



EPN-related Activities at ASI/CGS

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e-geos
AN ASI/TELESPAZIO COMPANY

asi
agenzia spaziale
italiana

ASI/CGS solutions delivered to EUREF

Using IGS FINAL products (September 1996)

ASI weekly products: **ASIweek7.SNX**

ASIweek7.SUM

latency 1 week from IGS product publication

ASI daily products: **ASIweekd.SNX**

ASIweekd.TRO

latency 1 week from IGS product publication

Using IGS RAPID products (March 2007)

ASI daily products: **ASIweekd.SNX**

latency 6 hours from IGS product publication

Using IGS ULTRA RAPID products (September 2007)

ASI hourly products: **ASIweekd_hh.SNX**

latency 1 hour from IGS product publication

EPN Sub-network

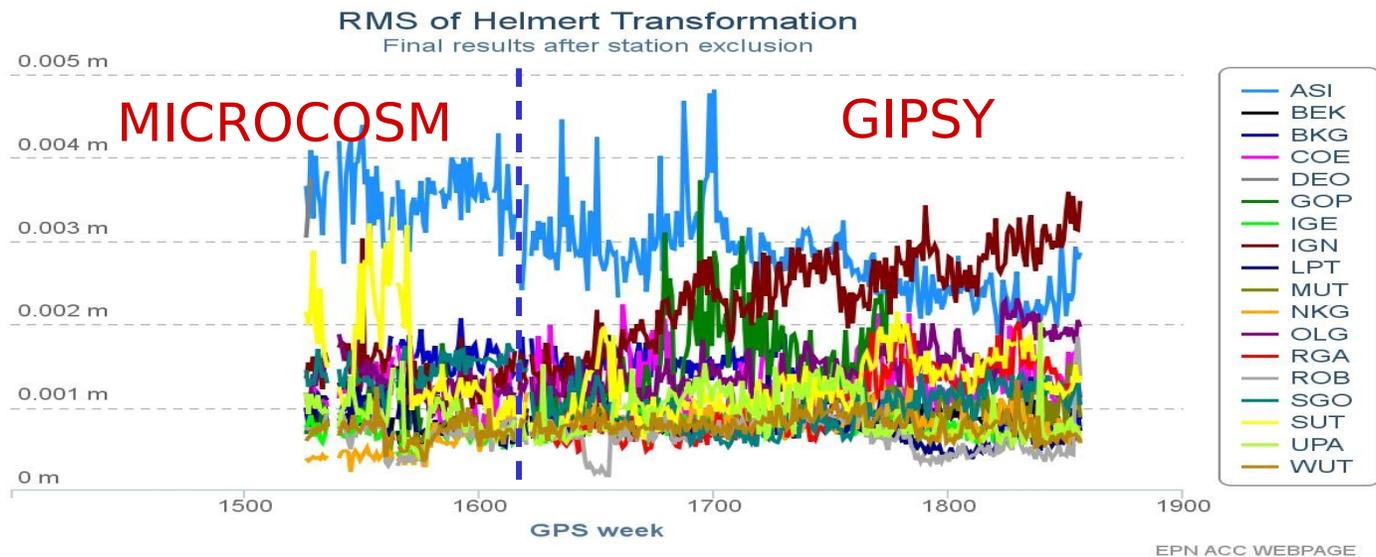


- 48 stations
- 9 stations added in the last 3 years: CAKO, DUB2, PORE, POZE, ZADA (Croatia), DYNG (Greece), ILDX (Corsica, France), MATG, UCAG (Italy)
- 3 proposed stations: GRAC (France), IBIZ, PASA (Spain)
- 1 inactive station: CAGL (Italy)

