EPN CB Report

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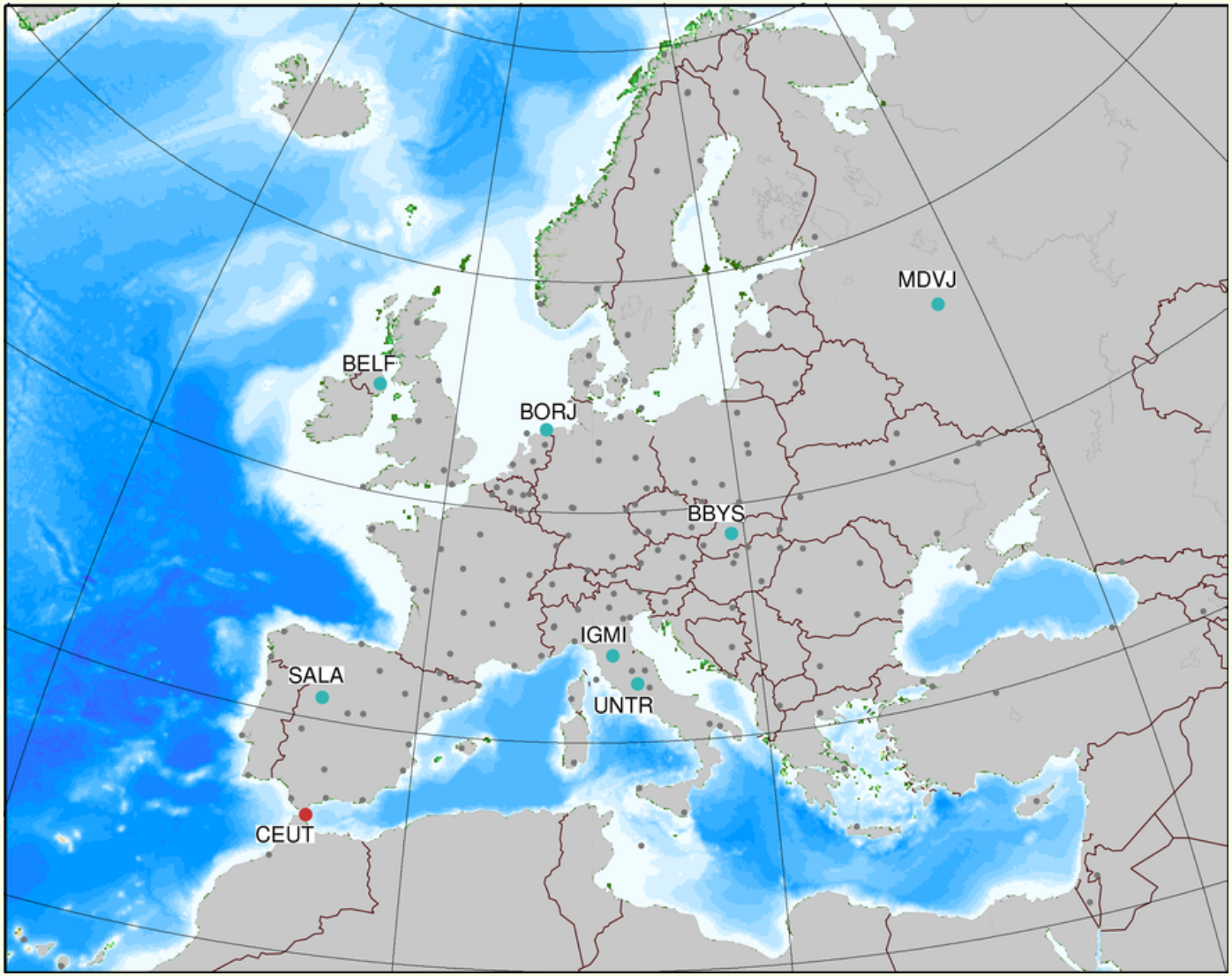
EPN CB

STATUS OF EPN TRACKING NETWORK

199 stations (7 inactive), 7 new, 1 withdrawn



NEW EPN STATIONS

Station	4 char ID	Country	Date inc.	H	ECGN	IP	GLO
Banska Bystrica	BBYS	Slovak Republic	04-02-2007	H			
Belfast	BELF	United Kingdom	28-01-2007	H			
Borkum	BORJ	Germany	24-12-2006	H		IP	GLO
Firenze	IGMI	Italy	28-01-2007	H			
Mendeleevo	MDVJ	Russia	04-03-2007				GLO
Salamanca	SALA	Spain	12-11-2006	H		IP	
Terni	UNTR	Italy	04-03-2007	H		IP	GLO

