

GUIDELINES FOR IGS DATA CENTERS

Definition of IGS Data Center Activities

March 2005; revised August 2008

Background, Definitions and Responsibilities

IGS data centers fall into three categories: Operational, Regional, and Global Data Centers.

Operational Centers are in direct contact with tracking sites. Their tasks include station monitoring, data validation, suitable data reformatting into an exchange format (RINEX), compression of data files, maintenance of a local archive of the tracking data in its original receiver format and the exchange format, and the electronic transmission of data in exchange format to a Regional or Global Data Center. The Operational Center must download data from the receivers located at IGS stations on a timely basis without interruption, or as specified to meet the requirements of at least one type of IGS product. Details are available in the "IGS Site Guidelines" document. Operational Centers may or may not allow users direct access to their data holdings.

Regional Data Centers collect tracking data in exchange format from several Operational Centers and/or stations, maintain a local archive of the data received, provide on-line access to these data to the user community of the region, and transmit data from a subset of their sites (minimally, IGS reference frame stations) to the Global Data Centers. The set of stations archived may be either a limited geographic region (e.g., Europe, Australia, etc), or those stations managed by the archiving agency.

The Global Data Centers are the main interfaces to the Analysis Centers and the user community in general. They receive/retrieve, archive, and provide online access to tracking data provided by the Operational/Regional Data Centers. At a minimum, Global Data Centers archive 30-second sampling interval data from IGS sites identified as reference frame stations. The Global Data Centers also archive and provide online access to IGS products. Finally, the IGS Global Data Centers backup and secure their holdings of IGS data and products, exchanging data between other data centers, in order to ensure equalization of data holdings.

Although station operators are required to validate data prior to transmission, data centers at all levels should also perform routine quality control on incoming data as additional prevention of providing bad or corrupt data.

Data Center Contents

All DCs should retain logs of IGS data and product file retrievals for at least one year, but preferably indefinitely. The CB may request such information from time to time, for the purpose of collecting statistics on the usage of IGS data and products.

The online archive of GNSS data available through the IGS Global Data Centers should include:

- Daily files of GNSS (GPS, GLONASS) data (minimum all IGS reference frame stations) at a 30-second sampling rate (minimum of one year online; older data may be near-line)
- Hourly files of GNSS data at a 30-second sampling rate (minimum of three days online; older data may be purged)
- High-rate, low-latency GNSS data.

All data should be available in RINEX format, both Hatanka-compacted and Unix (.Z)-compressed. The data archive should also include broadcast ephemeris, and meteorological RINEX files.

The online archive of IGS products available through the IGS Global Data Centers should include:

- Weekly solutions of classic IGS Final products from the IGS Analysis Centers
- Combined weekly solution from the IGS Analysis Center Coordinator
- Daily rapid and sub-daily ultra-rapid solutions from the IGS Analysis Center Coordinator
- Weekly and cumulative combined station coordinates and velocities from IGS Reference Frame Coordinator
- Associate Analysis Center products as they are approved by the IGS Governing Board as Pilot Projects or Working Groups, including:
 - GLONASS orbits
 - Regional and Global Network Analysis Center solutions in SINEX format
 - Zenith path delay files from the Troposphere Working Group
 - Ionosphere parameters from the Ionosphere Working Group

New Data Centers

Proposals for a new Data Center should begin with a conversation with the Data Center Working Group (DCWG). The DCWG and Central Bureau can assist in bringing a letter stating the agency's qualifications, commitment, and plans to the GB. Based on recommendations of the DCWG, and demonstrated commitment of the host organization, the proposed DC will be evaluated and considered for approval by the GB.