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EPOS-GNSS Data Gateway: News and Novelties

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The EPOS-GNSS Data Gateway (DGW) is the European thematic gateway to GNSS data distributed within the European Plate Observing System - EPOS framework. Thanks to this portal, all interested parties have free access to metadata and data from over 2,000 European GNSS stations.

The information system is based on a network of servers, the nodes, connected to a main server, the DGW. The main showcase is the DGW's graphical interface (https://gnssdata-epos.oca.eu/), which enables all the data and metadata in the EPOS-GNSS data infrastructure to be browsed and downloaded. It conceals a complex system of multiple software enabling the integration and synchronization of metadata between the DGW and the nodes. The development and population of this system is the result of a team effort involving the development team, node managers and the node infrastructure and DGW operation coordination team (https://gnss-epos.eu).

New features for 2024 include the integration of two new nodes (CEGNxEPOS, Italy and SONEL, France), filling a gap in Central Europe (Northern Italy, Austria, Slovenia) and opening up to other scientific communities, such as those working on long-term sea level trends as part of GLOSS (Global Sea Level Observing System). Their deployment and population, at record speed, demonstrate the commitment of the new partners, the robustness of the system and the efficiency of the procedures. Next, the level of data completeness at the DGW in relation to the stations proposed to EPOS is becoming very good. Finally, the number of files not validated at the nodes, according to the EPOS-GNSS procedure, and therefore not transmitted to the DGW, is now very low.

On the other hand, there are some important novelties worth highlighting. All the monitoring tools needed to check that the entire system is working properly are now operational. These tools focus on monitoring all system elements and their interaction at the DGW, comparing metadata between the DGW and the nodes that highlights metadata and synchronization issues, monitoring availability statistics for each DGW-hosted service and user statistics. The system also now gives the opportunity to publish hourly High-Rate GNSS data that are accessible at both the DGW and the EPOS multidisciplinary platform. In early 2025, a new version of the graphical interface, developed using a different technology, will be deployed, enabling easier customization of the interface by node managers, in particular to better acknowledge all contributors to the EPOS-GNSS system.