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.

In 2012, one WG meeting was held on April 23, in conjunction with the EGU General Assembly 2012 in Vienna. The agenda and the minutes are available on the website <http://www.iers.org/WGSINEX>.

WG Members

The list of WG members was changed only slightly during 2012: Jim Ray handed over the IGS Analysis Center Coordination (ACC) to Jake Griffiths. He will be the representative of the IGS ACC in the SINEX WG, and Jim Ray will continue his participation in the WG.

- Chair: Daniela Thaller
- IERS Analysis Coordinator (ex officio): Tom Herring
- IERS Central Bureau (ex officio): Bernd Richter
- IDS Analysis Coordination: Laurent Soudarin
- IDS Combination: Guilhem Moreaux
- IGS Analysis Center Coordination: Jake Griffiths (replaced Jim Ray)
- IGS Reference Frame Working Group: Paul Rebischung
- ILRS Analysis Coordination: Erricos Pavlis
- ILRS Combination: Cecilia Sciaretta
- IVS Analysis Coordination: 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

A list of topics to be revised or added to the SINEX format description was compiled and discussed in conjunction with the kick-off meeting (see IERS Annual Report 2011). Several topics out of this list were further discussed and worked on by members of the SINEX WG during 2012:

- Mathematical background (Appendix II)
- Phase center issues, antenna offsets and SATELLITE/ID block for satellite techniques
- Weighting of satellites, techniques, etc.
- DISCONTINUITY block

Appendix II containing the mathematical background on how to handle the information given in the SINEX file was revised under

the leadership of Manuela Seitz (DGFI). The new version was circulated within the working group. Only minor remarks were suggested by the WG members and subsequent changes made. Therefore, Appendix II is finalized.

The phase center issues and antenna offsets were discussed among the WG members representing the analysis of the satellite techniques' observations. The goal is to make the block SATELLITE/ID also applicable for non-GNSS solutions and satellites, and to define how the antenna phase center models (for GNSS and DORIS) or the SLR reflector offsets (for SLR) should be specified in a SINEX file. It was agreed that the format itself will not be changed, but a dedicated remark will be added to the format description in order to explicitly define the satellite numbers in the SATELLITE/ID block. The specification of the antenna / reflector model will be considered in a new block on modelling issues.

The IDS representatives brought up the request to provide information on satellite-specific weighting in the SINEX file. Two proposals were prepared together with the chair of the WG: Add this information to the SATELLITE/ID block, or define a new block for weighting issues. In the latter case, the weighting could be extended from satellite-specific only to, e.g., technique-specific or station-specific weighting. The WG decided that the satellite-specific weighting should be separated from the SATELLITE/ID block in order to have more flexibility. A final decision regarding how the new block for weighting issues should be defined has not been made yet.

The group at IGN (Institut Géographique National) provided a document with pros and cons for different ways of defining the block DISCONTINUITY and related information stored in other blocks. It was proposed that the best way of storing all information related to discontinuities in SINEX will be evaluated during the computation of ITRF2013. The ITRF combination centers then will provide a proposal to the WG.

The third Unified Analysis Workshop (UAW) that took place in Zurich, September 2011 brought up another important topic to be clarified in the SINEX format description: the parameterization, especially for the Earth orientation parameters (EOPs). This request is supported by the IVS, too. Parameterizations as piece-wise linear polygons (that are especially needed if highly resolved time series are estimated, e.g., 1 hour) on the one hand and piece-wise constant offsets on the other hand cannot be represented unambiguously in SINEX. Therefore, the parameter definition for EOPs has to be revised in the SINEX format description. The discussion on this topic is still ongoing.

Daniela Thaller (on behalf of all WG members)