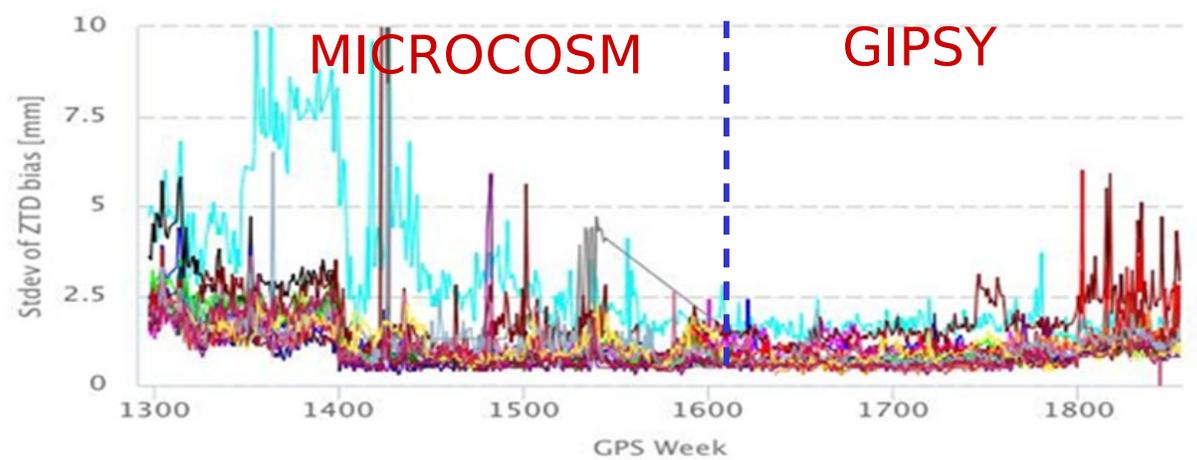
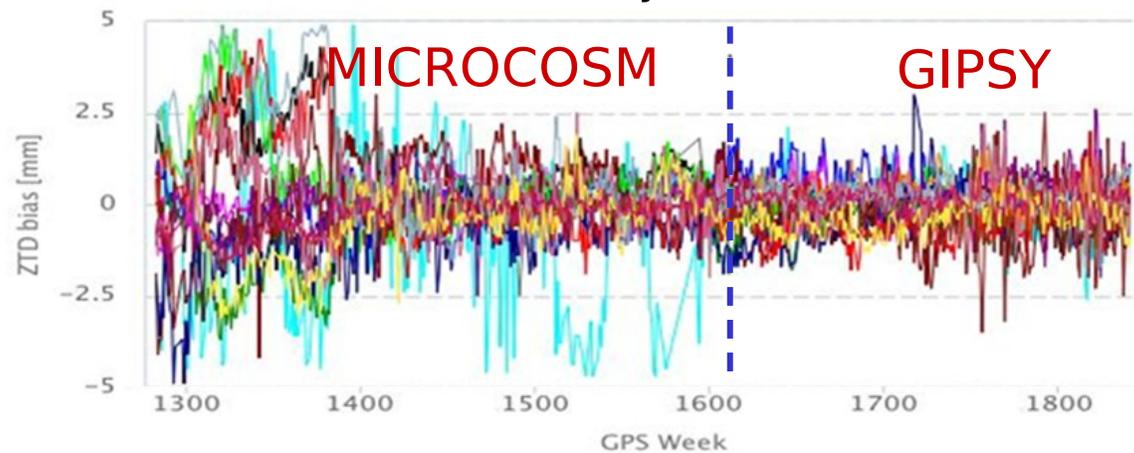
	Final	Rapid	NRT
S/W	GIPSY 6.2	GIPSY 6.2	GIPSY 6.2
Analysis Strategy	network	network	network
Set-up	EPN AC guidelines	EPN AC guidelines	EPN AC guidelines
File RNX	daily	daily	hourly
IGS Products	final	rapid	ultra-rapid
Latency	2-week	1-day	1-hour

ASI/CGS Final Routine Products

Weekly RMS of each LACs' solution w.r.t. the combined one



Weekly BIAS/STD of each LACs' solution w.r.t. the combined one



Analysis Centres [\(Click to hide\)](#)

ASI — BEK — BKG — COE — DEO — GOP — IGE — IGN — LPT
MUT — NKG — OLG — RGA — ROB — SGO — SUT — UPA — WUT

Analysis Centres [\(Click to hide\)](#)

