



# **EPN Troposphere Report**

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# Routine Combinations

- 12 combined solutions delivered gps-week 1800-1811 [14JUL06-14SEP27]
- We flag stations/ACs with bias  $\geq 10\text{mm}$

	IWV		
	Threshold	Breakthrough	Goal
Horizontal Domain	Regional (e.g. Europe, N. America)		
Horizontal Sampling	200 km	25 km	10 km
Observation Cycle	6 h	4 h	3 h
Accuracy	3 kg.m <sup>-2</sup>	1.5 kg.m <sup>-2</sup>	1 kg.m <sup>-2</sup>
Timeliness	60 days	14 days	7 days

Table 6. Observational requirements for Regional Climate

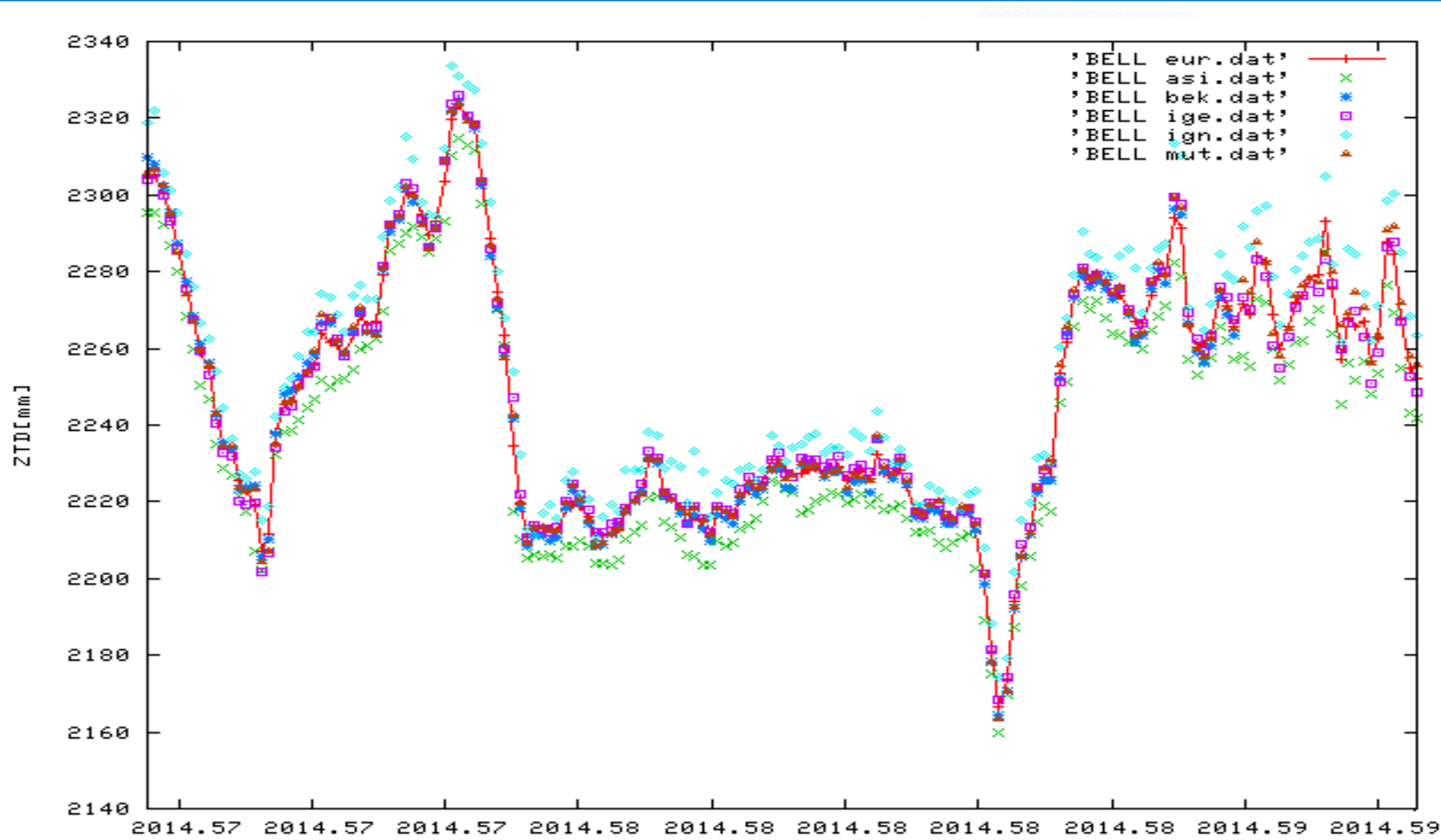
E-GVAP II Product Requirements Document

**C column** = stations detected as outliers – excluded stations (Table 1 of the AC report)

**T column** = stations with bias  $\geq 10\text{mm}$  w.r.t. the combination

GPSWEEK	ASI		IGN		OLG		MUT		SUT	
	C	T	C	T	C	T	C	T	C	T
1800	BELL		BADH BELL	AXPV MARS	-		-		-	-
1801	BELL CEBR VILL	-	-	BADH	-	GSR1 PORE SPRN TRF2 ZOUF	-	NOT1	-	-
1802	BELL CEBR	-	BADH BELL	CANT EGLT RIO1 SCOA	-	BISK CLIB CPAR CRAK MARJ SPRN WROC	-	-	-	-
1803	BELL	BELL	BELL CANT	BELL MAN2	-	AUT1	-	-	-	-
1804	BELL CEBR VILL	-	BADH BELL CANT	BADH BELL EGLT ENTZ RIO1 SCOA	-	-	-	-	-	-
1805	BELL VILL	-	BADH BELL CANT	BADH CAEN ENTZ SJDV	-	-	-	-	-	-
1806	BELL CEBR VILL	-	BADH BELL CANT	BADH ENTZ	-	MEDI MOPS PRAT	-	-	-	COBA
1807	BELL CEBR VILL	-	BADH BELL	ENTZ MAN2	-	-	-	-	-	-
1808	BELL VILL	-	BADH BELL CANT	BADH ENTZ VFCH	-	-	-	-	-	-
1809	BELL CEBR VILL	-	BADH BELL	ACOR BADH BELL EGLT	-	-	-	-	-	-
1810	BELL VILL	-	BELL CANT	BELL VFCH	-	-	-	-	-	-
1811	VILL	-	CANT	BADH CAEN ENTZ						

