OPUS-Projects 5: Supporting RTK Measurements for Establishment of Geodetic Control

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SUMMARY

The National Geodetic Survey (NGS) has finished developing its web-based and freely-available surveying application, OPUS-Projects, so that users can upload GNSS vectors in the standard GNSS Vector Exchange (GVX) file format. GVX is an XML-based standard file format proposed for sharing GNSS vectors, whether derived from a real-time kinematic (RTK) survey or from post-processing. Industry is adopting GVX and providing tools in their software for exporting GNSS vectors to this format. OPUS-Projects will display the uploaded GNSS vectors in GVX both on a map and in tabular form, and it will flag vectors that do not meet user-specified quality thresholds. Moreover, OPUS-Projects will provide tools for adjusting the uploaded GNSS vectors along with any other baselines post-processed within the software in order to estimate geodetic coordinates at control points or bench marks. Users can then submit the resulting survey network adjustments to NGS for review and loading in its national database. GVX and OPUS-Projects provides an efficient means for surveyors to analyze, adjust,

and

publish RTK data collected on geodetic control. NGS is promoting its use by all surveyors in the United States for recovering and resurveying existing geodetic control (bench) marks as well as establishing coordinates on new control marks. OPUS-Projects uses continuous GNSS stations in the NOAA CORS Network as well as the IGS Network for aligning surveys to both the United States National Spatial Reference System and the latest global International Terrestrial Reference Frame.