

Minutes of the COL meeting, 3 May 2010
D. Gambis, 8 May 2010

List of participants

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1 – Introduction

D. Gambis recalls the main objectives of the Working Group and the benchmark campaign concerning the inter-comparisons of SINEX files obtained from the processing of the various geodetic techniques.

The period chosen for establishing benchmarks is from August 10 to August 30, 2008. It includes the intensive CONT08 VLBI period (from 12 to 26/08/08). Combined SINEX are to be delivered per week.

2 - Report of the different groups

1. **DGFI:** M. Seitz presents the solution of DGFI (15 VLBI sessions and 3 SLR) a summary of the contributions of the following institutes: GRGS (DORIS, GPS, SLR, VLBI), AIUB (GPS, SLR), DGFI (SLR, VLBI), GFZ (SLR+GPS) and ESOC (SLR+GPS, SLR+GPS). Solutions have differences concerning estimated parameters which prevent a direct comparison. In order to be compared, some solutions have to be re-parameterized. We note for instance, that GRGS gives ZTD corrections and not the whole ZTD value. This should be corrected. ESOC solutions are not comparable to other solutions (ESOC (GPS+SLR) contains only SLR observations to GNSS satellites). GRGS(VLBI) presents anomalies which should be checked (problem in the transformation GINS format → SINEX file?). Comparisons between inter technique SINEX show a good agreement for some cases:
For GPS, GRGS/AIUB: agreement of 1mm for station coordinates and 0.02 to 0.2 mas for pole components).
For DORIS, GRGS/ESOC (DORIS+SLR): 10-20mm for station coordinates and 0.2 to 2 mas for pole components)
For SLR, an agreement of about 10 mm for station coordinates.
The SINEX presenting a fair agreement can be selecting for the next step: combination
2. **AIUB:** D. Thaller presents the contribution of AIUB. Two solutions were obtained: GNSS and SLR. For GNSS, daily SINEX are derived. Parameters estimated: Stations coordinates daily pole components, UT1/LOD and nutation. 2-hour ZTD and geocenter coordinates. EOP series were parameterized as piece-wise linear polygons.

SLR solution is given as weekly SINEX. A combined SLR+GNSS solution is envisaged as a next step.

3. **GRGS:** J.Y Richard reports about the GRGS contribution: The parameters contained in NEQs are daily pole coordinates (possibly rate), UT1/LOD, nutation, weekly station coordinates, hourly ZTD. In order to reduce the size of SINEX files, these parameters can be reduced for non collocated GPS stations. J.Y. presents the strategy applied for getting the NEQs using GINS for all techniques. A SINEX tool was developed by S. Loyer (CLS) to transform GINS NEQs to SINEX files and reverse. The tool was used as a first test to transform AIUB SINEX into GINS format.
4. **GFZ:** Report presented by R. Koenig who first explained the motivation to take part in the Working Group: comparisons of their processing only applied to dynamic techniques and results with other groups.
In the case of GFZ, the approach is different as compared to other institutes. It leads to integrated solutions brought by simultaneous orbit computations of various satellites and estimated solutions for the different tracking types. Observations: GPS, GRACE, SLR. Presentation of the models using in the orbit computation: It appears that some inconsistencies have to be solved (a priori ITRF2000 and EOP05C04). Additional re processing are under way (include CHAMP, LAGEOS satellites). Re submission of SINEX files is being made.

In case of disagreement between SINEX files, a detailed comparison of models used will be made. L. Soudarin accepted to work on it.

Deadline for re-submission of solutions (ESOC, GRGS (VLBI) and others..): end of May 2010

Combinations

The group needs to converge on a strategy to combine the various SINEX files. Choice of a common list of satellites and stations, choice and tuning of constraints (local ties), technique weighting. The work will be initiated by M. Seitz. The progress will be acknowledged and discussed via the forum. Validations will be mutually performed by DGFI and GRGS.

Next Meeting

During the IFRAG meeting which will be held during the REFAG Conference in Marne La Vallée (4-8 October 2010)