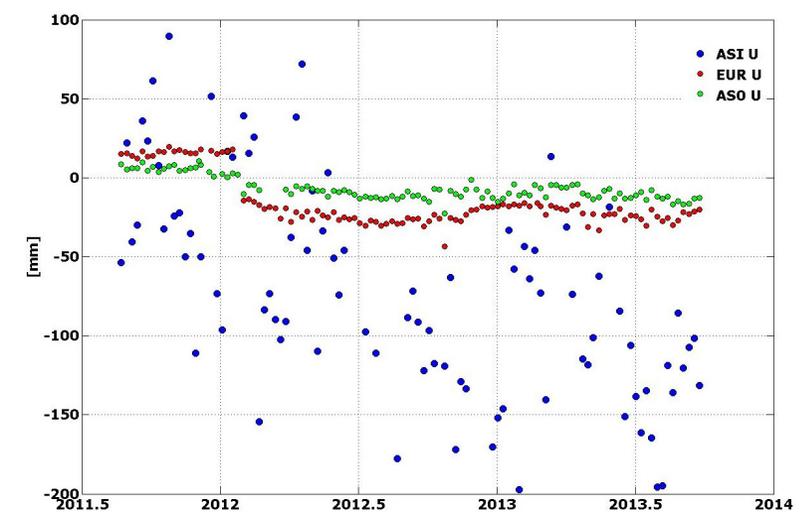
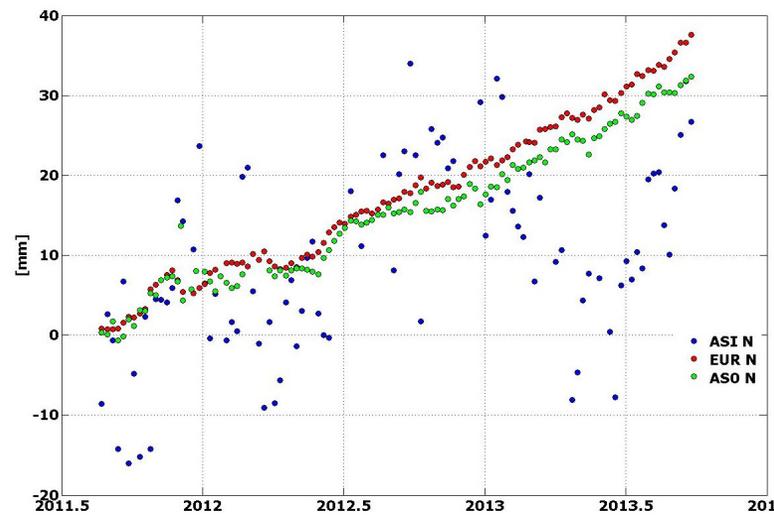
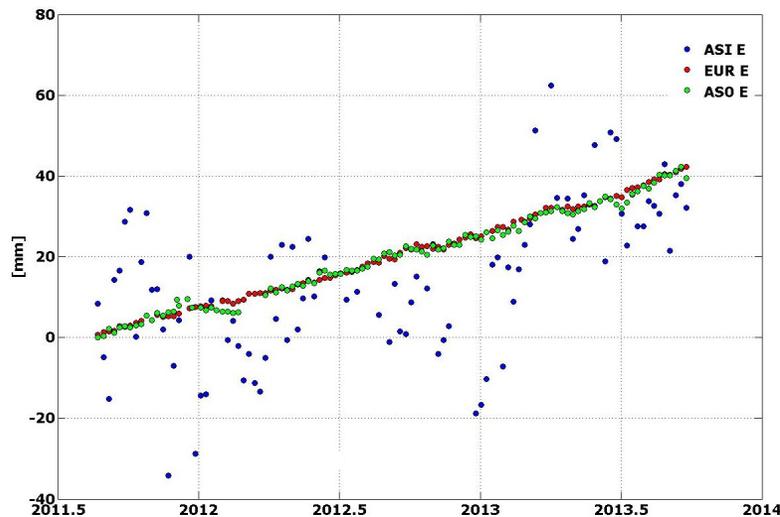
ASI — BEK — BKG — COE — DEO — GOP — IGE — IGN — LPT
MUT — NKG — OLG — RGA — ROB — SGO — SUT — UPA — WUT

Spanish Stations



- 2012-01-26 Antenna change @ BELL from TRM29659.00 NONE (Marker->ARP Up Ecc. (m)= 0.0540) to TRM55971.00 NONE (Marker->ARP Up Ecc. (m)= 0.0570)
- Since then **BELL, CANT, CEBR, VILL** not submitted or excluded from the EPN weekly combination.

