



ALPHATRON  
Marine



Bridge solutions

# AlphaBridge

Redefining bridge design

[www.jrc.am](http://www.jrc.am)

# Complexity, made simple

Whilst maritime technology becomes more complex, the number of specialized staff onboard is reducing, making high levels of monitoring vital to ensure a safe work environment for crew. Accuracy and reliability are paramount to efficient operations, which is why all equipment integrated on the AlphaBridge is designed to meet and exceed international standards. Our modular concept offers true flexibility to integrate sophisticated navigation and control systems from a diverse portfolio of technology, for any class and size of ship.



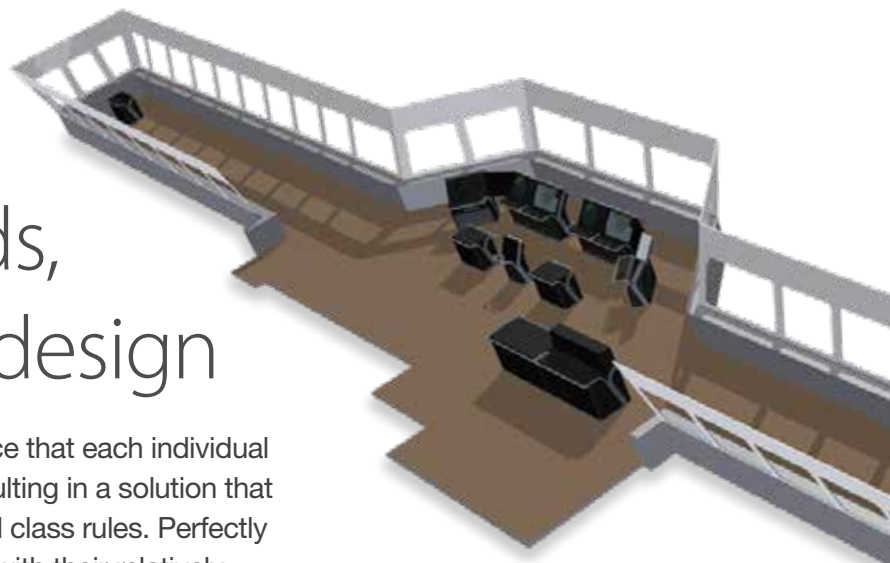


## Bridge operation, made easy

The maritime world first became familiar with the AlphaBridge concept in 2007 when Alpatron Marine introduced a compact, modular bridge solution based on standard control panels in a neat, simple design. Now close to 1000 vessels worldwide operate safely and efficiently thanks to the AlphaBridge. Our principle is that technology should make bridge operation easier - even for the highest class notations for vessels undertaking complex, sometimes hazardous operations.

## Setting standards, in space saving design

The AlphaBridge aim is to minimize the space that each individual component uses on the bridge console, resulting in a solution that follows the latest thinking in ergonomics and class rules. Perfectly suited to even the largest container vessels with their relatively small wheelhouses, which are often sized down to maximize the cargo volume of the vessel.



# The world's first truly modular bridge

The best of Dutch design has created a unique, versatile and innovative bridge system based on the highest quality materials and manufacturing techniques. Because of its modular concept, AlphaBridge can be preassembled at Alpatron Marine workshops around the world. Factory acceptance tests are carried out before shipment, ensuring your satisfaction in the quality of our delivery. AlphaBridge is built to your requirements. For instance, you can choose screen selection by KVM switch technology or full network MFD operation or modules in steel or aluminium, with special versions to meet diverse requirements on request.

|                                                                                                                                     |                                                                                                                                                |                                                                                                                                          |                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|  <div>width variable</div> <p>Standard console</p> |  <div>height variable</div> <p>Standard console</p>          |  <div>height variable</div> <p>Raised desk</p>        |  <p>Deep pedestal</p>                      |
|  <div>angle variable</div> <p>Wedge</p>           |  <div>width variable</div> <p>Empty desk or chart table</p> |  <div>depth variable</div> <p>Propulsion console</p> |  <p>Chart/GMDSS console</p>               |
|  <p>GMDSS console</p>                             |  <div>width variable</div> <p>Wing console</p>              |  <div>width variable</div> <p>Overhead console</p>   |  <div>stack and line up</div> <p>Rack</p> |

In addition to standard modules, AlphaBridge features work specific modules for offshore, dredging, fast ferry and workboat applications. Special custom made designs are available on request.



