

GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS)

The Royal Observatory of Belgium (ROB) maintains repositories containing decades of observation data from Belgian and European stations permanently tracking Global Navigation Satellite Systems (GNSS) like GPS or Galileo.

GNSS APPLICATIONS

GNSS data enable precise measurements of ground deformation, the realization and maintenance of terrestrial reference frames, space-weather monitoring, numerical weather prediction improvements, and the detection of climate trends, among other applications.



2,500+ GNSS stations
Monitoring: 2000+
Data distribution: 500+

160+ agencies

GNSS (META)DATA & PRODUCTS MANAGEMENT AT ROB

Data curation & quality assessment ☆☆☆

GDPR 

FAIR data principles    

Documentation 

Linked Open Data (LOD) 

PIDs: w3id & DOI for data citation  

Metadata: provenance info, data license... 

APIs 

EU E-INFRASTRUCTURES



EUREF Permanent
GNSS Network (EPN)

M³G METADATA MANAGEMENT SYSTEM

(gnss-metadata.eu)

A scalable architecture to harmonize metadata across heterogeneous GNSS networks, including EPN and EPOS.

-  Web UI
-  DOI for GNSS stations datasets
-  API
-  GeodesyML, GeoJSON
-  W3C PIDs
-  LOD (in progress)

OPEN DATA PORTAL

(gnss.be/opendataportal)

A FAIR-compliant gateway providing open access to daily RINEX observations and their curated and standardized metadata for Belgian and EUREF stations.

-  Web UI
-  API
-  GNSS-DCAT-AP  [10.5281/zenodo.16610371](https://doi.org/10.5281/zenodo.16610371)
-  W3C PID
-  LOD

DQMS – EPOS-GNSS DATA QUALITY MONITORING SERVICE

(gnssquality-epos.oma.be)

A service for continuous monitoring of data availability and quality metrics within EPOS

-  Web UI

HIGH-PRECISION GNSS PRODUCTS

(epncb.oma.be)

Central information system of the EPN.

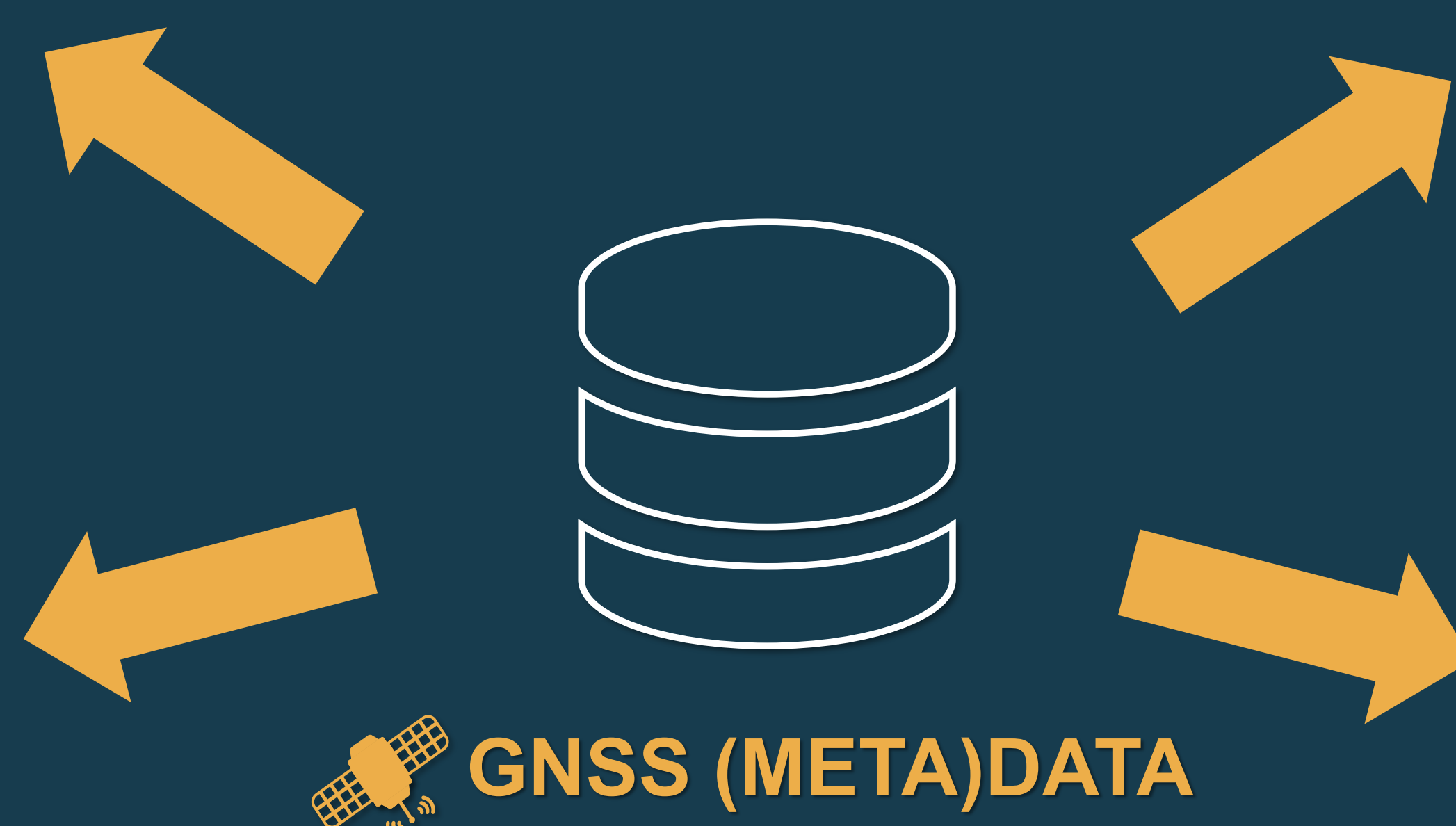
-  Web UI

Stable reference for measuring positions in Europe.

-  Web UI
-  API (in progress)

(gnss.be/SpaceWeather)
GNSS-based ionospheric products.

-  Web UI
-  API (in progress)



GNSS data
providers

