

Kongsberg EM 1002 Multibeam echo sounder

Software release note

Release 6.12

Document history

Document number: 881-218592		
R	December 2008	Update for EM 1002 and new release of SIS 3.6.1

Note

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1 INTRODUCTION

This document presents the software release documentation for the Kongsberg EM 1002 Multibeam echo sounder. See release note for Seafloor Information System (SIS) for information about this software.

This software for the EM 1002, version 6.12, is released for the following platform:

Transceiver unit: TRU with Viper CPU (new PU).

Operator station: HWS running Windows XP and SUSE Linux 10.3.

Note

Note that some SIS features will require a hardware licence eToken.

Table 1 Modules comprised by this software release 6.12

Unit	Module	Version	Date	Remark
OS	SIS	Release 3.6.1		New version
TRU	new CPU	2.3.0	Dec.9. 2008	New version
TRU	DDS	3.27	Feb. 17. 2005	
TRU	BSP	1.5.5	Aug. 10. 2005	
TRU	SPRX (Eproms)	1.0.6	Oct. 14. 1999	

The installation of operator software (SIS) should be done in accordance with the installation instructions.

Related topics

- *SIS Software Release Note Version 3.6.1 [881-164890].*
- *Seafloor Information System, Installation procedure [851-164891]*

2 SOFTWARE RELEASE 6.12

Overview

This software is for use with Kongsberg EM 1002 and a HWS Operator Station. The release DVD contains the Seafloor Information System (SIS) software, the Transducer Unit software and the user documentation. The information in this release note describes changes in the Transducer Unit software. For changes in the Operator station software (SIS), refer to the *SIS Software Release Note* Version 3.6.1 [881-164890].

2.1 Seafloor Information System

This release includes SIS 3.6.1, for features and limitations, see release note for Seafloor Information System, reg. no 881-164890

2.2 Transducer Unit software

2.2.1 Changes since release 6.11

Use of Q-factor in position datagrams

Previously, the system only generated Height datagrams if the input GGA/GGK position data had sufficient quality. Now it is possible to disable this quality check in the TRU and thereby always generating height datagrams. This is done by checking the “Log all heights” button in the Installation Parameters menu. See the SIS release note for further details.

2.3 Software limitations

Note

SVP profile. There is a limitation on the size of the sound velocity profile. The file used by the PU must be maximum 30 kB and maximum 1000 depth points. The profile can be edited and decimated in the SIS SVP editor.

2.4 Known Issues

Software

- The Noise BIST shows to low noise level the first time it is run (In the noise test the TVG gain is increased to maximum and the sampling of data is started to early). The user must repeat the test to get a correct level.

2.5 Software installation

2.5.1 Software upgrade/reinstallation

Operator Unit (SIS)

For upgrade of SIS follow the installation menu found on the DVD. Or follow the Software installation procedure, reg. no 851-164891.

Downloading of software to the Transducer Unit (TRU)

The release DVD contains all software needed. To update the Transducer Unit software, the TRU needs to be connected to the network, and powered on.

- 1 Start the TRU software download script.

Windows:

From the installation menu select “PU SW Installation”.

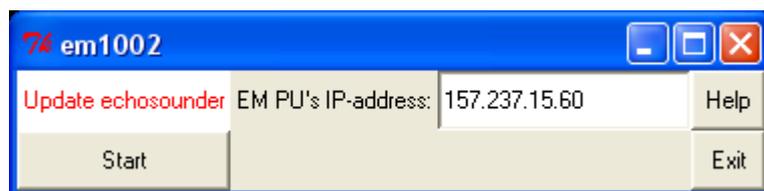
Linux:

Change to directory:

`/usr/local/sis/PU/EM1002/PUCD/tktcl/linux` and run the script `./startup.sh`

- 2 The following download window will appear: In this window the default IP address for the Transducer Unit is shown:

Figure 1 Update TRU Window



- 3 Check that the IP address displayed matches the real IP address of the TRU. If not, change to the correct IP address.
- 4 Press the “Start” button. A terminal window now pops up and the software downloading process starts.
- 5 When the download is finished, close the terminal window by typing `exit` [enter]. Close the TRU download script by pressing the “Exit” button
- 6 Restart the TRU by turning power off and on.
- 7 Start SIS, connect to the EM 1002 TRU, open the Installation parameters window, select the BIST tab and press the button labelled Software Date/Version. Check that the

dates/versions shown match the dates/versions listed in the beginning of this document

- 8 The installation process is now completed.

2.6 Documentation

Online help

Online help for EM 1002 is not fully implemented, and will only cover the general items. The Online help is only implemented in English and have some defects related to missing figures.

