

Update from INFCOM for the Capacity Development Panel

3rd Meeting of the Capacity Development Panel (CDP)
15 and 16 September 2021 (Virtual Session)



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World Meteorological Organization

Organisation météorologique mondiale

Contributions from the INFCOM MG - Secretariat and Standing
Committees

Jennifer Milton, Interim Representative for CDP for INFCOM
Retired Director - Meteorological Service of Canada

Outline

- Contributions of INFCOM to Capacity development processes as per decisions from EC-72
- Recent training and outreach activities
- Outcomes of EC-73 on INFCOM workplan and CD initiatives
- Outcomes of EC-73 linked to CDP recommendations
- Considerations

INFCOM 1-III (April 2021) linked with EC-72

- Information paper (INF. 5.2.3): contributions from INFCOM to be aligned with CD decisions from EC-72:
 - [Decision 12 \(EC-72\)](#) - **Recommendations for Revision of the WMO Capacity Development Strategy (WMO-No. 1133)**
 - Status (Sept 2021): INFCOM has reviewed and provided suggestions for the draft outline for the revision of the [WMO Capacity Development Strategy and Implementation Plan](#).
 - Provision of additional input and expert revision is expected as a function of future developments and requirements.
 - [Decision 13 \(EC-72\)](#) - **Developing and Sustaining Core Competencies and Expertise**, in which INFCOM is requested to contribute to expert reviews in the finalization of revisions of the Basic Instructional Packages for Meteorologists (BIP-M) and for Meteorological Technicians (BIP-MT).
 - Status (Sept 2021): Initial review and contributions have been provided to the revisions of BIP-M and BIP-MT



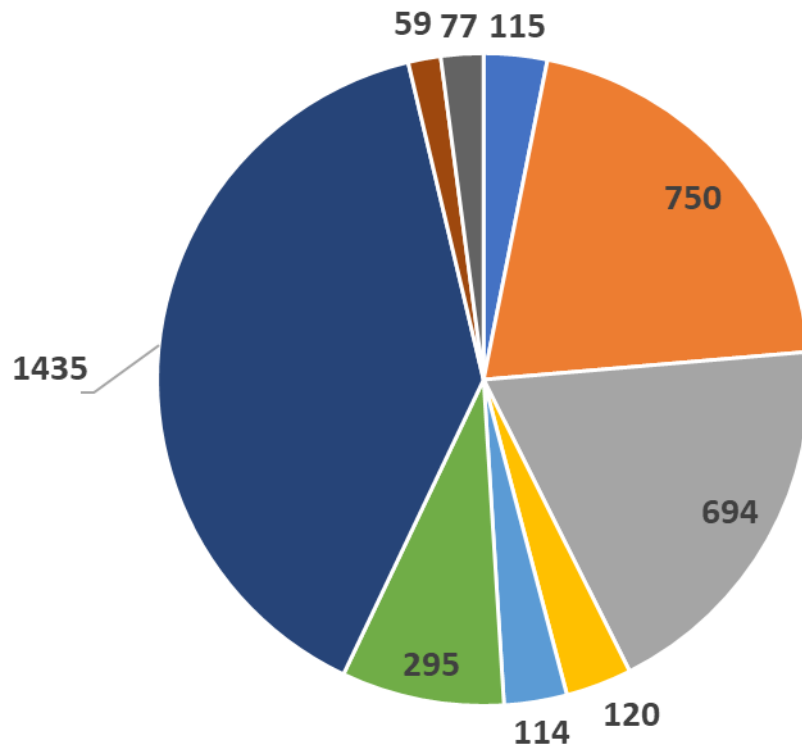
Some Recent Training and Outreach Activities

- WMO online Workshop on Transition to automatic ground-based measurements, RA-I (22-25 March 2021)
- Side event on WIGOS Tools (INFCOM 1 – III, April 2021)
<https://etrp.wmo.int/mod/folder/view.php?id=15822>
- WMO online training workshop on quality, traceability, and compliance – General Metrology and Temperature, for RICs and RMICs (8-15 June 2021).
- WMO online RA II Training workshop on Regional WIGOS Centers Functions and Tools (5-12 July 2021). <https://etrp.wmo.int/course/view.php?id=226>
- Webinars, of which:
 - Observing Systems Capability Analysis - OSCAR/Surface (Feb and April 2021)
 - WIGOS Data Quality Monitoring System - WDQMS (June 2021)
<https://etrp.wmo.int/course/view.php?id=146§ion=4>
- WIGOS Learning Portal <https://etrp.wmo.int/course/view.php?id=146>
- OSCAR/Surface training tutorials <https://etrp.wmo.int/course/view.php?id=146§ion=2>
- WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology
 - 65 training events organized with 3659 participants from 129 countries

