

The use of bar graphs facilitates the reading of critical engine parameters, enabling rapid visual comparisons.

ENGINES, DIGITAL

Accessing all engine data at a glance is akin to having the skipper in the engine control room, and often eliminates the need for a trip to the engine control room.





TANKS

TANK LEVELS

Fuel, water, oil, and other resources - as well as waste water and sewage - are carried along in tanks most of the time. Bar graphs display the tanks' filling states.

Also available:
Tank spill warning gauges for outdoor installation.

FLUID TRANSFER

Monitoring and switching of the fluid transfer systems, including tank monitoring and pump states.

BILGE SYSTEM

Monitoring and switching of the bilge pumps, including alarm and operate mode selection (automatic/manual).

NAVIGATION LIGHT CONTROL

Monitoring and Control Systems for Navigation Lights

The AHD-DPS 02 is a modular system that monitors and controls up to 42 navigation and signal lanterns on vessels. Its modular design enables customization to meet the specific needs of customers. The system comprises a basic module, up to four extension modules, and a customer-specific operation panel. It is available in various versions for the standard voltages on board vessels and works with both conventional and LED lanterns.

The minimum configuration consists of a basic module for 14 lanterns and a standard operation panel. Customers can add extra basic modules to control and monitor an unlimited number of lanterns. The operation panel includes one operation button and one LED status light for each lamp circuit. Customers can choose between a standard-size operation panel or one tailored to their preferences, such as a touch screen or panel PC.

The lamp current comes from either the main feed or a separate feed for emergencies. Both power sources are monitored continuously, and the internal electronics are powered automatically. If a lamp channel is turned off, both switch contacts are disconnected from the power supply with a relay. The lamp outputs are short-circuit-proof and maintenance-free. During electronics failure, the lanterns can be controlled manually.

The AHD-DPS 02 has a collective alarm (closed) contact that alerts higher-ranking alarm systems of current error conditions. It can be connected to ancillary systems through the CAN bus or Modbus for convenient control and visualization.

Cabin Control

Böning expands your control options on board. In addition to machinery-focused controls and monitoring, comfort features are now added to the range.

From now on you can control many comfort features on board via Böning technology. We provide you with all new options for light switches and multifunctional displays with highly customizable software. All control devices are connected to the shipwide monitoring and control bus. Shipwide control from a central location for all lights, air conditioning units and window blinds is just the first of immediate benefits.

Inside each cabin, the guest profits from customized controls tailored to the specifics of the cabin. All controls are labelled accordingly and therefore facilitate operation. No more guessing what switch turns on what light.

