

Minutes of the Meeting of IAG JWG 2.1.1 Development of the International Terrestrial Gravity Reference Frame

**Wednesday, 3 September 2025, 15:00 UTC
IAG 2025, Rimini, and online**

**Chair: Hartmut Wziontek (Germany)
Vice-chair: Sylvain Bonvalot (France)**

Agenda

1. Coordination of the infrastructure
2. Site requirements and best practices guides
3. Updates on the AGrav database
4. Future Activities: ITGRF Workshop, Publication

1 Coordination of the infrastructure

As agreed in the meeting at GGHS 2024 in Thessaloniki, regional coordination was assigned for Europe, North American and Latin America. Support for a coordination in Asia and Japan was expressed by Shuqing Wu (NIM China) and Koji Matsuo (GSI Japan). For Middle East and Africa, the responsibility is still open.

For the European station in the NKG region, A. Engfeldt (Lantmäteriet) proposed core stations Metsähovi (Finland), Onsala (Sweden) and Ny Ålesund (Norway), and Mårtsbo (Sweden) and Borås (Sweden) as comparison and references stations, resp. It was discussed and agreed on that core stations should be aligned with the GGOS core stations where several space geodetic techniques (VLBI, SLR, GNSS) are established.

For the remaining parts of Europe a set of stations was identified by P. Dykowski (IGIK): Pecny (CZ), Wettzell (GE), Bad Homburg (GE), Trappes (FR), Strasbourg (FR), Yebes (ES), Borowa Góra (PL) and Józefosław (PL). Other stations of uncertain status were discussed in Italy, UK, Austria, Slovakia and Belgium. Station Herstmonceux (UK) was proposed by V. Smith (BGS) as reference station. Station Yebes (ES) was presented as site for regional comparisons, and station Santa María Station (Azores, PT) was introduced as reference station by M. Calvo (IGN Spain). In Italy it will be checked how stations equipped with a superconducting gravimeter can be included. In North America, two stations were reported by D. Van Westrum (NGS) and J. Crowley (NRCAN): Table Mountain Geophysical Observatory (TMGO) and the Canadian Absolute Gravity Site (CAGS). TMGO is a comparison site with a long FG5 time series that goes back to 1994 and where the ICAG 2023 was hosted. At CAGS a reference function based on combination of a gPhoneX and AQG operated continuously along with an FG5X will be established. It is further planned to rebuild CAGS with the perspective to accommodate future international comparisons.

For Latin America, stations AGGO/La Plata (AR) and Vassouras (BR) were proposed as reference stations by E.D. Antokoletz (BKG) and M De Sousa (ON). D. Blitzkow mentioned a potential station in the Astronomical Observatory, Valinhos, Brazil.

2 Site requirements and best practices guides

Documents describing site requirements need to be developed or adopted, distinguishing first order stations. For the majority of stations, the specifications can be more relaxed in order to promote the establishment of new stations and to avoid to exclude existing ones. A connection to GNSS should be considered. A wiki page hosted at BKG was offered as reference site requirements and best practices guides

<https://share.bkg.bund.de/x/tgDhAg>

As separate meeting in autumn 2025 was found to be necessary to elaborate this further

3 Updates on the AGrav database

The current status of the re-established AGrav database at BGI with support of Observatoire Midi-Pyrénées (SEDOO service) that was presented with a poster in session G03-2 and is accessible via

- <https://bgi.obs-mip.fr/data-products/gravity-databases/absolute-gravity-data/>
- <https://agrav.bkg.bund.de/>

The registration process and the upload of gravity data were explained. An alternative to project files was requested, e.g. based on csv files or spreadsheets. The import of table structures will be discussed by BGI and SEDOO. Another possibility would be to create project files from summary information on gravity values and related information.

4 Future Activities: ITGRF Workshop, Publication

A second ITGRF workshop for 2026 was discussed. Based on a survey with 17 votes, a workshop was considered as important. Scheduling it for the second half of 2026 was supported by 65% of the answers. About half of the respondents would join in person and about ¾ consider a hybrid option as necessary. As an alternative, a session at GGHS 2026 was proposed. Finally, V. Smith (UK) kindly offered to host the workshop at Herstmonceux, UK, with support of the BGS. This was greatly acknowledged by the participants.

A new publication to document the ITGRF infrastructure was proposed, aiming to replace the IGSN71, but not discussed further.

An alternative software to process FG5 observations developed in UK was described by V. Smith and offered to the community to be further developed as open source.

Participants

On site: (incomplete)

P. Dykowski
E. D. Antokoletz
V. Pálinkáš
M. Lederer
J. Mäkinen
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I. Mezhenova
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D. Blitzkow
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Online:

A. Germak
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A. Engfeldt
D. van Westrum
J. Crowley
M. Calvo
V. Smith