



INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

IGN/SGN Analysis Center

EGVAP Report

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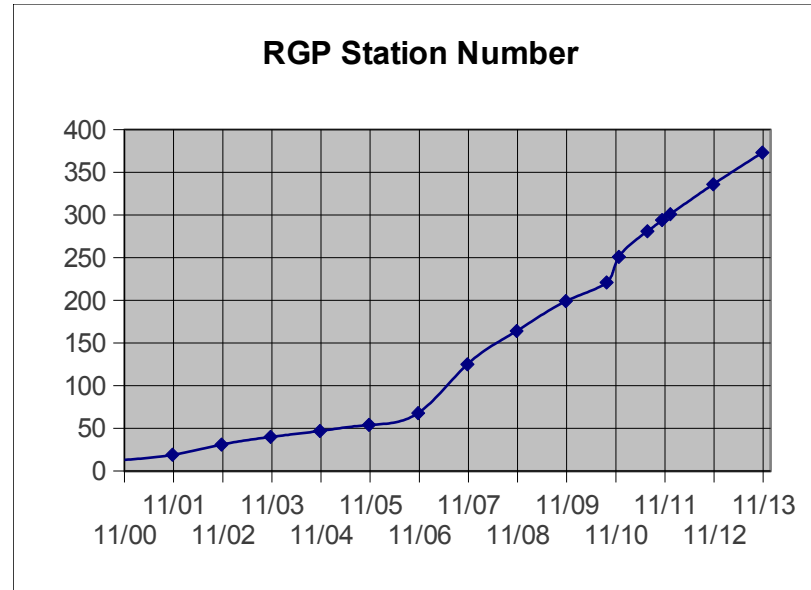
rgpadmin@ign.fr

01 43 98 83 39

- **French Network Status**
- **SGN_, SGN1 & SGNC Status**
- **Future**

1. French Network Status

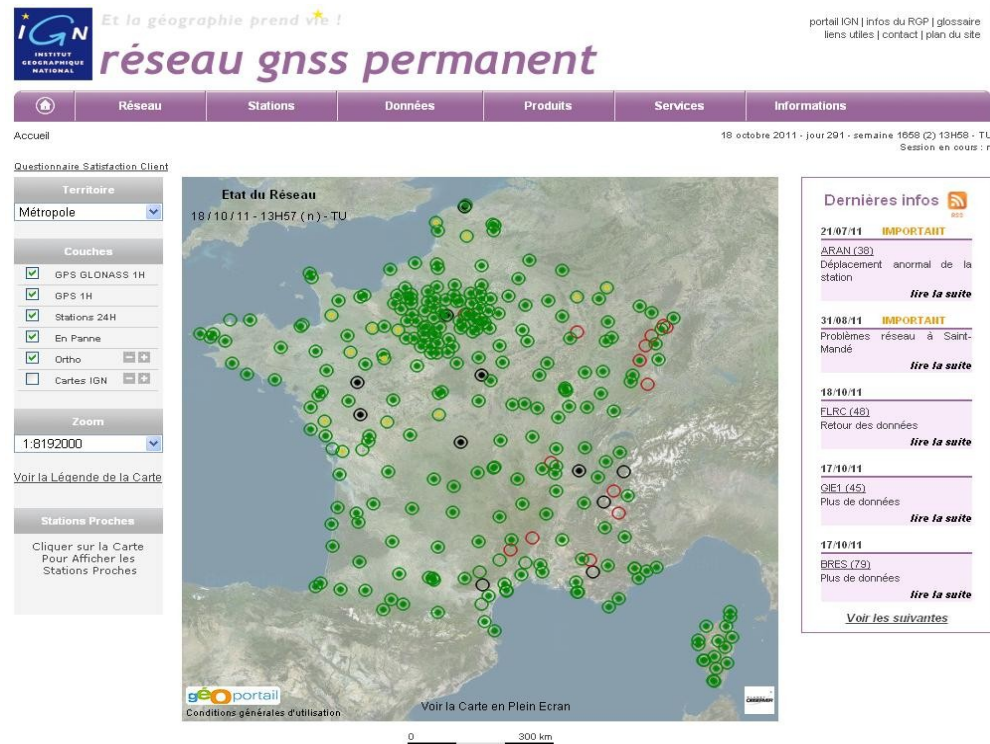
1. French Network Status



- RGP : a network built thanks to private/public partnerships.
=> 373 stations in December 2013.
=> Grow according to the unpredictable growth of our partners.
- 315 / 373 (84%) GPS+GLONASS stations.

