

## **Minutes of the 4<sup>th</sup> COL Working Group Meeting**

*29 May 2012 – DGFI/Munich*

### **Agenda**

- 09:45 welcome,  
10:00 introduction and reminder of actions decided at the last meeting, R. Biancale  
10:15 Status on software and activities in the COL Analysis Centres (15 mn each)  
*AIUB / BKG, D. Thaller*  
*DGFI, M. Blossfeld*  
*ESOC, C. Flohrer*  
*GFZ, R. Koenig*  
*GRGS, J.-M. Lemoine, L. Soudarin*  
*ASI, C. Sciarretta*  
*GSFC, F. Lemoine*  
*TUW, H. Krasna*
- 12:30 *lunch*  
13:30 activities in the COL Combination Centres (15 mn each)  
*DGFI, M. Seitz*  
*GRGS, J.-Y. Richard*
- 14:00 discussion on activities  
14:30 discussion on roadmap (tasks and sequence)  
15:30 discussion on combination  
16:30 summarizing actions and schedule  
17:00 *end of meeting*

### **Chair**

Manuela Seitz, Richard Biancale

### **List of participants**

Manuela Seitz, Detlef Angermann, Mathis Blossfeld, Natalia Panafidina, Michael Gerstl (DGFI); Claudia Flohrer (ESA/ESOC); Daniela Thaller (AIUB); Maria Mareyen (BKG), Cecilia Sciarretta (ASI/CGS), Hana Krasna (TUW), Frank Lemoine (NASA/GSFC), Jean-Yves Richard (Obs Paris/GRGS); Arnaud Pollet (IGN/GRGS), Laurent Soudarin (CLS), Jean-Michel Lemoine, Richard Biancale (CNES/GRGS)

### **Minutes**

- 1) Introduction and reminder of actions decided at the last meeting (R. Biancale)

As defined in the COL-charter, the COL-WG major tasks are studying methods and advantages of combining techniques at the observation level, searching for an optimal strategy to solve for geodetic parameters.

Both CONT08 and 11 periods serve first as test period for achieving these tasks. Each AC should adopt the defined standards and process multi techniques with the various software packages available.

## 2) Status on software and activities in the COL Analysis Centres

- ✓ AIUB (D. Thaller)  
Report on GPS-Glonass-SLR processing with Bernese
- ✓ DGFI (M. Blossfeld)  
Report on SLR processing with homogenized DOGS.
- ✓ ESOC (C. Flohrer)  
Report on multi-satellite processing with NAPEOS
- ✓ GRGS/CLS (J.-M. Lemoine, L. Soudarin)  
Report on SLR-DORIS processing with GINS
- ✓ ASI (C. Sciarretta)  
Report on SLR processing with GEODYN-II/SOLVE
- ✓ GFSC (F. Lemoine)  
General report on SLR-DORIS-GPS processing with GEODYN

Presentations (in pdf) from ACs and CCs are available on the following site:

[ftp://hpiers.obspm.fr/iers/eop/grgs/Meetings/Munich\\_May\\_2012/](ftp://hpiers.obspm.fr/iers/eop/grgs/Meetings/Munich_May_2012/)

## 3) activities at the COL Combination Centres

- ✓ DGFI (M. Seitz)
- ✓ GRGS/OP (J.-Y. Richard)
- ✓ GRGS/IGN (A. Pollet) Combination of tropospheric parameters

## 4) discussion

- ✓ test period  
ACs should process technique data with the defined standards over both test periods CONT08 (10-30 August 2008) and CONT11 (11 September-1 October 2011).
- ✓ data set  
The list of stations used will be reconfirmed, particularly for DORIS (L. Soudarin).  
Moreover each AC should inform about the number of data used/rejected per technique and per week.

ACs are free to process data from more satellites, for instance Etalon, Starlette, Stella, Jason... This can be particularly of interest for multisatellite processing as it is done in ESOC.

✓ a priori models

Recommended a priori models are available through the forum. Some ACs have still to implement the NRO formulation.

For LEO satellites, the JB2008 drag model is proposed..

✓ parameterization

Pole and UT1 parameters will be provided every 3 hours in (continuous) piece-wise-linear mode (0-3-6-9...-24hr UTC).

NRO nutation parameters (in X and Y) will be provided in pwl mode per day (at 0hr UTC). Wet troposphere parameters should be adjusted every 2 hrs in pwl mode (0-2-4...). A priori values should be the dry tropospheric zenithal delays from GPT/GMF models (TROTOT). Northward/eastward gradients (TGNDOT/TGEDOT) should be given per day, at least for a few co-located stations.

List of VLBI-GNSS co-locations:

CONT08: Ny Alesund (also DORIS), Onsala, Svetloe Medicina, Wettzell, Tsukuba, Hartebeesthoek (also DORIS), Westford, Kokee Park (also DORIS), Concepcion

CONT11: Ny Alesund (also DORIS), Onsala, Svetloe, Zelenchukskaya, Badary, Yebes, Wettzell, Tsukuba, Hartebeesthoek (also DORIS), Westford, Kokee Park (also DORIS), Concepcion, Hobart

Antenna phase centres for DORIS and GPS should be present.

It is proposed to adjust as well the degree 2 coefficients over each CONT period.

✓ SINEX file compatibility

Most of discrepancies are now solved. However information about models is often missing. The OPA solution is no more to be considered.

A priori X/Y nutation values should be 0 for all ACs. GRGS has still to provide daily parameters at 0hr UTC (and not every 12hr).

GRGS has still to normalize the ZBIAS parameters (~TROTOT).

Large discrepancies on SLR coordinates of Arequipa, Greenbelt, Fort Davis between GRGS and DGFI/AIUB have to be explained.

✓ weighting

OP will provide variance factors obtained by the Helmert's variance component estimation method for all normal equations.

✓ comparison strategy

It was agreed last time that ACs will check the SINEX files per technique. According to the minutes of the last meeting Hana Krasna proposed to do it for VLBI, Manuela Seitz for SLR, Frank Lemoine for DORIS, Daniela Thaller for GNSS in order CCs can focus on inter-technique combinations.

Christian Bizouard proposed last time as well to provide Earth's rotation excitation time series for the time of the CONT08 campaign (1 value/day) for validation purposes. These data should be made available to the COL-WG.

L. Soudarin suggests for the next time that results from ACs should be shown according to a guideline proposed by the coordinators in order to get a better comparative overview.

5) Time schedule

All SINEX files from the ACs should be put into the COL forum (<http://grgs.obspm.fr/forum/>) before end of October.

6) Next meeting

Between 10 and 21 December in Toulouse over 2 half days. A "doodle" will follow to determine the date.