How to become an IGS Station

IGS Central Bureau

IGS INTERNATIONAL GNSS SERVICE

NASA Jet Propulsion Laboratory
California Institute of Technology

Process for becoming an IGS station

- Collection heterogeneous stations operated by many different organizations pooling their resources under the IGS umbrella for the common good

- The IGS looks for stable, long-term stations that will operate indefinitely with minimal changes to avoid discontinuities in the station's position time-series

- IGS Station operator should be a Geodetic or Space Agency, Scientific Foundation, Research Institution or similar

- Participating stations must agree to follow the standards and conventions in the IGS Site Guidelines to ensure a high quality network and products
  - https://igs.org/wp-content/uploads/2019/08/IGS-Site-Guidelines-July-2015.pdf

- Stations located within the footprint of a regional reference network should first seek approval in those regional networks (EPN, APREF, SIRGAS) prior to proposing a station to the IGS

IGS Site Guideline Highlights

- Station details and configuration history shall be recorded in an IGS station log
  - https://files.igs.org/pub/station/general/blank.log

- Receiver and antenna models must be described in the IGS rcvr_ant.tab
  - https://files.igs.org/pub/station/general/rcvr_ant.tab

- The GNSS antenna absolute calibration must be available in igs14.atx
  - https://files.igs.org/pub/station/general/igs14.atx

- If an antenna radome is deemed necessary the antenna+radome combination needs to have an absolute calibration available in the igs14.atx

- Monument should conform with current best practices observed by geodetic agencies. (typical installations include a drilled-braced tripod or tapered pillar)

BRMG00DEU – pillar monument

MRC100USA – drilled-braced tripod
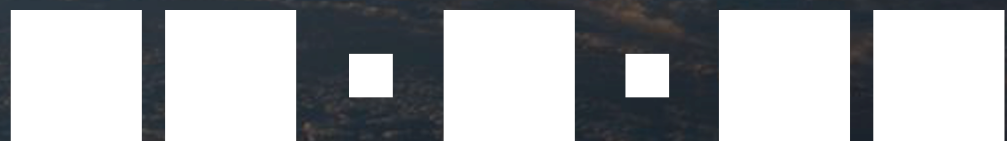
IGS Site Guideline Highlights

- The GNSS antenna must be leveled and oriented to True North using the defined antenna reference marker from manufacturer

- The station must have a unique IERS DOMES number from the Institut Geographique National (IGN) https://itrf.ign.fr/domes_request.php

- GNSS receiver must be set to track as many satellites from as many constellations as possible (GPS+GLO+GAL+BDS)

- The station should provide RINEX3 observations files using the RINEX3 standard long filename

- The station must provide pictures of the antenna installation in the four cardinal directions (North, South, East, West)

- It is strongly desired that new IGS stations provide real-time data

Propose an IGS Station

- Stations that meet the IGS requirements and have been included in the relevant regional reference network may propose a new IGS station at the following:
  - https://igs.org/network/#propose-new-site

- The IGS Station Proposals are reviewed by the IGS Network Coordinator, Infrastructure Committee Chair, IGS GB Network Representatives

- The review process may take over 8 weeks
  - Review the site log, RINEX
  - Assess the data quality
  - Data reliability and timeliness

- Approved stations will be announced by the IGS Network Coordinator

IGS Station Operator Responsibilities

- Station's Operating Agency must be able to repair, maintain, and upgrade the station

- Station operator shall quickly correct RINEX header or station log inconsistencies when advised by the IGS Central Bureau

- Station operator shall send IGSSTATION email explaining outages and data availability over the period

- Station operator shall keep IGS users informed about station events and changes by sending IGSSTATION email

- Station operator or parent organization must follow IGSMAIL and IGSSTATION email lists to stay informed about IGS announcements and current station recommendations from the IC

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