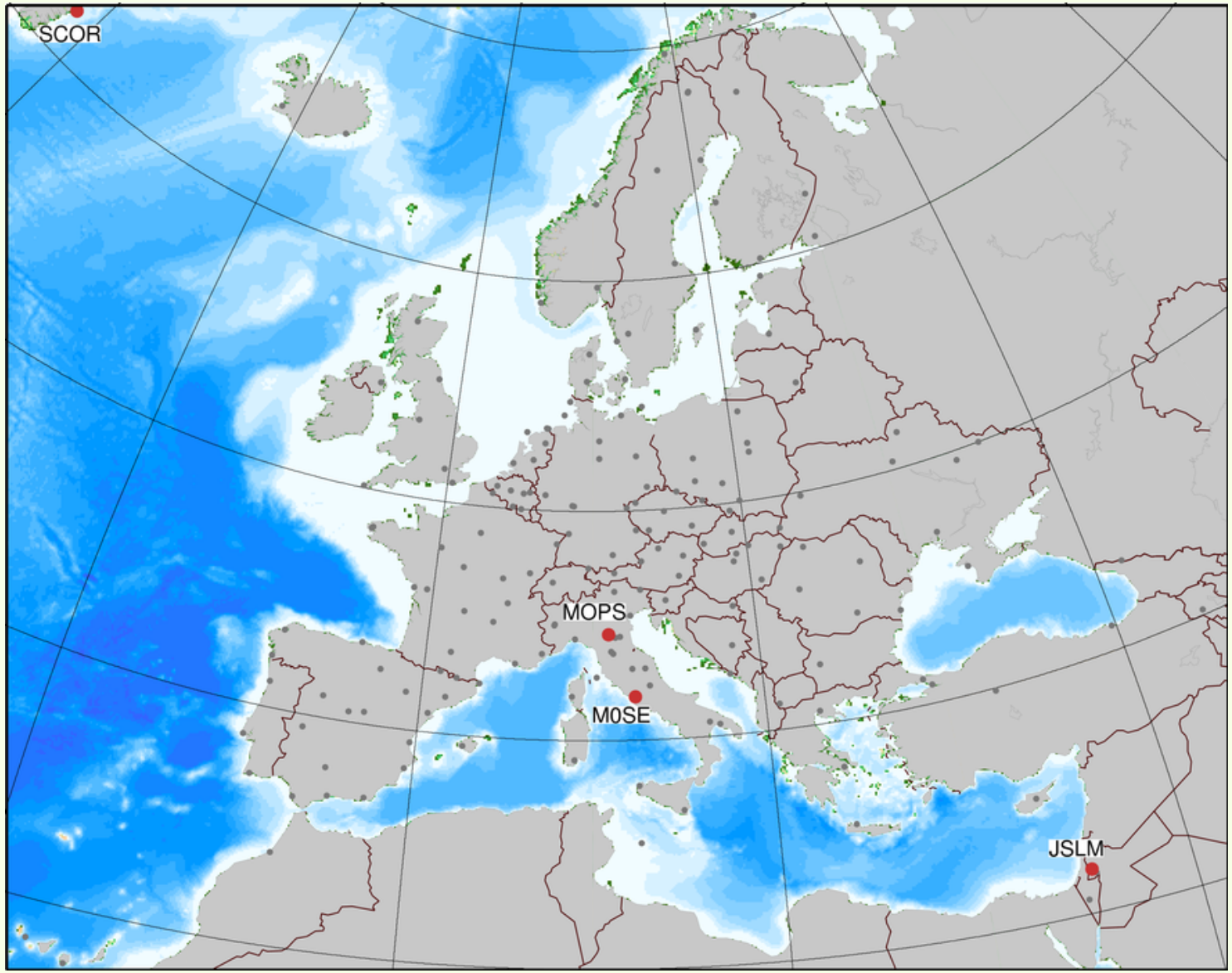
INACTIVE EPN STATIONS

Station	4 char ID	Country	Date inact.	Explanation
A Coruna	ACOR	Spain	21-01-2007	GNSS data quality problem
Brest	BRST	France	05-02-2006	GNSS data quality problem
Dubrovnik	DUBR	Croatia	18-12-2005	BKG searches for cooperation with another Croatian agency
Taranto	FATA	Italy	23-04-2006	GPS receiver has been stolen
Nicosia	NICO	Cyprus	18-06-2006	Internet connection problem
Osijek	OSJE	Croatia	02-10-2005	BKG searches for cooperation with another Croatian agency
Tallinn	SUUR	Estonia	04-02-2007	Bad data quality

WITHDRAWN EPN STATIONS

Station	4 char ID	Country	Date excl.	Explanation
Ceuta	CEUT	Spain	17-02-2007	GNNS data quality problem

PROPOSED EPN STATIONS



PROPOSED EPN STATIONS

Station	4 char ID	Country	Status	H	ECGN	IP	GLO
Jerusalem	JSLM	Israel	No data	H			
Roma	M0SE	Italy	Data obstruction	H		IP	
Modena	MOPS	Italy	No pictures, site log not yet correct	H			GLO
Scoresbysund	SCOR	Greenland	Data not sent to the 2nd RDC OLG	H			

Update of EPN Guidelines

Following decisions of last TWG meeting + iteration amongst TWG members after TWG

- Procedure for Becoming an EPN Station
  Last updated : Dec. 5, 2006
  New EPN stations must have an antenna/radome with known absolute calibrations

- Guidelines for EPN Stations and Operational Centres
  Last updated : Dec. 5, 2006 + March 3, 2007
  - Added guidelines for stations streaming real-time data
    - full code/carrier phase data
    - Agreement with ETRS89 coordinates (need for set of official coordinates)
    - Agreement of meta-data (antenna/radome type & height)
  - Promote usage of multi-GNSS equipment
  - New antennae/radomes or antenna/radome replacements must have absolute calibrations
  - Recommendation for connection to UELN/national levelling network

Antenna calibrations – actions since last TWG

EUREF mail and individual contacts with station managers, obtained individual calibrations for 12 stations:

GANP	TRM55971.00	NONE	37385	
HOBU	TRM29659.00	SNOW	73802	
BORK	TRM29659.00	SNOW	80416	
HOE2	TPSCR3_GGD	CONE	70298	
KLOP	TRM29659.00	NONE	81795	
DRES	TRM29659.00	NONE	81799	
SASS	TPSCR3_GGD	CONE	70155	
WARN	TPSCR3_GGD	CONE	70159	
BADH	TRM41249.00	NONE	79133	
WTZR	AOAD/M_T	NONE	404	
TUBO	LEIAT504	LEIS	02923	type calibrations available from IGS
BORJ	TPSCR3_GGD	CONE	70182	no calibrations available from IGS

Created dedicated web page:

http://www.epncb.oma.be/_trackingnetwork/equipment_calibration/index.php

…
The EPN Central Bureau makes available two calibration files :
• epnc_05.atx, with the individual antenna calibrations of the EPN stations (if available)
• epn_05.atx, with the absolute antenna phase centre calibrations for all the EPN stations
Both files are freely available from the EPN CB, but they are password protected in order to fulfil the requirements of any license protections. Users of the EPN data can get the password on simple request from the EPN CB after agreeing with the license restrictions.
…

