

Unified Working Group on Site Coordinate Time Series Format

Meeting summary. Prepared by L. Soudarin.

Wednesday, April 10, 2013, Vienna International Centre, EGU2013, Vienna

Participants

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(Only a few participants because of travel restrictions for our NASA colleagues and the meeting of GGOS Bureau of Networks and Communications at TUW at the same time).

About the WG

The WG is now an unified WG, both an IERS WG (<http://iers.org/WGSCSTF>) and IAG WG 1.1.1 (<http://iag.uni.lu/index.php?id=175>) of Sub-Commision 1.1 (Coordination of Space Techniques)

Existing formats

A list of existing formats at IAG services and GPS time series providers is presented. It is far from being exhausted and represents only the formats known within the WG up to now.

IAG services:

- LS presents the STCD format developed by IDS. It consists of a header with 4 blocks derived of the SINEX format (FILE/REFERENCE; FILE/COMMENT; SITE/ID; SOLUTION/APRIORI), and the time series. The description can be find at http://ids-doris.org/documents/report/CB_STCD_format_v1.0.pdf

Other IAG geodetic services don't seem to have such complete formats.

- XC presents the VOTable format. It is self-descriptive and based on XML. The definition of the format is available at: <http://www.ivoa.net/documents/VOTable/>

ITRF2000 and ITRF2005 are supplied in VOTable at <http://itrf.ensg.ign.fr/VO.php>

GPS providers:

- TH announces that PBO has implemented a file format update to the station position file with more descriptive header sections as well as column headings

<http://pbo.unavco.org/doc/NOTICE%20TO%20UNAVCO%20DATA%20PRODUCT%20USERS%2020130315.pdf>

- Nevada Geodetic Laboratory delivers GPS time series in two formats (cf Geoff Blewitt's presentation in EGU 2013 geodesy session):

East North Vertical: http://geodesy.unr.edu/gps_timeseries/README_tenv3.txt

XYZ: http://geodesy.unr.edu/gps_timeseries/README_txyz2.txt

- SOPAC and JPL (MEaSURES project) have defined an XML format for GPS higher order products (e.g., positions, velocities), called GeodeticML.

See the schemas at <http://sopac.ucsd.edu/projects/xml/measures/index.html>

Discussions

- **Data**

Several issues concerning the time series are discussed.

-epoch: the time should be as specific as possible. It should be easily understood by users, precise enough for high frequency sampled series. A trade-off is not easy to find. Two time scales are probably needed, e.g. decimal MJD and YYYY MM DD HH MM SS.sss. Decimal year is not recommended as it can cause problems because of leap years (/365.25 or /366.). A certain flexibility of the format is necessary. For daily and weekly sampling, hours, minutes and seconds could be ignored. The sampling frequency could be indicated in the metadata.

-time tag: middle of the span

-accuracy of the series: a precision of 10^{-3} mm is used by NGL, PBO. However, such a precision is not required for fast event such as glacier (several m/year).

-correlations between components? Provided by PBO and NGL.

-how many stations per file? PBO VEL files include several stations. Raises several issues e.g. ties between stations.

-substitution character when values non available: « N/A », other? separation with coma?

- **Meta data**

OR provides some information about the metadata search engine included in the GGOS Portal: http://www.ggos-portal.org/lang_en/GGOS-Portal/EN/Discovery/Discovery.html. The engine will provide access to the data for users via the defined metadata of the product. The Search is based on an opensource software called Geonetwork <http://geonetwork-opensource.org/>. ISO standard 19115 from ISO/TC 211 is used for Geospatial metadata <http://www.isotc211.org/>

Next steps

The discussions will continue by e-mail. LS will propose a draft version of the format as a starting point.

May 2013: Activity report for IERS DB meeting. TH is asked to present this report in the absence of LS.

September 2013: Propose an exchange format at IAG in Potsdam

Summary of action items

Action	Responsible	Opening date	Deadline	Status
To complete the list of existing time series format	All	2013.04.10	2013.06.30	open
To propose a draft version of the format	LS	2013.04.10	2013.05.31	open
To keep the WG informed of GGOS activities about metadata and development of the metadata search engine for the GGOS portal	BKG	2013.04.10	2013.08.31	open