

ASI Local Analysis Center Report

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- ASI/CSG new products and upgrades from the last LACs meeting in Padua,
- Overview on ASI/CGS activities related to:
 - terrestrial reference frame maintenance,
 - geophysical evolution of the Mediterranean area.

Using IGS FINAL products:

ASI weekly products: **ASIweek7.SNX**
 ASIweek7.SUM

generally delivered within 1 week from IGS products publication

ASI daily products: **ASIweekd.SNX**
 ASIweekd.TRO

generally delivered within 1 week from IGS products publication

Using IGS RAPID products:

ASI daily products: **ASIweekd.SNX**

generally delivered within 6 hours from IGS products publication

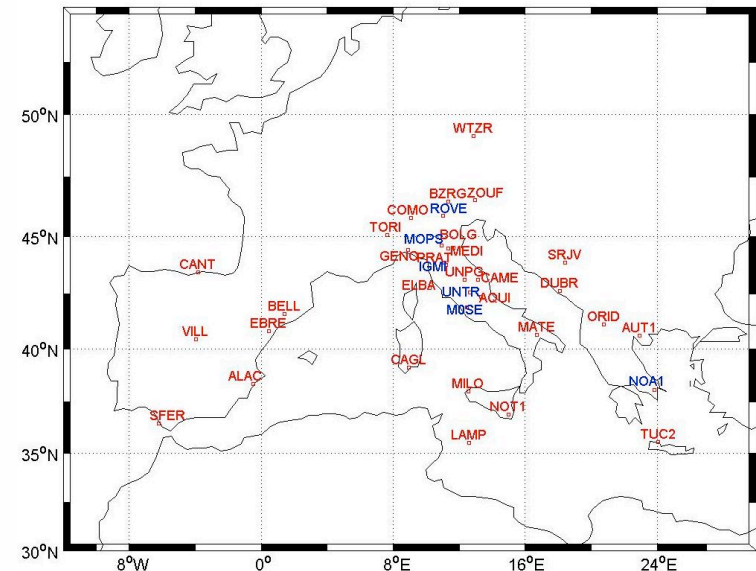
Using IGS ULTRA RAPID products:

ASI hourly products: **ASIweekd_hh.SNX**

generally delivered within 1 hour from data publication

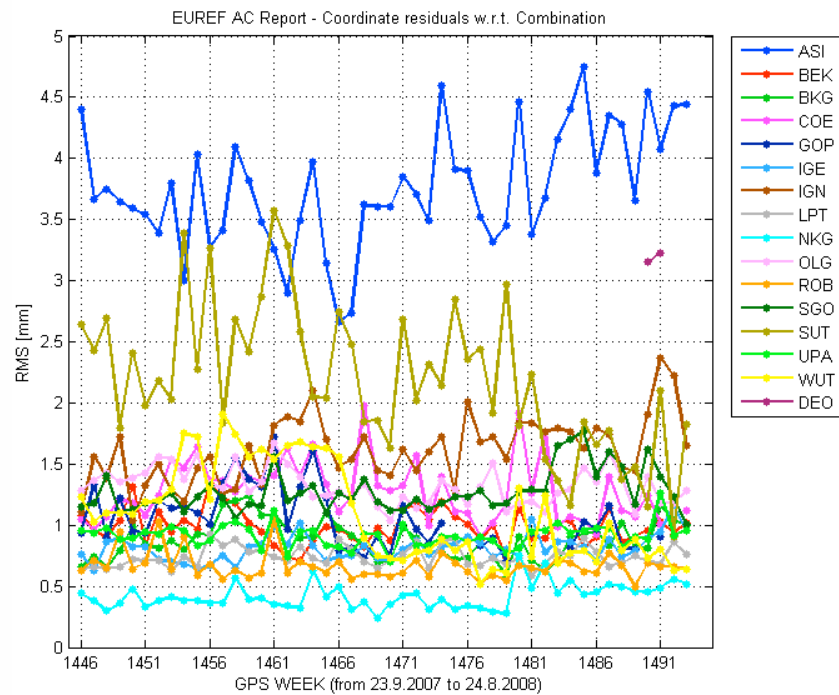
- September 1996 ASI Final solutions were combined into EUREF Final weekly solution.
- March 2007 ASI Rapid solutions were combined into EUREF Rapid daily solution.
- September 2007 ASI hourly solutions were combined into EUREF hourly solution.

