1. SeaPlow VIII Plow Device

Revision History			
Revision	Date	Author	Comments
01A	Nov 21, 2024	G Wright	Initial release

1.1 Overview

The SeaPlow VIII device supports input from and output to the SeaPlow VIII plow. Input and output messages are comma delimited.

1.2 Message Validation

The input message is tested for valid ASCII alpha and numeric characters.

1.3 Add Device

1. From the Explorer view or Setup ribbon, select Devices to display the IO Devices
2. From the dropdown list, select SeaPlow Plow and click the **+** button

3. Configure the Device IO parameters and apply them accordingly (refer to the Devices section of the User Guide)

1.4 Configure Device

1. Access the Configure SeaPlow Plow view by either right mouse clicking on the SeaPlow Plow device in the list and selecting Device Settings or selecting it in the list and clicking the Configure device icon ( ) in the Device view tool bar

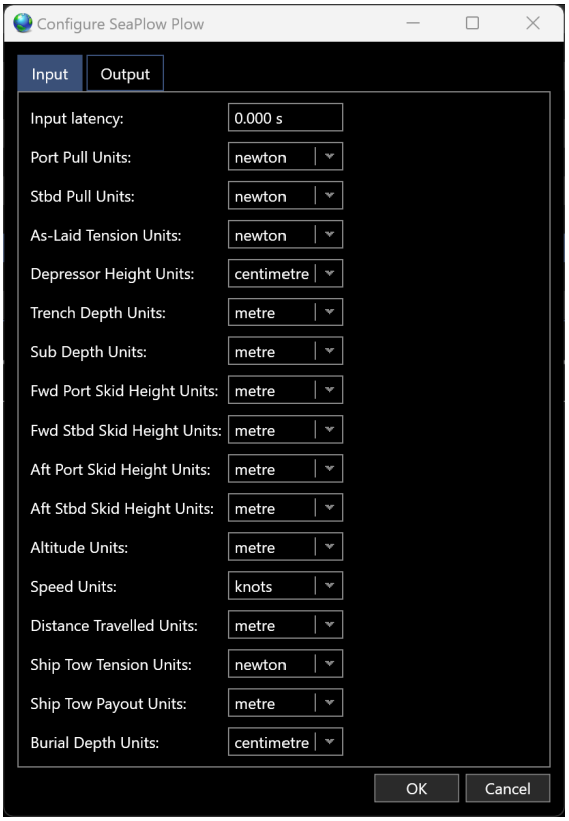

Figure 1 SeaPlow Plow Input Configuration

2. The configuration of the input and output are addressed on separate tabs
3. Input
    a. Input latency:
        i. If the latency of the input message is known, enter it here, otherwise leave this at 0
    b. The units used for inputs to NavView are configured on the plow system by the plow operator, NavView supports configuring this device to match the data accordingly
        i. From the respective dropdown list, select the units
        ii. Figure 1 is an example of the settings
4. Output
    a. NavView supports the selection of the data source for each output item to provide the greatest flexibility and the units to use for the output
        i. For each output type, the respective dropdown list presents all available data sources of that type
        ii. For each output type selected, the respective dropdown list presents the appropriate unit options
        iii. From the respective dropdown lists, select the data source and units to use
        iv. If the option None is selected for a data source, the respective field in the output message is empty
        v.
    b. Figure 2 is an example of appropriate data source selections and units