# BELL time series GPS WEEK 1803

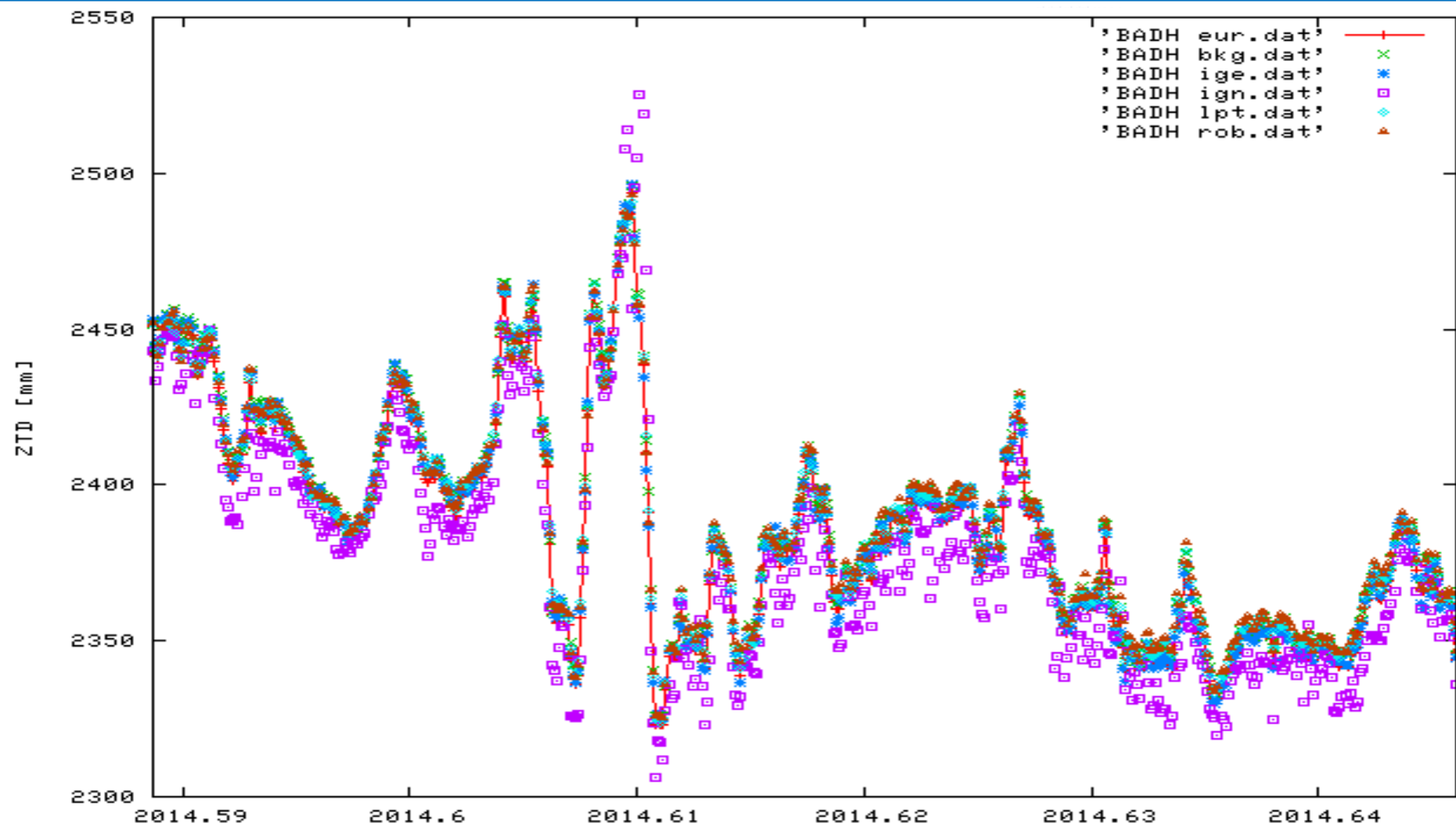


Daily Bias [mm]

Weekly Bias [mm] (tro file)

