WinFrog Device Group:	**Speed Log**
Device Name/Model:	**Ulvertech ZR**
Device Manufacturer:	
Device Data String(s) Output to WinFrog:	
WinFrog Data String(s) Output to Device:	
WinFrog Data Item(s) and their RAW record:	Speed Log 402

DEVICE DESCRIPTION:

This driver is designed to read data from the Ulvertech ZR speed log device. Data from speed log devices is used in WinFrog's Kalman filter routines to enhance positioning results from other positioning devices such as USBL, GPS, etc. It is critical that the device is set-up correctly, and monitored, in order to ensure correct application of the data. It is also important with speed log devices that there is a stable heading source available. It is also important to note that only the *Speed over Ground* data is used in the Kalman Filter.

For more detailed information on how speed log data is used in WinFrog's Kalman filter routines, as well as some useful information on the filters themselves, refer to chapter 19 of the WinFrog User's Guide.

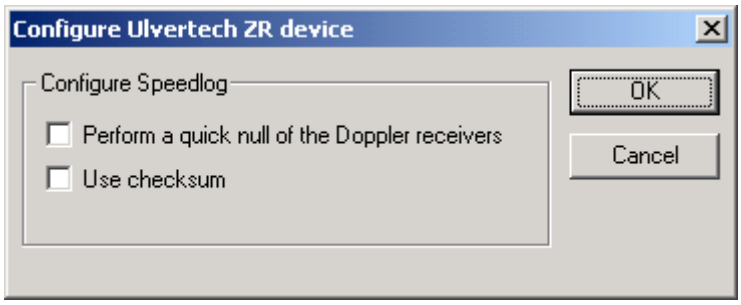
DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Serial
Configurable Parameters

WINFROG I/O DEVICES > CONFIGURE DEVICE:

This device must be configured at the I/O Device window level. In the I/O Devices window, click the device name to select it, then right-click and select Configure Device. The Configure Ulvertech ZR dialog box appears, as seen below.



Refer to Ulvertech ZR documentation for details on the function of the quick null of the Doppler receivers.

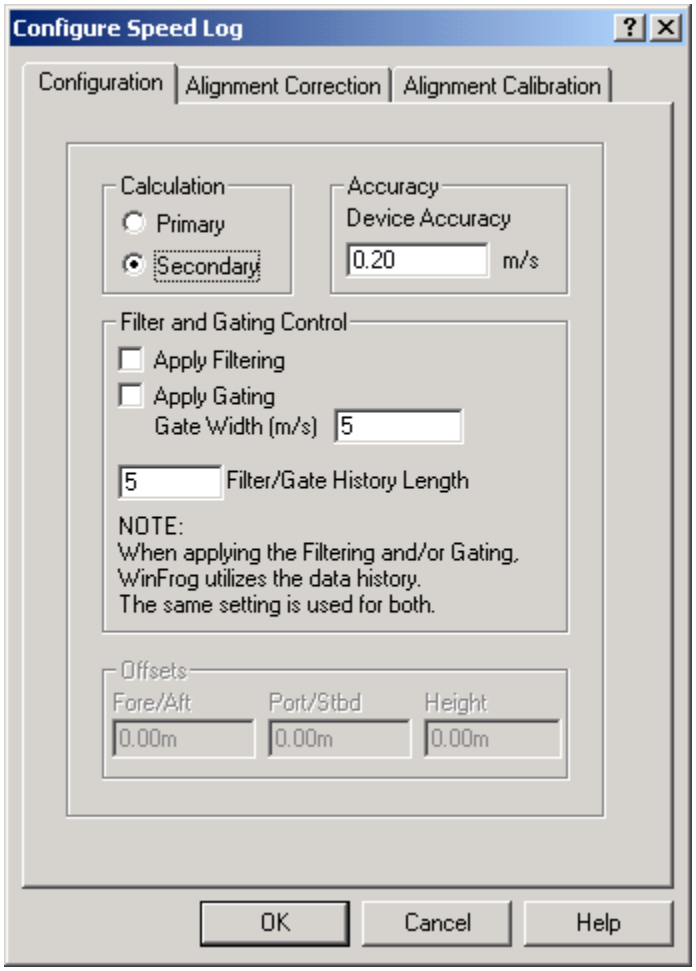
If it is desirable to add a checksum to the data string, select the Use checksum option.

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

Adding the Ulvertech ZR device creates the SPEED LOG data item. Once the data item has been added to the vehicle, it must be edited to suit the application. Note that the data item must be attached to the vehicle that the speed log device is physically mounted on.

