



mmVu® Server

GNSS Deformation Monitoring Software

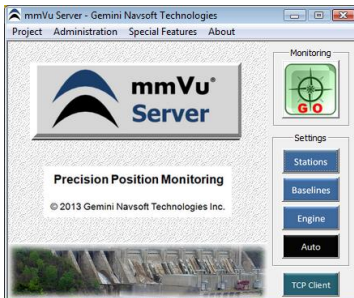


mmVu® Server is a real-time GNSS deformation monitoring software that processes baselines from dual-frequency GNSS receivers. It is one of the most advanced and sophisticated software that can deliver up to sub-millimetre level accuracy in real-time even at a high data rate. It has been especially designed to overcome serious GNSS challenges imposed on various project sites. The mmVu® Server is highly scalable and easily configurable. In addition, GNT's dual-processing engines can be easily tuned-up so that the mmVu® Server can be applied to most GNSS monitoring projects regardless of the time period, distance and scale of the project.

Features

The mmVu® Server uses redundant processing modules to ensure the integrity of its results. Customized processing modules are available for unique applications.

- Provides TDD and DDC solutions by adjustable, selectable filters
- Detects sudden displacements and long-term stability trends
- Delivers up to sub-millimetre level accuracy
- Designed to overcome GNSS challenges such as high multipath, longer baselines, and ionospheric and tropospheric errors
- Flexible system deployment regardless of the time period, project scale or distance
- Archives solutions, observations, and server activity
- Upgradeable and expandable to cover a growing project scale
- Supports structure specific coordinate system



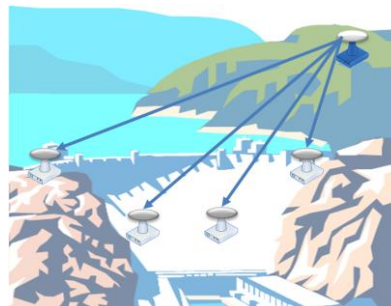
- Built-in system Integrity Monitoring Services.
- Supports multiple input data formats from various GNSS receivers.
- Simple to configure and easy to use

Application

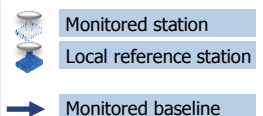
The mmVu® Server fits in most real-time deformation monitoring applications such as civil structures, localized natural features and industrial applications, and is designed for challenging GNSS environments.

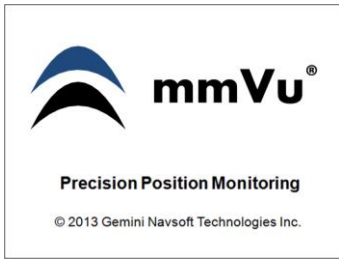
Civil Structures	Bridges, Dams, Weirs, Dykes, Buildings, Towers, Breakwaters, Wind turbines
Natural Features	Volcanoes, Glaciers, Avalanches, Landslides, Ground subsidence
Industrial Applications	Construction sites, Offshore oil platforms, Mines, Railways, Roads, Tailings ponds,

System Deployment Diagram



- Dual-frequency GNSS receivers are located at the monitored structure.
- Dual-frequency reference station is located outside of the deformation zone.





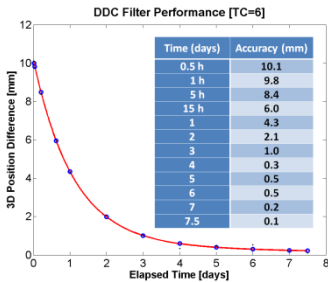
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Performance

The mmVu® Server delivers mm-level accuracy in real-time even in challenging GNSS environments. Sub-mm level accuracy is also achievable under certain conditions.



Note:
Based upon repeated displacement detection tests in a controlled environment. System performance may vary depending upon the GNSS monitoring station environments.

mmVu® Server Products

GNT offers three different types of mmVu® Server products for customers to choose the right one that fits ideally for their monitoring needs.

mmVu® Server Basic	an economical solution for small scale projects
mmVu® Server Plus	an optimal solution for complex projects
mmVu® Server Premium	for extreme GNSS environments with special requirements

mmVu® Server Basic

- Economical: suitable for all budgets
- Generic Applications: fits most of the deformation monitoring applications
- Simple Configuration: fits small scale projects
- Easy site implementation, maintenance and operation

mmVu® Server Plus

- Optimal: suitable for medium budgets
- Oriented Applications: fits complex monitoring applications
- Medium Configuration: longer baselines and higher data rate

mmVu® Server Premium

mmVu® Server Premium is available for applications that require customization of the license options for their special needs.

Capabilities

License Options	mmVu® Server Basic	mmVu® Server Plus
Filter Type	TDD, DDC	TDD, DDC
Monitoring Application	Real-time, Static	Real-time, Static
Data Rate	Up to 1 Hz	Up to 10 Hz
Baseline Length	Up to 10km	Up to 30km
No. of Baseline	Up to 5 baselines	Up to 20 baselines
GNSS Environmental Challenge	Lower	Medium

Local Server Computer and GNSS Stations

The mmVu® Server can be integrated with customer's existing system or operated as a stand-alone system. GNT offers GNT's hardware solutions for customers who look for pre-configured hardware products.

The local server computer PS100 is a dedicated computer on which mmVu® Server is preloaded and configured for individual applications.

DGS100 is used to monitor a location of interest or serve as a reference station. DGS100 consists of a geodetic quality GNSS receiver and antenna, wired or wireless Ethernet-to-serial device server and an optional high-volume data logger.