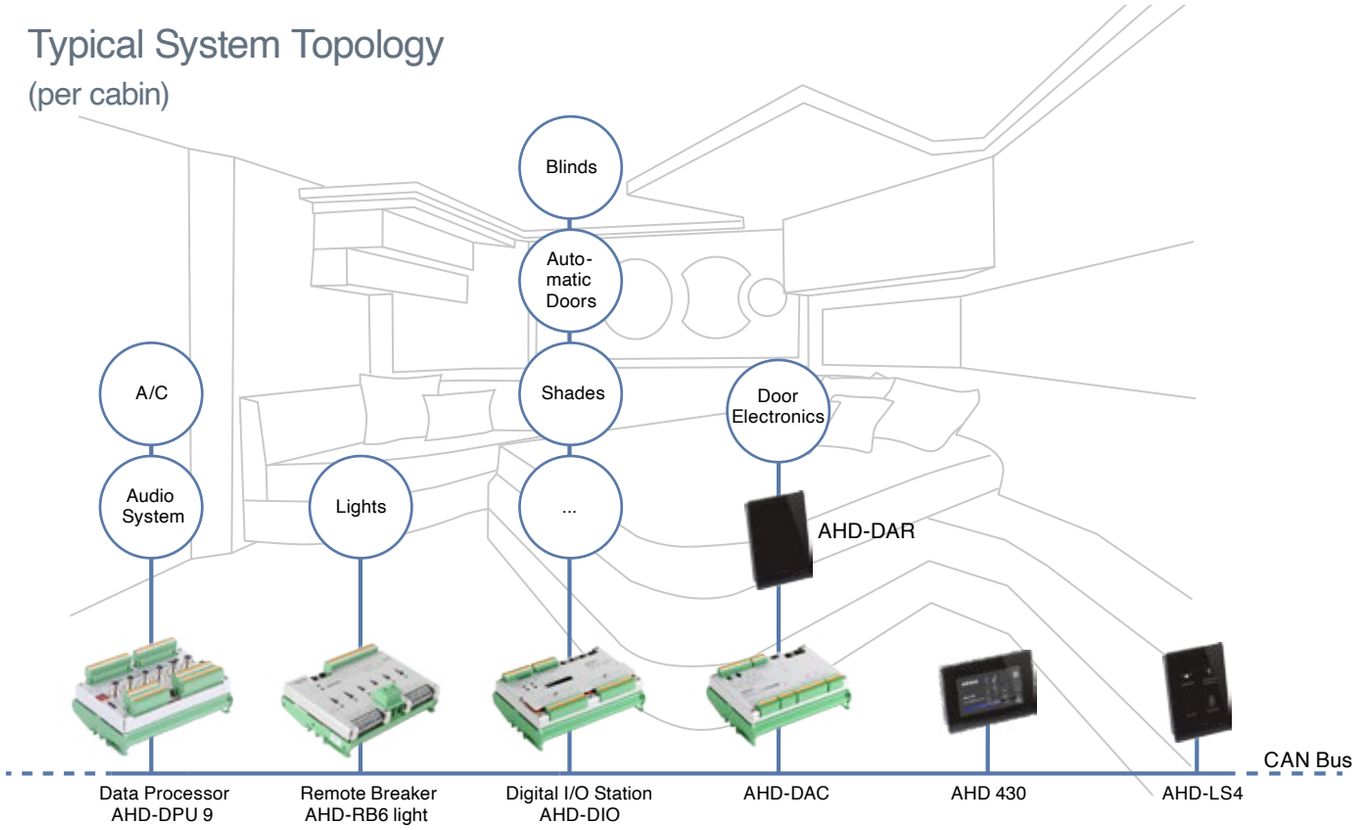
Additionally, all cabin functions can be controlled via iOS devices so the guest can use her smartphone instead of the conventional methods.

Features at a glance

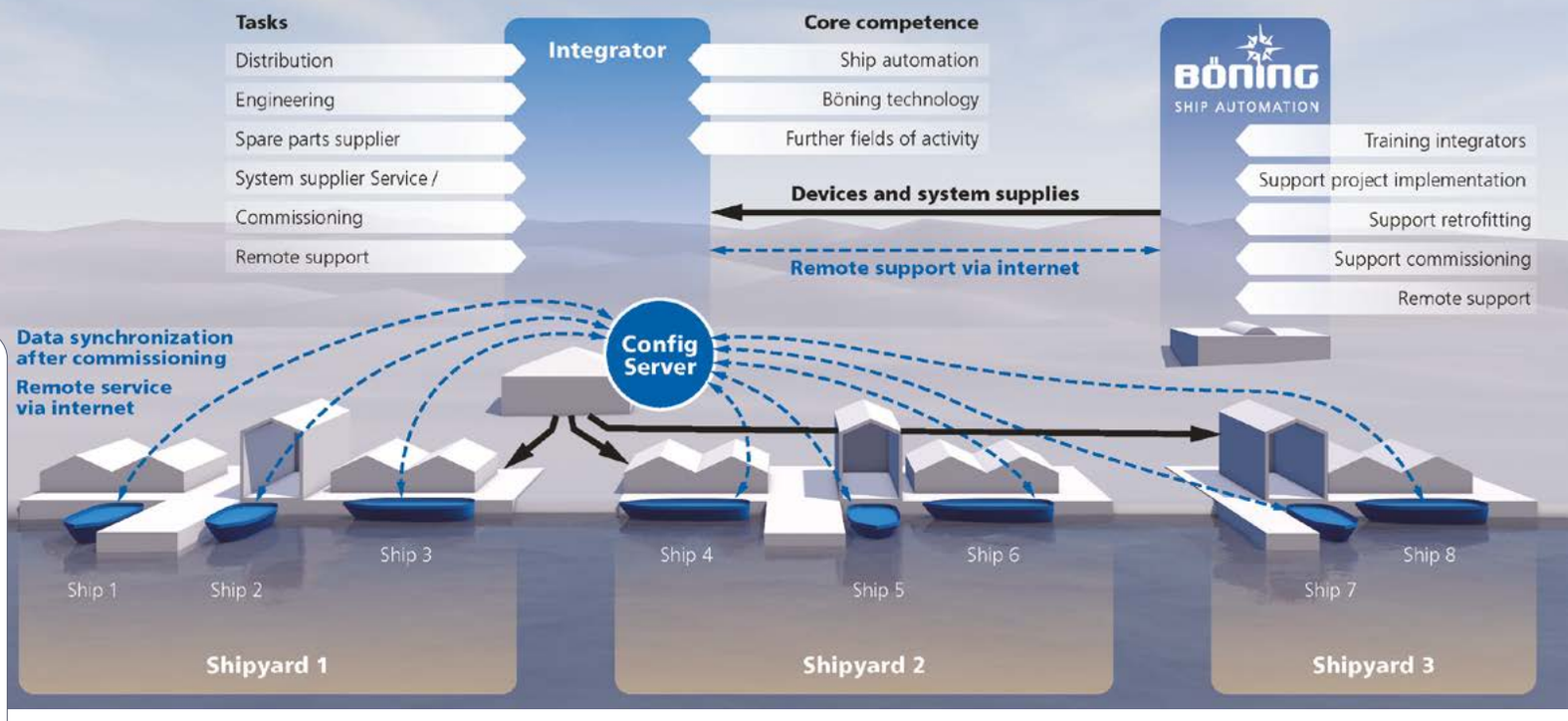
- Lighting controls
- Air conditioning
- Open / close window blinds
- Basic A/V controls
- Easily expandable
- Cabin controllers embedded in monitoring and control system
- Integration of nearly every third party system
- Integrates all control functionalities in a single device

