Report on INTERMAGNET Meeting - Rio de Janeiro, Brazil

07 – 10 November 2024

The 2024 INTERMAGNET meeting was held over four days, Thursday and Friday 07-08 November at Observatório Nacional (ON) in Rio de Janeiro and 09-10 November at ibis Rio de Janeiro Botofogo hotel.

Meeting participants at ON. L-R: Marcos Vinicius da Silva; Hiroki Matsushita, Tero Raita, David Calp, Matthew Gard, Seiki Asari, Jan Reda, David Boteler, Kristina Rossavik, Roman Leonhardt, Jürgen Matzka, Stephan Bracke, Benoît Heumez, André Wiermann, Andrew Lewis, Chris Turbitt, Cristiano Martins, Kristen Lewis. (On-line participants not included)

The meeting was the first face-to-face meeting under new Operations Committee (OpsCom) chair, Jürgen Matzka. Most participants attended the meeting in person, but some from Europe and North America participated on-line. Minutes for the meeting are still in preparation. When minutes are finalised they will be available on the INTERMAGNET website at https://intermagnet.org/meetings.html

New IMOs

Kiruna observatory (KIR) Sweden, was accepted as the newest INTERMAGNET Magnetic Observatory (IMO), congratulations and welcome.

Technical Manual

Version 5.1.1 of the INTERMAGNET Technical Manual has been released and is available on-line at https://tech-man.intermagnet.org/stable/ and is linked from the INTERMAGNET website. The process of releasing the Technical Manual has been stream-lined and automated and it is now faster and easier for the community to contribute to the manual.

The Digital Object Identifier (https://doi.org/10.48440/INTERMAGNET.2020.001) for the Technical Manual will be updated for each new published version of the manual.

Real-time data

There is an increasing demand from data users for real-time geomagnetic data, particularly for space weather monitoring applications, so INTERMAGNET is working towards improving real-time data availability.

Data transfer protocols between the 5 GINs and the INTERMAGNET data portal at the British Geological Survey are being modernised. The current rsync protocol, which has been used for many years for data transfer between GINs, will be replaced with MQTT and Seedlink.

The MQTT and Seedlink protocols will also be available for data transfer directly between IMOs and some GINs, while retaining all the legacy methods of data transfer. The Edinburgh GIN can already accept data from IMOs via the new protocols and some IMOs are now contributing data using MQTT. Specifications and requirements for ImagMQTT are available on the INTERMAGNET github https://github.com/INTERMAGNET/wg-www-gins-data-formats/tree/master/ImagMQTT

INTERMAGNET encourages all IMOs to provide data at their fastest possible rate using the most suitable of the available data transfer protocols.

Quasi-definitive data

IMOs are encouraged to provide quasi-definitive (QD) data, both one-minute and one-second. Currently about 75 IMOs regularly deliver 1-minute quasi-definitive data and 25 IMOs produce 1-second quasi-definitive data. IMOs currently producing 1-second data are encouraged to contribute those data as QD data where possible. While neither one-second data, nor quasi-definitive data, are obligatory for INTERMAGNET membership, the higher quality of quasi-definitive data compared to reported data and the faster delivery time compared to definitive data make both one-minute and one-second quasi-definitive data a valuable product for our data users.

Data publication

The INTERMAGNET Reference Data Set (IRDS) for 2020 has been published and is available at:

https://doi.org/10.5880/INTERMAGNET.1991.2020

Each new IRDS contains all available definitive 1-minute data starting from 1991. The full list of IRDS publications is available on the INTERMAGNET web site https://intermagnet.org/data_download.html

INTERMAGNET thanks all IMOs for preparing and contributing definitive data and acknowledges Jan Reda and the data checking team (listed on the website at https://intermagnet.org/structure.html#data-checking-task-team for continuing to assure the high quality of the INTERMAGNET one-minute definitive data set.

New members of the data checking team are welcome and needed, please contact INTERMAGNET if you are interested to join the data check team.

Thanks also to GFZ for their work in preparing the DOI and hosting the IRDS datasets.

Data licensing and usage

Conditions of use for data and suggested texts for acknowledgement are set out on the INTERMAGNET web-site at https://intermagnet.org/data_conditions.html

Any IMOs or institutes providing data to INTERMAGNET under licence conditions that differ from CC BY-NC 4.0 are invited to include a link to their specific licence conditions on the INTERMAGNET web-site. Some IMOs choose to impose short-term embargoes on data distributed through INTERMAGNET - please contact INTERMAGNET for further information.

INTERMAGNET Structure and officers

Eight new officers joined OpsCom during or immediately after this meeting. Welcome to Seiki Asari, David Calp, András Csontos, Matthew Gard, Brendan Geels, Maggie Pueringer, Kristina Rossavik and Marcos Vinicius da Silva. Their broad range of skills and experience will be a valuable addition to the work of the sub-committees.

A call for nominations for new officers was distributed in August 2024 and remains open – please contact INTERMAGNET for more information.

There were some membership changes and re-allocation of responsibilities for the sub-committees within OpsCom.

Simon Flower has taken over as chair of a re-structured GIN sub-committee to manage the operations of the 5 geomagnetic information nodes and data portal at Edinburgh, Ottawa, Golden, Paris and Kyoto. Simon returns to this role after 8 years as OpsCom chair and replaces Charles Blais, who stepped down as chair of the sub-committee but remains an active member and GIN manager.

Stephan Bracke is now chair of the Technical Manual sub-committee. Many thanks to Benoit St Louis who retired from the position of chair in 2023 after many years of valuable service to INTERMAGNET

Roman Leonhardt has joined Jan Reda as co-chair of the Definitive Data sub-committee. Roman is responsible for 1-second definitive data products while Jan retains responsibility for one-minute definitive data.

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 in the offices of Instituto Portugues do Mar e da Atmosfera, Lisbon, Portugal on 08-09 September 2025, immediately following the Lisbon IAGA-IASPEI joint scientific assembly. As always, INTERMAGNET welcomes attendance at the meeting from interested IMO representatives and guests.

Acknowledgements

Many thanks to Andre Wiermann, Luiz Benyosef and staff for hosting the meeting at Observatório Nacional, including access to the ON campus, provision of meeting rooms, internet and audio-visual facilities, morning and afternoon teas, lunch arrangements at local restaurants, a tour of the ON historic buildings and lively contributions throughout the meeting.

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