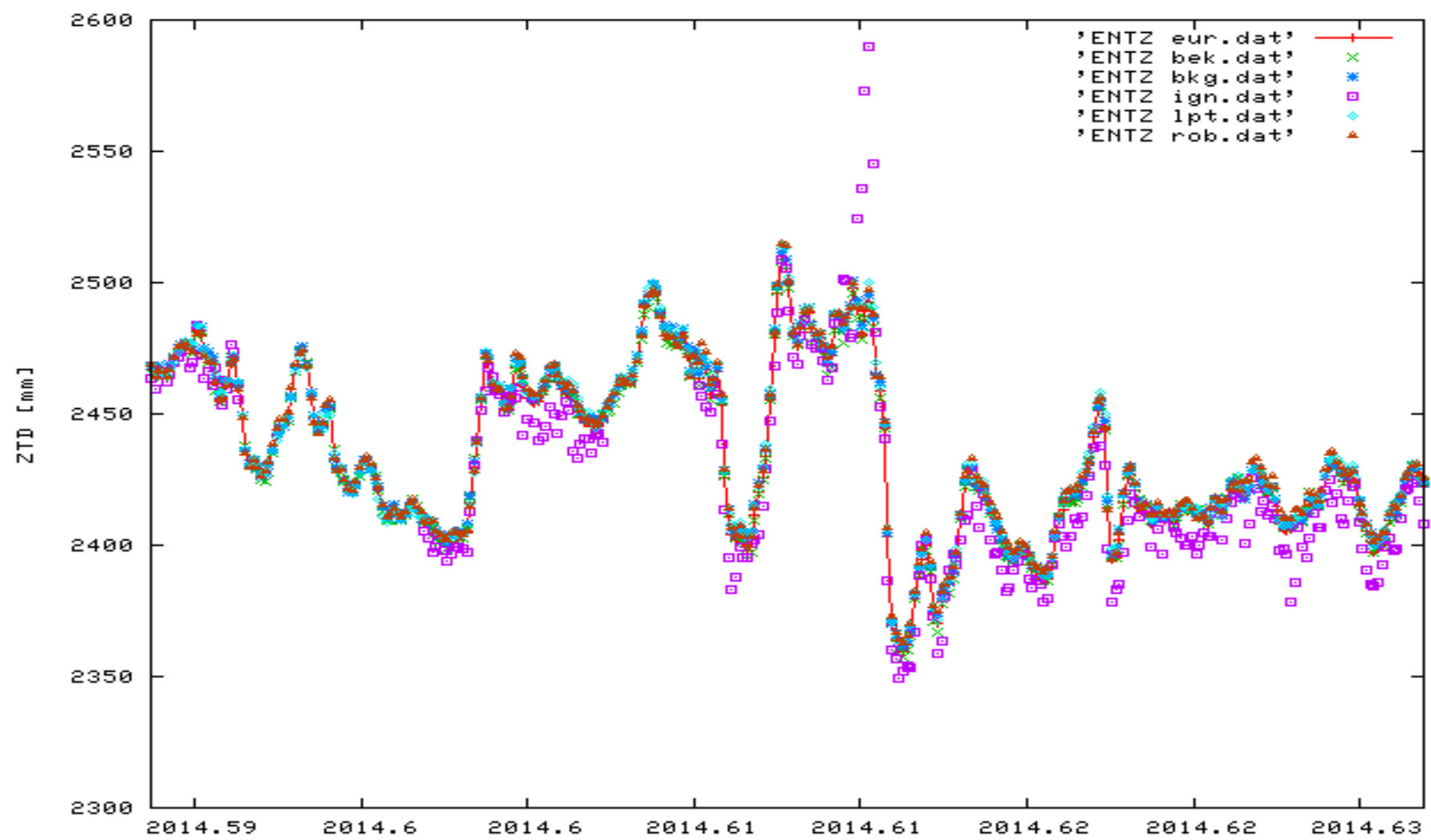
1803 BELL ASI	-7.8	-7.2	-8.3	-7.3	-7.5	-8.4	-11.0 *	-8.2
1803 BELL IGN	7.8	7.9	6.6	7.2	6.1	8.2	11.5 *	7.9

