



### Introduction

This document describes the changes introduced with the new software version.

- **Product:** SU90
- **Software version:** 21.13.21

This software controls all functionality in the SU90 system. This includes transmission and reception, interfaces with external peripherals and sensors, and all user interface.

A firmware update for the Transceiver Unit is not included with this release.

### Software changes

This software update solves a number of software bugs that have been reported by our users, or detected during our own product testing. New functionality is also introduced.

The following specific changes have been made.

#### Reverberation Controlled Gain (RCG)

To simplify understandig, we have started to name the RCG settings. Settings 1, 2 and 3 have changed names to “Weak”, “Medium” and “Strong”. RCG setting "6" has been named "Scattered". The functionality remains unchanged. The "numbered" settings will be removed in future versions.

We have added “Experimental” values after 9. These are for development purposes, and will be changed in future software versions.

### Lower Bandwidth in FM

For FM transmissions you can adjust the bandwidth to a lower value than the standard 0,5 kHz. This will reduce the noise and increase the range while still keeping the resolution. The reduced bandwidth may be an efficient tool if you have noise problems. Test this functionality if you are bothered by propeller noise from other vessels in close vicinity.

### Inspection beam

A single inspection beam has been added to the presentation modes. The Inspection view does not support bottom detection and expansion.

Size Distribution and Fish Position information panes are provided. Note that size distribution calculations with small tilt values are inaccurate.

A Biomass information pane is provided, but the calculated values are not accurate. You may find it useful to evaluate echo information using both high and low frequencies while observing a school.

The Inspection view uses echogram colors. These are not affected by your the colour selections.

The TVG settings provided are the same as for echo sounders.

## Fish Select / School Mass

With the introduction of an Inspection view we also added fish size adjustment. Keep in mind that this functionality is inaccurate. You can adjust the fish size in the Inspection view, and the school mass in the other views.

## Tracking

The tracking functionality has been improved. The geographical area the sonar evaluates for the tracking can be shown in the view. You can turn **Estimated Track Area** on or off in the **Visual Objects** menu.

## Hull unit error handling

New error messages have been implemented if you have a problem with the hull unit.

## System Protection

During purse seine operations you can set the hull unit to retract x minutes after the system calculates that the whole purse has been deployed. If you have depth information from an echo sounder connected to your sonar you can set the system to retract the transducer automatically if the depth below keel is lower than x meters. For relevant sonars the transducer will be hoisted if the vessel speed is too high.

## Output dialog box

The **Output** dialog box has been set up as in the ES80. **File Setup** and **Marker Output** pages moved to this dialog box.

## Raw data recording

The **Record** function has been renamed to **Record RAW**. The **Record** indicator symbol on the top bar is now a button. You can turn recording on and off with the mouse. On the **System Protection** page you can set recording

to automatically turn itself off after a certain time or when hull unit is hoisted.

Every time the record function is turned off the **Recording** dialog box opens. You can select where to save the files, and provide additional information related to the recording. The information is added to a text file saved together with the raw data file. You also choose to delete the entire recording without saving it.

### Note

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*If you wish to record data on the Processor Unit hard disk, use drive "D".*

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## Marker and tracking outputs

MDS and TPP datagram formats can be exported using the **Marker Output** page in the **Output** dialog box.

## Scientific output

All sonars can now output sonar data on NetCDF format. This is a format defined by the scientific community. This output requires a dedicated software license. Start and stop scientific recording using the **Record Processed** function on the **Operation** menu.

## External markers input

Position information from external devices can be shown in the sonar views. Set up the inputs using the External Objects option on the **Sensor Installation** page in the **Installation** dialog box. The functionality supports TLL datagram formats, as well as proprietary datagrams from Serpe and Ryokusei bouys. Use this functionality to see FAD units in the sonar views.

