







THE IGS INFRASTRUCTURE

Markus Bradke German Research Centre for Geosciences (GFZ)

Tour de l'IGS 2nd Stop: Infrastructure

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Role of the Infrastructure in the IGS





- Infrastructure consists of:
 - Network + Coordinator
 - Data Centres* + Coordinator
 - Infrastructure Committee + Coordinator
- All roles and components are dependent on each other
- Coordination with other components of the IGS

* Pat Michael (NASA): Highlights from CDDIS

IGS Infrastructure Committee

GFZ Helmholtz Centre POTSDAM

- Forum of professionals:
 - Network/station operators
 - Data Centre/GNSS-IT professionals
 - Ex-officio members (chairs and coordinators from other IGS Working Groups)
- Develop policies, standards, guidelines and recommendations
- Maintain and improve the GNSS data and information systems upon which IGS product quality and responsiveness rely
- Ensure the overall effectiveness of the Service

IGS Infrastructure Committee



- Work on an ongoing basis with the Governing Board and Station Operators, Data Centres, Analysis Centres, Pilot Projects, Working Groups and the Central Bureau to define ways to improve access to high-quality GNSS data and information
- Task Teams/External Working Groups:
 - Coordinate station proposals between different networks (e.g., APREF, EPN, SIRGAS)
 - SLM (IGS Site Log Manager)
 - Data Centre Security
 - GGOS DOI (Global Geodetic Observing System Digital Object Identifier)
- Quarterly meetings

IGS Network

505

246

131

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• Registered stations (as of August 24, 2021)

Overall agencies including local/supporting partners

Responsible agencies (mainly from research, federal surveying)

- 70% of the network covered by 20 agencies
- 6 agencies (JPL, GA, CNES, NRCan, GFZ, BKG) contribute with 20+ stations (205 stations, 41% of the network)

IGS Network





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IGS Network





RINEX v.3 availability since 2012

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Antenna Models (Overall)



■ <20 ■ >=20

Status: 2021-08-24



Receiver Models (Overall)



Status: 2021-08-24

■ < 20 ■ > = 20



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IGS Network (GRE)



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IGS Network (GREC)

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Some stations additionally track QZSS (136) and NavIC (67)



Antenna Models (GREC)



■ < 20 ■ > = 20

Status: 2021-08-24



Receiver Models (GREC)



■ <20 ■ >=20

Status: 2021-08-24



IGS Network (Real-Time)



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Activities in the IC





- Initiate coordinate solutions for all IGS stations (GFZ added ~40 stations not included in the IGS Finals before)
- Increase number of Multi-GNSS and Real-Time stations by active outreach
- Provide support to station operators in the less represented regions to build capacity and capability
- \rightarrow ensure that the IGS network has a consistent global coverage
- Working on new/updated guidelines:
 - CORS Guidelines (currently known as "IGS Site Guidelines", 2015) + Steps for Becoming an IGS Station
 - Data Centre/Real-Time Broadcaster Guidelines
 - Analysis Centre Guidelines

Fit into goals of the IGS 2021+ Strategic Plan

Activities in the IC



- Web service implementations @ IGS CB:
 - Site Log Manager (SLM)* \rightarrow new development implementing GeodesyML
 - Station monitoring and time series plots (formerly hosted by IGN)
- Web service/software implementations @ GFZ:
 - Satellite Meta Information System (based on MGEX metadata file + antenna PCO, notice advisories from satellite operators)
 - Station Meta Information System (implementing GeodesyML)
 - Systems will replace SEMISYS in the long-term (<u>https://semisys.gfz-potsdam.de</u>)
 - Open source
 - Access via REST API/GUI
 - Available by the start of 2022
 - QC add-on for GFZRNX







CONTACT

Markus Bradke markus.bradke@gfz-potsdam.de

GFZ GNSS Website https://gnss.gfz-potsdam.de IGS IC Mailing List <u>https://lists.igs.org/mailman/listinfo/igs-ic</u>

IGS Website https://igs.org