About 30 requests up to date

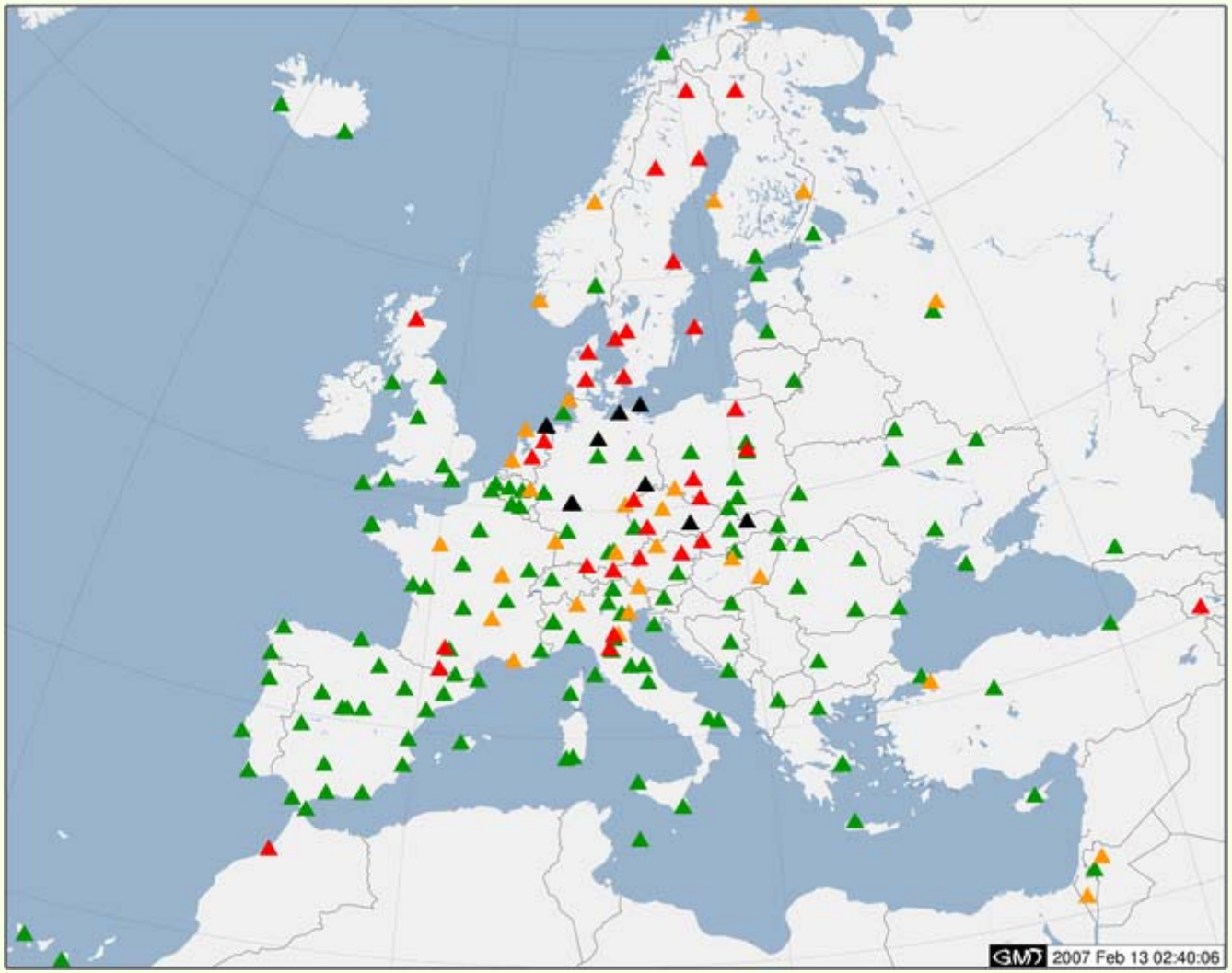
Antenna calibrations – present status

individual absolute calibrations

true absolute calibrations

absolute calibrations converted from relative values

without absolute calibrations, calibrations are taken from the corresponding antenna without the radome

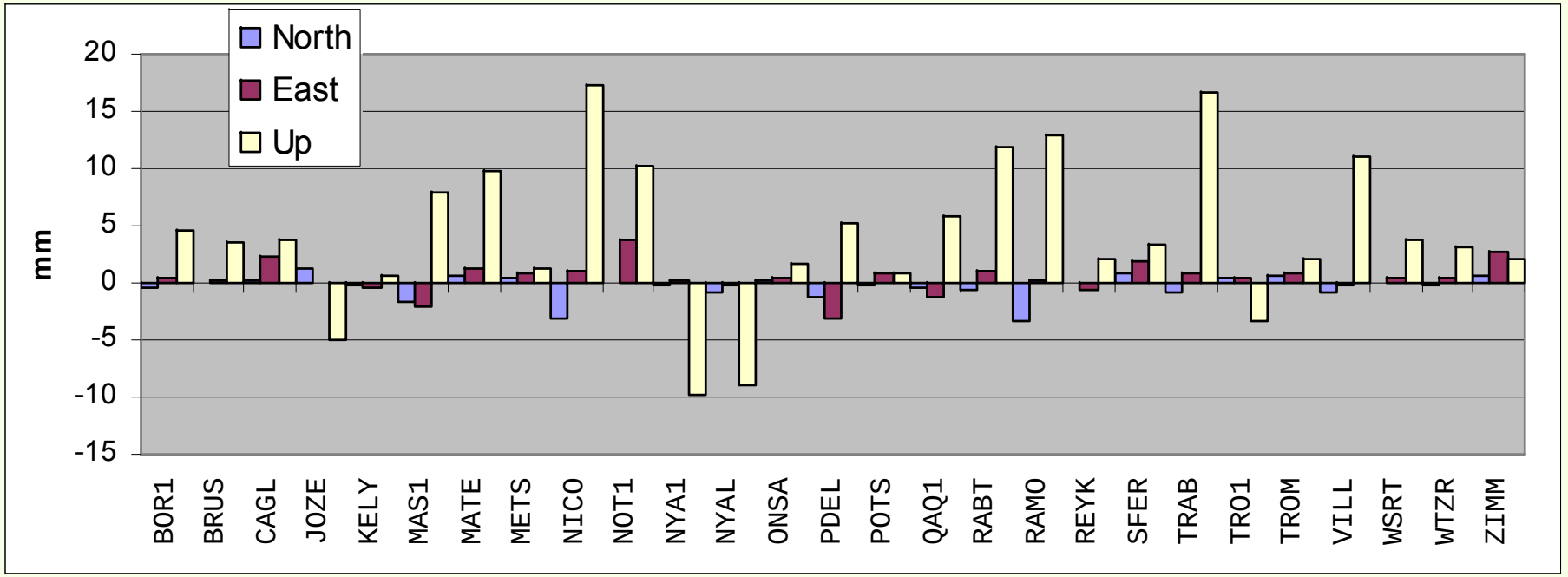


Remember

From previous TWG meeting

Influence of introduction of absolute antenna phase center models on IGS reference frame stations

Extraction of EPN stations



Conclusion:

IGS needs to generate its own realization of ITRF2005, and this realization should be consistent with the absolute APC !