# BADH time series GPS WEEK 1804-1806



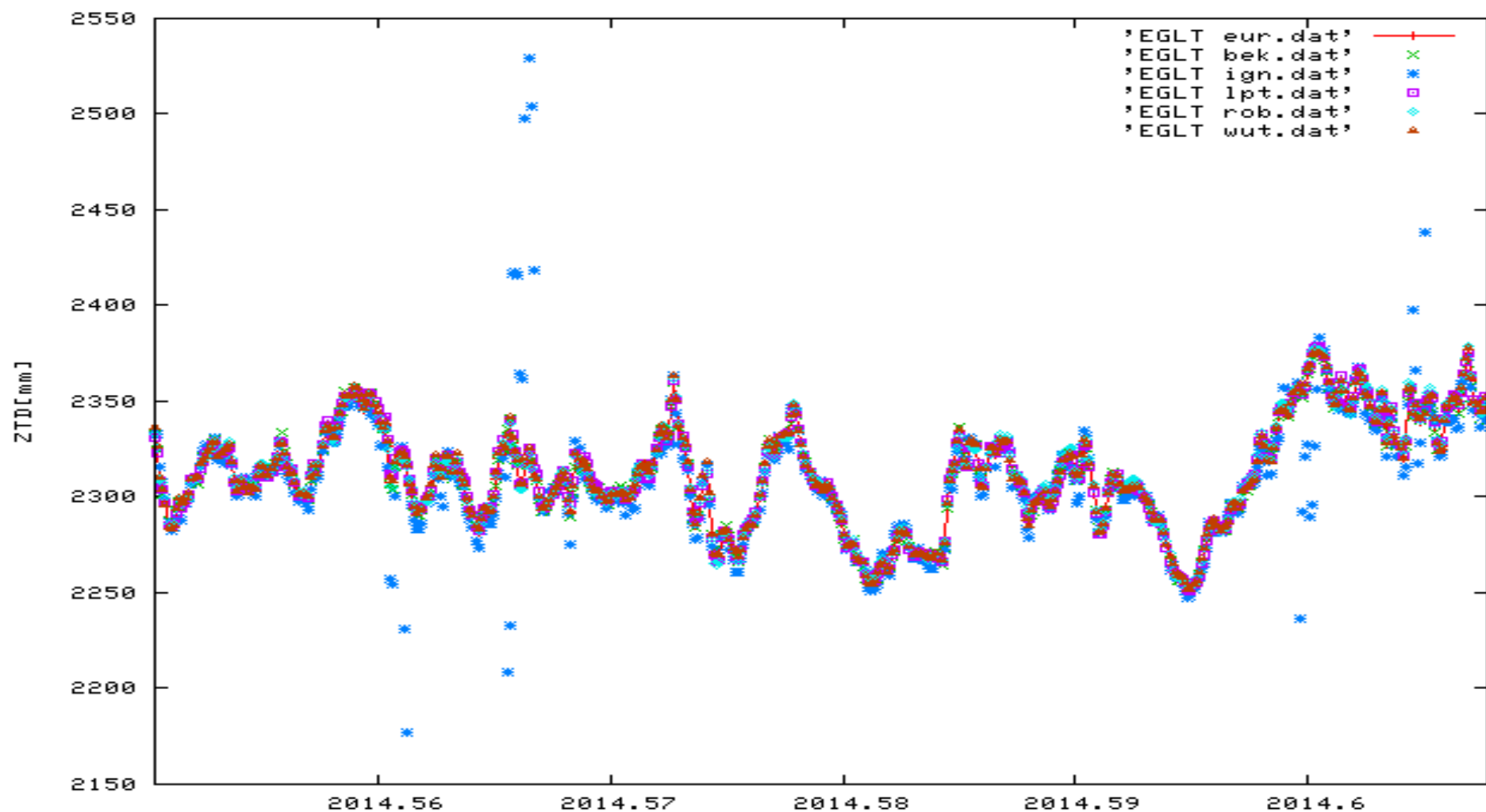
	Daily Bias [mm]							Weekly Bias [mm] (tro file)
1804 BADH IGN	-5.0	-12.7	-7.7	-5.0	-12.1	-9.6	-11.8 *	-9.1
1805 BADH IGN	8.7	-8.7	-8.2	-12.4	-10.1	-11.4	-10.7 *	-7.6
1806 BADH IGN	-9.8	-7.2	-12.2	-9.1	-6.9	-13.3	-5.7 *	-9.2

