Report on INTERMAGNET Meeting – Lisbon, Portugal

07 – 09 September 2025

The 2025 INTERMAGNET committee meeting was held over three days from Sunday 07 to Tuesday 09 September 2025 at the offices of Instituto Português do Mar e da Atmosfera in Lisbon, Portugal. There were a total of 34 participants comprising 23 committee members and guests on-site and 11 on-line participants.

The minutes for the meeting are in preparation and will be available on the INTERMAGNET website.

Meeting participants at IPMA: L-R: Chris Turbit, Shun Imajo, Simon Flower, Diogo Silva, Jorge Cruz, Andrew Lewis, David Boteler, Sang Cheol Han, Barbara Leichter, Jürgen Matzka, Ellen Clarke, Woo Cheol Yun, David Calp, Gauthier Hulot, Roman Leonhardt, Benoît Heumez, Tero Raita, Marcos Vinicius da Silva; Seiki Asari, Stephan Bracke, András Csontos. (Not present Cristiano Martins, Michael Vik and on-line participants.)

New IMOs

La Reunion Island observatory (REU) was accepted as an INTERMAGNET Magnetic Observatory. REU, located in the southern Indian Ocean, is operated by L'Institut de Physique du Globe de Paris and makes a valuable addition to the INTERMAGNET network. Congratulations and welcome.

Technical Manual

Version 5.3.2 of the INTERMAGNET Technical Manual has now been released and is available on-line at https://tech-man.intermagnet.org/stable/. The manual is also linked from the INTERMAGNET website and has a DOI (https://doi.org/10.48440/INTERMAGNET.2025.001). Comments and corrections to the manual are welcomed from the community.

Real-Time Data Submissions to INTERMAGNET

The Technical Manual defines "reported" data (also known as variation data) as preliminary data without baselines applied which may contain spikes and have missing values. "Adjusted" data (also known as provisional data) have baselines applied, spikes removed, and gaps filled.

Many INTERMAGNET magnetic observatories (IMO) submit real-time reported data to the GINs. Most of these data have baselines applied. A small number of IMOs submit real-time reported data without baselines applied. Since 1999 it has been considered best practice that IMOs submit data to INTERMAGNET with baselines applied.

INTERMAGNET requests that all real-time data from IMOs, even those with long-standing membership commencing prior to 1999, are now submitted as adjusted data with baselines applied. This will provide consistency in real-time data quality from IMOs and ensure the processing systems at the INTERMAGNET data archive can correctly calculate all vector components from real-time data submitted by IMOs. Multiple submissions of these preliminary data are possible, where an IMO wants to refine the quality of data shortly after recording.

Those IMOs currently submitting real-time reported data with baselines applied should re-classify those data submissions as adjusted data. IMOs submitting reported data without baselines applied should apply baselines to those data before submission and re-classify the data as adjusted. IMOs submitting real-time adjusted data are not required to make any changes.

The Technical Manual and web site will be updated to reflect these significant changes and IMOs affected will be contacted directly by INTERMAGNET.

Presentations and Discussions

During the meeting, plenary presentations were made by Gauthier Hulot, Simon Flower, Marcos Vinicius da Silva and Roman Leonhardt. Gauthier described the ESA Scout NanoMagSat project and future plans. Simon presented on developments for real time data transfers within INTERMAGNET and demonstrated an example application to access data from the INTERMAGNET archive and Edinburgh World Data Centre. Roman presented his MARTAS data acquisition and MQTT python package. Marcos Vinicius shared his work on long-term data quality checking by comparing secular variation data from IMOs against data derived from field models.

Slides from some of the presentations will be made available on the INTERMAGNET web site.

Space weather data users increasingly require easy access to true real-time magnetic data. The high standard of absolute accuracy required for INTERMAGNET magnetic observatory data is often not necessary for space weather research and magnetic variation data can fulfil the requirements for space weather users.

During this meeting there were extensive discussions to explore the opportunities and challenges to expand INTERMAGNET's data holding to include magnetic variometer data. Whilst magnetic variation data would be a valuable addition to meet the evolving requirements of users, accepting variometer data presents some technical and logistical challenges to INTERMAGET's systems, not least the increased workload on INTERMAGNET's limited resources.

A variometer data working group, made up of interested members from the subcommittees, was formed to consider the topic in detail and report at the next meeting. Input from INTERMAGNET member institutes and IMOs is welcome.

INTERMAGNET Structure and officers

Nominations for new OpsCom members are welcome from IMOs and their institutes – contact the OpsCom secretary for a nomination form.

Since August 2024 all members of the data checking team are OpsCom members, and most have now been assigned responsibilities within the subcommittees. New members who commenced during this meeting include Emmanuel Nahayo, Igor Mandić, Kusumita Arora, Manjula Lingala and Orsi Baillie.

Since the previous meeting in November 2024 Kristina Rossavik and Margaret Pueringer have resigned from the Operations Committee. We thank both Margaret and Kristina for their contributions to the committee and their work as definitive data checkers.

The current organisational structure is available on the INTERMAGNET website.
https://intermagnet.org/structure.html

Next meeting

The next face to face meeting will be held at World Data Centre, Kyoto, Japan from 21 to 23 October 2026, immediately preceding the XXIst IAGA Workshop in Kakioka.

As always, INTERMAGNET welcomes attendance at meetings from IMO representatives and guests. To express interest in attending please contact Jürgen Matzka, Chair of the Operations Committee.

Acknowledgements

The INTERMAGNET committee thanks IPMA, Jorge Cruz, Diogo Silva and staff for hosting the meeting on the 8th floor of their Lisbon offices. The meeting arrangements included provision of three meeting rooms, internet and audio-visual facilities, morning and afternoon teas and lunches and a memorable official INTERMAGNET dinner on Monday 08 September at Mae Restaurante in Lisbon.

Andrew Lewis (INTERMAGNET Secretary), secretary_intermagnet@gfz-potsdam.de ; andrew.lewis@ga.gov.au