ASI EUREF sub network in blue stations added during the last 2 years.



	Final	Rapid	NRT
S/W	MicroCosm 2005.0	MicroCosm 2005.0	GIPSY-OASIS II 4.04
Analysis Strategy	network	network	network
Set-up	EUREF recommendations applied	EUREF recommendations applied	EUREF recommendations applied
File RNX	daily	daily	hourly
IGS Products	final	rapid	ultra-rapid
Update	weekly	daily	hourly

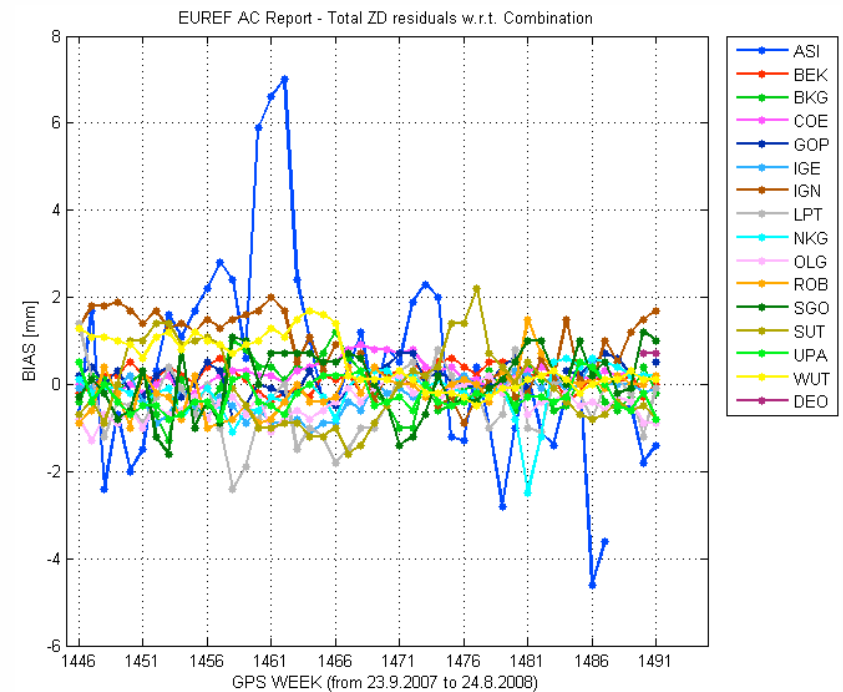
ASI FINAL products for EUREF – SSC & ZTD



ASI/CGS, Matera, Italy

Weekly RMS of each LACs' SSC solution w.r.t the combined one, as reported into the weekly combination report.

Weekly BIAS of each LACs' tropospheric solution w.r.t the combined one, as reported into the weekly combination report

