ADVANCED NAVIGATION
POSITIONING EVERYWHERE

RELEASE NOTE

Product:	Subsonus	Release Date:	22 October 2021
Firmware Version:	3.0		
Release Status:	Public Release		
Download Link:	https://www.advancednavigation.com/solutions/subsonus/#Software		
Manual:	https://www.advancednavigation.com/solutions/subsonus/#Documentation		

1. Release Description

Firmware 3.0 is a major release for Subsonus, released concurrently with Subsonus Tag Firmware 2.0. Introduced in this release is the option to select between the existing acoustic data protocol - now called "High Speed" mode, and a new acoustic data protocol - called "High Reliability" mode.

Important Information: This firmware release is not backwards compatible with older Subsonus firmware, or with Subsonus Tag firmware older than V2.0. It is necessary to update the firmware of all Subsonus and Tag units being used together.

If a Subsonus or Subsonus Tag unit is installed in such a way that its' firmware cannot be updated (e.g. in a subsea installation) it is not recommended to update to this firmware.

In the event Subsonus FW3.0 has been installed on a unit, and another unit running an older incompatible firmware is discovered it is recommended to roll back the Subsonus firmware to FW2.4 (Available from Advanced Navigation website or from support@advancednavigation.com)

1.1 Compatible Firmware

| Subsonus	Firmware 3.0 or later
Subsonus Tag	Firmware 2.0 or later

2. Selecting Acoustic Data Protocol

By default Subsonus has the Data Protocol set to 'Auto' mode. In this mode, Subsonus will automatically determine the optimal data protocol based on noise levels and detected multipath levels.

Should the User wish to, the data protocol may be selected. The data protocol is fully controlled from the master subsonus and can be set for each tracked target independently. To select the desired Data Protocol follow the steps detailed below;
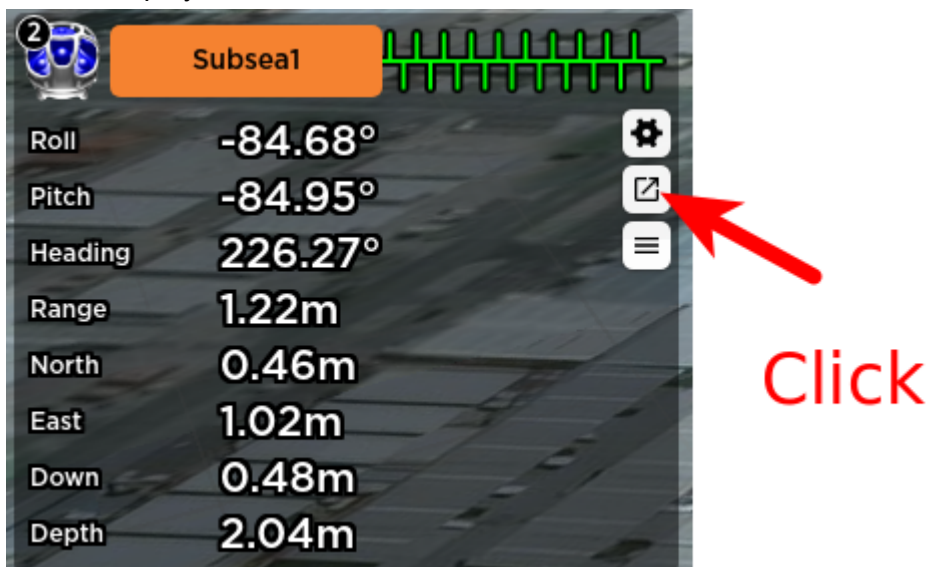
Step 1:
On the main view click on the name of the device to modify:
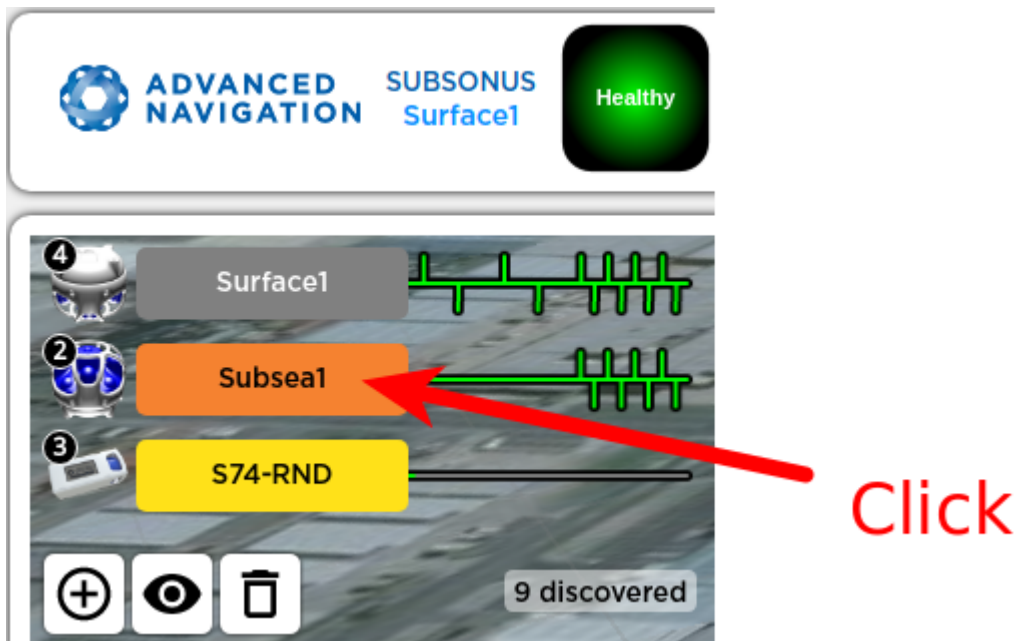
Step 2:
Open the Device Configuration Tab, the button will be visible when the mouse pointer is in the text display area.

Step 3:
Select the "Tracking" tab:

Step 4:
Select the Desired "Data Protocol" and press "Submit"

In Auto Mode the User is able to see which Data Protocol is being used by enabling the Data Protocol Display Field and monitoring the output in the display text area:

Enable Data Protocol Display:
1. Open the Device Configuration Tab, see above steps 1 and 2
2. Open the "Displayed Fields" tab and enable the checkbox for "Data Protocol"

The active Data Protocol will be displayed in the text display area per device

2.1 High-Speed Mode

High-Speed mode is the standard acoustic protocol that Subsonus has historically operated on. This protocol utilises a proprietary phase-based signal encoding technique to deliver high data transmission rates while maintaining good levels of resilience to acoustic multipath and high background noise levels.

2.2 High-Reliability Mode

High-Reliability mode is a new acoustic protocol, introduced in this firmware release. This data protocol utilises MFSK signal encoding with high redundancy, which has been optimised to deliver acceptable data transmission levels while offering exceptional levels of resilience to acoustic multipath and high background noise levels.

3. Enhancements

3.1 Improved acoustic discovery time

This firmware changes the way devices are discovered and tracked from a Subsonus USBL. The user is now required to manually discover or add devices to be tracked. This change resolves a tracking startup delay issue experienced in the past that required a period of negotiation before the device is tracked. Previous tracked devices will now resume tracking instantly without any negotiation.

3.2 Address conflict resolution

In the event a user has accidentally deployed two or more devices with conflicting device addresses Subsonus allows these addresses to be manually changed from the surface unit via acoustics. This can be achieved by running an acoustic discovery then resolving conflicts without needing to remove the transponder from the water, potentially saving huge costs to the operation.

3.3 Adds support for Certus and Certus Evo

Network discovery and aiding from Certus and Certus Evo is now supported.