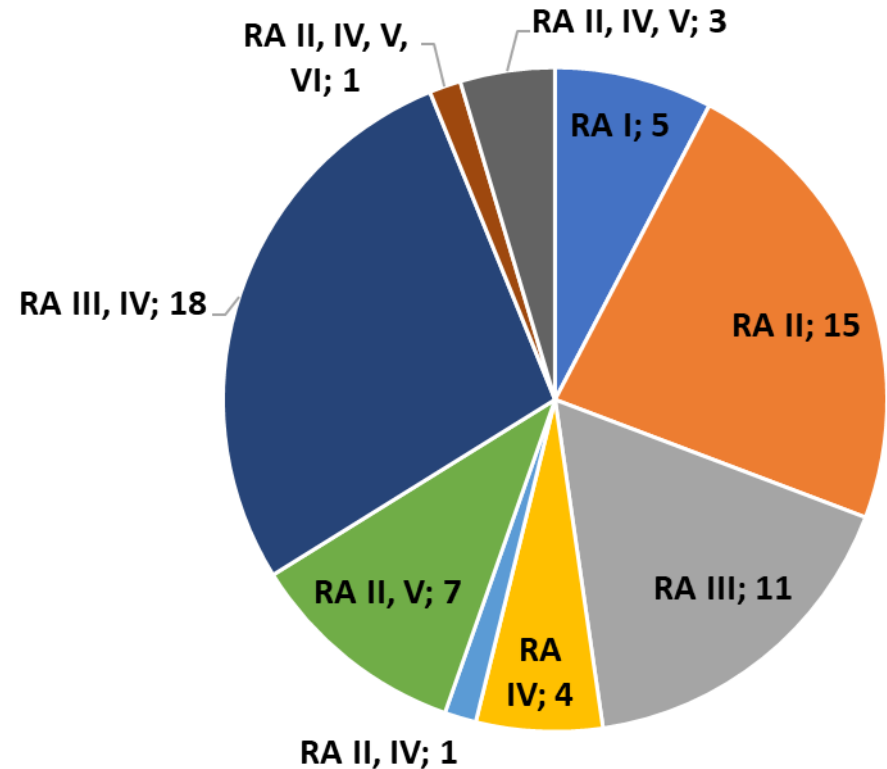


VLab training distribution by WMO regions

Number of people trained (Sum: 3659)



Number of training events (Sum: 65)



- RA I
- RA II
- RA III
- RA IV
- RA II, IV
- RA II, V
- RA III, IV
- RA II, IV, V, VI
- RA II, IV, V

Of which:
 Online 55
 Classroom 4
 Blended 6

Outcome of EC-73 and impacts on the work of INFCOM, of interest to the work of the Panel

WMO Unified Data Policy – Draft recommendation 4.1/1 (Cg. Ext (2021))

'As a fundamental principle of the World Meteorological Organization (WMO) and in consonance with the expanding requirements for its scientific and technical expertise, WMO commits itself to broadening and enhancing the free and unrestricted international exchange of Earth system data; "Free and unrestricted" defined in [Annex 4](#).'

Requests the President of the Commission for Observation, Infrastructure and Information Systems, in coordination with the President of the Commission for Weather, Climate, Water and Environmental Services and Applications and the Chair of the Research Board to:

- (1) Provide draft technical regulations to support implementation of this resolution, to be submitted to the World Meteorological Congress in 2023;
- (2) Develop a process for systematic and regular review of the types or domains of data that fall within the established practice and categories of Earth system data, as described in [Annex 1](#), in order to meet both the changing needs of Members, the changing availability of data, and the continued development of modelling capabilities;
- (3) Ensure that the regional associations are kept informed of initiatives related to the implementation of this resolution and consulted on developments as necessary;
- (4) To take any necessary steps to ensure that WMO technical systems and guidelines will develop and evolve to accommodate the exchange and interoperability of Earth system data envisaged in this policy;

Including Guidelines for national implementation and public-private engagement & Outreach initiatives. [Summary Presentation on the WMO Unified Data Policy Resolution](#)



