

EXTERNAL COMMUNICATIONS FOR THE SPANISH NAVY

F-110 Bonifaz-class multi-mission frigates

The Spanish Ministry of Defense (MoD) has ordered the construction of five new F-110 Bonifaz-class multi-mission frigates by Navantia. They are specialized in anti-submarine warfare and will be used for force and fleet protection, maritime security, joint and combined missions and to prevent conventional and asymmetric threats.

KEY FACTS

- ▶ Displacement: 6,100 t full load
- ▶ Length: 145 m
- ▶ Beam: 18 m
- ▶ Speed: 35 knots (top speed)
- ▶ Crew: 150 sailors

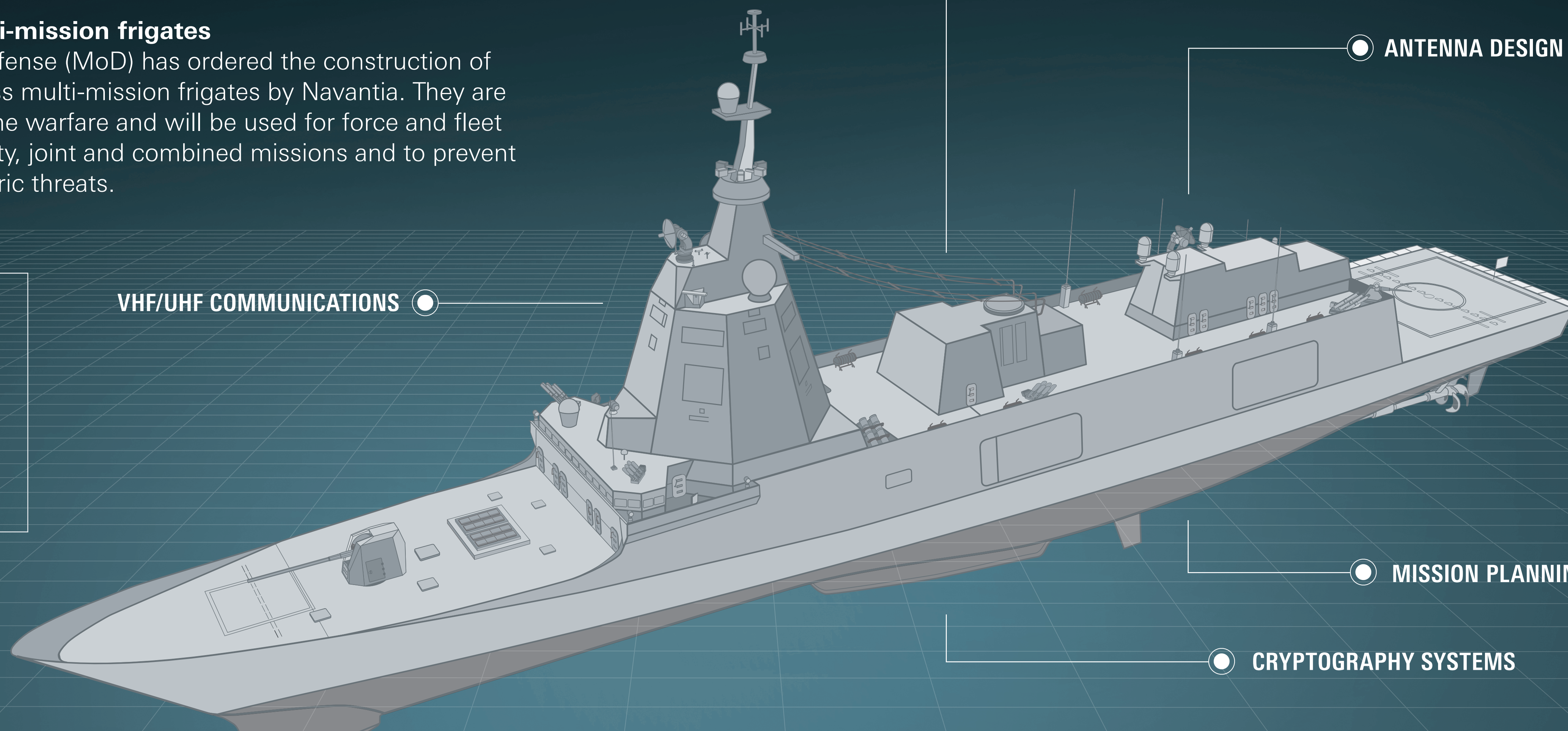
VHF/UHF COMMUNICATIONS

HF BROADBAND SYSTEMS

ANTENNA DESIGN AND ENGINEERING

MISSION PLANNING SOFTWARE

CRYPTOGRAPHY SYSTEMS



"Rohde & Schwarz and Navantia have a long history of collaboration and providing the Spanish Navy with the best communications systems. We are very proud to be providing first-class equipment and services for a wide variety of Spanish naval assets, such as the Juan Carlos I (L-61) landing helicopter dock (LHD), Galicia class landing platform dock (LPD), F-100 and F-105 frigates, Meteoro class offshore patrol vessel (OPV) and the upcoming S-80+ submarines. We make sure that we deliver a safe, future-ready investment for today's navies on time and on budget."

Rafael Falagan, Sales Manager Secure Communications & Radiomonitoring, Rohde & Schwarz (Spain)

THE FRIGATE OF THE 21ST CENTURY

The F110 is a multipurpose vessel that represents a substantial step forward towards Navantia's Smart Ship concept. The vessel integrates the best of industry 4.0 technologies, that will improve her construction, operation and life cycle management. The multi-mission frigates and their anti-submarine warfare capabilities will be used for missions such as fleet protection and maritime security and will be deployed to counter conventional and asymmetric threats.

OVERVIEW

In naval communications, Rohde & Schwarz is a provider of reliable, interception- and jam-resistant voice and data connections. NAVICS® by Rohde & Schwarz is a secure and fully-IP based system solution for internal and external communications (voice and data) across all security domains for all classes of ships in a joint environment within a formation, up to fleet command and other forces. Rohde & Schwarz (Spain) signed a contract with Navantia to design and supply external communications systems for line of sight (LOS) and beyond line of sight (BLOS) communications, including engineering services and Integrated Logistics Support (ILS).

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

Line of sight (LOS) and beyond line of sight (BLOS) communications by Rohde & Schwarz consist of R&S®M3SR software defined radios (R&S Series4100 HF and R&S Series4400 VHF/UHF, both part of the SOVERON® radio family).

The R&S® Series4100 high frequency (HF) software defined radio (SDR) fulfills the latest maritime communications requirements and standards. Several frequency hopping standards, including automatic link establishment, and data transmission methods, such as LINK 11, LINK 22 and broadcast ship shore in the current IP capable stage, are supported.

The R&S®M3SR Series4400 SDR is designed for stationary civil and military secure voice and data communications. It features high modularity and offers military customers a wide range of interfaces and associated proprietary frequency hopping waveforms, as well as radiocommunications in line with NATO standards.

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 the Internet protocol (IP). State-of-the-art Rohde & Schwarz radios feature an IP interface. IP-based applications use this interface to transport data over radio networks. In Rohde & Schwarz radios, IP over air (IPoA) protocols that have been specially optimized for radio applications ensure error-free, robust, encrypted transmission of data.

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