Instituto Geográfico Nacional (IGN) - Spain
IGE Local Analysis Centre of EUREF

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Main activities of IGN in EUREF, 2003

- Maintenance IGN ERGPS network (16 stations, 10 EUREF, 4 nrt)
  - RF serious problems: ACOR, CANT.
- Implementation of EUREF IP stations
- Organization EUREF Symposium (Toledo)
- **Processing networks:**
  - EUREF (25 and increasing)
  - HISPANET (29 stations – 6 non EUREF stations)
  - Periodical campaigns
  - Other regional networks for geophysical and geodetic purposes in Spain
  - HISPANET time series obtention
IGE Local Analysis Centre short description

✓ Officially started in Sept 2001 (20 stations)
✓ Bernese, BPE 4.2
✓ Currently, 29 stations, 25 + 4 proposed (Spain, Portugal, Morocco, France, Italy, GB)
✓ Future: new stations in the middle west Europe
✓ Change Unix Solaris-> Linux SuSe, 2003 (versatility, economy, efficiency)
General processing strategy

☑ Orbits and ERP’s from IGS
☑ Solution constrained to YEBE (0.1 mm) – VLBI station
☑ Troposphere: final hourly ZTD’s estimation, Dry-Niell mapping function
☑ Ionosphere: QIF to resolve ambiguities in each baseline and introduced into the final solution
☑ DE200 planetary ephemerides, GOT99.2 ocean loading corrections, JGM3 earth potential, IGS PCV’s
☑ Ambiguity resolution interval: 60 sec, final process: 180 sec.
☑ Products: SNX, CRD, ZTD, time series
Exclusion criterias:

- Automatic detection a priori: size of files
- Frequent jumps in the daily file (RABT)
- High rate of ambiguities no solved
- Triple differences solution in BPE (MPXTR)
- High standar deviation in SNX file
- High RMS in SUM (>5 mm NE, 10 mm Up, no border stations, long baselines-> Azores, Canary, 1200 km)
- Automatic time series (ITRS, ETRS89, standard Helmert)
Example: ACOR (Up)

RF problems already no solved
no signal from low SV’s, sink st.
Example: CREU

WK 1219: Change of radome causes 4 cm variation (mostly Up comp)!!!!
Example: SFER

WK 1220: 5 mm variation planimetric position
High PDEL Residuals: long baseline

Helmert residuals: ± 10 mm
(>1200 km from LPAL) – 3 years

Standar serie
HISPANET processing

✓ Same criterias EUREF subnetwork processing
✓ 29 stations in Iberia (6 non EUREF)
✓ Since Jan 2000, Wk 1042 (almost 4 years)
✓ Automatic time series of the 29 sites:
  ▪ ITRS
  ▪ ETRS89
  ▪ Standar (Helmert)
✓ 85% Helmert residuals < 4 mm
✓ Non EUREF stations data available:
  ftp://193.144.251.14/ERGPS
VIGO ITRS serie (non EUREF station)

ITRF2000
VIGO Residuals (< 4 mm)
HISPANET – Provisional ITRS Velocities

1142 – 1230 Wk
HISPANET – Provisional ITRS Velocities (Up)

1142 – 1230 Wk

4th EUREF LOCAL ANALYSIS CENTRES WORKSHOP – Graz, 18-19 Sept 2003

IGE Report
Present work and future purposes

✓ Estimation of improved time series -> geodinamic
✓ Kinematic series interpretation: singular points, noise vs. field velocities
✓ Increase the number of stations EUREF (W Europe)
✓ " " " " HISPANET from other institutions in Spain
✓ Absolutely opened to collaborate in other projects (real time, time series)
✓ Automatic detection of suspicious stations -> remove -> processing -> automatic validation of solutions
✓ Automatic Web publication of time series
✓ First tests with GAMIT