SIS Release note

Document registration number: 881-164890 / X.

SIS Software installation procedure

Document registration number: 851-164891 / N.

SIS Operator manual

Document registration number: 850-164709 / F.

EM series Datagram format

Document registration number: 850-160692 / J.

EM 1002 Installation manual

Document registration number: 851-160978: rev E.

EM 1002 Maintenance manual

Document registration number: 852-160979: rev C.

Note _____

The Maintenance manual is not updated with the latest EM series datagram format, please refer to the separate document, with registration number: 850-160692 rev J. This is the EM series datagram format.

Instruction manual, Hull Unit

Document registration number: 851-164697, rev. A.

Software history

Releasenotes for older releases of EM 1002 can be found under `./SIS./doc/English/EM_doc/history/`.

From Windows you can open the file: `../doc/EM_previous.html` for easier view of the release notes.

3 APPENDIX

3.1 Datagram format for ExtraParameters Datagram

Table 2 *ExtraParameters Datagram*

Data Description	Example	Format	Valid range	Remarks
Number of bytes in datagram		4U		
Start identifier = STX	Always 02h	1U		
Type of datagram = 3	Always 33h	1U		
EM model number EM 1002 =	1002	2U		
Date = year*10000 + month*100 + day	Sep 26, 2005 = 20050926	4U		
Time since midnight in milliseconds	08:12:51.234 = 29571234	4U	0 – 86399999	
Sequential counter		2U	0 – 65535	
System serial number		2U	100 –	
Content identifier		2U		1)
Array of variable length		variable		
Spare byte if required to get even length	Always 0	0–1U		
End of file	always 0	1U		
End identifier = ETX	Always 03h	1U		
Check sum of data between STX and ETX		2U		

Remarks

- 1 Content identifier.
1= Calib.tx file for angle offset
2= Log all heights.

3.1.1 Content identifier = 1: The Calib.txt, ExtraParameters datagram.

The Format:

The Content description contains the name of the file. “calib.txt”. The Array of variable length contains the file. The file has this layout; The angular correction table is made with 1 degree step, from 100 degrees port to 100 degrees starboard (201 elements).

The angular offset in this file has been added to the beam angles in the raw range and angle datagram.

Table 3 Array of variable length for Calib file

Data Description	Format	Remarks
Content description	100U	Contains the file name for the calibration values, ie calib.txt
File contents	variable	See description below.

Table 4 Calib.txt description

File Description	Example
Name of echo sounder	EM 1002
Line 1 for comments	Comments
Line 2 for comments	Comments
Line 3 for comments	Comments
Line 4 for comments	Comments
Line 5 for comments	Comments
Info BS offset Angle offset	100 0.0 x.x
...	...
	-100 0.0 x.x

3.1.2 Content identifier = 2: The Log all height, ExtraParameters datagram.

This datagram configuration is used for logging parameter settings in connection with the definition of additional approved position quality factors. The parameters are separate for each of the three positioning systems available in the PUs.

The Format:

The ‘Array of variable length’ is used as follows:

Table 5 Array of variable length for Log all heights

Data Description	Format	Valid range	Remarks
Active positioning system	4S	0 — 2	
Quality factor setting for pos. system 1, 2, 3.	3 * 4 S	1=PU decodes Q-factor. Default 0=External PU decode	1)
Number of quality factors for pos. system 1, 2, 3	3 * 4 S	0 — n	2)
Variable no of entries follows = total number of all quality factors:			3)
Quality factor	4S	0 — m	4)
Limit	4S	0 cm default = not used	5)

Remarks

- 1 Each positioning system has its own individual setting. Value '1' indicates that the PU should decode the quality factors in the traditional way. This is the default setting. Value '0' indicates that the PU should skip quality factor decoding as this is performed externally. The PU should always transmit the height datagram 'h' based on the active positioning system.
- 2 Each positioning system have an independent set of additional quality factors. The number of quality factors for each system must be specified. Default value is 0.
- 3 Each quality factor is described by two entries, the quality factor itself and a limit, forming a pair. This results in a variable numbers of such pairs, depending on how many additional quality factors is set by the operator. If no quality factors are defined, no pairs are included. The sequence of pairs is important. First, all pairs for positioning system 1 is listed, if any. Next any pairs for positioning system 2 and at the end any pairs for positioning system 3.
- 4 A quality factor is a positive number. Currently no upper limit is imposed.
- 5 Uncertainty in position fix in cm. This uncertainty is associated with the quality factor value. Currently not used.

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