# ENTZ time series GPS WEEK 1804-1805



Daily Bias [mm]				Weekly Bias [mm] (tro file)				
1804	ENTZ	IGN	-2.2    NA    NA    -3.4    -10.3    NA    -8.7 *	-6.1				
1805	ENTZ	IGN	11.8    -6.2    -5.9    -10.0    -6.0    -9.8    -8.7 *	-5.0				

# EGLT time series GPS WEEK 1802-1804



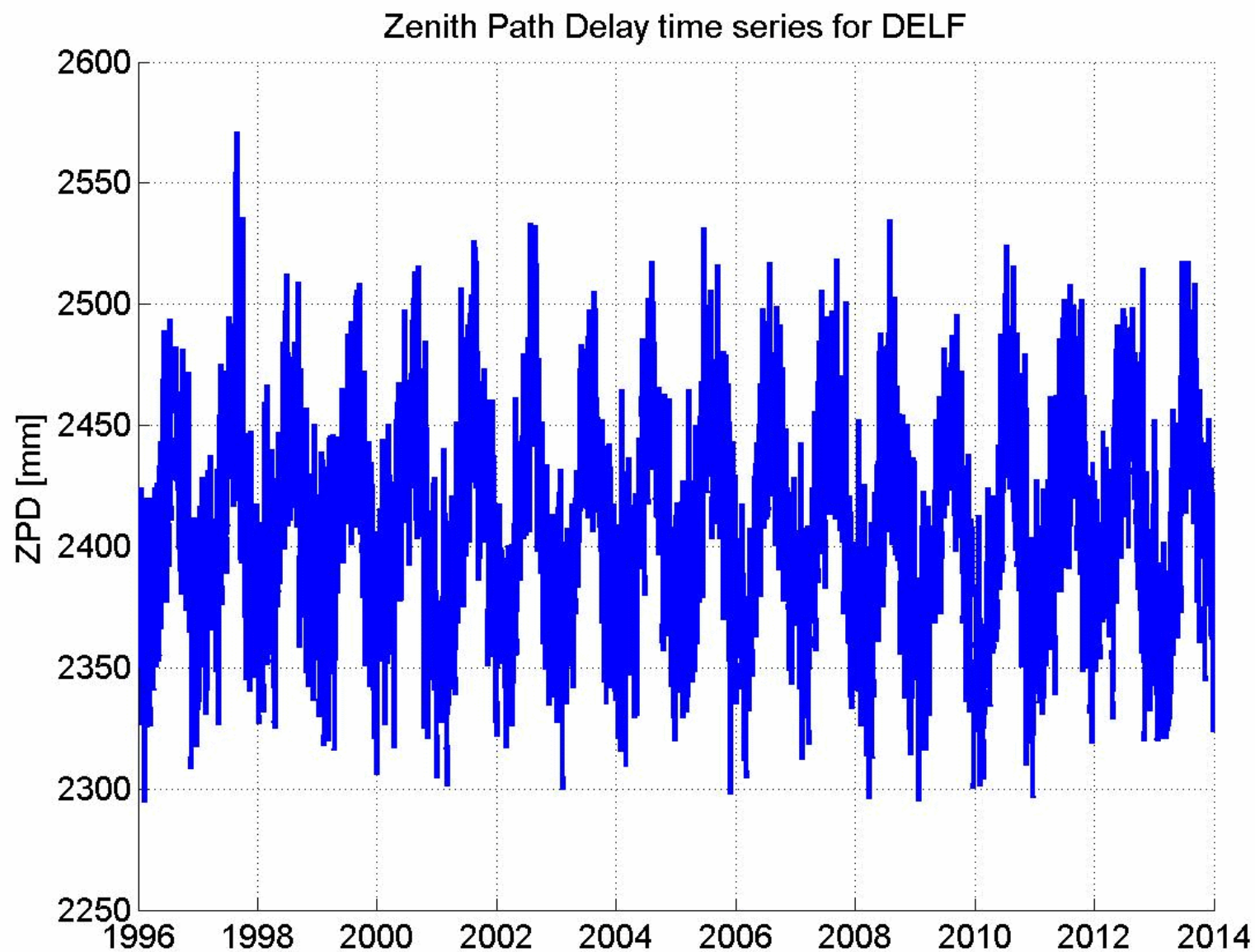
Daily Bias [mm]

