



UNITED NATIONS GLOBAL GEODETIC CENTRE OF EXCELLENCE

MODERNISING GEOSPATIAL REFERENCE SYSTEM
CAPACITY DEVELOPMENT WORKSHOP

Opening, Overview and Introduction

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Why are we here?

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



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The UN-GGCE envisions...



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... future where ALL countries have strong political support for geodesy ...



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. to assist with the implementation of UN General Assembly Resolution 69/266

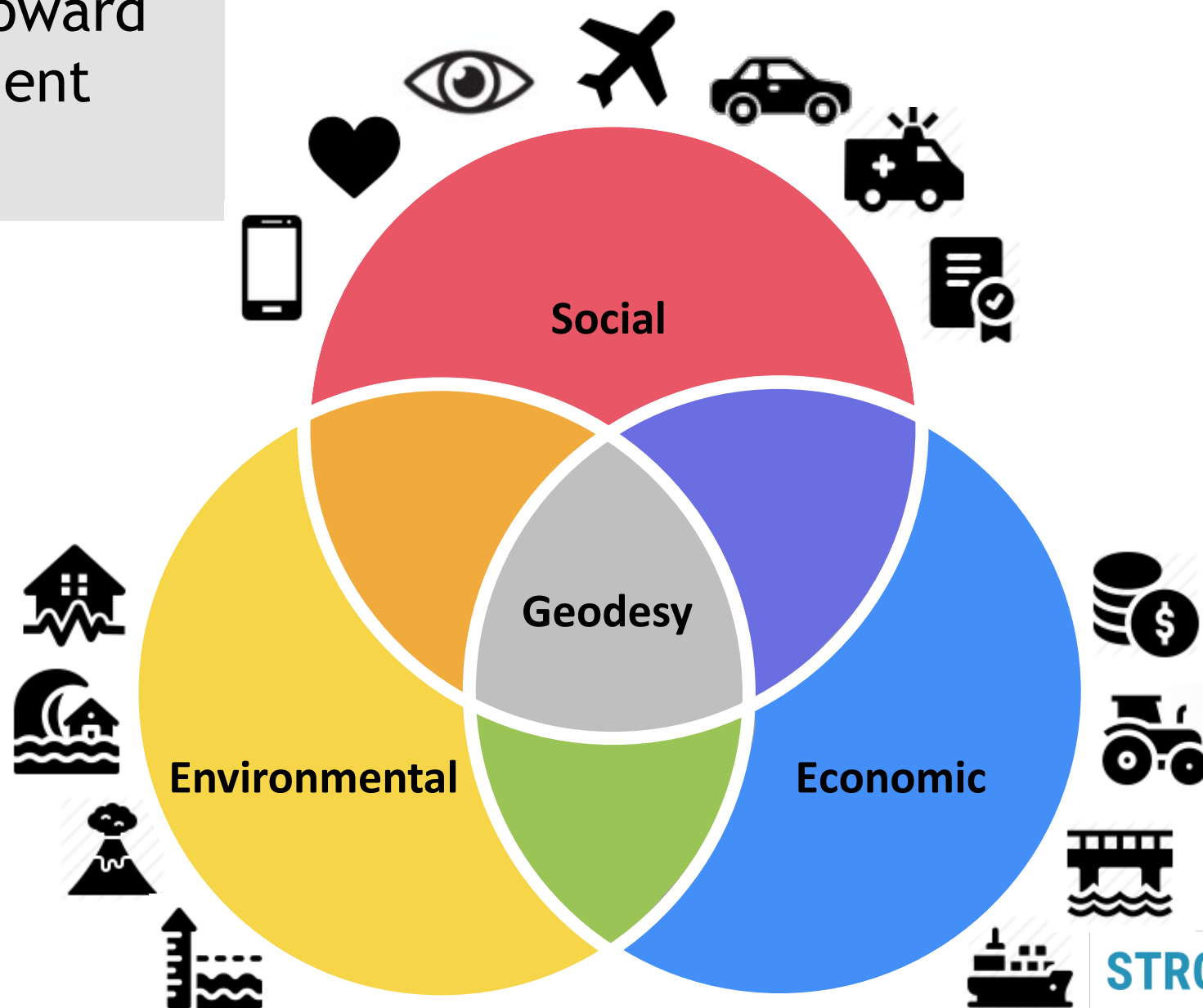


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... accelerating progress toward the Sustainable Development Goals (SDGs)...