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Outcome of EC-73 and impacts on the work of INFCOM, of interest to the work of the Panel

- Implementation of Global Basic Observing Network (GBON) as of January 2023:
 - Implementation Road Map (to be completed by CG. Ext. 2021) and implementation guide.
 - Guide for use of WDQMS and OSCAR.
 - Further requirements for Capacity Development activities to be determined.
- Assessing how to expand GBON to other domains
- Guidelines for using Systematic Observations Financing Facility (SOFF)
- Evolution of WIS 2.0: links with the new Data Policy, training and demonstration projects
- Implementation of the WIGOS integration concept at regional and national levels and ensuring environmental sustainability of observations (guidance & training)
- GDPFS products: availability, changes to regulatory material, potential additional need for training
- WMO Hydrological Observing System (WHOS) Phase II implementation



Outcome of EC-73 in connection with the work of the Panel – Recommendations from the CDP and their links with INFCOM

Decision 4.4(1)/1:

- Review and update the current competency frameworks as needed, and support development of new frameworks in areas not yet addressed, with the support of the Education and Training Office;

Ensure that changes to new technologies or required competencies are reflected. For example: implementation of GBON; new technologies in Satellite information; exchange and access to new data through the revised Data Policy; additional products in GDPFS, etc

- Make recommendations on how to foster systematic contributions from academia towards the enhancement of the research-to-operation continuum... promotion of capacity development and service capabilities in weather, climate, hydrology and environment at regional levels ... collaboration and communication between regional centres such as Regional Specialized Centres, Regional Climate Centres, Regional Training Centres (RTCs), WMO Integrated Global Observing System (WIGOS) Centres and WMO Information System (WIS) Centres, etc;

Aim for a holistic approach to capacity development initiatives to enhance linkages with the RTCs, other regional centers, academia and TCs in supporting these initiatives and to consider (1) current gaps identified by Members and regional organisations (2) evolving requirements for training (3) required resources and infrastructures to support these initiatives (coordination of training)

Consider that regulatory material be complemented by outreach and training adapted to regional and national requirements.

- Contribute to the Fourteenth WMO Education and Training Symposium (SYMET-14) which will be held in 2021, as additional input to the development and promotion of education and training activities of the Organization.

Opportunities for INFCOM to outreach have been discussed recently.



Outcome of EC-73 in connection with the work of the Panel – Recommendations from the CDP

Decision 4.4(1)/1:

- Coordinate the Technical Commissions (SERCOM and INFCOM) in the development of a capacity development framework to support the implementation of their activities
- **Considerations:**
 - **Further discussion with INFCOM MG and ETs, SERCOM, members of the ET-TDs, the CDP, Ras, etc, to shape the development (and links with the WMO CDS). Further assessments of gaps and requirements related to capacity development initiatives are required.**
 - **Multilateral collaborative initiatives and partnering** could be further encouraged and help support capacity building initiatives in INFCOM through the sharing of resources and knowledge (hands-on/apprenticeships/fellowships).
 - **Ensure linkages with the WMO Global Campus and the ETR Community. Assess further opportunities within Fellowships. Promote the sharing of expertise with universities and colleges in education and training activities in support to capacity development.**
 - **Ensure sustainability of CD/training initiatives: resources/material should be available, accessible, adaptable and updated for further use and in various formats. Build on lessons learned from capacity building initiatives.**
 - **Blended/online training approaches and webinars** can reach wider groups. The benefits and ROI related to these approaches should be assessed.
 - **Encourage ‘Train the trainer’ approaches** which can increase perennity to local capacity development while further developing training competencies.
 - **Promote and ensure gender equality** in the development, delivery and access to capacity development initiatives, leadership roles, and research-to-operation continuum



