

CONNECT-2

22 October 2024

Item 3.3 – WMO Technical Commission for Observation, Infrastructure and Information Systems - INFCOM

*Submitted by Jennifer Milton
(INFCOM coordinator for capacity development and
representative on the Capacity Development Panel)*



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

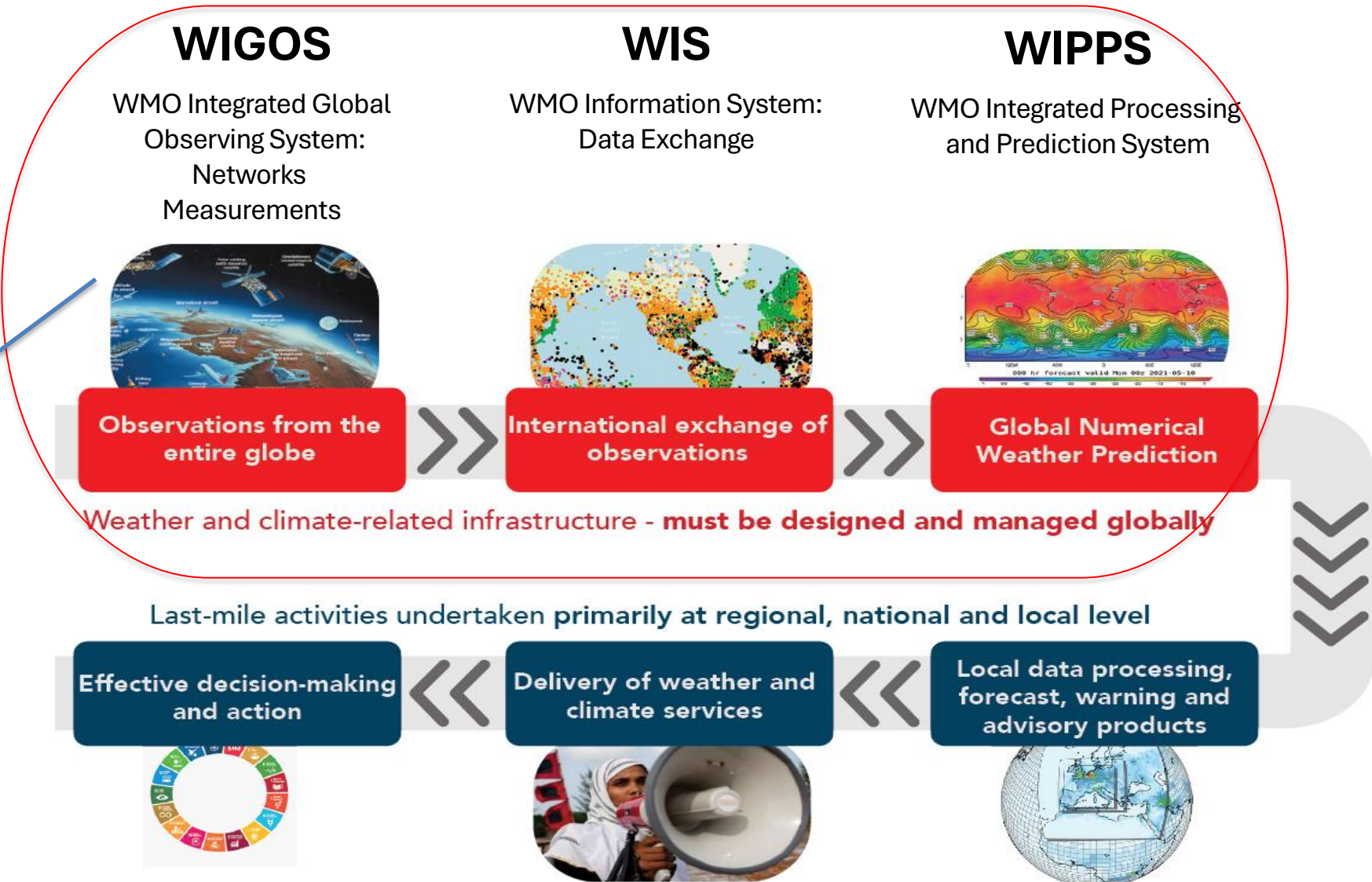
Outline

- High level overview of INFCOM and planned contributions to EW4All
- Follow-up to Decision 20 (INFCOM-2) and Decision 10 (INFCOM-3) for Capacity Development
- Next steps- short term

