WinFrog Device Group:	Speed Log
Device Name/Model:	ODEC
Device Manufacturer:	
Device Data String(s) Output to WinFrog:	Binary
WinFrog Data String(s) Output to Device:	NONE
WinFrog Data Item(s) and their RAW record:	Speed Log 402

#### **DEVICE DESCRIPTION:**

This driver is designed to read data from the ODEC 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:

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

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

Adding the ODEC 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, ODEC, SPEED LOG

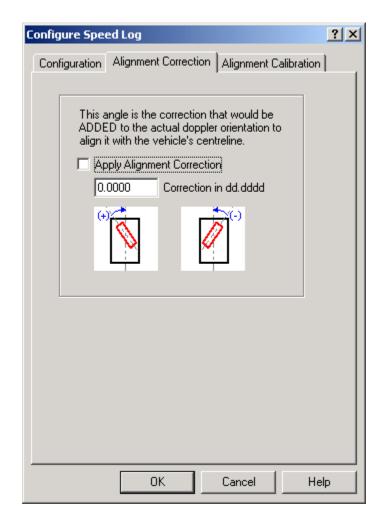
Highlight the SPEED LOG data item in the vehicle's device list and click the Edit button to open the Configure Speed Log dialog box as seen below. This dialog has three tabs, each of which requires configuration.

Configure Speed Log
Configuration Alignment Correction Alignment Calibration
Calculation       Accuracy         Primary       Device Accuracy         0.20       m/s         Filter and Gating Control       Apply Filtering         Apply Gating       Gate Width (m/s)         Gate Width (m/s)       5         Filter/Gate History Length       NOTE:         When applying the Filtering and/or Gating,       WinFrog utilizes the data history.         The same setting is used for both.       Offsets         Fore/Aft       Port/Stbd       Height         0.00m       0.00m       0.00m
OK Cancel Help

#### **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 ODEC 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.

Configure Speed Log	? ×
Configuration Alignment Correction Alignment Calibration	
The Doppler Speed Log can be 'calibrated' to a known course. Enter the known course the ROV will travel and check On. The Alignment Monitoring display in the Calculaiton window will compare the uncorrected COG of the Doppler to this course to determine an Alignment Correction to apply. Calibration Mode Ori 0.0000 Known Course (Grid)	
OK Cancel Help	)

#### 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.

Setup Calculation Views	X
Included Views	
Position	🗖 Time Series
🔽 Data Item Text	LOP
Position Comparison	Heading Comparison
🦳 Position Comp. Histogram	Pos. Comp. Time Series
SPEED LOG,ODEC,SPEED	
On Off	
OK Cance	Help

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.

🐣 Calculations-1		
Setup CSGL	<b>_</b>	
SPEED LOG,ODEC,S Secondary - F/A:Bad Raw F/A 0.00m/s Used F/A 0.00m/s Corr'd F/A 0.00m/s Res VN 0.00m/s STW F/A 19438.18k	PS:Bad P/S 0.00 U/D 0.00 P/S 0.00 P/S 0.00 VE 0.00m/s	
Alignment Monitoring: Uncorr'd Log COG: Vehicle COG: Calc'd Correction: Corr'd Log HDG:	0.0000 0.0000 0.0000 ( 0.0000) 0.0000 ( 0.0000)	

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

#### TELGRAM SPECIFICATION:

Binary Message.