

Activity Report of UN-GGIM-AP WG1- Geodetic Reference Framework for Sustainable Development

Chair

Dr. John Dawson, Australia

Vice Chairs

Mr. Basara Miyahara, Japan

Dr. Hanjiang Wen, China

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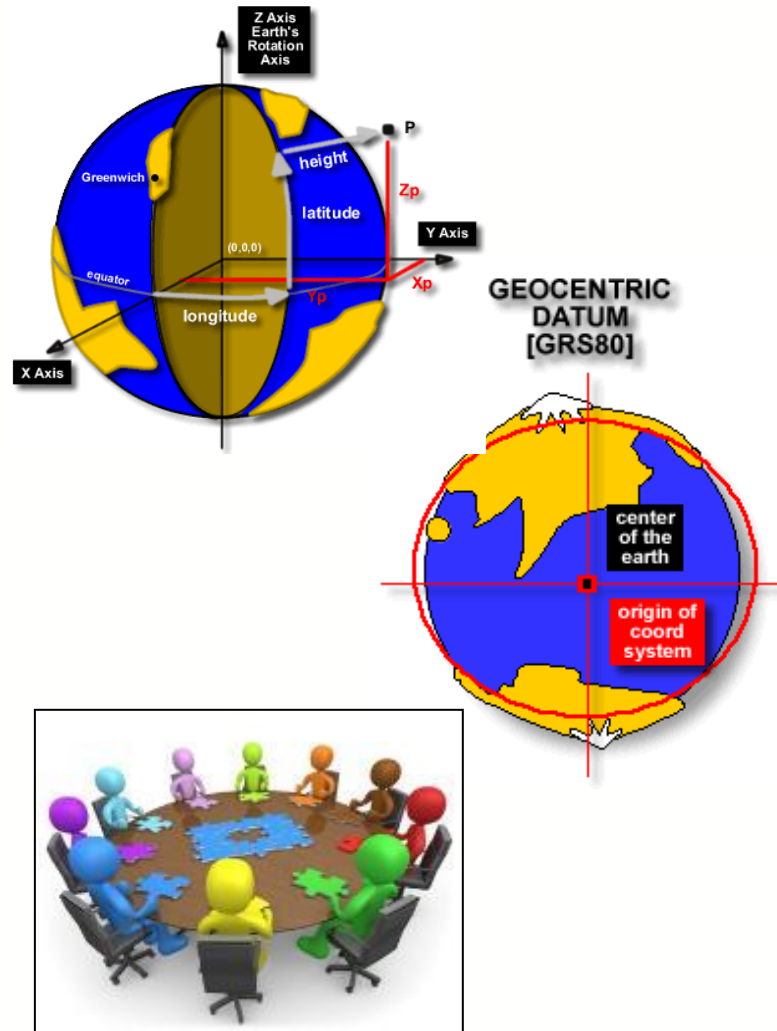
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Work Plan of the WG1 (2012 – 2015)

- Asia-Pacific Reference Frame (APREF) Project
- Asia-Pacific Regional Geodetic Project (APRGP)
- Asia-Pacific Regional Height System Unification (APRHSU) Project
- Asia-Pacific Geodetic Capacity Building (APGCB) Project



Asia Pacific Reference Frame

- **Asia Pacific REference Frame – APREF**
- Analogous to other ITRF based regional reference frames EUREF, SIRGAS, NAREF, AFREF, etc
- Joint initiative of the UN-GGIM Asia Pacific and the International Association of Geodesy (IAG) supported by **FIG**
- Encourage sharing GNSS CORS data and its analysis
- Create and maintain a common, accurate and densely realised geodetic framework, based on continuous observation and analysis of GNSS data in the Asia Pacific

