WMO ET-RFC

WMO-ITU Training Workshop on Use and Management of Radio Spectrum for Meteorology

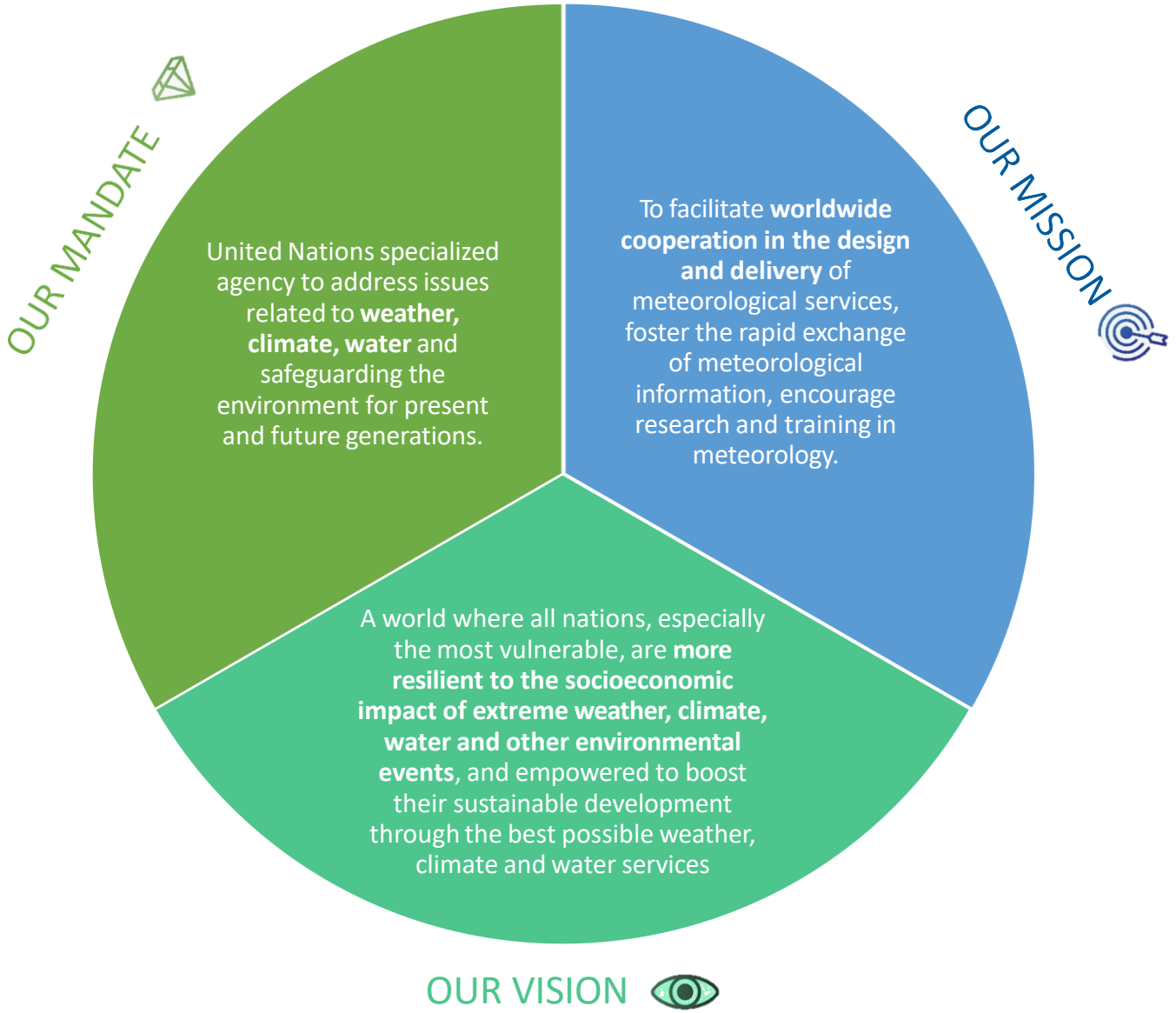
3 & 4 March 2025

WMO

1873
2023
IMO-WMO

WMO OMM

WMO in a nutshell



WMO OMM

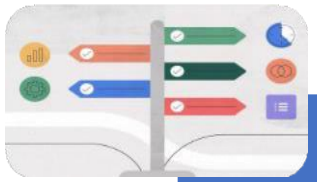
WMO convention

WMO plays a role as a global coordinator for Member countries, harmonizing and supporting the work done across National Meteorological and Hydrological Services around:

- Protection of life and property
- Safeguarding the environment
- Contributing to sustainable development
- Monitoring the earth system (collecting and sharing data & information)
- Defining best practices
- Promoting targeted science to improve infrastructure, service delivery and policymaking
- Contributing to capacity development, seeking to reduce the development gaps

Overarching priorities

Socioeconomic value of weather, climate, hydrological and related environmental services



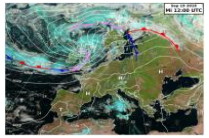
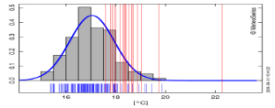
Climate-smart decision making to build resilience and adaptation to climate risk

Preparedness for and reducing the loss of life, infrastructure and livelihood from hydromet extremes

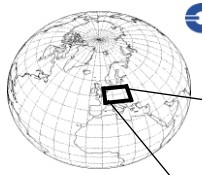
WORLD METEOROLOGICAL ORGANIZATION

The Meteorological Value Chain: from Observations to Socio-Economic Impacts

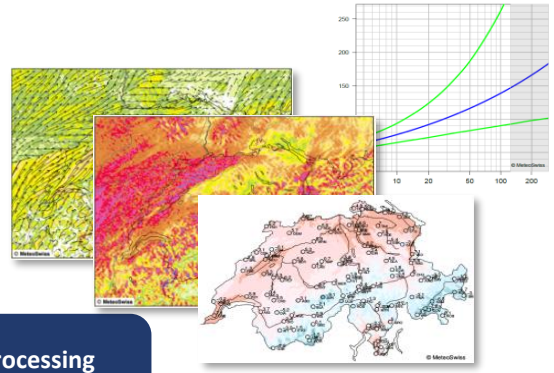
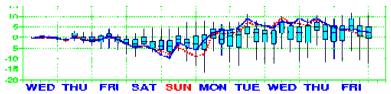


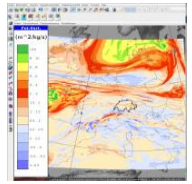
Data collection and analysis



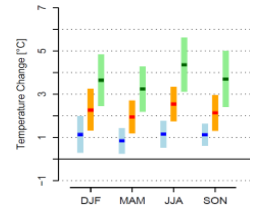
Modelling for prediction

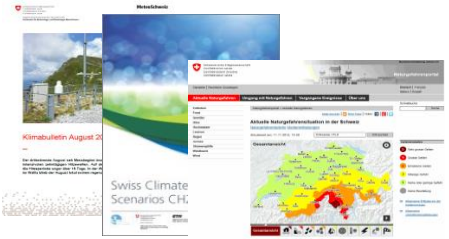
Post-processing and automatic production




