

The Role of the UN-GGIM-AP

Geospatial and GNSS CORS Infrastructure Forum
Kuala Lumpur Malaysia

Dr. John Dawson, Australia
Chair UN-GGIM-AP WG1



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

"Positioning geospatial information to address global challenges"

ggim.un.org

UN-GGIM

- Each UN-GGIM regional entity plays a vital role liaising with the UN-GGIM Secretariat on topics of interest and major developments in intervening periods between meetings of the Committee of Experts, facilitating regional development and discussion, and formally feeding into the Committee of Experts
- UN-mandated regional bodies are established in the Asia-Pacific, the Americas, the Arab States and Europe
- UN-GGIM activities are presently coordinated in Africa by the United Nations Economic Commission for Africa (UNECA)



What is the UN-GGIM-AP

- UN-GGIM-AP includes 50+ member nations from the Asia Pacific. Geographic spread:
 - Russian Federation → New Zealand
 - Iran → Cook Islands
- Afghanistan, American Samoa, Armenia, Australia, Azerbaijan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, French Polynesia, Guam, Hong Kong, China, India, Indonesia, Islamic Republic of Iran, Japan, Kazakhstan, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Macao, China, Malaysia, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Nepal, New Caledonia, New Zealand, Niue, Northern Marianas, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Russian Federation, Samoa, Singapore, Solomon Islands, Sri Lanka, Tajikistan, Thailand, Timor-Leste, Tonga, Turkmenistan, Tuvalu, Uzbekistan, Vanuatu and Viet Nam



What is the UN-GGIM-AP

- Intergovernmental body for technical exchanges on geospatial matters
- Geodesy Working Group active since 1997 (PCGIAP)
 - Annual GPS campaign every year since (20 campaigns!)
- Forum for sharing knowledge and experience



UN-GGIM-AP Geodesy Working Group

Chair

Dr. John Dawson, **Australia** - John.Dawson@ga.gov.au

Vice Chairs

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Mrs. Enkhtuya Sodnom, **Mongolia**, enkhtuya.s@gazar.gov.mn

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Annual Regional GPS Campaign



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Asia Pacific Regional Geodetic Project 2015

➤ Available from www.ga.gov.au

Record 2016/20 | eCat 101401

Report on the Analysis of the Asia Pacific Regional Geodetic Project (APRGP) GPS Campaign 2015

G. Hu

Table 2 The final computed Cartesian coordinates in ITRF2008 at the mean epoch of the measurements, i.e. @2015. 69.

Station	X (m)	1 std (m)	Y (m)	1 std (m)	Z (m)	1 std (m)
0029	-3862398.6296	0.0006	3105008.5386	0.0005	4001961.0183	0.0005
0745	-3512920.0666	0.0004	4524558.0948	0.0005	2795881.9186	0.0003
0746	-3786804.9581	0.0006	4311846.1473	0.0006	2774485.5299	0.0005
0837	-3530185.7427	0.0009	4118797.2213	0.0009	3344036.7862	0.0009
1135	-3591931.0570	0.0006	3758796.9397	0.0006	3682342.8163	0.0005
2004	-3565271.8273	0.0005	4118973.0667	0.0006	3306293.0992	0.0005
2005	-3642161.4011	0.0005	2861487.8620	0.0005	4370351.2484	0.0005
2007	-4490605.2322	0.0009	3483894.9129	0.0007	2884928.2784	0.0006



