EQUIP-G

European Quantum Infrastructure Project for Gravimetry

equip-g.eu

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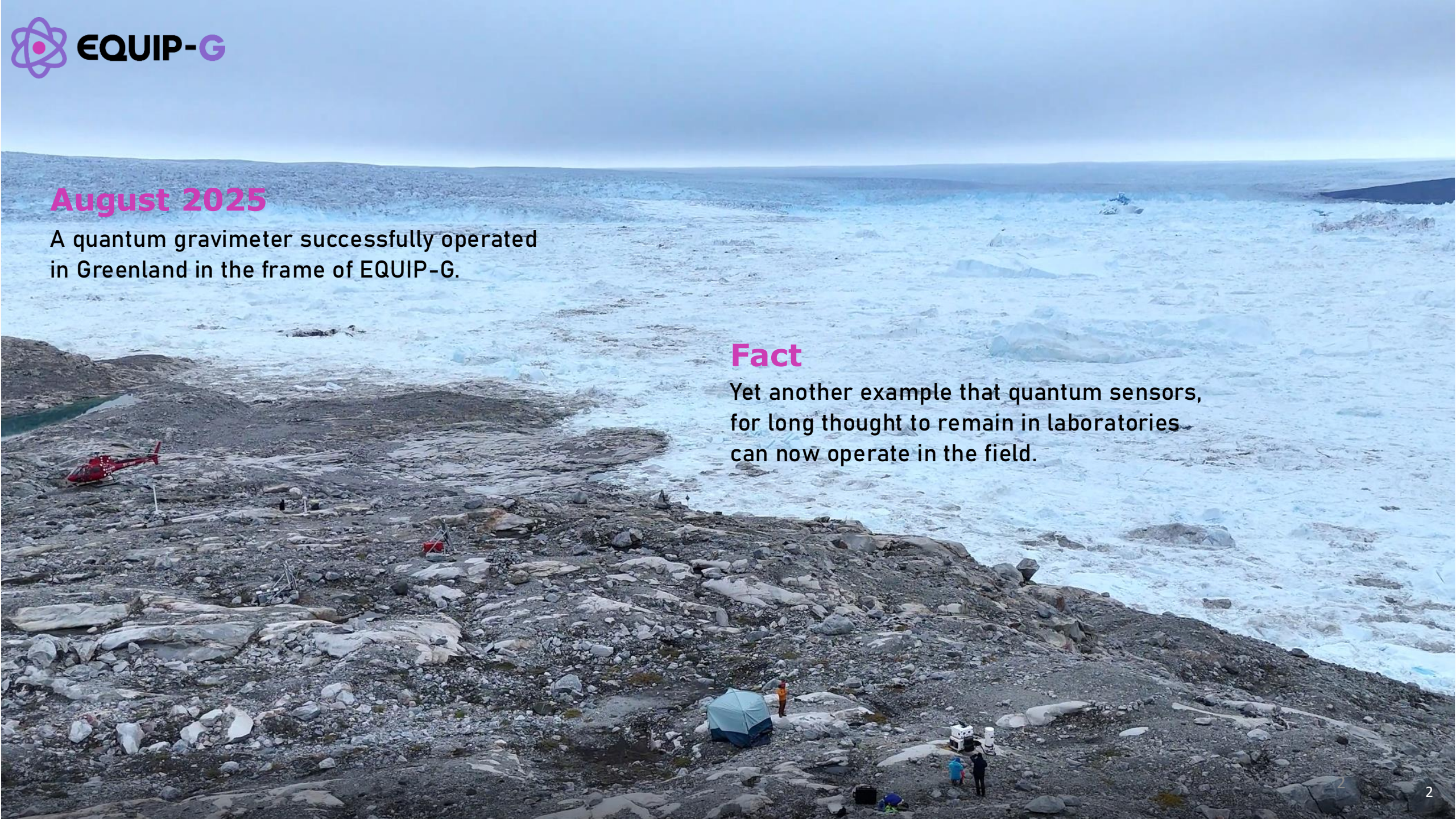
LTE Observatoire de Paris | PSL

EQUIP-G has received funding from the EC's Horizon Europe programme, under the HORIZON-CL4-2024-DIGITAL-EMERGING-02 call.

