



# Capacity Development

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# Capacity Development Workshops

**216 PARTICIPANTS**  
**100 COUNTRIES**  
**001 TO GO**

Hosted with **UN-GGIM: Europe**  
10-14 February 2025  
UN Campus - Bonn, Germany  
45 participants  
22 countries

Hosted with **UN-GGIM: Asia-Pacific**  
30 June-4 July 2025  
UN Campus - Bangkok, Thailand  
53 participants  
22 countries

Hosted with **UN-GGIM: Americas**  
and support from **SIRGAS**  
3-7 November 2025  
UN Campus - Santiago, Chile  
57 participants  
27 countries  
**Translation into Spanish**

Hosted with **UN-GGIM: Africa**  
19-23 May 2025  
UN Campus - Nairobi, Kenya  
61 participants  
29 countries  
**Translation into French**



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Statistics Division – Department of Social and Economic Affairs

# Capacity Development Workshops

## Purpose

- Bringing together geodetic professionals to advance collaboration and modernize geospatial reference systems

## Participants

- Surveying or geodetic professionals and practitioners: Individuals actively involved in geodetic work at a national or international level.
- Government officials: Representatives actively involved in technical geodetic processes and implementation.
- Academics and Researchers: Members of the academic community engaged in geodesy and related fields.
- Representatives from geodetic organisations: Individuals affiliated with professional bodies and organisations in the field of geodesy.



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# Capacity Development Workshops

## Application process

Workshop attendees will be selected based on (but not limited to) the following criteria:

- Professional background and expertise
- Academic qualification
- Demonstrated practical technical skills
- Motivation for attending the workshop
- Affiliation with professional institutions / organizations / Member States
- Reference letter



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# Capacity Development Workshops

	Monday	Tuesday	Wednesday	Thursday	Friday
Session 1	Opening, Overview and Introduction	HOW - Profiling the current status of national GRS	HOW - Using transformation parameters, plate motion and deformation models	WHERE - Making geodesy understandable and visible	WHO - Identifying the weakest link in the chain of command
Session 2	WHY - The importance of a Geospatial Reference System (GRS)	HOW - Reviewing geodetic adjustments	HOW - Developing national geoid models and height datums	WHERE - Crafting effective communication strategies for decision-makers	WHY - Forward looking strategies for geodesy
Session 3	HOW - GRS infrastructure	HOW - Creating a new national datum	..continuation	WHAT - Developing business cases for increased investment in geodesy	Stronger. Together. UN-GGCE roadmap for GRS modernisation
Session 4	HOW - Identifying the current national GRS status	HOW - Introducing data sharing, standards and registers	WHAT - Addressing capacity development needs for the region	WHO - Governance structures for overseeing national GRS programs	Sharing the UN-GGCE's GRS roadmap
Session 5	WHO - Introducing regional geodetic collaborations	HOW - Applying data sharing, standards and registers	WHAT - Introducing international geodesy initiatives and partners	WHO - Developing governance structures and stakeholder engagement	Workshop reflection and feedback
Session 6	WHO - Developing regional geodetic collaborations	HOW - Using the ISO geodetic register, EPSG register and OGC standards	UN-GGCE Stronger. Together.		Closing



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# Capacity Development Workshops

## WHY?

### **Evidence about the Importance of Geodesy**

- Highlight the value of geodesy to decision-makers
- Support efforts to secure increased investment in geodetic infrastructure and capacity

## HOW?

### **Modern Geodetic Reference Systems (GRS) and Technical Guidance**

- Introduce concept of a modern GRS
- Provide step-by-step guidance on creation, access, use and sustainability
- Examples of key processes: geodetic adjustments...
- Standards

