

Time & location:

June 1, 2015: 13:00 – 18:00 ; June 2, 2015: 08:30 – 12:00

Leipzig facility of BKG, Karl-Rothe-Straße 10-14, 04105 Leipzig

AGENDA

Last update: May 27, 2015

1. Opening (Bruyninx)
2. Approval of minutes of 67th TWG meeting in Warsaw (all)
3. Review of Action Items from previous TWG meetings (all)
4. EUREF 2015 symposium (Ihde, Söhne)
 - a. Program
 - b. Resolution committee
5. Introduction of EVRS as reference for hydrographic work in the Baltic Sea (Lidberg, Mononen)
6. Polish campaign validation (Ryczywolski)
7. CEGRN campaign validation (Caporali)
8. EUREF 2016 symposium (Zurutuza)
9. Status of the ITRF2014 (Altamimi)
10. WG on Deformation Models (Lidberg)
11. WG on EPN Densification (Kenyeres)
12. RINEX3 data flow (Stangl)
13. EPN Combination (Szafranek)
14. Troposphere (Pacione)
15. EUREF positions (Candidates EUREF Chair, TWG Chair, Secretary, procedure) (Torres et al.)
16. EUREF ToR (Ihde)
17. Short Notes
 - a. EPOS (Fernandes)
18. Action Items (all)

Participants**TWG members :**

Z. Altamimi	ZA	
E. Brockmann	EB	
C. Bruyninx	CB	
A. Caporali	AC	
R. Dach	RD	
J. Dousa		excused
R. Fernandes	RF	
H. Habrich		excused
J. Ihde	JI	
A. Kenyeres	AK	
M. Lidberg	ML	
R. Pacione	RP	
M. Poutanen	MP	
W. Söhne	WS	
G. Stangl	GS	
K. Szafranek	KS (2 nd day only)	
J. Torres	JT (2 nd day only)	

Guests:

A. Araszkievicz	AA	
C. Völksen	CV	
M. Ryczywolski	MR (1 st day only)	
J. Mononen	JM (1 st day only)	
J. Zurutuza	JZ (1 st day only)	

Minutes

1. Opening (Bruyninx)

In her property as chairwoman of the EUREF Technical Working Group (TWG), C. BRUYNINX opens the 68th meeting of the EUREF TWG, welcomes the participants and expresses her thanks to the Bundesamt fuer Kartographie und Geodäsie (BKG) for the invitation and organization of this meeting. On behalf of the hosting Institution J. IHDE welcomes the TWG and submits the best wishes for a successful meeting. The geodetic activities of BKG are reviewed. National and international collaborations (Antarctic, Argentina, ...) are ongoing in fields ranging from VLBI, GNSS, Geoid/leveling, SLR, Global Reference Frames, Georeferencing, Unified European Leveling Network, absolute gravimetry in Wettzell, German quasigeoid are all activities which are under the responsibility of BKG. It is pointed out that soon Europe will need a combined precision geoid.

A draft of the agenda has been distributed among the TWG. The participants accept the agenda after some minor corrections.

2. Approval of minutes of 67th TWG meeting in Warsaw (all)

The minutes are approved with minor corrections.

3. Review of Action Items from previous TWG meetings (all)

CB reviews the Action Items since the last TWGs.

4. EUREF 2015 symposium (Ihde, Söhne)

a. Program

JI reports that the preparations are well underway. The program is finalized. WS reviews the scientific program and the last changes. The program is available online. As to the Best Student Prize this year there will be a contribution from

Carl Calvert, but it is necessary to think at some other option, as Carl Calvert is not coming regularly to the Symposia and it appears inappropriate to maintain the Prize under these conditions. Given the small number of applicants, it is decided to suspend the Award for this year and review the concept for the next symposium.

b. Resolution committee

Mark Greaves will chair it, as usual. First proposals for resolutions are provided by the TWG members.

