

The Global Geodetic Observing System (GGOS): Strengthening Geodesy for Sustainable Development and Surveying Applications

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SUMMARY

The Global Geodetic Observing System (GGOS) is the international geodetic community's response to the need for continuous monitoring of changes in the Earth system. Organised under the umbrella of the International Association of Geodesy (IAG), GGOS provides the reference frames, geometric and physical ones, needed for all position-dependent observations and applications. They form the basis for most Earth observations, measuring changes in the Earth's shape, size, gravity field and rotation over time and space, and provide the fundamental layer for surveying, geomatics and spatial data management. GGOS is based on the scientific services of the IAG (IGS, IVS, ILRS, IDS, IERS, IGFS, ISG, PSMSL, IGETS, IDEMS, ICGEM and BGI), as well as the operational products they provide for Earth monitoring using space- and ground-based geodetic techniques. Surveying and geospatial communities rely on GGOS to provide a global reference framework ensuring the interoperability of national geodetic systems and supporting real-time positioning services. This enables accurate monitoring of land deformation, sea-level rise, and other geophysical processes. These capabilities are vital for disaster risk management, infrastructure resilience and achieving the United Nations' Sustainable Development Goals (SDGs). This contribution outlines GGOS's mission, strategic goals and current developments, including efforts to raise the profile of geodesy, enhance data sharing and bolster geodetic capacity in developing regions. It will emphasise collaboration opportunities between GGOS and the FIG community to promote the Global Geodetic Reference Frame (GGRF) and ensure that geodesy continues to underpin sustainable surveying, mapping, and spatial data management.

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