Geodesy

“Science of measuring the **shape, orientation** and **gravity field** of the Earth and how it changes over **time**.”



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Workshop style

Interactive and Informal

- The agenda and PowerPoint slides are GUIDANCE for us.
- If you have something to contribute, please raise your hand and whoever is leading the discussion will invite you to contribute.
- There will be times the presenter will ask who has experience on a topic and invite you to give examples.

Collaborative

- Build teamwork and networks
- Share ideas
- Collective problem-solving



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Workshop Components

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

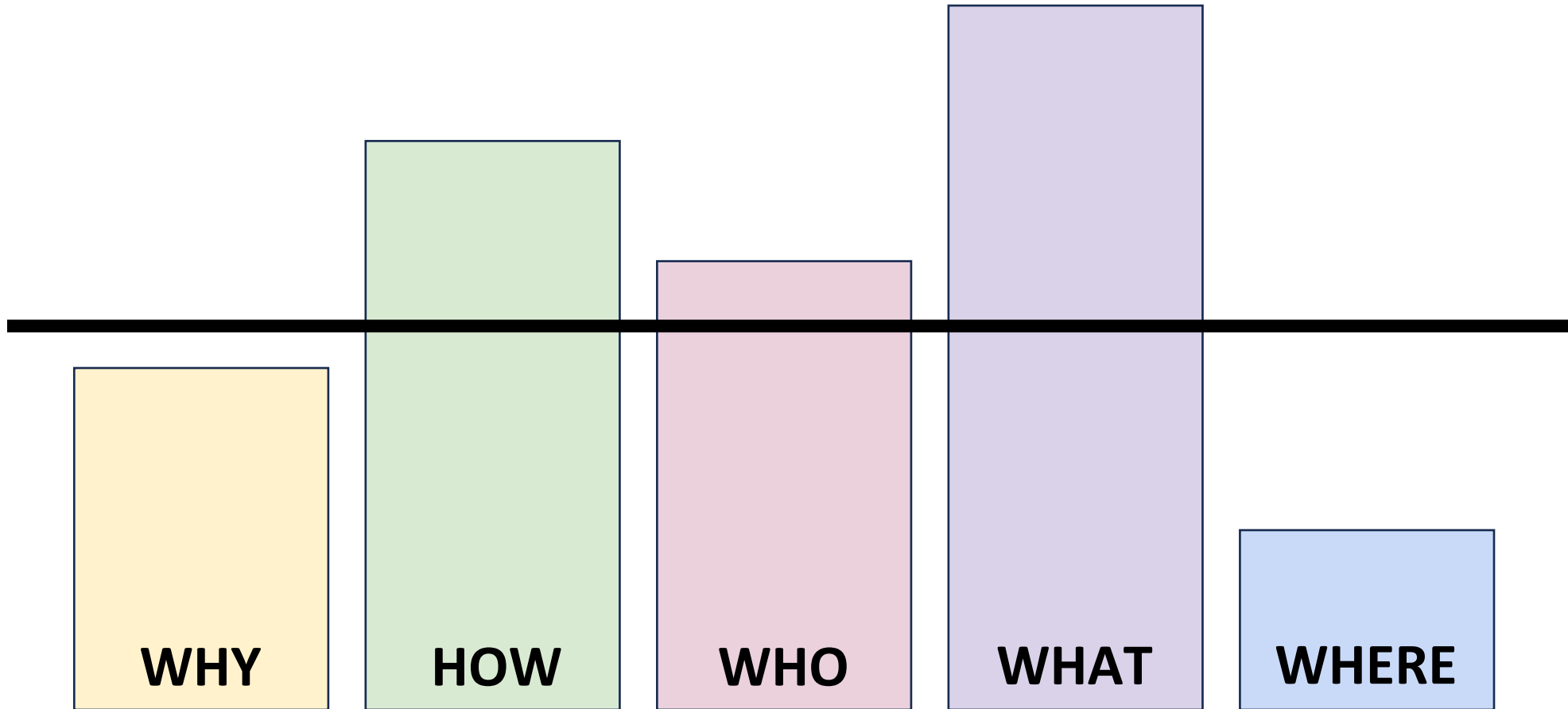
- Support in creating an engagement plan to involve stakeholders

