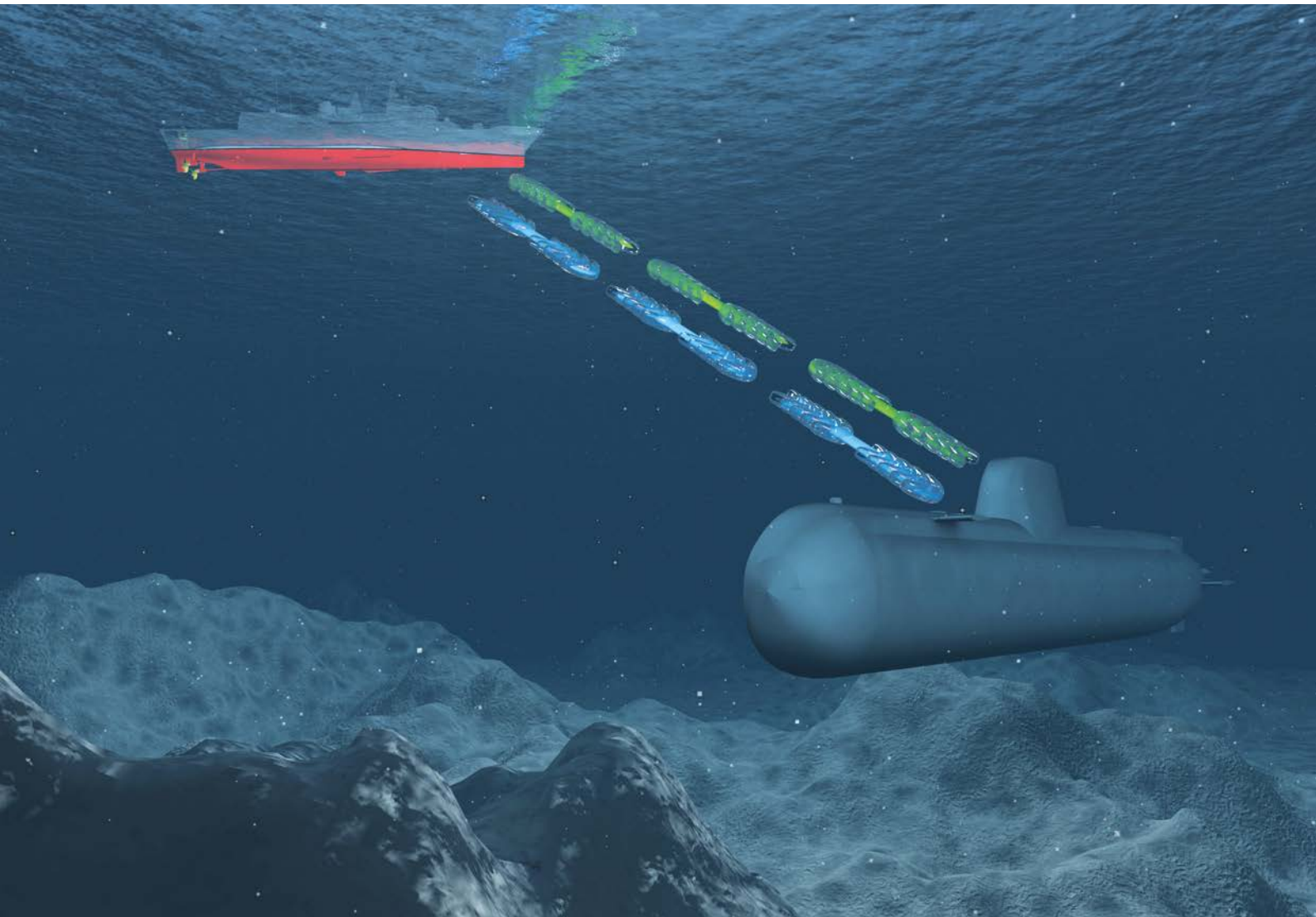


Wärtsilä ELAC UT 3000

Digital and analogue
underwater communication



Wärtsilä ELAC UT 3000 is the latest version of underwater communication systems designed and built by Wärtsilä. The system is a milestone in the history of underwater communication as it offers proven digital data transmission for the first time.





Wärtsilä ELAC UT 3000

Digital and analogue communication at speed and depth

The Wärtsilä ELAC UT 3000 is the first proven system to offer digital data transmission in addition to analogue voice communication. It is already installed in an increasing number of submarines and surface ships worldwide.