WMO Global Infrastructure – Earth System Approach

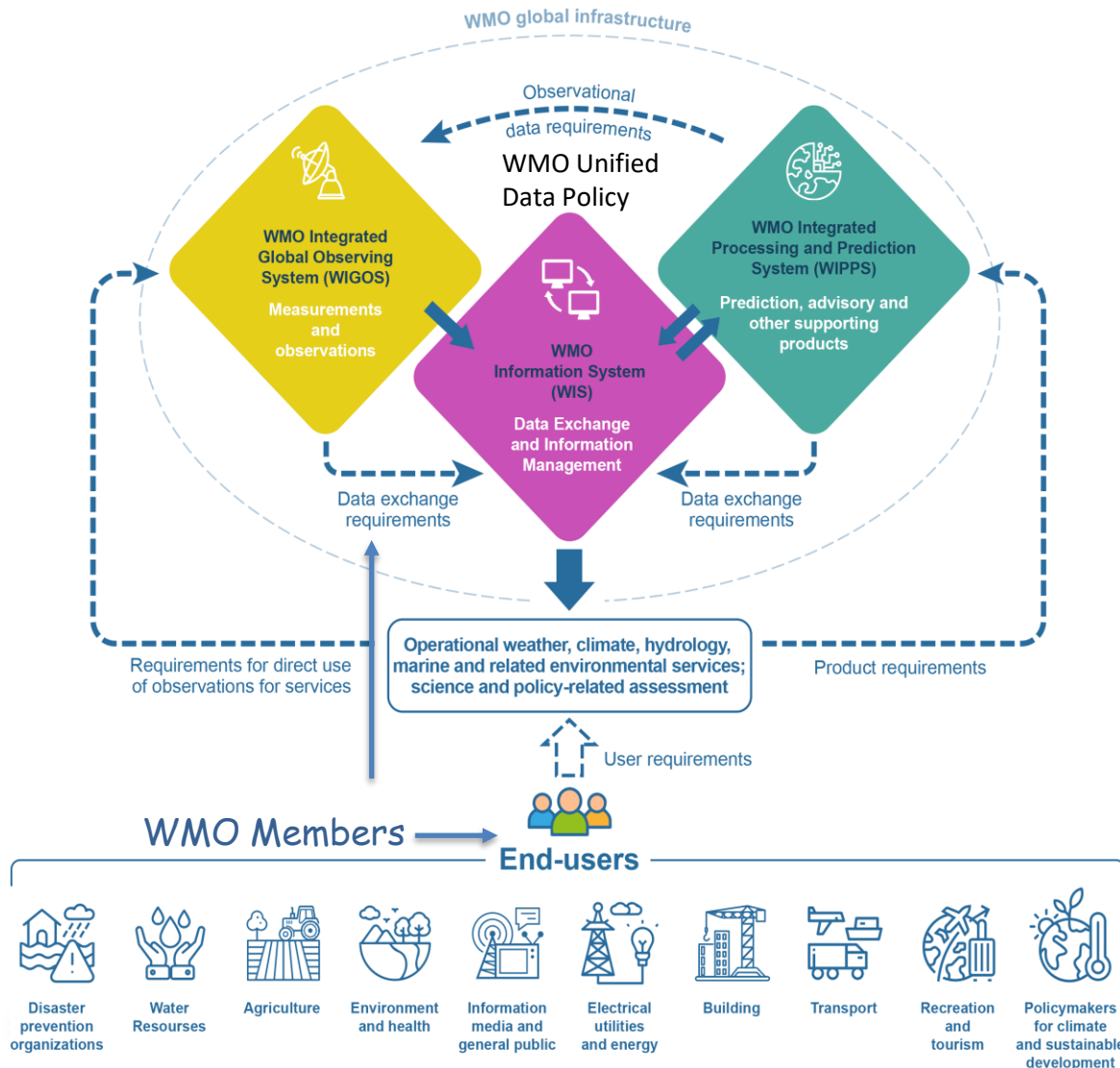
- Observations
- Terrestrial- Weather and climate
 - Atmospheric composition
 - Hydrological
 - Cryosphere
 - Marine meteorological and oceanographic