EQUIP-G



August 2025

A quantum gravimeter successfully operated in Greenland in the frame of EQUIP-G.

Fact

Yet another example that quantum sensors, for long thought to remain in laboratories can now operate in the field.

EQUIP-G

Our vision

Quantum gravimeters will play a key role to monitor the Earth and tackle some of the most pressing EU societal challenges.

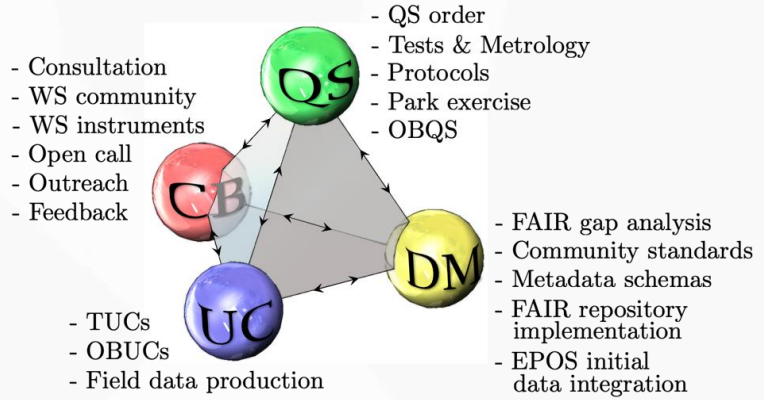
Our mission

Establish a European perennial Research Infrastructure managing a shared park of quantum sensors and a terrestrial reference gravity network for the benefit and the sovereignty of Europe.

EQUIP-G - Project

A Horizon Europe project towards a future European Research Infrastructure

- 20 partners, 11 countries
- Lead by CNRS, France
- 4 years (2025 – 2029)
- 25 M€
- 4 pillars:



1. Procuring and testing quantum gravimeters
2. Deploying in the field operational quantum gravimeters addressing identified use cases
3. Collecting, storing and providing high-quality data to a wider scientific community
4. Building-up an EU-wide community of stakeholders for gravimetry

EQUIP-G - Board of Advisors

An experienced board of advisors to guide our consortium

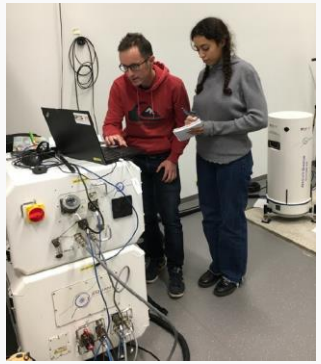
EQUIP-G EXTERNAL EXPERT ADVISORY BOARD		
First name	Surename	Entity
Joséphine	Boisson Gaboriau	SNCF
Davide	Calonico	INRIM
Thomas	Lévèque	CNES
Martin	Lidberg	Landmäteriet
Jürgen	Müller	LUH
Laura	Sanchez	TUM

EQUIP-G - Instruments

Procuring quantum gravimeters as products, testing and deploying them in the field

Within EQUIP-G we are procuring quantum sensors using atom interferometry to measure the acceleration of the Earth gravity *g* . Our park of instruments will comprise:

- 7 terrestrial absolute quantum gravimeters
- 2 terrestrial quantum gravi-gradiometers
- 1 airborne quantum gravimeter



We open public procurement procedures to all EU manufacturers

We benefit from a reference infrastructure at French national metrological institute LNE to test and evaluate all the EQUIP-G sensors and ensure SI traceability.

EQUIP-G activities for instruments:

Procurement
Testing
Establishing measurement protocols and good practices
Trainings of new operators
Development of the airborne quantum gravimeter

