Automated Quality Check for GNSS Field Surveyed Data

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SUMMARY

Cadastral organizations require robust mechanisms to validate the integrity and completeness of GNSS field measurements submitted by surveyors from external contractors or internal teams. This presentation introduces a new solution developed by Leica Geosystems that enhances both post-survey validation and real-time monitoring of field activities. When activated, Leica Captivate-based GS-series RTK rovers (e.g. GS18) transmit a message to the Leica Spider Network-RTK processing software each time a survey point is recorded. This message includes metadata such as point identifier, timestamp, coordinates, occupation duration, and quality indicators, which are centrally logged by the Leica Spider installation running at the cadastral organization servers.

The resulting dataset forms a comprehensive digital field book that reflects the actual measurements performed in the field. Organizations can use this record to verify that the delivered survey data corresponds to what was measured, including whether each point meets predefined criteria for positional accuracy and observation duration. Additionally, the system might enable real-time visibility into ongoing fieldwork, allowing supervisors to monitor progress and identify potential issues—such as insufficient occupation time or poor coordinates quality—while surveyors are still on site. This dual capability supports both immediate oversight and post-survey validation workflows, providing a robust audit trail for regulatory compliance and contractual assurance. The presentation will detail the technical implementation of the rover-to-server communication and discuss its implications for improving governance, transparency, and operational efficiency in GNSS-based cadastral surveying.