



UN Subcommittee on Geodesy

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UN Subcommittee on Geodesy



Definitions

- What is Governance?
 - Government. (Merriam-Webster)
 - Comprises all of the processes of governing – whether undertaken by the government of a state, by a market or by a network – over a social system (family, tribe, formal or informal organization, a territory or across territories) and whether through the laws, norms, power or language of an organized society. (Wikipedia)
- What is an InterGovernmental Organization (IGO)?
 - An intergovernmental organization (IGO) is an organization composed primarily of sovereign states (referred to as member states), or of other intergovernmental organizations. IGOs are an important aspect of public international law. IGOs are established by a treaty that acts as a charter creating the group. Treaties are formed when lawful representatives (governments) of several states go through a ratification process, providing the IGO with an international legal personality. (Wikipedia)



What does UN-GGIM do as an IGO?

¿Qué hace UN-GGIM como OIG?

Frameworks, guides, norms, standards and methodological development

Normative strengthening, capacity building and implementation of GGIM in support of the 2030 Agenda

-  Strengthening global geospatial information management
-  Contribution of regional committees, thematic groups and networks
-  Legal and policy frameworks and issues related to authoritative data
-  Trends in national institutional arrangements
-  Adoption of standards and technical specifications
-  Strengthening collaboration with UNGEGN
-  United Nations activities in geospatial information management
-  Secretariat programme management

**UN-GGIM:
Strengthening
the Global Data
Ecosystem**



The activities and efforts that contribute to the unique local-to-global value of UN-GGIM for Member States

-  Global geodetic reference frame
-  Global fundamental geospatial data themes
-  Integration of geospatial, statistical and other information
-  Geospatial information and services for disasters
-  Land administration and management
-  Geospatial information for sustainable development
-  National geospatial data and information systems
-  Marine geospatial information

FIG/IGM-Chile Technical Seminar

United Nations

Reference Frameworks in Practice

- Department of Economic and Social Affairs (ECOSOC)

STRUCTURE

- Statistics Division

- United Nations Global Geospatial Information Management (UN-GGIM)

UN-GGIM
Asia-Pacific

UN-GGIM
Americas

UN-GGIM
Arab States

UN-GGIM
Europe

UN-GGIM
Africa

- **UN-GGIM adopted the GGRF – that is, all Nations have agreed to use a common reference frame based on the ITRS.**
- **The UN-SCoG is tasked with implementing the GGRF globally.**
- **That agreement and the obligation to adopt the GGRF was also passed through to the Regional Committees (RCs).**

FIG

SubCommittee on
Geodesy (UN SCoG)

EG on Land
Administration and
Management

EG on the Integration of
Statistical and
Geospatial Information

WG on Development of a
Statement of Shared
Principles for the
Management of Geospatial
Information

WG on Trends in National
Institutional Arrangements in
Geospatial Information
Management