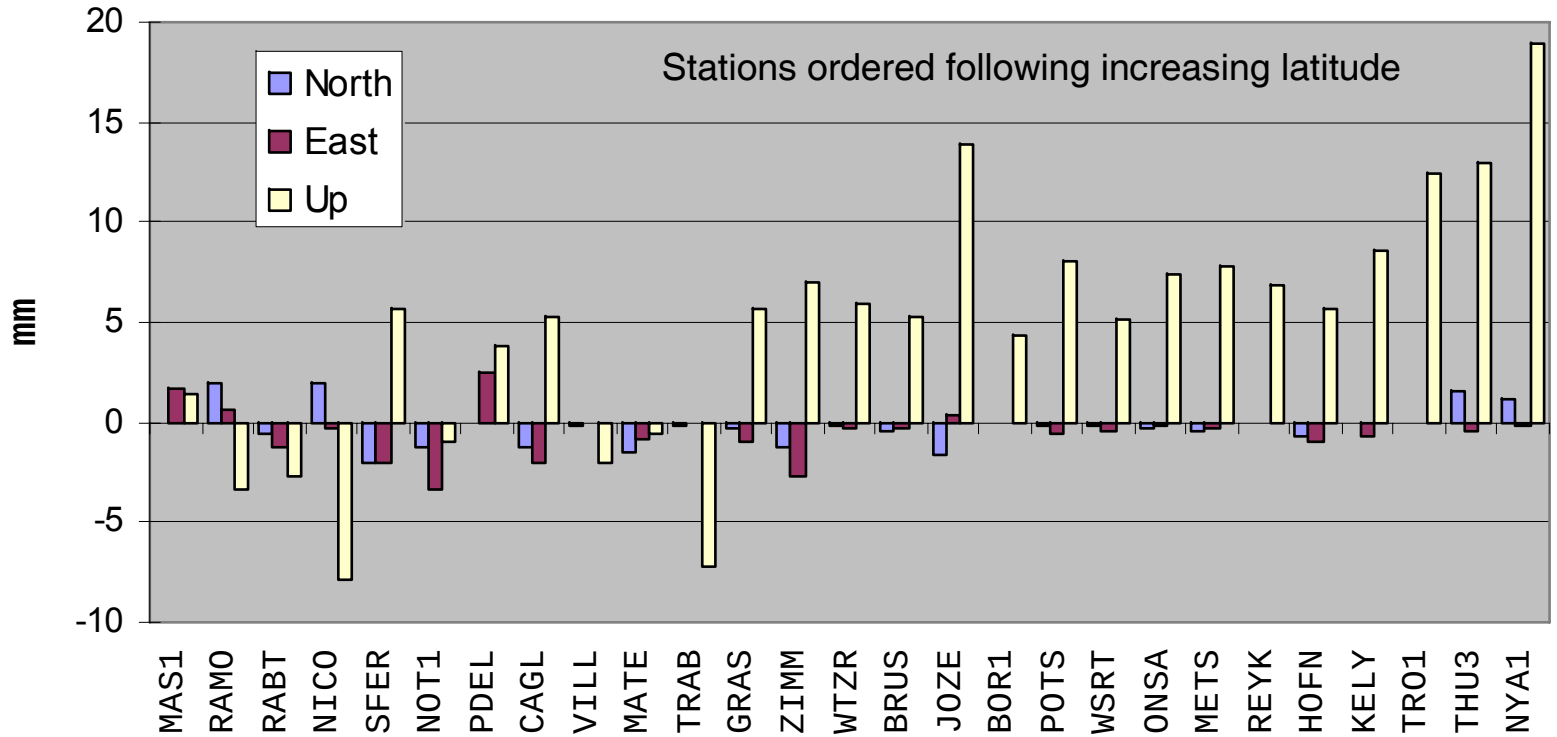
Procedure (Ferland, IGS mail 5547, Oct 19, 2006):

- ✓ Determine station-dependent correction for switch relative to absolute
  - Computation of two simultaneous solutions for 12 months (one absolute, one relative)
- ✓ Compute (relative) cumulative IGS solution and correct it for the station-dependent offset
- ✓ Align corrected cumulative IGS solution with ITRF2005 using 7 parameter Helmert transformation

