

Introduction

A general requirement for WDS Regular and Network Members is that they are reviewed on a periodic basis. A key component in the recurrent evaluation of these WDS Members is the provision of Activity Reports by Official Representatives once every two years; coinciding with the 1-day WDS Members' Forum organized before each WDS Conference. Member Representatives are requested to submit a brief Activity Report following the template included in this document, which provides a simple format to share details of accomplishments over the previous two years and future goals with the WDS Scientific Committee (WDS-SC) and WDS community.

Responses in the Report are examined by the WDS-SC to gauge the current position of each Member Organization as regards its maturity and its interaction with ICSU-WDS. In this respect, the Reports given by a Member Organization during each cycle of its affiliation to ICSU-WDS will be used by the WDS-SC as supporting documents during its next periodic review. Specifically, the evidence contained in the Reports will enable the WDS-SC to highlight those assessment criteria already satisfied by the Organization, facilitating its re-accreditation as a WDS Member.

Instructions

- The Report template is split into a small number of sections and subsections to encourage standardization in the information given while hopefully allowing each WDS Member to highlight what they do. It consists of six parts: (1) Identification Information, (2) Remit & Status, (3) Activities & Developments, (4) Assessment & Accreditation, (5) Future Targets, and (6) Feedback.
- Each answer has been allocated a maximum length to guide the level of detail required. Responses are expected for all (sub)sections—even if your answer is simply 'None/Not Applicable'. If the WDS-SC considers that a particular (sub)section is not relevant to your organization, you will be notified of this in advance.
- Information should be provided directly within your Report where possible. However, if you wish to add supporting tables, graphs, or other documents; please refer to them in the text and append each as a separate attachment (with a suitable filename) when returning by email. If links to webpages are cited, the contained information should also be summarized since URLs often change over time.
- Please return the Report to the WDS International Programme Office (ipo@icsu-wds.org) by the agreed date.
- The format of this template is not considered final, and your inputs on any part of its design or on the Report process are welcomed in Section 6.

1. Identification Information

The contents of your Report may be made public on the WDS website. If any information you supply is considered sensitive, please indicate this within the text or the Feedback section. If you do not want any of this Report to be openly accessible, please uncheck the following:

The WDS-IPO has my permission to place this Report on the WDS website

Please confirm that the following information is correct or make revisions, as appropriate.

1.1 Details of organization

Name:

Website:

Host Organization:

Network(s):

1.2 Details of WDS point-of-contact

Contact Name:

Address Line 1:

Address Line 2:

Town/City:

County/State/Province:

Postal/ZIP Code:

Country:

Email Address:

Telephone:

Facsimile:

1.3 Function(s) within ICSU-WDS

- Data collection and processing (including quality assurance/control)
- Long-term data repository (e.g., data library; including open access to all data)
- Data publisher (including citability, use of persistent identifiers, and peer-review-like procedures for data and products)
- Community (data-)related service
- General service (e.g., mapping, cataloguing, bibliography and bibliometrics, or data dissemination)

2. Remit & Status

2.1 Please provide a short summary of the remit of your organization. [Max. ≈ 250 words]

To establish a global real-time magnetic observatory network recognized as a key Earth observing system providing data serving scientific research into the Earth, from its deep interior to space, and supporting operational services benefiting society. INTERMAGNET:

- Sets mandatory and aspirational standards for measurement, data processing, formats and transmission for network membership, and supports magnetic observatory operators in achieving the standards by providing technical assistance.
- Provides advice on the establishment of new observatories, helping to co-ordinate initiatives taken by member institutes and so optimise the scientific value of the global network.
- As a member of the World Data System, supports data services, by maintaining an infrastructure for magnetic observatory data collection and dissemination.
- Communicates with data users to promote use of INTERMAGNET data and to understand their requirements, feeding this information into the definitions of operating standards.
- Works closely with the International Association of Geomagnetism and Aeronomy and other organisations concerned with magnetic observatory operations.