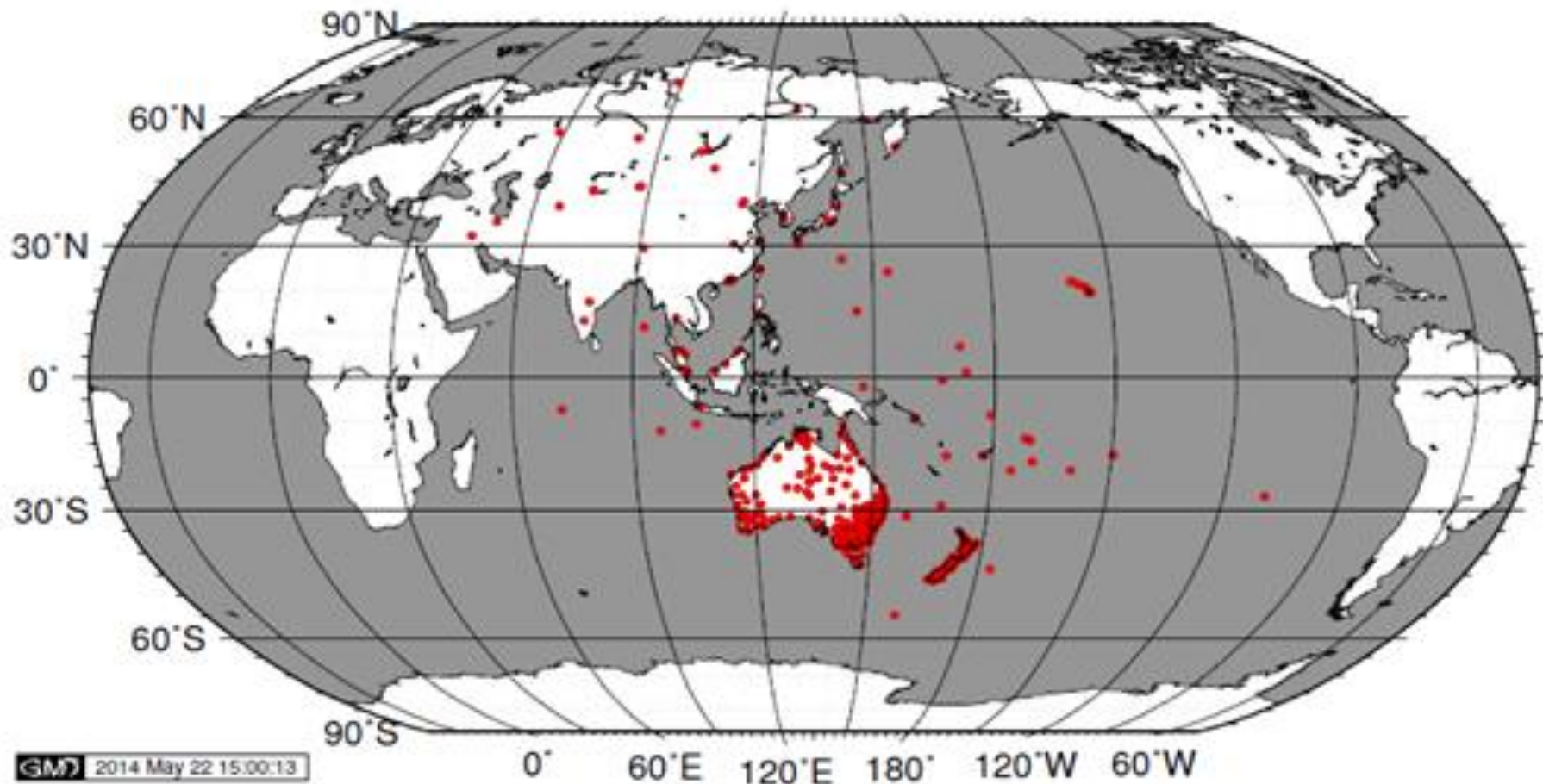


Asia Pacific Reference Frame

- Data from 28 countries
- 16 national agencies participating
- Approximately 420 Asia Pacific stations
- Approximately 600 stations routinely analysed
- Four independent analysis centres
 - Geoscience Australia
 - Curtin University
 - Department of Sustainability and Environment in Victoria, Australia
 - Institute of Geodesy and Geophysics, Chinese Academy of Sciences



