



**International Association
of Geodesy**

Newsletter

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Editor: Gyula Tóth

IAG Communication and Outreach Branch
Department of Geodesy and Surveying
Budapest University of Technology and Economics
H-1521 Budapest, Hungary

Information Service of the International Association of Geodesy

<http://www.iag-aig.org>

newsletter@iag-aig.org

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The *IAG Newsletter* is under the editorial responsibility of the *Communication and Outreach Branch (COB)* of the IAG.

It is an open forum and contributors are welcome to send material (preferably in electronic form) to the IAG COB. These contributions should complement information sent by IAG officials or by IAG symposia organizers (reports and announcements). The *IAG Newsletter* is published monthly. It is available in different formats from the IAG new internet site: <http://www.iag-aig.org>

Each *IAG Newsletter* includes several of the following topics:

- I. news from the Bureau Members
- II. general information
- III. reports of IAG symposia
- IV. reports by commissions, special commissions or study groups
- V. symposia announcements
- VI. book reviews
- VII. fast bibliography

General Announcements

Call for IAG proposals for the IUGG Grants Program 2024-2027

We would like to draw your attention to opportunities within the IUGG Grants Program 2024-2027. The 1st call for proposals is now open.

For more information refer to: <https://iugg.org/grants-program/grants-program-2024-2027/>

If you wish to propose a project via IAG as leading Association, please contact the IAG Secretary General – IAG-Office(at)bkg.bund.de – and submit your proposal for internal IAG reviewing
until 8th of March 2024.

As IAG can submit only one proposal as leading Association, there will be an IAG-internal selection process with a decision by end of March.

Proposed projects for the IUGG Grants Program must:

- explore new scientific ideas, develop future international initiatives, and be of scientific and societal importance to the international geodetic/geophysical community.
- follow open science practices, thus making its scientific research and dissemination (including publications, data, physical samples, and software) accessible to all levels of society, amateur or professional.
- involve at least two IUGG bodies (i.e. **IAG plus at least one more IUGG Association or Union Commission**), whereby preference will be given to proposals that are multi- and trans-disciplinary, especially those involving more than two of the IUGG Associations and Union Commissions.
- consider aspects of diversity in view of countries/regions, gender and career stage of researchers involved.
- have deliverables that bring increased visibility to IUGG and the Union Associations, and have results that are expected to provide clear recommendations to politicians and other decision makers and to the general public in terms of the urgent actions to be undertaken.

Example: A typical proposal may be for a workshop or a meeting of experts from several disciplines to develop a specific scientific program or assessment, particularly addressing an enhancement of geodetic/geophysical research and education in underdeveloped and developing countries.

Thank you in advance for your interest and kind cooperation!

IAG Bureau

GGOS Strategic Plan 2024 – 2034: Geodesy for Science and Society

GGOS, the Global Geodetic Observing System of the International Association of Geodesy (IAG), was established as an integrating framework for all IAG Components (Services, Commissions, Inter-Commission Committees and Projects) to move from the provision of individual geodetic technique-based products to a level of consistent modelling and interpretation of Earth System processes and interactions, ensuring an integrated, consistent and long-term observing system.

GGOS regularly reviews and updates its strategic priorities to meet emerging needs in geodesy, always with a focus on strengthening GGOS' role as a collaborative hub in support of sustainable geodesy through the promotion and integration of diverse geodetic technologies and applications.

With this in mind, we are pleased to present the new **GGOS Strategic Plan 2024 – 2034: Geodesy for Science and Society**. This new Plan is based on an extensive community survey consisting of six closed questions (multiple choice with predetermined answers) and seven SWOT (Strengths, Weaknesses, Opportunities, Threats) questions. 70 colleagues from 32 countries participated in the GGOS survey between 11 July and 30 September 2022. Based on this brainstorming, the GGOS Strategic Planning Committee convened a two-day community workshop to discuss and identify updated long-term goals as well as cross-cutting community needs that each Strategic Goal will seek to address.