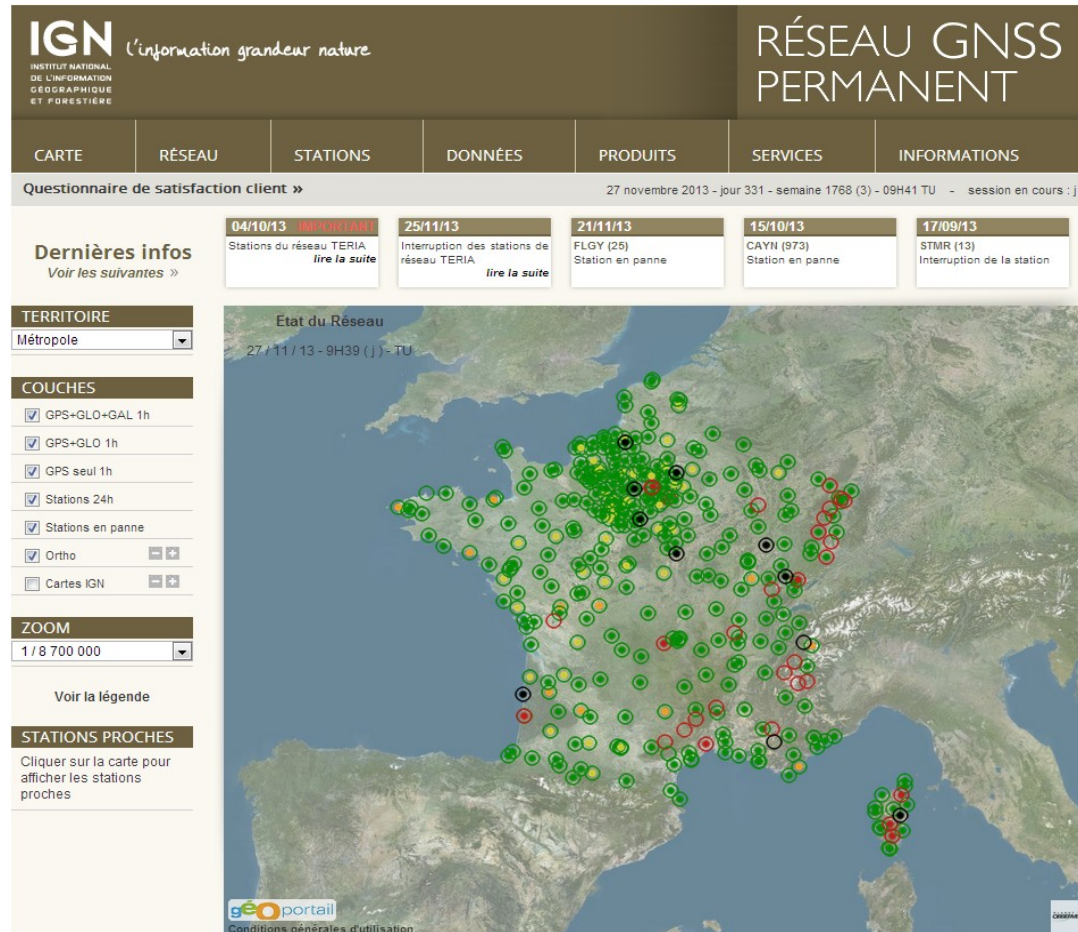
1. French Network Status

■ Oct 2011 : 2 years ago



1. French Network Status

■ Nov 2013 : This year



1. French Network Status

■ The Team :

■ Left since Nov. 2011 :

Georgia Roesch (Nov 2012)



Sylvain Dauriach (May 2013)



Julie Jaubert (Aug. 2013)



Thierry Duquesnoy (this week)



■ Arrived since Nov 2011

Marie Chalmel (Feb 2013)

Lila Jean-Louis (Oct. 2013)

Marine Rougier (Sept 2013)

???