Global Basic Observing Network (GBON)



Collaborations with SERCOM, RB and science & innovation, RAs and others

World Weather Watch → Early Warnings for All



INFCOM Priority Activities for EW4All

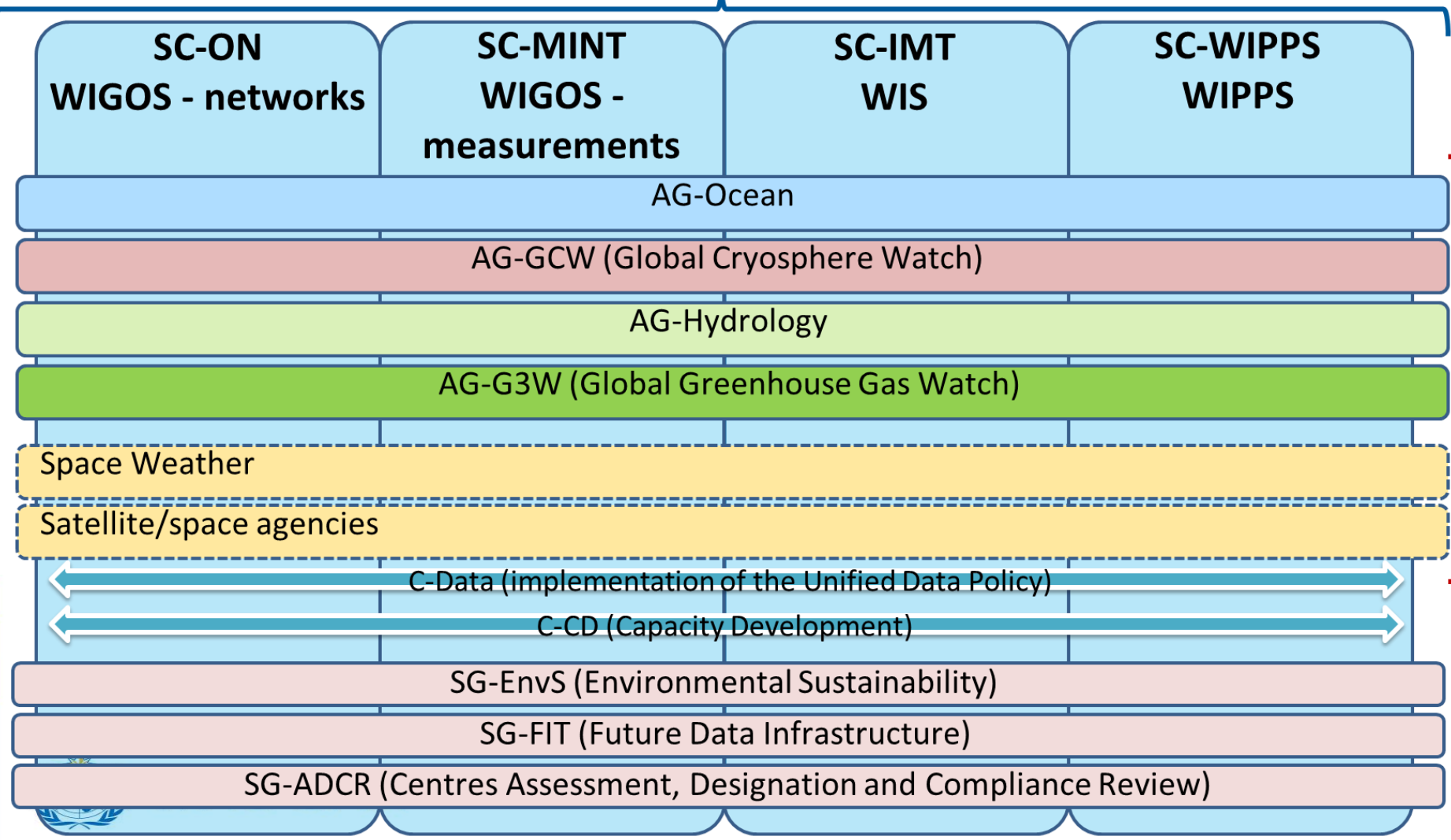
- Implement the Global Basic Observing Network (**GBON**), including through the (support provided by/via the) **SOFF**
- Implement the WMO Information System (**WIS**) **2.0** (incl dev of CAP editor & WHOS)
- Guide and support the development of the Regional Basic Observing Network (RBON)
- Enhance WIPPS products for priority hazards (improve access, use and gaps in products and cascading processes)
- Enhance engagement of academic and private sector players in WIPPS development
- Introduce new emerging technologies (e.g., Artificial Intelligence (AI)) and science into WIPPS
- Address **gaps in satellite products** and applications for priority hazards
- Support Members to ensure **access to satellite data** and products with supporting training on processing, visualization, and interpretation of satellite data
- Address **cryosphere-related emerging hazards**

