

WMO Regional Association VI (RA VI)
Webinar on Regional Basic Observing Network (RBON)
(20 November 2025)

***Introduction to
the Regional Basic Observing Network in RA VI***

(Krunoslav Premec, WMO Secretariat)



WORLD
METEOROLOGICAL
ORGANIZATION



Contents

1. WIGOS
2. RBON - background
3. RBON - design
4. RBON – towards implementation
5. GAP Analysis

WIGOS

- a framework for all WMO observing systems and contributions to co-sponsored observing systems,
- principal purpose of WIGOS: to meet the evolving requirements of Members for observations.

Surface-based

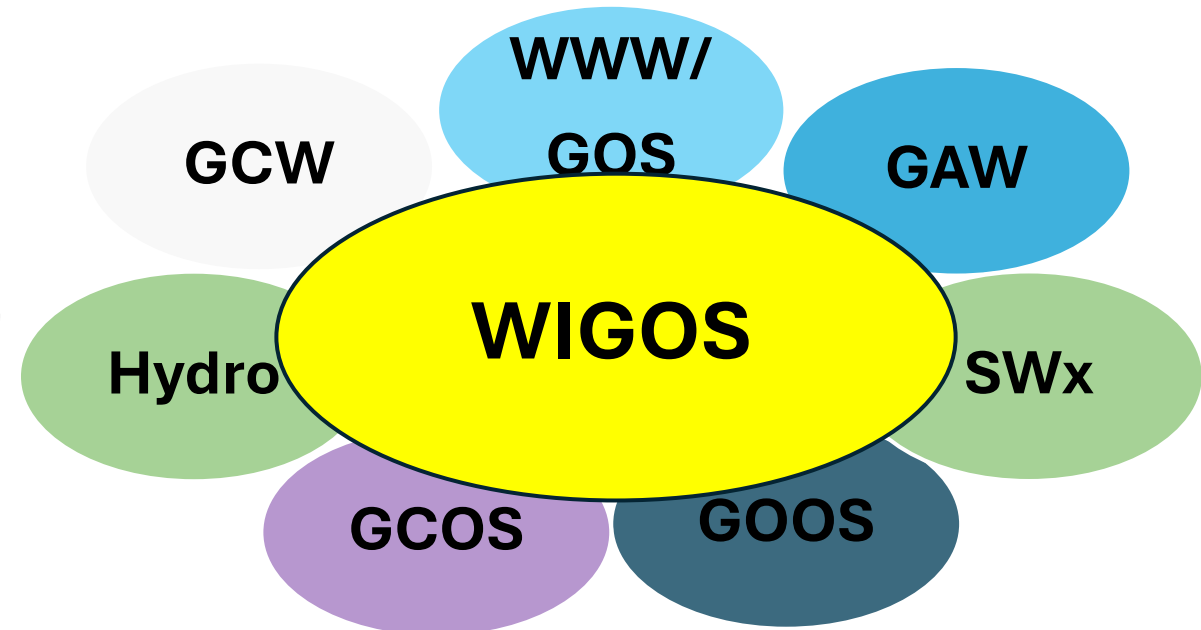
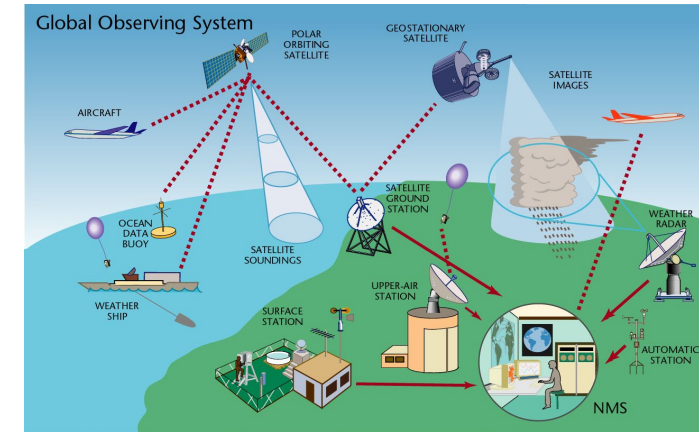
- Surface
- Climate
- Upper atmosphere (GRUAN)
- Wind profilers
- Weather radars
- Lightning detection systems
- Air quality monitoring (GAW)
- Cryosphere observations (GCW)
- Marine observations (drifters, floats, moorings, tide gauges, ships, gliders ...)
- Terrestrial observations (GTOS)
- Surface-based space weather observations
- GNSS radio-occultation