■ Still in RGP :

Evelyne Liotado

Romain Fages

2.Processes Status

2. Processes Status

- ZTD Analysis : unchanged since 2008.

- Bernese GNSS Software 5.0. GPS Only.

- 6 slicing hours:

In cost files: ZTD from the last hours.

- IGU orbits for SGN_
SGU orbits for SGN1

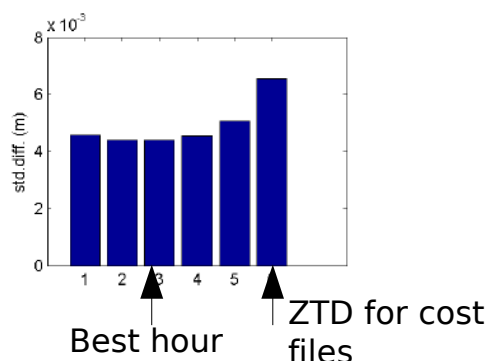
- ZTD a priori model : Dry Neil.
Mapping function : Niel

- Cut Off angle : 10°

- One ZTD every 15 min

- Fixed Coordinates (for EGVAP)

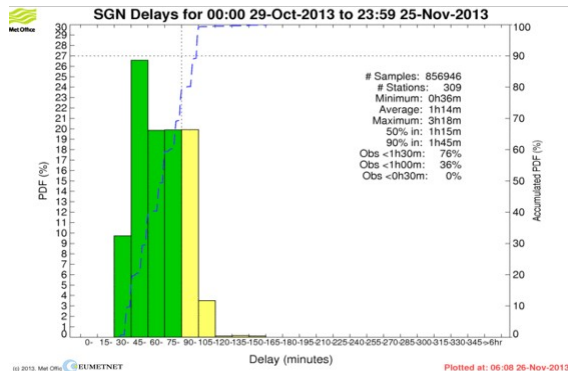
- 8 clusters : approximated parameters, QIF ambiguity resolution, estimated parameters. (GPSEST)
Then combination (ADDNEQ2)



2. Processes Status

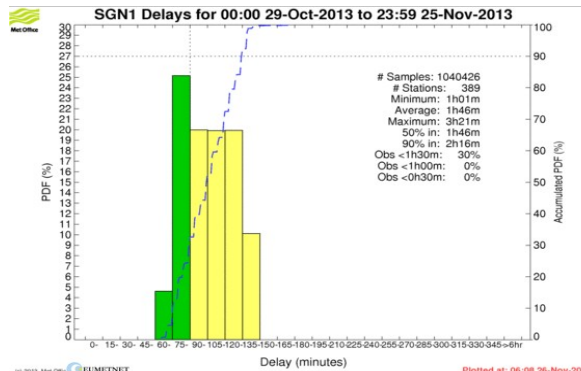
■ SGN_

- Latency is the main constraint
- Max: 310 stations in Europe
- Average: only 265 stations
- No estimated coordinates



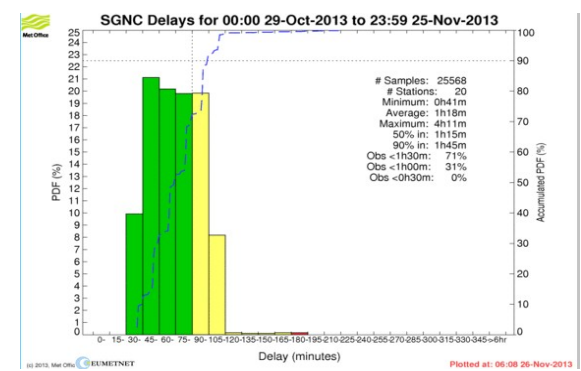
■ SGN1

- The Number of stations is the main constraint
- Max: 390 stations in Europe
- Average: only 320 stations
- ZTD with fixed coordinates + Estimated coordinates (for monitoring)
- In accordance with Meteo France, SGN1 is still uploaded in the standard area

