



APREF and UN-GGIM

John Dawson, Geoscience Australia



United Nations Global Geospatial Information Management

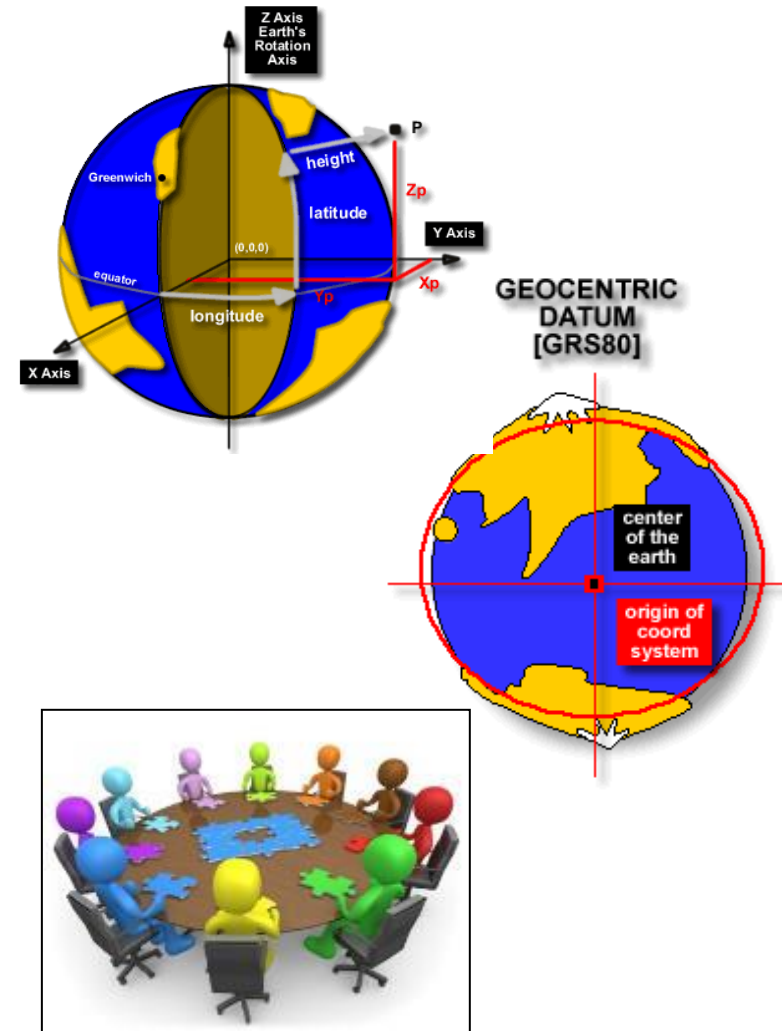
- The United Nations initiative on Global Geospatial Information Management (UN-GGIM) aims at playing a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges. It provides a forum to liaise and coordinate among Member States, and between Member States and international organizations.



- UN-GGIM for Asia and the Pacific
- UN-GGIM-AP
 - <http://www.un-ggim-ap.org/>
 - Members
 - Structure
 - UN-GGIM-AP Geodetic Working Group
 - Australia (chair), China, Japan, Korea, Malaysia, New Zealand, Mongolia, Iran