Data item: SPEED LOG, Ulvertech ZR, SPEED LOG

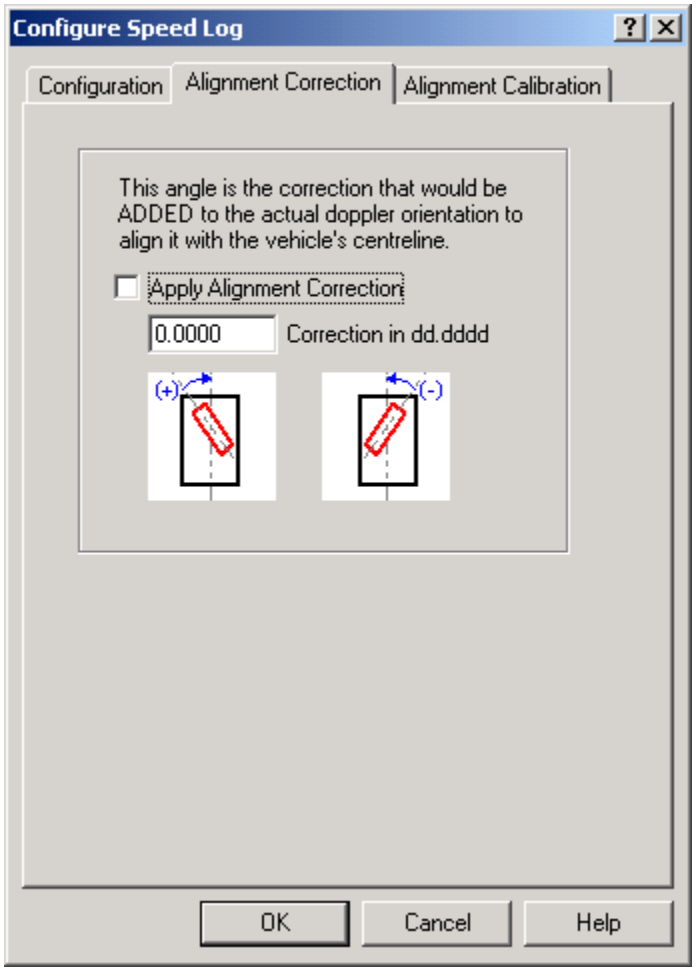
Highlight the SPEED LOG data item in the vehicle's device list and click the Edit button to open the Configure Speed Log dialog box as seen below. This dialog has three tabs, each of which requires configuration.



Configuration tab

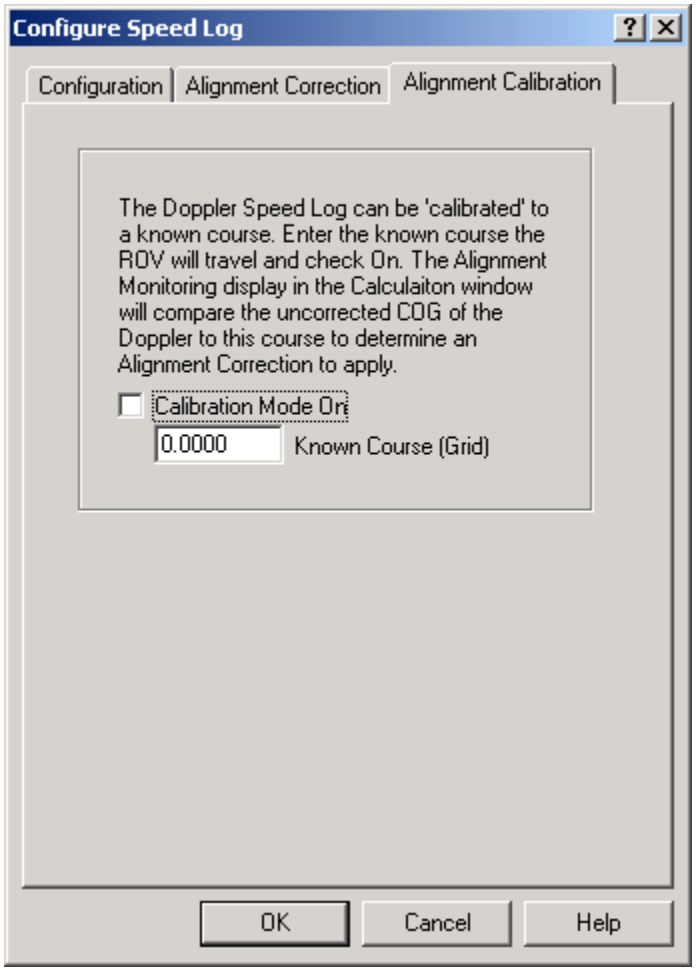
Select Primary if the data from the speed log is to be used to assist in the positioning of the vehicle. The default accuracy should be changed to match the accuracy stated in the Ulvertech ZR documentation. The default Gate and Filter/Gate settings should provide an adequate starting point, however, the optimal settings can only be determined from observation and manual adjustments to these settings. Offsets are not used by this device.

