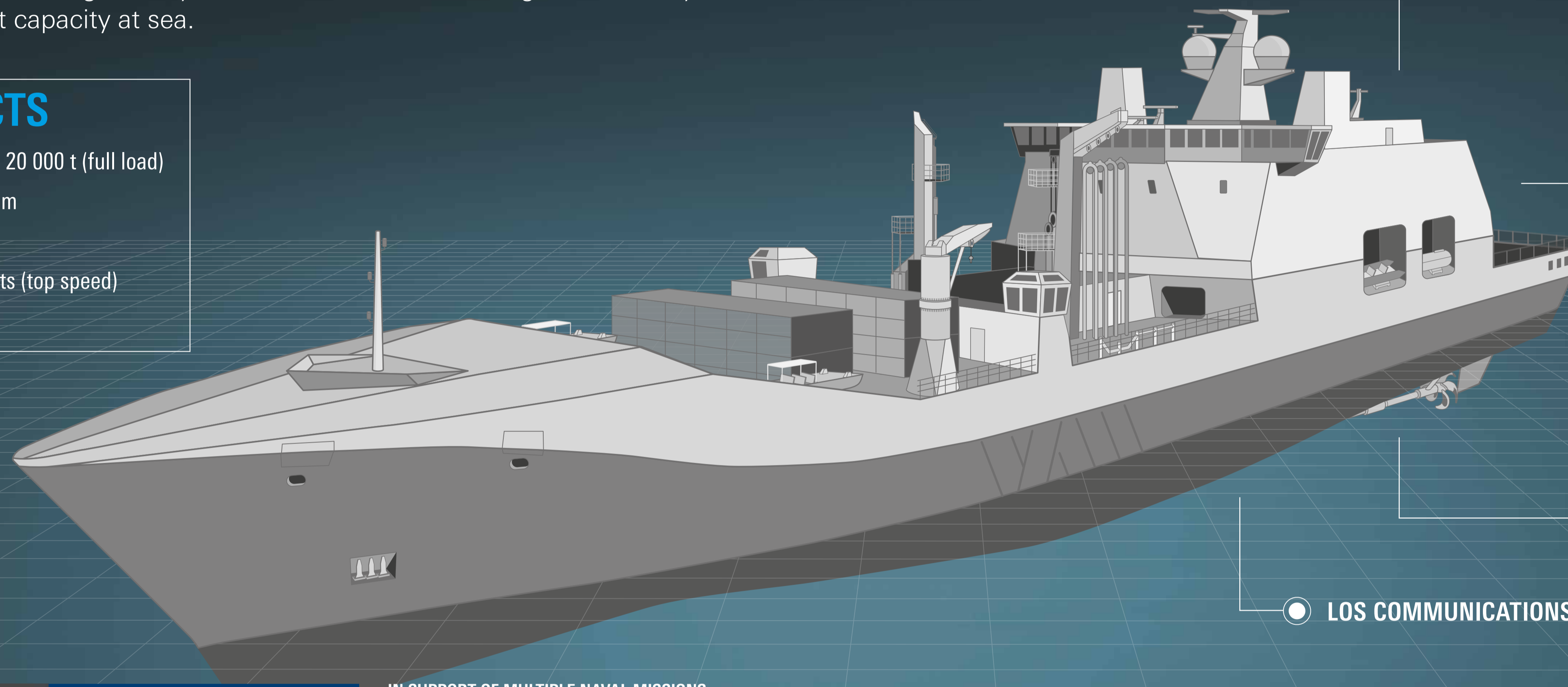# FULL COMMUNICATIONS SOLUTIONS FOR COMBAT SUPPORT SHIP (CSS)

HNLMS Den Helder, the new combat support ship (CSS) of the Royal Netherlands Navy (RNLN), is being built by Damen Naval and will strengthen the navy's replenishment capacity at sea.

KEY FACTS

▶ Displacement: 20 000 t (full load)
▶ Length: 179.5 m
▶ Beam: 26.4 m
▶ Speed: 20 knots (top speed)
▶ Draught: 8 m

SYSTEM INTEGRATION

PUBLIC ADDRESS SYSTEM

SHARED IP BOARD NETWORK

BLOS COMMUNICATIONS SYSTEM

LOS COMMUNICATIONS SYSTEM INCL EPM

"Rohde & Schwarz Benelux is the communications system integrator for Damen Naval. Our local engineering team in Utrecht ensures that we deliver on schedule and budget, and that the system is supported throughout its life by our Dutch personnel."

Bas Meijers, Account Manager of Rohde & Schwarz Benelux

IN SUPPORT OF MULTIPLE NAVAL MISSIONS

In cooperation with the Dutch Defense Material Organisation (DMO), DSNS has developed the HNLMS Den Helder, a new combat support ship (CSS), to assist with multiple RNLN missions. The CSS Den Helder is the result of further developments of existing ship designs such as the JSS Karel Doorman. The vessel can operate in high threat situations and be used to prevent drug trafficking, control refugee flows and support emergency aid missions. A replenishment oiler, also known as a replenishment tanker, is a naval auxiliary ship with fuel tanks and dry cargo holds that can supply both fuel and dry stores during underway replenishment (UNREP) at sea.

OVERVIEW

Damen Naval signed a contract with Rohde & Schwarz Benelux B.V. for the delivery and installation of a state-of-the-art integrated communications system (ICS), including R&S M3SR software defined radios for HNLMS Den Helder, the RNLN's CSS. In naval applications, Rohde & Schwarz provides secure and fully internet protocol (IP) based system solutions for internal and external communications (voice and data) across all security domains for all classes of ships working in a joint or combined environment. The independent company supplies line-of-sight (LOS) and beyond-line-of-sight (BLOS) communications for various RNLN vessels. Rohde & Schwarz has provided more than 40 navies with state-of-the-art communications technology.

EXTERNAL COMMUNICATIONS: ROHDE & SCHWARZ V/UHF LOS AND HF BLOS RADIOS

R&S M3SR software defined radios from Rohde & Schwarz (R&S Series4100 HF and R&S Series4400 VHF/UHF, both part of the SOVERON radio family) enable LOS and BLOS communications. The software defined radios (SDR) fulfil the latest maritim communications

requirements and standards. Several frequency hopping algorithms, automatic link establishment, and data transmission methods, such as LINK 11/22, and broadcast and ship to shore communications, are supported. Frequency hopping (EPM) is in line with the approbiate NATO standard. The SDR feature high modularity and offer military customers a wide range of interfaces and IP capable system interconnectivity.

ADVANTAGES OF A MODERN HF BASED COMMUNICATIONS SOLUTION

HF BLOS communications provide an extended range for voice communications and the exchange of data messages. HF allows worldwide communications thanks to its unique propagation characteristics. Rohde & Schwarz HF SDR offer a modular radio platform that can be extended with various power classes. A unique, high-performance solution and future proof invetment is granted via wideband functionality to establish high data rate communication links.

ADVANTAGES OF IP BASED COMMUNICATIONS SOLUTIONS

Naval network centric operations require standardized message formats, transport protocols and transmission methods. Similar to civil operations, advanced military networks on land and at sea also make use of IP. Modern message handling systems use this interface to transport data over radio networks. In Rohde & Schwarz radios, IP over air (IPoA) protocols that have been specially optimized for radiowave propagation ensure error-free and robust data transmission.

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