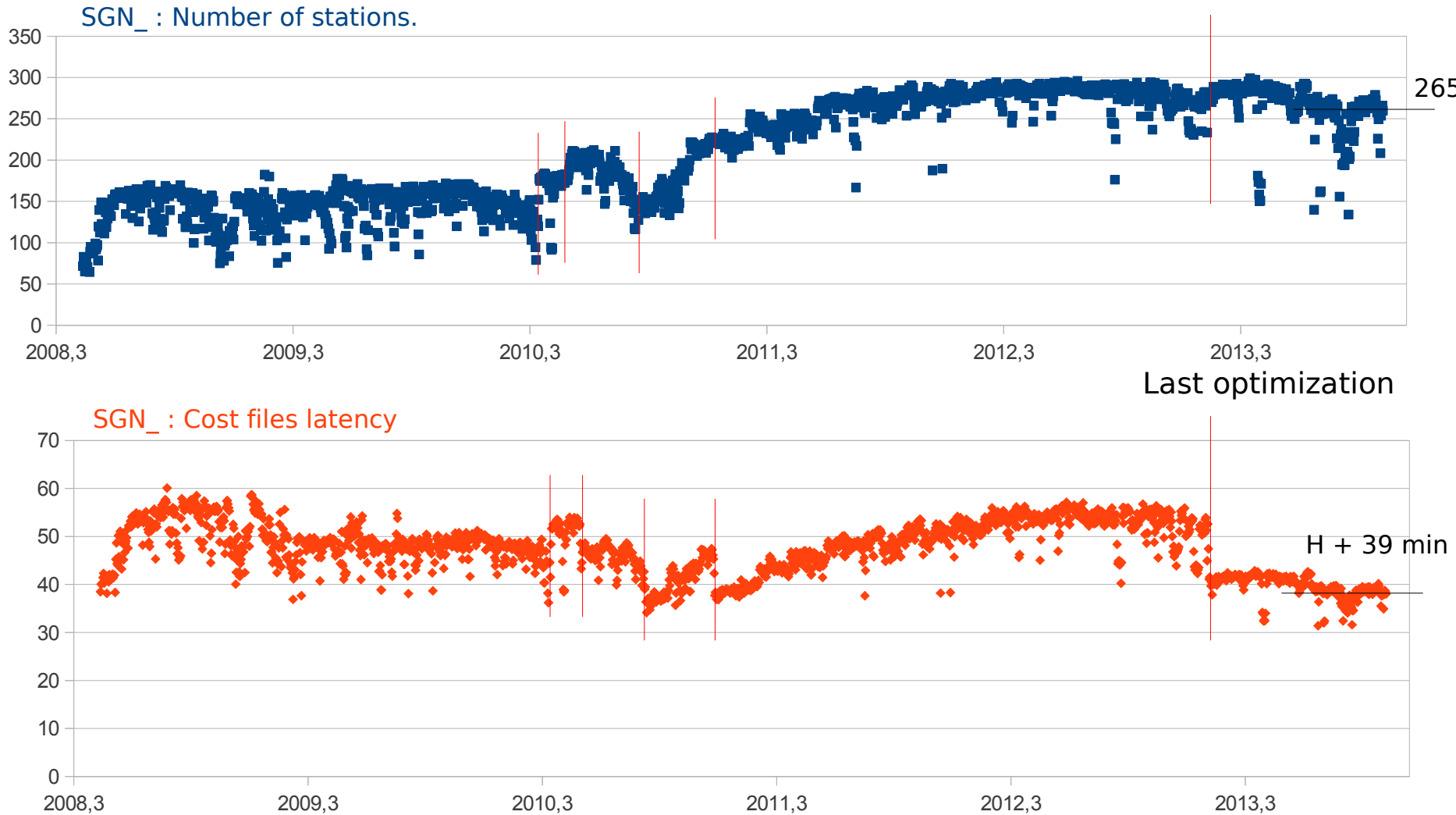


■ SGNC

- Uploaded in the test area.
- Available data is the main constraint
- Max: 20 stations in Central and North America
- Average: only 18 stations
- ZTD with fixed coordinates + Estimated coordinates (for monitoring)
- Very few reliable because of:
 - network outage.
 - lack of monitoring for non-IGS and non-RGP stations

