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EUREF-TWG Project: Monitoring of official national ETRF coordinates on EPN web

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Status

- Project started at LAC Meeting Frankfurt / TWG Meeting Munich (Oct./Nov. 2008): 15 countries asked to deliver national official ETRF coordinates for their EPN stations – all other countries were asked to report on it in the national reports
- EUREF Symposium in Firenze (May 2009)
 - Presentation + Paper
 - Resolution No 3
 - Many reports of the different countries as part of the national reports



Resolution 3

- The IAG Reference Frame Sub-commission for Europe (EUREF)
- *Considering*
 - the importance of ETRS89 and its future maintenance
 - and the importance of the national realisations of ETRS89 in use today
- *invites* the member countries of EUREF to submit coordinates of EPN stations in their national realisation of ETRS89 to the TWG before **September 15, 2009**.



File format for information exchange



File name: CHE_200810021.ETRF

Station	DOMES	X	Y	Z	Frame	Epoch	valid from	to
-----*		-----**		-----**		-----**yyyy*mm*dd**yyyy*mm*dd**yyyy*mm*dd		
ZIM2	14001M008	4331300.1443	567537.0824	4633133.4977	ETRF93	1993 01 01	2007 11 09	
ZIMM	14001M004	4331297.3388	567555.6380	4633133.7174	ETRF93	1993 01 01	1988 01 01	



File name: SWE_200903013.ETRF

Station	DOMES	X	Y	Z	Frame	Epoch	valid from	to
-----*		-----**		-----**		-----**yyyy*mm*dd**yyyy*mm*dd**yyyy*mm*dd		
KIRO	10422M001	2248123.5038	865686.5326	5886425.5943	ETRF97	1999 07 01	1993 08 01	
MAR6	10405M002	2998189.7132	931451.5886	5533398.4735	ETRF97	1999 07 01	1993 08 01	
ONSA	10402M004	3370658.8318	711876.9387	5349786.7450	ETRF97	1999 07 01	1999 02 02	
SKE0	10426M001	2534031.1978	975174.4040	5752078.3436	ETRF97	1999 07 01	1993 08 01	
SPT0	10425M001	3328984.8136	761910.0660	5369033.4748	ETRF97	1999 07 01	1995 12 01	2007 06 08
SPT0	10425M001	3328984.8211	761910.0677	5369033.4857	ETRF97	1999 07 01	2007 06 08	
VIL0	10424M001	2620258.8912	779137.9797	5743799.2762	ETRF97	1999 07 01	1993 08 01	
VIS0	10423M001	3246470.5614	1077900.3132	5365277.9025	ETRF97	1999 07 01	1993 08 01	



Reference solution for this “call of participation”

- ITRF05 densification solution of the EPN
 - published in Dec. 2008
 - aligned to ITRF2005 with minimum constraints
 - data from 0860 – 1355 [same as ITRF2005, Dec. 2005; before Nov. 2006 (week 1400)] **EPN_ITRF_C1355.SNX**
 - based on relative antenna phase center variation model, which is also true for many national reference frame realizations
 - regarded as a “scientific” coordinate solution
- Reference solution with more frequent updates are provided (Kenyeres, 2009); every 15 weeks updates; actually combination is week 1540



