

# IGN/SGN Analysis Center

## EGVAP Report

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- **French Network**
- **Main changes in 2014**
- **Others**

# 1.French Network Status

# 1. French Network – Status

## ■ Oct 2014 : 396 stations



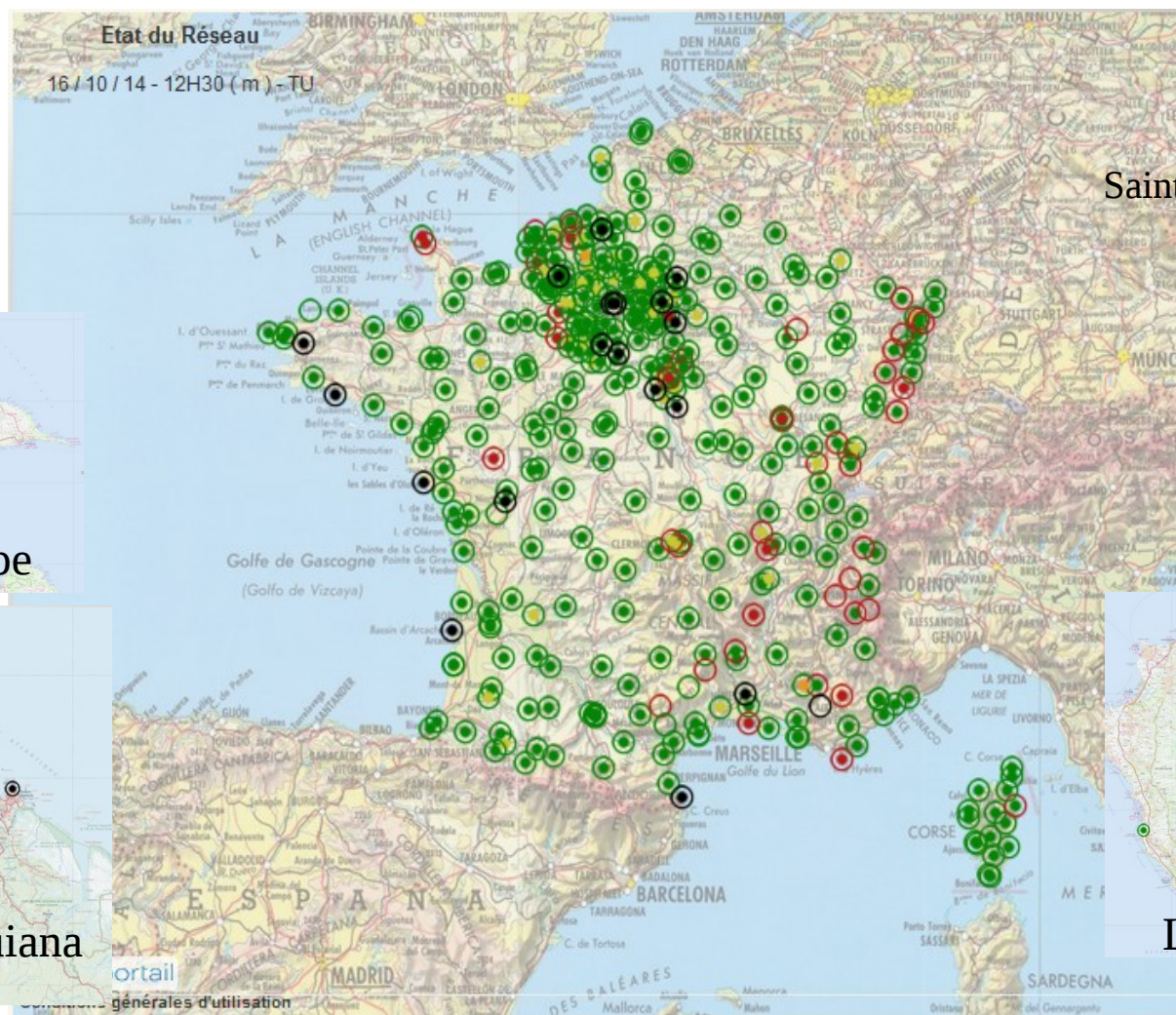
Martinique



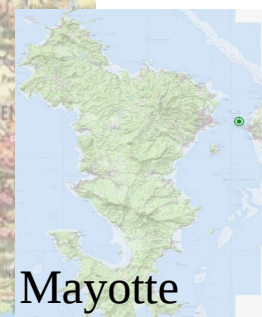
Guadeloupe



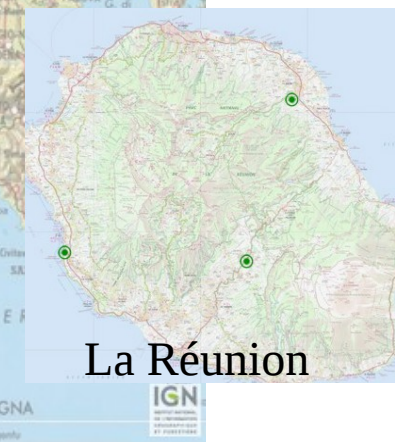
French Guiana



Saint Pierre et Miquelon