Asia Pacific Reference Frame



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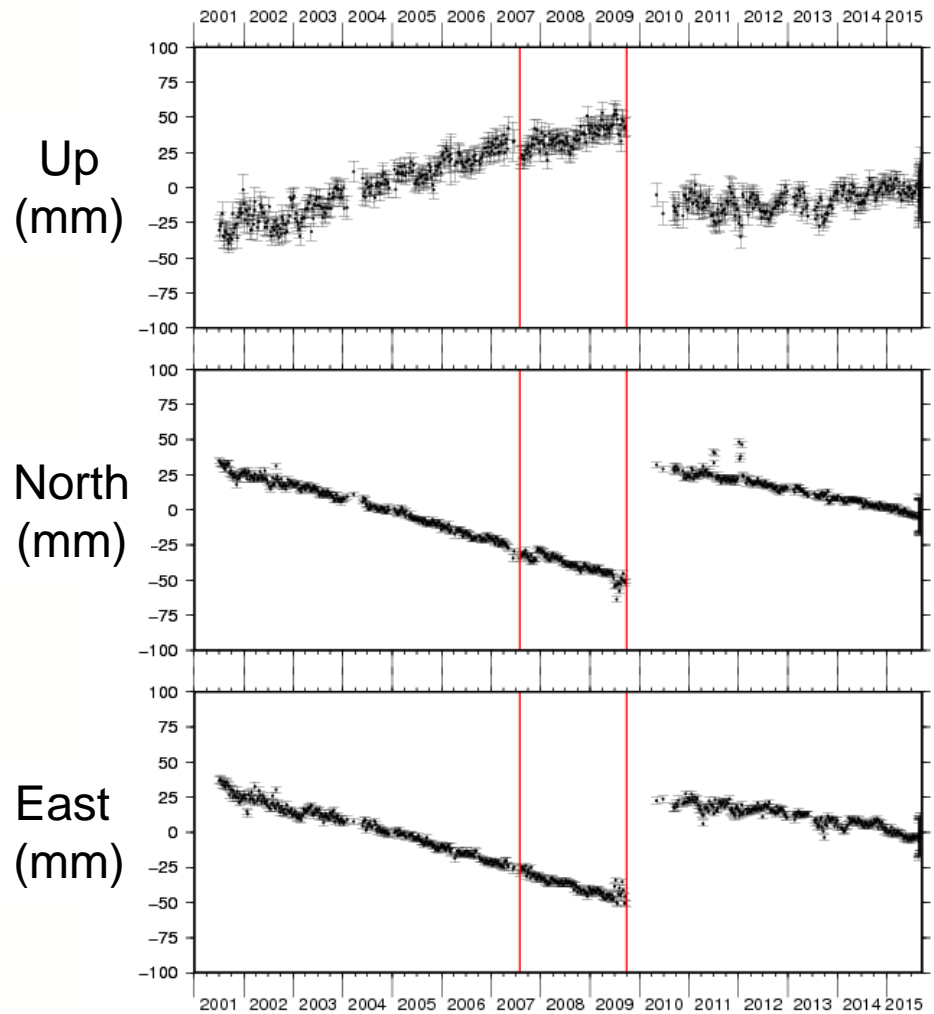
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APREF - Samoa – GNSS Station



