

# Report of UN-GGIM-AP WG1 - Geodetic Reference Frame

UN-GGIM-AP Executive Board Meeting  
Sydney, Australia  
May 6, 2024



UN-GGIM

United Nations Initiative on  
Global Geospatial Information Management

*"Positioning geospatial information to address global challenges"*

[ggim.un.org](http://ggim.un.org)

# UN-GGIM-AP Working Group 1

## - Geodetic reference frame -

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Mr. Basara Miyahara, Japan



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Mr. Ahmad Sanusi bin Che Cob, Malaysia

Ms. Dalkhaa Munkhtsetse, Mongolia

Mr. Graeme Blick, New Zealand <- **Dr. Nic Donnelly** (TBD)

Mr. Jongsin Lee, Republic of Korea



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# UN-GGIM-AP Working Group 1 – Focus 2022 - 2025

**UN-GGIM  
Geodesy**



**International  
Height Reference  
Frame (IHRF)**

**Regional  
Reference Frame  
(APREF, APRGP)**

**Regional  
Capacity  
Building**



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# 2<sup>nd</sup> Meeting of the UN-GGCE International Advisory Committee 4<sup>th</sup> Plenary Meeting of the Subcommittee on Geodesy

- March 18 – 21, 2024 @ UN Campus in Bonn
- Joint meeting with the SCoG & UN-GGCE IAC
- Member States (India, Indonesia, Japan, Singapore), IAG, FIG, ..
  - Operating plan of the UN-GGCE
  - Workshop on the Draft Global Geodesy Needs Assessment  
1st Joint Development Plan for Global Geodesy -> 14<sup>th</sup> UN-GGIM



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# Expert Consultation meeting on Strengthening the Global Geodesy Supply Chain

- April 22 – 23, 2024 @ UN Campus in Bonn
- NGIA, Space Agencies, Defense Agencies, Academia..
  - What is the Global Geodesy Supply Chain and what is our dependence on it?
  - The importance of the Global Geodesy Supply Chain for science & society
  - The current status of VLBI network / the Global Geodesy Supply Chain
  - The need to stabilize the Global Geodesy Supply Chain now
  - 1st Joint Development Plan for Global Geodesy
  - Draft Decisions from the Expert Consultation meeting on Strengthening the Global Geodesy Supply Chain (22-23 April 2024)



<<https://ggim.un.org/UNGGCE/#meetings>>



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# UN-GGCE Focus / Ongoing efforts

- Global Geodesy Needs Assessment ←Listening World Tour
- 1<sup>st</sup> Joint Development Plan for Global Geodesy Supply Chain
  - ✓ a vision and plan for the future of the GGSC
  - ✓ a summary of the State Of Geodesy
  - ✓ strategic objectives and actions required to stabilize the current GGSC and enhance it for the future
  - ✓ description of work packages which will need to be completed to describe what a “fit for purpose” future state for the GGSC looks like
- Five Focus Areas: Evidence, Resources, Governance, Capacity, Awareness
- Develop 1<sup>st</sup> Joint Development Plan by UN-GGCE and informal working group as background document of GGCE report to the UN-GGIM 14<sup>th</sup> Session
- Hidden Risk document / UN-GGCE partnership logo



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# Asia Pacific Reference Frame (APREF)

- Regional geodetic reference frame
- Realized by continuous GNSS observation of over **700 stations**  
**28 countries**
- Densify ITRF and improve access to ITRF
- Data are routinely processed by three Local Analysis Centres\*
- Station coordinates made openly available
  
- APREF solutions have been transitioned to **ITRF2020/IGS20** since 27 November 2022 (GPS week 2238)
  
- Report on APREF available at  
<https://www.un-ggim-ap.org/wg/working-group-1-geodetic-reference-frame>

\* Geoscience Australia

Office of Surveyor-General Victoria, Australia

Institute of Geodesy and Geophysics, Chinese Academy of Sciences

Geospatial Information Authority of Japan (under evaluation)



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# Asia Pacific Regional Geodetic Project (APRGP)

- Annual GNSS campaign
  - Densify ITRF and improve access to ITRF
  - Data are analysed by Geoscience Australia
  - Analysis report is distributed each year
- 
- **APRGP2023**: 10 to 16 September 2023
  - Under processing by Guorong Hu, Geoscience Australia
  - Data submitted by Brunei, India, Korea (Republic of), Laos, Mongolia, Philippines, Singapore, Tonga and Vietnam



