



Minutes of the COL Working Group Kick-off Meeting *21-22 October 2009 – Centre for Space Research, Warsaw, Poland*

Agenda of the meeting

Wednesday 21 October 16:15 – 18:15

16:15 presentation of the COL WG

16:20 presentation of current software packages and combination activities

1. *M. Seitz: Combination of space geodetic techniques in order to compute TRF solutions, NEQ handling, constraints, local tie handling, weighting of the techniques, aspects concerning daily TRFs*
2. *D. Thaller: EOP estimation and combination aspects of daily resolution, constraints on EOP (advantages, disadvantages, CODE strategy, densification of UT1, subdaily EOP*
3. *M. Seitz: DOGS software*
4. *R. Gross: GIPSY software*
5. *R. Biancale, J.Ch Marty, J.M. Lemoine: Presentation of GINS/DYNAMO*
6. *J.Y. Richard: Strategy and analyses performed at GRGS using DYNAMO*
7. *F. Lemoine: GEODYN & Multi-technique Processing for the Reference Frame*
8. *D. Thaller: Bernese software (postponed to 22, 9:00)*

18:15 adjourn

Thursday 22 October 9:00 to 12:00

9:00 discussion on strategies according to the charter of the WG

1. *promoting the approach within groups and the capability of processing jointly two or more techniques.*
2. *establishing common processing standards for all techniques in order to guarantee homogeneity and consistency.*
3. *studying appropriate weighting between techniques and the interest of using local ties or satellites tracked by several techniques.*
4. *optimizing and unifying parameterization for instance for tropospheric parameters in order to minimize globally the degree of freedom of the whole inverse system.*
5. *elaborating benchmarks to intercompare results between groups from the same data set.*
6. *insuring SINEX compatibility between techniques and with the international technique services and IERS.*
7. *studying stabilization methods and looking for high temporal resolution of parameters.*
8. *evaluating and comparing results to search for compatibility between groups.*
9. *organizing routine operations*

11:00 list of actions and schedule

12:00 end of the kick-off meeting

List of participants

On day 22/10:

Jolenda Nastula, SRCPAS; John Gipson, Frank Lemoine, Chopo Ma, NASA/GSFC; Erricos Pavlis, GEST/UMBC NASA; Vincenza Luceri, E-GEOS ASI/CGS; Peter Steigenberger, IAPG/TUM; Manuela Seitz, DGFI; Sarah Böckmann, Thomas Artz, IGG Bonn; Laurent Soudarin, Sylvain Loyer, CLS; Daniella Thaller, AIUB; Maria Mareyen, Bernd Richter, BKG; Johannes Boehm, Tobias Nilsson, TU Wien; Maria Kudryashova, ROB Belgium; Vojtek Stefka, ASU CR; David Salstein, AER; Richard Gross, JPL; Nicole Capitaine, Daniel Gambis, Jean-Yves Richard, SYRTE/Obs Paris; Zuheir Altamimi, IGN; Richard Biancale, CNES/GRGS.

On day 23/10:

John Gipson, Frank Lemoine, Chopo Ma, NASA/GSFC; Erricos Pavlis, GEST/UMBC NASA; Peter Steigenberger, IAPG/TUM; Manuela Seitz, DGFI; Sarah Böckmann, IGG Bonn; Laurent Soudarin, Sylvain Loyer, CLS; Daniella Thaller, AIUB; Maria Mareyen, Bernd Richter, BKG; Johannes Boehm, Tobias Nilsson, TU Wien; David Salstein, AER; Richard Gross, JPL; Rüdiger Haas, Chalmers; Daniel Gambis, Jean-Yves Richard, SYRTE/Obs Paris; Richard Biancale, CNES/GRGS.

Minutes

AIUB-BKG, DGFI, GRGS and GSFC proposed to be Centres for analysis and Combination, DGFI and Paris Observatory agreed to be Combination and Validation Centres for the combined SINEX of the 4 analysis centres.

The first part of the meeting (day 21) was dedicated to presentations of the different softwares able to process the observations of at least two different techniques: DOGS (DGFI), GIPSY (JPL), GINS (GRGS), GEODYN(GSFC) and Bernese (AIUB). The software packages able to combine normal equations or SINEX files were as well presented within DGFI, AIUB and GRGS.

The second part (day 22) provided discussions on the objectives, organization, tasks... according to the following plan:

1. *Registering a list of participants (with respective software) on the Paris Observatory' forum (for exchanging information and for file delivering)*
2. *Describing models used in processing (for each software package)*
3. *Fixing a priori weighting between techniques*
4. *Defining the parameters to be kept in NEQ (EOP and nutation, drifts, stations, troposphere...) and to which frequency (1hr – 1d – 1w)*
5. *Elaborating benchmarks: test week(s), list of stations and satellites*
6. *Describing SINEX and testing compatibility; defining name file convention*
7. *Dealing with additional information (a priori constraints, ties...) and continuity constraints*
8. *Proposing two or more centres making combinations and results comparisons (relative, wrt to C04, ITRF...)*

Electronic forum

Jean-Yves Richard proposed to maintain an electronic forum at the Paris Observatory:

<http://grgs.obspm.fr/forum/> and in addition an ftp server for files delivery:

<ftp://hpiers.obspm.fr/iers/eop/grgs/>

This forum is open to any one willing to participate to the COL-WG. Registration is firstly required.

Models used in the software packages

Laurent Soudarin prepared a template form which will be available in the forum in order to acknowledge the different software packages used with their standard characteristics (models, parameters...)

SINEX format exchange

The SINEX format for combination has to be described. It should be compatible between participating groups. Sylvain Loyer will make a proposal (normal matrix + vector) available through the forum.

Benchmarks

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 will be delivered per week. They could be separated per technique (or even per day for VLBI) .

Parameters estimated

The non reduced parameter set should include EOP (pole, UT1, nutation parameters per day and possibly drifts), station coordinates (per week), troposphere zenith delay ZTD (per hour). A list of GPS stations and satellites to be used will be proposed by Maria. In order to reduce the size of SINEX files, troposphere parameters of non collocated GPS stations can be previously reduced.

Schedule deadline

30 November: list of participants to be registered on the COL forum

31 December: discussion on a priori models and parameters

28 February: delivery of SINEX

30 April: results of comparisons

Next meeting

The second COL meeting will be held during EGU meeting in May 2010