

Strategic goals of the Global Geodetic Observing System

The Global Geodetic Observing System (GGOS) is the response of the international geodetic community, organised under the International Association of Geodesy (IAG), to the need to continuously monitor the Earth system. GGOS observes the time-varying shape, rotation and gravity field of the Earth with respect to precise and long-term stable geodetic reference frames. Changes to these characteristics are inherently related to changes occurring within and between the Earth's components: the geosphere, atmosphere, hydrosphere, cryosphere and biosphere. Geodesy is therefore an essential discipline for Earth system monitoring. GGOS aims to raise awareness of this new role of geodesy and to move from the provision of usual geodetic products (station coordinates, geoid, Earth orientation parameters, satellite orbits) to a consistent modelling and interpretation of Earth system processes and interactions, ensuring an integrated observing system.

In the focus of GGOS are:

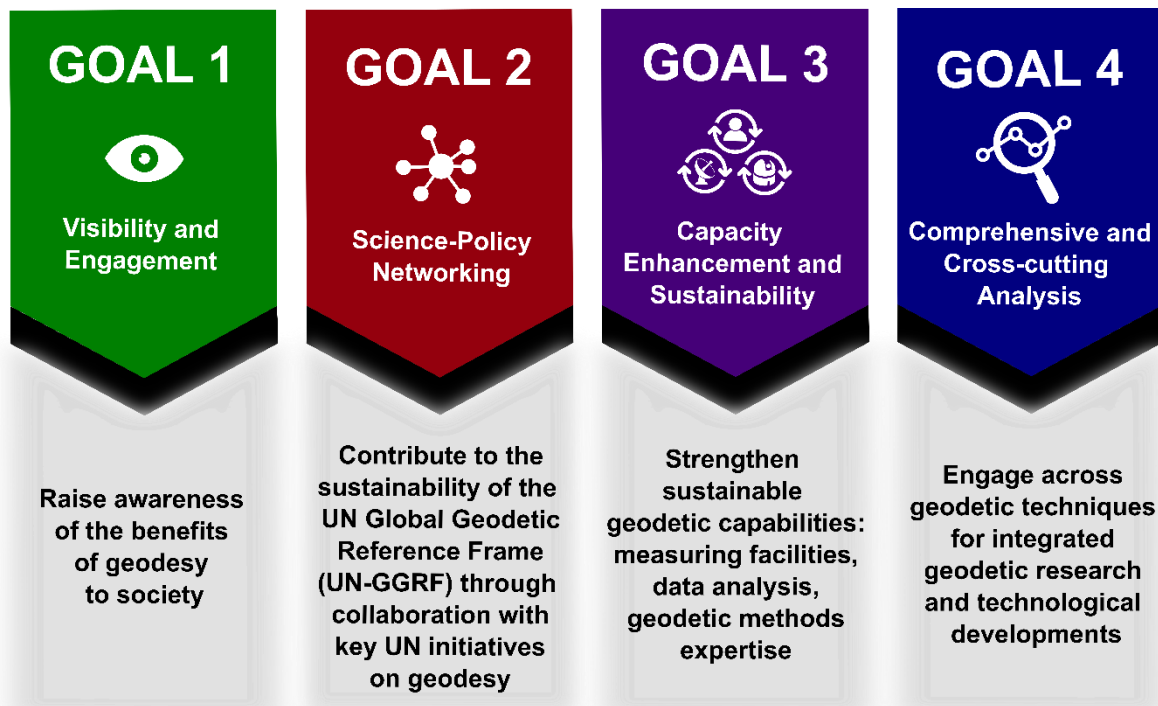
- The **observations** needed to monitor, map, and understand changes in the Earth's shape, rotation, and mass distribution.
- The **global geodetic frame of reference**, which forms the fundamental backbone for measuring and consistently interpreting key global change processes, as well as many other scientific and societal applications.
- The **benefit of science and society** by providing the foundation upon which advances in Earth system science and applications are built.