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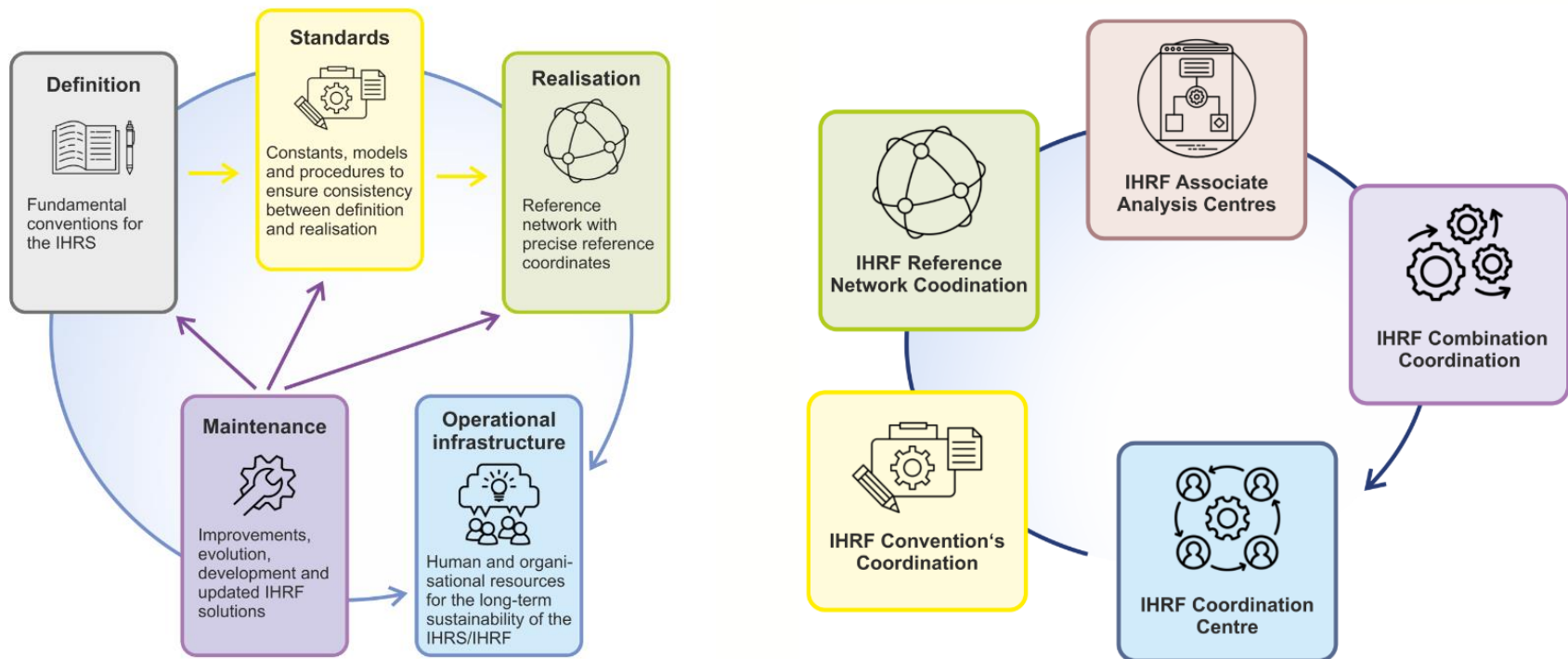
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# International Height Reference Frame (IHRF)

- International Height Reference Frame (IHRF) coordination center will be established under the International Gravity Field Service (IGFS)



The objectives, products and goals of the IHRF

The main modules of the IHRF Coordination Centre.

<https://ggos.org/2024/01/29/ihrf-coordination-centre/>



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# Capacity Building Opportunities in 2024-

- Capacity Development Workshop on Geodesy on November 2024 in India in conjunction with UN-GGIM-AP 13<sup>th</sup> Plenary (TBD)
- WG1 annual session at the UN-GGIM-AP 13<sup>th</sup> Plenary in India on November 2024
- PGSC meetings  
The GeTEWS Oceania 2024 Implementing Workshop in Suva, Fiji on November 4-8, 2024
- Subcommittee on Geodesy and Global Geodetic Center of Excellence in Bonn, Germany on March 2025 (TBD)
- Other opportunities?