WG on Geospatial
Information and Services for
Disasters

WG on Global
Fundamental Geospatial
Data Themes

WG on Legal and Policy
Frameworks for
Geospatial Information
Management

WG on Marine Geospatial





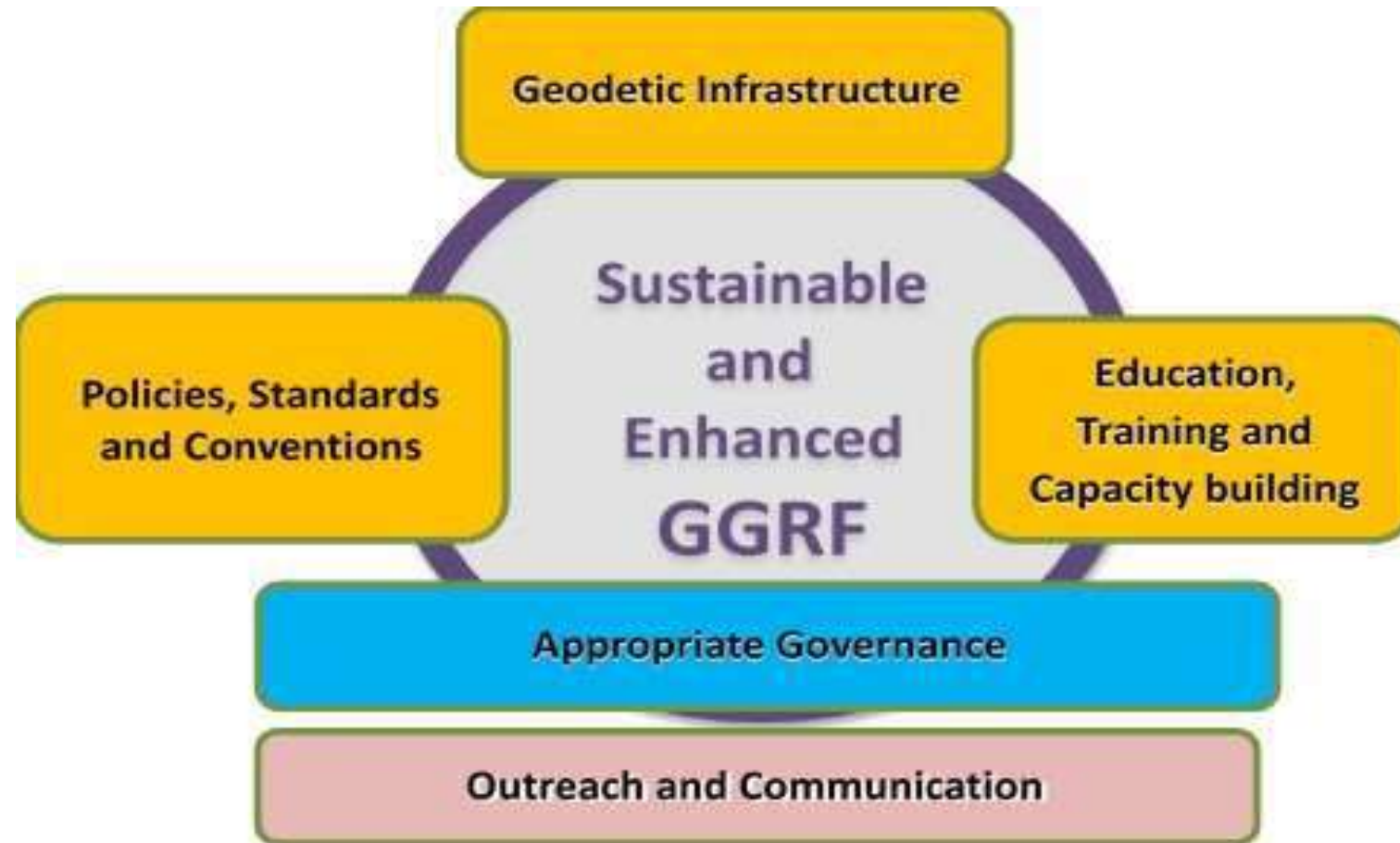
What is the UN Global Geodetic Reference Frame (GGRF)?

- Conceptually, the GGRF encompasses all aspects of a modernized reference frame including the geodetic infrastructure (GI), Education Training and Capacity Building (ETCB), Governance (GOV), Outreach and Communication (OC) as well as Standards (PSC).
- Includes both International Terrestrial Reference System (ITRS) and the International Height Reference System (IHRF)
 - The ITRS focuses on a framework for GNSS applications in an ellipsoidal framework
 - The IHRF focuses on a framework for physical heights (i.e., leveling, heights above “MSL”)
- Both the ITRS and the IHRF are determined and maintained by the International Association of Geodesy (IAG)
 - The ITRS is very robust and mature
 - The IHRF is nascent but growing
- The UN SCoG was tasked with developing a Roadmap and implementation plan to put the GGRF in place.



