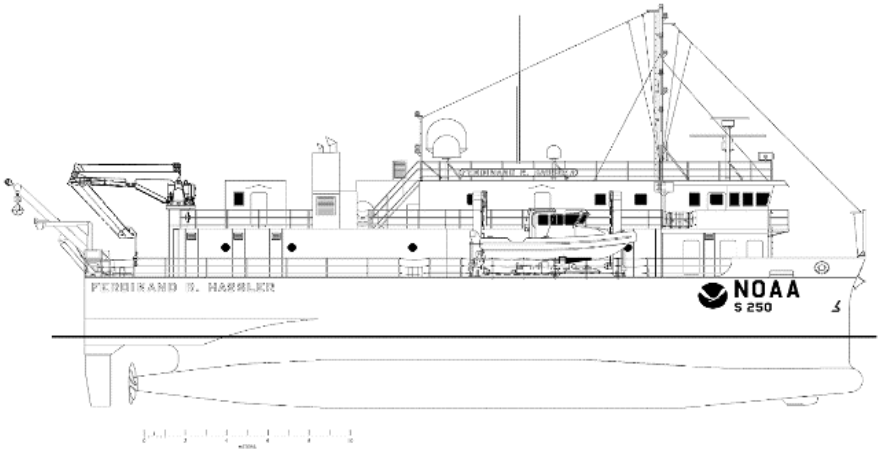


Revision History

DATE	DESCRIPTION	VERSION	AUTHOR
UNK	Creation	1.0	UNK
7/10/2023	Reviewed/ Updated	1.1	LT Debroisse

POSPacAutoQC in Pydro

As before, if you have reached this place in the SOP, it means Charlene was not your friend today and you are learning about all of the nice things it does automatically, with one of those things being QC images. To make these images, there is another tool in Pydro called POSPacAutoQC. This is an optional step to provide you with a troubleshooting tool.

3.1 Open POSPacAutoQC in Pydro.
3.2 In the POSPac AutoQC window, direct it to the Extract folder within POSPac project of interest and it will find the other two folders.

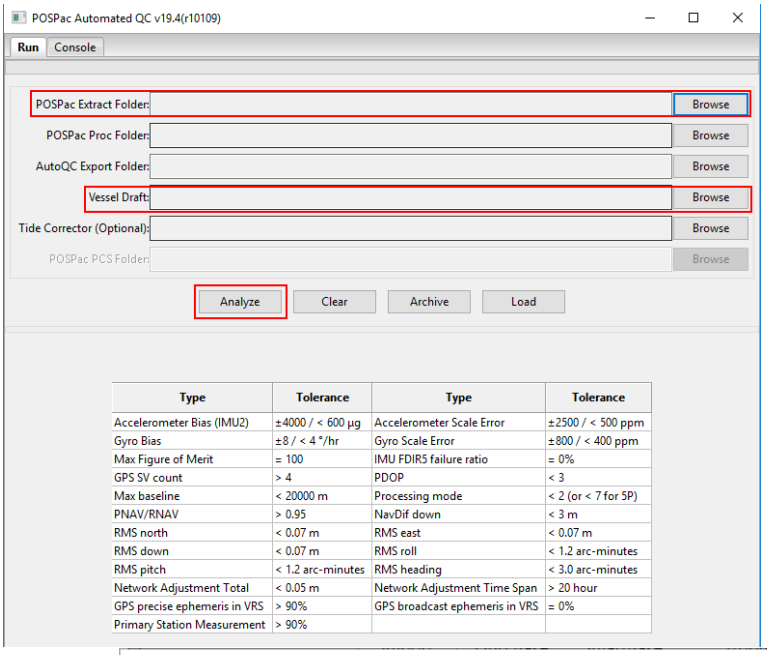
3.3 For the “Vessel Draft”, direct it to the HVF that is in the HDCS_Data folder for your sheet

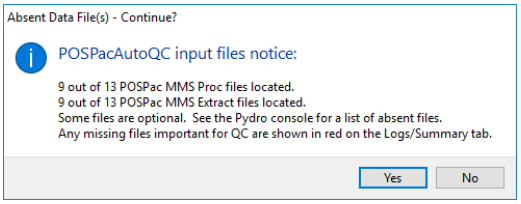
3.4 Hit Analyze.