9 EPN Spanish stations in ASI sub-network

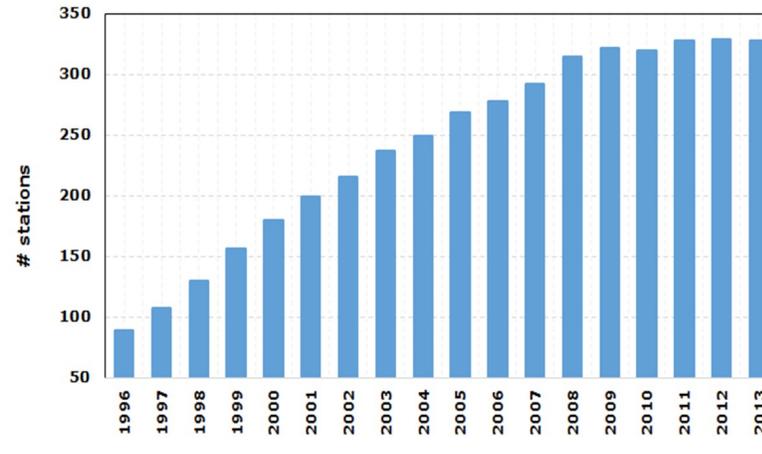


BELL residual time series w.r.t. fitted daily solutions for the period 2011.5-2013.5

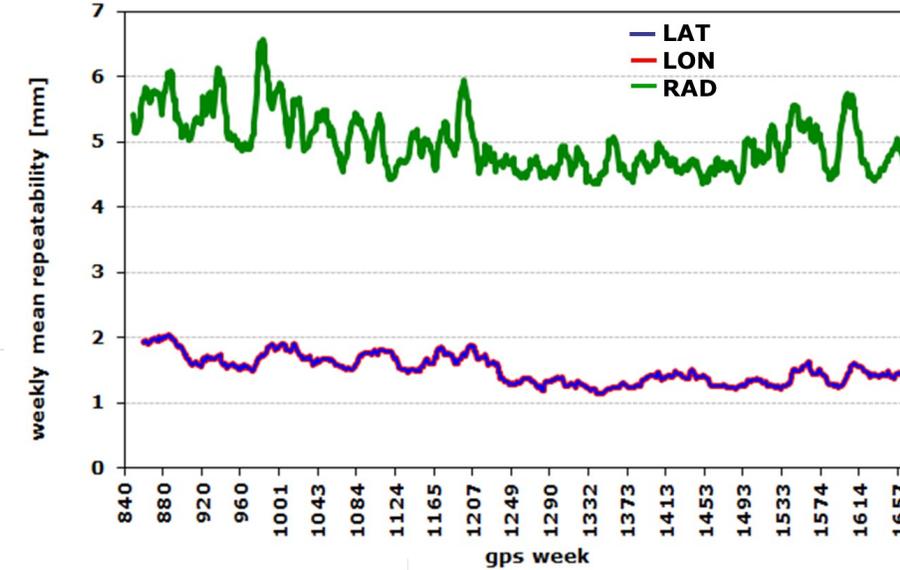
EPN-Repro2: AS0 homogeneously reprocessed solution

Software	GIPSY-OA
Mode	PPP
Network Coverage	All EPN + IGS
Period	1996-2013
GNSS data	GPS
Orbits, clocks and EOPs	JPL Reference
Sat. & Ric. Antenna Model	IGSO
Mapping Function	VMF
Estimated trop. param.	ZTD+Grad
Ocean Tide Loading	FES2008
Elev. Angle Cutoff	3degrees
RINEX Type	30h daily (3h doy-1+24h doy-2)
Ambiguity Resolution	Resolving
Second order ionospheric correction	Considered