Weekly Bias [mm] (tro file)

1802 EGLT IGN	0.0	-1.6	-2.7	-17.5	-4.4	32.0	-1.3 *	0.6
1803 EGLT IGN	-3.8	-3.0	-2.8	-0.5	-0.1	-1.6	-2.6	-2.1
1804 EGLT IGN	-1.2	-1.4	-1.1	-1.4	-21.1	1.3	-3.8 *	-4.1

# Updated Plots (period 1996-14AUG30)

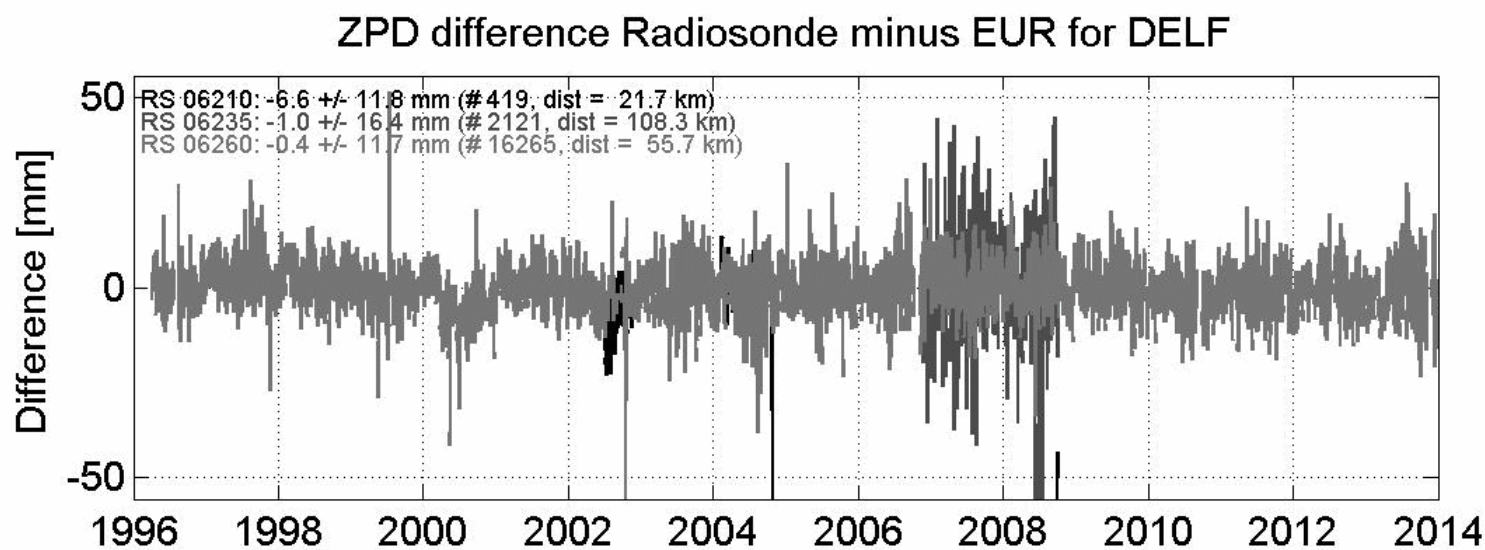
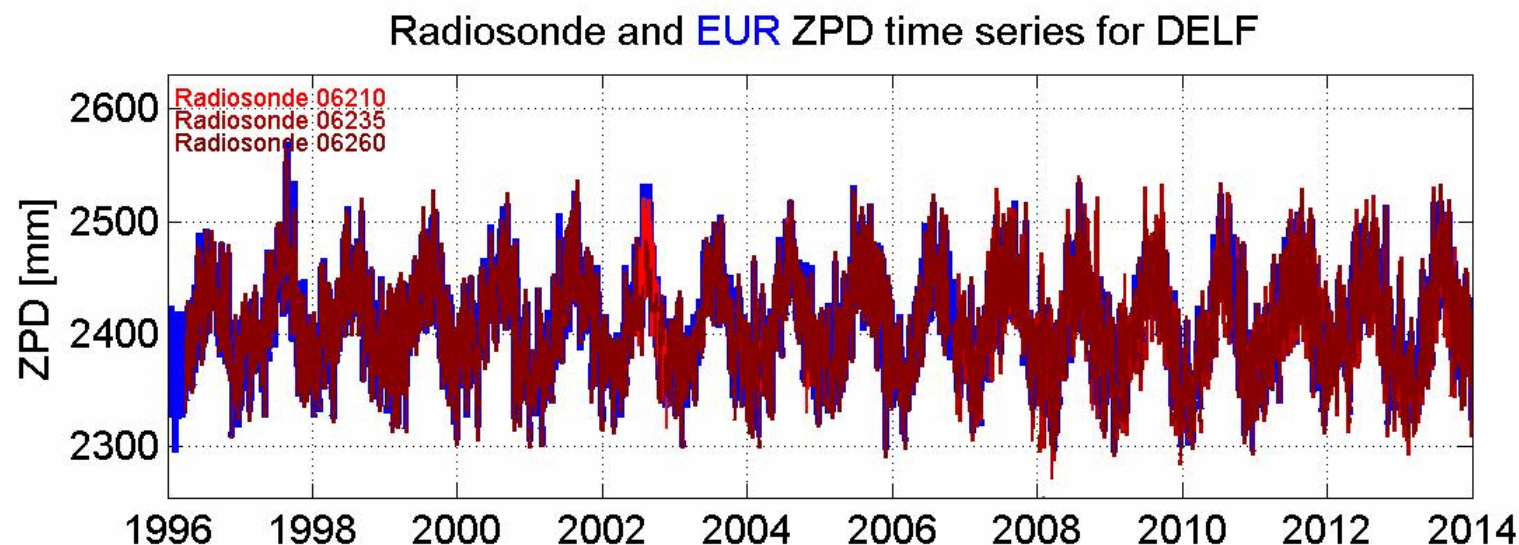
First plot at web page [http://www.epncb.oma.be/\\_networkdata/zenith\\_path\\_delay\\_timeseries.php?station=DELF\\_13502M004](http://www.epncb.oma.be/_networkdata/zenith_path_delay_timeseries.php?station=DELF_13502M004)