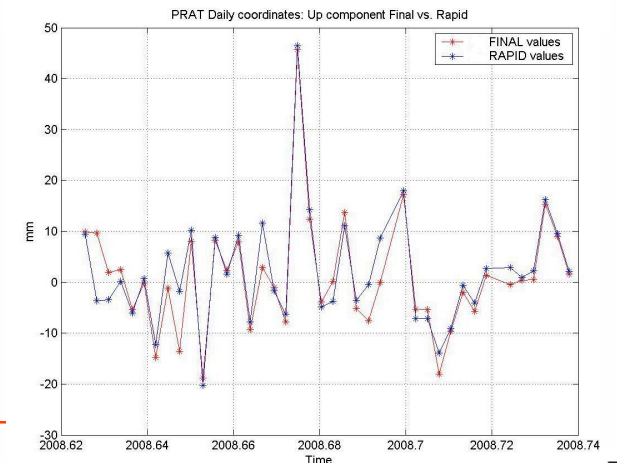
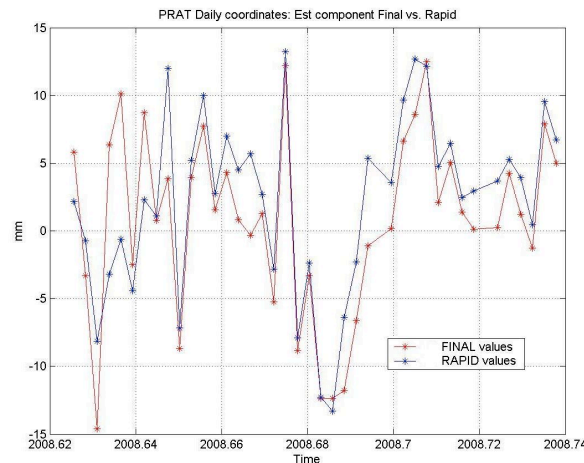
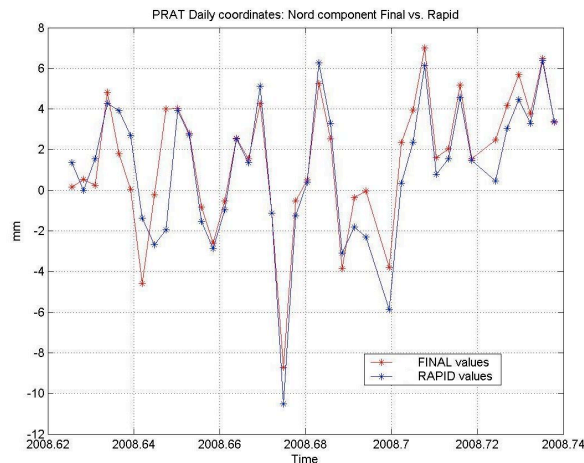
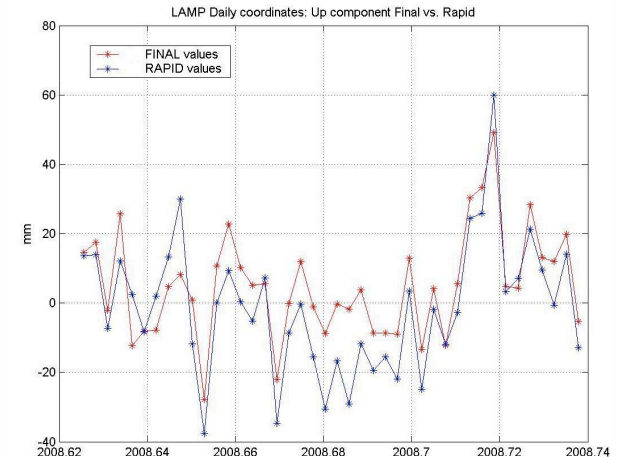
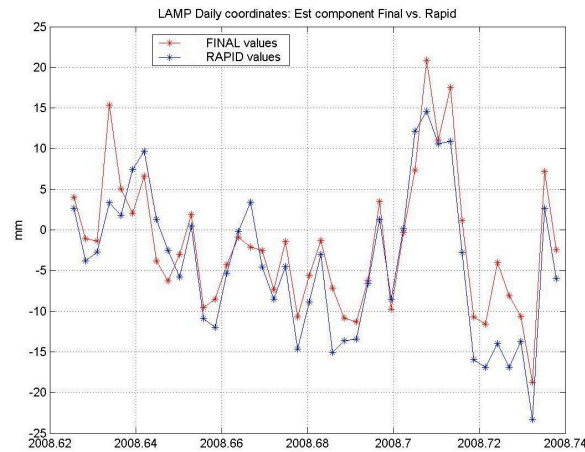
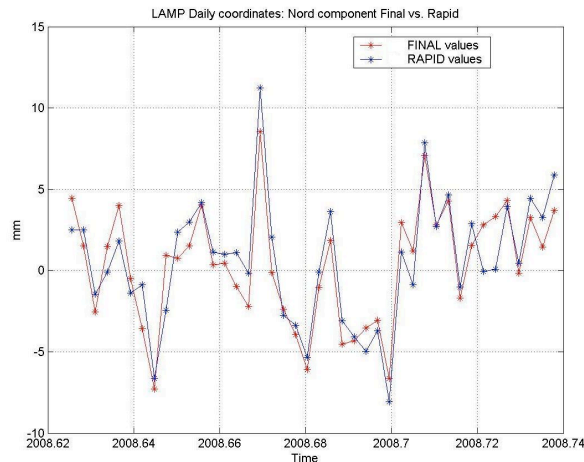