Forecast interpretation and decision

Dissemination of products and services to users

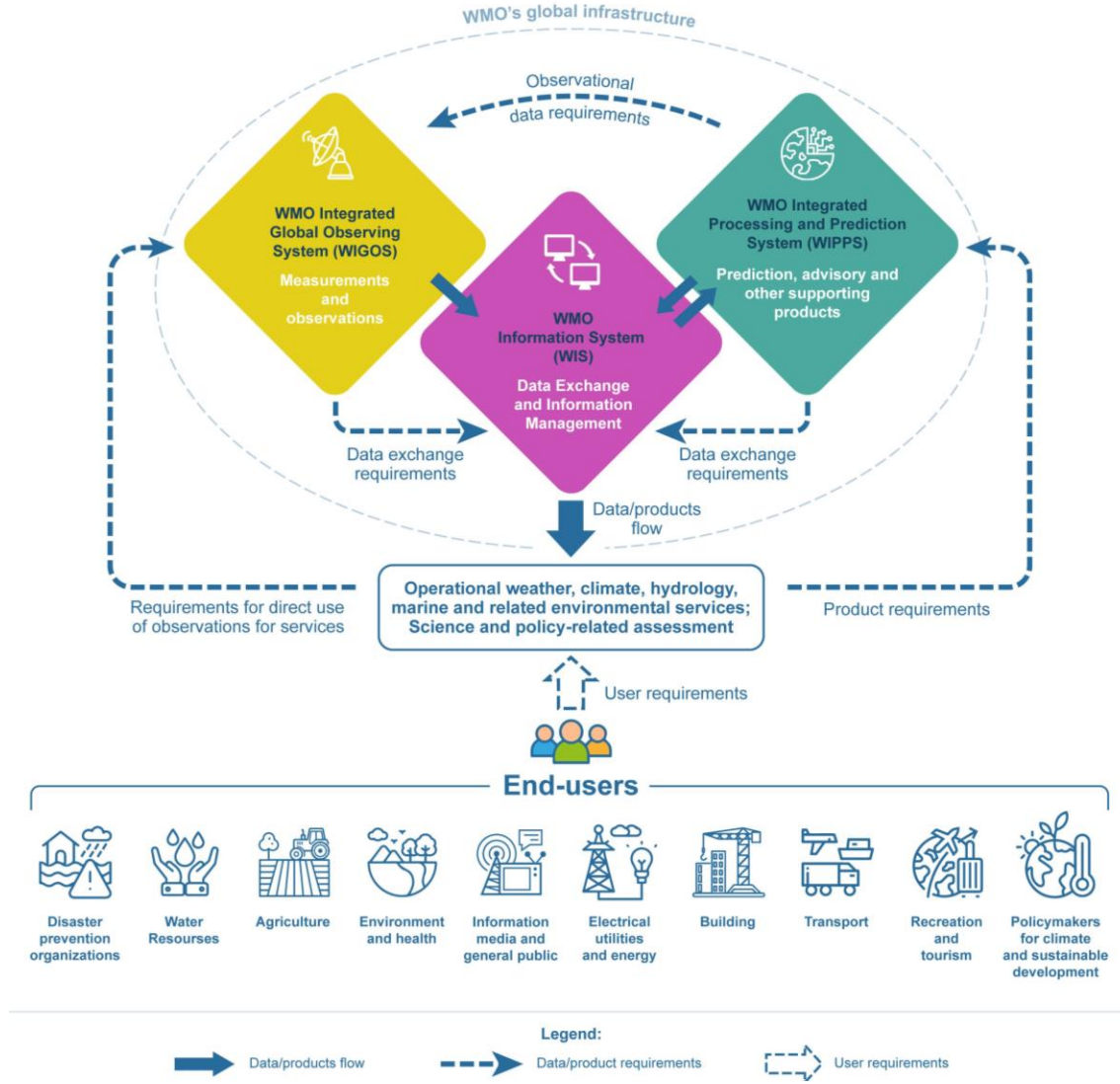
Understanding and use of forecasts



WMO Global Infrastructure

The **WMO global infrastructure** is composed of three integrated core system components:

- The WMO Integrated Global Observing System (**WIGOS**) provides high-quality, standardized observations of weather, climate, water, and environment from all parts of the globe and from outer space.
- The WMO Information System (**WIS**) provides a coordinated network of systems for sharing authoritative data on weather, climate, water, and related observations, products and warnings.
- The WMO Integrated Processing and Prediction System (**WIPPS**) is a worldwide network that coordinates Member capacities to prepare analyses and forecast products and make these available to all Members, enabling delivery of weather, climate, water and related environmental services.



Radio Frequency Coordination

The WMO community relies on the radio frequency spectrum for two vital functions:

(1) to observe the Earth (e.g., with satellites, weather radars, and wind profilers) and

(2) to transmit data about the Earth system to meteorologists, hydrologists, emergency managers, and other scientists

- Access to the radio-frequency spectrum is **critical** to the operation of WMO global infrastructure → it underpins the service delivery of all Members.
- The radio-frequency spectrum is a physically limited and increasingly **contested** resource, with emerging technologies continually raising demand.
- Revision of Radio Regulations to meet new requirements is a **long process.**
- Expertise in radiocommunications regulatory work develops slowly.

