

<b>WinFrog Device Group:</b>	<b>ROV</b>
<b>Device Name/Model:</b>	<b>STMC SLED</b>
<b>Device Manufacturer:</b>	
<b>Device Data String(s) Output to WinFrog:</b>	Binary Message
<b>WinFrog Data String(s) Output to Device:</b>	NONE
<b>WinFrog Data Item(s) and their RAW record:</b>	HEADING            409 ELEVATION         372 BOTTOMDEPTH     911

**DEVICE DESCRIPTION:**

This is a driver designed to read the heading, elevation and depth data from the STMC SLED.

***DEVICE CONFIGURATION INSTRUCTIONS***

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**WINFROG I/O DEVICES > EDIT I/O:**

Serial  
Configurable Parameters

Note: The default name of this device is LEAD SLED. This can be changed to STMC SLED in the Device I/O Parameters window that opens when this device is first added to WinFrog. Be aware that changing a device name after the data items have been attached to the vehicle will cause the data items to be removed from the vehicle's device list.

**WINFROG I/O DEVICES > CONFIGURE DEVICE:**

No configuration is required at the I/O Device window level.

**WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:**

Adding the STMC SLED device creates three data items: HEADING, ELEVATION and BOTTOMDEPTH. Once the data items have been added to the vehicle, they must be edited to suit the application.

## Data item: ROV, STMC SLED, HEADING

Highlight this data item in the vehicle's device list and click the Edit button to open the Configure Gyro dialog box as seen below.

The screenshot shows the 'Configure Gyro' dialog box. It is titled 'Configure Gyro' and has a close button (X) in the top right corner. The dialog is organized into three main sections. The first section, 'Heading Data Item Options', contains four controls: 'Application Mode' with radio buttons for 'Primary' (selected) and 'Secondary'; 'Heading Offset' with a text box containing '45.00'; 'Heading Filter' with a checked 'Off' checkbox and a text box containing '4.00'; and 'Heading Gate' with a checked 'Off' checkbox and a text box containing '1.00'. The second section, 'Multiple Heading Sources Options', contains two radio buttons: 'Disable Auto Switching Operation' and 'Enable Auto Switching Operation' (selected), and a text box for 'Age of data in seconds when switch occurs' containing '10.0s'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

### Heading Data Item Options:

#### Application Mode(Primary/Secondary):

Set the type of calculation to Primary or Secondary by selecting the appropriate radio button. Devices set to Primary are used to provide the vehicle heading information. Devices set to Secondary are simply monitored, and are not used in the vehicle's calculations.

Note that WinFrog supports automatic switching from a designated Primary to a Secondary in the event that data from the Primary fails (see Multiple Heading Sources Options).

#### Heading Offset:

A correction value (as determined from a gyro calibration) can be input in the Heading Offset box. This value is added to the heading value from the device to provide a corrected heading for the vehicle. Note that positive or negative values can be entered.

#### Heading Filter/Heading Gate:

The Heading Filter is used to "smooth" heading values used by the vehicle. The value entered in the Heading Filter indicates the number of headings that will be used to predict the next heading value. The larger the value entered, the

“heavier” the filter will be – i.e. the slower the vehicle’s heading will respond to changes.

The Heading Gate defines a tolerance value to limit the use of anomalies in gyro readings. If the next observed gyro value received falls outside the specified range of predicted values (i.e. plus or minus the entered value), the value will not be used.

**Multiple Heading Sources Options:**

WinFrog supports automatic switching from a designated Primary source to an alternate Secondary source in the event that the Primary fails. The first Secondary source to receive data after the Primary has failed becomes the alternate Primary providing the heading for the vehicle. When the designated Primary is detected as active again, the alternate Primary source reverts to Secondary and the designated Primary provides the heading data to the vehicle.

If an alternate Secondary fails and there are additional Secondary sources, it in turn is detected by the first of the remaining operational Secondary sources to receive data after the failure, at which time this Secondary becomes the alternate Primary.

Note that this option is only available if more than one HEADING source is associated with the respective vehicle. Changes made to the Auto Switching options for any one of the HEADING data items are automatically assigned to the others upon exiting this dialog with OK. If the Auto Switching option is enabled and the respective HEADING source has been set to Primary, all others are automatically set to Secondary. The exception to this is when configuring a WinFrog Controlled Remote (WinFrog with a Remote module) from a Controller. In this case, changes made to one HEADING source are not automatically made to other HEADING sources. The operator must explicitly make them for each HEADING source.

This option is not available in the WinFrog Remote package.

**Disable/Enable Auto Switching Operation:**

Select the mode you wish to operate WinFrog.

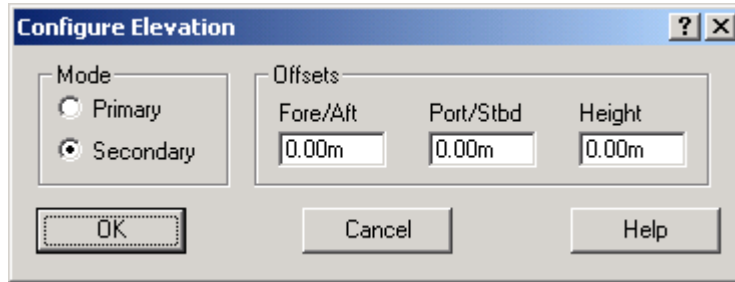
**Age of data in seconds when switch occurs:**

Enter the age of data that is permitted before the source is considered to have failed.

**Data item: ROV, STMC SLED, ELEVATION**

Add the ELEVATION data item to a vehicle to record and/or assign the vehicle’s height or depth.

