

Position reliability using C-Nav P3QC processing

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The reliability of GPS and aided GPS positioning is a major concern for many existing and potential applications. This paper describes an experiment to test C-Nav Precise Point Positioning Quality Controlled (P3QC) software, which has been developed to address this concern.

This experiment places a pair of C-Nav World corrected GPS (WcGPS) receivers sharing a single antenna via a splitter on a surveyed point in a high blockage/multi-path environment. This environment is chosen to stimulate a high level of positioning failure, as system performance during failure is the parameter of interest. A second pair of receivers sharing a single antenna via a splitter is placed in a clear environment. This pair tests the performance of the receiver in the clear. In each pair, one receiver uses the P3QC software, while the other uses pre-P3QC software as a control. Receiver position outputs are compared to the surveyed positions and errors for each receiver are determined at each epoch. The errors are examined as a function of antenna environment, software type and data quality. A filter is run to delete remaining positions with low reliability. Data sets are compared.

An earlier edition of this paper was presented at Hydro 2009 in Norfolk Virginia.

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