GBON

RBON

Space-based

- Geostationary
- Polar orbiting LEO
- Elliptical orbit,



Regional Basic Observing Network (RBON)

- **Decision 13 (RA II-16)** (Abu Dhabi, UAE, 12-16 Feb 2017) - Decides to establish a pilot RBON for RA II, comprised initially of the merging of all RBSN and RBCN stations of RA II.
- **Decision 21 (EC-69) REGIONAL BASIC OBSERVING NETWORK**, (Geneva, Switzerland, 10-17 May 2017)

The WMO Executive Council **recognized**:

- The need to integrate the RBSN, RBCN and AntON into RBON and,
- include additional observing stations/platforms into the RBON to reflect its multi-disciplinary nature in support of all WMO application areas,

Requested regional associations:

To establish, on the model of RA II, pilot RBON in each WMO Region, comprised initially of the merging of all RBSN, RBCN and AntON stations of that Region;

Requested Members:

To actively participate in the further development of the RBON Concept and propose inclusion of **additional surface-based observing stations, such as weather radars, wind profiler systems, lightning detection systems, data buoys, voluntary observing ships and aircraft**, in the Pilot RBON established by the regional association.



Regional Basic Observing Network (RBON)

(Approved by Decision 21 (EC-69) REGIONAL BASIC OBSERVING NETWORK, in 2017)

- network of surface-based meteorological, hydrological and related observing stations/platforms to address the **key regional weather, water, climate and other environmental challenges**.
- leads to **improved services** by delivering more and enhanced observations to stakeholders.
- enables the **full benefit of regional and national observing capabilities** to be realized.
- consider **EW4All** observational user requirements and gaps through RBON.
- is defined and adopted by the relevant **WMO Regional Association**, or the Executive Council or the World Meteorological Congress for the Antarctic.



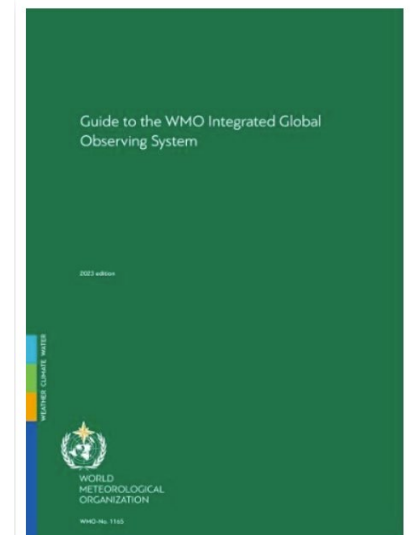
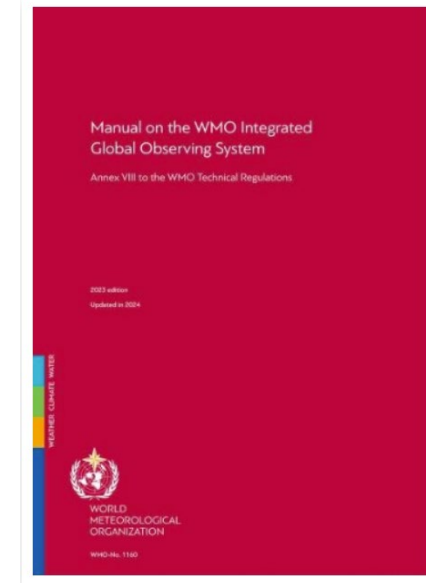
Regulatory and Guidance material

Members' duties regarding GBON and RBON are defined through the provisions in:

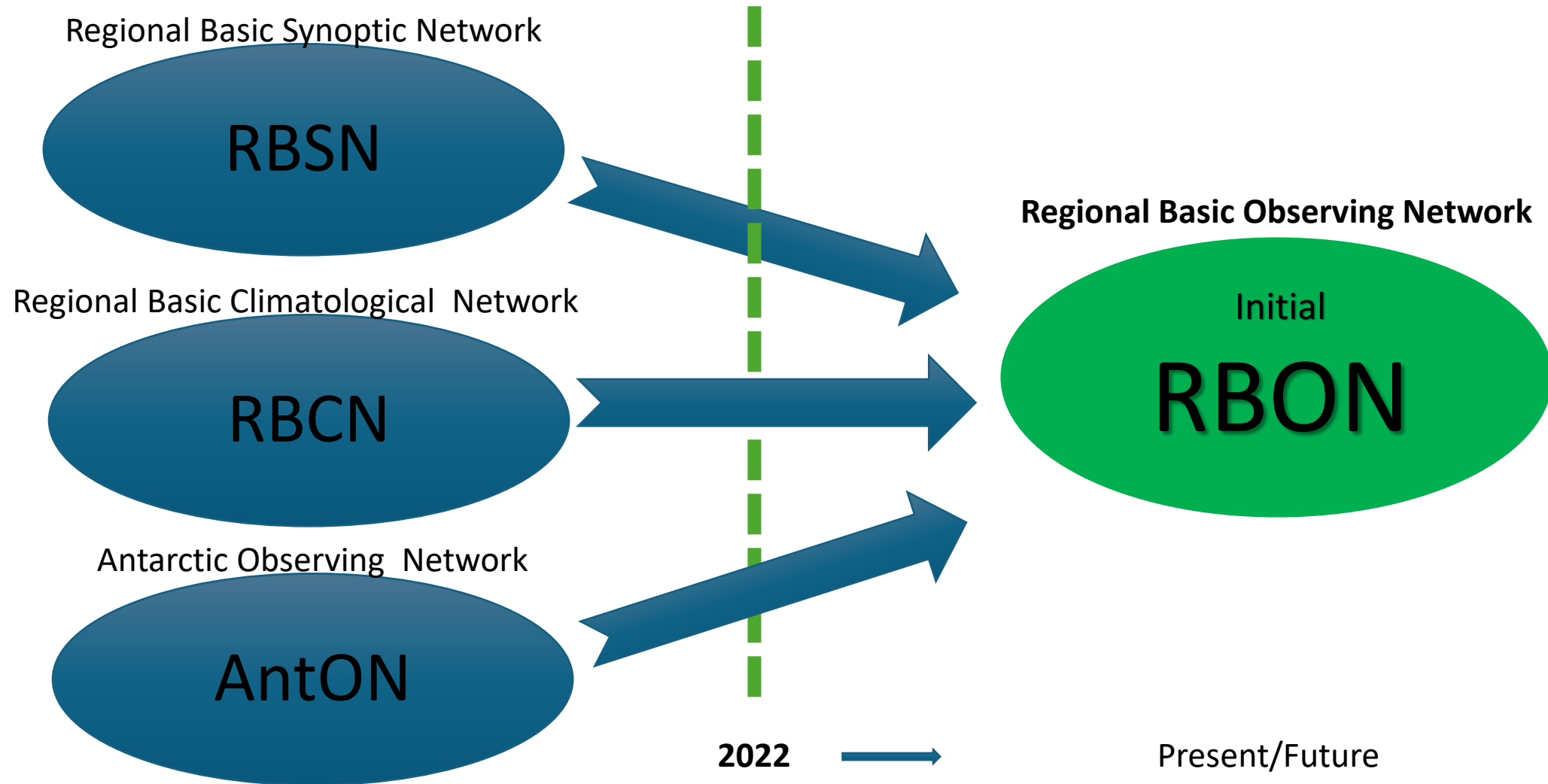
- Manual on the WMO Integrated Global Observing System (WMO-No. 1160), Section 3.2.2. GBON, 3.2.3 RBON
 - (2023 edition, **updated in 2024**; approved by EC-78 in June 2024, is available via [WMO Library](#)).

Guidelines on how to address the provisions and design GBON and RBON are described in:

- Guide to the WMO Integrated Global Observing System (WMO-No. 1165), Chapter 10 – GBON, 11 – RBON.
 - (**2024 edition**, approved by INFCOM-3 in April 2024, is available via [WMO Library](#)).



