

IMAGE Science Council meeting minutes

Time: 21 Feb 2024 at 14:00 - 16:00 EET

Place: Online (Zoom)

Present:

Parties:

TGO: Magnar G. Johnsen (SC Chair)

FMI: Liisa Juusola (PI), Ari Viljanen, Kirsti Kauristie, Mirjam Kellinsalmi, Tiera Laitinen

SGO: Tero Raita

IG: Jan Reda, Anne Neska

IRF: Masatoshi Yamauchi (arrived at 15:04 EET)

GFZ: Jürgen Matzka

SGU: Jan Wittke

Parties-In-Waiting (have not yet signed the Cooperation Agreement):

DTU: Anna Willer

Associate Members:

Hermann Lühr

Hermann Opgenoorth

Missing:

Parties-In-Waiting: SI

Associate Members: Iann Mann and Karl Laundal

The meeting was convened and the agenda circulated by email by the SC Chair Magnar G. Johnsen on 25 Jan 2024. 7/7 of the votes were present. The meeting was quorate.

Agenda:

1. Acceptance of Agenda

The agenda was accepted.

2. Appointment of writer of minutes

Magnar G. Johnsen suggested Liisa Juusola and she agreed.

3. Status report from PI

Liisa Juusola presented the current station coverage and data availability. Anne Neska and Jan Wittke noticed that significant amounts of IG and SGU data that should be available are missing from IMAGE. The missing data will be added as soon as possible. LJ noted that DTU and SI have not yet signed the Joinder to the IMAGE Cooperation agreement (email sent by LJ on 13 Jan 2023). Anna Willer commented that DTU's legal department is reviewing the document and hopefully it will be signed soon.

4. Could IMAGE become an ERIC?

Kirsti Kauriste presented an approach by B. Heilig for collaboration between IMAGE and the European quasi-Meridional Magnetometer Array (EMMA). EMMA was founded in 2012 during the EU/FP7 PLASMON project (<http://plasmon.elte.hu/home.htm>) and some IMAGE stations contribute 1-s real-time data to EMMA.

1. EMMA offers IMAGE access to archived data from those EMMA stations that are not already part of IMAGE.
 - Hermann Lühr commented that it would be a gain for IMAGE to extend its latitude coverage by collaborating with EMMA and to increase its sampling rate from 10-s to 1-s.
 - Hermann Opgenoorth commented that a discussion on the principles of IMAGE is needed: Does IMAGE want to remain a research infrastructure that provides archived 10-s data or become an operational infrastructure that provides real-time 1-s as well. An operational infrastructure might be in a position to apply for funding from ESA.
 - Magnar G. Johnsen pointed out that possible expansion of IMAGE far south of the nominal auroral zone is also a topic for the discussion on the principles of IMAGE; after all, IMAGE is the "International Monitor for Auroral Geomagnetic Effects". With an expansion to include EMMA, one could end up with an ambition to transform IMAGE into a Pan-European magnetometer network, which is quite far from the original objective. He also pointed out that the ambition to transition to 1-s data varies among the IMAGE partners, and it may take a long time before all stations attain it. He supported adding stations to IMAGE but noted that there is no need to make the decision immediately.
2. For the future, EMMA suggests considering wider consortium-like cooperation, possibly in the form of an ERIC.
 - Magnar G. Johnsen noted that belonging to an ERIC would open some funding possibilities.
 - Hermann Opgenoorth commented that an ERIC does not guarantee funding and sources for sustainable funding for the maintenance of ground-based infrastructures are needed.
 - Kirsti Kauristie noted that a magnetometer-based ERIC may not be feasible but there might other alternatives, such as adding a magnetometer-aspect to the PITHIA-NRF project (<https://pithia-nrf.eu/>).
 - Jürgen Matzka noted that the ERIC we are most familiar with, EPOS, is huge; IMAGE alone is too small. Besides, FMI, IG, and GFZ are already parts of EPOS. Is it possible to be part of two ERICs?
 - Anne Neska noted that based on experience with EPOS-ERIC, the amount of paper-work required is huge but the funding very small. FMI agreed.
 - Magnar G. Johnsen concluded that we will keep an open mind and invite B. Heilig to the next IMAGE meeting.

5. DOI for IMAGE data

Liisa Juusola reviewed an email she had sent on 14 Dec 2023, where she wrote:

“Acquiring a DOI for IMAGE data has been brought up several times over the past years. Last spring James Weygand from UCLA visited FMI. As assigning DOIs through SPASE (<https://spase-group.org/>) is part of his work, we also discussed the possibility of getting a DOI for IMAGE data. It turned out that a DOI should refer to both a data producer and a file type. There is no requirement for "freezing" the archive, so the data can be modified and new data can be added freely.