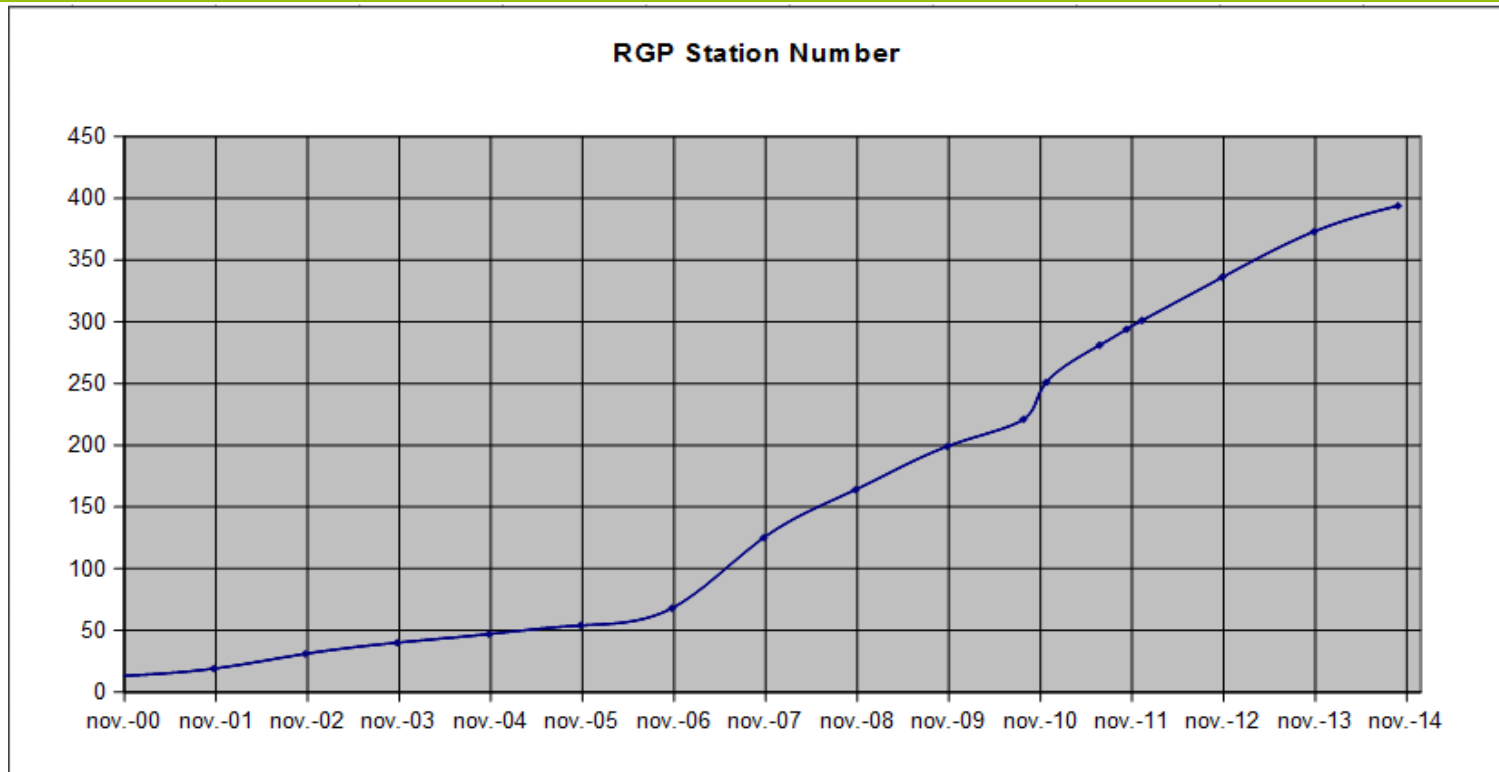


Mayotte



La Réunion

# 1. French Network – Status



- **RGP : stations from public and private partnership**

**=> 396 stations in October 2014.**

- **346 / 396 (88%) GPS+GLONASS stations.**
- **35 GPS+GLONASS+ GALILEO stations**

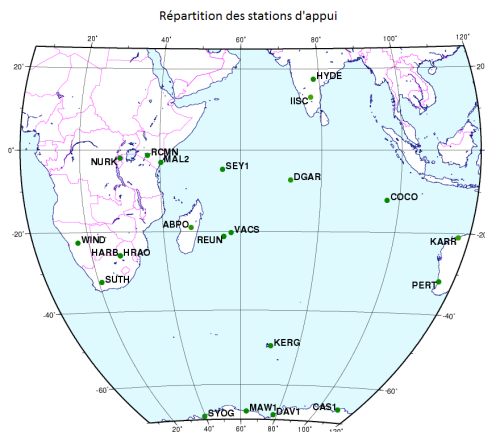
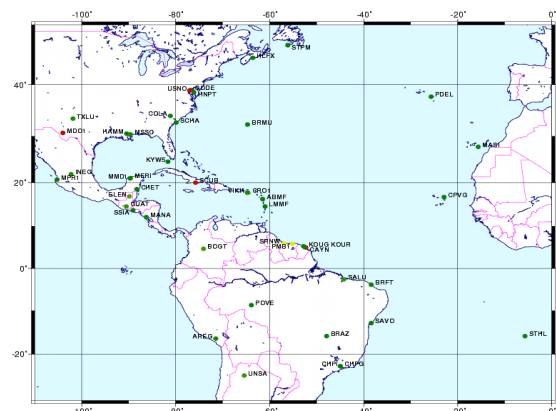
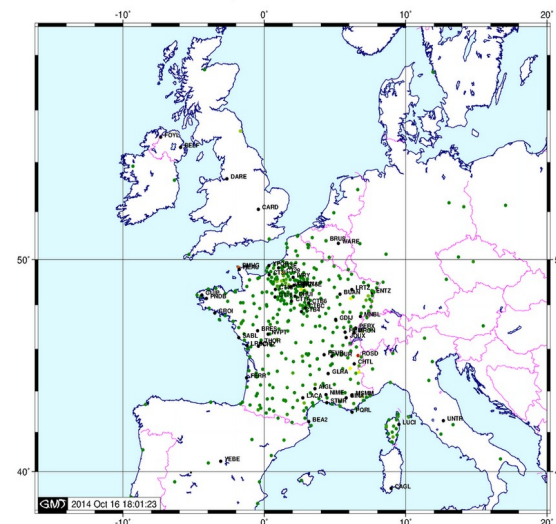
# 1. French Network – Processes