Typical System Topology

(per cabin)



New Builds and Retrofits



Project Business with Böning Technology

Böning now offers independent project planning for integrators who already implement their own projects with Böning technology or consider this for the future.

The Control Center: Böning ConfigServer

The application developed by Böning allows comprehensive and secure data management of all projects based on Böning devices.

Work specific project and configuration data is saved to an independent web server that is set up and managed by the integrator. This ensures system know-how as well as permanent and exclusive access to all their projects. At the request of the integrator, Böning can resign from acting as manufacturer for a given automation system. From the integrator's point of view, two business models can be distinguished.

New Ship or Retrofit Projects

For new builds, the scope of the project is known and the execution of the shipyard contract can usually be planned well. The ship is in a predictable position and accessible.

- The integrator is in direct contact with his clients
- The shipyards are supplied, the system is set up and put into operation

The integrator or service technician will synchronize each new project with the ConfigServer database.

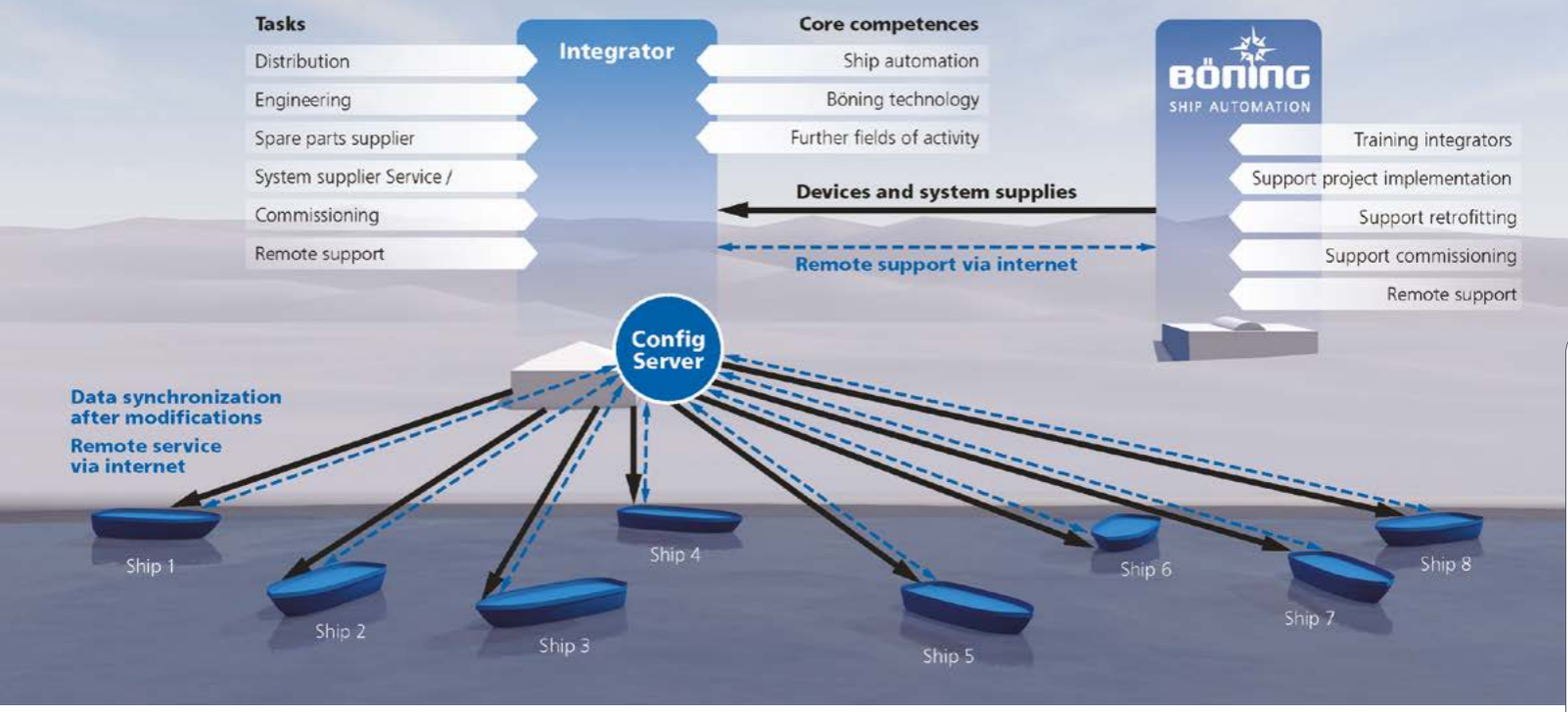
Exclusive Aftersales Business as Böning Partner

The contact data of the responsible integrator stored in the system helps the ship's crew to quickly and easily make direct contact in case of any incidents.

The integrator is in direct contact with each vessel.

Often the circumstances are complicated by the fact that the position of the ship is not foreseeable or accessible. With permission from the ship's crew, the service technician can log in to the system and analyze the problem in advance.

Aftersales and Service



If a hardware replacement is necessary due to a device failure, a local technician should be instructed to do so with appropriate instructions. Therefore, traveling to the place of damage can be avoided in many cases.

Long Term Profits Through Project Related Service

In both business models, the integrator benefits as the number of projects increases. By means of Böning training courses or project specific support, the integrator is constantly gaining experience and competence in the handling of Böning systems.

The exclusive data access also ensures a long term aftersales phase, which extends the integrator‘s activity range beyond the new building phase by an average of 30 years.

AFTER SALES & SPARE PARTS

MAN-High-Speed-Marine-Diesel-Engines Spare parts supply

We have been developing and producing electronic devices and automation systems for ships since 1977.

The diesel engine manufacturer MAN in Nuremberg has been one of our customers since 1997. For instance, we supply MAN with the MMDS series for monitoring, control and diagnosis of high-speed diesel engines. Up to now, more than 15,000 ships, mainly yachts and work boats, have been equipped with MAN engines, including the engine electronics developed and produced by us. Starting in 2013, we have delivered the devices under our name BÖNING.

We supply spare parts as well. These parts are not only supplied by MAN, but also by direct sales to anyone who places an order with us.

The devices and accessories listed here were developed by BÖNING for monitoring and automating MAN high-speed diesel engines. The designs have been developed over a twenty-year period and are the property of BÖNING Automationstechnologie. All components are manufactured at the Ganderkesee site in Germany and delivered worldwide from here.

Due to the widespread use and long service life of ships, we have set ourselves the goal of keeping the technology available at least until the year 2045 and this means ensuring the supply of spare parts.