We decided to get started by getting a DOI for the FMI 10-s magnetometer data available through the IMAGE webpage. Here it is:

<https://doi.org/10.48322/29rq-g929>

We are in the process of getting DOIs for the FMI 1-min data available through IMAGE and FMI 1-s data as well.

In case any of you are interested in getting a similar DOI through SPASE for your magnetometer data, you could do it by contacting James Weygand (jweygand@igpp.ucla.edu). You'd need to provide him with your data producer information (see <https://doi.org/10.48322/29rq-g929>, for example) but the data file information could just be copied from the FMI 10-s magnetometer metadata.”

Tero Raita and Jürgen Matzka raised the doubt that published data could not be modified. Liisa Juusola promised to ask for clarification from James Weygand.

Addition on 28 Feb 2024: In response to Liisa’s query, James Weygand replied: *“The metadata descriptions and DOIs only describe a dataset format and point toward the data archive. The DOI points toward the metadata description. Unless the format of the data itself changes (i.e., adding parameters, changing the order of the parameters, removing parameters, etc), the metadata description and DOI don't really change if corrections are made to the data. Even if you change the number of parameters we can just update the metadata and the DOI can stay the same. Also, if changes are made to the data, notes can be added to the metadata to tell users about updates. I change my SECS dataset every once and a while but don't ever need to update the metadata or DOI.”*

Yama has already asked for a DOI for IRF data and received a positive reply but is still waiting for the DOI. Magnar Johnsen volunteered to be the next to try the process.

6. Integrating IMAGE data in Dutch timeline viewer?

Magnar G. Johnsen presented Karl Laundal’s suggestion that if IMAGE data were made available through a HAPI server, Eelco Doornbos could add it to the space weather time line viewer (<https://spaceweather.knmi.nl/viewer/>) he is developing.

Hermann Opgenoorth commented that Eelco’s tools are wonderful and HAPI access is a powerful tool. Magnar G. Johnsen noted that carrying out the suggestion requires effort from FMI. FMI promised to consider the possibilities.

7. Next IMAGE meeting

In the previous IMAGE meeting it was decided that the next meeting would be hosted by DTU in 2024. Anna Willer confirmed that DTU is still happy to host the meeting. She will create a poll with some possible dates for a three-day (“lunch-to-lunch”) meeting in September.

8. Reports from members

- GFZ (Jürgen Matzka): NGK and WNG had some technical problems in 2022, but this does concern IMAGE.
- IG (Anne Neska): Half a year of BRZ data in 2023 is missing from IMAGE and will be sent soon.

- FMI (Mirjam Kellinsalmi): HAN had some problems in summer 2023. New LEMI magnetometers are being tested and will replace some old ones. The main building at the NUR observatory site will be demolished but hopefully the measurements can still continue.
- DTU (Anna Willer): New data uploads to IMAGE are expected soon. The data delivery from SIN will be postponed because of a baseline drift problem and the data quality will be discussed at the next IMAGE meeting. Magnar G. Johnsen asked whether there are any plans of including the station DMH, located on the east coast of Greenland, to IMAGE. Anna replied that this is possible and she will give a data quality report at the next IMAGE meeting.
- SGU (Jan Wittke): Data for 2023 is missing from IMAGE but available at the SGU ftp server. Mirjam Kellinsalmi will check the data download. The rest of the missing data will soon become available.
- SGO (Tero Raita): SGO is setting up three new magnetometers, one of which is already being tested in Kemihara. Yama suggested that one could be placed between KIR and LYC.
- IRF (Yama): There was a one month gap in TOP data in spring 2022 and there have been some spikes due to traffic.
- SI (Magnar G. Johnsen on behalf of Gulli): There is a new absolute house at LRV.
- TGO (Magnar G. Johnsen): TGO is developing a new 1-s magnetometer and there is a long-term plan to upgrade to 1-s sampling rate at all stations. A new magnetometer in Antarctica is being deployed and there is on-going work to establish a new observatory to Ny-Ålesund.

9. Any other business

Hermann Lühr noted that it is impressive how IMAGE is recognized in international communities and we should keep up the good data quality and data availability.

Hermann Oppenoorth noted that there is a push from science infrastructures to space weather service infrastructures, which affects IMAGE as well. He also mentioned that ESWW2025 will be in Umeå.

Ari Viljanen conveyed a request from EPOS to add their logo to the IMAGE webpage. Magnar G. Johnsen noted that there is no formal agreement or collaboration between IMAGE and EPOS, and he therefore does not understand why EPOS should have a logo at the IMAGE webpage. TGO data, for example, is not available through EPOS although the license under which the data are distributed would allow this. Yama suggested that rather than promote EPOS, IMAGE could promote other relevant infrastructures, such as all-sky cameras. It was concluded that the Parties will vote on this at the next IMAGE meeting.

Meeting ended at 15:55 EET