The long-term goals focus on: **Visibility and engagement**, **Science-policy networking**, **Capacity enhancement and sustainability**, and **Comprehensive and cross-cutting analysis**. Guided by these Goals, the Community Needs are presented as elements of a holistic effort to support the geodetic community and advance the recognition and use of geodesy for public benefit through **innovation**, **advocacy**, **communication**, and **integration**.

The members of the GGOS Executive Committee are currently working on the related Implementation Plan, which outlines the steps required to achieve the Strategic Goals. The Implementation Plan focuses on identifying, allocating, executing, and monitoring progress, with some actions requiring a multi-year effort. GGOS will periodically assess the progress towards the implementation of this plan and provide updates to the geodesy community.

We invite all interested colleagues inside and outside the IAG to find out more about our new Strategic Plan at <https://doi.org/10.5281/zenodo.10571158> and to get involved in supporting its implementation. Your participation would be greatly appreciated.

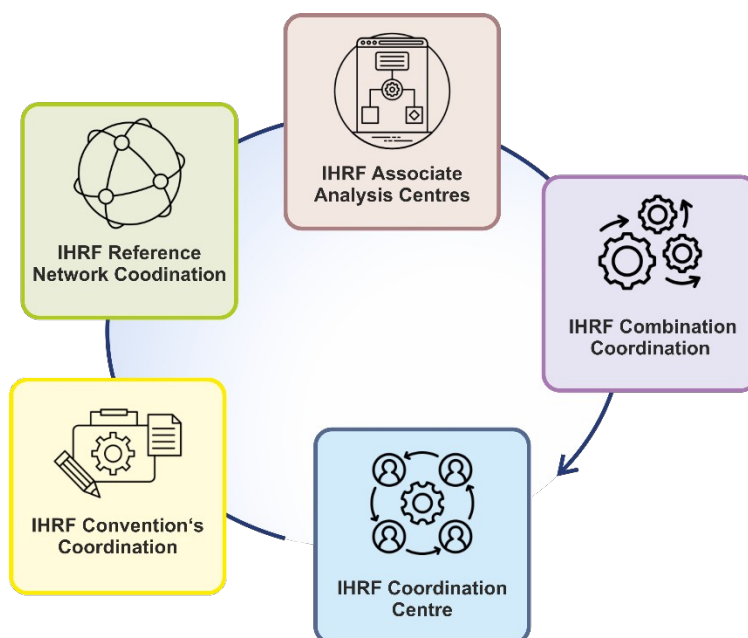
Laura Sánchez, GGOS President, Deutsches Geodätisches Forschungsinstitut, Technische Universität München, Germany

Anna Riddell, GGOS Vice-President, Geoscience Australia, Australia

Martin Sehna, Director of the GGOS Coordinating Office, BEV Austrian Federal Office of Metrology and Surveying, Austria

From the GGOS Focus Area Unified Height System to the Coordination Centre for the International Height Reference Frame IHRF

One initial objective of the Global Geodetic Observing System (GGOS) of the International Association of Geodesy (IAG) was the standardisation of height systems worldwide. In this way, the GGOS Focus Area Unified Height System (GGOS-FA-UHS) was established in 2010 to lead and coordinate the efforts needed towards the establishment of a global standard for the precise determination of physical heights. The GGOS-FA-UHS activities rely on the contribution of several IAG components, namely, Commission 1 (Reference Frames), Commission 2 (Gravity Field), the Inter-Commission Committee on Theory (ICCT), the International Gravity Field Service (IGFS), and the International Earth’s Rotation and Reference Systems Service (IERS). During the 2011-2015 term, various discussions focused on the best possible definition of a global unified vertical reference system, resulting in the IAG Resolution for the *Definition and Realisation of an International Height Reference System (IHR)*, which was adopted at the 2015 General Assembly of the International Union of Geodesy and Geophysics (IUGG) in Prague, Czech Republic. During the period 2015-2019, activities were undertaken to investigate the best strategy for the implementation of the IHR; i.e., the establishment of the *International Height Reference Frame (IHRF)*. A preliminary selection of stations for the IHRF reference network was made and different calculation methods for the determination of potential values as IHRF coordinates were evaluated. For the period 2019-2023, the objectives of the GGOS-FA-UHS focused on (i) compiling detailed standards, conventions and guidelines to support a consistent determination of the IHRF at global, regional and national levels; (ii) coordinating with regional/national experts in gravity field modelling the computation of a first IHRF solution; and (iii) designing an operational infrastructure that will ensure the long-term sustainability and reliability of the IHRF. With these objectives achieved, the GGOS-FA-UHS completed its goals and was closed during the IUGG 2023 General Assembly in Berlin, Germany. The focus is now on the operational infrastructure required to ensure the maintenance and availability of the IHR/IHRF in the future. In line with IAG practice, the development of theory and methods for the continuous improvement of the IHR/IHRF will be continued by the IAG Commissions and the ICCT, while the operational performance will be ensured by the IAG Services, in this particular case the IGFS. With this in mind, the Central Bureau of the IGFS has developed a proposal for the establishment of a central coordinating body for the IHRF, composed of individual modules, which take care of the main components of the IHRF. The central management body is the IHRF Coordination Centre and its modules are the IHRF Reference Network Coordination, the IHRF Conventions' Coordination, the IHRF Associate Analysis Centres and the IHRF Combination Coordination.