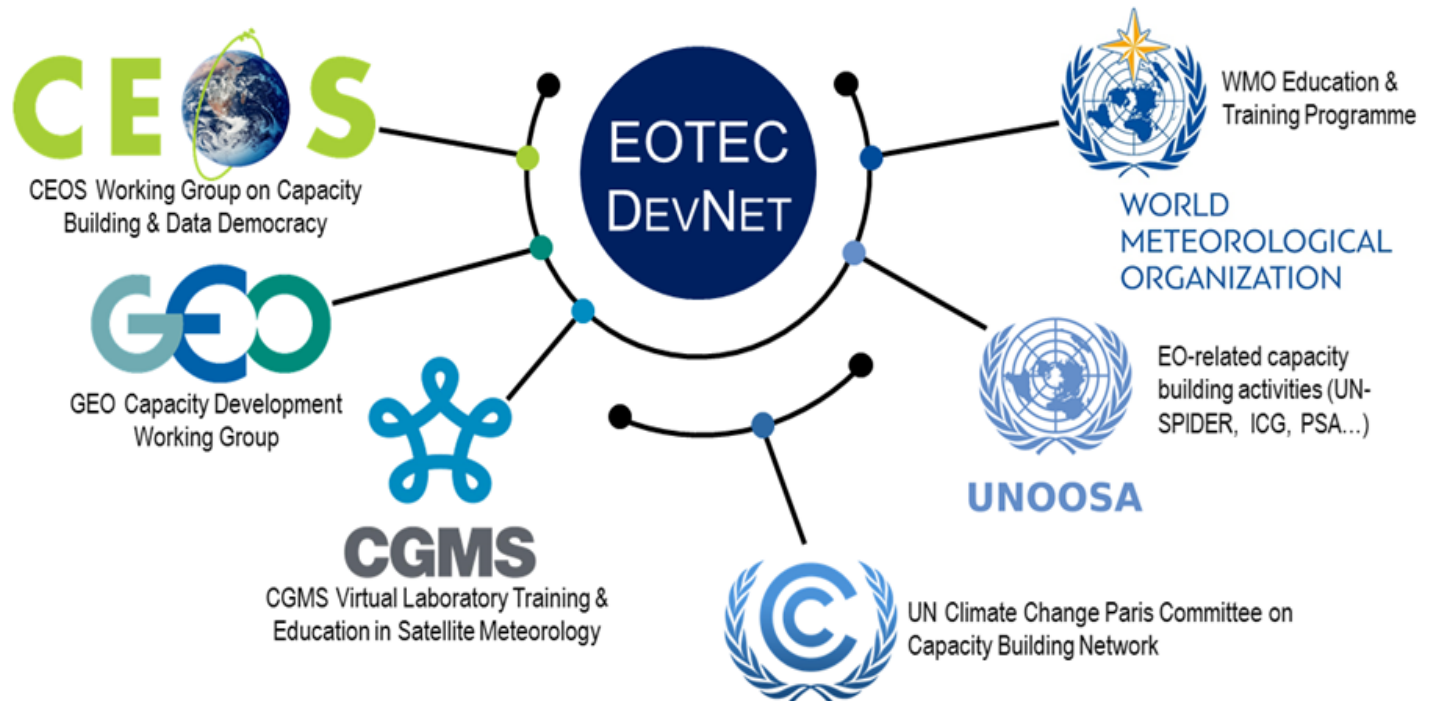
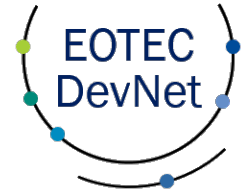
WMO Supports EOTEC DevNet

The Earth Observation Training, Education and Capacity Development Network

A CEOS (Committee on Earth Observing Satellites) initiative

EOTEC DevNet aims to fill a gap in the coordination of Earth Observation capacity building

Pilot project on flood monitoring



Outcome of EC-73 and impacts on the work of INFCOM, of interest to the work of the Panel Considerations

- The new WMO Unified Policy for the International Exchange of Earth System Data, GBON and SOFF will create significant opportunities for Members. Communication, outreach and training will be key activities for the implementation of the Data Policy and roll out of GBON;
- Updates in Guidelines and regulatory material are to be expected in a number of priorities such as GDPFS products, GBON, WIS 2.0 etc. Outreach and training activities are required to support their implementation and use;
- INFCOM supports the coordinated work done within the CDP and its Expert Teams and will ensure continued coordination, feedback, and promotion of training and capacity development initiatives.

