

Geodetic reference frame of Asia and the Pacific assimilating VLBI observation

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The United Nations General Assembly adopted the UN resolution on Global Geodetic Reference Frame (GGRF) for Sustainable Development and UN Working Group on GGRF is working to promote maintenance and improvement of GGRF. In Asia and the Pacific, regional geodetic reference frame, Asia-Pacific Reference Frame (APREF), has already been developed through GNSS observation. In addition, in order to spread recognition for importance of GGRF and enhance capacity building and technical assistance for implementation of GGRF, UN-GGIM-AP has held technical seminars in conjunction with FIG, IAG and ICG. Japan is also contributing to APREF by participating GNSS continuous and campaign observation and to capacity building and technical assistance through bilateral cooperation and training courses for third countries. APREF is essential infrastructure for the region to densify regional geodetic reference frame. However, the current frame is developed only from GNSS observation. Therefore, in order to develop more consistent frame with global frame such as International Terrestrial Reference Frame (ITRF), it is necessary to combine APREF with the other space geodetic techniques, more specifically VLBI. Japan has been serving as the Secretariat of Asia Oceania VLBI Group (AOV), which is a regional collaborative initiative among Australia, China, Korea and New Zealand that started its activities in 2014 as a subgroup of International VLBI Service (IVS) to contribute to the development of more accurate regional geodetic reference frame. Station coordinates and Earth Orientation Parameters can be determined more accurately through the activity of AOV, and GGRF in the region also can be accurately developed and maintained by combining these products with APREF. Japan is committed to contributing to the development and maintenance of more consistent frame with ITRF through the activity of AOV.