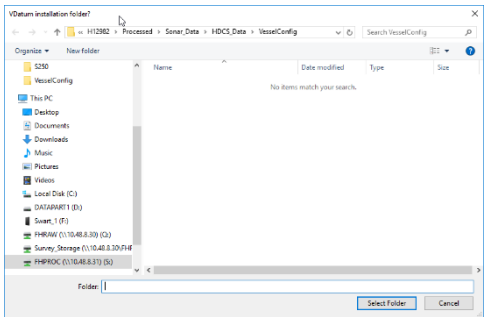
3.5 A window will pop up saying it only has 9 of 13 files. That is ok. Click ‘Yes’.

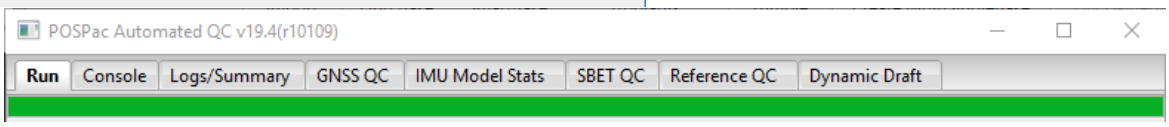
3.6 Another window will popup asking for a VDatum Installation Folder. You do not need to direct it anywhere and can hit ‘Cancel’.

3.7 In short order the 5 image tabs will populate. Navigate to each one and look over the information it shows. These images should be saved to that days SBET folder within Processed.