## ■ 9 processes in 3 areas:

- 3 hourly for EGVAP:
  - - 2 on France : SGN\_ and SGN1
  - - 1 on Carribean and Atlantic Ocean
- 3 daily processes : one on each area
- 3 weekly processes : one on each area

## ■ All done with BERN5.2

## ■ GPS only

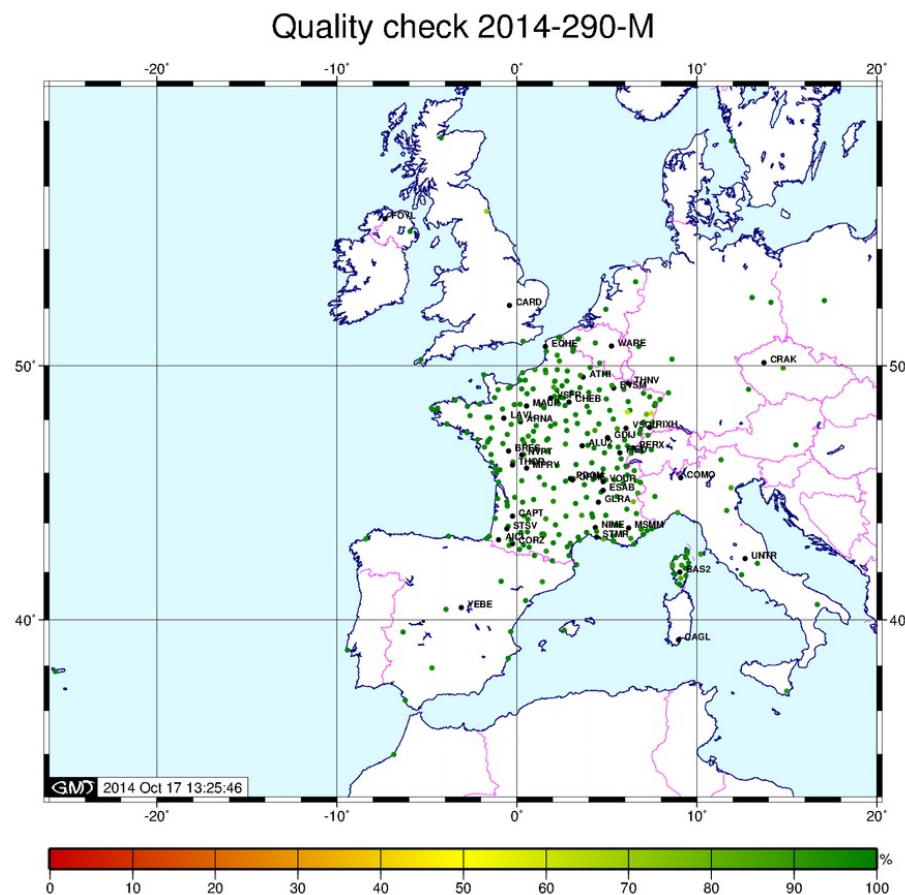




# 1. French Network – E-GVAP operational Process

## ■ SGN\_ :

- Start at H:24
  - Most reliable stations
  - Max stations : 330
  - Average : ~290
  - Orbits : IGU
  - 6 hours
  - ZTD estimation only
- ## ■ Cost file available at ~H:35



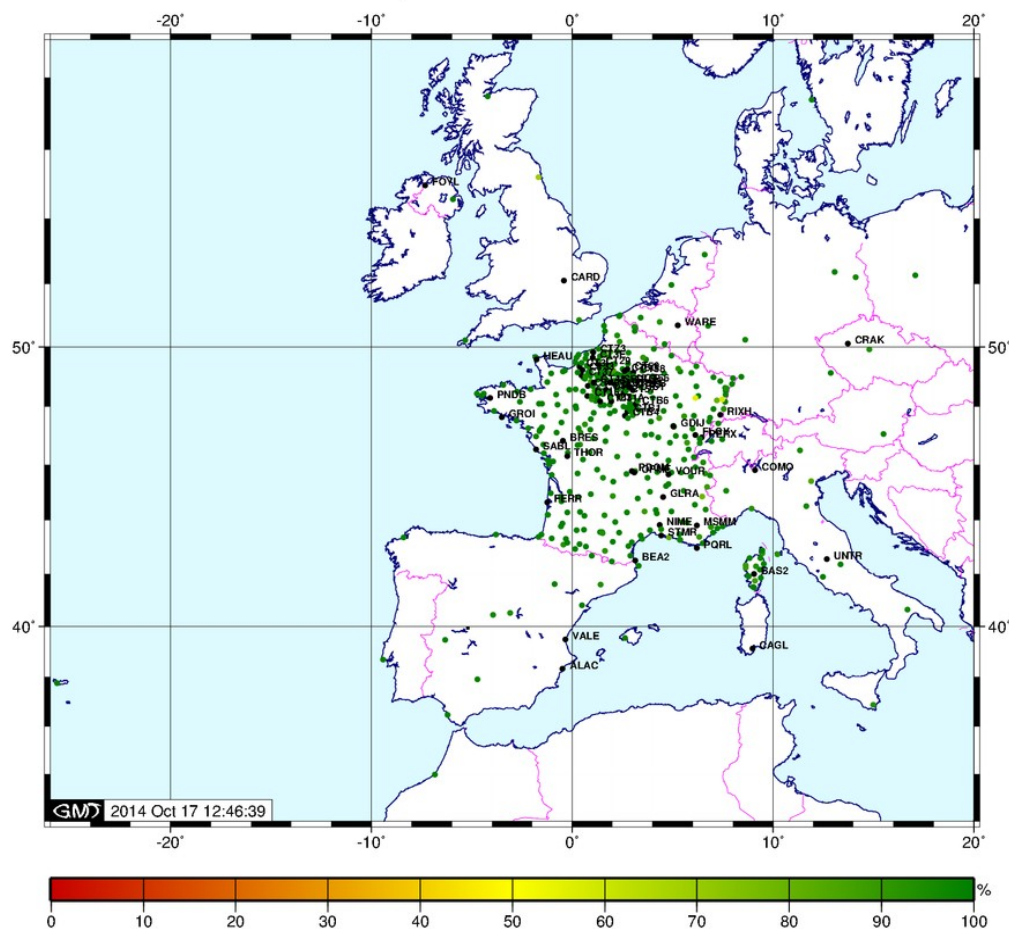
# 1. French Network – E-GVAP operational Process

