Technical Subcommittee on Ocean Mapping (TSCOM)

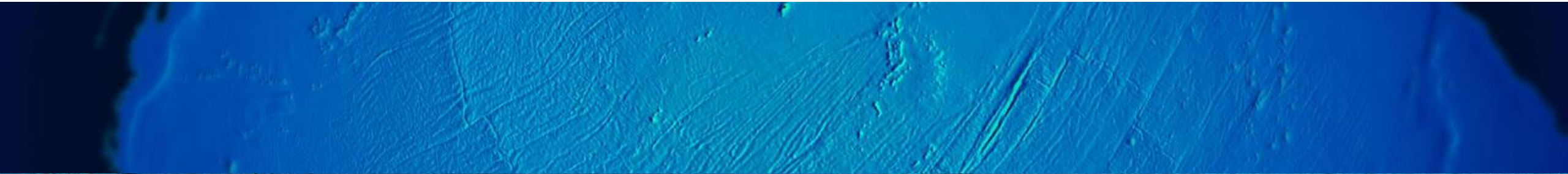
Seabed 2030 5th SaWPaC Regional Mapping Community Meeting, Lima, Peru, 12 – 14 July 2023

George Spoelstra (Chair)

TSCOM

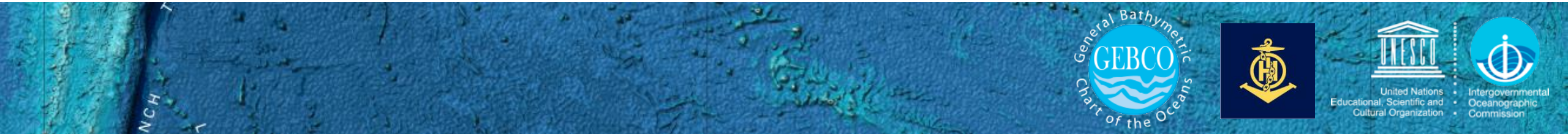
The Technical Sub-Committee on Ocean Mapping (TSCOM) was established in 2006 as part of the GEBCO program with the aim to:

- Provide ongoing advice to the GEBCO Guiding Committee and all associate groups and projects interested in the building and use of the GEBCO product.
- Serves the greater bathymetric, hydrographic, and maritime communities as authoritative source for technical expertise in seafloor mapping and forum for discussion on emerging technologies and applications of bathymetric and hydrographic data.



History and background

- In May 1977, at GEBCO Guiding Committee (GGC) IV, the Guiding Committee decided to form a small Sub-Committee on Digital Bathymetry (SCDB) to ‘investigate… the question: Is there an advantage [in] having digital bathymetric data?’
- Outcome was positive and in led to the formation of the IHO Data Centre for Digital Bathymetry (DCDB)
- First official meeting of the SCDB was in 1984 at the US Naval Hydrographic office and was chaired by Dr. Meirion Jones (Founding Director of the British Oceanographic Data Centre) . He chaired the SCDB for over 10 years
- Biggest achievement was the creation of the GEBCO digital atlas between 1988 and 1994
- In 2006 the committee was renamed to TSCOM (as everything was digital by then)



TSCOM Membership

(as of July 2023)

Voting Members

- Wetherbee Dorshow (EarthAnalytics,USA)
- Thierry Schmitt (SHOM, FR)
- Erin Heffron (Ocean Mapping Service, USA)
- Vicki Ferrini (LDEO, USA)
- Leonard Gomes (Marinha, BR)
- Tim Kearns (GLOS, US)
- Boele Kuipers (NHS, NO)
- Paul Johnson (CCOM, USA)
- Cisco Navidad (CSIRO, AU)

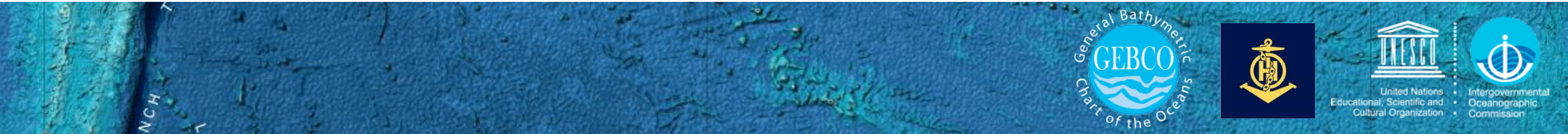
- Chair, George Spoelstra (GGSgc, NL)
- Vice Chair: Federica Foglini (CNR, IT)