UN-GGIM - Asia Pacific

- GGRF Roadmap
- 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

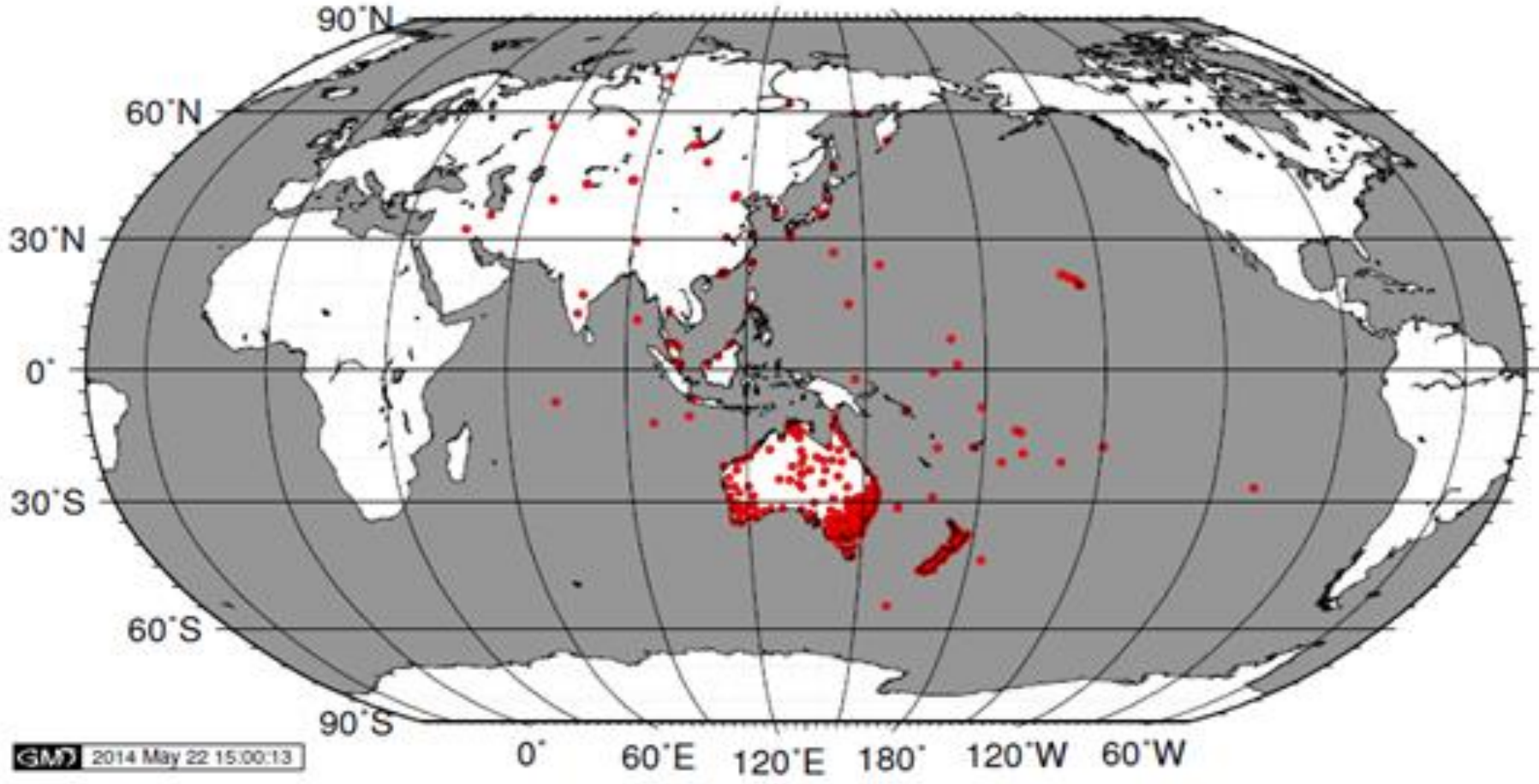


Asia Pacific Reference Frame

- 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



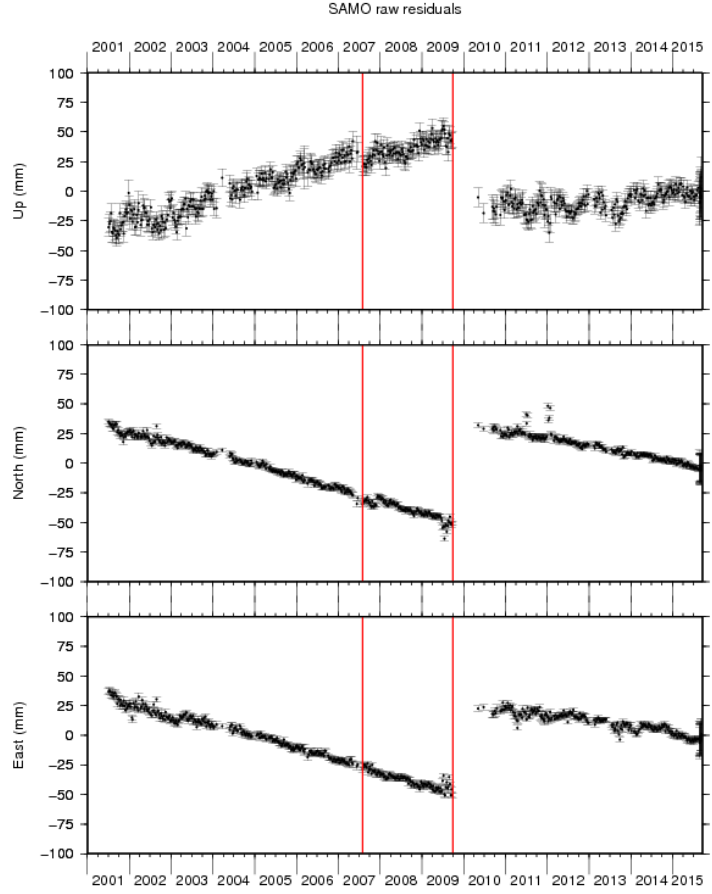
APREF - Samoa – GNSS Station



Up
(mm)