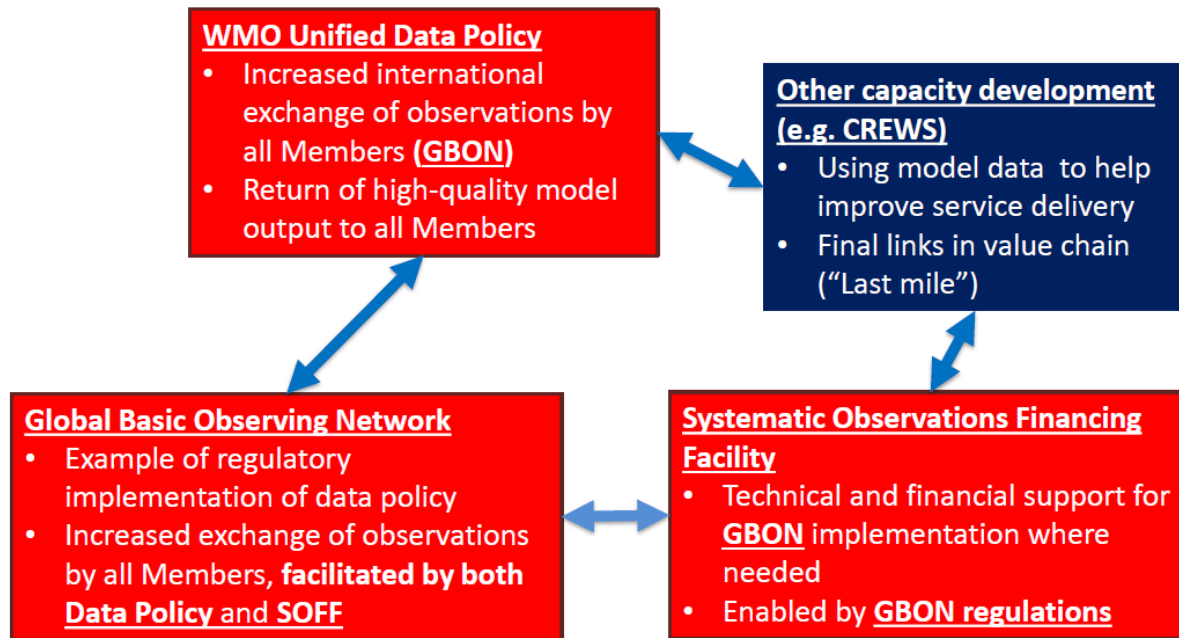
Thank you



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Outcome of EC-73 and impacts on the work of INFCOM, of interest to the work of the Panel



Outcome of EC in connection to the work of the Capacity Development Panel

1. Resolutions:

4.2(1)/1	9	Plan for the WIGOS Initial Operational Phase (2020–2023)
4.2(3)/1	10	Amendments to the Technical Regulations on WIGOS
4.2(3)/2	11	Amendments to the Manual on the WMO Integrated Global Observing System (WMO-No. 1160), section 2.4.1
4.2(5)/1	12	Regional WIGOS Centres Audit Process
4.2(6)/1	13	Guide to the WMO Integrated Global Observing System (WMO-No. 1165)
4.2(7)/1	14	Collaboration with IATA on the Development of the AMDAR Programme (WICAP)
4.2(8)/1	15	Publication of the Guide to Instruments and Methods of Observation (WMO-No. 8), 2020 Edition
4.2(11)/1	17	Strengthening Regional Instrument Centres
4.2(12)/1	18	Transition and the Pre-Operational Plan of the Global Cryosphere Watch (GCW)
4.2(15)/1	20	Climate Services Requirements for the Update of the Manual on High-Quality Global Data Management Framework for Climate (HQ-GDMFC)
4.2(17)/1	21	Modernization of Climate Data — Open CDMS Project
4.2(18)/1	22	WIS 2.0 Implementation Plan, Functional Architecture and Demonstration Projects
4.2(19)/1	23	Amendment to the Manual on the Global Data-Processing and Forecasting System (WMO-No. 485) and the designation of new GDPFS centres
4.2(19)/2	24	Amendment to the Manual on the Global Data-processing and Forecasting System (WMO-No. 485) reflecting the new WMO governance structure

Outcome of EC in connection to the work of the Capacity Development Panel

2. Decisions:

4/1	6	Adoption of resolutions without debate, based on the recommendations by the Technical Coordination Committee (TCC)
4.2(4)/1	7	WIGOS Readiness Indicators
4.2(16)/1	8	Establishment of Data Acquisition Centres (DAC) for Marine Meteorological and Oceanographic Climate Data within the Marine Climate Data System (MCDS)

3. Recommendations:

3.4(1)/1	3	WMO Unified Policy for the International Exchange of Earth System Data
4.2(2)/1	4	Update of Regulatory Material Related to Establishment of the Global Basic Observing Network (GBON)