  → IGS05

Differences ITRF2005-IGS05

Extraction of EPN stations

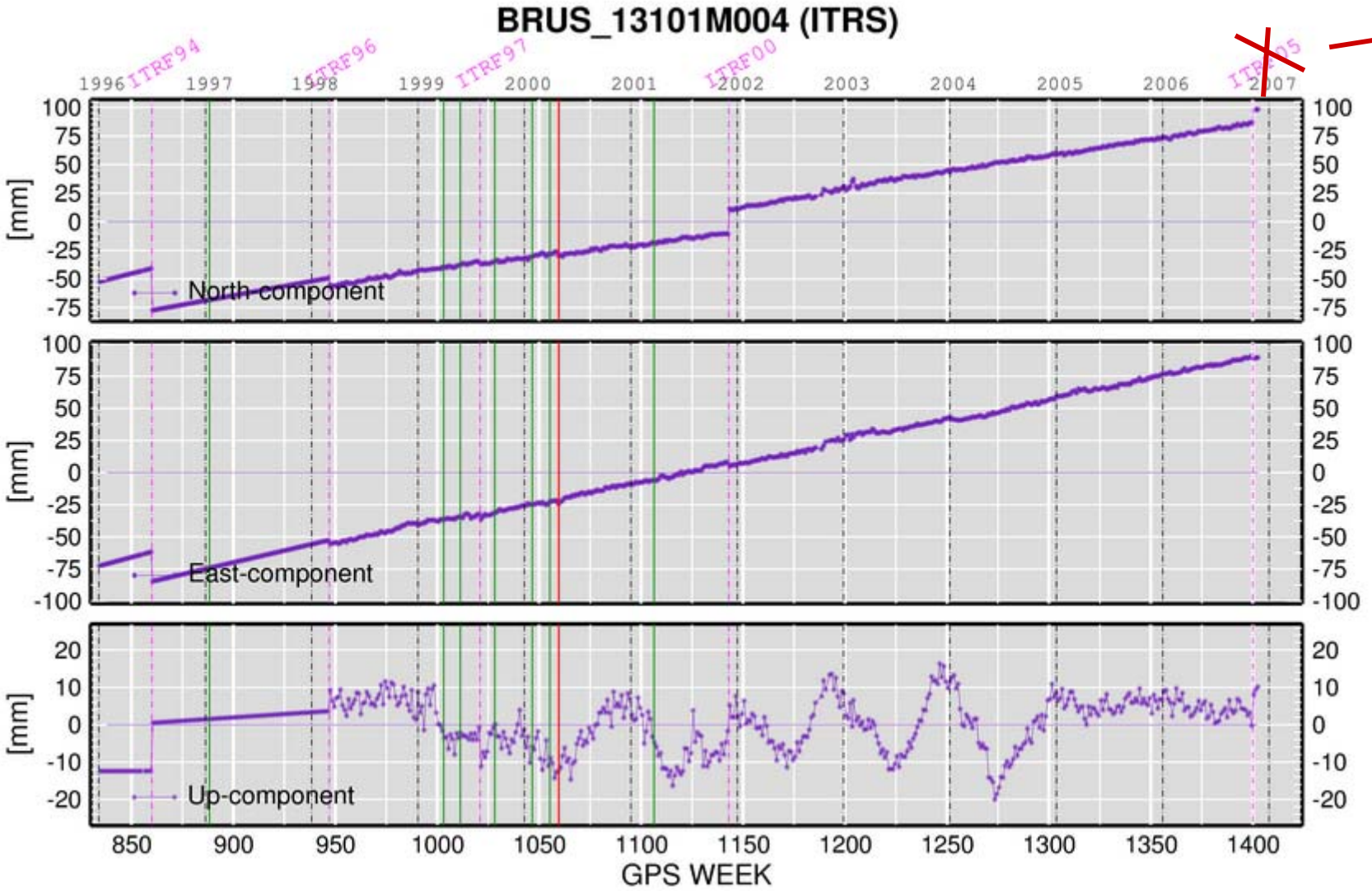


Mean differences:

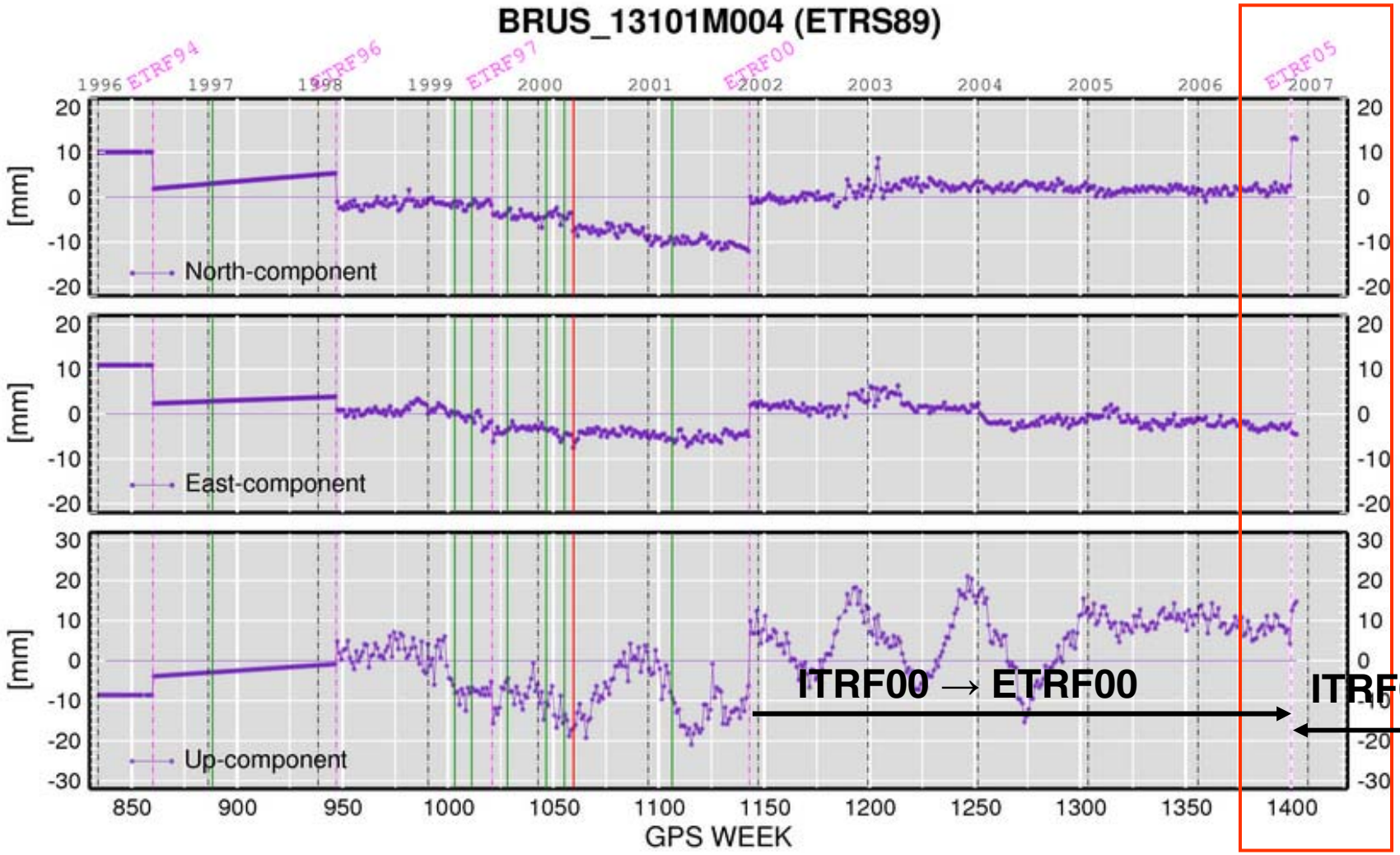
N= -0,2 mm ±1.0 mm E= -0,4 mm ± 1.4 mm U= 5.3 mm ± 6.5 mm

- Since GPS week 1400:
  - EPN solution is tied to IGS05
  - Absolute antenna phase centers are used

