mmVu® Solver is a real-time GNSS deformation monitoring software that processes single-frequency baselines from single- or dual-frequency GNSS receivers. It is equipped with the GNT’s unique, proprietary dual-processing engines (TDD and DDC filters) and utilizes GNT’s parallel processing technology. The mmVu® Solver is highly scalable and can easily configure a project with a number of monitored stations. It is specifically designed for budget-sensitive projects. GNT’s dual-processing engines can be easily tuned-up so that the mmVu® Solver can deliver mm-level accuracy in real-time even at a high data rate.

Features
The mmVu® Solver uses redundant processing modules to ensure the integrity of its results.

- Provides TDD and DDC solutions by adjustable, selectable filters
- Detects sudden displacements and long-term stability trends
- Delivers up to millimetre level accuracy
- Designed to overcome GNSS challenges such as high multipath, ionospheric and tropospheric errors
- Suitable for budget-sensitive small projects with up to 10 km baseline length
- Archives solutions, observations, and Solver activity
- Processes up to 100 baselines
- Supports structure specific coordinate system

Application
The mmVu® Solver fits in short baseline deformation monitoring applications using single- or dual-frequency receivers such as civil structures, localized natural features and industrial applications.

<table>
<thead>
<tr>
<th>Civil Structures</th>
<th>Bridges, Dams, Weirs, Dykes, Buildings, Towers, Breakwaters, Wind turbines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Features</td>
<td>Landslides, Ground subsidence</td>
</tr>
<tr>
<td>Industrial Applications</td>
<td>Construction sites, Mines, Railways, Roads, Tailings ponds</td>
</tr>
</tbody>
</table>

System Deployment Diagram

- Single-frequency GNSS monitored receivers are located at the structure of interest.
- Single-frequency or dual-frequency reference station is located outside of the deformation zone.

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mmVu® Solver Products

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

- **mmVu® Solver Basic**: an economical solution for small scale projects with up to 5 km baseline length
- **mmVu® Solver Plus**: an optimal solution for complex projects with large numbers and up to 10 km baseline length
- **mmVu® Solver Premium**: a customized solution for projects with special requirements

**mmVu® Solver Basic**
- Economical: suitable for budget-sensitive monitoring projects
- Target Applications: fits small projects with up to 5 km baseline length

**mmVu® Solver Plus**
- Optimal: suitable for medium budgets
- Oriented Applications: fits complex monitoring applications with large numbers of baselines

**mmVu® Solver Premium**
- mmVu® Solver Premium is available for applications requiring customized solution for projects with special requirements either in medium or large scale projects.

**Performance**

The mmVu® Solver delivers mm-level accuracy in real-time even in challenging GNSS environments.

**Capabilities**

<table>
<thead>
<tr>
<th>License Options</th>
<th>mmVu® Solver Basic</th>
<th>mmVu® Solver Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Type</td>
<td>TDD, DDC</td>
<td>TDD, DDC</td>
</tr>
<tr>
<td>Monitoring Application</td>
<td>Real-time, Static</td>
<td>Real-time, Static</td>
</tr>
<tr>
<td>Data Rate</td>
<td>Up to 1 Hz</td>
<td>Up to 10 Hz</td>
</tr>
<tr>
<td>Baseline Length</td>
<td>Up to 5 km</td>
<td>Up to 10 km</td>
</tr>
<tr>
<td>No. of Baseline</td>
<td>Up to 5 baselines</td>
<td>Up to 20 baselines</td>
</tr>
<tr>
<td>GNSS Environmental Challenge</td>
<td>Lower</td>
<td>Medium</td>
</tr>
</tbody>
</table>

**Local Server Computer and GNSS Stations**

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

The SGS100 single-frequency GNSS station is used to monitor locations of interest or serve as reference stations. The SGS100 consists of a high quality GNSS receiver and antenna, wired or wireless Ethernet-to-serial controller and an optional high-volume data logger.