## Ergonomic design, safe operation

The ergonomic design of AlphaBridge follows regulations and enables intuitive, comfortable operation, which enhances the safety of your vessel. A unique facility to adjust the height of monitors and the work shelf in eight increments means that AlphaBridge is the first system to enable navigation and communication equipment operation from both a seated or standing position. Standard supply features simple manual height adjustment, while reliable electrical adjustment is available as an option.





Courtesy of Marijn van Loon

## Moored tightly, as is the concept

JRC and Alpatron Marine design, build, deliver, install and provide technical support for high-spec navigation and communication equipment on board ships. Our experience and expertise enhances the safety of your ships and crews in increasingly busier shipping lanes, whilst boosting fuel efficiency and reducing emissions. The result is more efficient operations, fewer errors and ultimately, a stronger bottom line.

In recent years we have taken our position as an established technology specialist and systems integrator to the next level, through intensive collaboration with specialist shipyards and shipowners. In accordance with our desire to respond even better to changing needs in the maritime world, we initiated a strategy to develop more products in-house. Alpatron Marine has since become a leading producer and co-producer of complete bridge systems.



# A new definition of ergonomics

The Dutch Pilot Organization ordered three new pilot station vessels. After a careful selection procedure, the AlphaBridge concept was chosen as the heart and brain of these sophisticated new crafts. In addition to advanced navigation and communication equipment, we installed various operational control desks that fully complied with the high ergonomic standards required for safe pilot operations.

## The interface puzzle, solved

We take the AlphaBridge (with 15 to 46-inch displays) as the base and incorporate the desired observation and control elements according to a number of ergonomic principles, such as ensuring operating panels are always within reach. As a shipbuilder, you do not have to worry about the size of a cabinet, we take care of that. We take away any concerns our customers might have and maintain all contact with subcontractors if required. As a total systems integrator, we understand the importance of securing all interfaces, so whether you are a shipbuilder, owner or designer, we can make your job easier.

The ergonomic design of the AlphaBridge meets all requirements of classification societies and the international standard ISO8468 (Ship's Bridge Layout and Associated Equipment). It is installed on vessels complying with various class societies including Lloyds Register, DNV and BV. The AlphaBridge concept can be composed of various makes and types of equipment in order to comply with specific requests.



## A good start, in all dimensions

In close contact with the shipyard, owner and naval architect, a full 3D proposal is created before the actual bridge layout is taken into production. As a result of our flexible and modular approach, multiple variants based on the core AlphaBridge concept may be composed to ensure we offer the best solution for your vessel. All AlphaBridges carry the same DNA, with the same uniform design and control functionality that the aviation industry uses to secure safety at 30.000ft, which ensures safety and efficiency at sea level.



## Innovation, in form and function

A unique CAN bus dimming circuit controls the brightness on all AlphaBridge control panels and other equipment if suitable. A patented snap on mounting system makes it possible to fit control panels and Alphanon Marine designed monitors without tools. As a result, a minimal amount of screws or mounting bolts are visible.





## Full control, your way

Full, flexible and ergonomic control is a leading principle in the AlphaBridge system. You can choose customized joysticks or trackpad controls of the highest quality, enabling screens to be selected and controlled from a single workplace. Additional joysticks or trackpads are available in order to meet all control and layout needs of your vessel. Reflecting the flexibility of AlphaBridge, you can specify and personalize all control functions on demand.





## One man bridge

We have a unique, fully integrated one-man bridge with three 46-inch screens designed for offshore and coastal patrol vessels, showing radar, ECDIS, conning, alarm monitoring and dynamic positioning data at a glance from a comfortable captain's chair with all instruments and operating panels within arms reach. The JRC Multi Function Display (MFD) forms the backbone of this ruggedized concept.

## Detect and identify

Another variant is for use in law enforcement, semi military and/or patrol vessels which additionally has a fully integrated WECDIS system by Transas. Detect and identify are key elements for officers to work and operate on patrol vessels. The AlphaBridge features the latest high end tactical navigation and observation systems.

All systems work flawlessly together to allow target motion analysis, intelligence and target alarms, evidently for a quick response to emergency situations. Also a unique interfacing between thermal camera's and WECDIS allows full integration with the vessel's tactical mission specific parameters.

These are just a few of the solutions and capabilities of the AlphaBridge supported by specialized WECDIS functions, presented on large displays in an easy to use format.



# Achieve more, with fewer people

When the radio officer was replaced by electronics 25 years ago, Alpatron Marine came up with the integrated GMDSS console, which incorporated all relevant equipment. We have been pioneering new ways of working for years, gradually harmonizing control, communication and navigation technology. We introduced uniformity to lighting and switches, created a simple click system for flexible equipment installation and developed dynamic height adjustment for displays, to name just a few of our innovations.