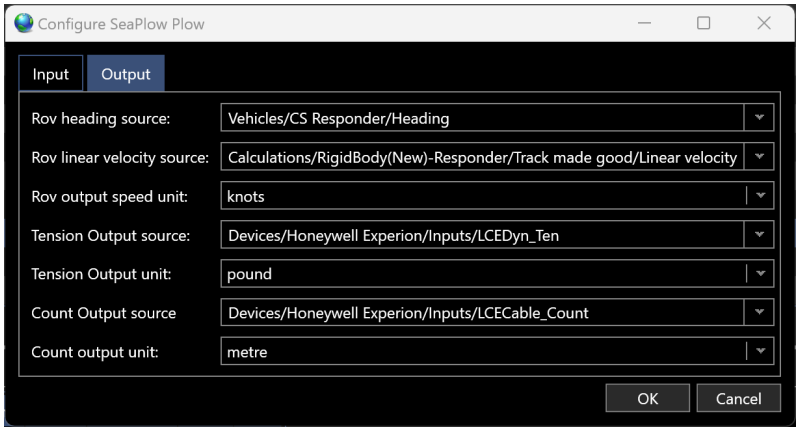

Figure 2 SeaPlow Plow Output Configuration

c. The output message is terminated with <CR><LF>

5. Once configuration is complete click OK

1.5 Monitoring

1. Open a Device Status view (see the Devices section in the User Guide)
2. ASCII Decode Tab

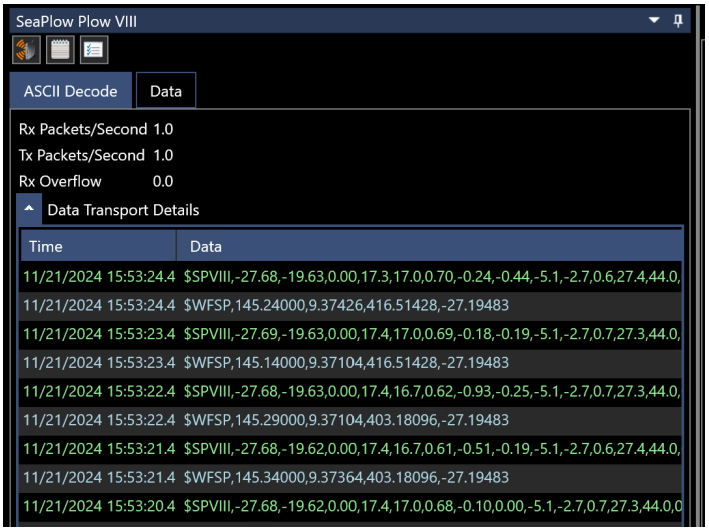

Figure 3 SeaPlow Plow Device Status View - ASCII Decode Tab

a. Rx Packets/Second: Displays the input rate of the received messages
b. Tx Packets/Second: Displays the output rate of transmitted messages
c. Rx Overflow: Displays the number of bytes in the case of an input buffer flow
d. Scrolling list of received (green) and transmitted (blue) messages