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ASI RAPID products for EUREF – SSC

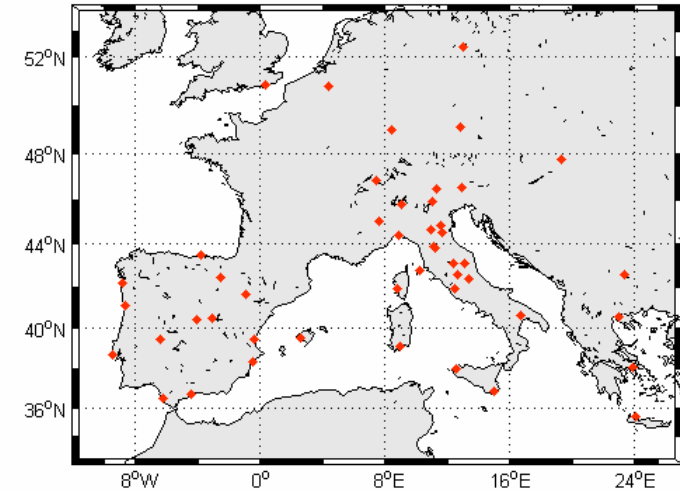


From March 2007 in the framework of the EPN Rapid Analysis project, a daily rapid coordinates solution, based on data acquired till the previous midnight, is regularly produced and delivered to BKG within the following 24 hours. Currently 8 LACs are contributing to this product. Final and Rapid SSC agree at mm level.

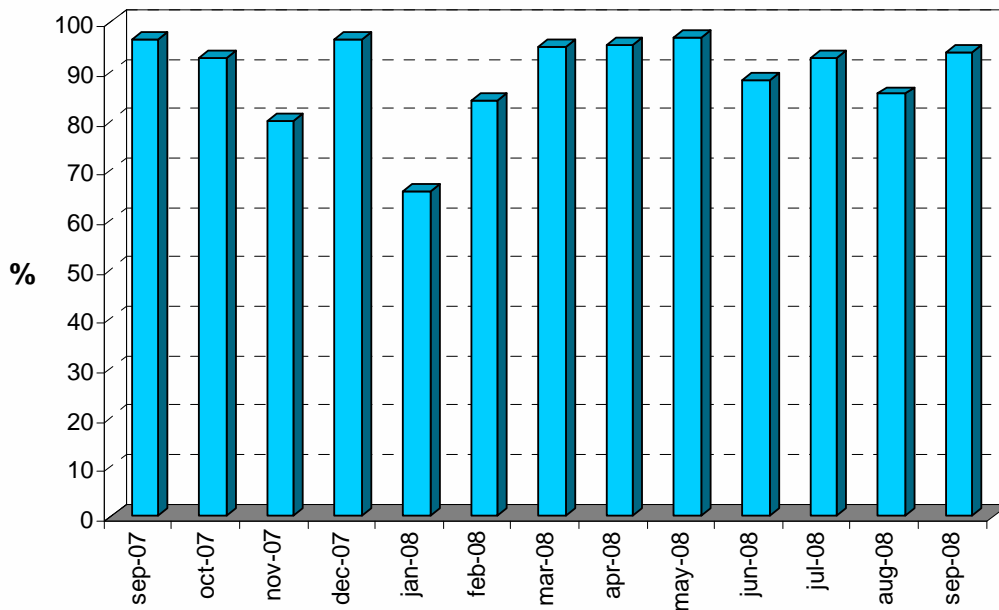


ASI delivers, together with BKG and LPT, site coordinates of ~40 sites to **EUREF** on hourly basis with the aim to establish a near-real time processing for a quick monitoring of the EPN stations. Site performance is monitored with a delay of less than 2 hours.