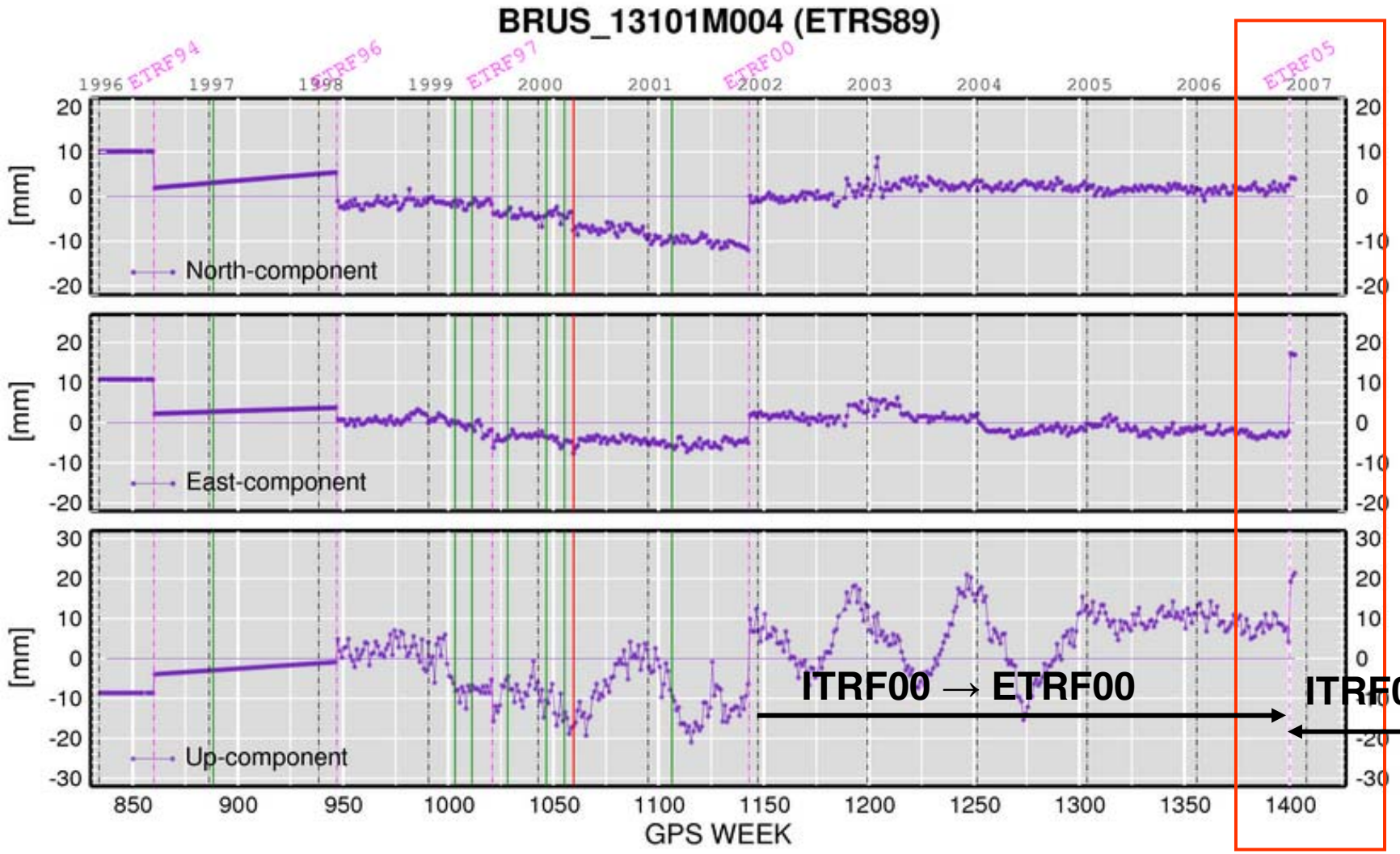
ITRS time series
Coordinates extracted from weekly EPN solution

