3.7.3 Working Group on SINEX Format

The IERS Working Group (WG) on SINEX Format was established in early 2011, with a kick-off meeting during EGU General Assembly 2011 in Vienna and a follow-on meeting during EGU General Assembly 2012 also in Vienna. The agenda and the minutes of the WG meetings are available on the website together with the Charter of the Working Group <http://www.iers.org/WGSINEX>.

WG Members

The list of WG members was changed only slightly during 2013: Bernd Richter handed over the Lead of the IERS Central Bureau to Daniela Thaller. And Axel Nothnagel handed over the IVS Analysis Coordination to John Gipson (NASA Goddard Space Flight Center).

- Chair: Daniela Thaller
- IERS Analysis Coordinator (ex officio): Tom Herring
- IERS Central Bureau (ex officio): Daniela Thaller (replacing Bernd Richter)
- IDS Analysis Coordination: Laurent Soudarin
- IDS Combination: Guilhem Moreaux
- IGS Analysis Center Coordination: Jake Griffiths
- IGS Reference Frame Working Group: Paul Rebischung
- ILRS Analysis Coordination: Erricos Pavlis
- ILRS Combination: Cecilia Sciaretta
- IVS Analysis Coordination: John Gipson (replacing Axel Nothnagel)
- IVS Combination: Sabine Bachmann
- ITRS Center and ITRS Combination Center at IGN: Zuheir Altamimi
- ITRS Combination Center at DGFI: Manuela Seitz
- IERS Co-location Working Group: Pierguido Sarti
- IERS Conventions Center: Gérard Petit
- GGOS Bureau for Standards and Conventions: Peter Steigenberger

Revision of SINEX Format

The block for documenting any discontinuities at site positions, e.g. after Earth quakes or equipment changes, is still under discussion and development. IGN (Institut Géographique National) is working on the definition of such a block. The work is embedded in the generation of the new ITRF2013 which is thought to provide a much better handling of non-linear station motions and station position discontinuities.

In the framework of the IERS Retreat held in Paris on May 23–24, 2013 some aspects related to the SINEX format came on the table:

- Discontinuities in station position time series: a proposal how to handle this information in the SINEX format will be provided by IGN (see above);
- Non-linear station motions: The parameterization of non-linear station motions is not independent of the question how to handle and parameterize station discontinuities. Therefore, both requests will be handled together, and a proposal will be provided by IGN, too (see above);
- Loading corrections: The ongoing discussion whether loading due to mass variations within the geophysical fluids (i.e., atmosphere, oceans and hydrology) should be taken into account directly on the observation level or at the parameter level brought up the request that the loading corrections have to be provided along with the solution itself. Therefore, an extension of the SINEX format with a block containing the loading correction for each station is needed. The mean corrections have to be stored with the valid time interval for each individual station. A distinction should be made between the contributors atmosphere, oceans and hydrology. Additionally, it is worth to distinguish between the tidal and non-tidal part. BKG is working on the definition of a SINEX block for loading corrections.

Additional requests for modifications in the SINEX format came from the IVS:

- The parameterization of Earth Orientation Parameters (EOPs) is not unambiguously defined in SINEX, i.e., constant offsets and a piece-wise linear polygon parameterization are not distinguishable. The discussion on this topic is lasting already quite some time (see previous IERS Annual Report 2012). A final decision was not yet taken.
- As the IVS is now providing source positions within the SINEX files, additional information related to the radio source estimates are needed: time interval and mean (or median) epoch for observations to each radio source, i.e., a block similar to the SOLUTION/EPOCHS block that is used for the ground stations.
- A statistics on number of observations (or sessions) contributing for each radio source position is suggested by the IVS. This kind of information is desired as a quality measure for the estimated source positions. A specific format of such a block (OBSERVATION/STATISTICS) was not yet provided, and the open point in the discussion is whether the block could / should be generalized for other parameters.

Daniela Thaller (on behalf of all WG members)