## WHAT?

### **Capacity Development Needs**

- Geodesy Initiatives and Partners

## WHERE?

### **Communications and Stakeholder Engagement**

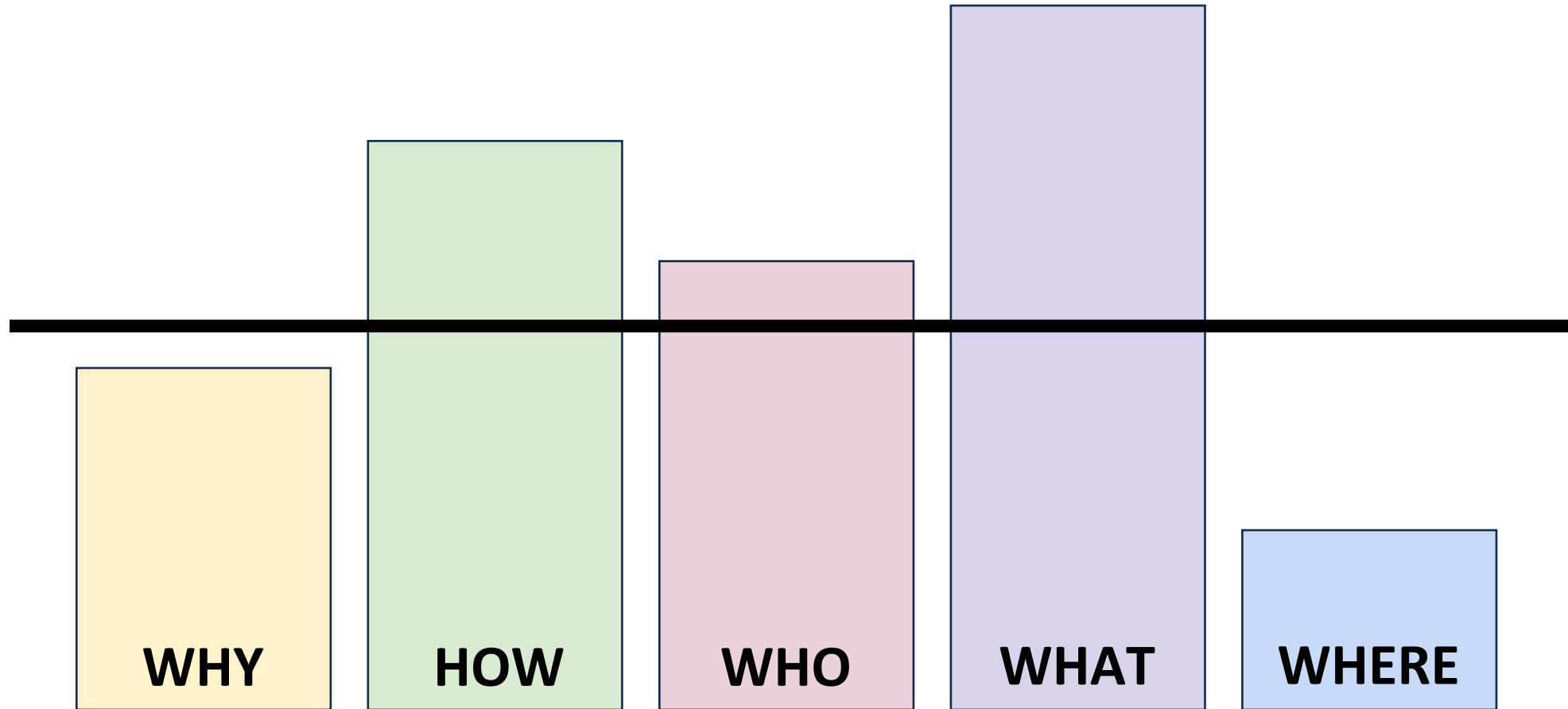
- Support in creating an engagement plan to involve stakeholders