EQUIP-G - Use Cases

8 use cases to support some of the most pressing European societal challenges

(1) Water storage assessment

(2) Soil pollutant flow monitoring

(3) Nuclear waste underground storage monitoring

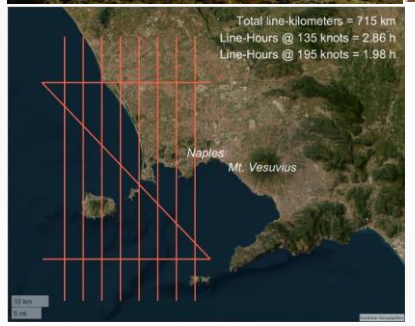
(4) Continuous volcano monitoring

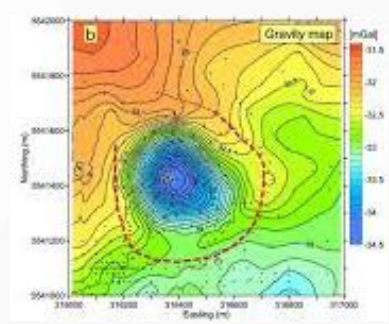
(5) Time-lapse volcano monitoring

(6) Climate change monitoring

(7) Geodesy and national spatial references

(8) Geothermal energy

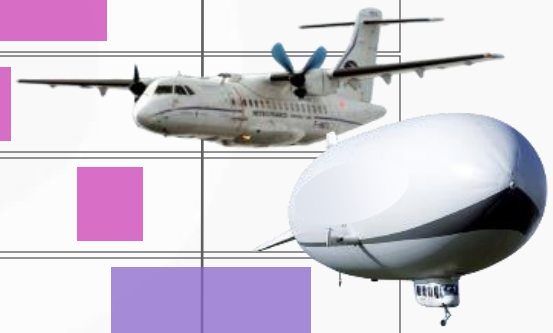




EQUIP-G - Use Cases

TUC: Terrestrial Use Case
OBUC: On-Board Use Case

	2025	2026	2027	2028	2029
TUC1 – Soil Pollutant flow monitoring					
TUC2 – Water storage monitoring					
TUC3 – Geological repository monitoring					
TUC4 – Continuous volcano monitoring					
TUC5 – Time-lapse volcano monitoring					
TUC6 – Climate Monitoring					
TUC7 – Geodesy and cartography					
TUC8 – Geothermal reservoir monitoring					
OBUC1 – Onboard survey (fixed-wing aircraft)					
OBUC2 – Onboard survey (airship)					
IPE Open Calls					



EQUIP-G - Data

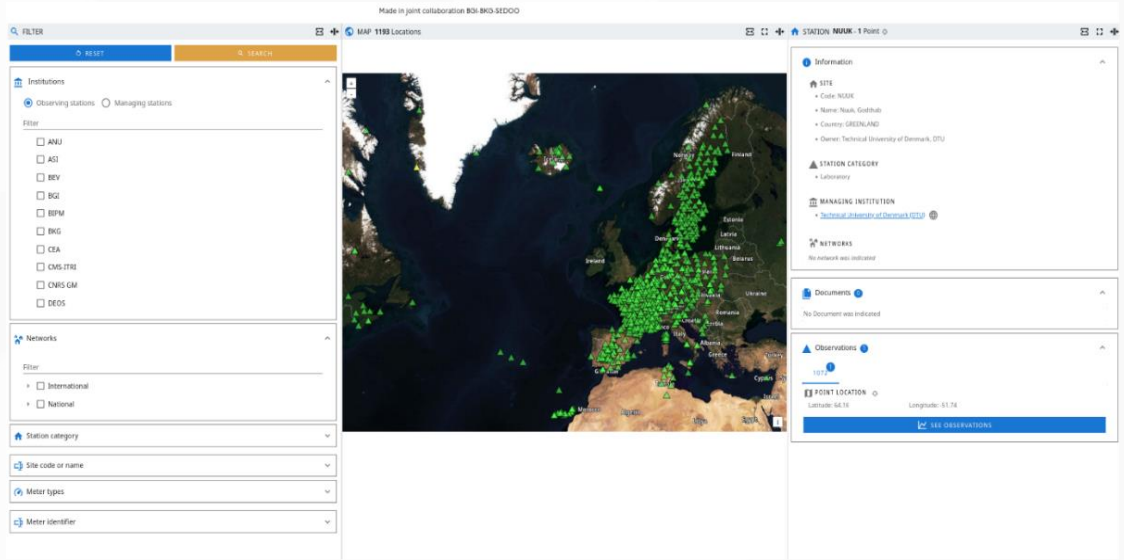
Collecting, storing and providing access to high-quality data to the entire scientific community

All data collected on the field by EQUIP-G sensors will be stored and provided following the FAIR principles:

- Findable
- Accessible in open source
- Interoperable
- Reusable

We leverage the expertise in existing data repository

Heritage from existing gravity data bases and return on experience of GNSS data



EQUIP-G activities for data access:

FAIR assessment and metrics

Recommendations on community standards for FAIR implementation

Implementation in data repository

Initial data integration within EPOS

EPOS EUROPEANPLATEOBSERVINGSYSTEM

EQUIP-G - Community Building

Knowledge transfer and community outreach

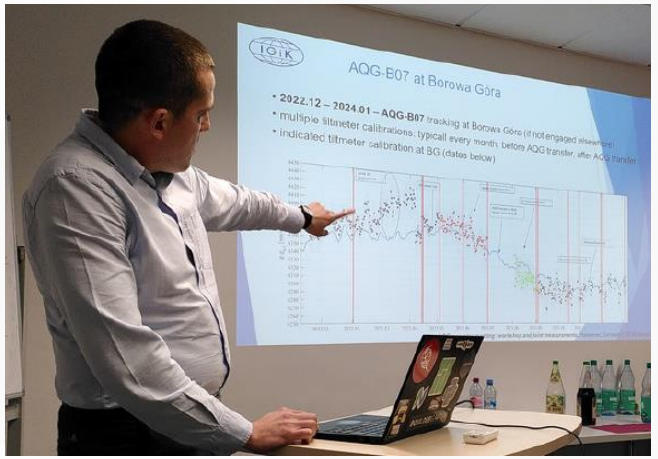
Within EQUIP-G we must:

- Raise the awareness of larger community of end users
- Train and educate more technical people
- Bridge the gap with the Industry

To democratize the use of quantum gravimeters developed in Europe

EQUIP-G benefits from a large and committed community already active in Geosciences

We engage with both public entities and private companies



EQUIP-G activities for community building:

Organizing two EU-wide community workshops

Organizing two Open Calls to enable European entities outside the consortium to borrow and use quantum gravimeters from the EQUIP-G park

Trainings

Identify future Use cases

To establish a roadmap and recommendations for future European perennial entity

EQUIP-G - Next steps for 2026

Towards the blueprint of a future European Research Infrastructure

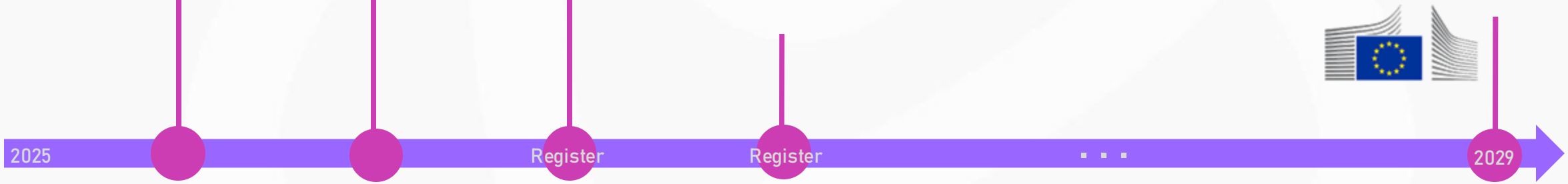
February 2026
Instrument training
(closed)

May 2026
Instrument comparison
(closed)

First EU-wide workshop
03/06/2026 to 05/06/2026
Potsdam, Germany

First Open-call:
External European entities will be able to borrow quantum gravimeters from EQUIP-G
Summer 2026

Roadmap and recommendations to the European Commission for a European entity managing a shared park of quantum gravimeters



EQUIP-G

European Quantum Infrastructure Project for Gravimetry

Save the date!