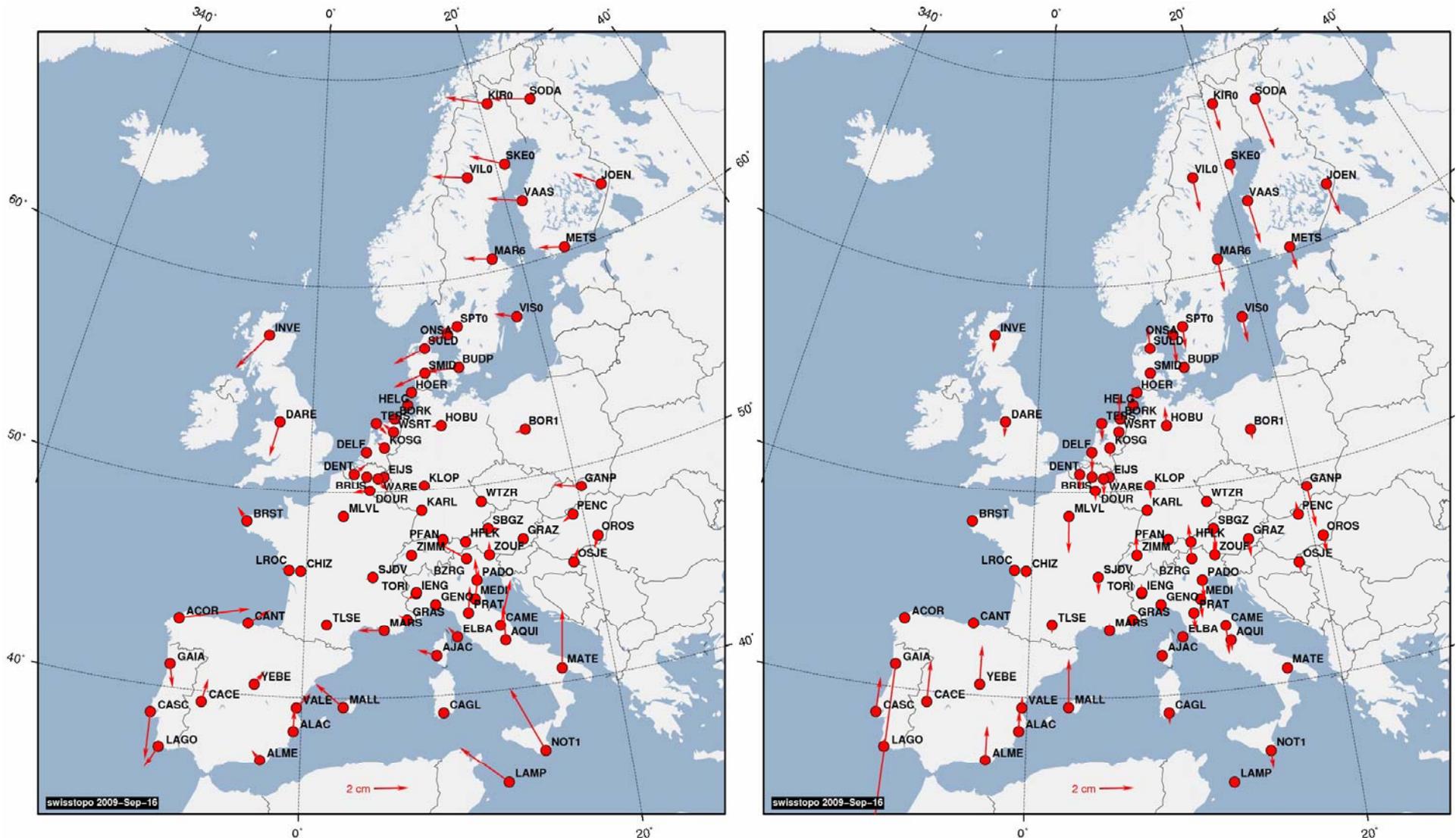
Changes since Florence

- Northern Ireland
- United Kingdom
- Update France
- Denmark
- Croatia



Comparison with EPN05 densification

Differences: horizontally + vertically Ep. 2000.0





Remarks of the results

- Countries did a great job computing ETRF coordinates for permanent EPN stations !!!
- No problems detected for the “additional” 5 countries arriving since Florence
- All countries agreed to publish their coordinates on the EPN web page
- 113 sites, 1 sites under investigation due to vertical antenna reference point (GAIA, Portugal)
- Mean std: horizontally < 10 mm, vertically 13 mm



Planned activities

- Reminder (EUREF mail) to “Resolution 3” via e-mail by Helmut Hornik (e.g. together with reminder to paper contribution to proceedings); eventually direct contact to persons -> E. Brockmann gives a list of missing countries to H. Hornik; a.s.a.p; ALL: send contact persons of missing countries to E. Brockmann
- Automated comparisons with scientific coordinates derived within EPN based on 15-weekly updated accumulated solution (Kenyeres et al., 2009) or last weekly EPN combination (Habrich, 2008); possibly with an automated feedback to the countries. -> Brockmann; a.s.a.p
- Preparation to make these “official national ETRF coordinates” and the results of the comparisons on the EPN web page visible (-> Bruyninx, Brockmann; next EUREF Symposium)
- Development of an update mechanism of coordinate changes (e.g. as established with station log) -> tbd



“Instructions” for national representatives

National ETRF coordinates for EPN stations of ALL countries desirable (if no objection against publication):

- **Send country file CCC_YYYYMMDD.ETRF** (CCC: national 3-character ISO 3166 code, YYYYMMDD: year, month and day of the information update to:
elmar.brockmann@swisstopo.ch
- **till September 15, 2009**
- Example file:
http://www.swisstopo.admin.ch/swisstopo/geodesy/pnac/divers/etrf_monitor/CCC_YYYYMMDD.ETRF
- Thanks to your kind cooperation !

Paper copies of the present status and all necessary information are available