GGRF road map key

issue categories





Geodetic Infrastructure

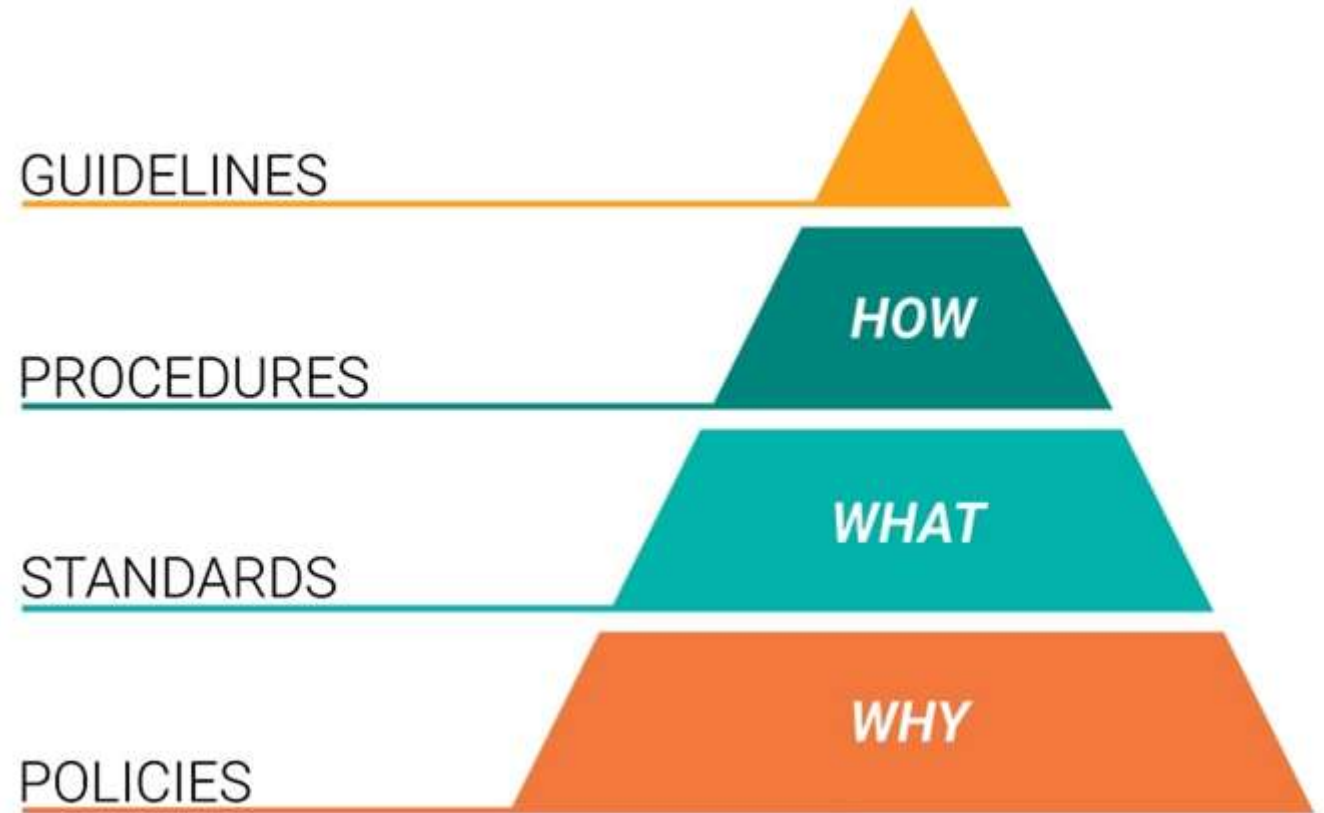
- Equipment/Data – VLBI, SLR, Continuous GNSS (e.g., CORS), DORIS
- Processing centers (IAG => IVS, ILRS, IGS, IDS)
- A sufficient number of properly trained staff
- Melding the four reference frames into one ITRF

	Station coordinates	Source coordinates	Earth Orientation Parameters (EOP)				Implicit parameters: datum parameters	
			Terrestrial pole	$\Delta UT1$	Length of day (LOD)	Nutation parameters	Origin	Scale
VLBI	x	x	x	x	x	x		x
SLR	x		x		x		x	x
GNSS	x		x		x			
DORIS	x		x		x			



Policies, Standards and Conventions

- Fundamental to GGRF
- Supports evidence based decisions
- F.A.I.R.
- Data-sharing strategy
- Metadata
- Meet ISO, OGC and other international standards





Governance

- Five focus areas in order to:
 - enhance global cooperation across Member States and relevant geodetic stakeholders, including IAG and FIG
 - ensure coherence and avoid duplication of effort
 - develop policy guidance, adoption and implementation of standards
 - ensure robust data analysis and product services, and infrastructure
 - assist with education, training and capacity building
 - improve communications and outreach
- Assist Member States in identifying their geodetic needs, and pathways to meet these needs in line with the Integrated Geospatial Information Framework
- Support to UN Integrated Geospatial Information Framework (UN IGIF)



Outreach and Communication

- Touches on all areas
- Decision makers in Nations
- Budget approvers
- National mapping, cadastral, geodetic agencies
- Users and stakeholders of national reference systems
- Critical for buy-in, acceptance and successful adoption



Education, Training and Capacity Building

- Focus is more on national and regional support
 - Survey focused on understanding/needs at national levels
 - Coordination with UN Global Geodetic Centre of Excellence
 - Education of national agencies
 - Focus on education for stakeholders/users
 - Leveraging available capacity to support regional development
- UN IGIF => country action plans
 - Geodesy sublayer
 - Country Action Plans

Establishment of the GGCE in Germany

Offer of the German Federal Government was accepted and supported on 11.09.2020 at the 10th UN-GGIM Committee of Experts

The GGCE in Germany

- located at the UN Campus Bonn
 - financed and supported by BKG
 - supported with virtual secondment by Norway
 - Steering Committee (UN DESA + Germany)
 - Technical Advisory Committee (SCoG, IAG, FIG, Space Agencies, ...)
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UN Campus Bonn

Source: Press office of the city of Bonn

- Courtesy Johannes Bouman



Global to regional coordination

- UN SCoG coordinates with UN GGIM, IAG, FIG, ISO/OGC and Nations
 - Survey questionnaires to determine needs for ETCB, GI
- Works with regional Geodetic Reference Frame working groups
 - GRFA in UN GGIM Americas
- Works with regional bodies focused on geodesy
 - APREG, SIRGAS, NAREF, etc.
- Part of governance mandate to coordinate efforts and minimize overlap of support to maximize capacity development

FIG/IGM-Chile Technical Seminar

Reference Frames in Practice



Questions?

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