Initial RBON



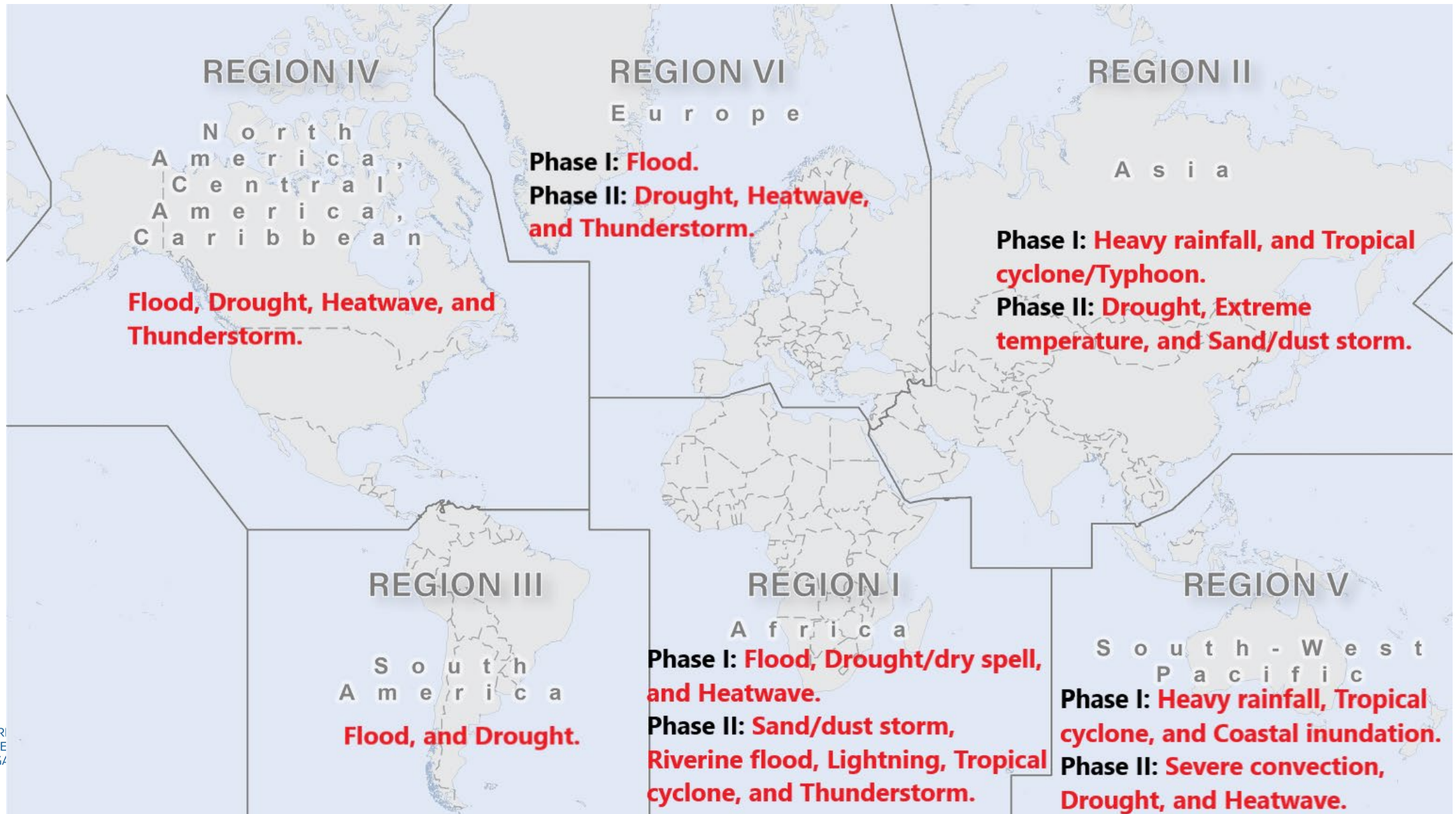
Progress with RBON design – Global level

Despite its complexity, as multiple stakeholders are involved, there is **significant progress with RBON design in Regions I, II, VI and, in particular, in RA V:**

- key challenges identified,
- phased approach developed,
- variables and requirements under finalisation, or approved (RA V),
- Workshops/webinars being organised,
- guidance material being developed.


RBON – Key challenges per RAs

- The phenomena to be addressed in order to bring substantial socioeconomic benefits.



