

GGOS and IGS, Meeting the Challenge: How Can the IGS Contribute to GGOS?

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The Global Geodetic Observing System (GGOS) is a major step forward for the evolution of the International Association of Geodesy (IAG). As stated in the GGOS Terms of Reference, GGOS will be “...considering the Earth system as a whole (including the geosphere, hydrosphere, atmosphere and biosphere), monitoring Earth system components and their interaction by geodetic techniques and studying them from the geodetic point of view...”.

The data, products, working groups and projects of the IGS can significantly contribute to these goals. The GNSS geodetic technique is unique in being utilized in a broad range of multi-disciplinary studies and applications relevant to the Earth system. IGS, through its classic suite of products (orbits, station position and velocity and time) is a key to densifying the global reference frame ITRF, and enables users to access it as well. Further, other products of the IGS coming from projects or under development within the working groups are useful for improving understanding of the Earth process include:

- o Tide gauge benchmark monitoring – sea level studies, coastal subsidence
- o Station motion and displacements – geodynamics, complementary to seismology
- o Ionospheric maps and TEC – space weather
- o Water vapor retrievals – climate and weather, severe storms
- o Real-time - towards geo-hazard response and system integrity
- o LEO – improved understanding of missions and potential improvements for IGS.

The IGS also is active in ensuring the incorporation of the other GNSSs, GLONASS and the future Galileo, in order to exploit these systems for similar applications. Careful studies of compatibility and inter-operability of the GNSSs are important benefits that the IGS can yield. This presentation will look at how GGOS is evolving with the view towards where the IGS can be active and engaged in order to contribute to the success of this important activity.

The paper will focus on what the IGS would expect from GGOS and what the IGS could contribute to making GGOS a success. Potentially critical points concerning GGOS implementation and goals will also be addressed.