## ■ SGN1 :

- Start at H:45
- All stations
- Max stations : 426
- Average : 346
- Orbits : SGU
- 6 hours sliding
- ZTD estimation
- ZTD + coordinates estimation

## ■ Cost file available at ~H+1:7

Quality check 2014-290-L





## 2.Changes in 2014

## 2. Changes in 2014

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- **Switch from Bern 5.0 to Bern5.2 :**

- **28/01/2014 : daily and weekly processes for France and Indian Ocean**
- **16/04/2014 : hourly process SGN1**
- **23/04/2014 : hourly process SGN\_**
- **16/05/2014 : daily process and weekly process Atlantic Ocean**
- **03/06/2014 : hourly process SGNC**

- **New options :**

- **IERS2010 conventions**
- **Troposphere GMF/ Chen Herring**

- **COST file format V2.2 since 30/06/2014**

## 2. Changes in 2014 – BSW5.2

### ■ Effect of Bern 5.2 on processes :

#### ■ Time saving (also material changes) :

- Daily process : 9h00 → 2h15
- Hourly process (SGN\_, SGN1) : few minutes saved (no more overlapping)

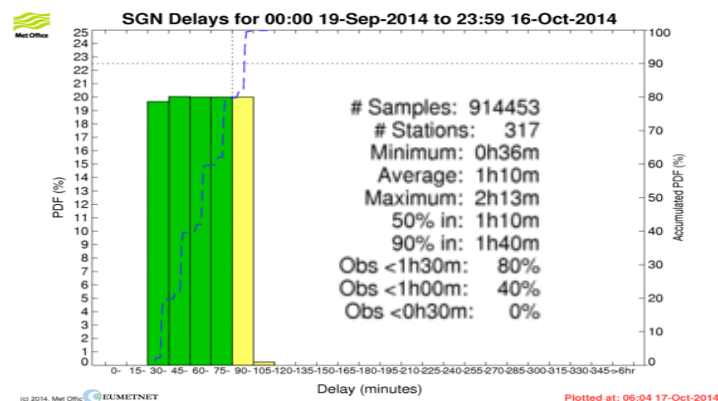
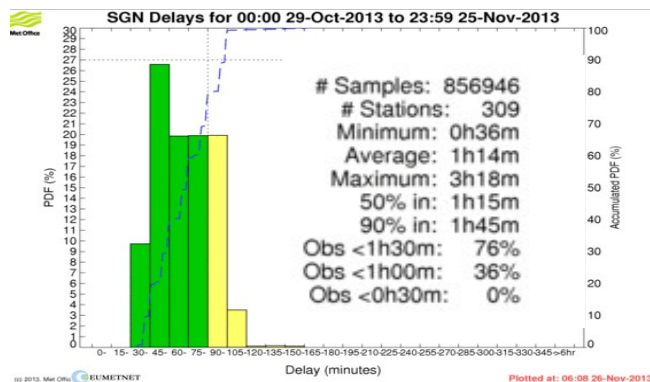
#### ■ Number of failed processes :

- Bern 50 : ZTD estimation for close station make some processes fails (~once a day)
  - pb for SGN1 with some CT stations + GRAC and GRAS
  - some stations had to be excluded
- Bern 52 : No more failed process due to close stations BUT some hourly process with bad ZTD estimation (over 9m)
  - pb with CETMEF stations (clock pb ?)
  - Happened 36 times since day 076 (less than 1%)
  - test on results before sending them to EGVAP
- But less and less CETMEF stations (6/8 in March, 3 in september, 0 now)

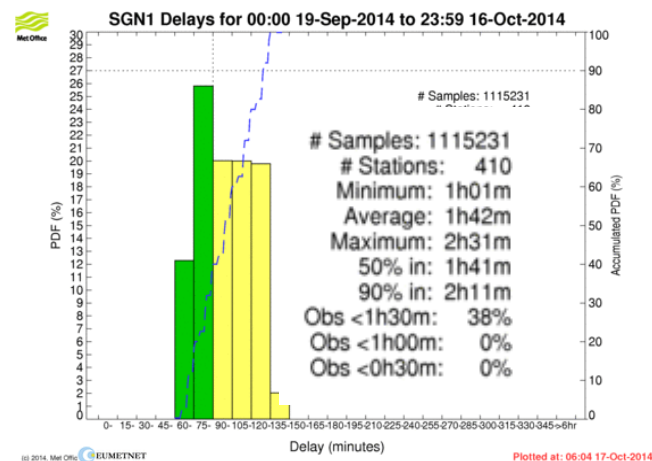
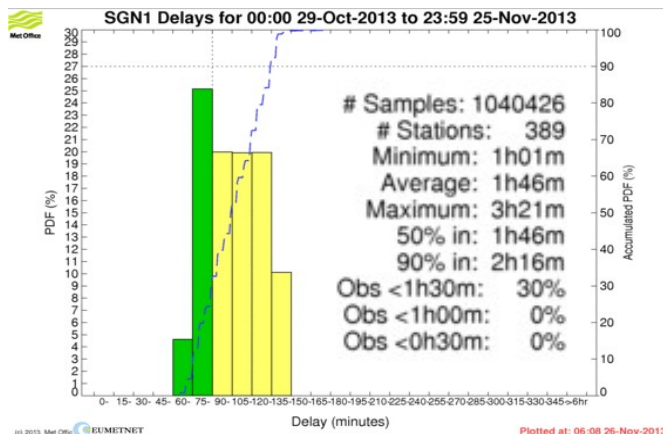
## 2. Changes in 2014 -- BSW5.2

