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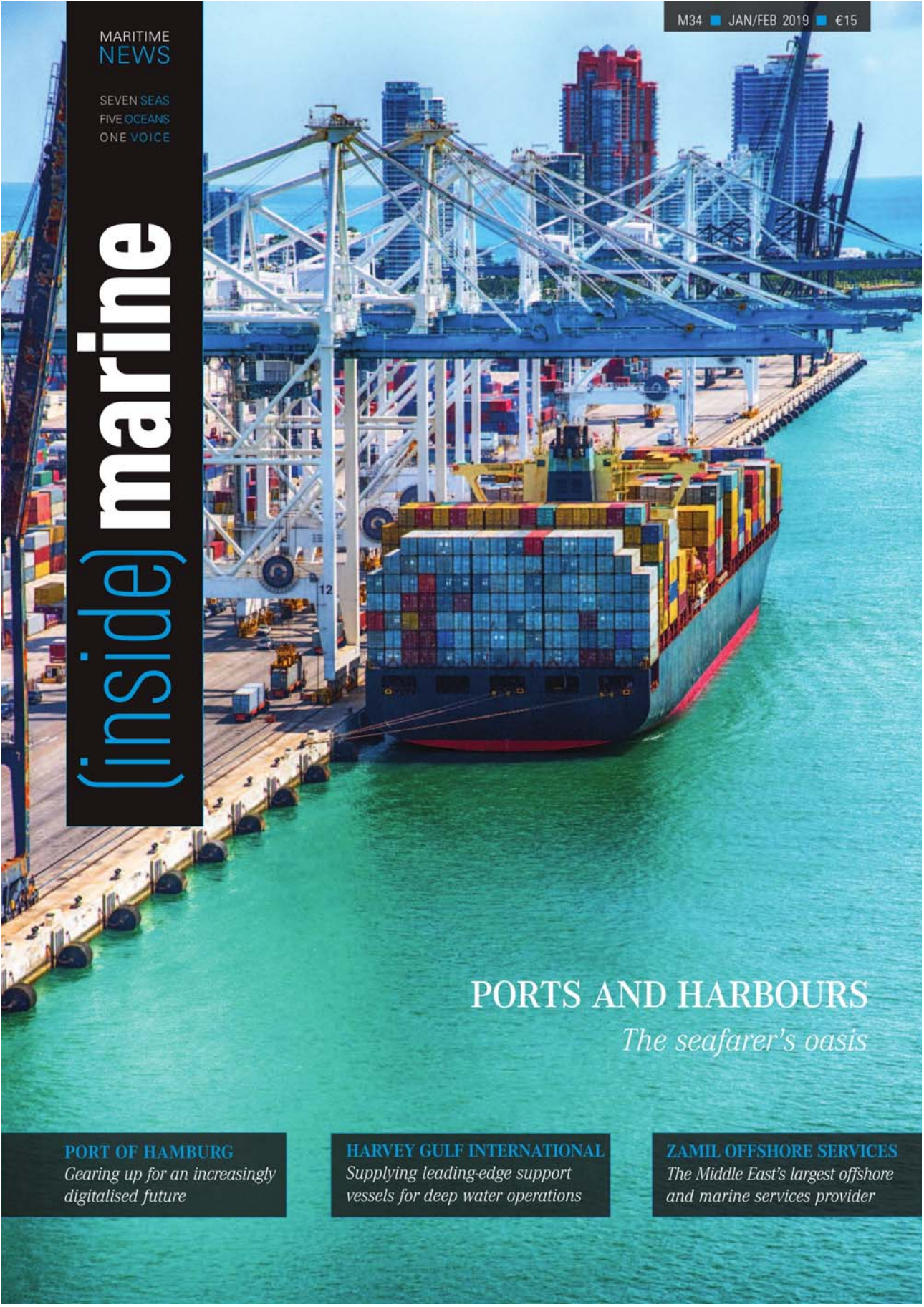
MARITIME NEWS

SEVEN SEAS
FIVE OCEANS
ONE VOICE

(inside) marine



PORTS AND HARBOURS

The seafarer's oasis

PORT OF HAMBURG
Gearing up for an increasingly digitalised future

HARVEY GULF INTERNATIONAL
Supplying leading-edge support vessels for deep water operations

ZAMIL OFFSHORE SERVICES
The Middle East's largest offshore and marine services provider

Staying CONNECTED *at sea*

Digital computer connections and electronic processing onboard ships have become more sophisticated in recent years, heralding increased reliance on IHSE's keyboard, video, mouse (KVM) switches and extenders. One of the company's latest projects is aboard Royal Caribbean Cruise Lines' largest and most prestigious cruise ships. Andy Probert reports.

Established more than 30 years ago, southern German-based IHSE has experienced phenomenal growth of its highly advanced products as the demand across all industries for computer-based technology has increased.

That growth has accelerated in recent years as computers switched from analogue systems to digital. Nowhere has the advance in digital communications been more profound than in the maritime sector – be it onboard ships, oil rigs or at ports.

The general growth in electronic processing and bandwidth has opened up new capabilities to manage and control signals. And IHSE has been at the forefront of these changes through the intelligent deployment of its KVM switches.

IHSE's products are utilised wherever computers are used: in broadcast, maritime, air traffic management, emergency services, defence and civil applications, as well as telecoms, roads and railways.

The KVM matrix switch systems that IHSE designs and manufactures range from eight to 576 ports and are used in small offices through many different locations like control rooms and airport control towers, right up to massive installations in government installations and broadcast studios.

The common requirement for all users is to have a flexible, totally reliable method of connecting users to remote computers, and for those users to be able to instantly switch between computers.