For further information see the INTERMAGNET technical manual:
<http://www.intermagnet.org/publication-software/technicalsoft-eng.php>

Guidance

- Include here
 - The mission of your organization and its responsibilities
 - Links to strategic documents/business plans for achieving this mission
 - Any stakeholders, for example, data producers/depositors and user community(ies)

2.2 Please provide a short summary of the current status of your organization. [Max. ≈ 250 words]

At the time of writing (January 2015) INTERMAGNET has 59 participating institutes in 41 countries who collectively operate 143 geomagnetic observatories, over three quarters of all observatories known to be operating around the world (see <http://www.intermagnet.org/institutes-eng.php>). Data collection is continuous and is managed by regional Geomagnetic Information Nodes in 5 countries. Data is forwarded from these nodes to the INTERMAGNET web site in Canada for distribution to users. INTERMAGNET supplied 0.91 million data files to users in 2013 and 1.37 million in 2014 (each file contains either one day or one month of data from a single observatory - the vast majority of requests are for 'day' files). Two DVDs of 'definitive' data (for the years 2009 and 2010) have been published during the reporting period.

INTERMAGNET has 16 office bearers (<http://www.intermagnet.org/structops-eng.php>) who attend an annual meeting to manage INTERMAGNET business. Two meetings were held in the reporting period, at Copenhagen in Denmark and Hyderabad in India. As well as managing the day to day work (of assessing observatory applications to join, collecting, distributing and publishing data) a major initiative that is nearing completion is the launch of a new geomagnetic high resolution data product (see section 3.5).

Funding and staff time are all provided by the participating institutes.

Guidance

- Give details on your
 - Organizational structure, including the connections to your host organization
 - Funding
 - Staffing levels
 - Usage statistics, for instance, number of national/international users or downloads
- In particular, please indicate any changes to the above over the last two years and whether any changes are anticipated to occur within the next two years.

3. Activities & Developments

Note: In this section, you may wish to cite other reports your organization has generated (e.g., annual reports), as deemed necessary. Please provide links to those reports here and reference them in your responses. [Free text]

Annual report to INTERMAGNET Magnetic Observatories following INTERMAGNET annual meeting

3.1 Please list any major conferences/meetings attended by your organization over the previous two years. [Max. ≈ 100 words]

The INTERMAGNET 2014 meeting in Hyderabad was held to coincide with the International Association of Geomagnetism and Aeronomy (IAGA) 2014 Magnetic Observatory Workshop. Many INTERMAGNET office bearers were present at the IAGA workshop and some workshop attendees also attended the INTERMAGNET meeting.

3.2 Please list any major articles or research papers produced by your organization over the previous two years. [Max. ≈ 100 words]

Love, J. J. and A. Chulliat, An International Network of Magnetic Observatories, Eos Trans. AGU, 94(42), 373-374, doi:10.1002/2013EO420001, 2013

3.3 Please list any capacity building/training efforts by your organization over the previous two years. [Max. ≈ 100 words]

The objective of the INDIGO project is to increase the number of INTERMAGNET-quality digital observatories around the world. As well as providing equipment and offering remote support, INTERMAGNET ran a training course for two observers from the Argentinian Servicio Meteorológico Nacion at the British Geological Survey's offices in Edinburgh. The Royal Observatory of Belgium also provides support to the INDIGO project.

3.4 Please mention any engagement by your organization with ICSU research programmes ([list available here](#)) and with WDS (e.g., in Working Groups). [Max. ≈ 100 words]

The MAGNIO project is an ICSU funded project, with IUGG as lead applicant. INTERMAGNET members are involved in setting this up. MAGNIO aims to establish coordination and common standards between high-quality magnetic observatories in the North Indian Ocean region and promote regional studies of geomagnetic phenomena. Much of the focus of INTERMAGNET's work is in engaging with Space Weather researchers and making data products that are useful in this community, which is relevant to the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP). INTERMAGNET has an arrangement to supply data in real-time to support the work of the International Service for Geomagnetic Indices (ISGI).

