3.7.4 Working Group on Site Coordinate Time Series Format

Charter

Introduction

The temporal variations of the position of points on the Earth's surface are useful observations to monitor geophysical process (land deformation, post-glacial rebound, seismic activity …). The IAG services that distribute GNSS, SLR, VLBI and DORIS data and products proposes plots and/or files of coordinates time series for the stations of the tracking networks, as well as web services to display these time series. However, the time series, when available, are proposed in different formats and give position series under various forms (residuals, trended or detrended, cartesian or geographic coordinates …).

One of the outcomes of the Unified Analysis Workshop 2011 (UAW 2011) in Zurich was the action item to establish an IERS Working Group on site coordinates time series to define a common exchange format for coordinates time series for the geodetic techniques.

The format should provide a user-friendly presentation of coordinate time-series results for a potentially broader community of users. One of the objectives of the group is to define the data and meta-data to be included so that the format is self-described and can be easily used or converted for, at least, the existing web tools of the IAG Services (GGOS, IERS, IDS, IGS, ILRS, IVS). The group will ensure that comparisons of time series can so be possible between GNSS, SLR, VLBI and DORIS, but also with other techniques such as tide gauges records. Some of the issues that should also be addressed are, e.g., reference system, time unit, content description …

Goals and objectives

The major goals and objectives of the WG are:

1. Define a common exchange format for coordinate time series of all geodetic techniques (DORIS, GNSS, SLR, VLBI …).
2. Examine what type of time series is required (geocentric, detrended, reference frame, …).
3. Define the data and meta-data that should be included in the format.
4. Ensure that the format contains the necessary information to be easily used or converted for the web tools of the IAG Services (GGOS, IERS, IDS, IGS, ILRS, IVS).

Members

Laurent Soudarin (CLS) Chair

Bernd Richter (BKG) GGOS portal manager

Thomas Herring (MIT) IERS Analysis Coordinator

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Laurent Soudarin (CLS) IDS representative

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Erricos Pavlis (Univ. of Maryland, Baltimore County) ILRS representative

Alexis Nothnagel (Uni. Bonn) IVS representative

Médéric Gravelle (Uni. La Rochelle) user (SONEL)

Yehuda Bock (Scripps Institution of Oceanography) user (SOPAC GPS webservice)

Simon Williams (Proudman Oceanographic Laboratory) user (CATS software)

Xiaoping Wu (JPL) user

Summary of the activity in 2012

The WG has been established in April 2012 by the IERS Directing Board.

The first meeting of the WG was organized in San Francisco at AGU, on December 6th, 2012 with nine attendees: Detlef Angermann (DGFI), Daniela Thaller (AIUB), Sabine Bachman (BKG), Paul Rebischung (IGN), Samuel Namahni (IGN), Claudio Abbondanza (JPL), Xiaoping Wu (JPL), Thomas Herring (MIT), Laurent Soudarin (CLS). Despite a very short time of meeting, we had rich discussions on some important issues concerning the data: time scale, reference system, coordinate system … The metadata are of prime importance in the format because they will give the necessary information to identify the time series and to make them easily used. They were briefly discussed. S. Bachman informed us of the existence of ISO standards for Geospatial metadata, and of the metadata search engine included in the GGOS portal.

Laurent Soudarin