Seafloor

Topcon-TopSURV with HydroLite-TM

Installation

Topcon allows NMEA GGA output to be obtained by the SMMobile.exe acquisition program. The output of this string is achieved by sending a script with specific commands from the PC-CDU utility to your rover via RS-232 serial communications. The NMEA GGA string contains your position and the associated elevation, which is in reference to the WGS84 Ellipsoid. Our acquisition program will accept the position and elevation from your serial cable, while the soundings are streaming over Bluetooth. All data is logged real-time and is displayed on your datalogger. The soundings will be displayed as either a profile depth, or digital depth. The positions are displayed as a bread-crumb trail to show where you have surveyed.

The SonarVista processing utility imports your acquired data-set. After importing, you can clean your soundings in the echo-gram (sounding profile) screen and inquire on the quality of the soundings. If needed, you can convert your data-set to UTM coordinates before exporting. The elevations will be corrected by entering your rod height, which is the measurement from the bottom of the transducer under water, to the reference point on your rover. Upon export, SonarVista will subtract each sounding from the associated elevation to deliver your final soil elevation. The XYZ can then be used to create TINs and DEMs in AutoCAD, or whatever GIS utility you are using.

Below is an example from a support email that I recently sent to a customer concerning Topcon integration:

"This script will need to be renamed as a .tpc once you have taken a look at the format. The script will output the NMEA GGA string containing longitude, latitude, and elevation data referenced from WGS84. The script is set to output the GGA string at baud rate 9600 or 4800 from port A (1) on the bottom of your Rover. You will need to use the PC-CDU Topcon utility to send the script through port A. Connect your circular cable to port A, and the 9-pin RS-232 serial end to your PC. Once the script is sent, you will automatically see the GGA position string come through your PC CDU utility. At this point, do not disable the com connection within your laptop. In either the SMppc.exe, or newer SMmobile.exe utility, you will need to select DEVICE-GPS-COM 1-Baud 9600 or 4800. The baud rate should already be defaulted as 9600 or 4800 in the com window. This port needs to be opened before you connect the serial cable to your datalogger. Disconnect the serial cable from your PC and connect it to the 9-pin port on the bottom of your datalogger. The center window in the acquisition program will turn black, indicating that the positions are streaming in followed by a "bread crumb" trail. If the positions do not stream into the program, you may require a NULL modem in-line between your 9-pin cable and the 9-pin port on your datalogger. Then go to DEVICE-PARSER-check to box to use elevation and change the Z/elev value to 7. The elevation will be parsed into your logged file. The elevation is mean elevation above sea level."