(adapted from: [Annex to draft Decision 7.1/1 \(INFCOM-3\)](#))

Technical Commission for Observation, Infrastructure and Information Systems (INFCOM)

Standing Committees

Working on standard setting and implementation monitoring of WIGOS, WIS and WIPPS



Draft Resolution
6.2/1 (INFCOM-3)

Advisory Groups
Addressing requirements and engaging with community specific to Earth system domain

Study Groups
Addressing specific Cg and EC requests

(from: INFCOM3-item 6.1-6.2 Work Programme)

Capacity Development - INFCOM

Contributing to

- WMO Strategic Plan – Goal 2: Enhance Earth system observations and predictions
- WMO Strategic Plan – Goal 4: Close the capacity gap on weather, climate, hydrological and related environmental services
- Expanded World Weather Watch- Earth system approach and the means for gathering, sharing, processing information obtained from the system
- Support to opportunities created by SOFF
- Requirements from new initiatives such as EW4All and G3W
- Address the evolving requirements in competencies and capabilities

Decision 20 (INFCOM-2 session)

- **Coordination Mechanism for Capacity Development** established in May 2023, enabled
 - The compilation and sharing of plans for training events (pilot calendar) from subsidiary bodies, regional input, SOFF, and secretariat providing opportunities for coordination and outreach
 - Plans for training events and publications shared with members during INFCOM-2



Decision 20 (INFCOM-2 session)

- **Coordination Mechanism for Capacity Development** established in May 2023, enabled
 - The sharing of practices, challenges and leverage of experiences in capacity development related activities, of which:
 - The mapping of existing guidance/training and gaps to competencies related to Measurements, Instrumentation and Traceability (SC-MINT)
 - Training framework for GBON and WIGOS tools (SC-ON)
 - Sharing of reference material to support the translation of material

Competency 1: Calibrate instruments			
Execute calibrations in accordance with standard calibration procedures, from item handling to editing of calibration certificates.			
Competency Criteria	Criteria Applied	Training Required (Knowledge and Skill requirements)	Material Available
4. Handle calibration items appropriately	I.	Handle calibration items appropriately	a) Laboratory facilities and standards (including software)
			b) Care in handling instruments

Instrumentation gaps	Who is responsible?	Comment
Understanding and interpreting instrument specification documents	INFCOM	What are the specifics to look for as specifications documents are not always consistent
Uncertainty and accuracy	INFCOM	Currently being worked on by ET-MU
Guidance on performing field inspection and calculating field uncertainty	INFCOM	Currently being worked on by ET-QTC
Guidance on consistent application of siting classification schemes	INFCOM	Currently being worked on by ET-SSM
Diagnosing faults. Troubleshooting guidance	INFCOM and External	Some training needs to be formalized and accredited externally e.g., work around electricity

3.8.	Duration of training activities
3.9.	Training certification
3.10.	Training evaluation
	List for training activities
	TRAINING ACTIVITIES FOR WIGOS AND GBON
	Training on WIGOS
	Training topics – WIGOS
	Training Outcomes – WIGOS
	Training blocks for WIGOS trainings
	Training on GBON
	Training topics – GBON
	Training Outcomes – GBON
	Training on WIGOS Tools-OSCAR/Surface
	Training topics – OSCAR/Surface
	Training Outcomes – OSCAR/Surface
	Training blocks for OSCAR/Surface trainings
	Training on WIGOS Tools-WDQMS
	Training topics – WDQMS
	Training Outcomes – WDQMS
4.0.	Training on WIGOS Tools-IMS
4.5.1.	Learning topics – IMS