North
(mm)

East
(mm)



APREF website for more information

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



FOMO, Macau,
China

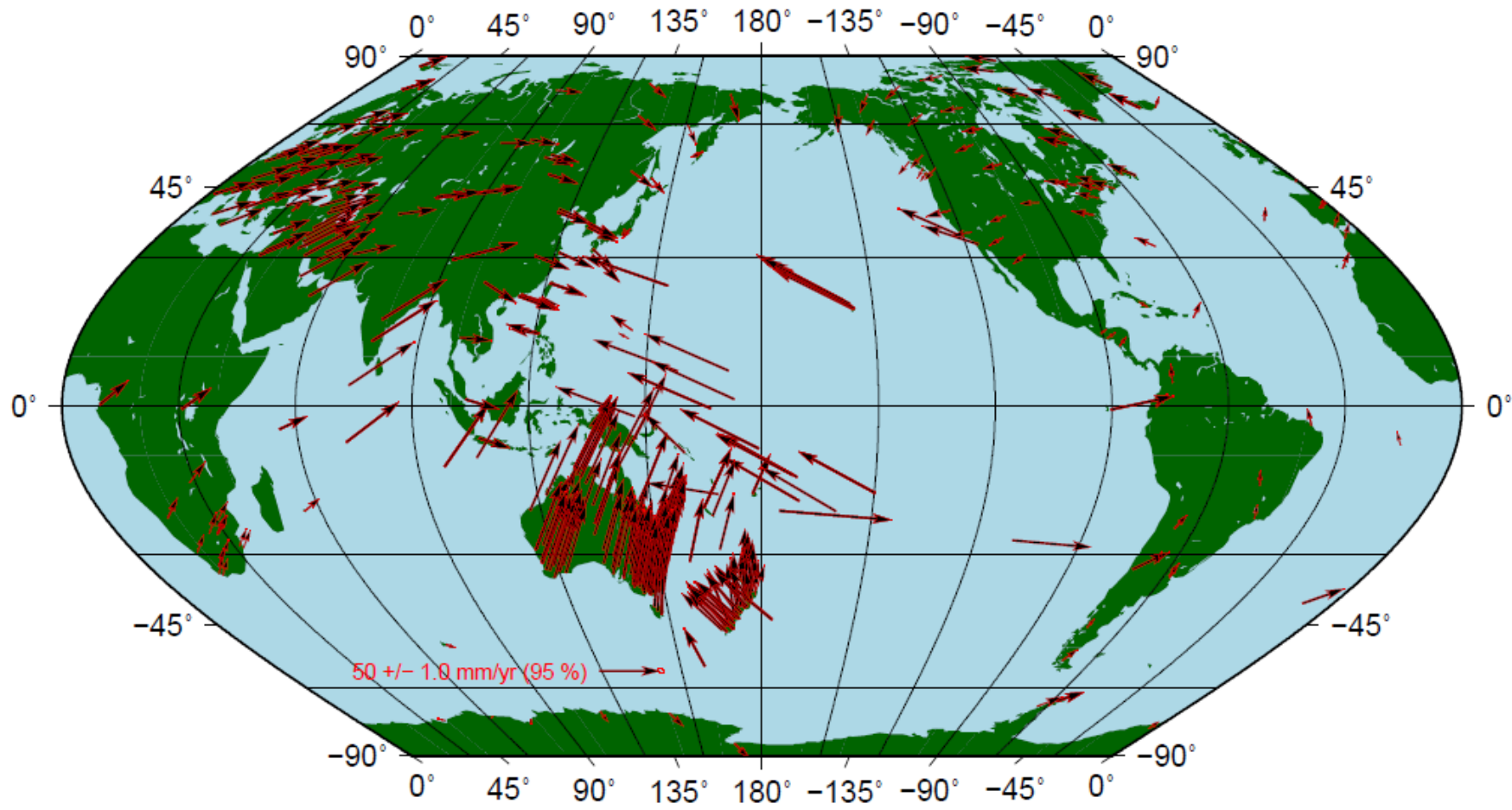


KUAL, Malaysia



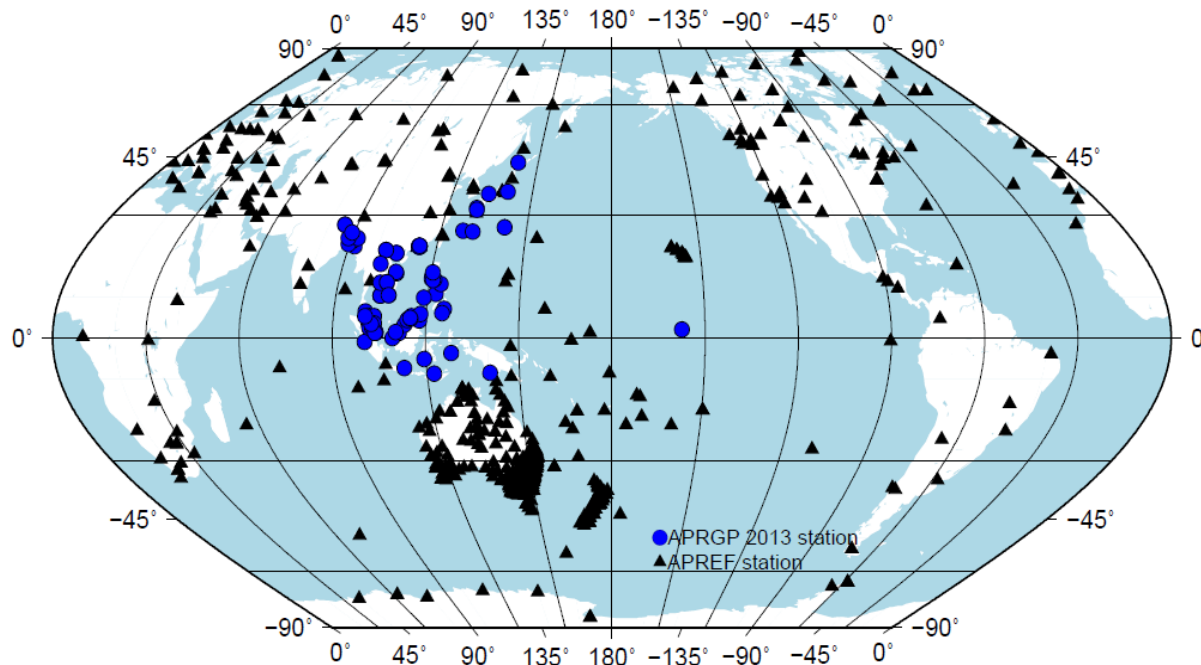
PTAG, Philippines

APREF velocity field model



Status of the APRGP Annual GNSS Campaign

- APRGP 2015 GNSS campaigns completed





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
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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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Available from www.ga.gov.au



- 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





- 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.



The Global Geodetic Reference Frame for Sustainable Development



In February 2015 the UN General Assembly adopted the resolution “A Global Geodetic Reference Frame for Sustainable Development” – the first resolution recognizing the importance of a globally-coordinated approach to geodesy.

Geodesy plays an increasing role in people’s lives, from finding directions using a smart phone to alleviating poverty.

Because the Earth is in constant motion, an accurate point of reference is needed for making measurements. Geodesy provides a very accurate and stable coordinate reference frame for the whole planet: A Global Geodetic Reference Frame.

The economic benefit of implementing the Global Geodetic Reference Frame is significant. So is its role in underpinning the Sustainable Development Agenda.

United Nations General Assembly





Welcome to the Roundtable on geodetic reference frames

at #LandConf2016

The extent and value to nations and the increased economic benefit of implementing the Global Geodetic Reference Frame will be highlighted in this session alongside its role in underpinning the Sustainable Development Agenda.

Wednesday, 16 March 2016: 4:30 pm – 6:00 pm

**Location: MC 2-800, World Bank HQ,
Washington D.C.**

Session chair: Vanessa Lawrence

Panel: John Dawson, Hussein Farah,
Zuheir Altamimi, Anne Jørgensen,
Laila Løvhøiden, Gregory Scott