

The surveys are in agreement along their common borders. The agreement was noted in the field using the CUBE surfaces during subset cleaning. The conformity is also apparent in the Final Combined BASE Surfaces.<sup>7</sup>

### Quality Control Checks

Positioning system confidence checks were conducted on a daily basis using the POSMV controller software. The controller software had numerous real-time displays that were monitored throughout the survey to ensure the positional accuracies, specified in the NOS Hydrographic Surveys Specifications and Deliverables were achieved. These include, but are not limited to the following: GPS Status, Position Accuracy, Receiver Status (which included HDOP) and Satellite Status. During periods of high HDOP and/or low number of available satellites survey operations were stopped.

### Comparison of PPK-GPSTide and Zoned Verified Tides

Tidal corrections for this survey were done using PPK-GPS derived altitudes which were reduced to MLLW using VDatum grids and the CARIS HIPS GPSTide function. Since conventional tidal data and zones were available, gross error and reality check comparisons were done between data corrected using both methods. The following tests were performed:

1. For a snapshot of general agreement throughout the survey area, a copy of the crossline data was corrected using zoned, verified smoothed tides, and dynamic draft correctors applied. QC reports were then generated in HIPS for these “tidal” crosslines versus the BASE surfaces (GPSTide method) in the same manner described in the crossline comparison section above.

Results: All Quicksilver (7125) “tidal” beams passed at 95 % or better as compared to the BASE surfaces. Some Pacific Star (8111) “tidal” beams did not pass, but at the general rate of failure as regular crosslines outlined in the Crosslines section.<sup>8</sup> Results are available in Separate IV.

2. In order to identify and quantify any static offsets between the two processing methods, a difference surface was created in IVS Fledermaus using a CUBE surface created from the crosslines and a CUBE surface created from the same crosslines corrected using zoned, verified smooth tides. (Difference surface = tidal surface minus GPSTide surface, both 4m resolution)

Results: Average difference was -0.078 m, median difference was -0.085 m, with a standard deviation of 0.393 m. Therefore, the GPSTide surface was about 8 cm shoaler on average. No significant trends were apparent. Spikes in the difference surface, most obvious on slopes, is a likely gridding artifact since the data matches up in these areas.