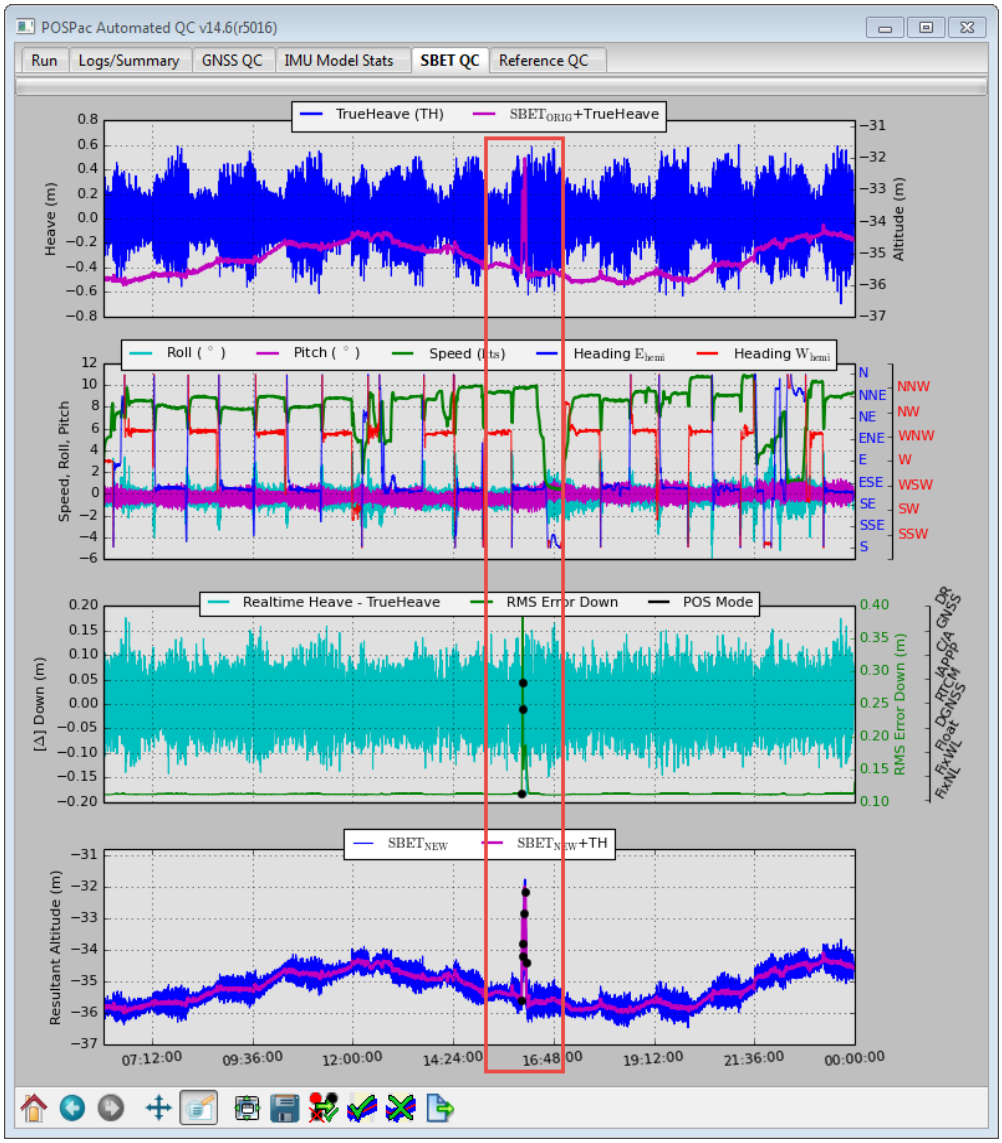




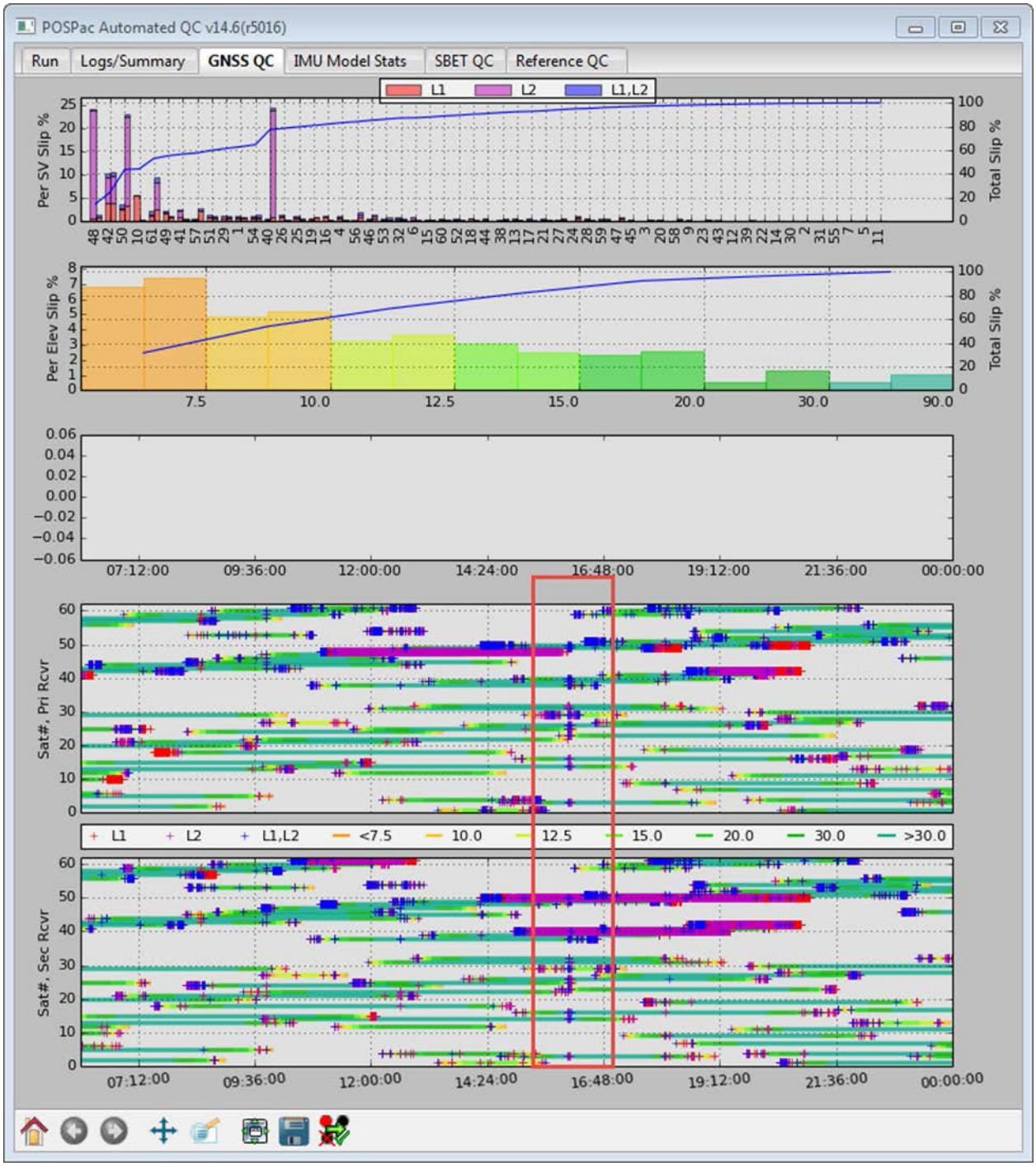




3.8 Five new tabs will appear. Take a look at the SBET QC tab. The SBET line in the first graph should not have any large