## Video recording

Video recording has been implemented in the user interface. Start and stop the recording from the icon on the top bar. Videos are saved in the folder chosen on the **Screen Recording** page in the **Output** dialog box. Note that files can be very large! Everything shown on the screen is recorded, including menus, dialog boxes and cursor movements. Settings on the **System Protection** stops the recording based on time and/or transducer in upper position.

### Note

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*If you wish to record data on the Processor Unit hard disk, use drive "D".*

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## Save the current settings for range, bearing and tilt with the user settings

When you save the user settings you can now include the current settings for range, bearing and tilt.

You may choose to save the current tilt, range and bearing with the user settings while still using the Operating Panel to choose presentation mode. The setup for frequency, filters and other options for vertical and inspection views are kept. Features like “Apply to all” for range are kept. The settings for bearing, range and tilt will also be applied the next time you turn on the sonar..

## Choose presentation modes or user settings on the Operating Panel

The user settings buttons on the Operating Panel can now be configured to either provide a previously chosen user settings or presentation modes.

## Dead reckoning

Dead reckoning has been implemented. You must have a current profiler connected to the sonar providing data on the VHW datagram format. GPS updates are ignored, the function only uses speed through water to update the position. The function is enabled in the **Setup** menu. Note that the GPS position on the top bar uses a yellow colour to indicating manual input.

## Roll and pitch offsets

For the relevant sonars, the use of an external motion sensor (MRU) will increase the accuracy. However, it is important to adjust for any offset errors. Check the difference between internal and external MRU data in port or in dry dock. Adjust the offset values in the sonar to make external MRU data match internal MRU data. You can also adjust MRU offset under “live” conditions by observing the surface reverb or the bottom ring.

## Timer for purse seine operations

A dual timer has been added for purse seine operations. The first timer starts when you place the gear, and stops when the purse is fully deployed. This starts the second timer. The second timer stops when gear symbol is removed.

## Maps

You can now interface a map system and show the map in the Horizontal view. Currently only Kongsberg WMS maps are supported. The K-Bridge source system must allow access to the WMS and give you the necessary link.

## Auto Bearing

The **Auto Bearing** functionality has been re-introduced. Control the function under the **Bearing** button. You can set up step size and search sector in degrees.

## Reduced TX Sector for vertical transmissions

You can now reduce the transmit sector in vertical transmissions to below 90 degrees. This can be useful as AGC works better when there are no bottom echoes. It will also improve results from schools near the surface. The reduced transmit sector will increase the detection range in vertical views. The tilt settings will follow the tilt in the Horizontal view.

## Course line

A course line has been added to the Horizontal view. The function is activated on the **Visual Objects** menu.

## Simulator

A built-in simulator is now available. A dedicated license is required.

## Using a mouse

Place the mouse cursor on the tilt indicator, use the middle scroll button to adjust the tilt. Use the index finger button (or thumb buttons on other models) to change the range in the active view. Due to the amount of different commercial mouse types, we cannot guarantee this functionality on all models.

## Using an XBox controller

You can now use a Microsoft XBox controller to make key settings on the sonar.

## Operating Panel Mk3

A new miniature Operating Panel is now available. It uses USB to communicate with

the Processor Unit. No power supply is required.

## Related topics

[Software installation, page 4](#)

## Do I need to upgrade?

This software update introduces new functionality. It also addresses software bugs that have been reported by our users, or detected during our own product testing.

We recommend that all users update their software.

## Software licenses

The Simrad SU90 is not a licensed product.

## Software installation

When a new software version is released for the SU90 system it must be installed on your Processor Unit. Contact your local dealer, or a Simrad distributor, to have the new software version installed.

### Note

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*You must remove the old version of the software before you install the new version.*

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A dedicated wizard is used to install the software. Installation of additional operating system components may be required. These are installed automatically. Observe the information offered in the wizard.

Registered dealers and distributors can download the new software version from the "Simrad Dealer Club". To access the "Simrad Dealer Club", visit our website.

