



**RÉPUBLIQUE
FRANÇAISE**

*Liberté
Égalité
Fraternité*



INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

Institut national de l'information géographique et forestière -
EUREF 2023 - National report FRANCE

NATIONAL REPORT FRANCE

EUREF 2023 Symposium
Gothenburg, Sweden

Sébastien Saur, IGN, service of geodesy and metrology



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GNSS PERMANENT NETWORK

RGP Network

IGN acts as a coordinator of ~50 partners
(private networks, public and scientific sector..)

522 permanent stations (01/05/2023)

474 stations in continental Europe

34 stations are integrated in EPN

189 stations are integrated in EPOS

Hourly, daily and weekly solutions

Cooperation with MétéoFrance for ZTD hourly production

Services

Website : <http://rgp.ign.fr> >3000 visitors / month

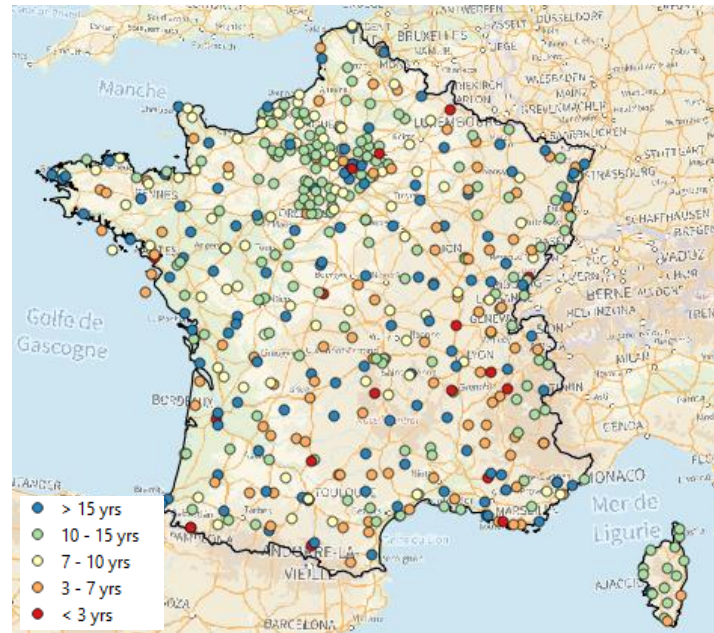
RINEX data download : ~3700 dl / month - ~500 Gb / month

Online GNSS processing service (differential and PPP): ~500 processings / month

Now compatible with RINEX3 input files

Perspectives

RINEX3 compatibility (→ Q3-2023)



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CONTRIBUTIONS TO THE GLOBAL GEODETIC INFRASTRUCTURE

IGS

- ➔ IGS reference frame combination center
- ➔ Global data center



EUREF / EPN

- ➔ Analysis center and local data center



DORIS

Partnership with CNES

- ➔ Network maintenance and evolution
- ➔ IDS data center
- ➔ IDS analysis center



REGINA

Partnership with CNES

Global GNSS network of 39 stations with real-time capacities, integrated in the IGS network

- ➔ Operational infrastructure management
- ➔ Redundant mission center



SONEL

Partnership between CNRS, IGN, SHOM, LEGOS, LIENSs

Sea-level observation from tide gauges and GNSS
Datacenter for GLOSS (Global Sea Level Observing System)

- ➔ GNSS data center
- ➔ GNSS stations implantation, management and measurement



SCIENTIFIC LEVELING

National leveling network - Maintenance of the national network

2022 : End of the ERNIT program (triplets determined from RGF93v2 and RAF2020)

Increased involvement overseas (Wallis & Futuna)

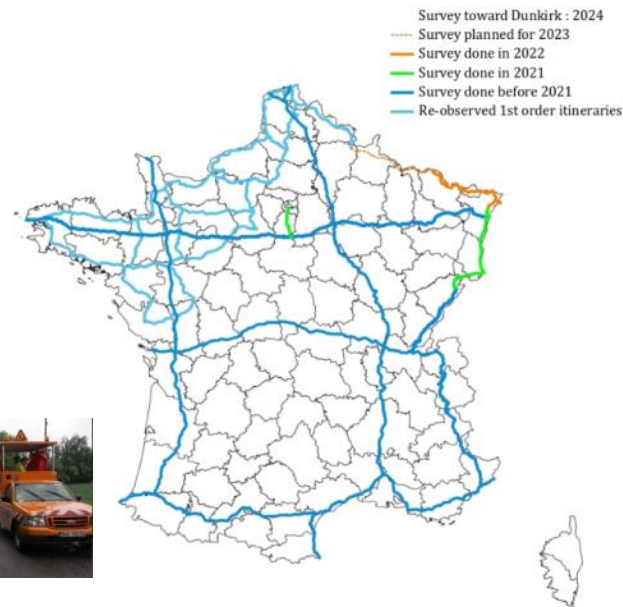
Junction of 50 'triplets' to 1st order NGF-IGN69 networks or NIREF

- ➔ 2023 : Switch from "standard" maintenance process to need-driven planning influenced by the partnership strategy and also by InSAR deformation analyzes.