RBON design in RA VI

- [Resolution 5](#) (RA VI-19) - Implementation of Global and Regional Basic Observing Networks (GBON/RBON) and the Systematic Observations Financing Facility (SOFF)
- Establishment of RBON Focus Group within the Working Group for Observation, Infrastructure and Information Systems to foster the RBON design and implementation in the Region
- Development of Action Plan for RBON design in RA VI



World Meteorological Organization
REGIONAL ASSOCIATION VI (EUROPE)
Nineteenth Session (First Part)
15 to 16 October 2024, Virtual Session

RA VI-19(I)/Doc. 3.3.2
Submitted by:
Chair
15.X.2024
APPROVED

AGENDA ITEM 3: PLANNING OF SCIENTIFIC AND TECHNICAL MATTERS
AGENDA ITEM 3.3: Development of Infrastructure for Services
AGENDA ITEM 3.3.2: Regional Basic Observing Network

REGIONAL BASIC OBSERVING NETWORK
DRAFT RESOLUTION
Draft Resolution 3.3.2/1 (RA VI-19(I))
Implementation of Global and Regional Basic Observing Networks (GBON/RBON) and the Systematic Observations Financing Facility (SOFF)

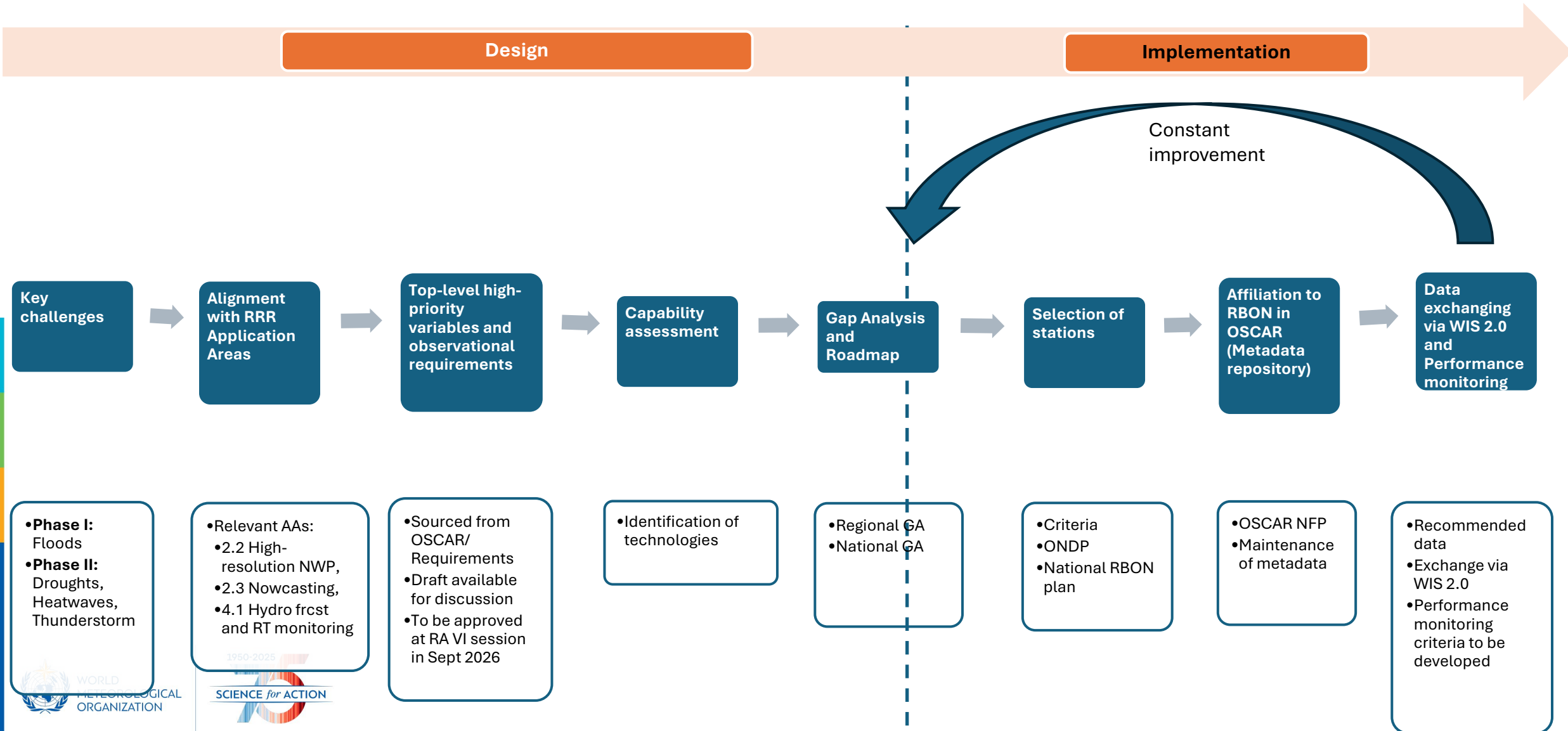
REGIONAL ASSOCIATION VI (EUROPE),

Recalling:

- (1) [Resolution 1 \(Cg-Ext\(2021\)\)](#) - WMO Unified Policy for the International Exchange of Earth System Data,
- (2) [Resolution 2 \(Cg-Ext\(2021\)\)](#) - Amendments to the Technical Regulations related to the establishment of the Global Basic Observing Network,
- (3) [Resolution 3 \(Cg-Ext\(2021\)\)](#) - Systematic Observations Financing Facility: Supporting Members in the Implementation of the Global Basic Observing Network,
- (4) [Resolution 2 \(Cg-19\)](#) - WMO Strategic Plan (2024–2027),
- (5) [Resolution 21 \(Cg-19\)](#) - GBON Implementation,
- (6) [Resolution 1 \(EC-78\)](#) - WMO Road Map for the Early Warnings for All Initiative,
- (7) [Resolution 2 \(EC-78\)](#) - Priority Activities contributing to the Early Warnings for All initiative,
- (8) [Resolution 13 \(EC-78\)](#) - Amendments to the Manual on the WMO Integrated Global Observing System (WMO-No. 1160),
- (9) [Resolution 14 \(EC-78\)](#) - Global Basic Observing Network Implementation and the Systematic Observations Financing Facility,
- (10) [Resolution 6 \(RA VI-17\)](#) - Regional WIGOS Implementation Plan 2018–2021,
- (11) [Decision 13 \(RA VI-17\)](#), which decided to establish a pilot Regional Basic Observing Network (RBON) for the Region,

RBON Design and Implementation process (in RA VI)

WIGOS Guide (WMO-No. 1165), Chapter 11



Members's engagement in RBON

- **Establish and manage RBON** in their Region (RAs) and the Antarctic (EC).
- **Ensure coordination, information sharing and engagement** of all **relevant organizations providing observations** (including academia, private sector and others).
- **Nominate National Focal Point** on WIGOS, OSCAR/Surface and WDQMS (including hydrological Advisors, OSCAR editors for hydrology).
- **Propose and commit existing stations** (consider national partnerships and upgrading stations to meet RBON requirements if needed), by registering them in Metadata Repository (OSCAR/Surface).
- **Commit to operate** the stations for **preferably more than 10 years**.
- **Ensure** the observations **exchange internationally in real or near-real time via WIS 2.0** (if not applicable, WHOS can also be used).
- **Review and update RBON composition** regularly, and **monitor its performance**.
- **Keep station metadata** in Metadata Repository (OSCAR/Surface) **up-to-date**.



OSCAR/Surface – RA VI

(as of 20 November 2025):

GBON – 2850 stations

RBON – 1696 stations



RBON implementation

(Registering RBON stations in OSCAR/Surface – RA V Pilot)

1. Invite Indonesia (pilot project lead), Australia and Fiji to test the new affiliation in OSCAR/Surface.
2. Testing to be run on OSCAR/DEPL (OSCAR/Surface test platform).
 3. De-affiliate all RBON stations of the participating Members, enabling a clean start for them.
 4. Create a new entry in the affiliations list in OSCAR/DEPL (OSCAR/Surface test platform).
 5. Remove the approval process (in OSCAR/DEPL).
 6. Participating Members to identify which stations they wish to (re)affiliate as RBON stations.
 7. For stations already registered in OSCAR/Surface (re)affiliation can be done by MeteoSwiss.
 8. For new stations, participating Members will have to add them themselves.

Timeline:

- a) Testing from early November until early December 2025, assuming a small number of stations.
- b) Testing results and conclusions to be ready by early January 2026.
- c) Based on the results, replicate the approach in OSCAR/PROD (OSCAR/Surface operational platform) Q1/2026.

RBON Gap analysis

- a technique for determining the steps to be taken in moving from a current state to a desired future state.

Purpose:

- ✓ identify the gap areas and the number of observing stations that need to be installed or improved to become aligned with the requirements of the RBON regulations.
- ✓ development of RBON Evolution Roadmap.

Regional and National Gap Analysis!

