WinFrog Device Group:	**Output**
Device Name/Model:	**Seabeam Data**
Device Manufacturer:	**L3 Communications - SeaBeam Instruments** 141 Washington Street, East Walpole Massachusetts 02032 USA Phone: 508-660-6611 http://www.seabeam.com **L-3 Communications - ELAC Nautik GmbH** Neufeldtstrasse, D-24118, Kiel, Germany (Tel: ++49 431 883 0)
Device Data String(s) Output to WinFrog:	Nil
WinFrog Data String(s) Output to Device:	Position, Heading, Speed, Time (seconds of day) i.e.AVN4612996W06311890H0050F004T00044151 See Configuration Details section for more information.
WinFrog .raw Data Record Type(s):	Type: 450

DEVICE DESCRIPTION:
L-3 Sea Beam Instruments designs, develops, and manufactures wide swath multibeam sonar survey systems, mainly for research organizations.

Sea Beam manufactures the following multibeam systems:

- Sea Beam 1000 series
- Sea Beam 2100 series
- Sea Beam 3000 series
- Sea Beam 3100 series

The WinFrog Sea Beam Driver outputs position, time, heading and speed to any Sea Beam unit that will accept the data string. The Surveyor should ensure that the Sea Beam unit being interfaced to will accept the output data string. Refer to the Configuration Details section for a listing of the output string.

The Sea Beam web page can be referenced for information on the various systems available. Sea Beam Reference Manuals should be consulted to ensure acceptance of the data string output from WinFrog.

DEVICE CONFIGURATION INSTRUCTIONS:
Baud Rate: configurable Stop Bits: configurable
Data Bits: configurable Parity: configurable

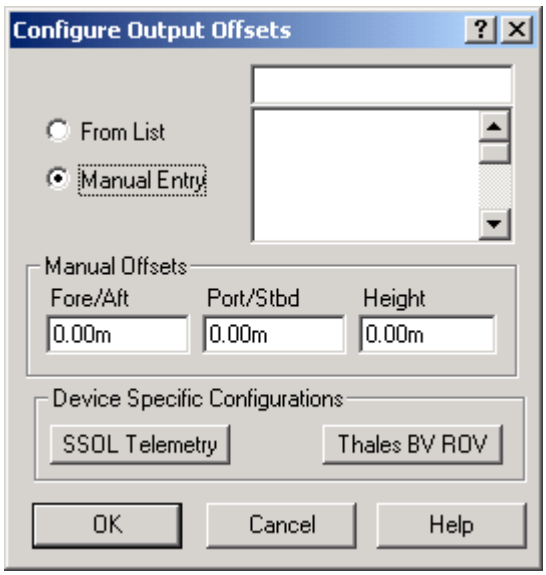
WinFrog defaults to a 4800-8-N-1 string outputting an RS-232, ASCII data block.

WINFROG I/O DEVICES > CONFIG OPTIONS:
The SeaBeam is added to WinFrog from the OUTPUT device types. The DATA OUTPUT data item is added along with the SeaBeam device. There is no configuration required or available at the I/O Device level.

WINFROG VEHICLE TEXT WINDOW > CONFIGURE VEHICLE DEVICES > DEVICE > EDIT OPTIONS:
The OUTPUT,SeaBeam,DATA OUTPUT data item is added to the vehicles' device list and must be edited to suit the application. The data item is added to the vehicle supplying the position data to the Sea Beam Unit.

When the DATA OUTPUT item is edited from the Configure Vehicle Devices dialog box, the Configure Output Offsets dialog box appears. The multibeam transducer location offsets can be input here.

For most subsea applications it is advisable to choose the CRP height reference at the water line; therefore there should be some type of Height value applied in the Configure Output Offsets dialog box.



Configure Output Offsets:
The offset applied to the output position for the SeaBeam can either be taken from the list of vessel offsets or a manual offset entry can be input. The Surveyor should select the appropriate radio button (From List or Manual Entry). The offset can now be highlighted from the list, or if Manual Entry is chosen, the offset values can be input. The position data output will now be referenced to the offset location chosen.