NIREF

2022-2024 : Completion of a ~800km leveling line between Strasbourg and Dunkirk (with junctions to Saarland and Wallonie)

- ➔ 2022 : 300km realized



GRAVIMETRIC NETWORK

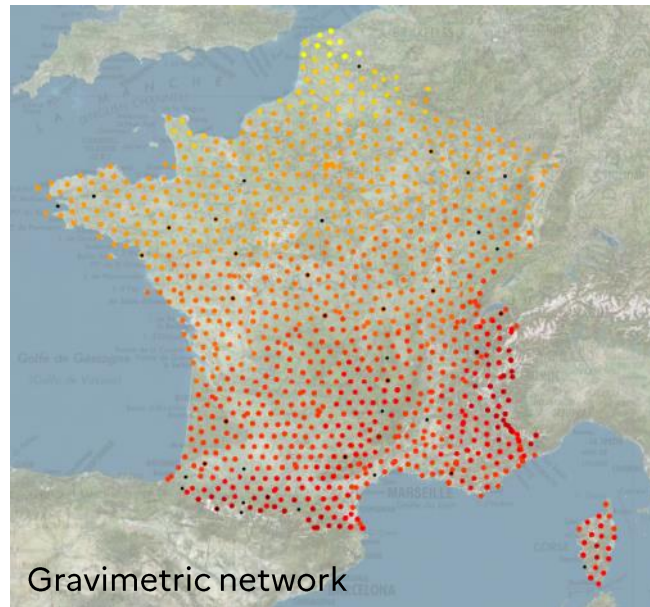
National Gravimetric Network

2022: Maintenance of the national gravimetric network

About 30 relative lines or gradients

Network overseas : Wallis&Futuna 7 points

➔ *Improvement of national gravimetric network by point densification*



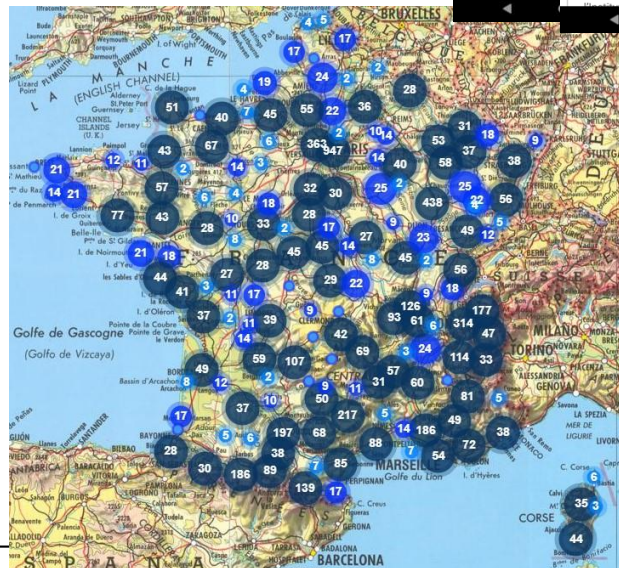
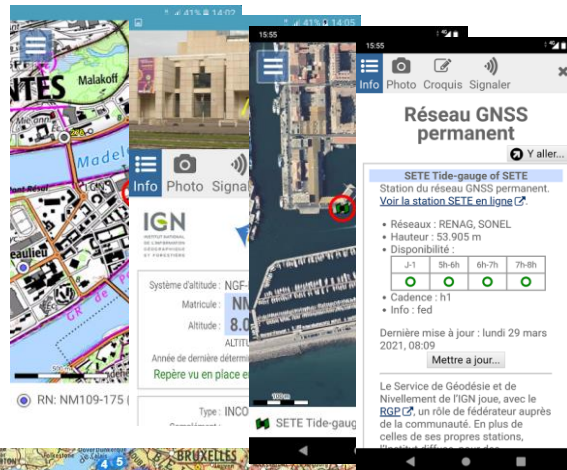
Géodésie de poche

"Geodesy in your pocket" - Android/iOS app

Access to all the geodetic information:

- benchmark data sheets
- CORS real-time status

- User feedback gathering on the infrastructure: real-time update of the marker information
~150 reports per month in 2022
- New version 3 available : Loading data on the fly



Survey on the usages of geodetic infrastructures

Gather information on the usages of national geodetic infrastructures

- Levelling and 3D benchmarks
- CORS networks
- From various actors : national/local, public/private, operational/research...

2022 : Starting point for the definition of a new national strategy for the maintenance of the infrastructures

2023 : First test operations with urban agglomeration communities



PERSPECTIVES

Geodetic infrastructure in Mayotte

Following the seismo-tectonic crisis (2018-2020)

InSAR displacement maps

Evaluation of the contributions of this technology to the maintenance of geodetic networks.

2023: commissioning for IGN needs – creation of multi-technique reference stations (GNSS + inSAR reflector/transpondeur)

Network maintenance

2022-2023: deployment of the new process for maintaining reference benchmarks



THANK YOU FOR YOUR ATTENTION