Capacity Development Materials Dashboard

(Decision 20- INFCOM-2)

→ Facilitating overall view and access to INFCOM capacity development and training material for Members

Commission for Observation, Infrastructure and Information Systems (INFCOM)

STRUCTURE & SUBSIDIARY BODIES (1)

- Commission for Infrastructure - Officers
- Advisory Group on the Oceans
- Coordinator for Engagement and Partnership (C-ENG)
- Coordinator for hydrology in Earth system modelling (C-HESM)
- Coordinator of satellite matters (C-SAT)
- Coordinator on Implementation of the Unified Data Policy (C-DATA)
- Global Cryosphere Watch Advisory Group (GCW-AG)
- INFCOM Management Group

ABOUT US

The Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission) contributes to the development and implementation of globally coordinated systems for acquiring, processing, transmitting, and disseminating Earth system observations, and related standards; coordination of the production and use of standardized analysis and model forecast fields; and development and implementation of sound data and information management practices for all WMO Programmes and their associated application and services areas.

- Terms of Reference of the Infrastructure Commission are available here
- Rules of Procedure for Technical Commissions can be found here

HISTORY

Following approval of the WMO Reform package by the Eighteenth World Meteorological Congress in June 2019, a Joint Session of the new Technical Commissions and Research Board agreed on working structures in May 2020.

More information about the Governance Reform can be found here.

Publication

Abridged Final Report of the First Session of INFCOM (WMO-No. 1251)

INFCOM STRUCTURE & GENERAL INFORMATION

STANDING COMMITTEES

STUDY & ADVISORY GROUPS

FOCAL POINTS & COORDINATORS

HIGH PRIORITY ACTIVITIES

RESOURCES

- Capacity Development Materials Dashboard
- Videos

OTHER RELATED BODIES (61)

- Best Practices Coordinator (GCW)
- Coordination Group on WMO-IATA Collaborative AMDAR Programme (WICAP)
- Cryosphere Bulletin Coordinator (GCW)
- Editorial Board (EdBd)
- Expert Team on Audit and Certification (ET-AC)
- Expert Team on Cryosphere and Polar Data Interoperability (GCW)
- Expert Team on Cryosphere and Polar Observations (GCW)
- Expert Team on Cryosphere Observations from Space (ET-COS)

Capacity Development Materials Dashboard

ACTIVITY AREAS (1)

- Commission for Observation, Infrastructure and Information Systems (INFCOM)

Area	Newsletter	Manual and Guides	Other publications	Awareness and training materials
Information Management and Technology	WIS Newsletter Operational Newsletter	WIS Manuals Guide to WIS		WIS2 in a box
Earth Observing Systems and Monitoring Networks	WIGOS Newsletters Aircraft based Observation (ABO) and AMDAR Newsletters	WIGOS Manual Guide to WIGOS WIGOS Metadata Standard	WIGOS Technical reports	OSCAR/Surface WIGOS Learning Portal
Satellite data applications	RA II WIGOS Newsletters Space-based		Guidelines on Best Practices for Achieving User Readiness	OSCAR/Space WMO-CGMS VLab Coordination Group

<https://community.wmo.int/en/capacity-development-materials-dashboard>

Decision 10/1 (INFCOM-3) – Capacity Development

- (1) To endorse the **established mechanism for coordination on capacity development activities among INFCOM groups**, with particular focus on activities that contribute to the **Early Warnings for All initiative and the *Global Greenhouse Gas Watch***;
- (2) To **utilize this mechanism to coordinate capacity development** activities led by INFCOM... using the **WMO Capacity Development Framework** adopted as Resolution 36 (Cg-19) - WMO Capacity Development Strategy (WCDS), as an **overall guidance**;
- (3) To endorse the establishment of the **Capacity Development Materials Dashboard** to improve the **access existing capacity development and training materials**, and further **develop and maintain it**;
- (4) To **review, in collaboration with the regional offices, the existing Competency Frameworks** (Part V of the Technical Regulations (WMO-No. 49), Volume I – General Meteorological Standards and Recommended Practices and the Compendium of WMO Competency Frameworks (WMO-No. 1209)), and, in coordination with the Capacity Development Panel (CDP), assess the needs and requirements, and draft a plan for **updating the existing and developing new Competency Frameworks, as necessary ...**

