



Australian Government
Geoscience Australia



Updates on the APREF and APRGP projects

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APREF and APRGP projects within UN-GGIM-AP WG1

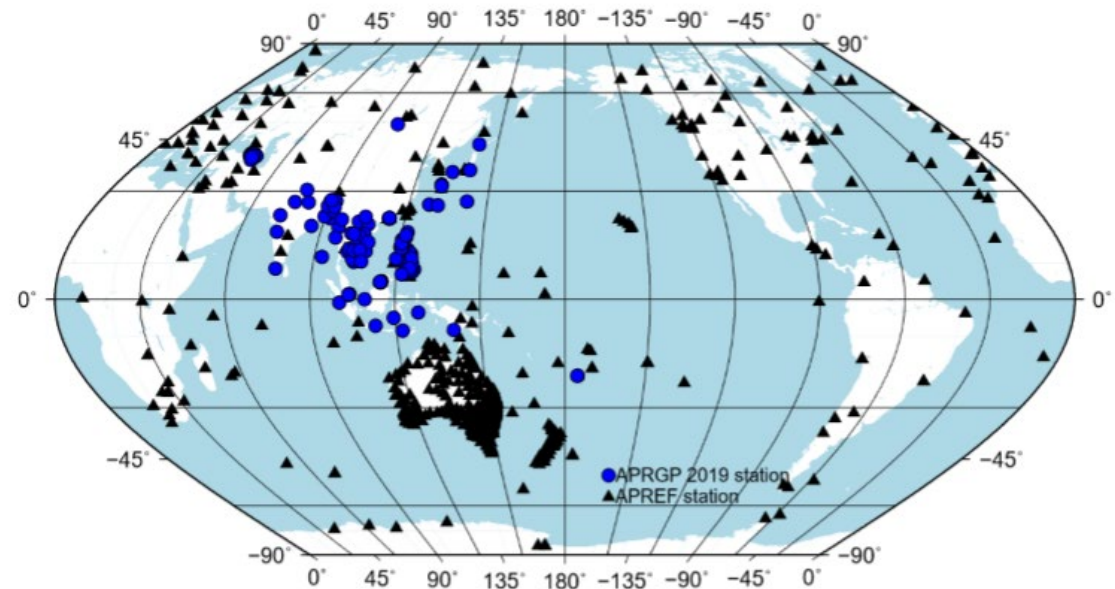
- The goals of the two projects are to link national geodetic datum to the ITRF
- APRGP project is for those countries unable to participate the APREF project
- Encouraging member countries to join the APREF project if possible
- APRGP project with only one week data annually
- APRGP project has run since 1997 (more than 20 years)
- GNSS CORS based APREF project was initiated in 2010

How APREF/APRGP projects link to ITRF2014

- Processing the APREF/APRGP network together with more than 200 IGS core sites where data available
- APREF solutions linked to IGB14 since gpsweek 2106
- Using IGB14 core sites as reference frame
- Conforming to the IERS2010 conventions
- Accounting for solid earth tide displacements (TIDE2000) and Ocean tide loading displacements (FES2004 model)
- Troposphere corrections estimated with wet-NIELL mapping function in intervals of 1 hour
- Scientific software Bernese V5.2 used for both APREF and APRGP projects data processing
- Using absolute antenna calibration PCV models (IGS14.atx)

APRGP 2019 GNSS campaign

- APRGP 2019 campaign ran from 15 September to 21 September 2019
- Data contributions from 16 countries and regions
- Analysis report of 2019 GNSS campaign published and circulated



APRGP 2020 GNSS campaign

- APRGP 2020 campaign ran from 13 September to 19 September 2020
- As of 26 Oct 2020, we have received data contributions from following countries: Japan, Korea, Myanmar, Singapore
- Ensuring sending right meta data in particular antenna type and antenna heights information
- Confirming right RINEX name convention and format when submitting data

Issues for APRGP 2019 GNSS campaign

- Some RINEX files not follow RINEX file naming conventions, such as four char-id of RINEX file name is not same as in RINEX head info
- Some stations missing meta data
- RINEX head info not match with meta data/log files
- Some stations used antennas which are NOT in the IGS published list of antenna calibrations
- Key two meta data items: antenna type and antenna heights

More new APREF stations added and new APREF LAC joining (2019/2020)

- 6 sites from GJI of Japan added into APREF project in Oct 2020
- 1 site from JAXA of Japan added into APREF project in Oct 2020
- GJI Japan will be one of APREF LACs soon

Accessing APREF data centre changed since 01 Oct 2020

- Moving ftp access point from <ftp://ftp.ga.gov.au> to <ftp://ftp.data.gnss.ga.gov.au>
- All RINEX version 2 data files on the new access points have been converted from .Z compression to .gz compression
- Details on how to access the data can be found at <https://data.gnss.ga.gov.au/docs/>

Data format changing from RINEX 2.x to 3.x

- Following IGS data guidelines, GNSS data format changing from RINEX 2.x to 3.x
- Transition stage, both RINEX 2.x and 3.x formats are acceptable
- Encouraging submitting RINEX 3.x format if possible
- Data submission in gzip compression
- Benefits: making data management and processing easier

How to access APREF and APRGP data and solutions

- Annual APRGP campaign data and log sheets are available from the link: <ftp://ftp.ga.gov.au/geodesy-outgoing/apref/APRGP/>
- Annual APRGP analysis reports can be found in the ftp link: <ftp://ftp.ga.gov.au/geodesy-outgoing/apref/APRGP/AnalysisReports/>
- APREF solutions can be found from the ftp link: <ftp://ftp.ga.gov.au/geodesy-outgoing/gnss/solutions/apref/>
- For more information on APREF project, please refer to: <http://www.ga.gov.au/scientific-topics/positioning-navigation/geodesy/asia-pacific-reference-frame>

Concluding remarks

- APREF project is also a testbed for a CORS before joining the IGS network
- A potential contribution to the IGS network densification via the APREF solutions
- We welcome any feedback and comments about the APREF and APRGP projects
- Any idea to improve the above two projects?
- Any help needs for submitting data in RINEX 3.x format?



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Thank you

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