



Brief description

JANUS DISSUB - OPEN DIGITAL UNDERWATER COMMUNICATION STANDARD FOR UT 3000 2G

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1 OVERVIEW

JANUS is an open digital underwater communication standard developed by the Centre for Maritime Research and Experimentation (CMRE) with the collaboration of academia, industry and government. It was developed to offer an open standard for digital underwater communication to allow interoperable operations between naval and civilian devices. ELAC SONAR participated in the development of the standard from a very early stage and is one of the first companies offering JANUS based applications in its digital underwater communication system UT 3000 2G. For further information regarding the standard, please refer to NATO STANAG 4748 (ANEP-87) or the official CMRE JANUS Website (www.januswiki.org). The UT 3000 2G includes a number of JANUS applications. The amount of supported applications will grow within the lifecycle of the UT 3000 2G.

The JANUS application belongs to the standard applications in the UT 3000 2G and consists of a processing board PSE 56, handling JANUS through-water communication schemes and a JANUS software plugin, including application handling and HMI operation.

2 SUPPORTED JANUS APPLICATIONS

The UT 3000 2G currently supports the following applications. The amount of supported applications will grow within the lifecycle of the UT 3000 2G.

Application	Class	Type	Description
Chat	11	1	ELAC SONAR Text Chat (SMS)
Emergency	0	4	ELAC SONAR Emergency Static Data
	0	5	ELAC SONAR Emergency Dynamic Data

Table 1: List of JANUS applications

2.1 Emergency

One basic goal of the interoperable JANUS standard is to define a standardised emergency/DISSUB (**DIS**tressed **SUB**marine) message format which can be interpreted by all manufacturers. Different messages exist in the JANUS Wiki, but these messages do not include all information needed for a rescue operation planning. Therefore ELAC SONAR has developed additional message types, including these information, together with the Bundeswehr Technical Centre for Ships and Naval Weapons, Maritime Technology and Research (WTD 71). In parallel ELAC SONAR is in close contact to the NATO Submarine Escape and Rescue Working Group (SMERWG) to define a version of the emergency message that shall be included into official NATO standards in the future.

The UT 3000 2G decodes different emergency message types (JANUS Wiki types and ELAC SONAR types) in case of reception and displays the received information in the JANUS DISSUB application, but it will only send ELAC SONAR message types in case of emergency as it is supposed to be the NATO standard DISSUB message in the future.

The required information for the emergency message can either be typed in manually or updated by available on board interfaces on request.

2.1.1 Emergency Position according to JANUS Wiki

The UT 3000 2G will decode and display the contents of the Emergency Position message described in the JANUS Wiki. Please refer to the JANUS Wiki pages for reference.

Note: The speed information will not be displayed.

2.1.2 Emergency Status according to JANUS Wiki

The UT 3000 2G will decode and display the contents of the Emergency Status message described in the JANUS Wiki. Please refer to the JANUS Wiki pages for reference.

Note: The speed information will not be displayed.

2.1.3 Emergency Position and Status according to JANUS Wiki

The UT 3000 2G will decode and display the contents of the Emergency Position and Status message described in the JANUS Wiki. Please refer to the JANUS Wiki pages for reference.

Note: The speed information will not be displayed.

2.1.4 ELAC SONAR Emergency data messages

The complete emergency message consists of two messages which are sent alternately. The Emergency Static Data Message and the Emergency Dynamic Data Message. The complete set of data of the DISSUB application is available after both messages have been received once. The ELAC SONAR Emergency Static Data Message includes information about the "where & when" of the accident. The ELAC SONAR Emergency Dynamic Data message contains information about additional sensors on board and additional ships and crew data.

The ELAC SONAR Emergency Messages do not include addressing information because emergency data is expected to be addressed to anyone receiving the emergency message (broadcast).

The ELAC SONAR Emergency Static Data Message and the ELAC SONAR Emergency Dynamic Data Message both include dynamic air sensor data in order to double the update rate for this important information.

Application data	Emergency Static Data Message	Emergency Dynamic Data Message
O2	X	X
CO2	X	X
CO	X	X
H2	X	X
date/time of accident	X	
latitude	X	
longitude	X	
depth	X	
vehicle type (not displayed in DISSUB application)	X	
crc16 (not displayed in DISSUB application)	X	X
nationality		X
survivors		X
heading		X
heel		X
trim		X
temperature		X
pressure		X
batt		X
fire		X
O2 rem		X
CO2 scrub		X
prim damage		X
sec damage		X
vehicle details (not displayed in DISSUB application)		X

Table 2: Content of ELAC SONAR Emergency Messages (for further information see JANUS Interface Specification)



Figure 1: DISSUB Application on submarine



Figure 2: DISSUB Application on surface ship

3 CHANGES

Errors reserved. ELAC SONAR GmbH further reserves the right to generally amend the specifications due to a continuous technical development process without prior notice, provided that such amendments do not affect these specifications as such being subject to a valid offer and that no existing contractual obligation is affected.