- Christie Reiser (NOAA, USA)
- Helen Snaith (BODC, UK)
- Caitlyn Raines (esri, USA)
- Heather Stafford (NGA, US)
- Pauline Weatherall (BODC, UK)
- Mark Zimmerman (NOAA, USA)
- Arne Johan Hestnes (Kongsberg, NO)
- Aileen Bohan (INFOMAR, IR)

19 voting
3 non-voting members

Non-Voting Members

- Eunmi Chang (Seoul University, KO)
- Martin Jakobsson (SU, SE)
- Jennifer Jenks (NOAA, US)



Team photo TSCOM last (virtual) meeting September 2022

Lost on the clipboard

General Bathymetric Chart of the Oceans
GEBCO
United Nations Educational, Scientific and Cultural Organization
Intergovernmental Oceanographic Commission

TSCOM organization

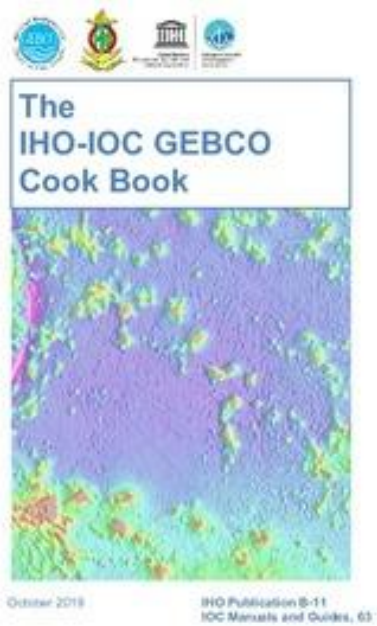
- Yearly Work Plan with associated budgets
- Budget for 2023 = 34k (higher than normal due to unspent budget during COVID)
- Task are performed by working groups
  - Metadata WG
  - Cookbook editorial board
  - GEBCO website WG
  - Opportunistic Mapping resources WG
  - Applied Discrete Global Grid System WG
  - Deep ARGO float profile WG
  - Undersea feature detection WG

Metadata working group Federica Foglini

- Original objective: provide advice on metadata to be provided by the data producer
- Ongoing collaboration with the CSBWG
- Metadata working group acts as the glue between various workitems of TSCOM
- After initial closure, chair will restart the working group

Cookbook Editorial Board Christiane Reiser

- Cookbook act as a resource for data providers and GEBCO data integrators
- Objective of the WG: Managing the Cookbook content
- New epub was released end of 2022
- Cookbook is an official IHO publication. Replacing the existent publication with the new one is a long process.
- Possible solution is to create a wiki
- WG will work in close co-operation with SCET



GEBCO Website Working Group Caitlyn Raines

- Migrated GEBCO website to new platform is completed (drupal)
- Content management system will be open for GEBCO website editors
- Google workspace is available (including mailing lists)
- Integration of the GEBCO website and SCOPE website is currently being investigated

General Bathymetric Chart of the Oceans GEBCO

IHO International Hydrographic Organization

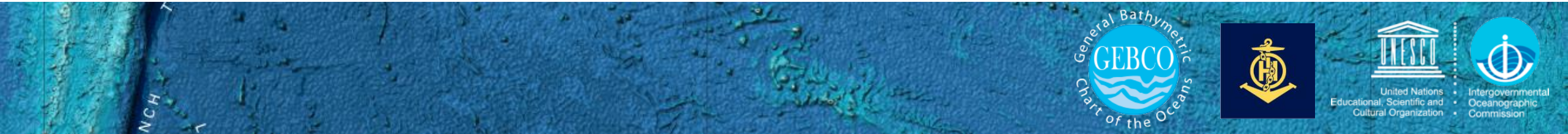
United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

DCDB and TSCOM

- TSCOM is supporting DCDB
  - to improve DCDB data pipeline
  - to educate GEBCO Community on DCDB
- Industry days (organized as a series of webinars and an in-person event in May 2023)
- Webinar 1: *Data stewardship* (data sharing, obstacles to data sharing, solutions that have helped to address bottlenecks, metadata needs for sharing and attribution, long-term preservation, access and re-use)
- Webinar 2: *Data Discovery & Identifying Data Gaps* (integration of web services for data discovery, access and advanced geospatial applications related to data-driven decision-making to opportunistically fill data gaps)
- Webinar 3: *Data Access & Community Needs* (how to improve not only the availability of bathymetric data, but also the accessibility of that data)
- Webinar 4: *Data Processing, Transformation & Integration* (How do we process, transform and integrate data)
- Report with conclusions and recommendations will be available soon

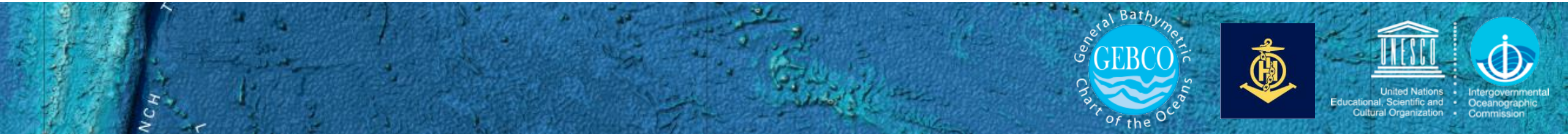
Webinars are available on-line at: https://www.youtube.com/@mapthegaps



Opportunistic mapping resources working group

Erin Heffron

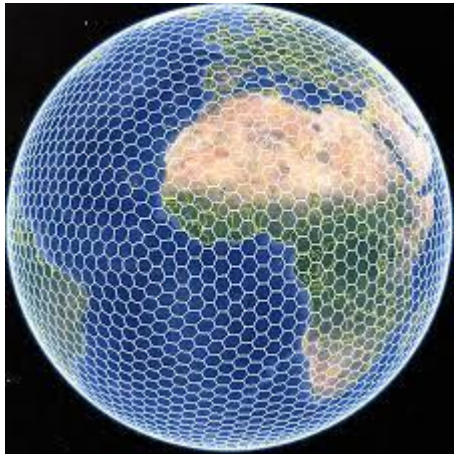
- Objective: To develop, test, and deliver resources that promote acquisition of seabed data by the seafloor mapping community in areas identified as gaps in the current coverage following the A+B+C=100% paradigm
- Preliminary report is submitted. Ongoing work by drafting group
- Preliminary report conclusion: required data is not globally available
- This topic was intensively discussed at the DCDB industry workshop



Applied Discrete Global Grid Systems

Boele Kuipers

- Workgroup established (4 members so far)
- Goal is to research current state of the art technologies and advise on the use of A-DGGS for GEBCO grid
- We aim from strong industry support



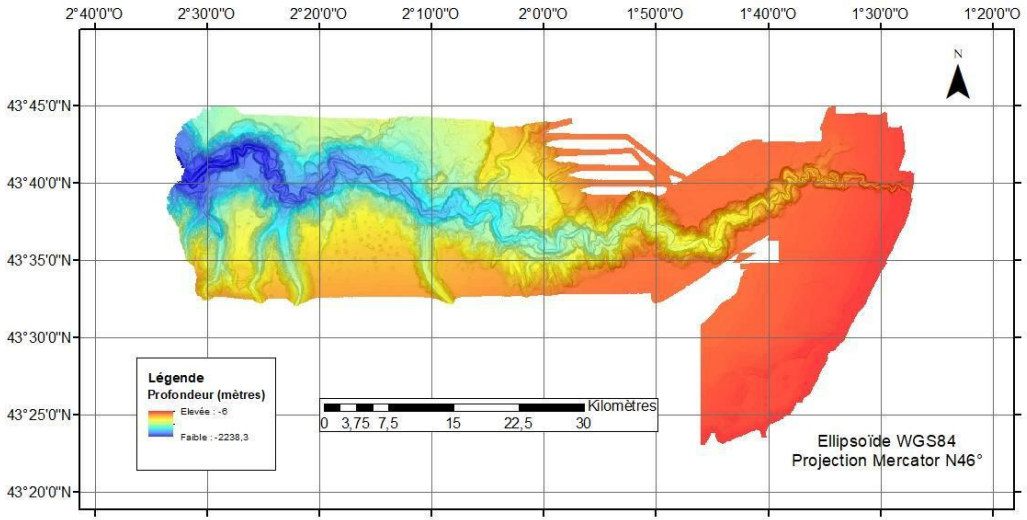
Using Deep Argo Float profiles as validation