Data flow between the IHRF Coordination Centre and its modules

The IHRF Coordination Centre will be responsible for the general coordination of activities required for the IHRF and for the storage, publication, and servicing of the IHRF. The IHRF Reference Network Coordination will implement and keep updated a catalogue of the IHRF global reference stations, including decommissioning of destroyed stations and the addition of new stations to replace removed stations or improve the geographical distribution. The IHRF Conventions’ Coordination is responsible for the maintenance of a

catalogue containing the conventions and standards needed for the IHRF and should assess the impact that revisions in these conventions will have, providing the necessary theoretical and methodological updates that need to be introduced to the existing station coordinates. The IHRF Associate Analysis Centres are those national/regional agencies/bodies that contribute to the realisation of the IHRF by providing the potential values at the IHRF stations located in their countries/regions, following the conventions outlined by the IHRF Conventions Coordination and delivering detailed descriptions about their calculations. The IHRF Combination Coordination will be responsible for the combination and quality assessment of the regional/national solutions and for releasing the final (official) IHRF solution. The IHRF Reference Network Coordination, Conventions' Coordination, Associate Analysis Centres and Combination Coordination should report to the IHRF Coordination Centre, which, in turn, would report directly to the IGFS Central Bureau.

The IGFS presented this proposal to the IAG Executive Committee at its meeting on December 10, 2023, and it was unanimously approved. Thus, a new component of the IGFS dedicated to the IHRF has been born and it will ensure the long-term availability and reliability of the IHRF. More details on the IHRF Coordination Centre (IHRF-CC) based on its Terms of Reference can be found in the IGFS webpage: http://igfs.topo.auth.gr/wp-content/uploads/2024/01/IHRF_CoordinationCenter_v4.pdf. A dedicated web front-end for the IHRF-CC is under development.

Laura Sánchez, GGOS President, Technische Universität München, Deutsches Geodätisches Forschungsinstitut (DGFI-TUM), Germany

George Vergos, Director of the IGFS Central Bureau and Chair of the new IHRF Coordination Centre, Aristotle University of Thessaloniki, Department of Geodesy and Surveying, Laboratory of Gravity Field Research and Applications, Greece

Riccardo Barzaghi, Chair of the IGFS, Politecnico di Milano, Department of Civil and Environmental Engineering, Italy

Advances In Space Research

Dear colleagues,

for your information, issue 73(1) of Advances in Space Research (COSPAR official journal), was published on January 1, 2024. As usual, Elsevier provided a one-year promotional OpenAccess to this first issue of the year. Consequently, all articles published in this issue will remain free-of-charge to anyone without any paid subscription to this journal for the complete year at <https://www.sciencedirect.com/journal/advances-in-space-research/vol/73/issue/1>



It is a very large issue (84 papers and 1206 pages) and several articles are directly related to geodesy.

While already 62 papers were published in OpenAccess in 2022, 102 were published in OpenAccess in 2023.