The large 46-inch screens used on the AlphaBridge ensure that navigation officers get a clear view even when standing several meters away, making one man bridge operations much easier and therefore safer. Following the trend of smaller bridge design and reduced manning, AlphaBridge provides greater clarity on watch. For large ships, the system uses a chart format that corresponds as much as possible to what navigators are used to, which helps to avoid human error in the sometimes high pressure bridge environment.



# Traditional design, ahead of its time

The strengthening of the partnership between JRC and Alpatron Marine has been prompted by the ever growing Asian market and the expansion of our own product range and supplementary services in recent years. With history that spans over 100 years, JRC develops the best quality maritime products. Alpatron Marine understands the end user and has been a system integrator with an eye for ergonomics and total concepts for more than 25 years.

Asia is traditionally building mainly larger vessels and the operation of the entire bridge from a sitting position has not been the norm. Watch officers work standing up, so we have developed a derivative of the one man bridge for larger vessels. The premium bridge features a variety of 46-inch (26-inch also available) screens in the front console, supplemented by extra consoles with control and operating panels as well as a free standing steering console.

This unique approach reflects our ability to satisfy the bridge design requirements of shipyards and owners. The premium bridge is built in compliance with IMO regulations and is available for all ships regardless of their tonnage and class notation, including IBS, NAUT-OSV(A). Manufacturing of the system can take place as near as possible to the actual building location.



# 46-inch at home, why not at sea?

What you do not see is just as important as what you do. Today, we have huge televisions and PC monitors at home and in our office. We believe big is best at sea too, so we base our premium AlphaBridge concept on 46-inch full HD displays. The LED technology allows for a phenomenally bright picture with excellent colors that can be seen from nearly every angle. With thin bezels, the crisp, clear picture is the center of attention. Even when walking around a large bridge, the important navigation and safety information displayed can always be seen when you have displays of this size and quality.

The AlphaBridge software works intelligently with the displays. With only a touch of a button, you can switch between various systems such as radar, ECDIS or conning. It is a great example of how hardware and software are designed to work together to give you the best experience possible – but on a whole new scale.



# Maximum view and control

Offering full control from a sitting position and exceptional all-round visibility through the full height windows. This tugboat concept is developed together with some of the biggest tugboat operators in the world. The bridge comprises of two ergonomic and dynamically designed consoles with a central captain's chair mounted on rails. The consoles contain the majority of controls and instruments required to operate the tug with at each end a semi-retractable screen for radar or other multi-function screen displaying navigation and other operational data.

# Limited space, unlimited functionality

Modern tugboats are equipped with azimuth thrusters that are manoeuvrable through 360°. The AlphaBridge tugboat variant ensures all round visibility and vessel control, without compromise. The AlphaMultiCommand Chair can rotate 180° allowing for various compatible design options suitable for ASD, Rotortug, Z-Peller, Schottel and Voith Schneider.



# Building to a higher standard

Emphasising the attention to detail in all areas, careful consideration has gone into enhancing the performance, satisfaction and situational awareness of the watch officer. Even as far as strategically placed USB charging facility, documentation storage and cup holders, the smallest details are taken care of with AlphaBridge. Considering redundancy, ergonomics and regulations, hardwire control buttons are also provided, giving direct access to relevant functions required by class or operator.





# Unique pushboat concept

We have a unique pushboat bridge concept dedicated for the American river and inland waterways. Harnessing 25 years of European inland waterways experience a careful balance is struck between the latest technological advancements and the unique operating requirements for some of the world's largest rivers.

In Europe typically inland shipping moves a maximum of 6 barges at a time while the significant size of the rivers in the United States allows for transport of up to 36 barges at the same time. We have gained experience from hundreds of modular bridge solutions delivered to the European market and based on this we developed the pushboat variant.

Besides controlling the vessel from a single chair, the captain can now actually feel the power of the main and flanking rudders while holding the joystick. This remarkable way of operation, designed together with Dutch hydraulic steering specialist Van der Velden Marine Systems really lets the operator feel control of the vessel.





## Sitting comfortably, truly dynamic positioning

The AlphaMultiCommandChair is a versatile piece of control equipment suitable for extremely demanding applications. Within easy reach of the operator, a multitude of functions can be accessed or controlled, including: dynamic positioning system, hydroacoustic reference devices, laser radar, fan beam, (chart) radar, ECDIS, conning, CCTV, cargo handling, VHF and alarm monitoring.

A touch screen AlphaCommand panel provides access to various auxiliary functions such as screen selection, intercom, PABX, window wipers, search light, navigation lights, deck lights and other systems.