Note that if this device stops tracking the sea bottom it will stop updating.



Alignment Correction tab

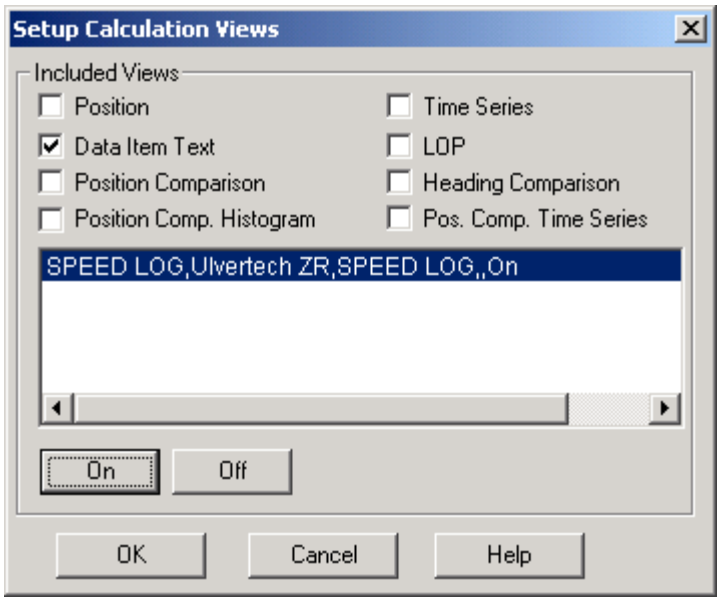
If an alignment correction has to be added to orient the speed log device with the centreline of the vehicle, select the Apply Alignment Correction checkbox and enter the correction value in decimal degrees. See the Alignment Calibration tab for details on determining the correction value to be used.



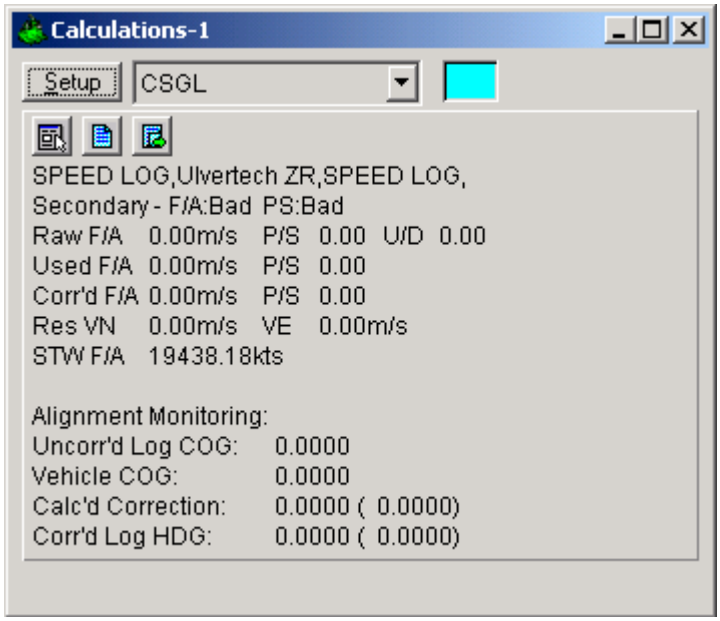
Alignment Calibration tab

The description in the Alignment Calibration is fairly self-explanatory. It is used in conjunction with a Calculations window to determine the correction value that can be entered in the Alignment Correction tab as discussed above.

To open a Calculations window, select View > Calculations from the main menu. In the Calculations window click the Setup button to open the Setup Calculation Views dialog box as seen below.



Select (check) the Data Item Text option. Next, highlight the Speed Log data item and click the On button. Exit this window with OK and the speed log data, as well as the Alignment Monitoring data can be viewed in the Calculations window as seen below.



The calculated correction (Calc'd Correction) can be viewed in this window. This correction value can be entered in the Alignment Correction tab.