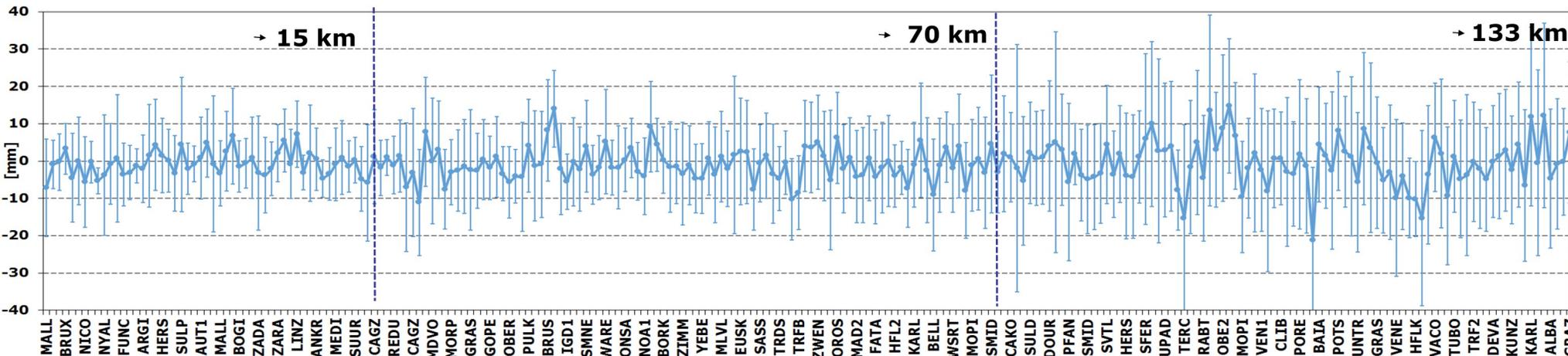
Analyzed Stations



Weekly Repeatability.



GPS versus Radiosonde overall bias and std.



Tropospheric solutions delivered to E-GVAP

4 solutions delivered to E-GVAP

ASI_

Available from June 2001 **Operational**
Input: hourly RNX files/IGU 4 scores per hour every 15min
Update cycle: hourly COSTV2.0/ZTD + gradients
Purpose: *NWP data assimilation*

ASIC

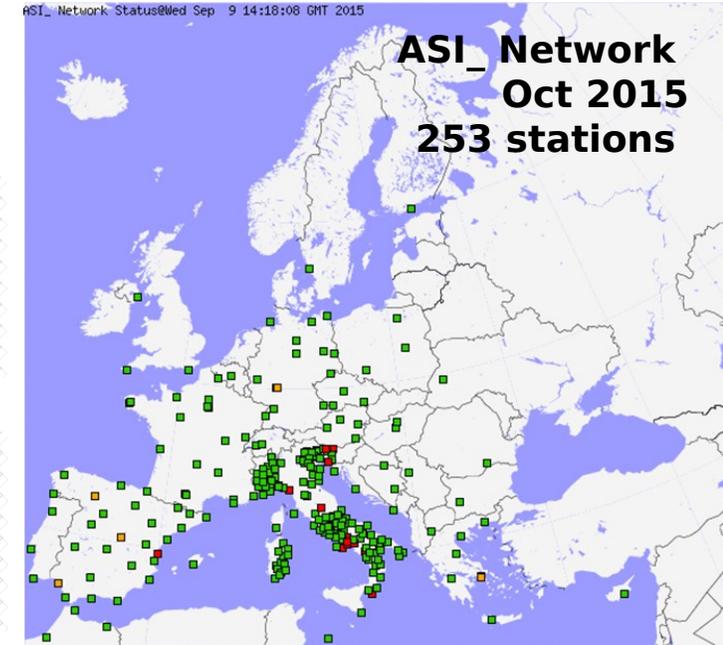
Available from November 2008 **Operational**
Input: hourly operational cost solutions 4 scores per hour every 15min
Update cycle: hourly COSTV2.0/ZTD
Purpose: *NWP data assimilation + QC*