Contents:

- 1) Key gap name
- 2) Short description of the gap
- 3) Main requirement criteria to be addressed
- 4) Potential observing technologies
- 5) Other existing observing technologies
- 6) Possible approaches for the longer term

RBON

Purpose

- regional requirements,
- key regional challenges (e.g., floods, droughts, tropical cyclones, thunderstorms, heat waves)

Stations (**shall**)

- all surface-based observing stations as per requirements defined by Region

Stations (should)

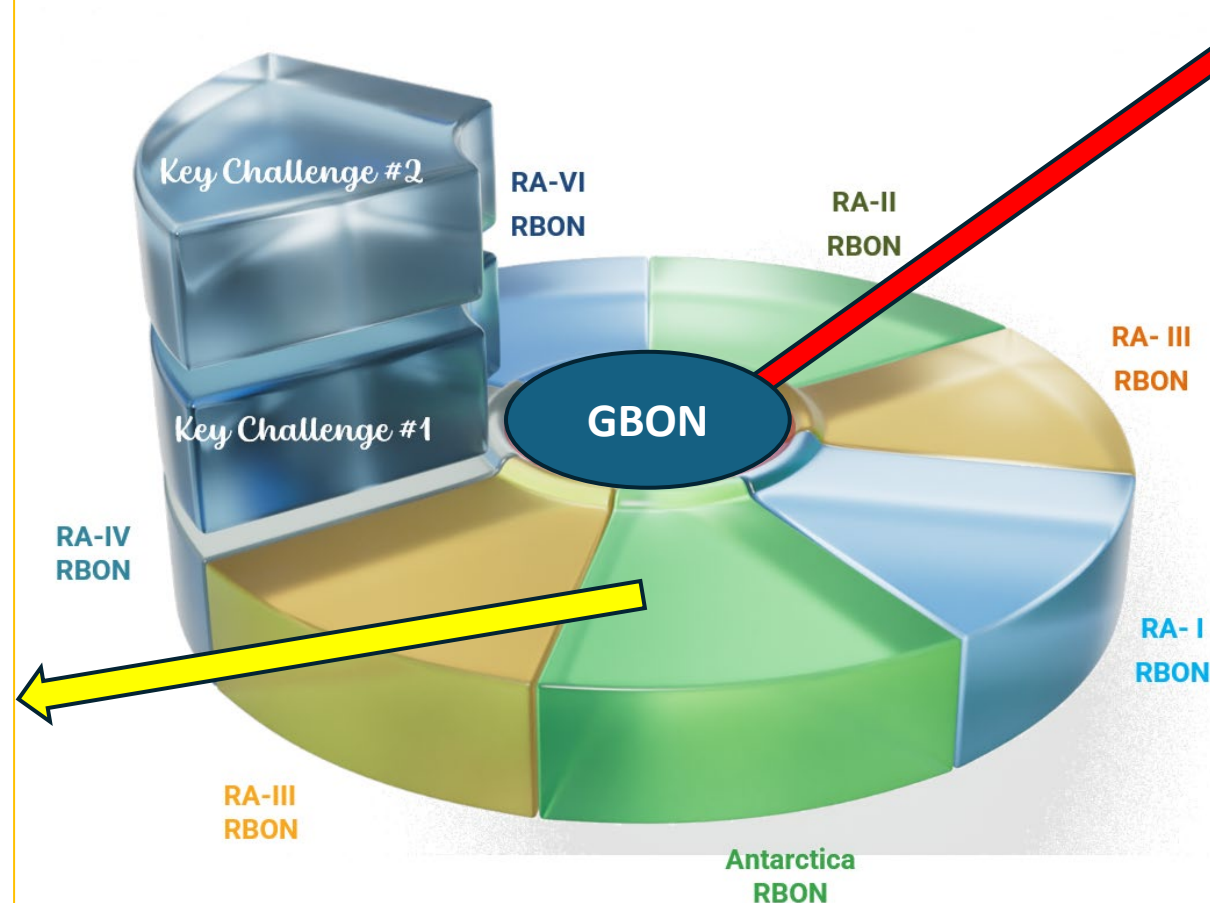
- weather radars

In charge: RA

Note: GBON is part of RBON



GBON vs RBON



GBON

Purpose

- global requirements,
- global NWP
- climate reanalysis

Stations (**shall**)

- surface land meteorological (SLP, T, H, W, P, SD)
- upper-air land meteorological (T, H, W)
- surface marine in EEZ (SLP, SST)
- upper-air marine in EEZ (T, H, W)

Stations (should)

- aircraft-based (T, H, W)
- remote sensing profilers (T, H, W)

In charge: INFCOM

Thank you!

For more:

Visit: [RBON - Regional Basic Observing Network](#)

Or send us an email to: rbon@wmo.int