IGN AC activities

4th Local Analysis Centres Workshop,
18-19 September 2003 in Graz, Austria

Bruno Garayt
The French GPS Permanent Network “RGP”

- GPS permanent stations

- Connexions between
  - GPS stations and Operationnal Centres (Internet (FTP) - Leased Lines - Phone / mode)
  - Operationnal Centres (Internet - leased line)

- Two Operationnal Data and Analysis Centres:
  - One located in Saint-Mandé is dedicated to daily and hourly data processing, as a data-quality and monitoring process
  - The other one is operating as EUREF analysis centre in Marne-La-Vallée including some non EUREF GPS stations from the RGP to provide weekly positions of the stations.

Website: [http://lareg.ensg.ign.fr/RGP](http://lareg.ensg.ign.fr/RGP)

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The network

- 29 stations producing hourly files at 1s/30s rate
- 12 stations producing daily files at 30s rate

Data available at IGN data centres

- 24h/30s
- 24h/30s - 1h/30s - 1h/1s

Last update 01/09/2003
Data flow

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Data server
GPS Station
RTC : daily 30s
RTC (back-up) : daily 30s
RTC : hourly 1s and 30s, daily 30s
RTC (back-up) : hourly 1s and 30s, daily 30s

Intranet
Numeric line

Internet : daily 30s to regional or local data centre
Internet : hourly 1s and 30s, daily 30s

RTC : public phone network

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Data access

Data are freely available for any purposes at the following ftp addresses:

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<tr>
<th>Data availability</th>
<th>Sampling rate</th>
<th>Internet address</th>
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<td>ftp://lareg.ensg.ign.fr/pub/rgp2/nrt/data_1&lt;br&gt;ftp://arethuse.ign.fr/pub/data/yyyy/ddd/data_1</td>
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Data processing at Saint-Mandé

Stations included in the processings
- Hourly / daily
- Daily only

Hourly processing strategy (main features)
- last 3 hours data
- use of Ultra rapid ephemeris (IGS product)
- ambiguity resolution QIF
- no troposphere a priori model ; Dry_Niell mapping function ;
- fixed coordinates for the production of troposphere parameters
The EUREF Analysis Centre
Data processed

The EUREF subnetwork: 24 stations
Other European stations: 6 stations
French non EUREF stations: 14 stations

The data processed are those listed in the «IGN.LAC» file
The processing strategy adopted is those described in the «IGN.LAC» file, with the following main features:

- **Troposphere:**
  - up to week 1200: Saastamoinen a priori model, estimating zenith delays in 1 hour interval for each station, mapping function: \(1/\cos(\text{zenith angle})\).
  - since week 1200: No a priori model estimating zenith delays in 1 hour interval for each station, mapping function: Dry Niell.

- **Elevation angle cutoff:** 10 degrees

- Elevation dependant weighting is applied
Future developments

- New equipment for data servers of the 2 Operational Centres, and for the EUREF local analysis centre computations.

- New website, more « real-time » information

- Time series processing in the frame of a new French ETRS89 realization based on the RGP stations enlarged with EUREF stations. This activity will be maintained and contribute to the RGP stations monitoring system.
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