Radio Frequency Coordination: WMO response

- To safeguard the availability of the radio-frequency spectrum for meteorological and related environmental operations and research, it is of prime interest for WMO Members
  - → to engage with their respective National Regulatory Authorities (NRA) and
  - → to actively contribute to any matters related to the radio-frequency spectrum at the national, regional or international level, in particular regarding preparation for WRC.

- ET-RFC develops WMO position on WRC Agenda items
  - →Preliminary WMO position on WRC-27 Agenda

- Establishment of a WMO network of **national focal points for radio frequency matters**: get NMHSs engaged with radio frequency management and advocate for WMO position with their national authorities
  - → With an associated capacity building program

INFCOM: SC-ON and ET-RFC

SC-MINT[1]

Joint Expert Teams

JET-OWR (Operational Weather Radar)

Expert Teams

ET-SSM (Surface and Sub-surface Measurement)
ET-UAM (Upper-air Measurement)
ET-QTC (Quality, Traceability and Calibration)
ET-RR (Radiation References)
ET-MU (Measurement Uncertainty)
ET-TMM (Transitioning to Modern Measurement)
Management Committee Project X

SC-ON[2]

Joint Expert Teams

JET-EOSDE (Earth Observing System Design and Evolution)
JET-ABO (Aircraft-based Observing Systems)
JET-HYDMON (Hydrological monitoring)

Expert Teams

ET-SSU (Space Systems and Utilization)
ET-WTR (WIGOS Tools and RWCs)
ET-RFC (Radio Frequency Coordination)

SC-IMT[3]

Expert Teams

ET-AC (Audit and Certification)
ET-W2AT (WIS2 Architecture and Transition)
ET-W2RAE (WIS2 Regional Associations Engagement)
ET-W2PE (WIS2 Programmes Engagement)
ET-IM (Information Management)
ET-Data (Data Standards)
ET-Metadata (Metadata Standards)
ET-OM (Operations and Monitoring)
ET-IS (Infrastructure and Security)

SC-ESMP[4]

Joint Expert Teams

JET-ESI (Earth System Implementation)

Expert Teams

ET-OWFS (Operational Weather Forecasting System)
ET-OCPS (Operational Climate Prediction System)
ET-OHPS (Operational Hydrological Prediction Systems)
ET-ERA (Emergency Response Activities)
ET-SWx (Space Weather)
ET-ODPMS (Observation Data Processing and Monitoring System)

[1] Standing Committee on Measurements, Instrumentation and Traceability (SC-MINT)
[2] Standing Committee on Earth Observing Systems and Monitoring Networks (SC-ON)
[3] Standing Committee on Information Management and Technology (SC-IMT)
[4] Standing Committee on Data Processing for Applied Earth System Modelling and Prediction (SC-ESMP)

ET-RFC Membership

Mr David FRANC - ET Chair - (United States of America)
Dr Alec CASEY - ET Vice Chair - (Canada)
Ms Kirsty MCBEATH- ET Vice Chair - (United Kingdom of Great Britain and Northern Ireland)

Dr Mohammad Zomorrodi - ET member - (Australia)
Ms Jing NIE - ET member - (China)
Mr Eric ALLAIX - ET member - (France)
Mr Mostafa JOURI - ET member - (Iran (Islamic Republic of))
Mr Elias Odhiambo OTIENO - ET member - (Kenya)
Dr Maxime HERVO - ET member - (Switzerland)
Dr Wanchalearm PETSUWAN - ET member - (Thailand)
Mr Jan ROZEMA - ET member- (Netherlands (Kingdom of the))
Mr Khusniddin Khadirov – ET member – (Uzbekistan)
Mr Tomasz WOJTASZEK - Associate member - (United States of America)
Mr Markus DREIS - ET member - (EUMETSAT)
Mr Vadim NOZDRIN - ET member - (ITU)
Mr Bruno ESPINOSA - Associate member - (ESA)

Mr Juha SALMIVAARA - ET member - (HMEI / Vaisala)
Mr Marcus POOL - Associate member - (HMEI / LEONARDO Germany GmbH)

Thank you

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A Member-Centred Strategy