

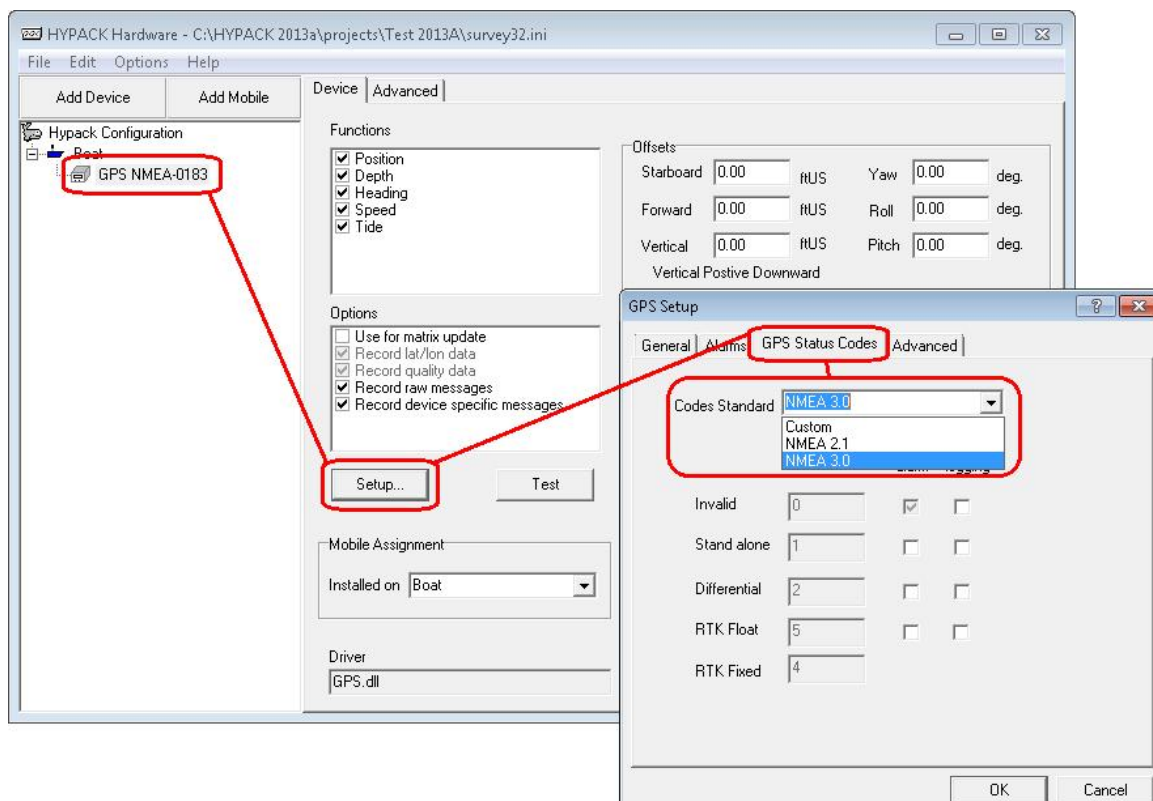


GPS Status Codes and OmniSTAR

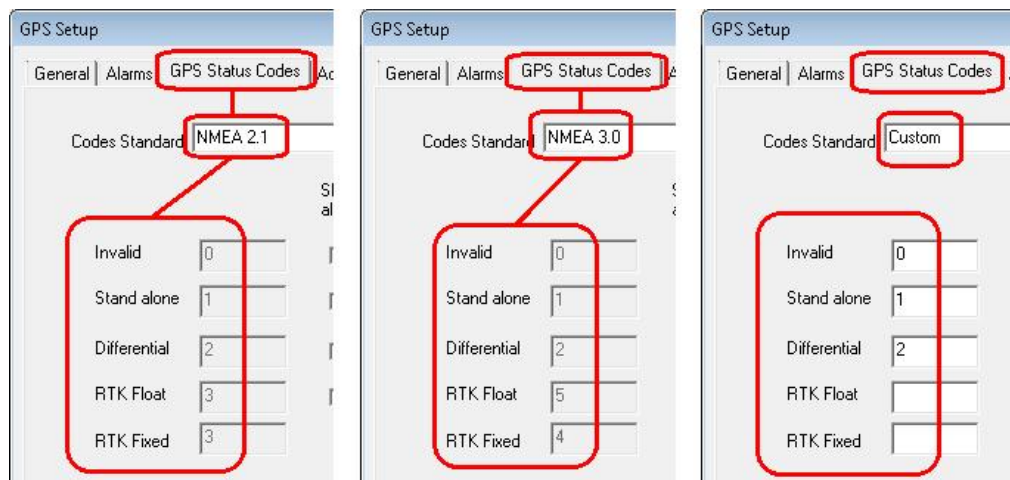
By Joe Burnett

When setting up your GPS in HYPACK® HARDWARE, in the driver setup (click [Setup]), you have the option to select the GPS Status Code format that your GPS outputs. This will allow you to know the current GPS Status.

FIGURE 1. Setting the GPS Status Code Option



You have 3 selections: **NMEA 2.1**, **NMEA 3.0**, and **Custom**



NMEA 2.1 and **NMEA 3.0** have set code numbers for the different modes.

NMEA 3.0 was created, so that RTK Float and RTK Fixed could be differentiated.

Custom was added due to **Virtual Reference Stations/Networks (VRS/VRN)** that were set up by cities around the country. Each city/network decides what the mode codes will be for their particular network. This option allows you to 'match' the network code numbers.

Recently, I was working with the OmniSTAR correction service and found that their HP corrections were generating a mode code number of '5'. According to Mike Huff at FUGRO/OmniSTAR, when the HP system had reached the 'converged' stage, they were equivalent to RTK Fixed. However, he also told me that each GPS brand set their own mode code number for the OmniSTAR 'converged' stage.

