The International VLBI Service and Its Role in GGOS

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The International VLBI Service for Geodesy and Astrometry (IVS), inaugurated in 1999, is an international collaboration of organizations that operate or support very long baseline interferometry (VLBI) components. The IVS is a service of the International Association of Geodesy (IAG) and the International Astronomical Union (IAU) and comprises more than 80 permanent components in over 20 countries. IVS organizations are currently in the process of implementing the next-generation broadband VLBI component of GGOS. This broadband VLBI system, the VLBI Global Observing System (VGOS), will ultimately replace the legacy S/X-band systems worldwide. VGOS broadband observations are made by fast-slewing 12-meter antennas in four bands between 2.5 GHz and 14 GHz. Once fully realized, VGOS will provide positional accuracies of 1 mm on global scales and involve continuous observations. The IVS also provides highly accurate and unique products through VLBI for the realization and maintenance of the celestial and terrestrial reference frames, ICRF and ITRF, and the Earth Orientation Parameters (EOP). VLBI plays a unique and fundamental role in the realization and maintenance of the global reference frames and in the determination of the EOP, including observation of quasars (necessary to realize the ICRF), the complete set of EOP including UT1–UTC, and the most precise measurements of intercontinental baselines for the realization and maintenance of the ITRF.

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