EU-wide community workshop

June 3rd to June 5th 2026

GFZ Helmholtz Center for Geosciences, Potsdam, Germany

Stakeholders of gravimetry for Geosciences
(scientists & engineers from research and private sector)
European and national policy makers

Contact (local organizing committee):
Marvin Reich, mreich@gfz.de

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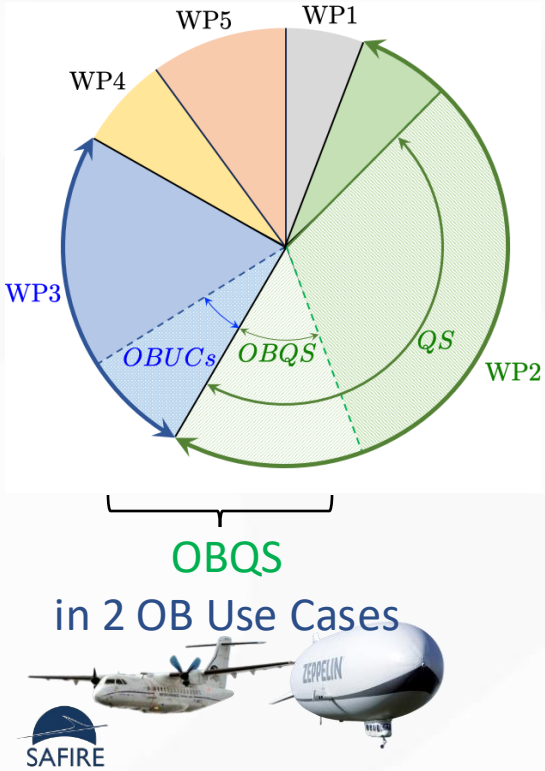
EQUIP-G - Epos-France ASG

Key role

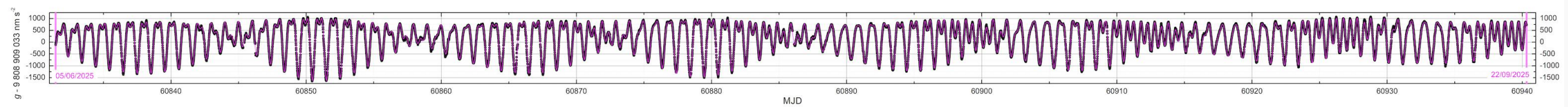
- PI
- WP4 Leader
- Largely involved in WP2 (tests, metrology, comparisons (2), training, future QS design)
- Large budget (9.2 M€)
- 3 new instruments (4.3 M€ + insurance)

- Participate to final proposed perenial EU entity
- Futur test stations
- TCS ?
- First KPI



QS Quantum Sensors:

7 Q Gravimeters	*(1 LTE CNRS)*
2 Dual Q Gravimeters	*(1 LTE CNRS)*
1 OB Q Gravimeter	*(LTE CNRS)*



Counterpart:

- AQG-B01 deployed and used in EQUIP-G

To remember:

- *Techno from French research labs, transferred to French industry*
- *We need to be prepared to continue to play a key role*

EQUIP-G - EU strategy

https://digital-strategy.ec.europa.eu/en/library/quantum-europe-strategy

European Commission

EN Search

Shaping Europe's digital future

Home | Policies | Activities | News | Library | Funding | Calendar | Consultations | AI Office

Home > Library > Quantum Europe Strategy

POLICY AND LEGISLATION | Publication 02 July 2025

Quantum Europe Strategy

The European Commission has adopted a Quantum Strategy to position Europe as a global leader in quantum by 2030.

Despite its remarkable progress in quantum technology, the EU is currently lagging behind in translating its innovation capabilities and future potential into real market opportunities, while also struggling with fragmentation of strategies and roadmaps across Member States.

While highlighting Europe's strengths, the Quantum Europe Strategy aims to turn Europe into a quantum powerhouse by fostering a resilient, sovereign quantum ecosystem, that fuels startup growth and transforms breakthrough science into market-ready applications, while maintaining its scientific leadership.

GettyImages © AliseFox

EQUIP-G - EU strategy

https://digital-strategy.ec.europa.eu/en/library/quantum-europe-strategy

EUROPEAN COMMISSION

Brussels, 2.7.2025
COM(2025) 363 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Quantum Europe Strategy: Quantum Europe in a Changing World

Pan-European quantum gravimetry infrastructure (>2030 and beyond)

- Array of quantum gravimeters (fixed terrestrial and mounted on carriers) at strategic sites
- Networked quantum sensing infrastructure covering all Europe, both land and sea
- Quantum space gravimetry pathfinder mission (complementing terrestrial network, allowing continuous monitoring of Earth's surface)

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Project coordination:

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Follow us!

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