# Updated Plots (period 1996-14AUG30)

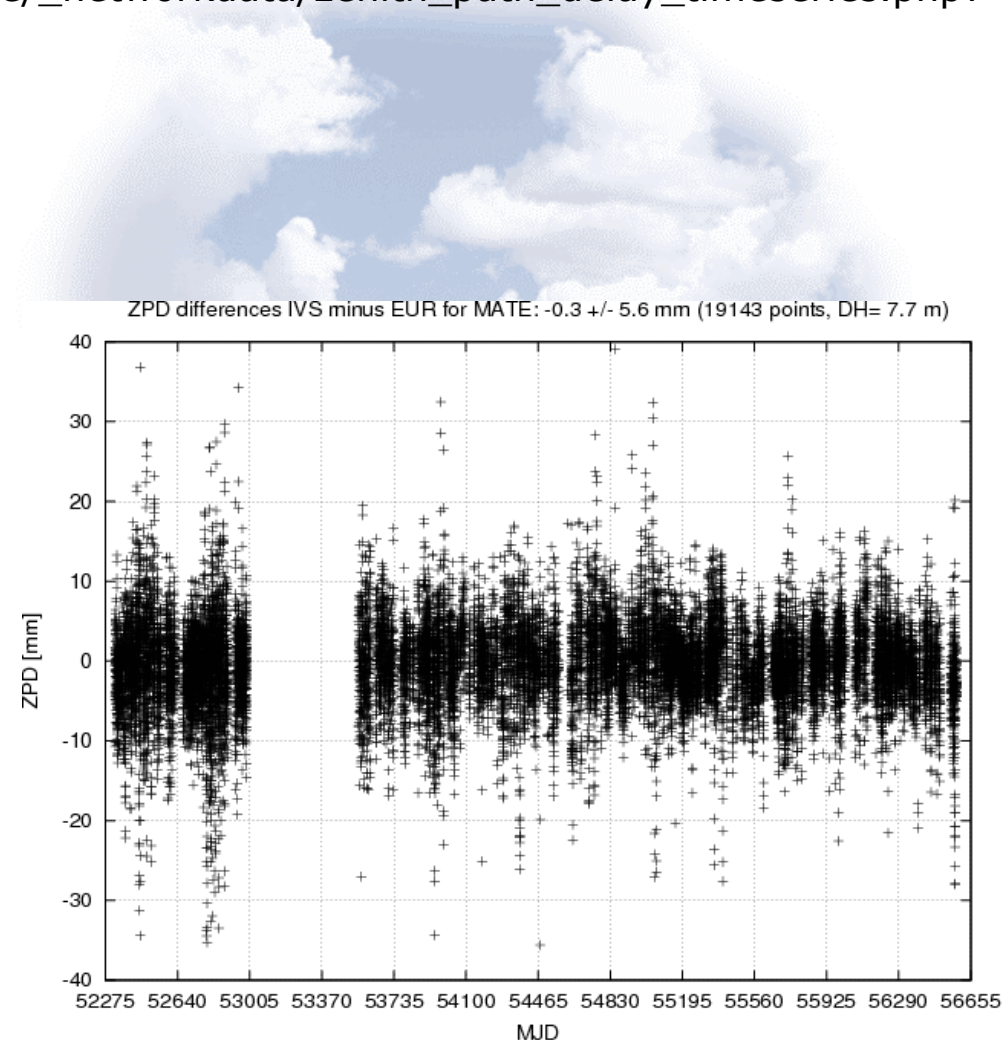
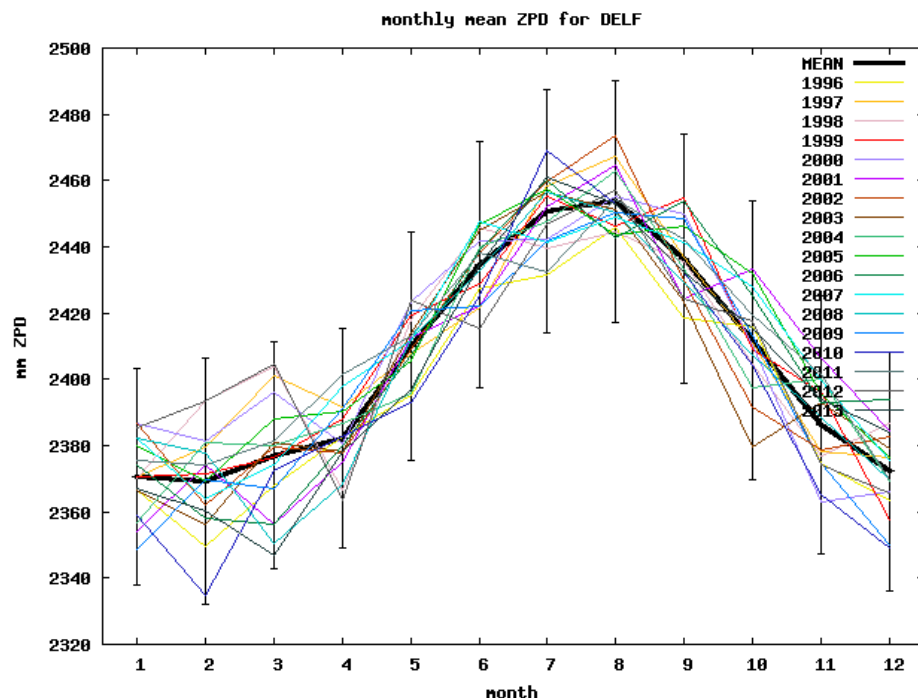
[http://www.epncb.oma.be/\\_networkdata/radiosonde\\_zpd\\_biases.php?station=DELF\\_13502M004](http://www.epncb.oma.be/_networkdata/radiosonde_zpd_biases.php?station=DELF_13502M004)