### ■ Latency on SGN and SGN1

#### ■ SGN\_ :



#### ■ SGN1

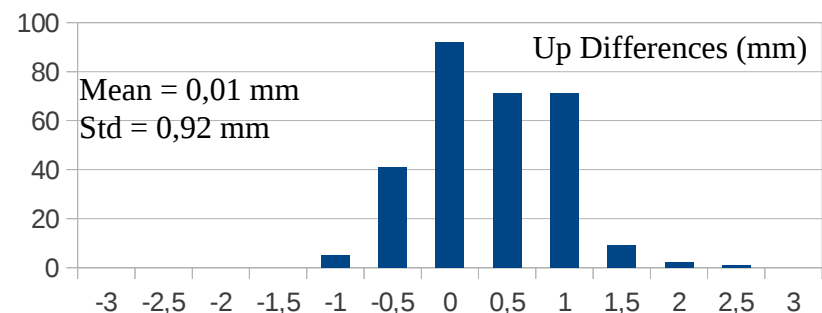
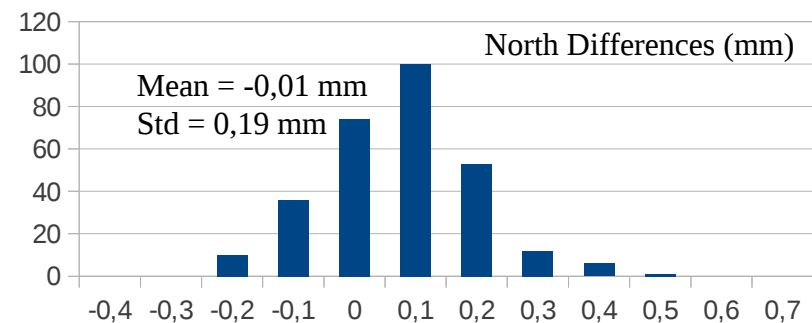
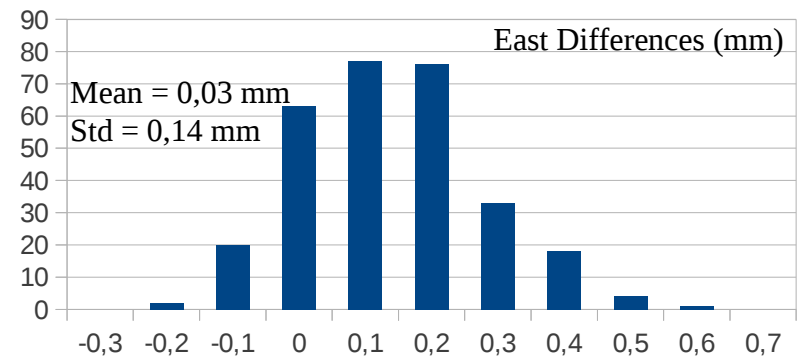
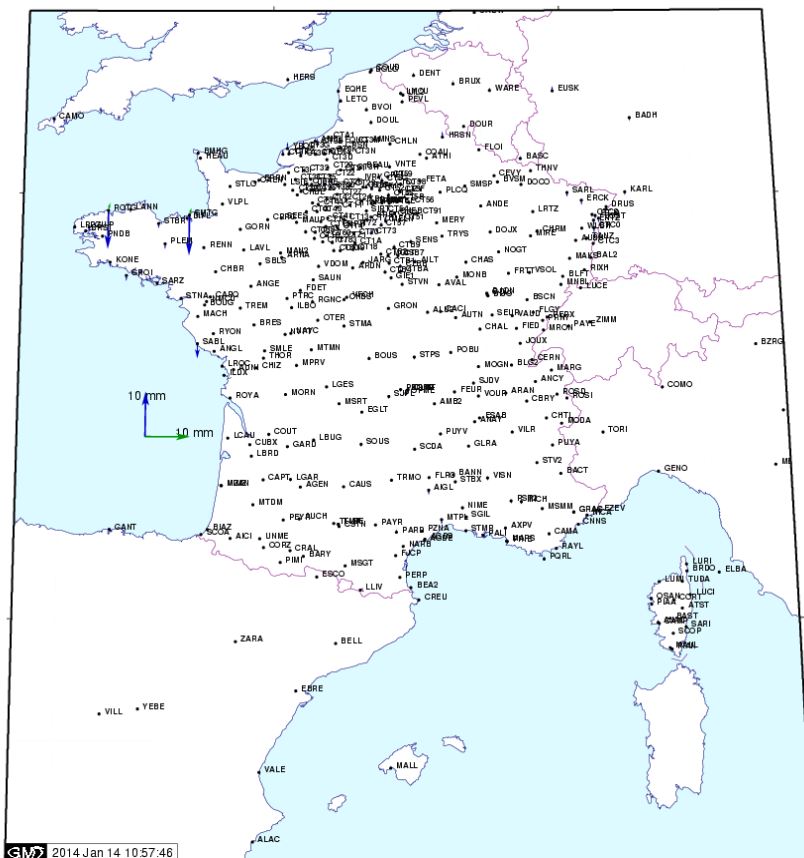