- [www.kongsberg.com/sdc](http://www.kongsberg.com/sdc)

## Related topics

[Installing a new version of the operating software, page 5](#)

[Settings you need to restore after a software upgrade, page 5](#)

## Installing a new version of the operating software

A dedicated wizard is used to install the software. The operating software for the SU90 system must be downloaded on a separate computer.

### Prerequisites

The following specific items are required for this task:

- Personal computer
- USB flash drive
- Computer mouse (Optional)
- Computer keyboard (Optional)

Neither tools nor instruments are required. This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system.

### Procedure

- 1 On the personal computer:
  - a Download the new software version.
  - b Unpack the ZIP file to access the executable application file.
  - c Copy the application file to a USB flash drive.
- 2 Turn on the Processor Unit.
- 3 Make the following preparations.
  - a If applicable: Connect the keyboard and the mouse to USB sockets on the front panel of the Processor Unit.
  - b Insert the USB flash drive.

- 4 Install the new version of the application.
  - a From the Windows® **Start** button, right-click to open File Explorer.
  - b Locate the application file.
  - c Copy the file to a temporary folder on the "C" drive.
  - d Double-click the setup executable file to start the installation.
  - e Select the check box to accept the license terms and conditions.
  - f Select **Install**.
  - g Follow the instructions provided by the wizard.

We recommend that you install the software in the default folder suggested by the wizard.
  - h Close File Explorer.
  - i Remove the USB flash drive.
- 5 On the Processor Unit desktop, double-click the SU90 icon to start the program.
- 6 If applicable: Disconnect the keyboard and the mouse from the Processor Unit.

### Related topics

[Settings you need to restore after a software upgrade, page 5](#)

## Settings you need to restore after a software upgrade

Due to the multiple software changes made to the SU90 system, certain settings must be restored after the software upgrade.

### Colour scales

In the **Colour Setup** dialog box, all existing user settings will for **Echo Colours** will revert to *Normsl*. If you have user settings with other settings you need to load these user settings, change **Echo Colours** from *Normal* to

your own preference. To keep the same name for the user setting, just delete it first and save with old name.

### **Mode Selection on Operating Panel page**

The default value for this setting is now to change presentation modes. If you still wish to use the buttons to select user settings you must activate this by deselecting . The old user settings will still be there.

### **Configuration of Operating Panel Mk1**

The Mk1 Operating Panel uses serial line COM1 to communicate with the Processor Unit. This setting must be reconfigured after the software upgrade.

## **End-user documentation**

The end-user documentation for the SU90 system has been updated with this software release.

The SU90 *Reference Manual* is included with the SU90 software as context sensitive on-line help.

Additional end-user documents related to the SU90 system can be found on our website. This includes publications that are translated to other languages. Selected publications are also provided on IETM (*Interactive Electronic Technical Manual*) formats.

- <https://www.kongsberg.com/su90>

## **Minimum display requirements**

Unless specifically ordered, the SU90 system is not provided with a display. The display must then be purchased locally.

You can use more than one display on your Processor Unit depending on personal and/or operational preferences.

### **Note** \_\_\_\_\_

*Make sure that the chosen display meets the requirements for the SU90 system. The design and construction must allow for marine use, and the display must be able to withstand the movements and vibrations normally experienced on a vessel. Verify that you have easy access to cables and connectors, and that the display can be installed in a safe and secure way.*

The minimum technical requirements for the display are:

#### **Resolution**

Minimum requirement: 1280 x 1024 pixels

The visual quality of the presentation depends on the quality of your graphic adapter and display. We recommend that you use a large display with resolution 1920 x 1080 or 1920 x 1200.

#### **Video interface**

The video interface must match the output format(s) provided by the Processor Unit. The Processor Unit may offer video output on several formats. Investigate your options before you purchase a display.

#### **Physical screen size**

The screen size depends on personal and/or operational preferences. We recommend that you use 24 inch or bigger diagonal screen size. The SU90 software supports 16:9 and 16:10 displays.