ASI NRT EUREF sub network



hourly sinex files delivered on monthly basis



Details in *'ASI Near-Real Time products and related processing experiences'*, session 4.

ASI activities beyond EUREF (1/2)

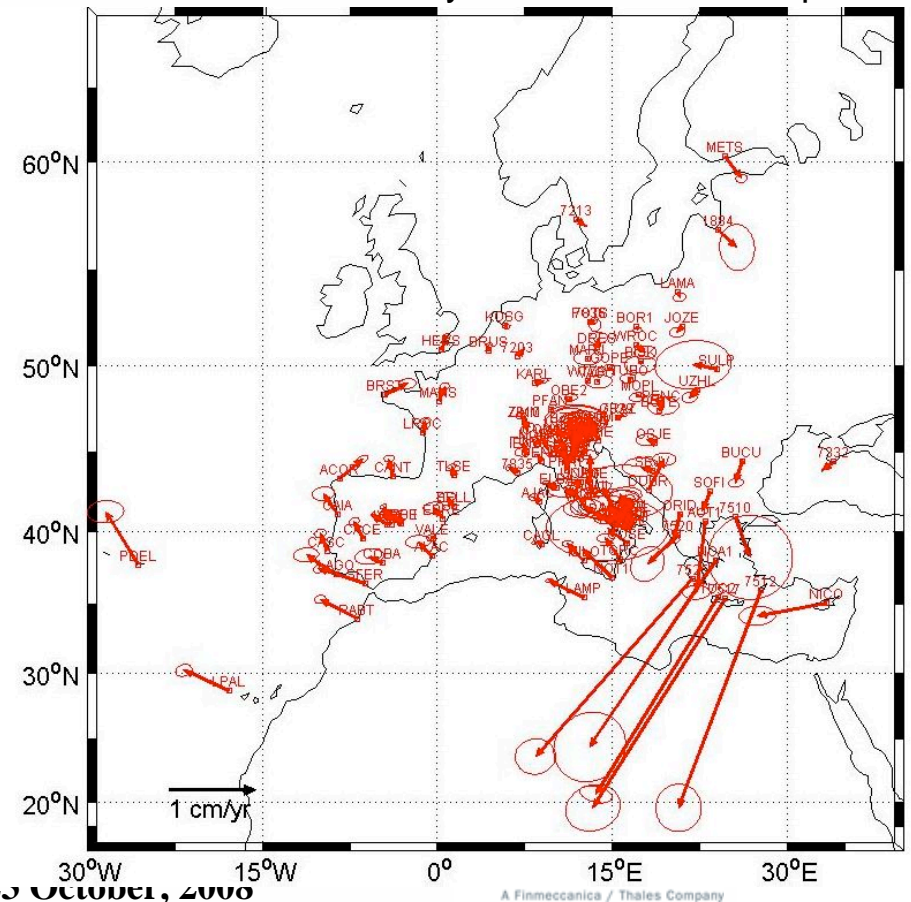


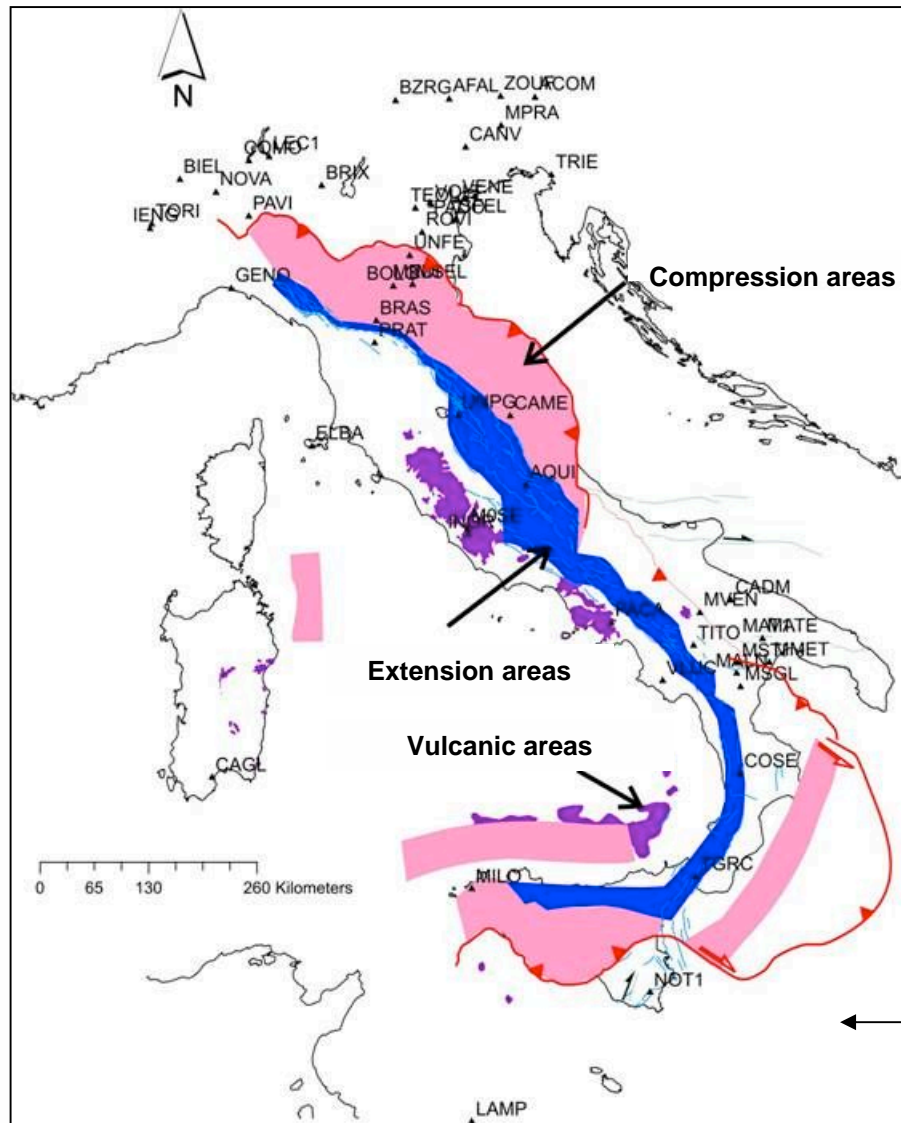
Continuous GPS data processing performed ASI/CGS since the last decade let us to monitor a large amount of permanent Italian GPS sites and obtain a valuable velocity field. The combination of these two different GPS solutions (Network and PPP) derived with two different SW (MicroCosm and GIPSY) has been performed to derive a unique velocity field for the area.

Two global, long-term geodetic solutions have been used in the combining process: SLR ASI07 and VLBI CGS2007, both performed at Matera ASI/CGS and used to frame the Mediterranean solution in the current ITRF05.

Details in *“Velocity field in the Mediterranean area from 12-years of ASI/CGS GPS solutions”*
C. Ferraro, R. Pacione, C. Sciarretta, F. Vespe, WEGENER 2008.

Residual 2D velocity field w.r.t. Eurasian plate.





This combined velocity field is the input for strain tensor computation on sismogenetic areas, in order to control the accumulating stress in Italy.

The activity is very close to the objectives and plans of the IAG WG **“Regional Dense Velocity Fields”**.

Italy: GPS network and geological structure (courtesy of F. Visini, Università Chieti)

- We summarize the main activities performed at Matera ASI/CGS related to EUREF.
- ASI provide Rapid and Near Real Time SSC, promptly joining to the first call of “EPN Rapid Analysis”, raised in September 2006.
- First feed-back about quality of these new products is encouraging.
- An overview on ASI/CGS activities related to the combination of different regional GPS solutions together with global SLR and VLBI ones for the terrestrial reference frame maintenance is given. The obtained velocity field is the input for studying the geophysical evolution of the Mediterranean area.
Such activities could be interesting for the IAG WG “**Regional Dense Velocity Fields**”, in which ASI/CGS wish to take part providing both SINEX files and its expertise in combining regional/global SINEX solutions.