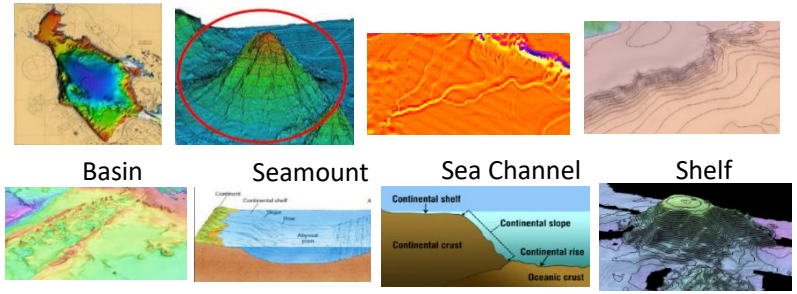
Dr. Thierry Schmitt

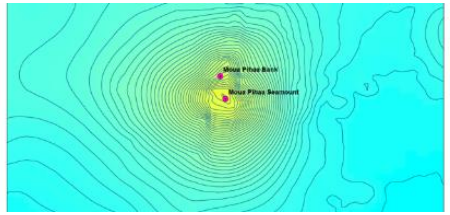
- Initiated by IHB
- Objective: Check out grounding of Deep Argo Float vs known bathymetry from GEBCO
- Project at its early stage, experimenting (seeking internship candidates)
- First meeting with ARGO community took place in November
- Focus on feasibility and accuracy

Undersea Feature Detection Project (action not started)

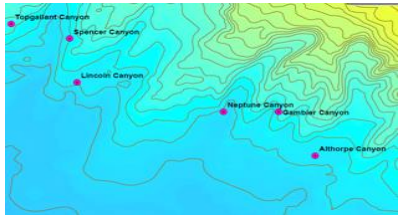
- Lead/requested by CHS (Anna Heindi, SCUFN member)



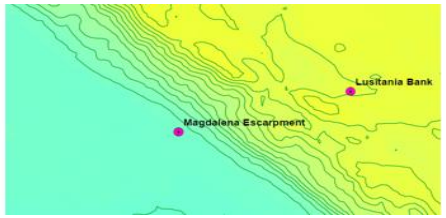




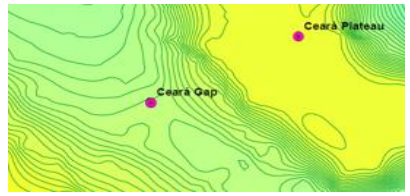
Closed Loop



Trend variation



Slope variation

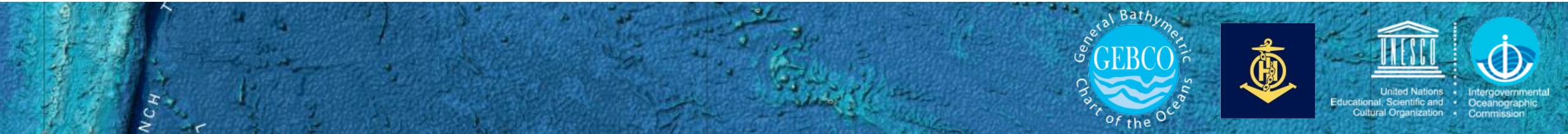


Negative Space

Contour Pattern Recognition

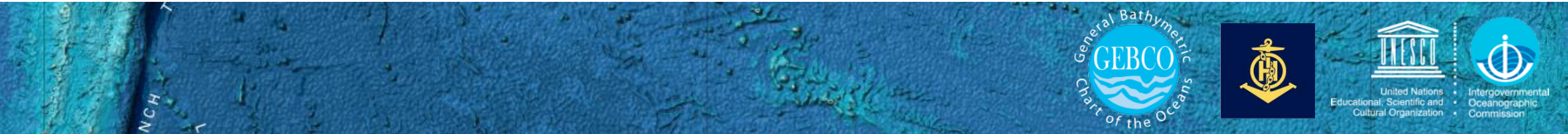
GEBCO grid

- TSCOM advices to turn GEBCO grid into official IHO publication
- Actions:
  - a governance structure
  - product definition
  - QA/QC and review procedure (repeatability, reproducibility, accountability etc)
  - Workgroup to draft these



Membership and request for input

- TSCOM is always looking for motivated “volunteers”
- TSCOM is there to help you. If you face technical difficulties while doing GEBCO Seabed2030 work, let us know.
- If you have any other ideas about possible TSCOM tasks, let us know



Questions