TeamViewer

Augmented Reality in operation on the high seas

maresystems digitalizes its support processes with AR-supported remote maintenance and reduces travel costs by up to 80%.

maresystems

From simple barges to high-tech ocean-going tankers and gigantic container freighters - ships move millions of tons of goods around the world every year. To ensure that the technical systems on board a ship operate as smoothly as possible, maresystems GmbH, based in Hamburg, supplies ship automation systems that record and evaluate all ongoing processes on board and vizualise them on the on-board computer. In the event of a system or plant malfunction, fast help is required - a challenge when the next port is several nautical miles away.

This is why maresystems relies on TeamViewer Pilot to guide its customers through the complex ship technology step-by-step via augmented reality in the event of a malfunction and to bring about a quick solution to the problem even in the middle of nowhere.

Challenge

Malfunctions of operationally relevant systems on board a ship require quick action - even on the high seas.

➔ **Ships with maresystems equipment are spread all over the world**

➔ **If technical support is needed, a journey by the expert is often lengthy and associated with high costs**

Solution

maresystems offers practical remote support with TeamViewer Pilot in case of service: Troubleshooting on board can be carried out by technically experienced crew members with the help of AR data goggles or the camera of a smartphone or tablet under remote guidance by qualified engineers on shore.

Results

Using the AR solution eliminates the need for on-site visits by any specialist - shipowners and operators save considerable time and money.

➔ **ROI achieved after only a few days**

➔ **Reduction of travel costs by up to 80%**

➔ **maresystems solves 85% of technical support requests already in the first contact in 2nd level support**

System monitoring 365 days a year

The equipment and systems from maresystems can be found on several thousand commercial and special ships worldwide. There, they not only create all the conditions necessary to get the ship running, but also use sensors to monitor the individual systems for limit violations. For example, if the pressure in a boiler rises and exceeds a certain limit, the automation system automatically triggers an alarm and a display on the ship's computer. This gives the ship's crew early warning and allows them to act before the situation becomes critical.

Faults in the automation system itself, such as a defective sensor or screen, must also be rectified as quickly as possible. But the crew cannot always take care of this themselves. Then the technical staff on board the ship can rely on the help of qualified support staff from maresystems - around the clock.

"We have modernized and digitalized our support by introducing AR data glasses on which TeamViewer Pilot is installed," reports Michael Steinbach, Managing Director of maresystems. "This allows us to connect in real time with the crew on board a ship from our office in Hamburg and guide and support them in solving problems."

> **Michael Steinbach, Managing Director of maresystems**
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> **With TeamViewer Pilot, we can help the crew immediately. We diagnose in real time and guide the crew in solving the problem.**

Troubleshooting and diagnosis across nautical miles

In the event of a malfunction of the automation systems, if telephone support cannot solve the problem, a connection is established via TeamViewer Pilot between a technical expert from maresystems and the crew. This is done via a satellite-based data connection. Via the camera of the AR data glasses, the support staff now see the same as the person wearing the glasses on the ship.

"The big advantage is that we can help the crew immediately. The technicians show us the affected system via the data goggles. We make a diagnosis in real time and guide the crew in solving the problem, with immediate success control," Michael Steinbach describes the procedure.

The support expert guides the technician on the ship step-by-step through the repair process. In fact, 85% of 2nd level support requests can be solved in this way during the initial contact. If a spare part is needed for the repair, it is ordered directly and delivered to the next port - even before the ship arrives there.

All that is needed to use the AR data glasses is a local data connection - on the high seas via a satellite-based 4G/LTE mobile network via antenna and router, or in port via a local WLAN with internet access. All remote sessions are AES 256-bit end-to-end encrypted and comply with SOC2, HIPAA/HITECH, ISO/IEC 27001, ISO 9001:2015 and GDPR.

And this is how a typical use case for TeamViewer Pilot looks at maresystems: Due to water damage at a control valve, a gas turbine no longer receives sufficient fuel. The power drops, the ship slows down. The shipping company loses money. Even worse: the manoeuvrability of the ship is endangered - and with it the safety of crew and cargo. Quick action is now required. But the defective valve is hidden behind numerous plates that have to be removed in a certain order. This is where the view of an expert helps. On the screen of the AR data goggles, the maresystems support employee shows the crew member step by step with markings and explanations how to reach the corresponding valve and repair or replace it.

Augmented Reality is revolutionizing the support in the maritime industry

In the maritime industry, the use of augmented reality is still in its infancy. "As an innovative and modern company, we decided to invest in this technology of the future," says Michael Steinbach. "The fact that we can react promptly with TeamViewer Pilot and that almost any travel time and costs are eliminated increases the acceptance of the solution by shipping companies enormously."

The option of condition monitoring, in which the automation systems from maresystems transmit all data and process images ashore, also helps here, so that the shipping companies have an overview of the processes on their ships at all times.

## Remote support with TeamViewer Pilot complements on-site support more and more

For the future, Michael Steinbach envisions that TeamViewer Pilot's remote support solution will increasingly complement on-site support. There are also plans to equip maresystems' facilities and systems with further TeamViewer products.