WHO?

Governance Structures and Geodetic Collaborations

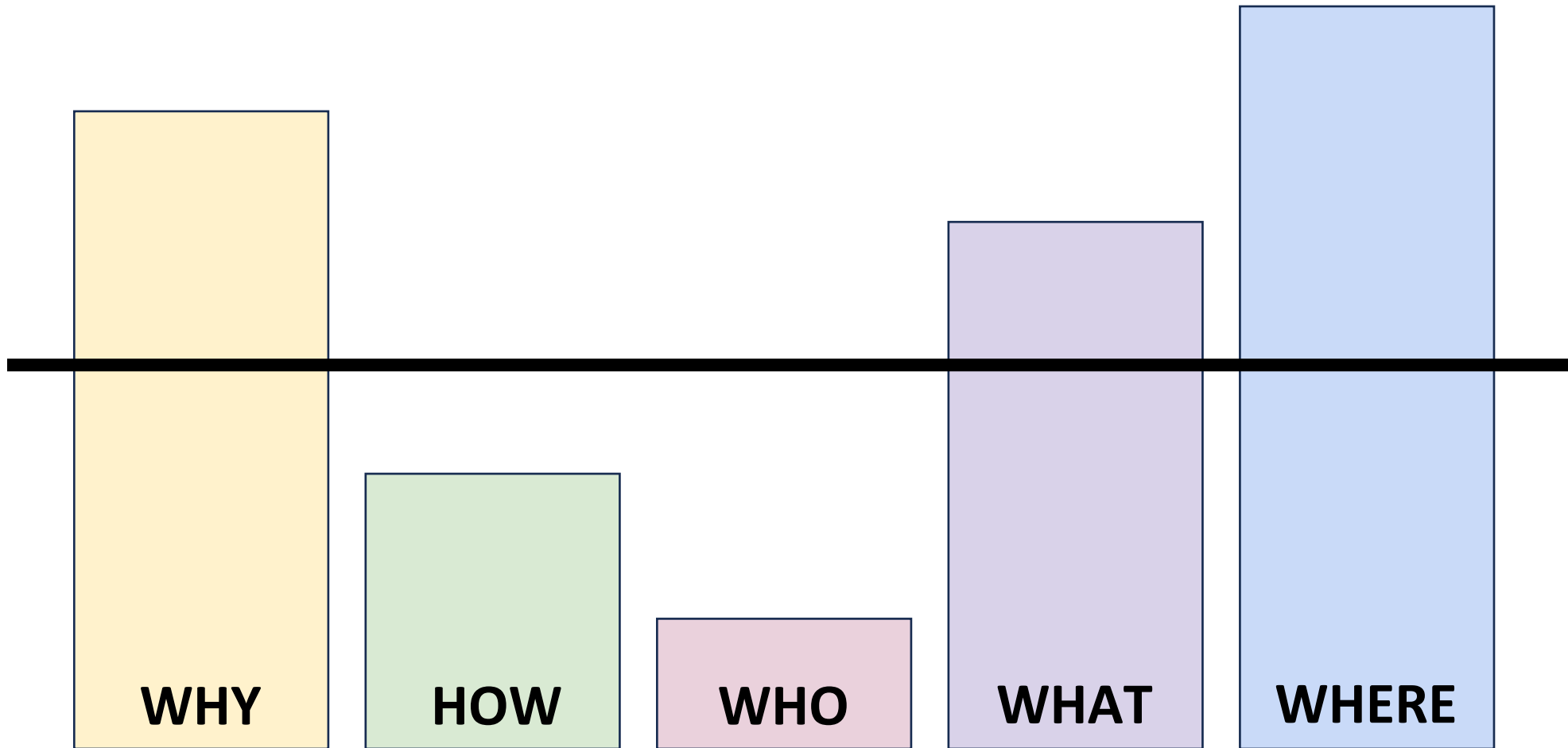
- Guidance on building governance frameworks to manage GRS modernization