BÖNING Project Business

Our project business mainly consists of automation systems for commercial ships and yachts. The following links lead you to our customer references and to some project examples:

www.boening.com/download/Referenzliste_EN.pdf

Project References

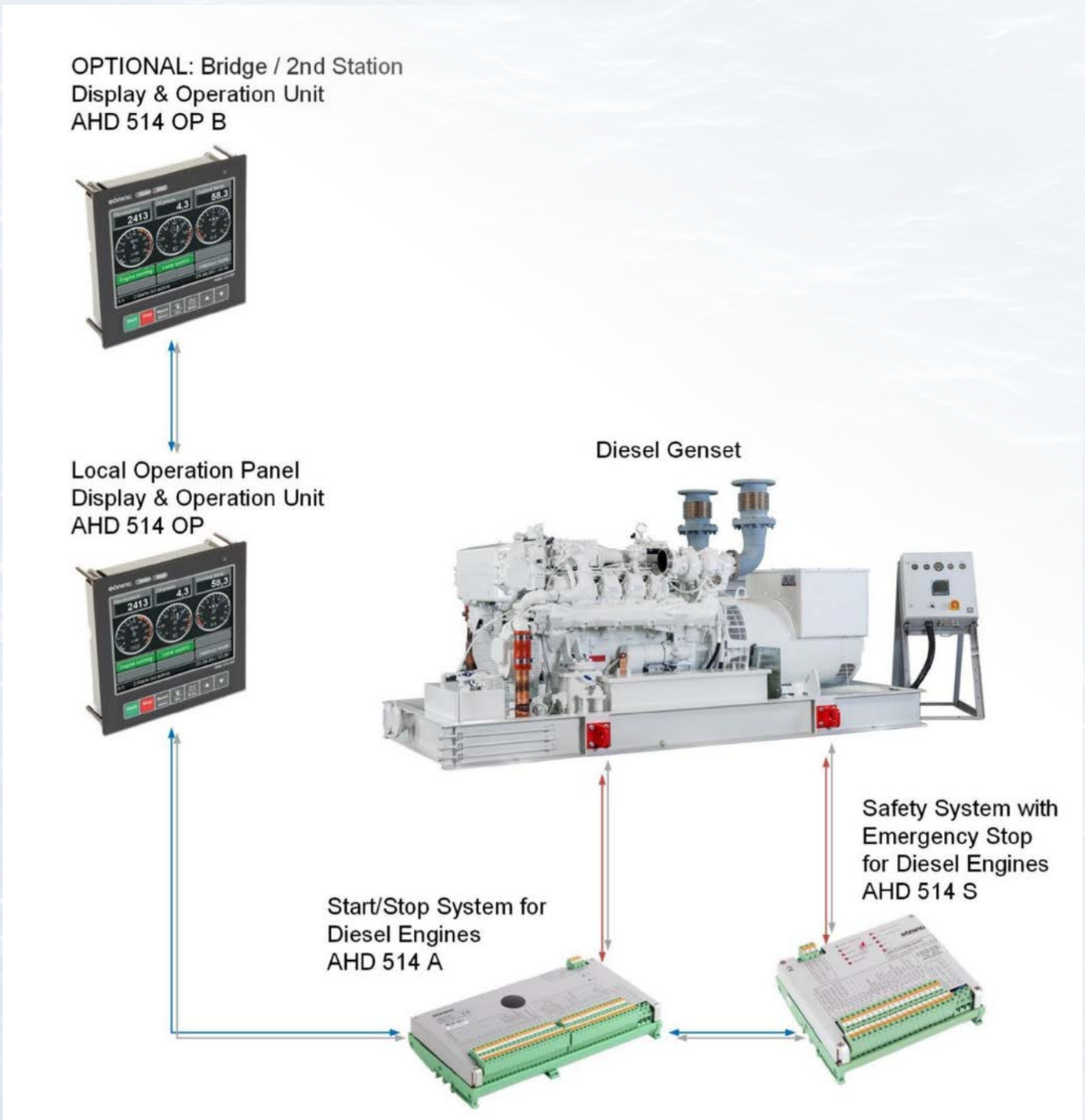
Please find a list of project examples under the following link:

www.boening.com/schemata/WebLink.pdf

GENSET CONTROL

AHD-514 Start/Stop, Alarm and Safety System

BÖNING also provides a complete solution with class compliant safety and emergency stop system for generally all engine brands, that operate on standard protocolls as SAE-J1939 and ModBus RTU, independendly from the engine brand but as well for the new generation of MAN auxiliary engines.



www.boening.com

Headquarters in Ganderkesee, Germany

Branches in the U.S.A., Brazil, Italy, Spain, and Croatia

Sales and Service Partners
For a list of our partners, please visit our website
www.boening.com

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