spikes. The image below shows a spike in the SBET data.



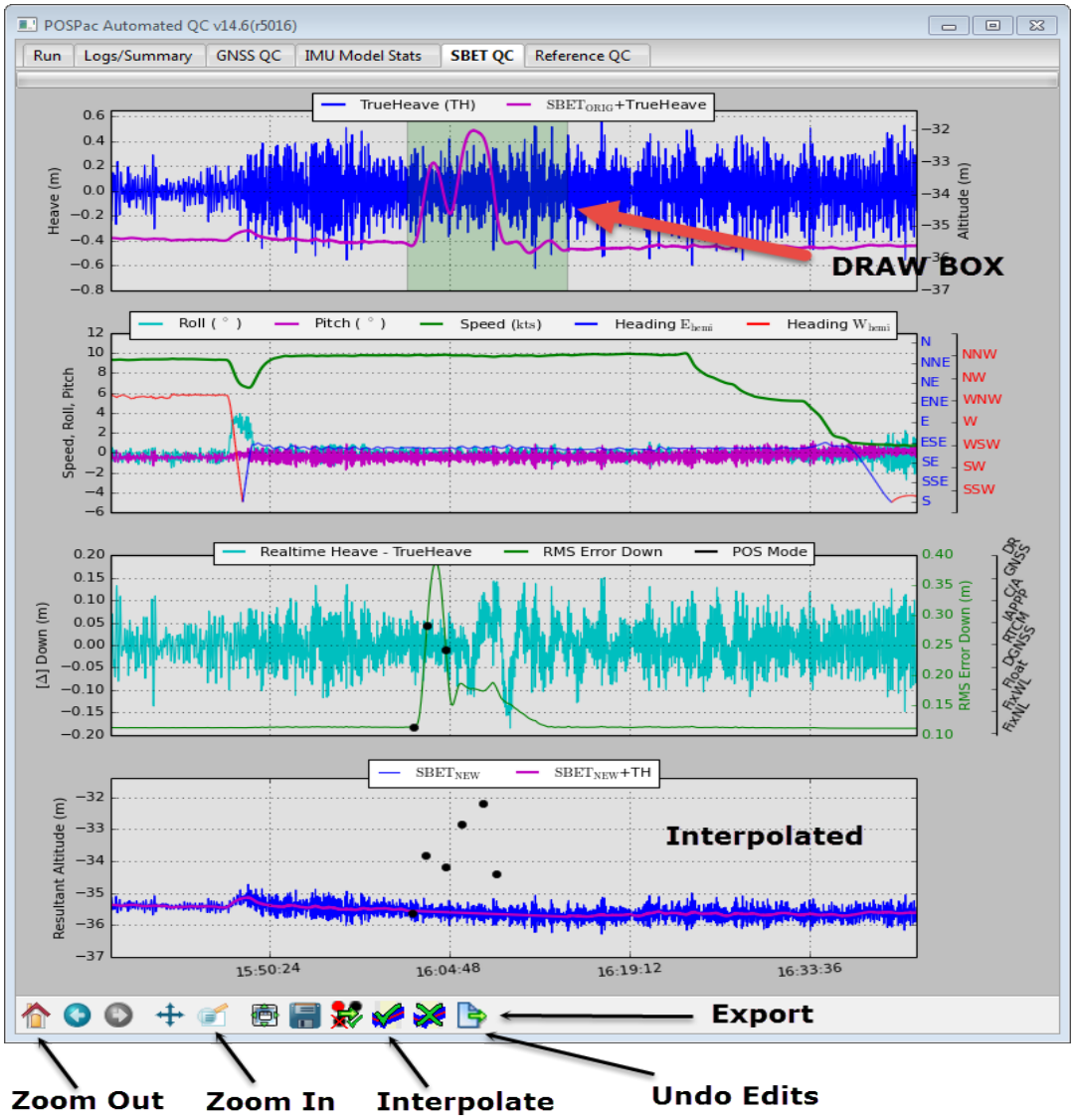
The GNSS QC tab shows the spike occurs at the same time as when there is a satellite dropout (See below).