Workshop Components



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Workshop Components



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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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Housekeeping



Mobile Phones:

- Please keep your phones on silent during sessions to avoid disruptions.



Water Stations:

- A water dispenser and cups is available at meeting room.



Safe Space:

- This workshop is a safe space. We encourage respectful, open dialogue. Please report any concerns to the support team.



Daily Signature:

- Sign the attendance sheet with administrative officer.



Evaluation forms:

- Will be distributed Day 1 and Collected Last Day of Workshop (5) to assess the content and delivery of each session.



Mentimeter Tool:

- For interactive polling and discussions at www.menti.com



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Timing

Security and Registration:

- 08:30 – 09:00 am each day

Workshop Timings:

- **Start:** 9:00 am each day
- **End:** 5:00 pm each day

Breaks:

- **Morning Break:** 10:30 – 11:00 am
- **Lunch:** 12:00 – 2:00 pm
- **Afternoon Break:** 3:00 – 3:30 pm



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Venue information

Location

- **Conference Venue:** UN Nairobi Complex
 - **Building:** Conference Building
 - **Floor:** Rooftop
 - **Rooms:** Conference Room 9

Facilities

- **Kiosk:** Located next to the lobby on the conference floor
- **All-Gender & Accessible Restrooms:** Ground floor
- **Meditation & Prayer Room:** Ground level, next to Conference Room 1
- Open network available



Lunch Options

- **External Caterers:** Options include Safari Park, River Café, and other
- **On-site Dining:**
 - Average cost: KES 400 – 1,500
 - Payment: Both cash and card accepted

Currency Exchange

- Possible at Banks on campus
- Requirement: Passport needed for exchange to Kenyan Shilling

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Emergency & Medical



Emergency

- **First Aid:** Joint Medical Services available on the UN compound
- **Security Assistance:** Available on each floor, reach out for immediate assistance

In case of an emergency, please follow the **exit signs** and instructions from the safety personnel, to reach emergency exits.

General Emergency numbers:

999 is the toll-free number for emergency services in Kenya, including for ambulance, fire, police and EMS

1199: Red Cross

You can as well contact workshop focal points



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Emergency UNON

For Emergency Requests or Services



Safety and Security

UNON Security:

020 762 2999, 020 762 2344, 020 762 6666

Security Operation Centre(SOC):

020 762 2053, 020 762 2116, 070 772 2503/5

JMS:

020 762 5999, 072 425 5378

Police:

999, 112

Diplomatic Police:

070 858 9522, 073 117 0666

Single Emergency number:

020 762 6666



Joint Medical Services (JMS)

UN Joint Medical Services

Emergency: Landline 020 762 5999,
24/7 Cell 072 425 5378

Email: unon-jms-
medicalevacuation@un.org

Reception: Landline 020 22267,

Email: unon-jms-medical@un.org

Ambulance Services

St. John's Ambulance: 020-221 0000/334
3999, 072 122 5285,

E-Plus Ambulance: 070 039 5395, 073
839 5395

AAR Ambulance: 072 522 5225, 073 422
5225



Travel Shipping and Visa Unit (TSVU)