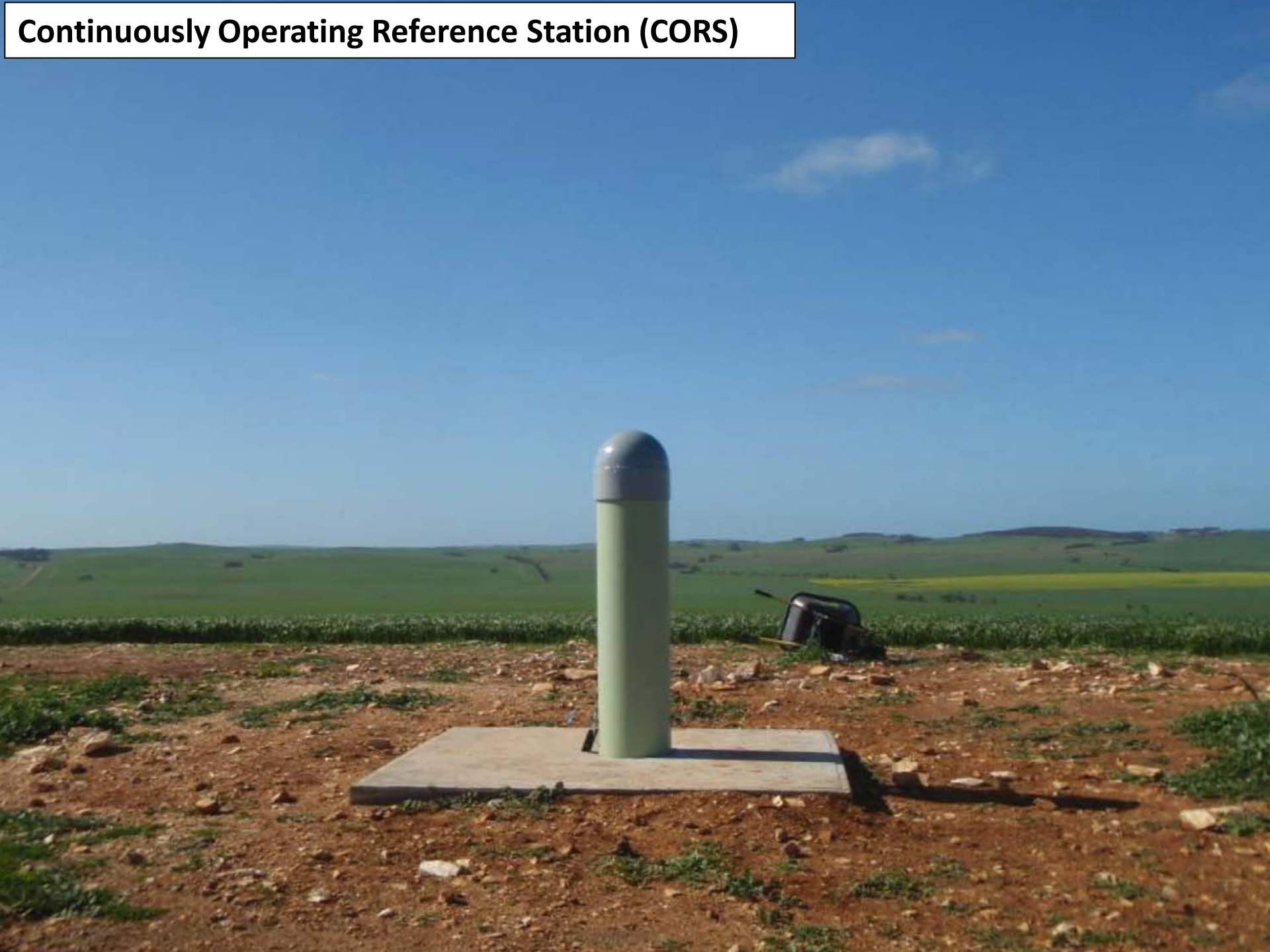
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Continuously Operating Reference Station (CORS)