ASIS

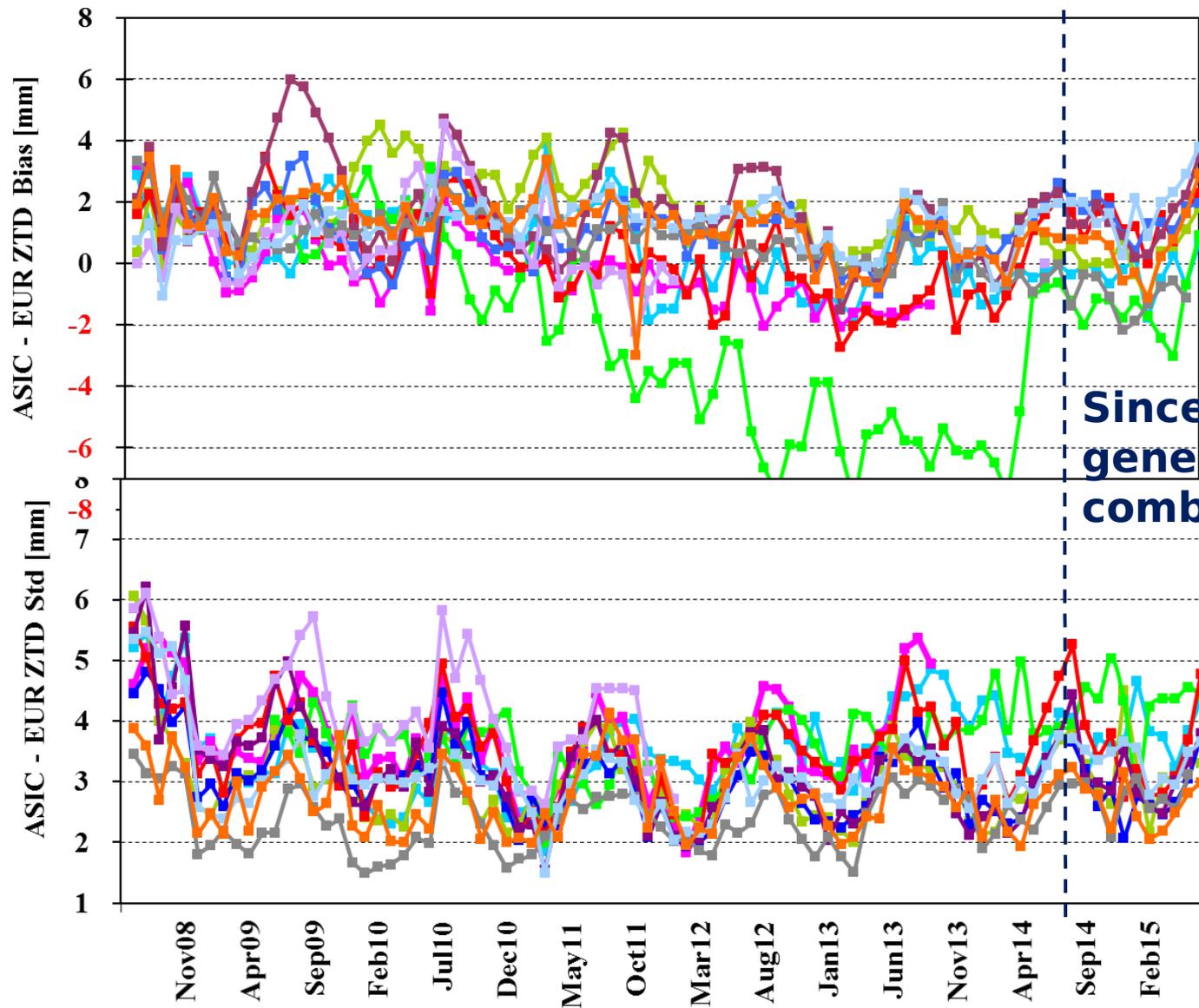
Available from January 2014 **Test**
Input: RT GNSS observation/IGS RT 4 scores per hour every 15min
Update cycle: 15min COSTV2.2/ZTD + gradients
Purpose: *test RT obs+prod in sub-hourly PPP for nowcasting*

ASIR

Available from March 2014 **Test**
Input: Hourly RNX files/IGS RT 4 scores per hour every 15min
Update cycle: hourly COSTV2.2/ZTD + gradients
Purpose: *test IGS RT prod in hourly PPP for NWP*



E-GVAP Combined 'ASIC' versus EUREF Combined 'EUR'



Since July 2014 same sw used for the generation of 'ASIC' and 'EUR' combined solutions