For submarines, digital communication offers numerous new applications at speed and depth, such as fast exchange of tactical, operational and navigation data. Now, also encoded communication can be realised effectively.

Like its predecessors – Wärtsilä ELAC UT 12 and ELAC UT 2000 –, ELAC

UT 3000 has been designed, built and certified to meet all relevant military specifications. This ensures safe and reliable communication even under harsh conditions.

The system setup – and therefore the installation – is as easy as with the former systems. All electronics is included in one compact control and display unit.

All features at your fingertips

The large display provides unbeaten intuitive operation and a variety of features such as telephony, telegraphy,

digital data transmission and reception, noise measurement, distance measurement and emergency mode. The online and offline built-in test (BITE) supports the system's uninterrupted availability.

Up to four transducer groups are supported for directional or omni-directional transmission within the widest frequency range available on the market. On surface ships, an optional outboard transducer enables communication even under adverse conditions.

Key features

- Digital data communication via text messages and data files
- Analogue communication
- Meets all relevant military specifications
- Supports up to four transducer groups
- Sector- and omni-directional transmission
- Space diversity reception
- Software update feature
- Modular design



System overview

Easy integration on submarines and surface vessels

Control and display unit SEB 34

The control and display unit SEB 34 combines transmission and reception electronics with processing, power supply and control and display.

Depending on the customers' needs, the SEB 34 is available with and without housing (e.g. for rack mount installation), with or without shock mounts or as mobile version.

Transducers

The Wärtsilä ELAC UT 3000 system supports a variety of transducers which are suitable for different installation types, frequency bands and spherical coverage.

Installation types range from small (typically omni-directional) transducers for installation on small vessels up to complex transducer arrangements which can be installed under a surface vessel typically in a streamlined dome housing for reduction of hydrodynamic and hydroacoustic influence.

If transducers are not allowed to protrude the ship's hull, some types can be easily mounted on a hoisting gear or directly into the hull using or not using acoustic windows, depending on customers' requirements.

For submarine installations, high-pressure-proof transducers are available. These transducers are intended to be installed behind acoustic windows to eliminate influence on shape of the hull and thus to eliminate influences on the hydrodynamic as well as avoiding hydroacoustic impacts.

Non-Wärtsilä ELAC transducers can be adapted upon request.

Interfaces

The system interfaces facilitate the exchange of all relevant data between the Wärtsilä ELAC UT 3000 and the ship's network.

The following interfaces are available:

- Ethernet for external operation and display units BDE 34, connected via network switch if more than one unit is installed and/or for connection of postscript printer server via TCP/IP
- Integrated communication system (ICS)
- NMEA input
- Keying output
- Captain's key input



Transducers WB 54 and WB 55

Specifications and technical data

Wärtsilä ELAC UT 3000 at a glance

Technical Data	
Frequency range	1 - 60 kHz, tuneable in steps of 50 Hz for analogue communication, NATO standard carrier frequency, 4 kHz band at 12 kHz for LF digital communication, 10 kHz band at 30 kHz for HF digital communication
Power output	Up to 320 W at 4 transducer groups, reducible -12 dB / -24 dB / -36 dB
Telephony signal	300 Hz to 3 kHz (audio band)
Telegraphy signal	800 Hz (reduced bandwidth of 1 kHz)
Audio output	2.6 W at 4 Ω
Headphone	26 mW at 2 x 600 Ω in parallel (L/ R)
Interfaces	Audio In/ Out for ICS Keying and captain's key NMEA input USB, RJ-45 (Ethernet)
Environmental conditions	According to military standards, details on request
Dimensions	Transmit-, receive and control unit SEB 34: 456 x 512 x 334 mm (without shock mounts), approx. 43 kg
Power supply	
Mains	115 V AC or 230 V AC 50 / 60 Hz
Anti-condensation heating	115 V AC or 230 V AC 50 / 60 Hz or 160 - 330 V DC
Power consumption	
Mains	Max. 900 VA (at 320 W transmitting power, CW) Max. 300 VA (receiving mode)
Anti-condensation heating	Approx. 30 VA (depending on ambient temperature)



Digital and analogue on display

High-power version (option)

Power output	Up to 1,400 W at 4 transducer groups
--------------	--------------------------------------