Hemingways Travel

Working hours: 0800 – 17:30, Mon-
Friday

Generic contact: +254 (020) 512 1438

Email for meetings:

meetings.un@hemingways.co

Email for other bookings (Missions):

travel.un@hemingways.co

After hours; During weekend and public holidays

Emergency Contacts

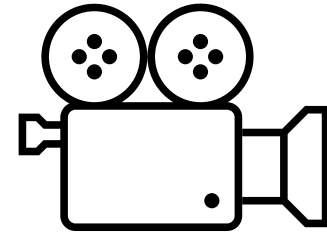
Tel: +254 702 633 783

Email: emergency.un@hemingways.co

Consent

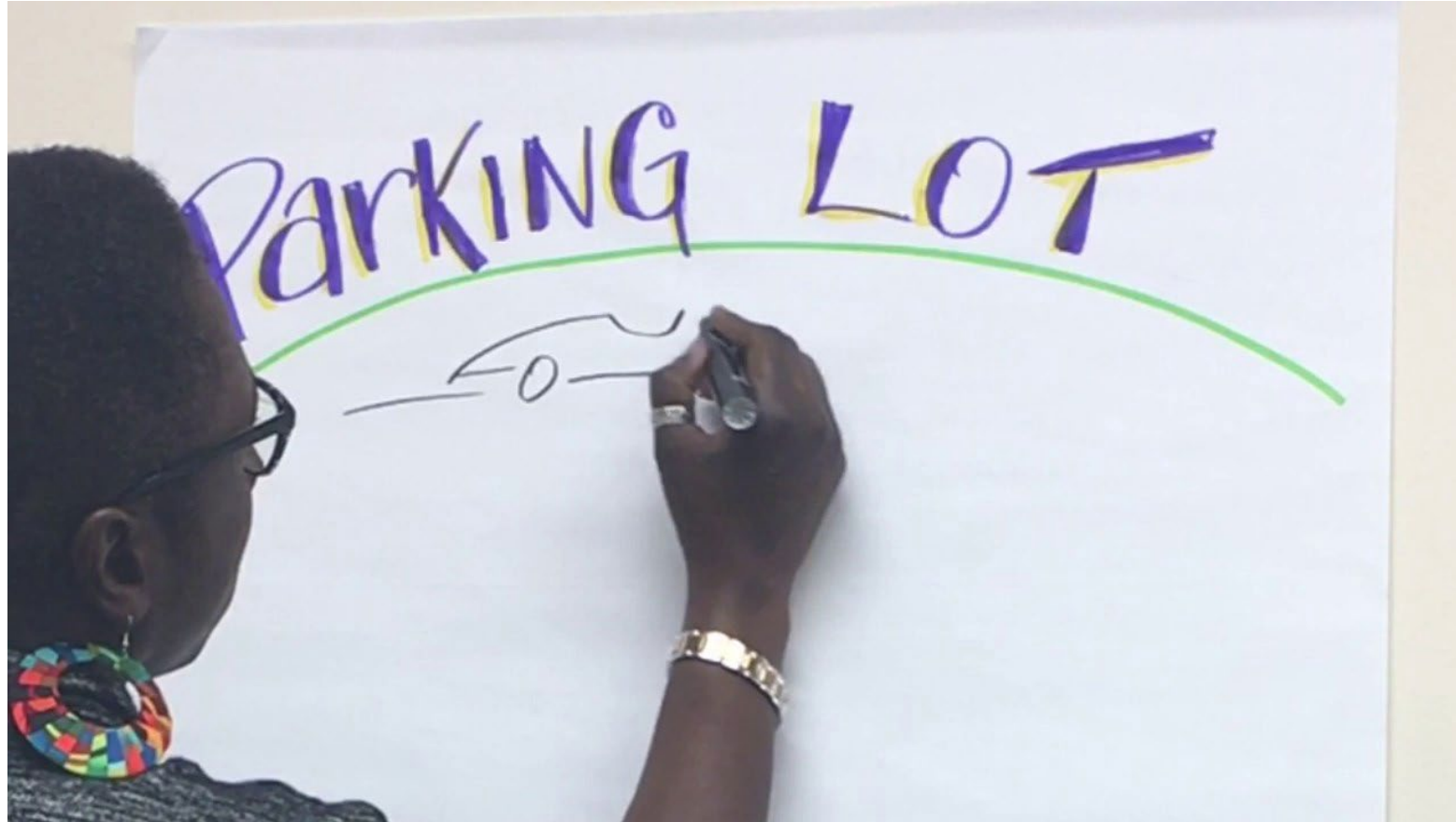
Consent on Recording:

- This workshop is recorded. Recordings will be published on the UN-GGCE website.
- If you don't want your voice, image or comments shared online, please let Nick or Walaa know and we will ensure you are removed in the editing process.