IHSE has experienced an upsurge in interest from the maritime sector as ships become more automated. The increased use of its KVM switches and extenders enables the switching, extension and conversion of all types of computer signals, including DVI, HDMI, digital audio and USB. They provide operators with the ability to select and control several computers simultaneously.

Withstanding challenging conditions

An operator no longer has to be physically close to a computer to use it – but can be 150 metres away – or even up to 10km away, depending on the type of cable used in the installation.

The KVM switches that IHSE produces are devices that connect a large number of computers – on the input side, and a large number of workstations – on the output side. This makes it possible for any user to switch to any computer, at will, and without delay, or crucially, adversely affecting image quality.

IHSE Sales Director Michael Spatny, explained that the company's products are designed and built to withstand the most challenging conditions experienced at sea, as well as extreme temperature change and humidity levels.

With ships that are several decks high, there is a need to ensure that onboard staff can access any device quickly without the delay caused by physically moving to a fixed, distant workstation.

IHSE's KVM extenders enable operators to connect to essential computer equipment remotely – over several decks and long distances. The addition of a matrix switch allows any operator to reach any onboard computer from any location.

Mr Spatny said this offers many benefits, including ease of access to multiple computers, as well as interaction with multiple computer screens using a single keyboard and mouse; all performed without the delay and inconvenience of returning to a dedicated location on another deck.

In large vessels, KVM extenders and switches provide the connection between operators and their computer-based systems, wherever they are. Computer signals are transmitted up to 10,000m from the equipment room to the bridge in real time and independent of the network. ↘

Photo credit: Mario Hoppmann, Alfred-Wegener-Institut

The KVM system comes into its own on very large vessels, and those operating in extreme conditions, like large cruise liners, research vessels and geophysical survey ships, in which researchers constantly need to access and monitor data processing equipment located remotely. In port control centres, up-to-the-second information can be critical to the safety and smooth passage of shipping in ports and through congested waterways. Operators and controllers have to rely on the KVM systems they use to access distant computers.

Cruise ship solutions

Mr Spatny said KVM systems are installed on the integrated bridges of superyachts. KVM extenders help by removing the noisy and distracting computing equipment while maintaining clear and accurate information for officers on the bridge.

Recently, IHSE KVM systems were installed on Royal Caribbean Cruise Lines' largest and most prestigious cruise ships, Harmony of the Seas and Symphony of the Seas, each capable of carrying 6,750 passengers, along with 2,100 crew members.

"The KVM solutions enable the crew to quickly and easily access important data from workstations around the ships," said Mr Spatny. "Critical decisions need to be taken without delay to ensure the utmost comfort and safety of those on board, and any hesitation or lack of information can have dire consequences."

With 18 decks and an overall length of 360m, moving to a dedicated location somewhere in this pair of cruise ships just to use a particular computer system would take time and reduce the efficiency of the crew and their ability to provide the best possible level of service and safety to customers.

Thanks to the KVM solution, crew members have instant access to all the information they need from any convenient workstation – comprising a screen, keyboard and mouse – and can instantly switch between the computers they need to access. This system ensures a high degree of flexibility, convenience and greatly improves crew efficiency.

As well as saving time, the KVM systems increase safety; data is always available to the crew ensuring that they do not miss any important safety-critical information. Backup and redundant connections ensure continuous operation of the systems in the event of failure or emergency.

"Even on the world's biggest cruise ships, saving space is crucial," acknowledged Mr Spatny. "The IHSE KVM solution is of great benefit in addressing this target, especially in highly technical venues like the engine control room or safety command centre."

Integrated functions

The IHSE KVM matrix system is also relied upon in the world's most advanced vessel tracking centre at Hong Kong Harbour. SAAB Technologies, Intronics and IHSE joined forces to build the Harbour's Vessel Tracking Centre. Around 200,000 ships annually enter Victoria Harbour, handling 300 million tonnes of cargo, and playing an important role in China's international trade.

Michael Spatny, Head of sales

Port controllers rely on Draco tera KVM matrix switches to connect workstations to critical computers at 4K resolution, enabling operators to instantly switch tasks as conditions change.

These devices ensure that 4K UHD video information is displayed exactly as produced by the computers so that operators do not miss vital information that could endanger vessels and lives at sea.

IHSE's systems are also installed on the drilling and production island of Germany's largest oil field, Mittelplate, north of the Elda Estuary. With an annual production volume of 1.4 million tonnes of oil and containing about 65% of the remaining economically recoverable German oil reserves, the need for safety is a top priority.

A control room is located on the drilling platform from which essential services, including the gas warning system, fire alarm system, camera system and process control system, are monitored and operated around the clock by shift supervisors.

Before IHSE's involvement, system computers were located close to operator workstations. These took up valuable space and caused a considerable amount of noise and heat. In addition, the computers required regular cleaning because of the dust and dirt in the air.

The IHSE KVM solution greatly contributed to making the new control room quieter and more comfortable. This was achieved by relocating the IT infrastructure to a separate equipment room.

All computers and process control systems as well as the operating devices (10 monitors, eight keyboard-mouse sets and loudspeakers) are connected via a Draco tera KVM matrix switch. From the workstations, operators can access all necessary systems as if the computers were located right there.

"Thanks to good preparation and cooperation between all parties, the project was a great success," stated Mr Spatny. "Together we have created and delivered a flexible infrastructure in which various functions are integrated into one system. In addition to the user-friendly environment, the system offers extensive switching options. Operators can instantly access any device they need from their individual workstations – with optimum video quality."

He concluded: "IHSE is now globally recognised as the leading supplier of high-end, flexible, rugged solutions that bring connectivity in the most challenging environments, whether it is on land or at sea." ■