Hourly PPP with IGS Real Time Products

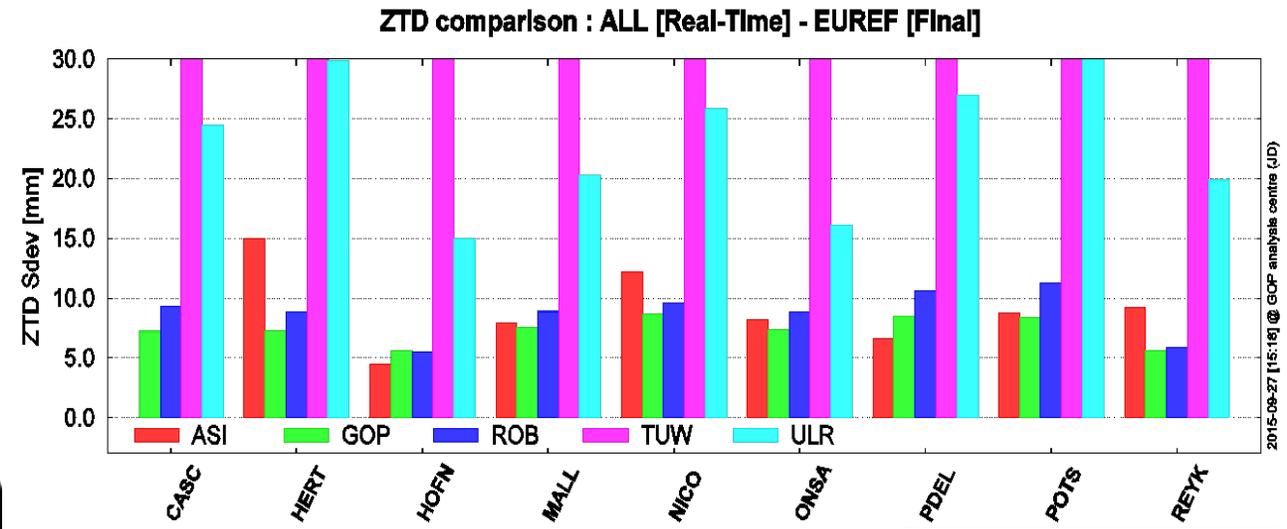
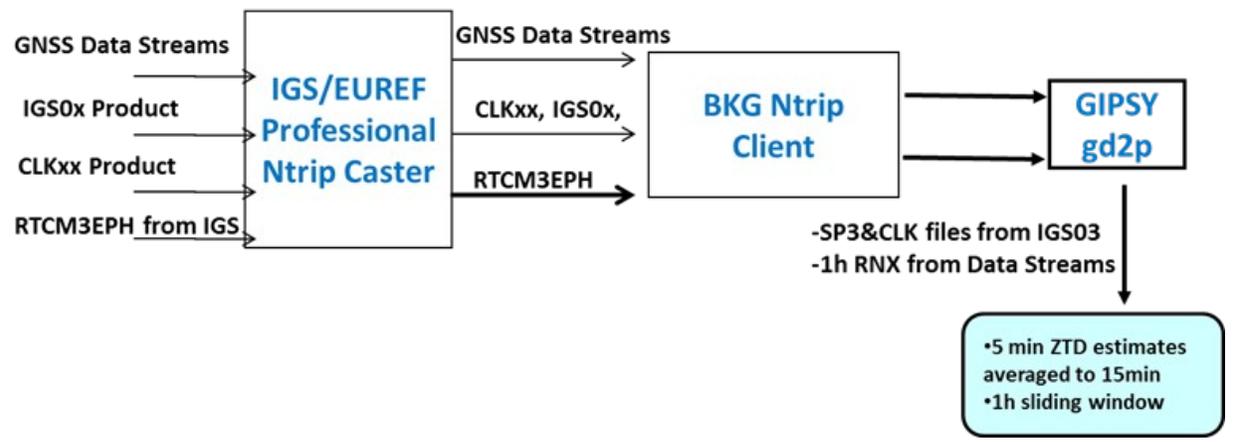
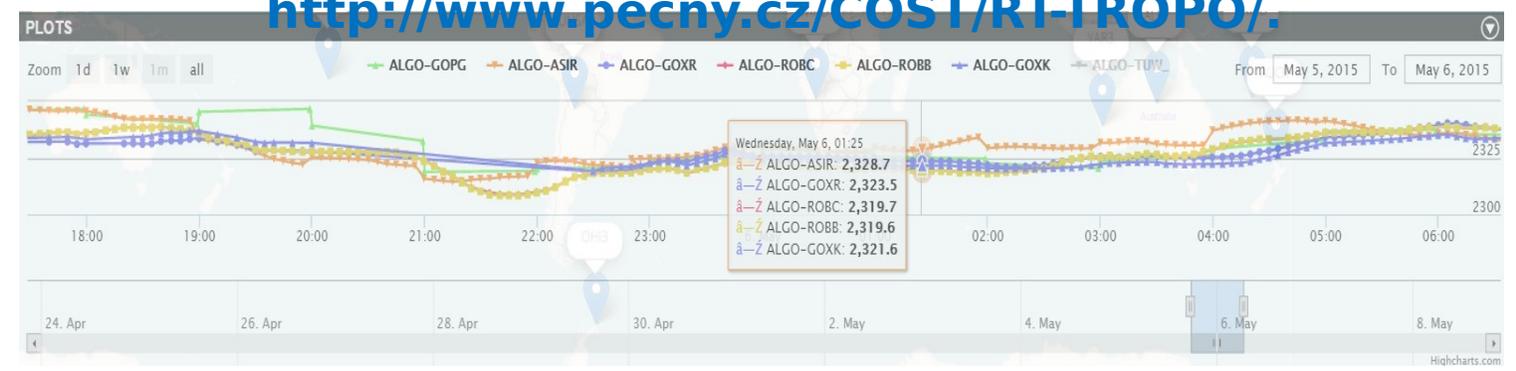
- Set up to evaluate if RT estimates can be valuable in meteorology.
- Contribution to **GNSS4SWEC WG1 Real Time PPP Campaign** starting from May 2015



