

The DLR GNSS Monitoring System – Powered by the IGS –

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Our data sources

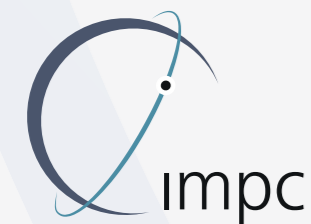


Rinex Merged Navigation Messages
Rinex Observation Data Files

Precise Orbits, Clocks & Differential Code Biases, RTCM streams from selected IGS stations



Two Line Elements



Ionosphere Products

Real-time Data Stream

Daily File Download from CDDIS and BKG

Realtime

Work in Progress

- Receive and Parse RTCM streams from IGS stations
- Extract current satellite health statuses
- Compute current satellite positions and visibilities
- Calculate current positioning solutions

... and more to come

Post processing

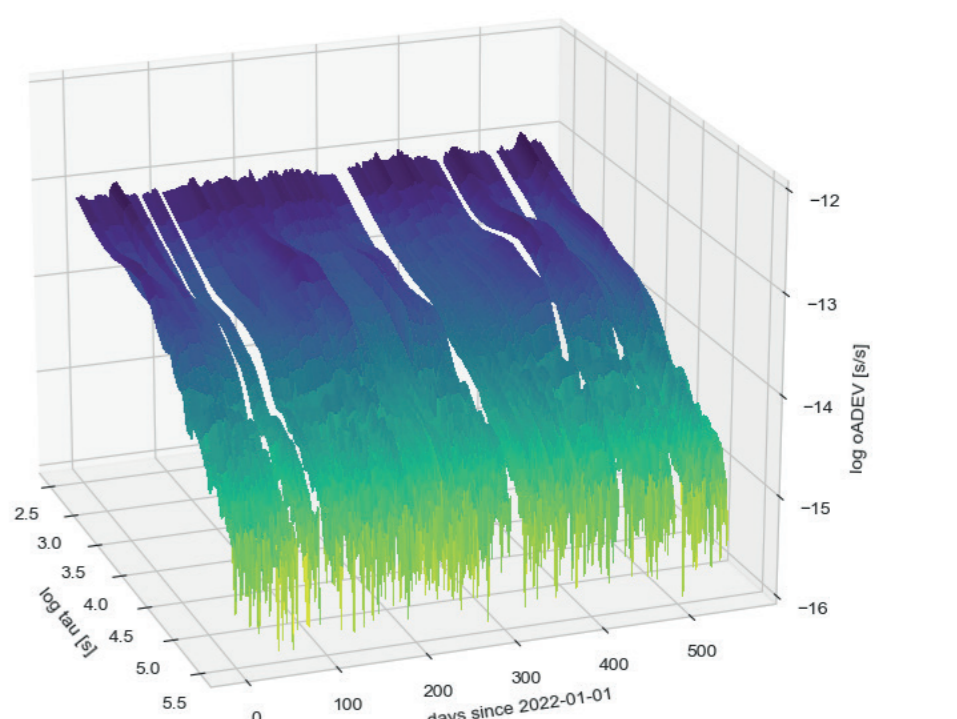
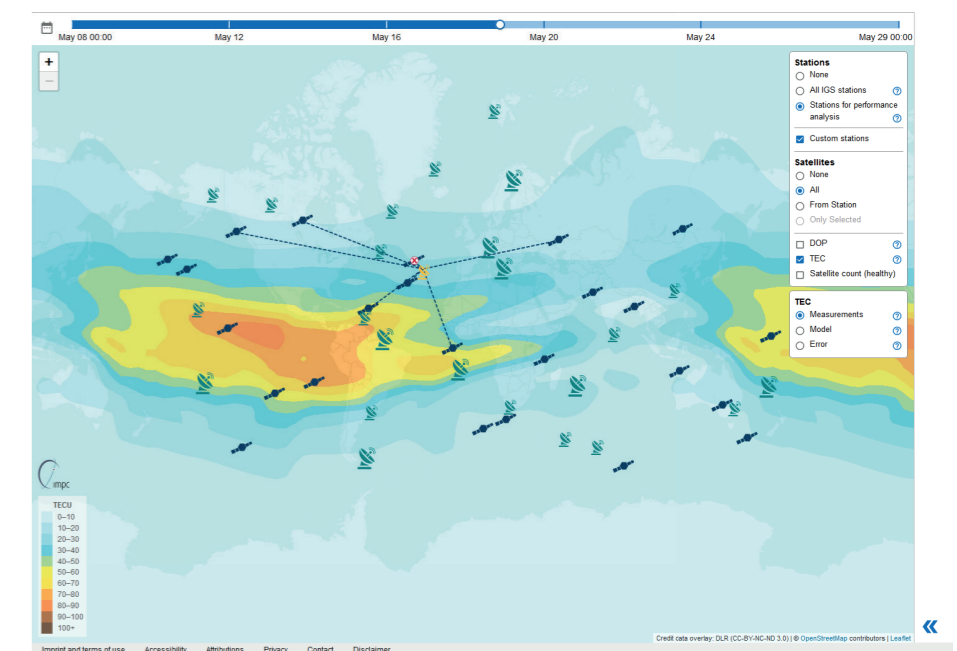
Provides data for our website

- Satellite Health
- Satellite visibilities and DOPs
- Positioning accuracies at IGS stations (SPP)
- Ionospheric conditions
- Satellite clock stabilities

More for internal analyses

- SISRE
- Galileo HAS positioning
- PPP positioning of IGS stations
- Long term analysis

Visualisation examples



Signal Performance Monitoring

Applications relying on global navigation satellite systems (GNSS) have become ubiquitous in our modern, technology-rich society. Navigating on land, in the air and at sea is the most obvious application of GNSS, but timing financial transactions and synchronizing communication networks or power grids are equally important.

It is therefore essential that the performance of GNSS is constantly monitored. Of course, the operators of each GNSS will monitor at least their own system.

However, their metrics and data sources are not necessarily comparable and homogenous. At the Galileo Competence Center within the German Aerospace Center (DLR), we have set out with partners from other DLR Institutes to build a comprehensive performance monitoring system focusing on the global four: **Galileo, GPS, BeiDou and GLONASS.**

The main goals of our monitoring system are:

- The usage of homogenous data sources, and aligned algorithms and metrics.
- Building a long-term database of measurements and deduced performance metrics.
- The provision of a publicly available webpage.



Come and visit our website:

www.gnss-monitoring.dlr.de

Feel like sending us a comment?

Contact: Katharina.Lutz-Lloyd@dlr.de

GNSS Basics – Satellites, Stations and DOPs

Maps showing visible satellites, sensor stations, dilution of precision values

EXPLORE

Local Performance Analysis

Charts showing GNSS horizontal errors at selected sensor stations.

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Ionospheric Conditions

Map showing positioning errors induced by the ionosphere.

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Satellite Clocks

Charts showing clock deviation and overlapping Allan deviation for all GNSS satellites.

EXPLORE

Satellite Library

Table showing health status and basic information about all GNSS satellites.

EXPLORE

GNSS Advanced - Flexible Analysis/Settings

Choose your specific settings, maps, charts or tables to dig deeper into the GNSS world.

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Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

Galileo Kompetenzzentrum

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