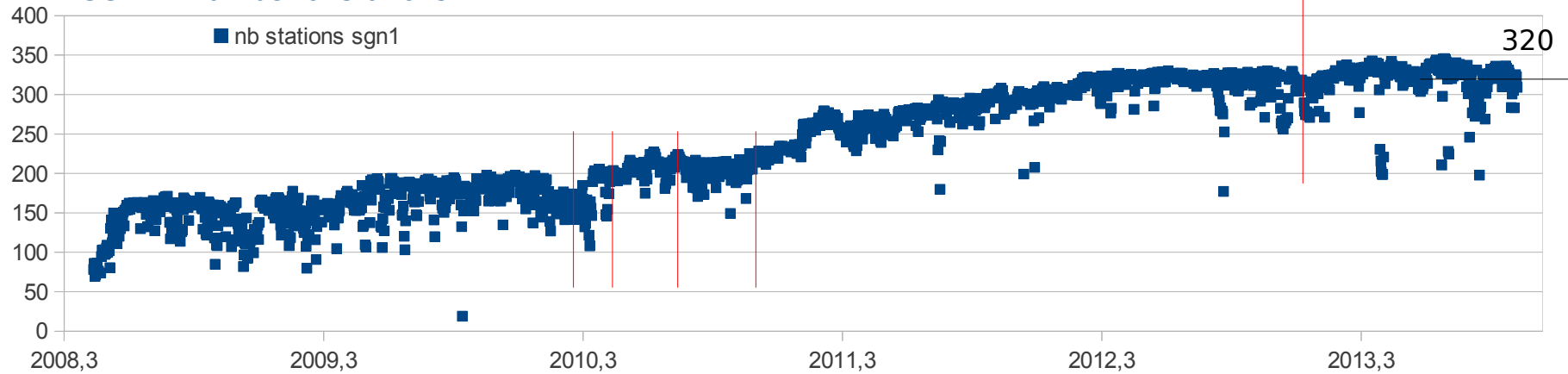


2. SGN_Status



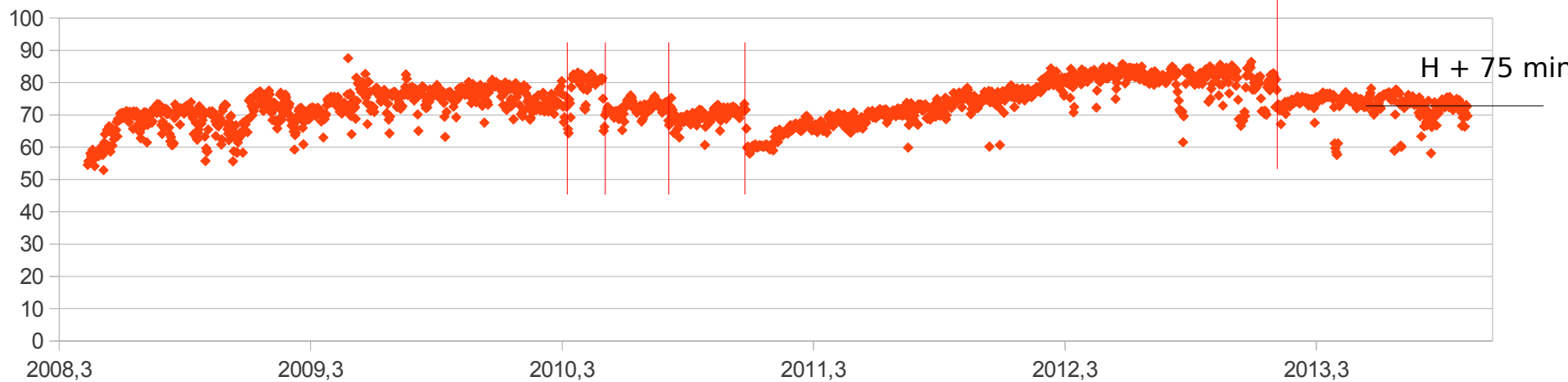
2. SGN1 Status

SGN1 : Number of stations.