Real Time PPP Campaign Network

Monitoring and Evaluation

<http://www.pecny.cz/COST/RT-TROPO/>



Courtesy of J. Dousa



<http://geodaf.mt.asi.it/>
ftp://_geodaf.mt.asi.it/

GNSS data are sent to BKG, IGN, OLG and CDDIS data centers

SENT FILES				
From 01/09/15 to 30/09/15				
Type	Total		Daily Average	
	MBytes	Files	MBytes	Files
igsput@141.74.33.23	127.0	582	4.2	19
ignrt@141.74.33.23	183.9	14384	6.1	479
eurefput@141.74.33.23	578.7	2257	19.3	75
eurefnt@141.74.33.23	1696.3	46864	56.5	1562
asi@igsdepot.ensg.eu	459.4	17488	15.3	583
asi@igsdepot.ensg.eu	460.1	5768	15.3	192
asigps@cddisin.gsfc.nasa.gov	459.9	5764	15.3	192
anonymous@olggps.oeaw.ac.at	235.6	975	7.9	33
anonymous@olggps.oeaw.ac.at	337.3	22769	11.2	759
eurefput@141.74.33.23	93.5	210	3.1	7
mgexput@141.74.33.23	37.4	90	1.2	3
asigps@cddisin.gsfc.nasa.gov	37.4	90	1.2	3
Total	4706.5	117241	156.9	3908



ASI GNSS Network

Visitors domains/countries (Top 10) - Full list

Domains/Countries		Pages	Hits	Bandwidth	
Unknown	Unknown	ip	6,620	33,641	31.74 GB
it	Italy	it	252	8,926	1.32 GB
be	Belgium	be	121	1,873	146.73 MB
com	Commercial	com	43	684	62.28 MB
edu	USA Educational	edu	31	134	45.64 MB
fr	France	fr	1	132	20.77 MB
uk	United Kingdom	uk		4,498	9.61 MB
gr	Greece	gr		508	8.87 MB
de	Germany	de		1,832	7.50 MB
gov	USA Government	gov		992	0
Others			0	2596	1.05 GB



ftp users

Link: euref-ip.asi.it

Number of mountpoints: 137

Registration Link:

http://geodaf.mt.asi.it/gps_caster_access.php

Number of users: 85

#	Country
26	Italy
12	Germany
6	France
4	Ungheria
4	Spagna
3	The Netherlands
3	Czech Republic
2	Poland
2	Greece
2	Purtugal
2	Romania
2	UK
1	Austria
1	Bulgaria
1	Finland
1	Niger
1	Slovenia
1	Thailand
1	Egitto
1	Bielorussia
1	Irlanda
1	Croazia
7	Unknown

Applications

education
farming
forest
geodesy
gnss/gps
road
rtk
swaci
survay
test
unknown
navigation
precise
creation
ppp
evaluation
pdg
fotogrammetria
leica
mapper
DGPS
real-time
limits
soccer
experimentation
mobile survey
sea
private
experimental
trimble
gnss, autonet
current
archeology
monitorization
hobby
automotive
rtklib
research
academic
survey
6D
CORS
topography
cadaster