The chair is available with full electrical control in respect to height and position, but is also available as a fixed version without electrical adjustment and/or flat armrest. Customized variants can be made on request.



# AlphaChartTable

Another example of large display integration is the new and unique AlphaChartTable. Comprising of a phenomenal 46-inch touch display, well known from the premium bridge design, where routes can be planned on a more realistic “paper chart” scale.

By use of the digital chart table, navigators are now given an intuitive and user friendly interface to plan optimal routes by touch operation. The software gathers and overlays the data officers require, including ENC's, weather data, tidal information, digital publications, and other services like piracy updates – all on a single 46-inch display.

The console is designed in our usual trusted way, a natural fit to existing AlphaBridge design. The display can be electronically tilted to a 35-degree angle, allowing optimal routing in the most ergonomic position. In addition to the AlphaChartTable powered by NAVTOR, the console has a built-in Navtex and GPS navigator, while at the same time leaving room for the paper chart for back up purposes.





# AlphaLine Repeater

Smart, clear, consistent, safe, just some of the ways to describe what the AlphaLine series of navigation and communication instruments bring to the bridge of the future. A full lineup of instruments that are easy to operate via an intuitive 5-inch, 6.5-inch and 8.4-inch color touchscreen display.

With just one physical button on the display, the three display sizes may be the first thing you notice. But there is so much more. Our engineers have created a beautiful platform for the software driven instrument line. The three display sizes are easy to operate, regardless of which of the many different products software is installed.

- AlphaHeading
- AlphaHeading+
- AlphaTMC
- AlphaTMC+
- AlphaDepth
- AlphaDepth Single
- AlphaSpeed
- AlphaSpeedLog
- AlphaTime
- AlphaRudder
- AlphaTurn
- AlphaTurn (optional rudder)
- AlphaRudderTurn
- AlphaWind
- AlphaWind (relative)
- AlphaMeteo
- AlphaMeteo (relative)
- AlphaNav



## Single supplier, multiple options



JRC and Alpatron Marine supply a range of lights for any type of vessel, ensuring your peace of mind in the quality of products on board. Deck controlled, cabin controlled or remote controlled versions are available.



We can deliver wheelmark approved LED navigation lights as a total solution in combination with control and monitoring systems. With shockproof, watertight housings, problems caused by vibration and water ingress are a thing of the past.



Various meteorological sensors are available, designed to withstand the toughest environmental conditions at sea. These high accuracy sensors use industrial standard interfacing that can be complemented with the AlphaMeteo display.



A wide selection of air and electronic horns suitable for small boats, as well as IMO approval for vessels over 100 meters that can withstand the punishing use of commercial and military service.



In line with the JRC and Alpatron Marine philosophy to offer total solutions, window wipers are a valuable complement to our product range. Switch them on and you can see clearly, whatever the weather – rain, snow or ice.



Courtesy of Damen Shipyards



Courtesy of Damen Shipyards



# Mobile audiovisual remote support

Since the very beginnings of delivering the AlphaBridge and various other complex solutions, supporting the ship-owner and crew the best to our ability has remained a priority. However, our desire and commitment to continually improve inspired us to build a total service platform around a new device called the AlphaEye.

With the AlphaEye, the crew onboard can call through a dedicated (satellite, 3G or 4G) communication link directly with the expert in the Alphasat Marine office and let us experience through live audio and visual contact the issues they are facing. Even in such a specialized and customized environment onboard, error analysis and problem solving can now be achieved in a matter of minutes. This unique remote support makes adjusting or replacing components just that easy and with the fault finding completed, necessary parts can be arranged to be ready in the next port of call.



Besides support of our own bridge navigation and communication equipment, we are also supporting ship owners and other strategic partners on various types of vessels. In collaboration with global market leaders, we can support the same solution for engines, hydraulics, pumps, cranes, and even telemedicine. We are making the difference, all via one single point of contact.



## Supporting the AlphaBridge

With Alphontron Marine and our local partners we are able to ensure worldwide that our customers receive the highest quality service, up keeping the operational and safety standards and include preventive maintenance services to secure the overall smooth running of bridge equipment, delivered in a competitively priced package.

With the nature of our modular concept we can pre-assemble the complete bridge at one of our workshops and ship globally. Through a dedicated central service department, 24/7 service availability is offered worldwide.

Ship owners who want no surprises in future bridge maintenance can opt for the comprehensive global service and maintenance contract. For a better understanding on board, we have a certified training department providing customers with both operational, technical or approved ECDIS training at any of the training centers around the world.

Also teams specialized in integrated technology in the field of complex IT solutions and IP entertainment and infotainment are available for you.



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