Decision 10/1 (INFCOM-3) – Capacity Development

(5) To endorse ... and **the plan for training activities for the next intersessional period** (as presented in INFCOM-3/INF. 10 Section C), and request the Management Group, in coordination with CDP and regional working groups, supported by the regional offices, to **support implementation of this plan**;

(6) To note the support to the implementation of the Global Basic Observing Network (**GBON**) through the Systematic Observations Financing Facility (**SOFF**) reported in INFCOM-3/INF. 8.1(4), and to encourage the **Standing Committee on Earth Observing Systems and Monitoring Networks (SC-ON), SC-MINT, and the Standing Committee on Information Management and Technology (SC-IMT)** to support the capacity development opportunities created by **SOFF through their regional centre** activities, training material and events, in the context of WMO's role as Technical Authority to SOFF;

(7) To promote the **Earth system approach in any capacity development activities by involving Earth system domains/disciplines**, especially ocean, hydrology, cryosphere, atmospheric composition, and space weather, as well as by enhancing **cooperation among regional centres of WMO with other bodies of Earth system domains/disciplines** (e.g. Global Ocean Observing System (GOOS) Regional Alliances);

(8) To explore the integration of the contributions coming from the social sciences and humanities domains/disciplines, to fully acknowledge the inter- and trans-disciplinary effort related to the capacity development as a whole



Decision 10/1 (INFCOM-3) – Capacity Development

(9) To encourage **INFCOM-related centres** (e.g. Regional WMO Integrated Global Observing System (WIGOS) Centres (RWCs), Regional Instrument Centres (RICs), Regional Marine Instrument Centres (RMICs), World and Regional Radiation Centres (WRC and RRC) and Measurement Lead Centres (MLCs), WMO Information System (WIS) Centres, WMO Integrated Processing and Prediction (WIPPS) Centres) to collaborate with **WMO Regional Training Centres (RTCs), supported by the regional offices**, on the **development and conduction of the training activities** towards the achievement of the WMO long-term goals and the strategic objectives; ...

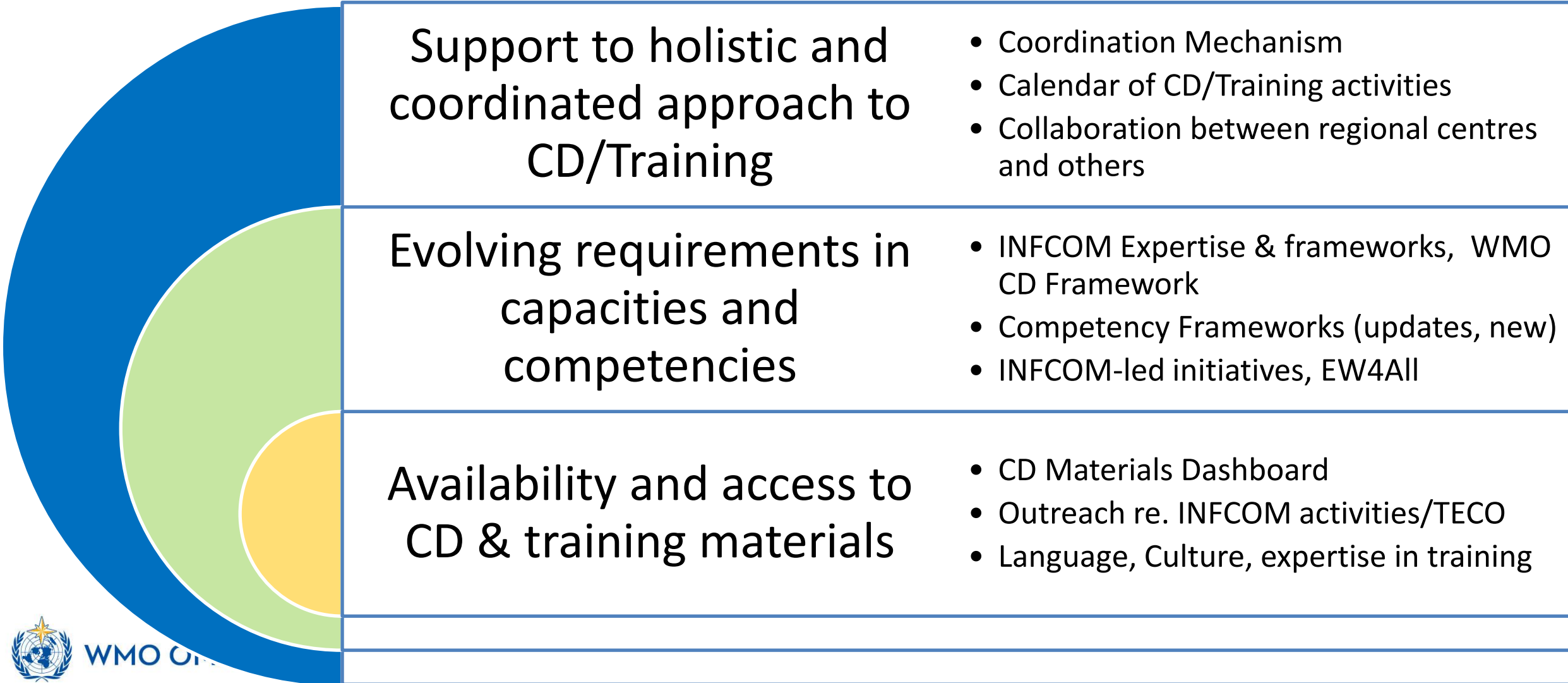
(10) To explore innovative ways, including the use of machine translation, to **make training resources available in all UN official languages**, as well as to promote the use of existing instructions for translation, like those produced by the COMET Translation Resource Center, to facilitate the preparation of training materials in more than one language;