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Parking Lot



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Ice breaker!

- Name
- Country
- Role
- Sticky note
 - Think of a 'geodesy capability' you can offer to another attendee here...
 - On your sticky note, draw a :-)
 - Think of a 'geodesy capability' you would like to have.....
 - On your sticky note, draw a :-)
 - Use the coffee break to find someone you can :-) to, and a second person you can get a :-) from....



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Photo time!



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DAY 1



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DAY 2

Activity – Geodesy Factbook

Purpose

- To identify and showcase the national Geospatial Reference System (GRS) and capabilities of your country.
- To create a shared understanding of Member States capabilities, needs and motivations.

Your Task

- Fill in the following your country “Geodesy Factbook”
- <https://ggim.un.org/UNGGCE/>
 - Capacity Development Tab
 - Africa workshop
 - [20250325 - Geodesy Factbook \(BLANK DRAFT\) EN | FR](#)



Activity – Data standards

Legal and Regulatory Frameworks

- *What data protection and privacy laws are in place?*
- *How do national regulations align with regional frameworks like the African Union Data Policy Framework? <https://au.int/sites/default/files/documents/42078-doc-AU-DATA-POLICY-FRAMEWORK-ENG1.pdf>*
- *What are the compliance and enforcement mechanisms for data misuse?*

Governance and Ownership

- *Who owns the data, and what are the rights of local communities?*
- *How is consent obtained from data subjects?*
- *What protocols exist for cross-border data sharing?*

Technical Infrastructure and Capacity

- *What infrastructure supports data collection, storage, and transmission?*
- *Are there standardized formats and interoperability protocols?*
- *What cybersecurity measures are in place to protect shared data?*



Activity – Data standards

Economic and Social Impact

- *How will data sharing benefit local communities and economies?*
- *What revenue-sharing models exist for data-driven innovations?*
- *How can data sharing support sustainable development goals (SDGs)?*

Partnership and Collaboration

- *What partnerships exist with international organizations and private sector entities?*
- *How can capacity-building initiatives support local data management expertise?*
- *What mechanisms are in place for resolving disputes related to data access and use?*





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DAY 3



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DAY 4



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DAY 5

Building Global Geodesy Alumni Network

Stay connected:

- ◆ **WhatsApp Group** – Workshop and beyond exchange and communicate
- ◆ **Microsoft Teams Channel** – Collaborate, exchange files & discuss projects
- ◆ **LinkedIn Group** – Share updates, opportunities & insights (links coming soon)
- ◆ **Global Alumni Map** – Get mapped by expertise & location for networking (add details to forms)

Build Capacity:

- ◆ Access all materials on the UN-GGCE website
- ◆ Share workshop materials & insights with colleagues
- ◆ Engage in peer mentoring & knowledge sharing



Stay connected. Build capacity. Strengthen global geodesy—together!

Stronger. Together.



Parking Lot

- How are reference frame parameters computed?
- Ghana War Office Ellipsoid problem?
- Future Training:
 - Geoid modelling
 - National Adjustments
 - Development of transformation parameters (including grids)
 - GNSS Processing
- What do analysis centres do?
- Process to submit metadata to EPSG and ISO GR
- Collaborate on a plan for capacity development (education) and assistance from ICT experts to make systems more reliable
- Software licencing issues (potential use of open source)
- Tide Gauge specifications and installation guidelines
- Retention of technical staff
- Maintenance of GNSS CORS
- Gathering information the users of data (including science applications)
- Share information about GNSS reflectometry from Kristine Larsen