Last optimization

SGN1 : Cost files latency

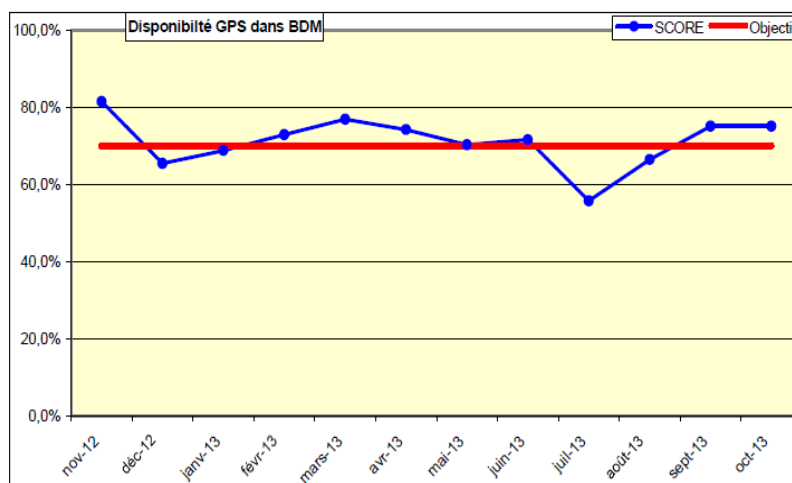


H + 75 min

2. Processes Status

■ Monthly feedback from Météo France

■ For ZTD Availability:



■ For gross errors:

	nov-12	déc-12	janv-13	févr-13	mars-13	avr-13	mai-13	juin-13	juil-13	août-13	sept-13	oct-13
SCORE 100mm	0	0	0	0	0	0	0	0	0	0	0	0
SCORE 50mm	0	1	2	2	1	0	0	6	27	18	7	7
Nb de stations pour le calcul	264	271	263	263	270	278	280	283	284	284	254	255
Objectif pour 100mm	2	2	2	2	2	2	2	2	2	2	2	2