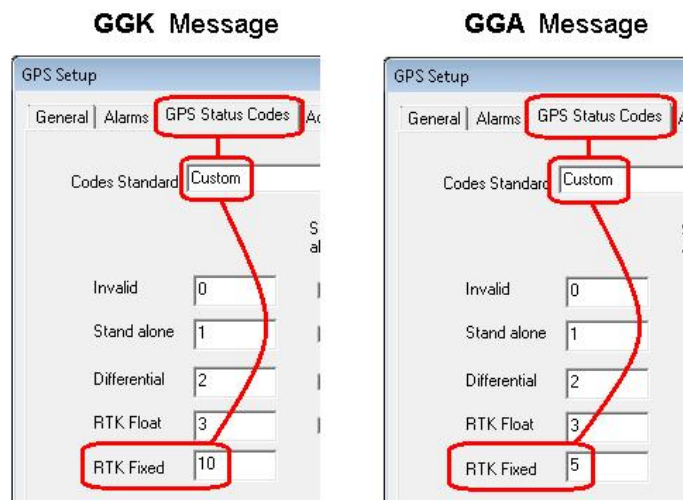
In addition, Mike told us that the vertical corrections of the OmniSTAR HP were accurate to 6-10 cm. You must determine whether this vertical accuracy meets the requirements of your survey.

Bruce Francis at Applanix (a Trimble company), was able to provide the following additional information:

- In the Trimble world, "converged" means "fixed" solution.
- In the **GGK** message number **10** is **RTK fixed**
- in the **GGA** message, number **5** is **RTK fixed**.

Therefore, if you are using the **OmniSTAR HP** corrections, you must set up the GPS Status Codes, as follows:

FIGURE 2. *OmniSTAR Sets Different RTK Fixed GPS Status Codes*



This can be very important if you are using this service to provide RTK vertical information to your survey.

In the Tide section on the General tab, set the slider to RTK Fixed.

FIGURE 3. Setting the Minimum Status to Record RTK Tide

Important! When you set the Slider Bar to Fixed RTK, and you don't have the GPS Status Code set correctly, then *no RTK vertical tide data will be calculated in real time and stored in the RAW files.*