SAMO raw residuals



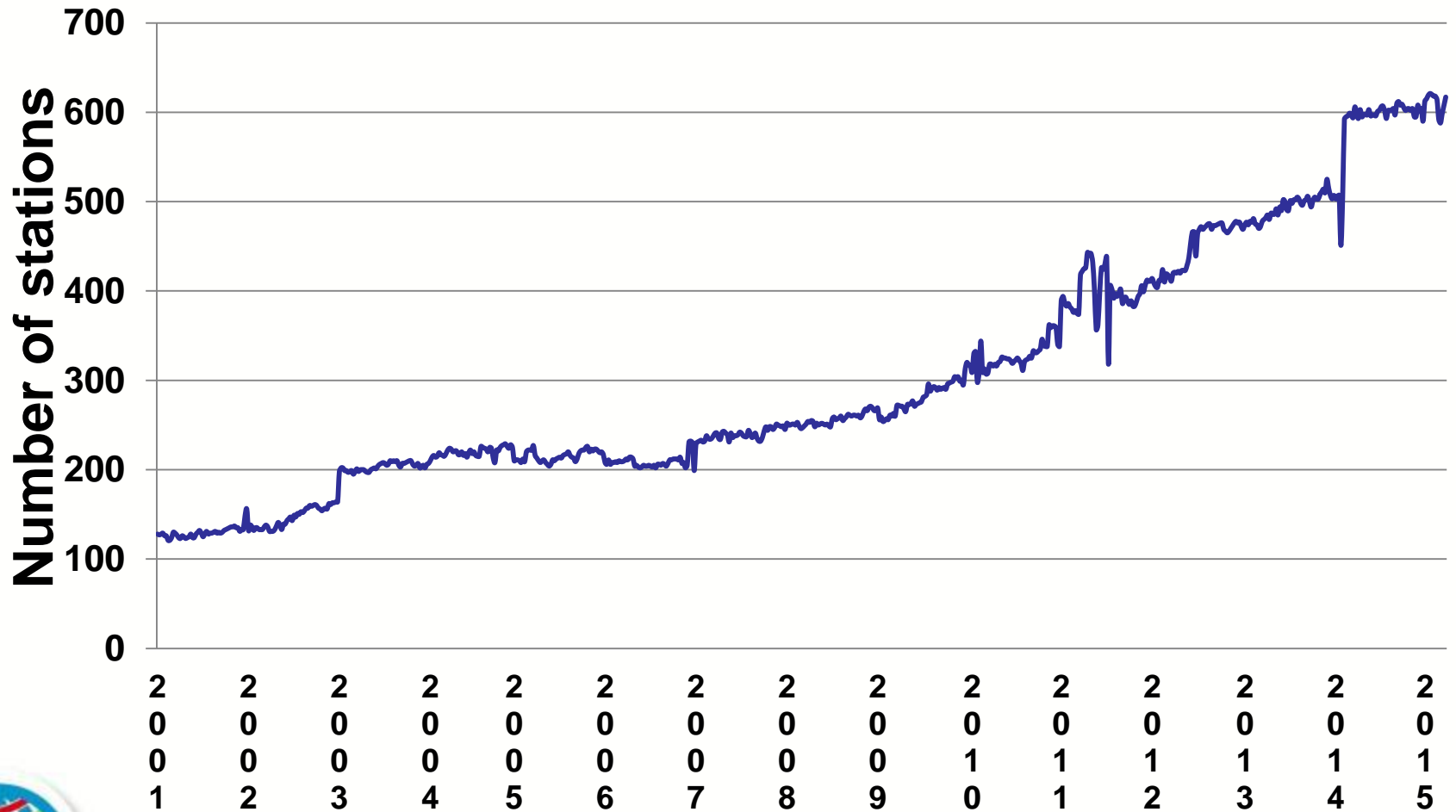
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Number of APREF Stations



APREF website for more information

- <http://www.ga.gov.au/earth-monitoring/geodesy/asia-pacific-reference-frame.html>