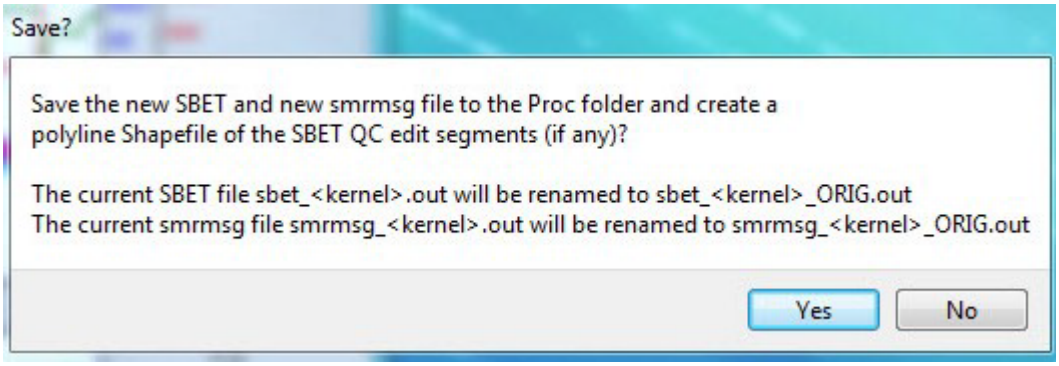
2.1.1.1 Make a note in the processing log if anomalous data exist. If so, it may impact the bathymetry and data and will need troubleshooting.

2.1.1.2 In the POSPac Automatic QC the data will be archived for further use. Go to the Archive button on the Run tab and select Archive button. This will save in the following location: H:\Surveys\Project#\Survey#\Processed\GNSS_Data\ERS_projects\Archive_QC.

5.2.1 If spikes exist in the data, select the SBET tab and zoom in on the anomaly via the top image (Heave and Altitude). Draw a box around the spike in the graph and select the interpolate button.



5.2.2 After interpolation is complete, export the new SBET from the auto qc program. This produces an unprocessed SBET. The program will rename the original SBET and RMS files as _ORIG and the newest files will follow the standard naming convention. If you get confused, just check the timestamp to confirm the newest file.



5.2.3 POSPac AutoQC edits the SBET that is referenced to ITRF therefore we must re-export it to the correct reference

5.2.4 MMS (File→Open→ navigate to H:\Surveys\Project#\Survey#\Processed\GNSS_Data\ERS_projects\).

5.2.5 Go to Project → Export, or select the export icon.

5.2.6 In the new window that pops up on the right hand side, direct the export to the SBET file location: H:\Surveys\ProjectNumber\SurveyNumber\Processed\GNSS_Data\SBET

