PRESENTED AT FIG WORKING WEEK 2019
APRIL 22-26, 2019 IN HANOI, VIETNAM

"Geospatial Information for a Smarter Life and Environmental Resilience"
Work and Plan of UN-GGIM-AP Working Group on Geodetic Reference Frame

Basara Miyahara
(Chari UN-GGIM-AP WG1: Geodetic Reference Frame)
Outline

• UN-GGIM-AP

• Working Group on Geodetic Reference Frame
  - UN-GGIM Geodesy
  - Regional Reference Frame
    > APREF (Asia Pacific Reference Frame)
    > APGRGP (Asia Pacific Regional Geodetic Project)
  - Regional Height System Unification
  - Regional Capacity Building
UN-GGIM-AP

• Regional Committee of UN-GGIM.
• Established: 1 November 2012
• Member: National Geospatial Information Authorities of 56 countries and regions in Asia and the Pacific
• Chair: Dr. Andy Barnicoat (Australia)
• Vice Chair: China, Japan, Mongolia
• Secretariat: UN-ESCAP
UN-GGIM-AP

Vital Role in
(Relevant to geospatial information management)
• Resolves regional issues
• Facilitate regional capacity building
• Promote globally the unique needs and interests of the region
• Contribute to the discussions in UN-GGIM

WG1: Geodetic Reference Frame
WG2: Cadastre and Land Management
TBD

UN-GGIM (at the Global level)

UN-GGIM-AP

Technical and substantive activities at the regional level

Organize WGs
Take Actions/Projects
Capacity Building
Regional Issues
Check Activities
Activity Report to UN-GGIM
UN-GGIM-AP WG1 (Geodetic Reference Frame)

Chair
Mr. Basara Miyahara, Japan

Vice Chairs
Dr. John Dawson, Australia
Dr. Yamin Dang, China
Mr. Lt Gen Girish Kumar, India
Mr. Yi Sang Oh, Republic of Korea
Dr. Mohd Yunus Bin Mohd Yusoff, Malaysia
Mrs. Dalkhaa Munkhtsetseg, Mongolia
Mr. Graeme Blick, New Zealand
UN-GGIM-AP WG1 – Focus 2019 -2021

UN- GGIM Geodesy

Regional Reference Frame (APREF, APRGP)

Regional Height System Unification

Regional Capacity Building
UN-GGIM-AP WG1 – Focus 2019 -2021

UN-GGIM Geodesy

Regional Height System Unification

Regional Reference Frame (APREF, APRGP)

Regional Capacity Building
UN Sub-committee on Geodesy

- August 2016: the UN-GGIM Committee of Experts decided to transition the **Global Geodetic Reference Frame (GGRF)** Working Group into a permanent UN-GGIM Subcommittee on Geodesy

- The Subcommittee membership includes:
  - 40 voting members nominated by the regional UN-GGIM Executives, ensuring geographically distributed membership
  - Associate Members (non-voting) including IAG, FIG and other Member States not included in the 40 above
  - Observers (non-voting)
UN Sub-committee on Geodesy

- Asia-Pacific members: Australia, China, Fiji, Islamic Republic of Iran, Japan, Kyrgyzstan, Malaysia, New Zealand, Philippines, and the Republic of Korea

- While these 10 counties are the official members, all other Asia Pacific Member States are invited and encouraged to participate in committee activities as associate members or observers.
UN Sub-committee on Geodesy

- The 1st inaugural meeting of the Subcommittee on Geodesy was held in Mexico City, November 2017
- The 2nd meeting was held in Deqing, China, November 2018 in conjunction with UNWGIC 2018.
UN-GGIM-AP WG1 – Focus 2019 -2021

UN-GGIM Geodesy

Regional Height System Unification

Regional Reference Frame (APREF, APRGP)

Regional Capacity Building
Asia Pacific Reference Frame (APREF)

- Regional geodetic reference frame
- Realized by continuous GNSS observation of over 600 stations
- 28 countries
- Densify ITRF and improve access to ITRF
- Data are routinely processed by three Analysis Centres and station coordinates made available publically
- Analysis aligned the IGS14 reference frame, the IGS realization of ITRF2014
- A report on all APERF results is under preparation by Australia (Dr. Guorong Hu & Dr. John Dawson)
Asia Pacific Reference Frame (APREF)
Asia Pacific Regional Geodetic Project (APRGP)

- Annual GNSS campaign starting in 1997
- Densify ITRF and improve access to ITRF
- Data are analyzed by Geoscience Australia
- Analysis report is distributed each year
- APRGP 2016 were collected from eight member countries, including Bangladesh, Hong Kong (China), Japan, Malaysia, Philippines, Singapore, Sri Lanka and Vietnam

- APRGP2018: 16 to 22 September 2018
- APRGRP2019: TBD

Call for participation will be from UN-GGIM-AP Secretariat
Asia Pacific Regional Geodetic Project 2016

Report on the Analysis of the Asia Pacific Regional Geodetic Project (APRGP) GPS Campaign 2016
UN-GGIM-AP WG1 – Focus 2019 -2021

UN-GGIM Geodesy

Regional Reference Frame (APREF, APRGP)

Regional Height System Unification

Regional Capacity Building
Regional Height System Unification (APRHSU)

• Questionnaires on current height system of each member countries
• Analyze the answers to understand current situation
• Planning next actions based on analysis
  Ex. Evaluate difference in height system among AP counties
  Compute averaged height reference surface among AP countries
• Further capacity building for vertical reference frame
UN-GGIM-AP WG1 – Focus 2019 -2021

UN-GGIM Geodesy

Regional Height System Unification

Regional Reference Frame (APREF, APRGP)

Regional Capacity Building
Capacity Building Workshops

- Hosting and participating in geodetic capacity building workshops in AP in conjunction with FIG, IAG and other organizations

- Pacific Geospatial and Surveying Council (PGSC)

- Technical seminar of the UN-GGIM-AP, FIG, IAG, Japan Federation of Surveyors, International Committee for GNSS (IGC), Geospatial Information Authority of Japan (GSI) on geodetic reference frame, July, 2017, Kobe, Japan
Capacity Building Workshops

- A joint workshop of the GSI, FIG and UN-GGIM-AP entitled “Regional Challenges, Benefits and Opportunities of Exchanging Geodetic Data” Kumamoto, Japan in 2017
Capacity Building Workshops Plan

- Special sessions on “Developing Capacity for Geodetic Infrastructure and Systems” at FIG WW 2019
  - TS06I 25 April, 11:00–12:30 249bc ("SOUTH ROOM")
  - TS07I 25 April, 14:00–15:30 249bc ("SOUTH ROOM")

- Workshop at UN-GGIM-AP 7th Plenary at Canberra Nov 2019
Summary

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