5. Introduction of EVRS as reference for hydrographic work in the Baltic Sea (Lidberg, Mononen)

ML introduces JM who is Chairman of the Baltic Hydrographic Commission. JM points out that his community is an end user of the EUREF products. The Hydrographic Commission sets standards for nautical charting. Members are from Countries involved in navigation in the Baltic region, in total 9 member states plus Norway. Working Groups are in charge of specific tasks, e.g. a common chart datum. Chart data are based on mean sea level, and there are differences from Country to Country. The new datum will be based on a geodetic vertical datum. Involved organizations are the International Hydrographic Office, Baltic Sea Hydrographic Commission and National Hydrographic Offices. Because of the need for a common datum, it is pointed out that an EVRS based harmonized vertical reference and land uplift at epoch 2000 could represent an interesting option. To that purpose cooperation is envisioned with the Baltic Operational Oceanographic System, Geodetic Community (EUREF) and National Geodetic Organizations, and organizations providing water level information. Furthermore the new chart datum must comply with the new IHO S-10X based standard. Adjustments of ca. 20 cm due to the adoption of the new

datum are expected. A meeting of the Chart Datum Working Group was held in February 2015. A question is on the zero tide/mean tide approach, because different communities have different preferences.

6. Polish campaign validation (Ryczywolski)

MR reviews the processing activities and the final results concerning the Active Geodetic Network – EUPOS. It consists of 43 EPN, 91 non EPN Polish sites and 22 non-EPN sites from neighboring countries. Period is GPSweeks 1632 to 1825. 81 sites are proposed as Class A and 10 sites as Class B. Daily processing strategy complies with the EPN Guidelines. On average 83% GPS ambiguities and 65% GLONASS ambiguities are solved. Final coordinates are transformed from IGB08 to ETRF2000 with the memo procedure. The agreement with the cumulative solution of the EPN densification appears within few mm/yr both horizontal and vertical. Also the agreement with the previous Polish ETRF2000 national realization is consistent within the statistical uncertainties. It is recommended that EPN sites are removed from the list of sites to be validated. The campaign is approved as Class A for the 81 sites. The proposed Class B sites are withdrawn for classification.

7. CEGRN campaign validation (Caporali)

AC presents the final results of the adjustment of a network stretching across Central Europe, which is active since 1994. The data cover the period 1996-2013 and include GLONASS data. Repro2 reprocessing was made for all the available data. The network is aligned to the EPN using 35 EPN Class A sites. The positions/velocities of 55 long-term sites and of 80 epoch sites are validated as Class A and respectively Class B.

There is a discussion on the classification

of non-EPN sites, as the current definition of Class A/B applies to continuous EPN sites. The Guidelines in this respect are obsolete and will need an update.

8. EUREF 2016 symposium (Zurutuza)

JZ presents the proposed location of the EUREF 2016 Symposium in San Sebastian, one of two European Capitals of Culture 2016.

Several options are available for the location of the Symposium and Hotels.

Date and precise location are tbd. Teamworking with IGN Spain is planned.

9. Status of the ITRF2014 (Altamimi)

ZA reports about progress on the computation. The post seismic deformation modeling is complete for 200 affected sites. Next, the combination of the 4 techniques is planned. Unfortunately ITRF2014 will not be ready by the IUGG Symposium. A total of 1000 sites is foreseen with 1800 discontinuities over 20 years. The final model will be parametrized with parameters which will be made publicly available, together with the model. ZA points out, that the end user will need an appropriate program to take the parametric model into account.

10. WG on Deformation Models (Lidberg)

The WG Web page is being developed. The question is which frame to use in case of deformation: ITRF2008 or ETRF2000. What is the effect of the Tzdot difference of 1.8 mm/yr e.g. in case of Fennoscandian sites? More work is necessary and is well underway.

11. WG on EPN Densification (Kenyeres)

AK reviews the densification status. Several bilateral agreements are planned with former Eastern European Countries. Contributions from GAMIT are under discussion because the orbits are

partially adjusted and this can be cause of inconsistency with the official IGS orbits. Plots of position and velocities are shown. Charter of the WG has been distributed. The WG 'EPN Densification' is officially established with A. KENYERES as Chairman. Interaction with EPOS is emphasized, in order to provide reliable velocities. The role of the Analysis Centers is emphasized.

12. RINEX3 data flow (Stangl)

GS reports on a sub-WG to facilitate the transition. IGS has decided the format for RINEXv3 + long names, to be implemented in 2015. Actions exist for both Data Providers and Data Centers. Data Providers should encourage OC's to submit additional RINEXv3 data and long name files. Data Centers should develop applications to include long RINEXv3 file names, diagnostic and error handling.

DC sheets must be updated to describe how long names are handled. Updated guidelines should be drafted before the next Symposium. Formal acceptance by the next (i.e., 2016) EUREF Symposium. Implementation is foreseen in 2016. Backward compatibility to 4 char id is foreseen for 3 years.

CB asks if the OLG and BKG DCs can agree on a date of implementation of long file names. Furthermore, concepts for a transition of short to long RINEXv3 filenames done by the DCs should be evaluated.

RINEXv2 will be accepted for GPS only and GPS+GLO receivers. RINEXv3 is to be implemented for multi-GNSS (GAL, BDS, ...) receivers.

13. EPN Combination (Szafranek)

KS reports on repro2 combination at MUT using CATREF and BSW52. Daily files rather than weekly files are combined. Input for the combination are 5 networks: 3 BSW, 1 Gipsy and 1 GAMIT. NEQ, incomplete COV and full COV are accepted formats for input and

output. Test week is 1677. ADDNEQ2 and preliminary CATREF results are compared. The results of the comparisons depend on the selected solutions.

It is necessary to select the solutions to be combined, so that a reference solution is provided to the Troposphere coordinator to obtain the combined troposphere solution.

Further comparison of the ADDNEQ2 and CATREF results will be performed until the differences are understood and an agreement is found. Only after that the repro2 results can be released.

14. Troposphere (Pacione)

RP reports on routine combination from gpswk 1800 to 1841. At 1800 the transition from BKG and ASI took place. The bias and STD are reviewed. Bias is consistent across the transition, while the STD slightly increased from BKG to ASI. Different weighting schemes seem to be the reason for it. Cleaning the input solutions should be a responsibility of the providers of the input data, i.e. the Analysis Centers, and not of the Combination Center.

No updated IVS combined solutions have been delivered for 2014 so no tropospheric comparisons between EUR and IVS can yet be done.

Next, Repro2 data are reviewed. Not all the solutions are completely homogeneous. First results will be presented at the COST workshop in Wroclaw and LAC workshop in Bern, both on Fall 2015.

Finally Tropo SINEX standardization is addressed. It should be compatible with SINEX 2.02.

A Real Time campaign, carried out in the framework of the COST Action 'GNSS4SWEC', is discussed, which could contribute to the E-GVAP if the results will justify it.

15. EUREF positions (Candidates EUREF Chair, TWG Chair, Secretary, procedure) (Torres et al.)

The candidates introduce themselves. Then the ballots are distributed. It is decided that the JT ballot will be disclosed only if needed. It is decided that ZA is able to vote because of his membership status appearing unclear.

The ballot results in Markku Poutanen as President of EUREF and Ambrus Kenyeres as Chair of TWG.

The Secretary will be Wolfgang Soehne.

16. EUREF ToR (Ihde)

JI presents an updated version of the ToR after the changes proposed by ML since the last TWG. The status of TWG members, Honorary Members etc. should be clarified in relation to voting rights. However, the old ToR will apply to the present elections. Here no distinction among members (ordinary, honorary, ...) was made.

It is discussed if there should be a Steering Committee and Special Projects. It is decided that these bodies should not be introduced. Technical components are reviewed, then the membership. It is discussed if EUREF members must come from Countries which are members of IUGG. If this is the case, then only 16 Countries (so called Category A) are eligible, out of more than 30 Countries which regularly participate to the EUREF Symposia. It is decided that the EUREF Chair and Secretary, but not necessarily the TWG members, should come from a Category A Country.

17. Short Notes

a) EPOS (Fernandes)

The next phase of EPOS called EPOS IP will start in October, according to RF. WP 10 concerns GNSS. The implementation phase will take 4 years. The next activity will be ERIC.

JI has informed Massimo Cocco about his personal doubts on the decision process within WG4 and the way EUREF is represented in EPOS.

The question is how the participation of EUREF in EPOS can be formalized. Because of the fact that EUREF is not a legal entity, a possible participation of EUREF to EPOS via IAG, which a legally mandated organization, is mentioned. It is also proposed that a MoU between EUREF and EPOS is signed.

18. Action Items (all)

AI_1_TWIG68_AI_4b on CB: to contact Mark Greaves for the Resolution Committee.

AI_2_TWIG68_AI_12 on CB, GS and WS: to discuss the details and practical aspects of implementation of long RINEX 3 filenames.

AI_3_TWIG68_AI13 on KS, RD and ZA: to understand and solve the pending problems related to combination of normal equations.

AI_4_TWIG68_AI16 on MP, JI, JT and AK: to form a committee to continue working on the EUREF ToR.