3. Activities & Developments (Continued)

3.5 Please give an overview of the status of any previously ongoing and new scientific and technological developments within your organization over the previous two years. [Max. ≈ 200 words]

INTERMAGNET is close to the launch of a new high resolution data product. This has included creating and publishing a standard for 1-second data, getting ready the infrastructure to support the new data (including a new data format) and developing processes for receiving and checking the data quality. INTERMAGNET has been involved in developing specifications for instrumentation that will meet user requirements in this area.

3.6 Please give an overview of any new data, products, and services offered by your organization over the previous two years. [Max. ≈ 200 words]

INTERMAGNET has defined a data product called quasi-definitive data that is designed to allow users early access to data of high quality, but before it has been corrected to final standards. One of the beneficiaries of this work is the SWARM satellite mission.

INTERMAGNET has encouraged its participants to submit one second data even though they may not yet conform to the new one second data standard. This is to support our users who work in Space Weather hazard.

INTERMAGNET has made an interactive geomagnetic activity map available on it's website:
<http://www.intermagnet.org/activitymap/activitymap-eng.php>

3.7 Please give an overview of any new standards or best practices adopted by your organization over the previous two years. [Max. ≈ 200 words]

See answers to previous questions in this section.

4. Assessment & Accreditation

4.1 Please supply details of any formal assessment or accreditation your organization has undergone within the last two years (other than WDS certification). [Max. ≈ 100 words]

None

Guidance

- An assessment or accreditation should ideally be performed by external body, for example, the Data Seal of Approval, an umbrella organization (network), or certification under ISO 9001. However, it may also include the adoption of an internal Quality Management System/Framework without official ISO 9001 certification. If your organization has a documented Quality Manual, please mention this and attach it to your report.

4.2 Please list any changes within your organization related to its accreditation as a WDS Member. In particular, please refer to any feedback given by the Reviewers of your organization's application on WDS criteria that required future clarification or improvement. [Max. ≈ 450 words]

The main area addressed by reviewers of the application to join the WDS was that INTERMAGNET needed to work on how it stores and presents metadata. An INTERMAGNET discussion document on geomagnetic metadata has been created and an institute (GFZ Potsdam) appointed to take the lead on making progress in this area.

5. Future Targets

5.1 Please list any key targets that your organization has for the upcoming two years. [Max. ≈ 300 words]

INTERMAGNET expects to make substantial progress towards regular production of 1-second definitive data, taking account of technological developments that enable instrumentation and data acquisition.

INTERMAGNET hopes to make progress towards its goal of collecting and distributing real-time data to users. Our present infrastructure allows data to be distributed, at best, within 20 minutes of recording. We hope to improve this to 2 minutes (for 1-minute resolution data) and 30 seconds (for 1-second data).

INTERMAGNET is in active discussion with the European Plate Observing System (EPOS) and expects to be making geomagnetic data available through EPOS by the conclusion of the EPOS implementation phase.

As the result of previous work on standards, INTERMAGNET expects to be able to confidently write down what are achievable standards (as opposed to aspirational standards) in the future.

INTERMAGNET expects to be attaching Digital Object Identifiers to some of the data it publishes within the next two years.

6. Feedback

6.1 Thank you for completing your WDS Biennial Report. The format of this Report is not seen as final, and we very much welcome your input on possible improvements to this template and to the procedure. Therefore, please use the space below to let us know of any general comments you have, as well as any specific thoughts on its relevance to your organization. [Free text]

Although we are a 'data' organisation, there is no space on this form to list our data publications, or the organisational document library (discussion documents and the technical note series) that underpins what we do.

Much of INTERMAGNET's work is 'regular' business (e.g. continuing to collect, check and publish time-series data) which is an important part of its mission. However the focus of this report to ICSU is on new initiatives. In future we would like to be able to report back on our 'regular' work.