FOMO,
Macau, China



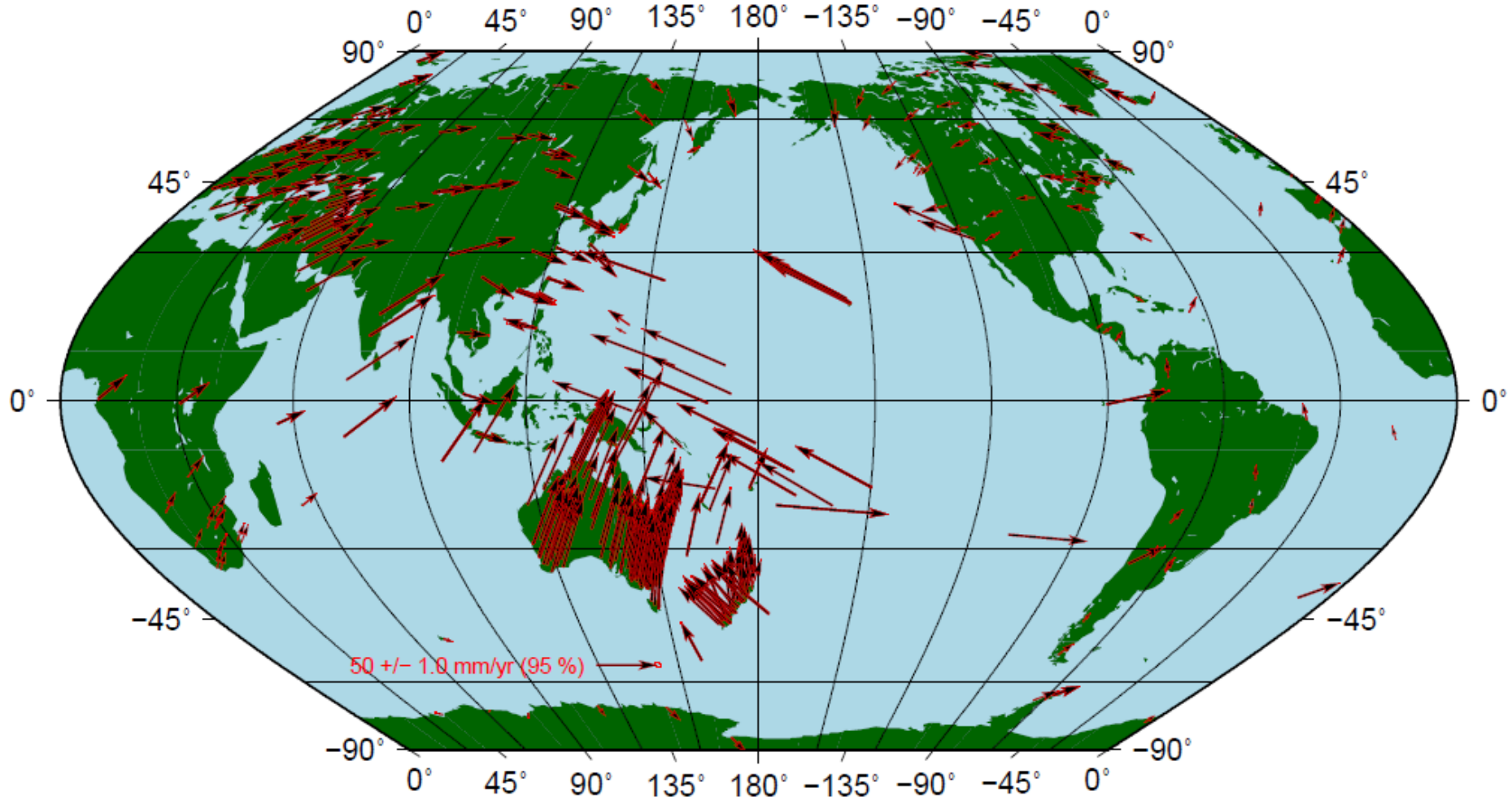
KUAL, Malaysia



PTAG, Philippines



APREF velocity field model



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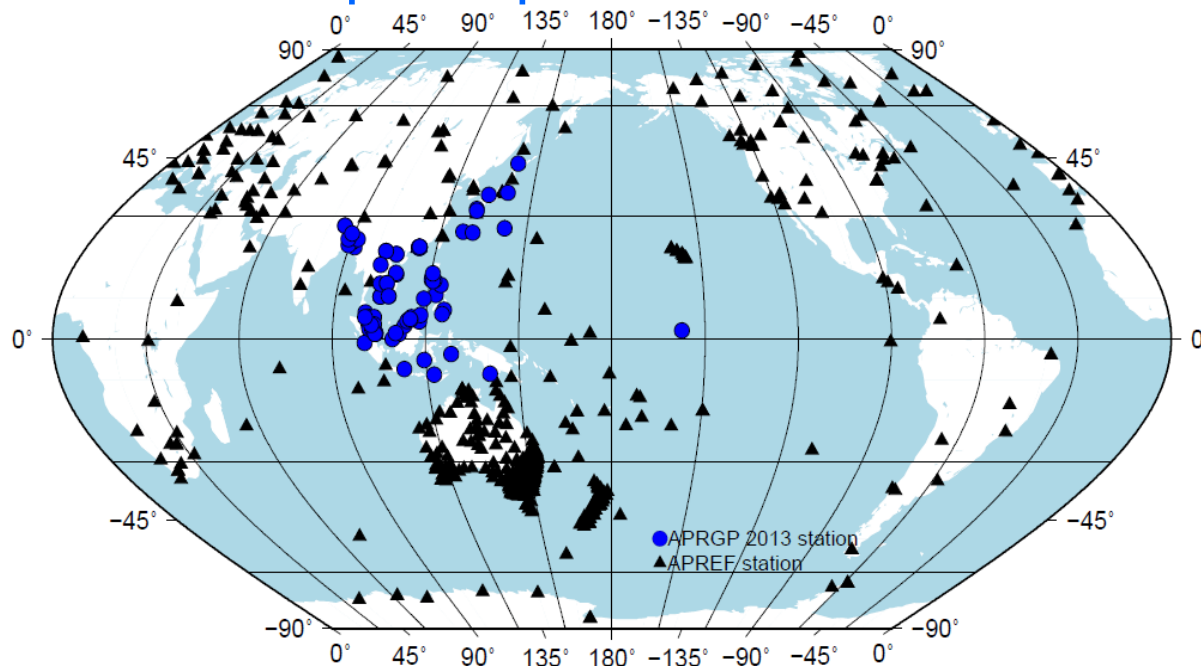
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Status of the APRGP Annual GNSS Campaign

- APRGP 2012, 2013 and 2014 GNSS campaigns completed
- Data analysis has been completed and analysis reports distributed to the participant members



WG1 Activities - APRGP

Australian Government
Geoscience Australia

Record 2013/31 | GeoCat 77019

Report on the Analysis of the Asia Pacific Regional Geodetic Project (APRGP) GPS Campaign 2012

G. Hu

APPLYING GEOSCIENCE TO AUSTRALIA'S MOST IMPORTANT CHALLENGES www.ga.gov.au

Australian Government
Geoscience Australia

Record 2014/34 | GeoCat 79654

Report on the Analysis of the Asia Pacific Regional Geodetic Project (APRGP) GPS Campaign 2013

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Record 2015/15 | GeoCat 83214

Report on the Analysis of the Asia Pacific Regional Geodetic Project (APRGP) GPS Campaign 2014

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WG1 Activities - APRHSU

- Asia-Pacific Regional Height System Unification (APRHSU) - led by Korea
- The objective of the APRHSU project is to encourage data sharing and facilitate technical exchange towards height system development in the Asia-Pacific region
- A questionnaire on the current status of the height system in the countries of the Asia-Pacific region was completed