# Plots to update

Second plot in the web page [http://www.epncb.oma.be/\\_networkdata/zenith\\_path\\_delay\\_timeseries.php?station=DELF\\_13502M004](http://www.epncb.oma.be/_networkdata/zenith_path_delay_timeseries.php?station=DELF_13502M004)



[http://www.epncb.oma.be/\\_networkdata/vlbi\\_minus\\_gps\\_zpd.php?station=MATE\\_12734M008](http://www.epncb.oma.be/_networkdata/vlbi_minus_gps_zpd.php?station=MATE_12734M008)

Next update will cover the period 1996-2014 (till GPS week 1825). It is foreseen in March/April 2015.

# RINEX 3 Tropo Files

```
From this;
+TROP/SOLUTION
*SITE EPOCH TROTOT STDEV TGNTOT STDEV TGETOT STDEV
MAS1 13:150:00000 2539.4 2.8 -3.106 0.407 0.059 0.474
...
Using filename;
mas1150.13zpd

To this;
+TROP/SOLUTION
*SITE EPOCH TROTOT STDEV TGNTOT STDEV TGETOT STDEV
MAS100ESP 13:150:00000 2539.4 2.8 -3.106 0.407 0.059 0.474
...
To using filename;
MAS100ESP150.13zpd
```



This filename mirrors the IGS case

- No indication of the AC-ID in it;
- Tropo products stored 'by station' on Data Centers;
- Only 1-day allowed;
- Good for time series analysis.

It is not applicable for EUREF tropo products where at least 3 ACs are processing the same station and the EUREF official products is a combined solution.

## Suggestion to the IGS IC:

- Allow 4-digits to AC-ID in the proposed file name;
- Not drop the old file name convention for multiple stations processed by the same AC ex. ASI18006.TRO otherwise too many files to download to do the combination !!!