Highlight this data item in the vehicle's device list and click the Edit button to open the Configure Elevation dialog box as seen below.



Assign the vehicle's height or depth by selecting the Primary or Secondary radio button on the dialog. In the Vehicle Text window, a vehicle's elevation (ELEV) will have the opposite sign of its depth (ROV D). The Height offset will be subtracted from the observed value. All the offsets are used for pitch and roll corrections.

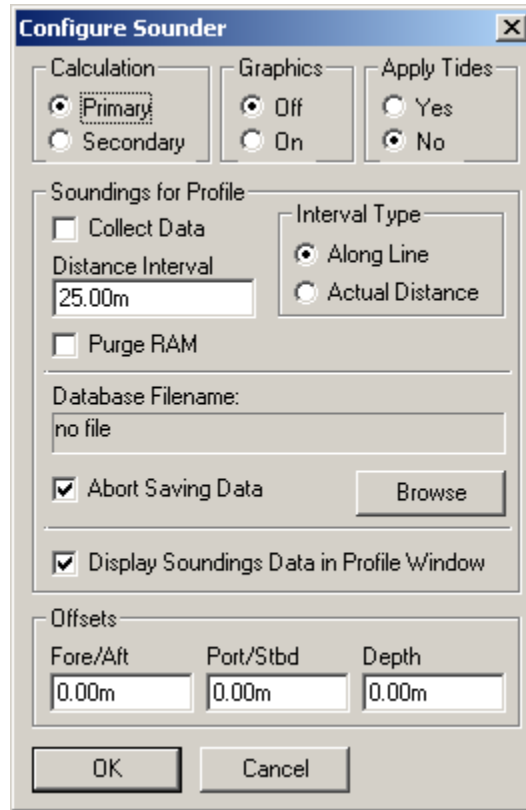
Raw record

**372, name, time, elevation, status, center elevation, raw data, temperature, relative humidity** *where:*

- 372 is the raw data record identifier for an ELEVATION data item
  - *name* is the operator-assigned device name
  - *time* is the computer time for the data
  - *elevation* is the elevation in meters
  - *status* is the status flag for the data, 1 = OK, 0 = Bad
  - *center elevation* is the elevation reduced to the CRP
  - *raw data* is the raw elevation data (specifically for Elevation group devices)
  - *temperature* is the temperature in Celsius
- relative humidity* is the relative humidity in units of 0-1.0 (i.e. = % / 100)

#### **Data item: ROV, STMC SLED, BOTTOMDEPTH**

Highlight this data item in the vehicle's device list and click the Edit button to open the Configure Sounder dialog box as seen below.



### **Calculation:**

Set the type of calculation to Primary or Secondary using the appropriate radio button. WinFrog will only utilize (i.e. display and record) data from a Primary depth sensor device. If there is more than one Primary depth sensor attached to a vehicle's device list, WinFrog will not mean the data (as is done with positional devices), but rather alternate between the devices. Data from a Secondary status depth sensor will simply be monitored.

### **Graphics:**

Select the On radio button to display a labeled square representing the location of the depth sensor in the Graphics and/or Bird's Eye windows.

### **Apply Tides:**

If the Yes radio button is selected, WinFrog will apply tidal corrections to the observed water depths. Depths displayed in the Vehicle Text window and recorded in automatic event (i.e. .DAT, .SRC, and .RCV) and type 351 raw files will refer to the datum corrected depths. Note that type 911 raw data records will remain truly raw and will not reflect the tide correction.

The tide information can be supplied by a real time telemetry system or by predicted tide files. Either way, the tide "device" must also be attached to the same vehicle's device list. For more information, refer to documentation on Tide devices.

### **Soundings for Profile:**

This section of the Configure Sounder dialog permits the collection of sounding data to an .mdb database file for display in WinFrog's Profile window. This collection is completely separate from automatic event or raw data collection.

#### **Collect Data**

Select this checkbox to enable the collection of data to an .mdb database file.

#### **Interval Type**

Select to utilize either Along Line or Actual Distance (i.e. between successive position updates) calculations for data collection intervals. Selecting Along Line requires that you also enable survey line tracking.

#### **Distance Interval**

Specify the distance interval at which the data will be collected.

#### **Purge RAM**

Sounding data is stored in the RAM memory of the computer. Any data collected which will not be required at later time can be deleted by selecting the Purge RAM checkbox, then clicking the OK button to exit the dialog box.

#### **Database filename**

Click the Browse button to define where and to what filename the .mdb file will be written. The file name and location is displayed in this window.

#### **Abort Saving Data**

Select this checkbox to abort saving data to the .mdb file. In other words, to save data to the .mdb file ensure that this box is NOT checked.

#### **Display Soundings Data in Profile Window**

Select this checkbox to enable the display of this data in WinFrog's Profile window.

### **Offsets**

This section of the dialog allows for entry of offset values as measured from the vessel's Common Reference Point (CRP). Note that the Fore/Aft and Port/Stbd offsets are used for "cosmetic" visual purposes only: A depth sensor is not a positioning device, and hence its horizontal offsets have no application. If the depth sensor's position is to be recorded correctly, you must create and enable a vehicle Tracking Offset for that specific location. The offsets entered here can simply be used as a means of graphically confirming that the Tracking Offset values have been entered correctly.

The Depth Offset is applied; the entered value will be added to the received depth sensor data.

Depths displayed in the Vehicle Text window and recorded in automatic event (i.e. .DAT, .SRC, and .RCV) and type 351 raw files will refer to the corrected depths. Note that type 911 raw data records will remain truly raw and will not reflect the depth offset correction.

**TELGRAM SPECIFICATION:**

Binary Message