- Technical seminar on vertical reference frames conducted in Singapore



WG1 Activities - APGCB

- Asia-Pacific Geodetic Capacity Building (APGCB)
- WG1 has continued to be involved in regional workshops aimed at geodetic capacity building in the Asia Pacific



WG1 Activities - APGCB

- The Reference Frame in Practice Symposium held in Manila, Philippines, June 2013
- FIG Pacific Small Island Developing States Symposium held in Suva, Fiji, September 2013 with a session entitled Reference Frame in Practice for Responsible Governance



WG1 Activities - APGCB

- Reference Frames in Practice - The Future, FIG International Congress, June 2014, Kuala Lumpur, Malaysia.
- A joint UN-GGIM-AP, FIG and Secretariat of the Pacific Community (SPC) meeting of Pacific geodetic surveyors, November 2014
- Technical seminar on vertical reference frames, Singapore July 2015, 13th South East Asian Survey Congress.



WG1 Activities – Other

- Involved in the development of a United Nations General Assembly resolution entitled “*A Global Geodetic Reference Frame (GGRF) for Sustainable Development*”.
- The working group has specifically assisted with the development of the:
 - Draft UN-GGIM Geodesy Concept Note
 - Draft UN-GGIM Geodesy resolution
 - UN-GGIM Geodesy Fact sheet
 - UN-GGIM Geodesy presentation
 - UN-GGIM Geodesy animation (see <https://vimeo.com/89695290>)



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