Guideline for including an EPOS GNSS data node in EPOS

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1. Introduction

This document is addressed to the node manager and describes the procedure for adding a new GLASS node into the GLASS network.

There are two main aspects to consider when adding a new node to the GLASS network: the legal-administrative aspect (who can set up a node, first thing to do in the procedure, section 3) and the technical aspect (how to set up a node, sections 3 and 4)

The contact to go through this procedure and validate the integration of the GLASS node into the GLASS network is the GNSS Data Gateway (gnss-dgw@oca.eu).

2. Architecture of the EPOS GLASS network

2.1. Terminology

Data dissemination consists of

A. Virtual layer (GLASS network): represented by GLASS nodes and its hierarchy operating on metadata

B. Physical layer: represented by data centers/repositories storing actual GNSS data

Metadata:

- T0 – metadata on GLASS virtualization architecture (node-specific) which describes the topology between the various nodes.
- T1 – metadata on GNSS sites (T1) / data centers (T1b) (centralized, downward synchronized)
- T2 – metadata on GNSS files (decentralized, upward synchronized)
- T3 – metadata on GNSS data quality (decentralized)
A GLASS node (A): is an access point (hostname) for database services accessed via an Application Programming Interface, it has information about data centers.

Data gateway (A): is the top-level federated GLASS node for data. It manages the T0 metadata and maintains a central DB controlling primary T1/T1b metadata.

M3G: Metadata Management and distribution system for Multiple GNSS Networks. It allows to upload, validate, and distribute GNSS station metadata (e.g. site logs).

Data center (B): is the access point (hostname) to data repositories (e.g. ftp server)

Data repositories (B): are the physical locations of the data files, for instance the directories of the data files (relative path within e.g. the ftp server or path to external directories.)

GLASS package: A set of tools installed at a GLASS node for providing virtualization level of data dissemination. At each individual GLASS node a subset of tools are activated according to the node functionality. Some of the tools may also be also installed at Data Center.

2.2. Schematic overview

Figure 1: Flow of the GNSS metadata in the GLASS distributed network
3. Procedure for adding a GLASS node to the EPOS GLASS network

1. Fill and send to the M3G (m3g@oma.be), with the Data Gateway in copy (gnss-dgw@oca.eu), the “epos-gnss data node letter”, supplied at this address: https://gnss-metadata.eu/index.php?r=site%2Fguidelines.
2. Install and configure the GLASS package (see GLASS package - configuration, installations, virtual machine document – in preparation UBI, supplied at XXX)
3. Download the document “epos-gnss data node parameters”, supplied at XXX.
   a. Collect the parameters of the GLASS node (name, IP, port, database name, username and password for the database).
   b. Collect the information concerning the Data Centers linked to the GLASS node (name, acronym, agency information, server parameters).
   c. Fill and send to the Data Gateway (gnss-dgw@oca.eu) the document “epos-gnss data node parameters”.
4. Add the Data Gateway parameters that you received to the database.

The GLASS node is ready to be made operational.

4. Procedure to make operational the GLASS node

1. Ask Data Centers to add stations following the procedure described in the “procedure for including GNSS Stations in EPOS”, supplied at https://gnss-metadata.eu/Guidelines. Do not forget to inform the Data Centers about the GLASS node name.
2. Read and follow the “Procedures for table synchronization and solving issues” (in preparation, UBI) document, supplied at xxx, to link the GLASS node to the Data Gateway.
3. In contact with the Data Gateway:
   a. Check the database is filled with the station metadata (T1).
   b. Add file metadata (T2) and QC metadata (T3) for one station (see GLASS package - configuration, installations, virtual machine document and QC doc, in preparation UBI, GOP)

   Once the metadata related to the station used for the test are discoverable from the Data Gateway, the GLASS node is operational.
4. Complete the population of the database.

5. Additional Remarks

1. Intermediate GLASS node can also be installed. The procedure is mostly the same, except for synchronization. Contact the Data Gateway if needed.