## 2. Changes in 2014 – BSW 5.2

### ■ Coordinates

results on daily process from doy 302 to 339 in France

Difference moyenne par station BERN52-BERN50 jour 302 a 339

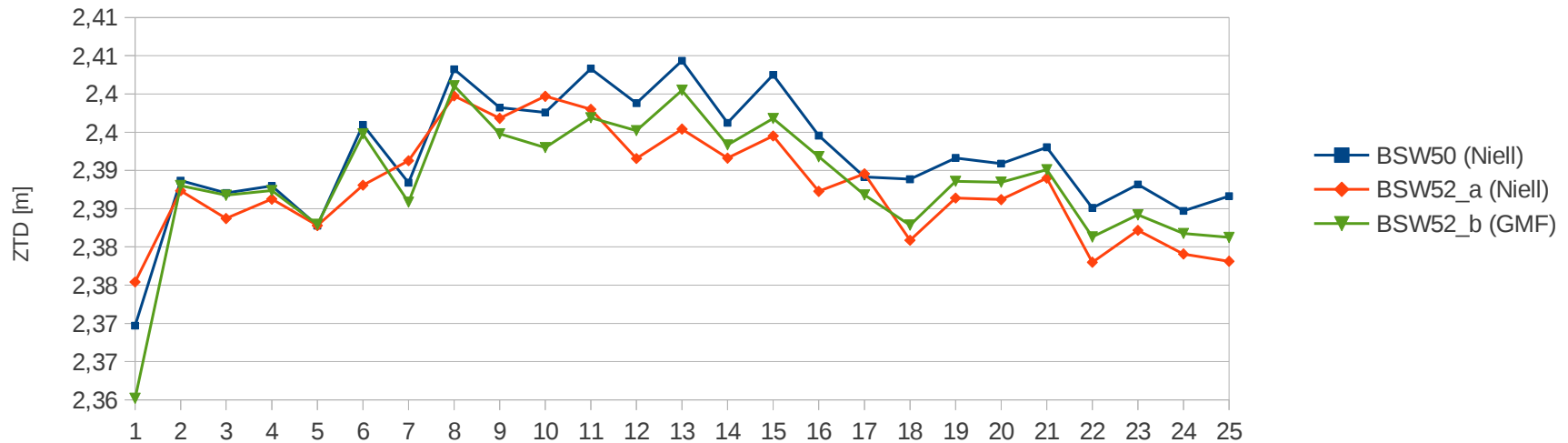


## 2. Changes in 2014

### ■ ZTD results, comparison for daily process 2 steps :

- BSW52 with same parameters
- BSW52 with GMF/ Chen Herring

MLVL DOY 335 2013 troposphere parameters

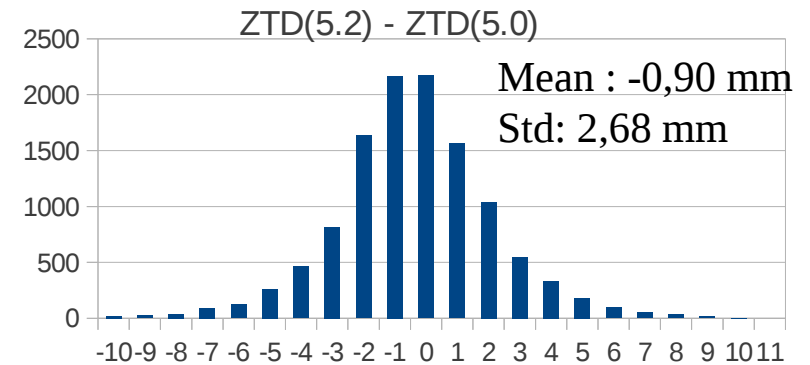




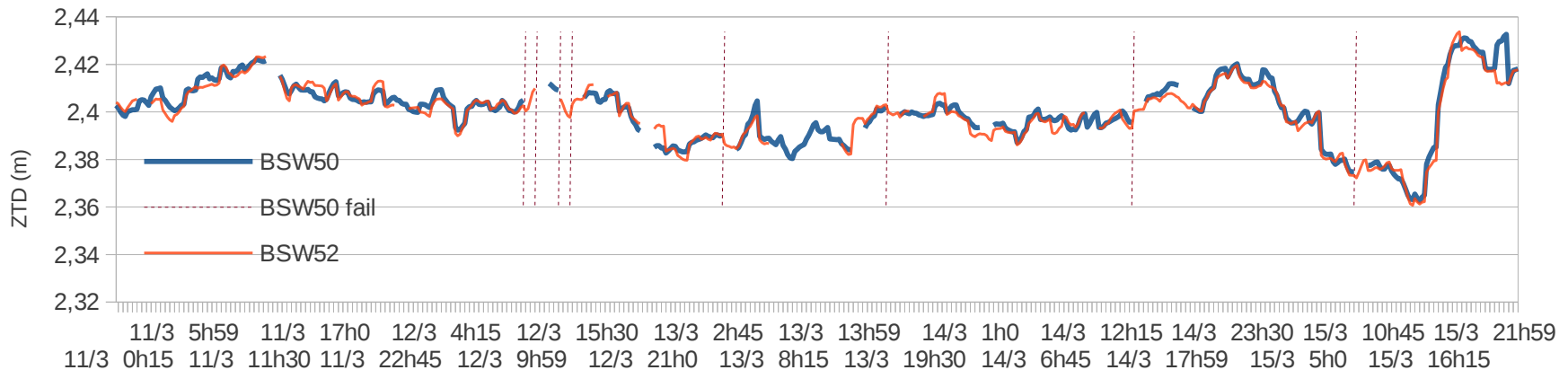
## 2. Changes in 2014

### ■ ZTD results : Comparison for hourly process

- ~20 stations from day 069 to 082