## WHO?

### **Governance Structures and Geodetic Collaborations**

- Guidance on building governance frameworks to manage GRS modernization

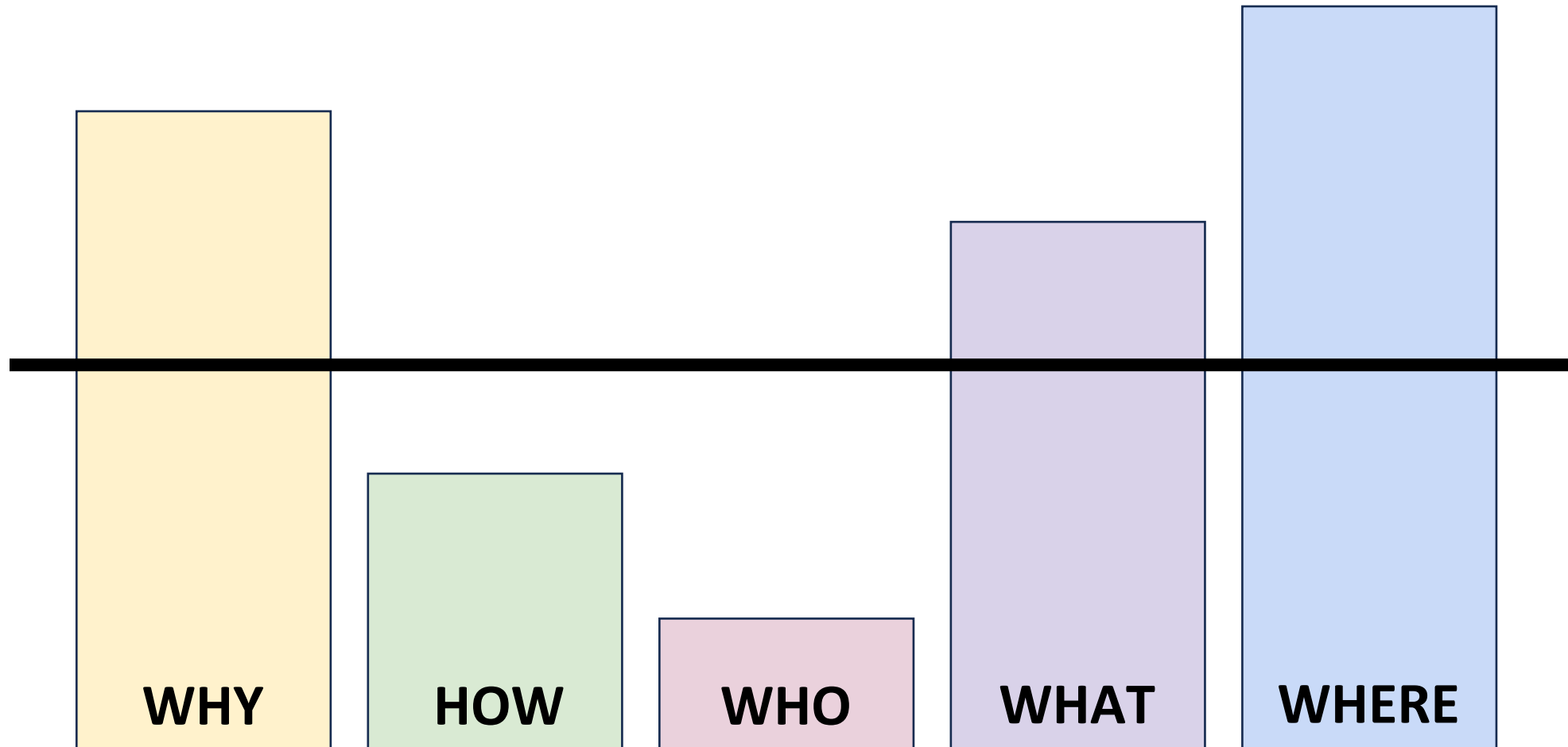
# Capacity Development Workshops



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# Geospatial Reference System

**Time Dependent  
Reference Frame**



e.g. International  
Terrestrial Reference  
Frame 2020



14 parameter  
transformation

**Static Datum**



New Geocentric  
Static Datum



Model

**Height Datum**



New Height Datum

**Example of a country  
Geospatial Reference System**



7 parameter  
transformation



Model

**Height Datum**



Old Height  
Datum

**Static Datum**



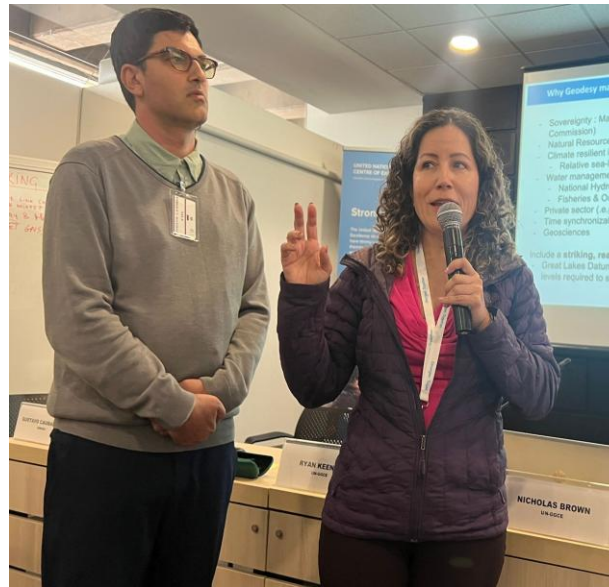
Old Geodetic Static  
Datum



Model

People  
Standards  
Legal frameworks  
Software  
Technical Manual

Credit: Geoscience Australia



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# Further capacity development

## Heights and Transformations

- Choosing the right height datum
- Computing them
- Seeking funding for gravity data
- Delivering and promoting them

## GNSS – Data Acquisition, Management, Processing & Analysis

- All stages of GNSS processing, including quality checking
- GNSS Operations

## National Adjustments

## Business case development

## Communications



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# Continued engagement

## Materials

All public workshop materials

<https://ggim.un.org/UNGGCE/#capacity-development>

- Links to presentations in multiple languages
- Recordings from the workshops

## UN-GGCE Workshop - Global Alumni Network

- 1) Microsoft Teams Channel
- 2) WhatsApp Channels (per workshop, and one Global channel for all Alumni)



### UN-GGCE Alumni of Geodesy...

Community



#### Announcements

Tuesday

+1 (819) 431-1811 joined

#### Groups you're in



#### Asia-Pacific UN-GGCE Geodesy...

Tuesday

+52 443 338 1610 joined from the community



#### Africa UN-GGCE Geodesy Works...

Tuesday

+52 443 338 1610 joined from the community



#### General

Tuesday

Jeff V joined from the community



#### Europe UN-GGCE Geodesy Work...

Tuesday

~Siphiwe Mphuthi joined using this group's invite link



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