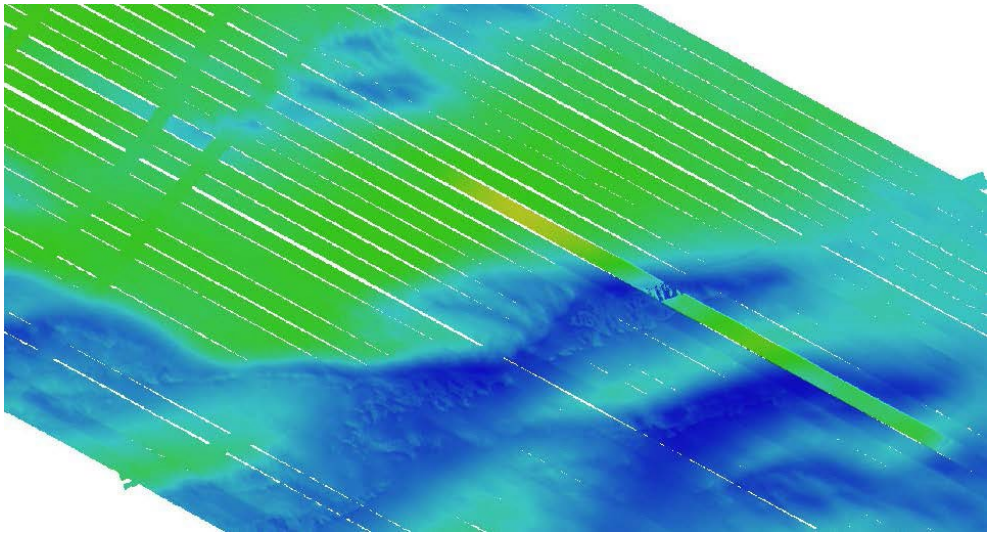
5.2.7 NAME THE FILE: interpolated_export_yyyy_ddd_vssl.out

5.2.8 Browse to the Export folder within the ERS project and find the SBET .out file. Copy the SBET out and place it in the folder labeled SBET under the Processed GNSS_Data file.

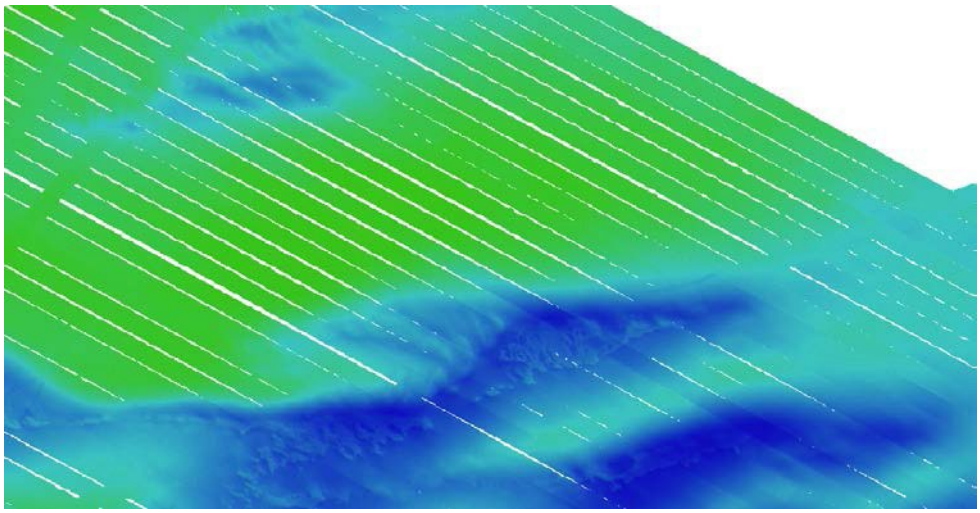
5.2.9 Browse to the Proc folder within the ERS Project folder and copy the smrmsg_YYYY_DDD_VVVV.out file to the SBET file under the Processed GNSS_Data file. RENAME the file extension .smrmsg.

5.2.10 To control data management, a “to delete” folder shall exist in the GNSS project data structure as a repository for outdated or edited SBETs. DO NOT leave old SBETS and RMS files floating around in the same folder as data applied to HDCS data in CARIS 9.0.

5.2.11 If the .SBET and .RMS files had been applied to data BEFORE auto qc editing, it is crucial to delete the corresponding .rawindex files from the H:\HDCS\HXXXXX folder before attempting to re-apply.



Example of Pre-edited SBET/RMS causing vertical offset in CUBE surface.



Example of Post-edited SBET/RMS causing vertical offset in CUBE surface.

ACRONYMS

SBET - Smooth Best Estimate of Trajectory

ERS- Ellipsoidally Referenced Survey

IAPPK - Inertially Aided Post Processed Kinematic

5P - Post Processed Precise Point Positioning

RINEX—Receiver Independent Exchange Format

POSPac MMS -Position and Orientation System Post-Processing Package

RMS -Root Mean Squared

GNSS - Global Navigation Satellite System

PPK - Post processing kinematics