NavView User Guide – 02 NavView Basics

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Table of Contents

2. NAVVIEW BASICS

This section provides an overview of the basic concepts employed by NavView.

NavView can be installed with Roles and Privileges enabled. This provides the level of operator interface depending on role assigned. Roles options are as follows:

Username	Password
Not Logged In	N/A
User	user
Online	online
Supervisor	supervisor
Admin (Administrator)	admin

2.1 PUB/SUB DESIGN

The terms publish, subscribe and observations are used throughout this user guide. NavView employs a Pub/Sub design for moving data through the program. This is the process of 'publishing' data for others to 'subscribe' to and use. Data is published as 'observations', a normalization of the data that enables its efficient flow through NavView and between NavView clients. Observations can be raw data such as those published by devices or processed data such as that published by calculations. Subscribers may use the observations for further processing or simply for display.

The pub/sub design is also used to publish change notifications to alert subscribers to changes. Subscribers receive the alerts and take the appropriate action. This process is used by NavView clients to alert other clients of changes in configurations and data such as waypoints that require the subscribing clients to retrieve the changes from a SQL server database via NavView Network Services.

2.2 VEHICLE LOCAL COORDINATE REFERENCE FRAME AND CRP

Each vehicle or object uses a local Cartesian coordinate reference frame centered on an operator specified Common Reference Point or CRP. All calculations, offsets, outlines and shapes are referenced to this CRP.

The sign convention for the local coordinate reference frame is as follows:

- Y axis coincides with the vehicle's centerline, positive forward, negative aft
- X axis is perpendicular to the Y-axis such that the XY plane is parallel to the vehicle's main horizontal surface (e.g. deck), positive starboard, negative port
- Z axis is the vertical axis perpendicular to the XY plane, positive up, negative down

Note: It is preferred when preparing vehicle 3D shape files (3DS) that the model origin matches the CRP of the created vehicle, however NavView does support translating the origin of these to match the vehicle CRP.

2.3 PITCH AND ROLL SIGN CONVENTION

The sign convention for pitch and roll used by NavView is as follows:

Pitch: Positive bow up

Roll: Positive starboard side down

It is important to note that if a device provides pitch and/or roll data, it is displayed in the decode panel of the device status view with the sign convention as received to enable confirmation that the incoming data is being received and decoded correctly. If this sign convention does not match NavView's, the sign convention will need to be changed accordingly before publishing the pitch/roll observation.

2.4 UNITS OF MEASURE

All unit conversion parameters and units used by NavView are in accordance with the standard Unit of Measure table from Energistics, formerly Petrotechnical Open Standards Consortium (POSC). More information on the unit table can be found at: http://www.energistics.org/.

In NavView, all individual distance and depth data have an associated native unit, i.e. the units that it is originally entered or loaded as. For example, if prompted for an offset distance and 100m is entered, NavView accepts this value as 100m and maintains it in its native units of meters. It is only converted to different units if it is to be used with another data value that is in different units or the operator has specified that data type is to be displayed in different units. In both cases, it is converted accordingly as part of the data manipulation or display, but the original data is unchanged. This eliminates the problem of rounding when converting data, either upon entry or loading, and subsequent manipulation.

2.5 ACTIVE STATION

The term Active Station refers to the state of NavView device outputs. If a station is active, all output devices are active and transmitting data as configured. If a station is not active, all output devices are disabled, i.e. the outputs are formatted and prepared but are not transmitted.

This control enables an online secondary system to be configured identically to a primary online system but not output data preventing conflicts and collisions that would disrupt the reception of data at the receiving end. Should the primary system fail, the secondary system can be set to active and its outputs enabled providing a seamless transition to the backup.

The Active Station setting can be configured when creating a new station as part of the New Project and Open Project wizards. It can also be controlled in the same wizards when loading

or importing an existing station through an override option that allows the operator to override the Active Station setting of the station being loaded or imported and configure it as desired.

The Active Station setting can also be configured from the Project Configuration view.