Device Specific Configurations:
Under the Device Specific Configurations section, there are two buttons that access dialog boxes, **SSOL Telemetry** and **Thales BV ROV**. These dialog boxes are only

to be modified for specific applications. You should not modify these items unless completely familiar with the outcome.

SSOL Telemetry:
This configuration is specifically designed for the SubSea Telemetry system. Other companies, specifically those working in the North Sea area, later adapted this output format. In almost all instances the positioning devices (e.g. GPS, GYRO) would be located on the same vessel as the Sea Beam system, and within cabling distance. Therefore it is unlikely that this option would be used. If this option is required, refer to the I/O Documentation on NMEA Output for configuring the SSOL Telemetry.

Thales BV ROV:
This configuration is designed to output the Thales BV ROV Driver position to the ROV Data Logging software/system Thales BV ROV. This option would most likely not be used for the Sea Beam Output. Should configuration information be required on this option, refer to the I/O Documentation on the NMEA Output Device.

CONFIGURATION DETAILS:
Sea Beam Reference and Installation manuals should be used for system set up. Experienced personnel should perform this.

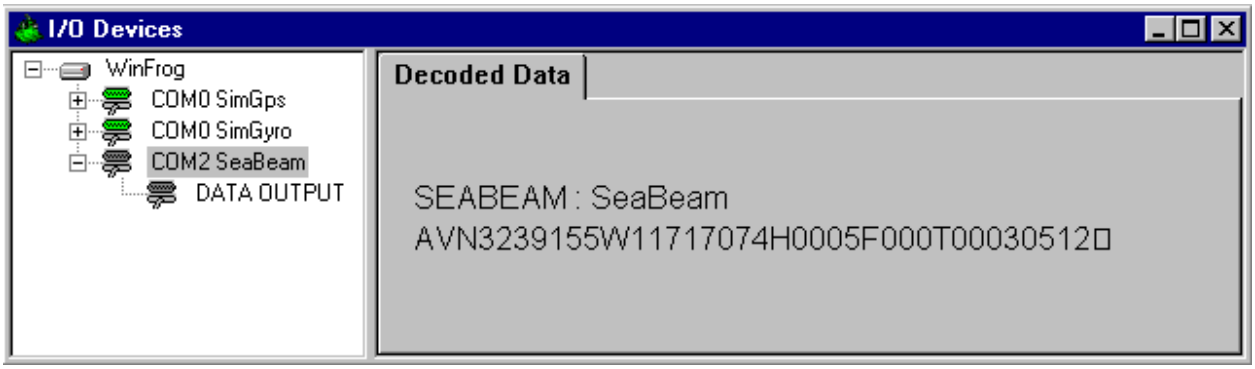
Output String:
WinFrog outputs the following RS-232C, ASCII data block for use with the Sea Beam Multibeam Systems.

```
AVN4612996W06311890H0051F063T00044145
```

Where:

```
A             Header
V             Data Valid (V) or Invalid (I)
N             Latitude Sign (N or S)
4612996       Latitude in DDMM.mmm
W             Longitude Sign (W or E)
06311890  Longitude in DDDMM.mmm
H             Heading
0051      Heading Value in DDD.d (i.e. 005.1°)
F             Speed (absolute)
063       Speed Value in nm/h (i.e. 6.3 knots)
T             Time (computer)
00044145  Number of seconds in day. (i.e. 44145=12:15:45)
```

Following is the I/O Device Window showing the SeaBeam Output from WinFrog. Simulated devices are only added in order to show position data.



Raw Data Record:
Shown below is the Type 450 Raw Data Record for the SeaBeam Device. The record only outputs the Computer Time and Position. Note that no Waypoint position is output, even though a waypoint was being tracked.

450,SeaBeam,984229893.54,46.21696588,-63.19812680,
0.00000000,0.00000000,0.000,0.000,0.000,0.00000000,0.00000000