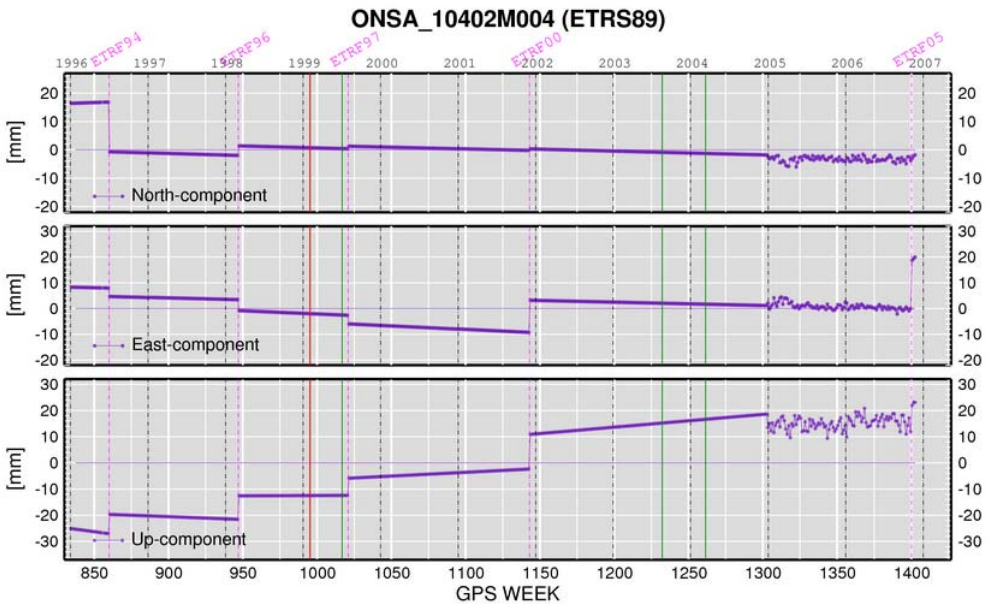


ETRS89 time series
ITRFxx → ETRFxx (t_{obs}), ~~IGS05 → ETRF05~~

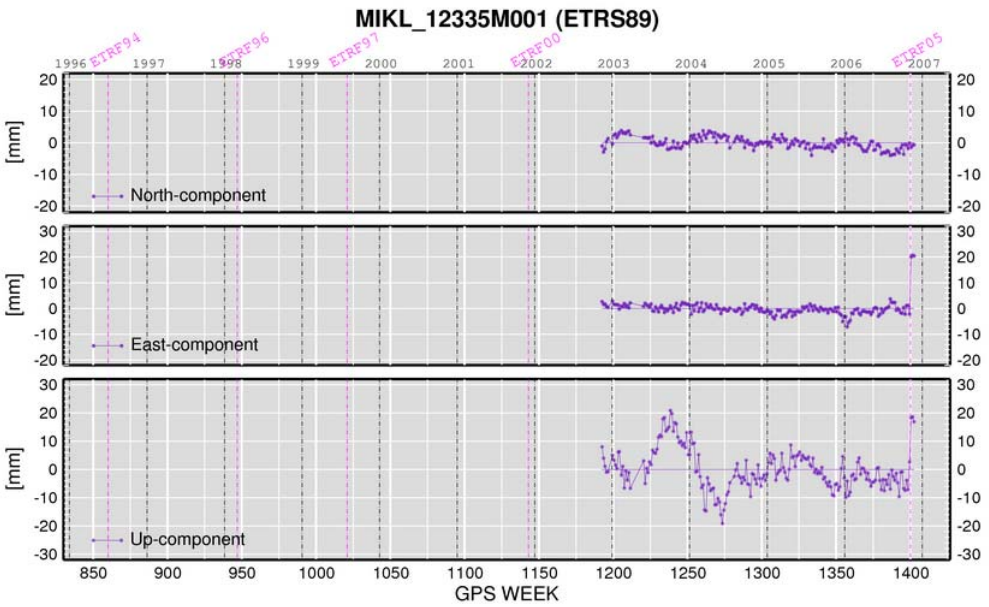


ETRS89 time series
ITRFxx → ETRFxx (t_{obs})