(11) To **coordinate** with the WMO Global Campus and CONECT initiatives, through CDP for the development and mobilization of **education and training opportunities and resources**, develop **partnerships** and **leverage supporting technologies for collaborative capacity development projects**, and promote sharing resources across institutions, by using, as relevant, **interoperable technological means**;

(12) Noting the plan for TECO in 2024 (from 23 to 26 September 2024, in Vienna, Austria), to continue **regular, biennial organization of the WMO Technical Conferences** on the Meteorological and Environmental Instruments and Methods of Observation (TECOs) as an excellent **opportunity for capacity development, including a mutually beneficial partnership with the private sector**.



Addressing Decision 10 (INFCOM-3): CD Draft Roadmap



Next steps – short term

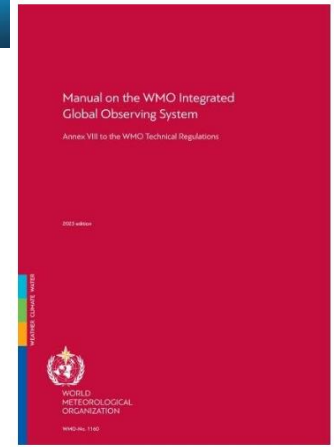
- Confirm membership of the INFCOM Coordination Mechanism on CD (CMCD)
- Review of INFCOM Roadmap for CD by CMCD and INFCOM MG and address activities supporting INFCOM CD initiatives (incl those supporting SOFF)
- Identify gaps, need for review and development of competency frameworks- INFCOM CMCD/ETs and CDP ET- Education, Policy and Competency Frameworks and CONECT as per ToRs
- Coordination with CDP ET- Guidance and Oversight of Capacity Development Matters for coordination between Regional Centers and CONECT
- Contributions to Gender balance, Youth Engagement, and INFCOM Experts development



A few resources

- [INFCOM Community Pages](#)
- [INFCOM-3 INF. 10 Capacity Development & INFCOM-3 Decision 10](#)
- Pre-INFCOM 3 [information sessions](#)
- [TECO 2024](#)
- [State of WMO Global Infrastructure report WMO-No. 1359](#)
- [SOFF](#)
- [Manual on WIGOS WMO-No.1160](#)
- [WIGOS Learning Portal](#)
- [Instruments and Methods of Observation Portal](#)
- [Guide to Operational Radar Best Practices WMO-No.1257](#)
- [WMO Information System](#)
- [WMO Integrated Processing and Prediction Systems Portal](#)

- And many more



Thank you



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale