

Time & location:

Two online meetings (MS Teams) Tuesday, February 16 and Tuesday, March 02, 2021, 1300 to 1500 CET

MINUTES**1. Opening (Söhne)**

WS opens meeting.

2. Approval of minutes of 84th GB online meetings (Kollo, Söhne)

Comments from JL and CV have to be included before uploading the final version to the EUREF web page.

3. Review of Action Items from previous GB meetings (Söhne, Kollo)

77-4: JT and WS prepared web-page about EUREF-campaigns, all missing references compiled by JT. Information sent to Helena to put it on EUREF web-page.

80-7: update for guidelines – on agenda.

84-2: BEV has need for MoU or collaboration agreement. CB: collaboration agreement is very concrete one, MoU is more general. WS continues communication with BEV.

84-4: possibly next newsletter after the symposium

84-5: Possibility to use fixed ambiguities in GipsyX, needed some special products for multi-GNSS, JPL is willing to create these. New EPN combinations will be done using GipsyX, except hourly processing, discussion on hourly processing. EB emphasizes the advantage of hourly processing, as problems are detected early in the analysis and no longer delay the calculation of the final product.

Action Item for WS and JT: provide text file on EUREF campaigns and contact Helena Ribeiro for inclusion on the EUREF web page¹.

4. EUREF symposium 2021 (Medved, Berk (gov.si), invited guests)

KM gives the status report, web page opened, EUREF-mail sent (15th of February). Symposium will be held virtual, after symposium presentations will be available in ppt-format. One splinter meeting – CEGRN announced, possibility to add splinter meetings later on. Invited talk proposed for the company Space OPAL. ZA: What will be presented by Space OPAL? – Galileo HAS (High Accuracy Service), GSOP (Galileo Service Operator), products useful for EUREF community. Invited speech – GGCE (Global Geodetic Centre of Excellence), Johannes Baumann, it is agreed more or less, note from ZA – should include UN-GGIM (United Nations Committee of Experts on Global Geospatial Information Management) and Sub Committee of Geodesy (SCoG) in general. CV asks for the time schedule – original symposia schedule is maintained. AK has question about poster session. RD: It may not work as expected. Would not push a poster session. AK: would be happy to upload some extended material for interested listeners. AC: how will the session conveners be informed about the abstracts? Abstracts shall be sent at least once per week to conveners. Abstract deadline April, 16.

5. EUREF Governance**a. EUREF Scientific Plan (Lidberg)**

ML gives an overview about EUREF science plan, it shall not compete with strategy. Now preamble added for explaining the goal of the document. Need to understand scientific questions and challenges ahead. Proposal to have this document as

¹ See http://www.euref.eu/euref_egrs.html

background document. AC adds that a kind of roadmap should be available ASAP. ZA notes that wording need to be changed. Separate meeting shall be organized.

b. GB membership (Söhne)

WS recalls the detailed compilation distributed by JT prior to the meeting. He recommends to take the decision to ask both candidates who responded to the call in March last year if they were still available for the GB. Discussion about the voting during the online meeting with ZA, JT, MP, ML, WS, AC contributing pros and cons. Who is able to vote? JT and ZA have general concerns on the composition of the plenary. AC recommends to test the online voting procedure prior to the symposium. Information from 2nd of March: both candidates agreed to become members of the GB.

Action Item for CV: update the proposal for a membership on specific tasks.

6. Working Groups

a. Repro WG (Völksen)

CV presents some slides on ideas concerning the next EPN-Reprocessing campaign. CODE products of the IGS repro3 (R3) are not yet publicly available. RD comments that they will be released soon. But a new version of the format for clock-files are used by Bernese for the IGS repro, which is not compatible with Berne version 5.2, but a patch for this is/will be released soon. Products of IGS Repro3 are available up to the end of 2020, but it is agreed by the IGS ACs to provide IGS repro 3 products also for 2021. A workshop for the EUREF analysis centres (ACs), hopefully a physical meeting if Corona allows, should be organized at the end of 2021 so that the reprocessing campaign EPN-Repro3 and the operational work of the analysis centres can be optimally coordinated. In particular, standards that were used in IGS Repro3 (e.g. new PCV corrections for the satellites and ground antennas) must be adopted.

ZA states that IGS20 won't be available this year, due to some delay by the individual techniques. But ITRF2020 should be available by end of this year. RP states that it is important to have the repro done consistently with the operational and possibility to re-arrange the subnetwork distribution. RP has to share the workload on reprocessing.

b. WG on Dense Velocities (Brockmann)

EB reports on the progress, EPOS dataset provided by the official EPOS combination and analysis centre (Université Grenoble Alpes - National Center for Scientific Research [UGA-CNRS]) was included, quality and agreement is good. Progress on standardization of deformation models within OGC (Open Spatial Consortium). Grids containing information on the deformation are to be developed. New version of the ISO19111 standard is available which allows the coordinates to have time epochs. ZA warns the usage of terminology – have to be careful with the concept, i.e. deformation model is beyond linear formalism. Importance of dynamic or kinematic reference frames

7. EPOS (European Plate Observing System)

a. EUREF-EPOS wrap-up (Söhne)

WS gives short summary of the EPOS TCS “GNSS Data and Products” webinar in January this year. Five solutions within the EPOS TCS with three of them coming, completely or shared, from EUREF.

b. EUREF-EPOS MoU (Lidberg)

ML explains the history of EUREF and EPOS collaboration, which is going on since roughly one decade. A draft version of the EUREF-EPOS MoU was distributed to the GB members prior to the first part of the meeting. MoU will be between EUREF and EPOS-ERIC, there is common interests, EUREF more visible. Comments from GB: JT reminds to the MoU with EUMETNET. AC: common view on the metadata. CV: wording shall be concrete. The MoU states that “duplications of work”! What does this mean for the EUREF community? Will some of our work become redundant/obsolete or will some of our work be made available to EPOS? RP has question – What EPOS gets from EUREF?

Action Item for ML: update the draft of the EUREF-EPOS MoU following the discussion during the GB meeting and prepare a table as amendment on the products, actions etc. which could be provided by the parties.

8. Coordinators

a. Report of the ACC (Liwosz -> March 02)

TL presents the progress of the ACC, new solutions by GipsyX, since 2139, GPS+GLONASS+GALILEO, absolute antenna calibrations, full covariance matrix, no ambiguity fixing. Some AC solutions are not included in ACC (missing or delayed), decreased number of stations in AC solutions (automatic processing may not have been adjusted to handle the new filenames caused by the gzip-compression method, or not using RINEX3). NRT solution characteristics, combined solutions have ca 140 stations. RP: EGVAP processing has to be updated for GipsyX, NRT will be updated later. Important is to continue, not to stop.

Action Item to TL: contact NRT ACs, which are also EPN ACs, to provide a coordinate solution on an hourly basis.

b. Reference Frame Coordinator: EPN Densification Guidelines and classification (Legrand -> March 02)

Reference frame coordination – two solutions produced 2115 and 2130. DOI published for 4 last solutions, others to follow. IGS discontinuities agreed.

Guidelines for EPN Densification – due to new station categorisation, but as well some more revision, result was re-written guidelines. Roadmap – ultimate goal to present new guidelines in symposium. Some remarks: section 4.2 – should it be kept, there is a risk of misuse of the EPN solutions together with the campaign solutions. PPP solutions – should they be adopted, RD: this would give a larger number of stations but without the important covariances between the stations. WS: naming of section 2 – should be used as the selection of reference station.

Action Item to all: send the feedback on the updated guidelines to JL until April 09.

Action item to JL: based on today’s meeting and on the feedback, send an updated document to the GB until April 16.

c. EGMS European Ground Motion Service (Kenyeres)

AK gives a summary on the EGMS project, which aims the realization of an InSAR-based surface monitoring service covering the EU member countries. EGMS is running from 2021 to 2024 and funded by EEA (European Environment Agency). The winning consortium is led by e-GEOS, an ASI / Telespazio company, and other members are TRE-Altamira (Italy), GAF (Germany) and NORCE (Norway). As InSAR needs GNSS for referencing and validation purposes, NORCE has invited SGO for contribution. EGMS will require – beyond the freely available EPND products (position time series and velocities) – a generalized velocity grid including, e.g., the

NGL (Nevada Geodetic Laboratory) solutions and some proprietary GNSS results coming from private sources. AK is willing to play a role as liaison person between EUREF and EGMS and will regularly report the EGMS status in GB meetings. EGMS shall have a particular importance in EUREF as a supporting project of EPND and also for the future planning of the European kinematic height system, where the time variable height model may come from the European scale and long term maintained surface variation model.

9. UN-GGIM

a. Short note: establishing a Global Geodetic Centre of Excellence [GGCE] (Söhne)

Skipped, should be invited talk in Symposium.

10. EVRS and Height (Sacher)

MS informs on different topics. There will be an extension of EUVN_DA. A new coordinate database CRS-EUv2 is under development, which should be conform to ISO19111. Several new data are available, e.g. newly available data from 4 countries (Belarus, Ukraine, Russia, North Macedonia), new levelling data of 11 countries, and new GNSS campaigns in several countries.

A new questionnaire is under development, which should be advertised at EUREF symposium to invite the EUREF members to answer. MS points out, that two queries are necessary – one for geoid data and one for EUVN_DA – and asks the GB if it prefers to launch one or two (sequential) questionnaires? It depends a bit of the addressees of each questionnaire.

Action Item to MS and Joachim Schwabe: develop a questionnaire on both topics to be presented next GB meeting.

11. AOB

a. Next GB meeting(s) (Kollo)

Action Item to KK: set up a doodle to find dates for the next GB meeting(s)

PARTICIPANTS

Z. Altamimi
 E. Brockmann
 C. Bruyninx
 A. Caporali
 R. Dach
 A. Kenyeres
 K. Kollo
 J. Legrand
 M. Lidberg
 T. Liwosz excused 1st part
 R. Pacione
 M. Poutanen
 M. Sacher
 W. Söhne
 J. Torres
 C. Völksen

A. Araszkievicz
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