Michael Steinbach is extremely happy: "With the AR data goggles and TeamViewer Pilot, we have maximum flexibility and can help a crew around the clock - even over thousands of nautical miles."

Take the next step

To find out more about the TeamViewer solution presented here please contact your TeamViewer sales representative. Visit us on the internet: www.teamviewer.com/pilot
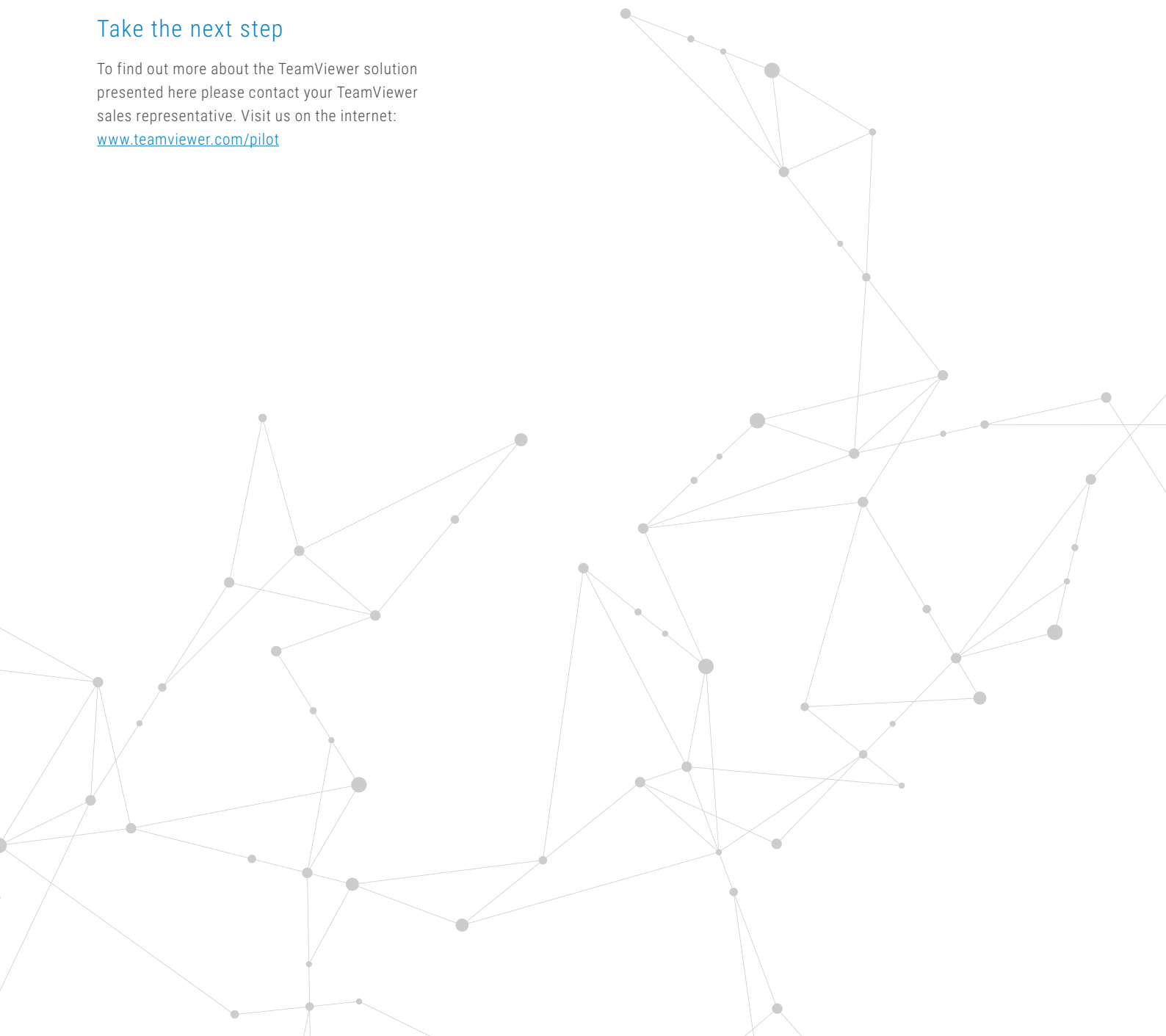
About maresystems GmbH

maresystems GmbH, headquartered in Hamburg and with a branch office in Neumünster, is a manufacturer of maritime ship automation systems for commercial and specialized shipping. maresystems systems are in use on several thousand ships worldwide. There, they record, visualize and monitor processes and systems of the ships and thus maintain their operation. www.maresystems.com.

About TeamViewer

TeamViewer is a leading global technology company that provides a connectivity platform to remotely access, control, manage, monitor, and repair devices of any kind – from laptops and mobile phones to industrial machines and robots. It enables companies of all sizes and from all industries to digitalize their business-critical processes through seamless connectivity. TeamViewer proactively shapes digital transformation and continuously innovates in the fields of Augmented Reality, Internet of Things or Artificial Intelligence. The company is listed at Frankfurt Stock Exchange and belongs to MDAX.

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