

VGOS development for Ishioka 13-m antenna

*Takahiro Wakasugi¹, Michiko Umei¹, Tomoo Toyoda¹, Masayoshi Ishimoto¹, Ryoji Kawabata¹, Basara Miyahara¹

1. Geospatial Information Authority of Japan

The Geospatial Information Authority of Japan (GSI) constructed a new VLBI facilities in Ishioka. It is designed for the next-generation VLBI system called VGOS, which is promoted by the International VLBI Service for Geodesy and Astrometry (IVS) in order to meet the requirements of Global Geodetic Observing System (GGOS). In addition to the VGOS facilities, Ishioka has GNSS Continuously Operating Reference Stations and a gravity measurement facility in order to contribute to GGOS as a core observatory. Since February 2015, the Ishioka 13-m antenna observed legacy S/X sessions with Tsukuba 32-m to obtain accurate positions of the new site. Then, Ishioka has started the international observations dedicated for Earth rotation measurement taking over the role of Tsukuba 32-m from the beginning of 2017. In parallel with these legacy observations, we have carried out several broadband observations compatible with VGOS frequency setup. From August to September 2016, we installed a new signal chain including QRFH (Quadruple-ridged flared horn), up-down converters, and high speed digital samplers at Ishioka in order to participate in VGOS Trial sessions which were broadband observations coordinated by IVS. Several experimental broadband observations with Kashima 34-m of NICT and Hobart 12-m of AuScope were also performed, and the compatibility of equipment between Ishioka and other overseas stations was confirmed. We report on the recent development of VGOS equipment and results of the legacy and broadband sessions for Ishioka.