

MCGS

Multipurpose Cooperative GNSS Service

OHB Digital Solutions GmbH provides a service for improving the GNSS positioning performance using cooperative data processing and sophisticated algorithms augmented with external information. Efficient client data management and cloud computing are key features in the scalability and global availability of **MCGS**.

With **MCGS** any type of **Global Navigation Satellite System** (GNSS) receiver will get a better positioning performance in real-time by avoiding investments in high-end devices or expensive infrastructure.

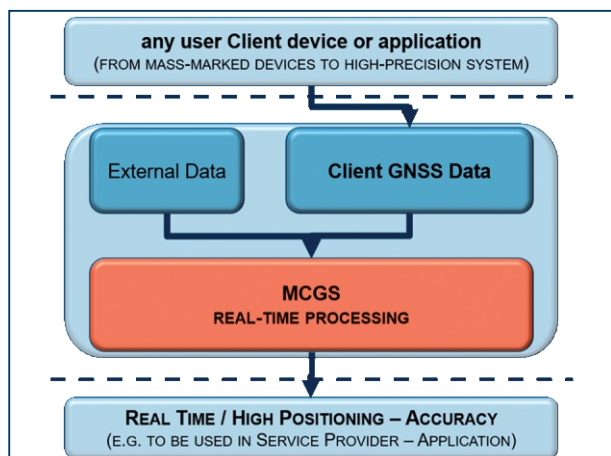
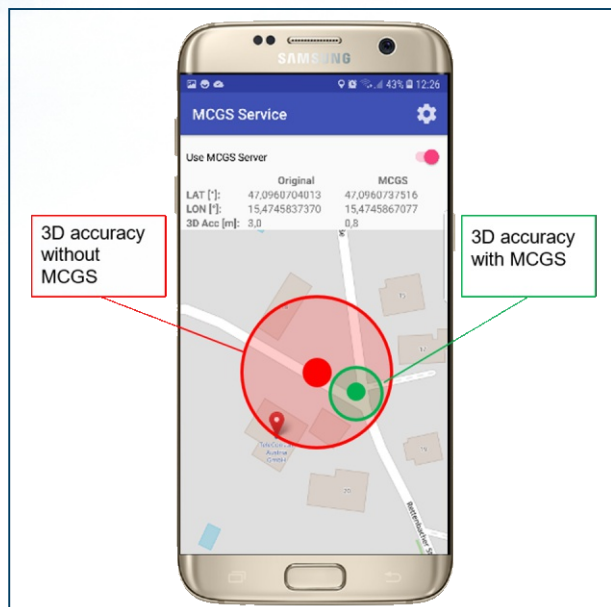
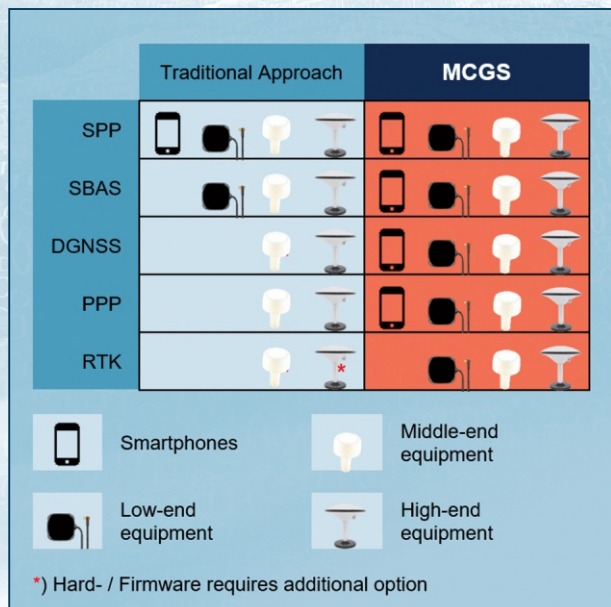
Key features of the innovative **MCGS**

- Increased positioning performance, accuracy and quality for Location Based Service providers
- Real-time service with highest availability
- Best positioning quality to cost ratio
- Best possible data processing strategy for each user device
- High level of flexibility and scalability
- Simple integration into existing GNSS infrastructure
- Compatibility with all major industry standards
- Designed for B2B, B2A and B2C solution and service providers



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The performance of GNSS products and services strongly depends on the used GNSS receiver quality and the used positioning technique. Stand-alone mass-market receivers usually perform single point positioning based on code pseudoranges on a single frequency enabling a typical positioning accuracy of some metres. The major error contributions caused by un-modelled satellite errors, signal propagation effects as well as the receiver performance.

In order to achieve significant higher accuracies either multi-frequency measurements or an expensive high-performance equipment is needed. High cost equipment enables more sophisticated data processing strategies like, Differential GNSS, Precise Point Positioning (PPP) or Real-Time Kinematic (RTK).

MCGS combines in real-time the best processing approaches with the ideas of cooperative client data processing and cloud computing. With **MCGS** the positioning performance, accuracy and quality for mass-market receivers and Location Based Service providers is significantly improved.

MCGS enables this advanced GNSS data processing by augmenting the client measurements with precise a-priori data available at the server side using precise satellite clock and orbit information, local meteorological parameters, and precise ionosphere models as well as data from existing nearby GNSS infrastructure and data from Geographic Information Systems (GIS). **MCGS** automatically selects the best algorithm for each client (from smartphones to geodetic grade devices) offering the most performant and accurate navigation solution.

MCGS is a multipurpose service supporting any kind of user device or application ranging from LBS using mass-marked devices to high-precision system based on the most advanced receivers.

MCGS offers for any type of GNSS receiver a higher positioning accuracy in real-time by avoiding investments in costly high-end hardware or expensive infrastructure. Service providers (e.g. mobile providers) use **MCGS** to address new customers by lowering the price entrance level in comparison to high-priced GNSS equipment.

The supported standards and protocols are RTCM 2.3 and RTCM 3.1, NMEA 0183, NTRIP version 2.0, ESA SISNet.

MCGS uses the following information

- Raw measurements: multi-frequency GPS/GLONASS/Galileo
- Precise satellite ephemeris and clocks
- Meteorological parameters (air pressure, humidity, temperature)
- Sophisticated models for signal delay in troposphere
- Different models for signal delay in ionosphere
- Correction information from EGNOS Data Access Service
- Measurements and correction data from GNSS networks
- GIS data (where available)

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