

Implementing NGS OPUS Projects' GVX feature to align RTK vectors to the NSRS to establish Geodetic Control for FirstNet Indoor Mapping

Kevin Jordan and Benjamin Gavin (USA)

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SUMMARY

The National Geodetic Survey provides field support to universities, federal agencies and scientific partners, advising on best-practices for field survey data collection and alignment to the National Spatial Reference System (NSRS). In special instances, the National Geodetic Survey's Field Operation Branch will lend personnel and equipment to plan, conduct, and process geodetic control surveys for these groups. In June 2022, NGS conducted a geodetic control project to support the First Responder Network Authority (FirstNet) agency within the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA). The location for the survey was the Public Safety Immersive Test Center (PSITC) in Boulder, Colorado. The objective was to establish a network of 20 control points inside and outside the facility and align them to the NSRS. This network of

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Geodetic

Control will be used for testing of indoor localization technologies being developed for Public Safety.

Careful pre-planning with site contacts, monument selection, network design, and passive NSRS ties were performed prior to deployment to the field. Field survey methods required a combination of Static GNSS, RTK and terrestrial survey methods. Post-processing of static and RTK GNSS observations was performed with BETA OPUS Projects (OP 5.0) along with specific NOAA's National CORS Network (NCN)

ties for the best possible alignment to the NSRS. Terrestrial survey observations were post-processed using Leica Infinity. This project highlights important advancements by NGS to support real-time GNSS collection and processing while supporting a critical mission of a partner agency.

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