

Local Tie Survey at the Ishioka Geodetic Observing Station

WAKASUGI, Takahiro^{1*} ; KAWABATA, Ryoji¹ ; KURIHARA, Shinobu¹ ; FUKUZAKI, Yoshihiro¹ ; KURODA, Jiro¹ ; WADA, Kojin¹

¹GSI of japan

The Geospatial Information Authority of Japan (hereafter GSI) has constructed a new geodetic observing facilities in Ishioka city, where is 17km northeast from the site of the GSI in Tsukuba city. A new VLBI antenna and two GNSS CORS were completed in the site. Moreover, we plan to construct a gravity observing point. We call the site iGOS (Ishioka Geodetic Observing Station).

The new VLBI facilities including antenna in the site are fully compliant with the VGOS (VLBI Global Observing System) concept, which is advocated by the International VLBI Service for Geodesy and Astrometry (IVS). It tries to achieve 1mm position and 0.1mm/yr velocity accuracy, continuous measurements, and turnaround time to initial geodetic results of less than 24 hours in order to satisfy the requirements of GGOS.

The site will take over the role of constructing and maintaining the geodetic reference frame of Japan from Tsukuba VLBI station after establishing strong tie relation between the two sites. In order to achieve this aim, measuring local tie vector at the site is also very important. We conducted survey to estimate tie vector between the reference point of the VLBI antenna (the intersection of the azimuth and the elevation axis) and GNSS observing points in January 2015.

We implemented local tie survey (angle and distance measurement, GNSS, and leveling) by using a conventional method that used some pillars for local tie survey as we had carried out at the other GSI's VLBI antenna sites. Furthermore, we tried some new method which aimed to estimate the reference point of the antenna with better accuracy. I will talk about the overview of iGOS and the preliminary result of the local tie survey.