3. Data Tab
   a. Displays the decoded and published data

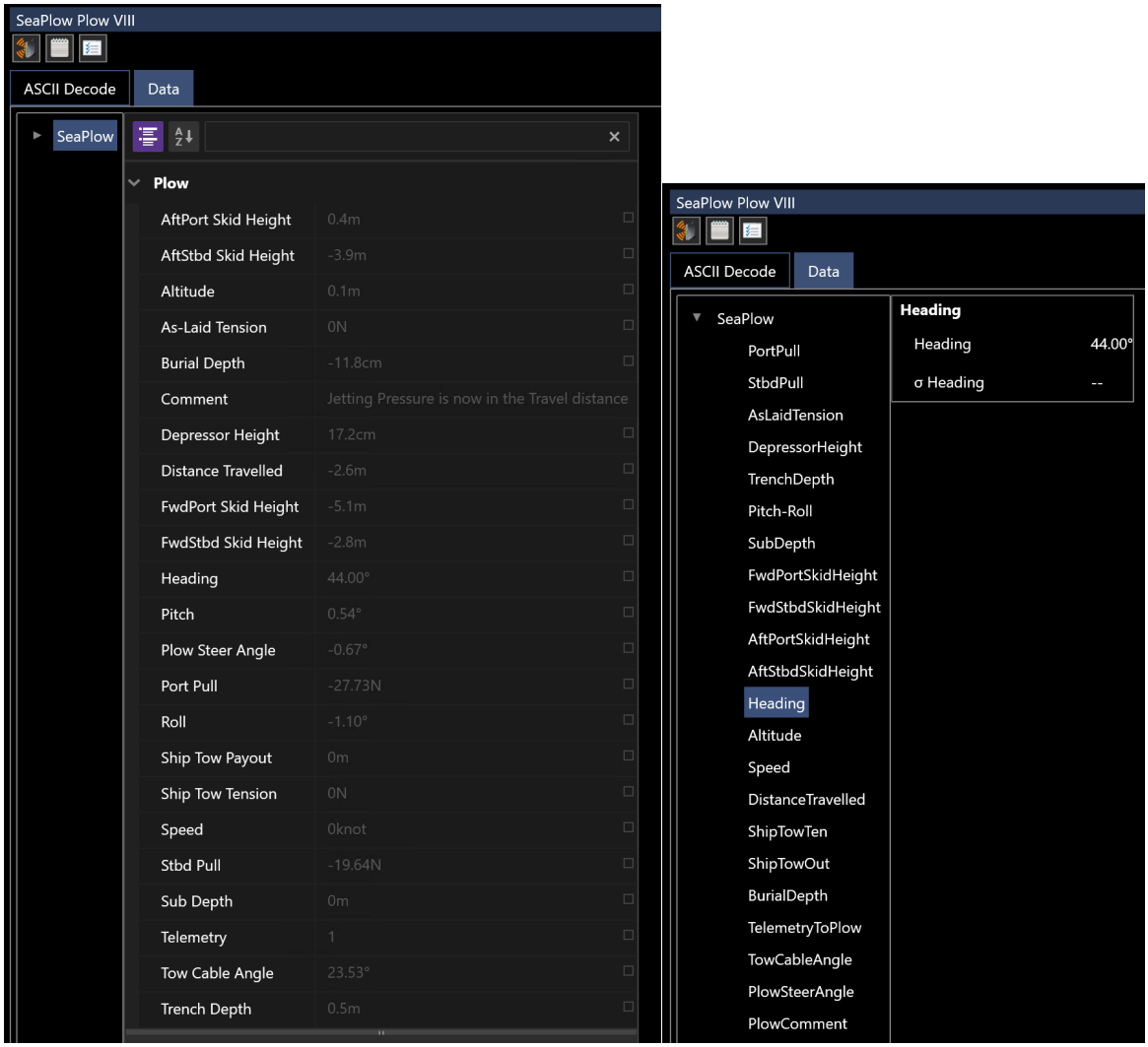

Figure 4 SeaPlow Plow Device Status View – Decoded and Published Data

b. Selecting the top of the tree (e.g. SeaPlow) displays the decoded data in the right panel in the units and number of decimal places expected based on the documentation provided
c. Expanding the branches in the tree (e.g., Altitude, Heading, etc.) lists the respective observation that are published and available for use elsewhere in NavView such as Text views and Data Recording

1.6 Input Telegram

SeaPlow VIII Plow Message to NavView		
Field	**Format**	**Description**
1	$SPVIII	Message header
2		Port pull (SeaPlow uses a tow bridal connected port and starboard)
3		Starboard pull (SeaPlow uses a tow bridal connected port and starboard)
4		As laid tension
5		Depressor height
6		Trench depth
7		Plow pitch
8		Plow roll
9		Plow depth
10		Forward port skid height
11		Forward starboard skid height
12		Aft port skid height
13		Aft starboard skid height
14		Plow heading
15		Plow altitude
16		Plow speed
17		Plow travel
18		Ship tow cable tension
19		Ship tow cable count
20		Burial depth
21		Telemetry to the plow
22		Tow cable angle (deflection of tow cable from straight ahead of plow)
23		Tow steer angle (angle of plow steering mechanism)
24		Plow comment
25	<CR><LF>	Carriage return Line feed

1.7 Output Telegram

NavView to SeaPlow VIII Plow Message		
Field	**Format**	**Description**
1	$WFSP	Header
2		ROV reference vehicle heading, i.e. towing ship's heading
3		ROV reference vehicle speed, i.e. towing ship's speed
4		LCE cable tension
5		LCE cable count
6	<CR><LF>	Carriage Return Line Feed