- Comparison on « double » stations



ZTD MARS DOY 070 to 074

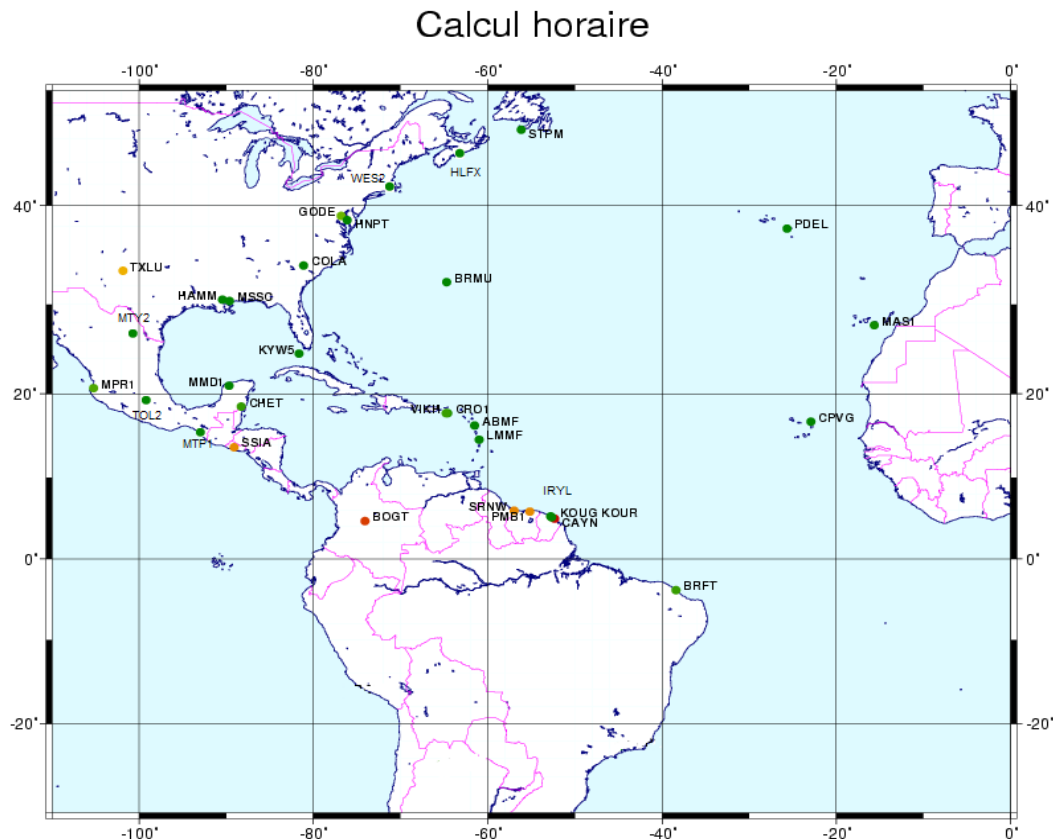


## 2. Changes in 2014 – SGNC

### ■ SGNC since 2011 in Test area :

- No update
- Pb with latency
- Lack of monitoring
- Process failed

### ■ Unreliable process



## 2. Changes in 2014 – SGNC

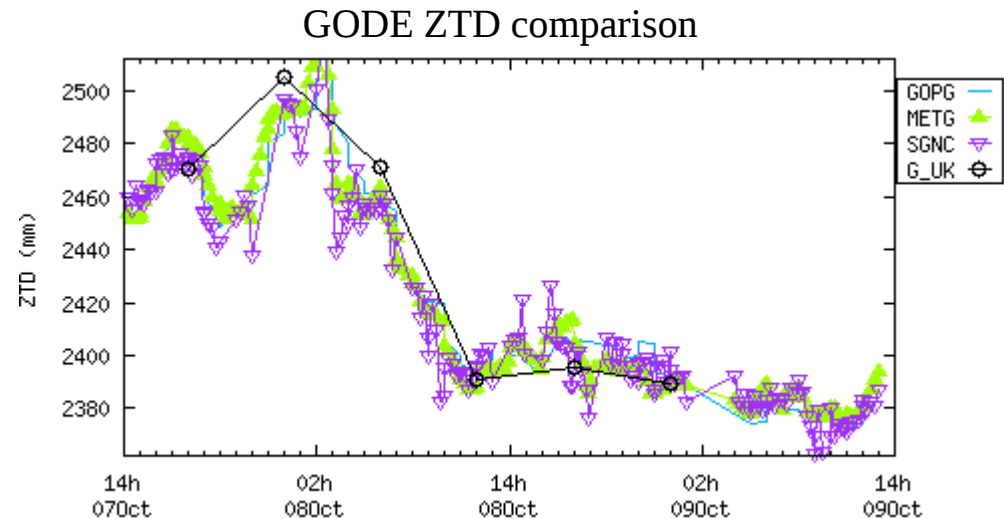
### ■ In April :

- Update stations list with 2 RGP stations (IRYL and STPM)
- Update coordinates and velocity of NGS/NOAA stations
- Add new stations with better latency
- Add new features