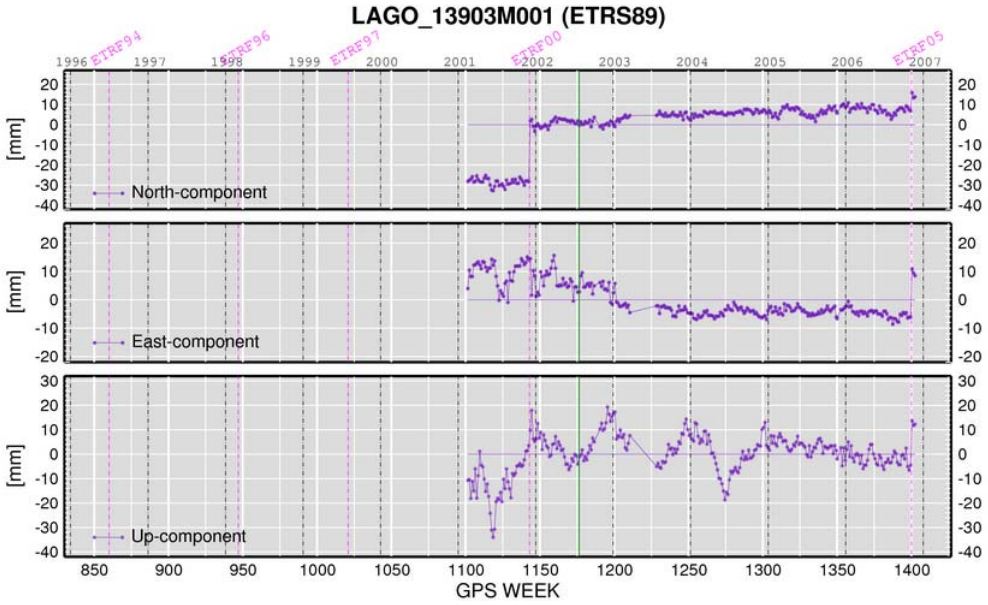




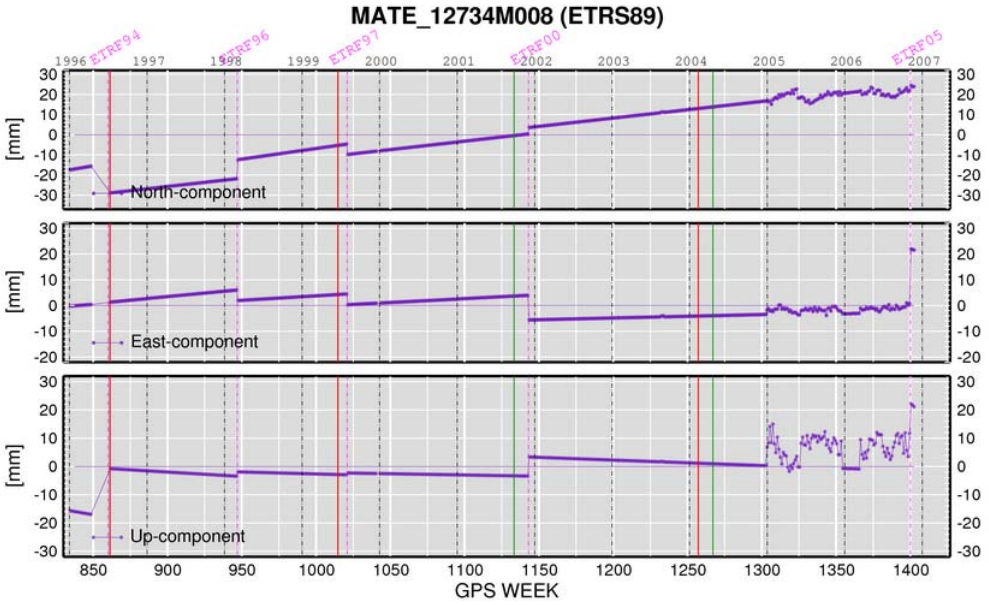
EPN CB Fri Mar 2 12:09:45 2007



EPN CB Fri Mar 2 12:09:08 2007



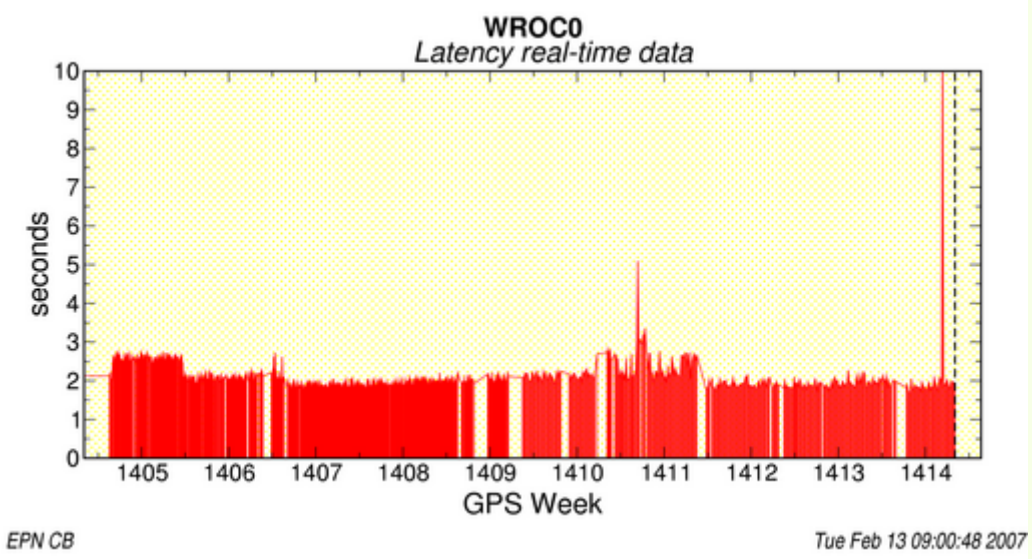
EPN CB Fri Mar 2 12:08:28 2007



EPN CB Fri Mar 2 12:09:00 2007

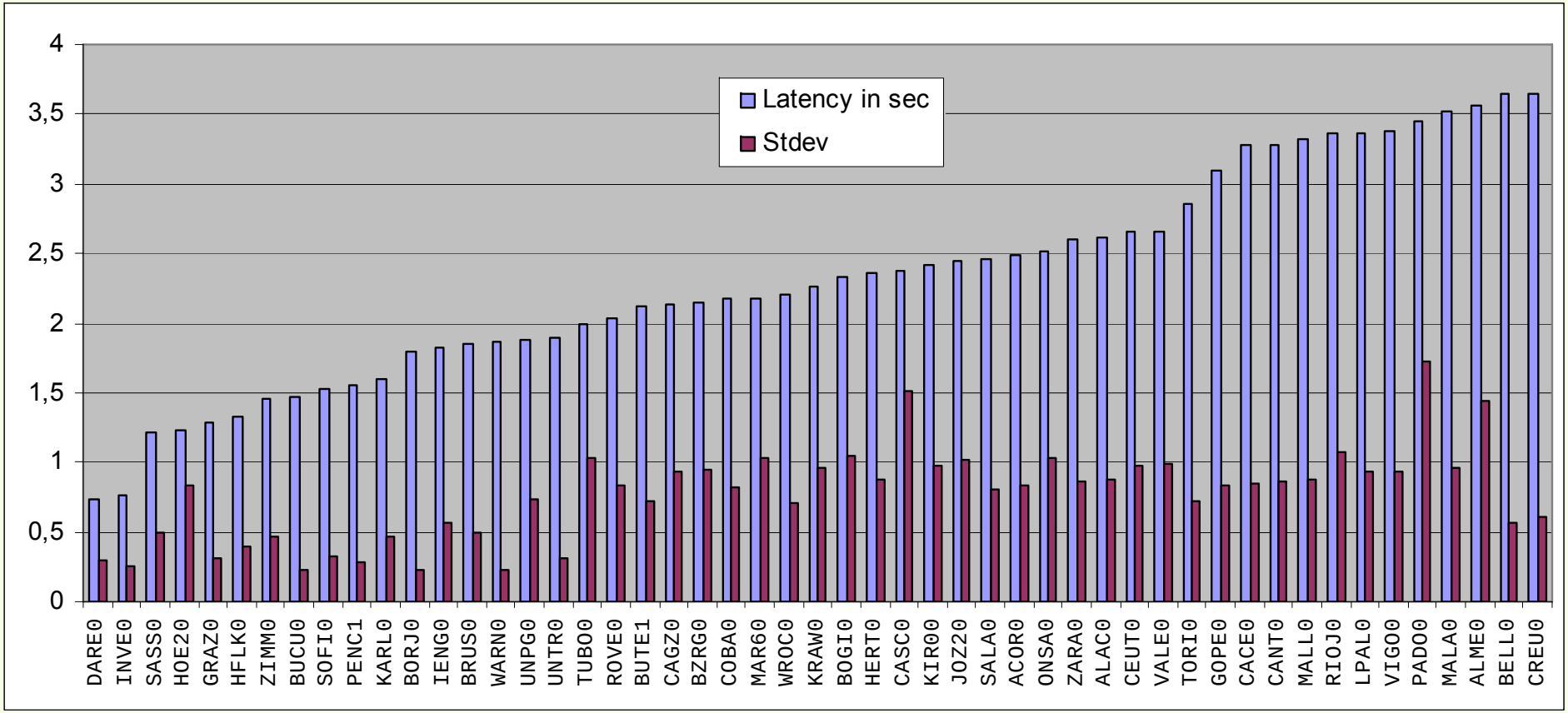
NEW at EPN CB

1) continuous monitoring of latency of real-time data on-line in graphical form in each station web-page



2) New web page with explanations about equipment accepted within EPN and details about antenna/radome calibrations

3) RINEX skeleton files have been generated (on request of G. Weber)


Latency in sec
Stdev
4
3,5
3
2,5
2
1,5
1
0,5
0
DARE0
INVE0
SASS0
HOE20
GRAZ0
HFLK0
ZIMM0
BUCU0
SOFI0
PENC1
KARL0
BORJ0
IENG0
BRUS0
WARN0
UNPG0
UNTR0
TUBO0
ROVE0
BUTE1
CAGZ0
BZRG0
COBA0
MAR60
WROC0
KRAW0
BOGI0
HERT0
CASC0
KIR00
JOZ20
SALA0
ACOR0
ONSA0
ZARA0
ALAC0
CEUT0
VALE0
TORI0
GOPE0
CACE0
CANT0
MALL0
RIOJ0
LPAL0
VIGO0
PADO0
MALA0
ALME0
BELL0
CREU0

TO DO

- Waiting for official set of EPN coordinates to request from station managers correct site coordinates in real-time data streams (ETRF2005)
- Add ITRF20005/ETRF2005 to coordinates web-page (in progress)
- +….