3.Future

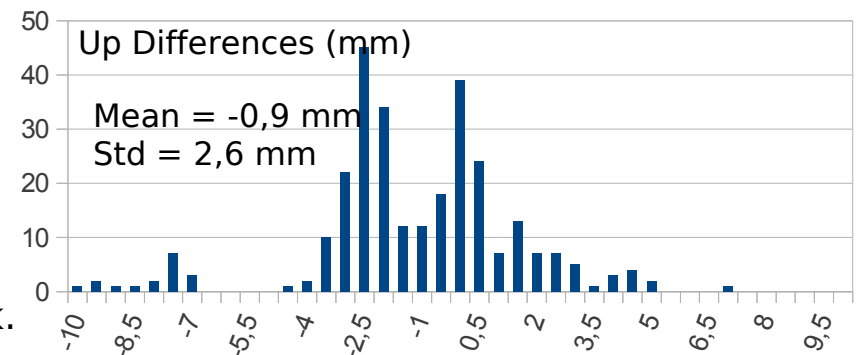
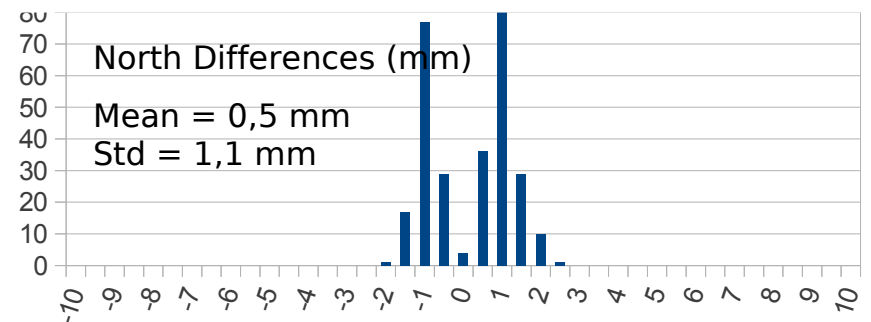
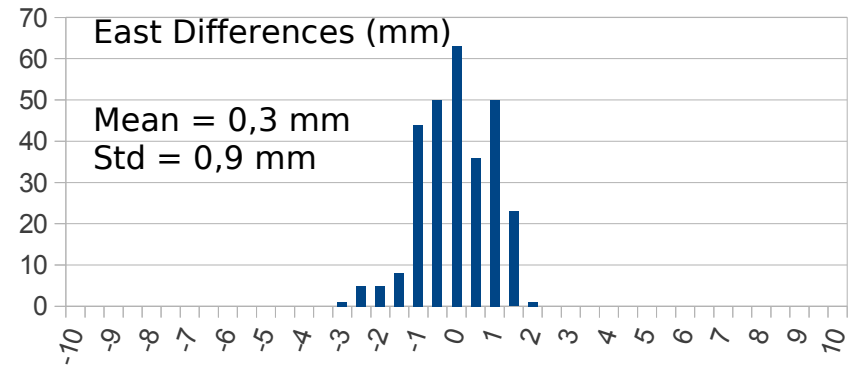
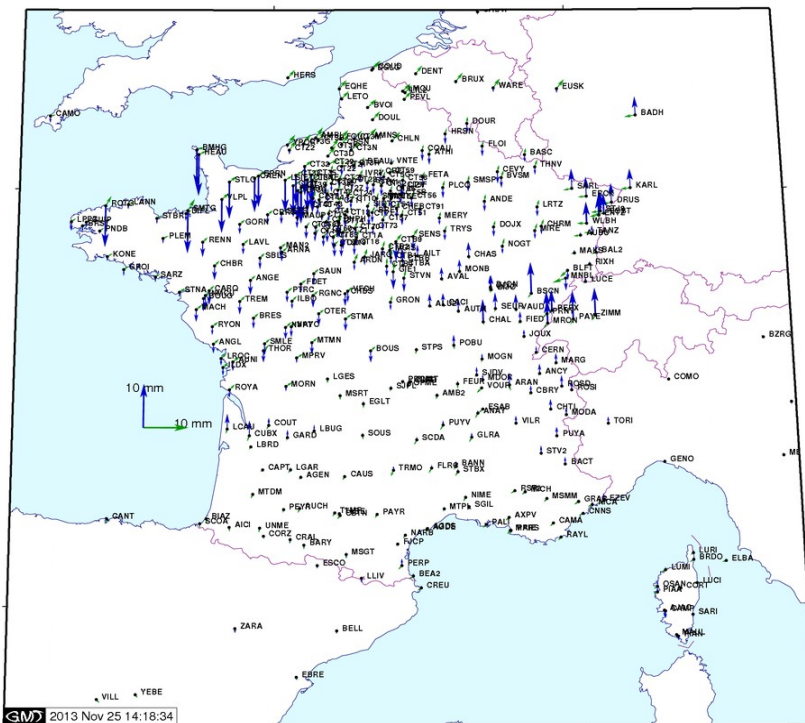
3. Future: Bern 5.2

- **1 month ago : start of new development stage :
Use of Bernese 5.2**
- **1st step (currently) : using Bernese 5.2 with the same strategy as Bern5.0 (same models)**
=> Currently developped by Lila
- **2nd step : using all recommended parameters by EPN Analysis coordinator
(GPT, GPS + GLO, ...)**
+ new naming scheme & cost format 2.2 (for domes number)

