

Quality Assurance of EPOS-GNSS station metadata provided by M³G

<https://gnss-metadata.eu>

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The GNSS station metadata distributed by the GNSS TCS of EPOS originate from the “Metadata Management and Distribution System for Multiple GNSS Networks” (M³G).

EPOS-GNSS Operational Centers maintain their GNSS station metadata through M³G, which ingests, validates, standardizes, and distributes the provided information. M³G consists of a web portal (<https://gnss-metadata.eu>) and an Application Program Interface (API). The GNSS station information can be uploaded in the standard ‘site log’ formation maintained by the International GNSS Service (IGS) or/and by inserting the data in an on-line form (using controlled vocabularies/code lists). These metadata collected by M³G does not only contain a description of the installations used at the GNSS stations, but also information on the station surroundings, as well as e.g., the license of use of the station’s GNSS dataset, digital pictures of the equipment and environment, or the Digital Object Identifiers are the GNSS datasets.

Only agencies with a registered account are allowed to edit/upload the GNSS station metadata of a predefined list of GNSS stations associated their agency.

M³G **will not accept and distribute metadata** that has not passed the build-in M³G **validation rules**, such as:

- Mandatory fields cannot be empty or missing
- Usage of international standards for GNSS antennas or receiver types
- Historical information must be correct (e.g. without incorrect dates)
- Metadata must be consistent with the EPOS-GNSS data supplier letter

If GNSS station metadata do not comply, M³G will request that the station manager corrects the GNSS station metadata. Once the GNSS station metadata have been corrected and validated by M³G, the station manager can submit them to M³G for insertion in the M³G database. All verifications done by M³G are based on the standards that are used within EUREF (<https://epncb.oma.be>) and International GNSS Service (<https://igs.org>).

Once the GNSS station metadata have been inserted into M³G, they are

- Available from the M³G FTP site (<ftp://gnss-metadata.eu>), through the M³G portal (<https://gnss-metadata.eu>) or the M³G API (<https://gnss-metadata.eu/site/api-docs>). For that purpose the standards site log and GeodesyML formats are used. GeodesyML is a Geography Markup Language (GML) application schema for transfer of geodetic information.
- Sent to the EPOS-GNSS data gateway, which provides a selection of the collected GNSS station metadata to the ICS.