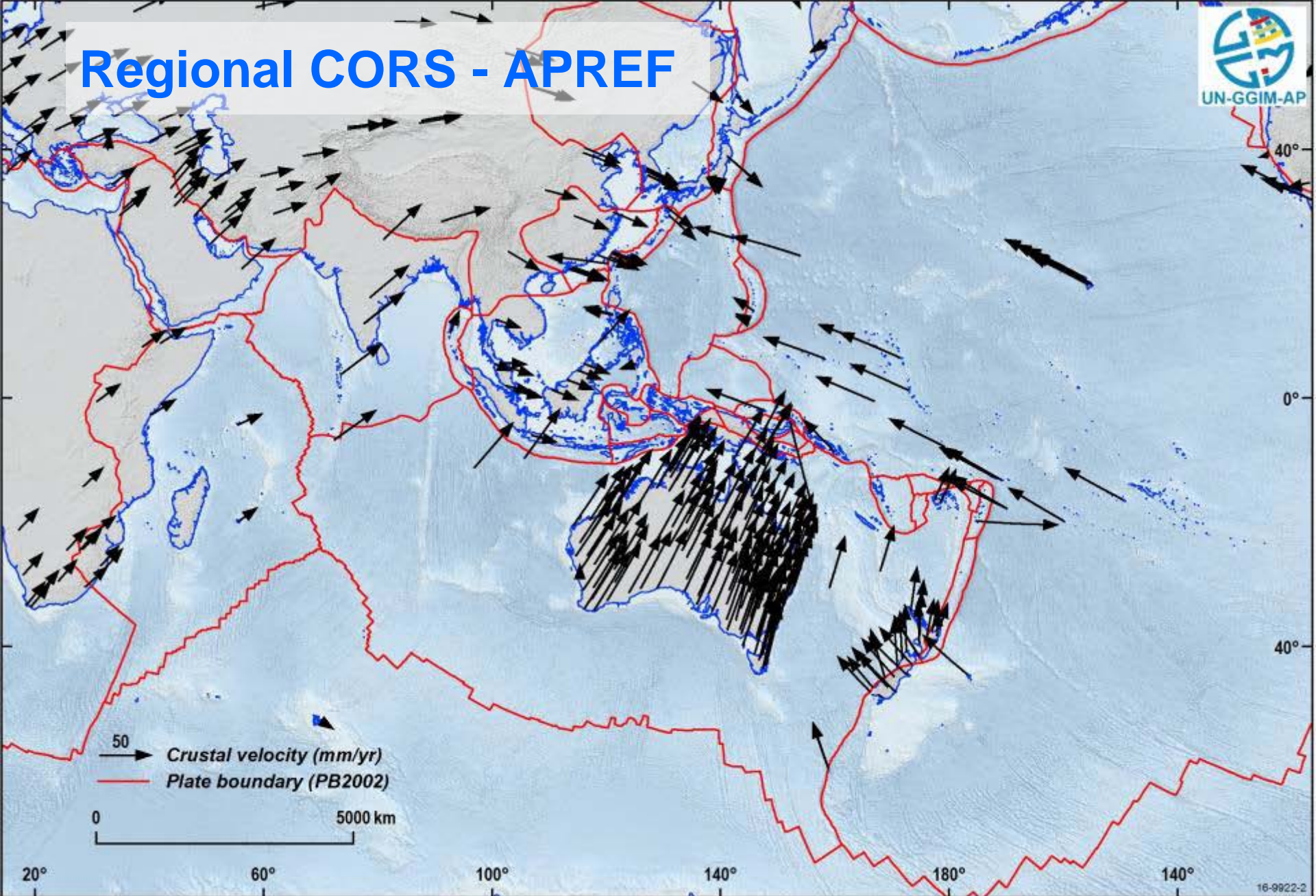


GGRF: APREF

- <http://www.ga.gov.au/scientific-topics/positioning-navigation/geodesy/asia-pacific-reference-frame>
- Google: APREF at GA
- Products:
 - ITRF coordinates and velocities for contributing stations
 - Coordinate time-series
 - Station performance

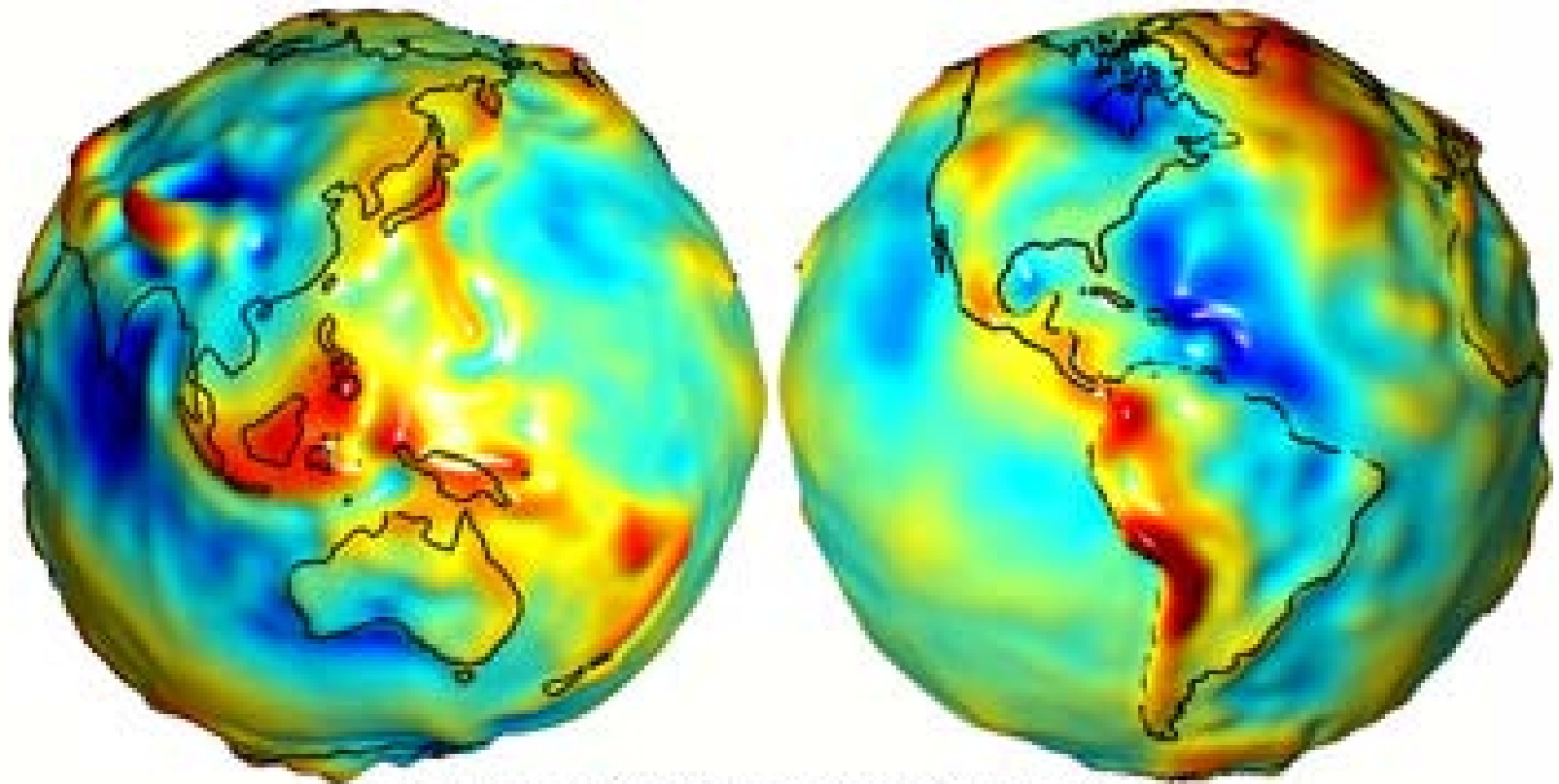


Regional CORS - APREF



Positioning geospatial information to address global challenges

Height System Unification



Earth's Gravity Field Anomalies (milligals)



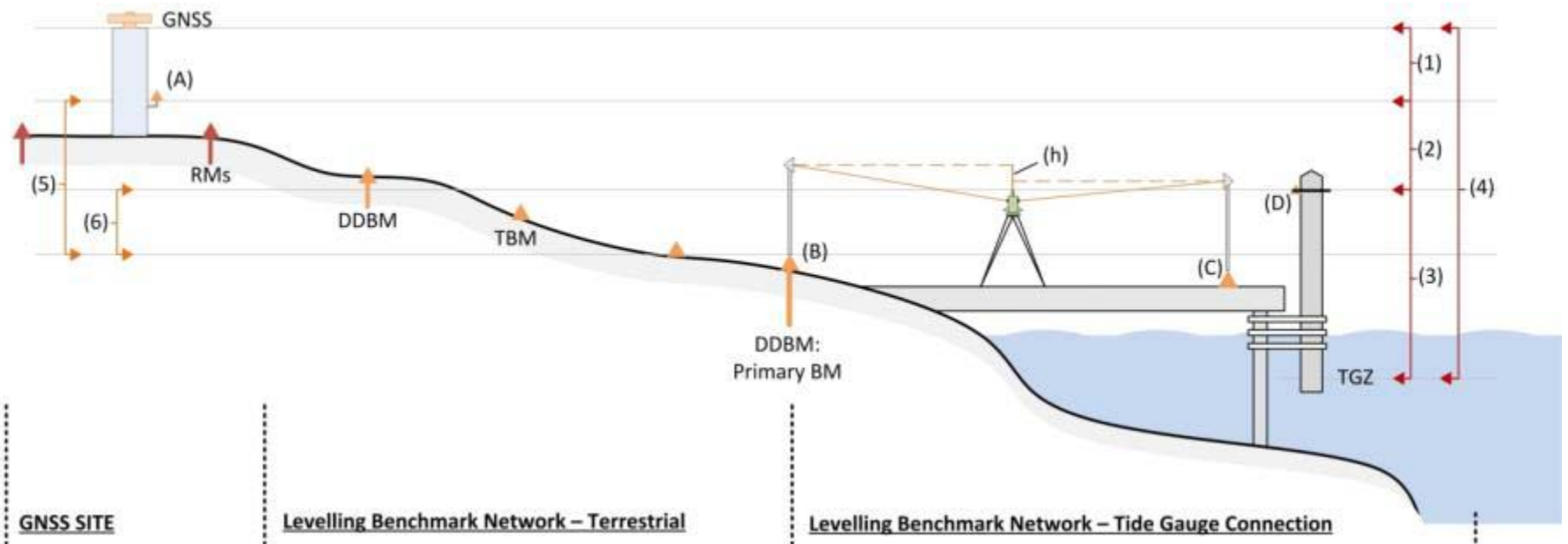
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Height System Unification



Capacity Building

- Joint UN-GGIM-AP, FIG and Secretariat of the Pacific Community (SPC) meeting of Pacific geodetic surveyors, November 2015
- Technical seminar on vertical reference frames, Singapore July 2015, 13th South East Asian Survey Congress.
- UN-GGIM-AP, FIG, IAG, ICG and NZIS Technical Seminar on Reference Frame in Practice Christchurch, NZ, May 2016.



Final Comments

- Encourage members to contribute to regional and global geodesy
- Encourage open sharing of geodetic data
- Encourage members to host WG1 meetings
- Encourage members to contribute to UN-GGIM-AP resolutions on geodesy
- Encourage members to suggest capacity building topics
 - Work with IAG and FIG to develop workshops (theory, practice, open source software)



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