3. Future: Bern 5.2

■ First results : coordinates

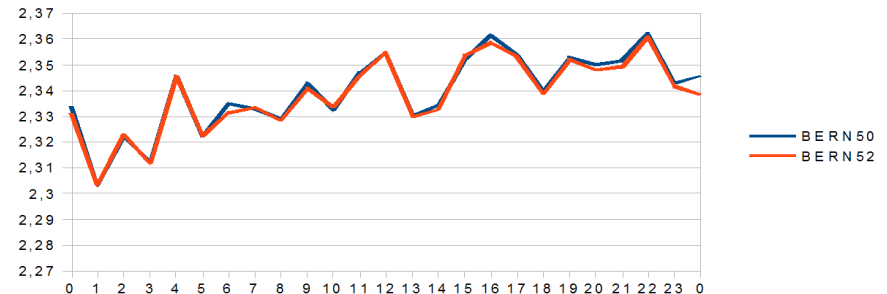
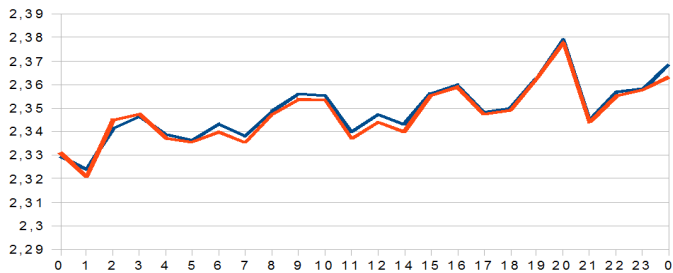
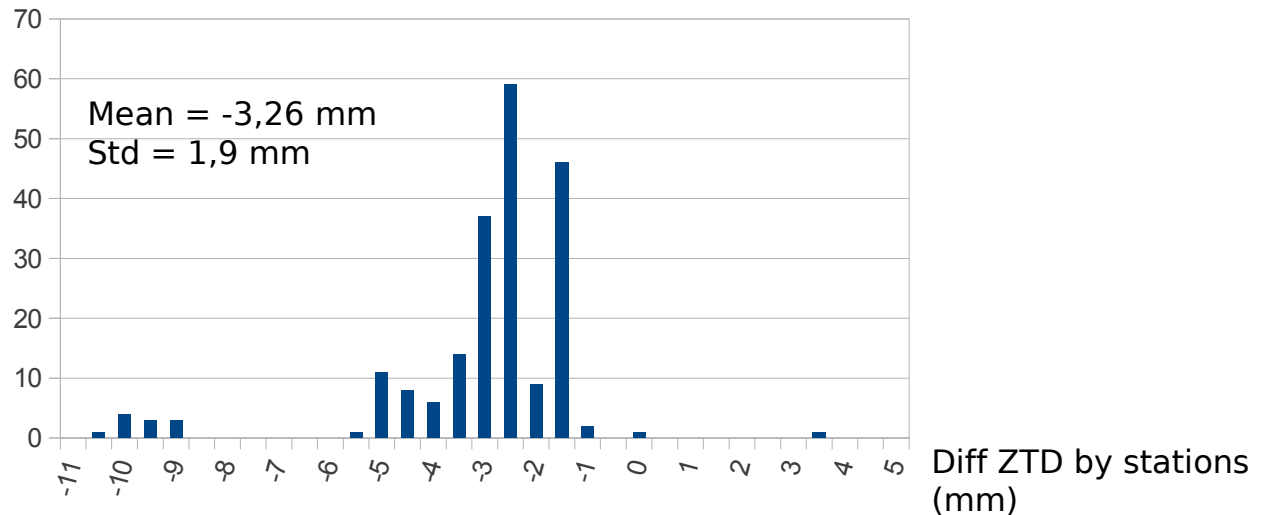
IGS08 BERN50 - BERN52 2013



=> Still a little problem of datum definition, but ok.

3. Future: Bern 5.2

■ First results : Differences of ZTD (BSW5.2 – BSW5.0)



3. Future: Bern 5.2

- **First results:**

- **Bernese 5.0 : Intel Xeon E5410 @2,33 GHz (benchmark : 3228)**
Bernese 5.2 : Intel Core I5-2500 @3,30 GHz (benchmark : 6369) (~ about twice better)

=> processing time (daily process) : Bernese 5.0 : 9 h 25

Bernese 5.2 : 2 h 05

=> we save 50 % of time thanks to Bernese 5.2

- **Coordinates : - 2 stations with calibrations problems**
 - East / North : < 1 mm
 - Up : ~ 1 mm
- **ZTD : A biais of -3 mm ?! (preliminary results!!)**

3. Future: Projects at SGN

- **Current projects and development at SGN:**

- **PPP / RT : with CNES**

- REGINA : world network of ~60 stations, well distributed, multi-GNSS and RT.
- ct2r2 : RT products

- **Ultra-rapids GPS + GLONASS orbits (every 2 hours) : sgv (done)**

- **Ultra-rapids GPS + GLONASS orbits with NAPEOS (esa software)**

=> long-term plan : sub-hourly processes based on RT, global level not national level (because we can not)

- **SONEL : GNSS stations collocated with tide-gauge (french contribution to GLOSS)**

- **Converto / concatec : home made software for « Editing » and « Quality check » parts of teqc for Rinex V3.**