3.5.5 ITRS Centre

This report summarizes the activities of the IERS ITRS Centre during the year 2016.

Maintenance of the IERS network

The ITRS Centre assigns DOMES numbers to geodetic tracking stations or markers as unambiguous identifications of points in space, independently from the technique of their tracking instruments.

The IERS network database, which contains the descriptions of the sites and points, is continuously updated as DOMES numbers are assigned. DOMES number request form can be found on the ITRF web site http://itrf.ign.fr, and should be sent to domes@ign.fr. An updated list of all available DOMES number is available at http://itrf.ign.fr/doc_ITRF/iers_sta_list.txt. The IERS site information is available to the users through the ITRF website interface (see below).

Several new stations, mainly GNSS permanent stations where added to the ITRF network and database.

ITRF2014 dedicated web site

A dedicated web site for the ITRF2014 was constructed: http://itrf.ign.fr/ITRF_solutions/2014/. It provides to the users all the detailed description of the ITRF2014 computation as well as all the necessary ITRF2014 products: stations positions and velocities in SINEX files, Earth Orientation parameters, and residual plots per techniques. In particular, the ITRF2014 web site provides to the users full description and equations of the Post-Seismic Deformation (PSD) parametric models used in the ITRF2014 generation, together with FORTRAN routines and some numerical examples to help the users on how to use the PSD models.

ITRF web site

The ITRF web site, available at http://itrf.ign.fr, provides an interface to consult the IERS network database. Site and point information can be requested on line; it contains approximate coordinates of the sites, the list of their points as well as their descriptions, their DOMES numbers and the list of ITRF versions in which they have been computed. Subsets of points can be selected and their ITRF coordinates can be requested at any epoch in any ITRF version if their coordinates are provided in the requested ITRF version.

The maps of the ITRF networks can be displayed depending of the measurement techniques and of the ITRF realization. Velocity vectors can be displayed as well as tectonic plates. The dynamical map can help users to familiarize with ITRF products and can be used for educational purpose. It can also be an interesting tool to select IERS sub-network depending on the measurement techniques, co-located hosted instruments or ITRF versions. ITRF94, ITRF96, ITRF97, ITRF2000,
ITRF2005, ITRF2008 and ITRF2014 solutions are available for download.

**Preparation for a new ITRF web site**

The ITRS Centre has started an initial study analysis and preparation for a new design of the ITRF web site. It will be designed to provide more ITRF-related information to the users using more user-friendly interfaces. The new web site which was expected to be operational beginning 2016 experienced some delay, unfortunately, and will hopefully be available in 2018.

**Local ties of ITRF co-location sites**

The ITRS Centre collects all new surveys operated by either IGN or the hosting agencies of ITRF co-location sites. The reports of these surveys are posted at the ITRF Website and are available to users at http://itrf.ign.fr/local_surveys.php. The local ties SINEX files used in the ITRF combinations are also available on that web site.

At the occasion of the ITRF2014 analysis, several new local tie SINEX files and corresponding reports were submitted to the ITRS Centre. All past and new local surveys used in the ITRF2014 computation are now available via the ITRF website: http://itrf.ign.fr/local_surveys.php.

The operational entity of the ITRS Centre at the IGN Survey department has prepared a document describing the IGN current practice of local survey that could help surveyors who do not know how to proceed and are not used with mm precision. The document is in its final stage and will be published in 2017 in a dedicated IERS Technical Note.

**Other activities**

- Participation in most meetings of the analysis working groups of the Technique Centres (in 2014: IDS, IGS, ILRS);
- Convensing and organizing EGU and AGU sessions on reference frames and ITRF;
- Participation in the UN-GGIM related meetings, and contribution to the Roadmap on the Global Geodetic Reference Frame for Sustainable Development, following the UN GA resolution adopted February 26, 2015.

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