GGOS goals, objectives, and outcomes are built around four strategic priorities:

- **Geodetic Information and Expertise:** Development and maintenance of organisational intangible assets, including geodetic information, expertise, and capacity building.
- **Global Geodetic Infrastructure:** Identification of gaps in the geodetic infrastructure and advocacy for modernisation, extension and maintenance of the existing global geodetic infrastructure.
- **Standardisation, Integration and Optimisation:** Interaction with all IAG components to provide unique standards and mutually consistent, highly reliable, and easily accessible geodetic products.
- **Communication, Education, and Outreach:** Public relations, marketing, outreach, and engagement to ensure a long-term sustainable geodetic enterprise.

GGOS revises and updates its strategic goals and supportive objectives regularly to meet emerging needs in geodetic matters. Based on extensive community surveys, GGOS designs updated versions of its Strategic Plan, which is then complemented by an associated Implementation Plan containing the actions designed to achieve GGOS goals and objectives. The current Strategic Plan for GGOS (2024-2034) considers four main goals:



- 1) **Visibility and Engagement:** Focuses on making geodesy more visible and engaging with various stakeholders. The aim is to raise awareness about the fundamental role of geodesy in Earth Observation and all daily-life tools based on positioning, navigation and timing. This goal involves communicating how geodesy directly quantifies changes in the Earth system, and therefore, how geodetic data and products are indispensable in all global and regional initiatives to measure and mitigate the effects of global change. In addition, with most activities in modern life involving satellite services, it is necessary to highlight the fact that geodetic science and technology, in particular geodetic reference frames are a central component of public infrastructures.
- 2) **Science-Policy Networking:** Focuses on contributing to United Nations initiatives on geodesy. In 2015, the UN adopted its first ever resolution on geodesy, recognising the central role of this science in modern life. The UN Resolution A/RES/69/266 "[Global Geodetic Reference Frame for Sustainable Development](#)" places the importance of geodesy at the centre of the policy arena, not only from the point of view of a robust, modern and durable observing infrastructure, but also of research and development activities that ensure reliable, timely, long-range and globally accessible geodetic products. GGOS aims to support the initiatives of UN bodies specialised in geodesy, particularly the Sub-Committee on Geodesy of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) and the UN Global Geodetic Centre of Excellence (UN-GGCE).

3) **Capacity Enhancement and Sustainability:** Focuses on supporting the improvement and sustainability of the global geodetic infrastructure while strengthening the capabilities of geodetic experts. GGOS aims to promote modernisation, extension, and maintenance of geodetic resources, while fostering capacity enhancement and knowledge sharing within the geodetic community. This goal also emphasises the importance of safeguarding and openly sharing geodetic Earth observations and products as essential resources.

4) **Comprehensive and Cross-Cutting Analysis:** Focuses on the core mission of using geodetic data and reference frames to monitor, map, and understand the changing Earth. The objective is to enhance the understanding and utilisation of integrated, cross-technique geodetic Earth observations, combining geodesy with other Earth observation technologies. The ultimate aim is to provide a comprehensive platform for geodetic information-sharing (the GGOS Portal), making geodetic data and resources more visible and accessible.

The implementation of the GGOS Strategic Plan 2024 - 2034 is planned in four-year phases 2024 - 2027, 2028 - 2031 and 2032 - 2035. The last phase extends beyond the period covered by the Strategic Plan so that the renewal/updating of the GGOS Strategic Goals can be addressed as a key action in the last phase of the current Implementation Plan. This will ensure consistency and continuity in the GGOS strategy. The implementation phase for 2024 – 2027 considers 64 activities following the SMART criteria: *Specific, Measurable, Achievable, Relevant, Time-bound*. Each activity is assigned to a GGOS component, which coordinates the interaction/support of other GGOS components (and external stakeholders as appropriate) and monitors progress and completion.



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