All papers available in OpenAccess in ASR (past, already published and accepted papers) can be freely accessed through COSPAR at:

<https://cosparhq.cnes.fr/publications/advances-in-space-research-asr/>

Furthermore, a few additional published articles are selected by the journal every year and get a 3-month promotional OpenAccess, courtesy of Elsevier.

Submissions can be done electronically at any time using the EES System (<http://ees.elsevier.com/asr>).

More information on this journal can be found at <https://www.journals.elsevier.com/advances-in-space-research>

Pascal Willis
Editor-in-Chief
Advances in Space Research

Meeting Announcements

GNSS IR Short Course

The GNSS Interferometric Reflectometry (GNSS-IR) Community is happy to announce that we will be holding a virtual short course on March 6/7. The first two-hour session will be dedicated to the basic principles of GNSS-IR, while the second two hour session will cover theory and applications of GNSS-IR for measuring water levels in rivers, lakes, and the ocean. Examples using both geodetic-quality and low-cost sensors will be shown.

A main goal of the course is to teach people how to use the gnsrefl software, an open source software package in python for GNSS-IR applications:

<https://github.com/kristinemlarsen/gnsrefl>

Further details about the short class - including how to register - will be posted at the following link in mid-February:

https://gnsrefl.readthedocs.io/en/latest/pages/sc_index2024.html

This short course is being sponsored by the Collaborative Research Center 1502 DETECT, Bonn University.

Makan A. Karegar

Meetings Calendar

IAG Sponsored Meetings

IVS 13th General Meeting and 25th Anniversary

March 4 – 8, 2024, Tsukuba, Japan

URL: <https://www.youtube.com/watch?v=mQkA8VHKWD4>

20th Geodynamics and Earth Tides Symposium (G-ETS 2024)

August 25 – 30, 2024, Strasbourg, France

URL: <https://g-ets2024.sciencesconf.org/>

Gravity, Geoid and Height Systems 2024

September 4-6, 2024, Thessaloniki, Greece

URL: <https://www.gghs2024.com/>

GGOS Days 2024 and GGOS Focus Areas Topical Meeting

October 7 – 11, 2024, Potsdam, Germany

URL: <https://ggos.org/event/ggos-days-fa-meeting-2024/>

6th Joint International Symposium on Deformation Monitoring (JISDM)

April 7 – 9, 2025, Karlsruhe, Germany

URL: <https://jisdm2025.gik.kit.edu/>

IAG Scientific Assembly 2025

September 1 – 5, 2025, Rimini, Italy

URL: <https://www.iag-aig.org/events/107>

IAG Related Meetings

Recent Achievements and Future Perspectives in Geodesy

February 21 – 22, 2024, Potsdam, Germany

URL: https://leibnizsozietaet.de/wp-content/uploads/2023/09/Colloquium_in_honor_of_Harald_Schuh-save-the-date.pdf

EGU General Assembly 2024

April 14 – 19, 2024, Vienna, Austria

URL: <https://www.egu24.eu/>

ION Pacific PNT Conference

April 15 – 18, 2024, Honolulu, Hawaii

URL: <https://www.ion.org/pnt/index.cfm>

FIG Working Week

May 19 – 24, 2024, Accra, Ghana

URL: <https://www.fig.net/fig2024/index.htm>

Japan Geoscience Union Meeting 2024

May 26 – 31, 2024, Chiba, Japan

URL: https://www.jpгу.org/meeting_e2024/

34th Conference on Mathematical Geophysics

June 2 – 7, 2024, Bombay, Mumbai, India

URL: <https://www.cmg2024.org>

18th Symposium of SEDI

June 23 – 28, 2024, Great Barrington, MA, USA

URL: <https://sedi-conference-2024-2675c.ingress-baronn.ewp.live/>

45th COSPAR Scientific Assembly

July 13 – 21, 2024, Busan, Korea

URL: <https://www.cospar2024.org/>

32th IAU General Assembly

August 6 – 15, 2024, Cape Town, South Africa

URL: <https://astronomy2024.org/>

2024 European Polar Science Week conference

September 3 – 6, 2024, Copenhagen, Denmark

URL: <https://www.europeanpolarboard.org/news-events/events/event/events/2024-european-polar-science-week-conference/>