### ■ Status now :

- 36 stations (6 RGP, 8 IGS)
- Reliable process

### ■ Operationnal status soon

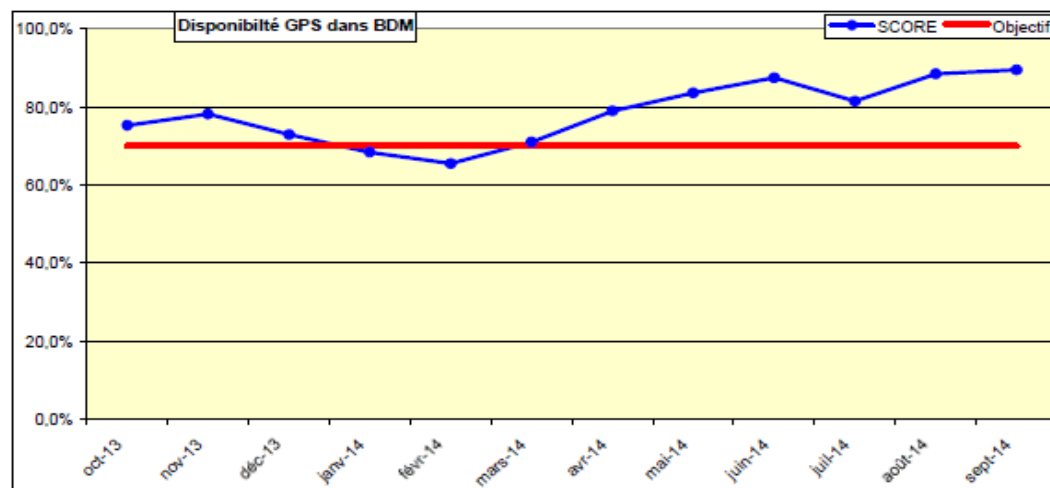


## 3.Others

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#### ■ Monthly feedback from Météo France

#### ■ For ZTD Availability:

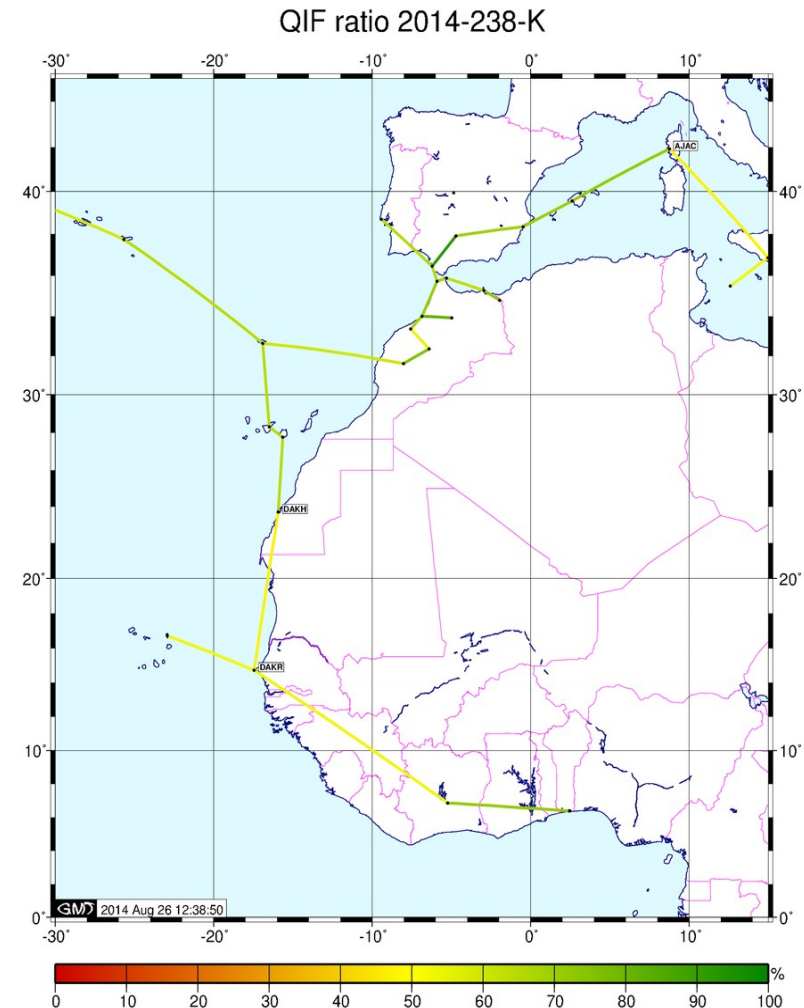


#### ■ Large errors (sup >100mm): → less than last year

	oct-13	nov-13	déc-13	janv-14	févr-14	mars-14	avr-14	mai-14	juin-14	juil-14	août-14	sept-14
SCORE 100mm	0	0	0	0	0	0	0	0	0	0	0	0
SCORE 50mm	7	8	0	0	1	1	0	1	8	13	11	3
Nb de stations pour le calcul	255	257	256	256	257	266	265	266	266	261	262	262
Objectif pour 100mm	2	2	2	2	2	2	2	2	2	2	2	2

### 3. Others

- **Contract with Maroc-Météo**
- **Automated ZTD process**
- **10 stations in Morocco + IGS stations**
- **Same process but  
ZTD and coordinates are estimated**
- **Collaboration with E-GVAP ?**





### 3. Others – Future

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- **GLONASS**

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

- PPP/RT with CNES
- Ultra rapids GPS+ GLONASS orbits with NAPEOS (esa software)
- SONEl : GNSS stations collocated with tide-gauge (french contribution to GLOSS)
- Convert0 /concatec : home made software for « Editing » and « Quality check » parts of teqc for Rinex V3