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| WEATHER CLIMATE WATER | **World Meteorological Organization**  **COMMISSION FOR OBSERVATION, INFRASTRUCTURE AND INFORMATION SYSTEMS**  **Third Session** 15 to 19 April 2024, Geneva | **INFCOM-3/Doc. 8.1(3)** |
| Submitted by: Chair of SC-ON  23.II.2024  **DRAFT 1** |

**AGENDA ITEM 8: TECHNICAL DECISIONS**

**AGENDA ITEM 8.1: WMO Integrated Global Observing System – networks**

# PLAN for update of the Vision for the WMO Integrated Global Observing System in 2040 (WMO-No. 1243) and the High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision

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| **Summary** |
| **Document presented by:** Chair of the Standing Committee on Earth Observing Systems and Monitoring Networks (SC-ON).  **Strategic objective 2024–2027:** 2.1 Optimize the acquisition of Earth system observation data through the WMO Integrated Global Observing System (WIGOS)  **Financial and administrative implications**: within the parameters of the Strategic and Operating Plans 2024–2027.  **Key implementers:** INFCOM  **Time frame:** 2023–2027  **Action expected:** review the proposed draft decision. |

# GENERAL CONSIDERATIONS

### Development of the Vision for the WMO Integrated Global Observing System in 2040

The development of the WMO Integrated Global Observing System (WIGOS) vision was initiated by the sixty-sixth session of the Executive Council (EC-66) in 2014 with the request to the Commission for Basic Systems (CBS) to lead that development. Taking into account contributions made by many technical commission experts, representatives from regional associations and WIGOS partner organizations during two consultation workshops, namely “WIGOS Space 2040” in November 2015, and “WIGOS Surface 2040” in October 2016, the Expert Team on Satellite Systems and the Inter-programme Expert Team on Observing System Design and Evolution provided initial drafts of the “Vision for the WIGOS space-based component in 2040”, and the draft “Vision for the surface-based components of WIGOS in 2040” for consideration at the sixteenth session of CBS (CBS-16).

CBS-16 recommended that the evolving drafts be used as the basis for further consultation with Members, satellite operators, and user communities and that the Inter-Commission Coordination Group on WIGOS (ICG-WIGOS) take ownership of the further development of the Vision. It was recommended to make necessary arrangements for the integration of the two drafts into one coherent vision document and present it to the World Meteorological Congress for approval.

At its eighteenth session, the World Meteorological Congress (Cg-18) approved the Vision for the WMO Integrated Global Observing System in 2040 (WIGOS Vision), through [Resolution 38 (Cg‑18)](https://library.wmo.int/viewer/56690/?offset=#page=137&viewer=picture&o=bookmark&n=0&q=) - Vision for the WMO Integrated Global Observing System in 2040.

The WIGOS Vision reflects on how new and more efficient technologies will become available to Members for both space-based and surface-based observing systems, and it provides high-level targets to guide the evolution of WIGOS in the coming decades.

However, new developments in capabilities and requirements for service delivery, technological innovations, information technology and communication systems, and satellite (space-based) operational and replacement programme planning that goes beyond 2040, call for an update of the current vision.

### 2. Development of the High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision (WMO‑No. 1334)

The purpose of the High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the *Vision* (WMO-No.1334) is to provide guidance to WMO Members for key activities to be implemented within the next five years to accomplish the Vision for WIGOS in 2040. The guidance consists of principles of a general nature that should be considered for the development of implementation plans by Members, agencies, and other operators of observing networks. It also identifies urgent specific actions arising as a consequence of WMO’s Earth System approach and priorities of WIGOS, WMO programmes and existing data gaps.

While the Vision for WIGOS in 2040 presents a likely scenario for how user requirements for observational data may evolve in the next few decades, the current High-Level Guidance (HLG) document focuses on the time frame 2023–2027 and gives recommendations on activities needed now.

The Joint Expert Team on Earth Observing Systems Design and Evolution (JET-EOSDE) of Standing Committee on Earth Observing Systems and Monitoring Networks has led the development of HLG document, ensuring contributions from the experts from weather, climate, hydrology, atmospheric composition, oceans, cryosphere, and space weather.

The document was approved through [Resolution 20 (Cg-19)](https://library.wmo.int/viewer/67177/?offset=3#page=193&viewer=picture&o=custom_bottom_Permalink&n=0&q=) - High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision for the WMO Integrated Global Observing System (WIGOS) in 2040, as a replacement for the [*Implementation Plan for the Evolution of Global Observing Systems*](https://library.wmo.int/records/item/68694-implementation-plan-for-the-evolution-of-global-observing-systems-egos-ip?offset=1) (WIGOS Technical Report No. 2013–4) which accompanied the Vision for the Global Observing System in 2025, but also became obsolete.

Cg-19 invited the president of the Commission for Weather, Climate, Hydrological, Marine and Related Environmental Services and Applications (SERCOM), and the Chair of the Research Board, and other relevant bodies, to collaborate with the president of INFCOM for the passing of their evolving requirements to INFCOM and their consideration in the WIGOS Rolling Review of Requirements for future updates of HLG.

Cg-19 also called for strengthening effective coordination with relevant WMO partners and stakeholders on matters related to the implementation of priority actions of HLG and it requested the presidents of regional associations to support and monitor the implementation of the guidance within their regions.

In addition, Cg-19 requested the president of INFCOM to also propose updates of HLG to reflect evolution of end user requirements and of observing technology.

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# DRAFT DECISION

## Draft Decision 8.1(3)/1 (INFCOM-3)

### Plan for update of the Vision for the WMO Integrated Global Observing System in 2040 (WMO-No. 1243) and the High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision (WMO‑No. 1334)

**The Commission for Observation, Infrastructure and Information Systems decides:**

(1) To initiate the update of the [*Vision for the WMO Integrated Global Observing System in 2040*](https://library.wmo.int/records/item/57028-vision-for-the-wmo-integrated-global-observing-system-in-2040?offset=1)(WMO-No. 1243);

(2) To initiate the update of the High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision (WMO-No. 1334), following the requests of the nineteenth World Meteorological Congress (Cg-19);

**The Commission for Observation, Infrastructure and Information Systems decides** further to task the Standing Committee on Earth Observing Systems and Monitoring Networks**:**

(3) To lead the updates of both publications and make necessary arrangements to ensure that the updates are presented to the fourth session of INFCOM for endorsement;

(4) To conduct wide consultations among the broad community of stakeholders, such as the National Meteorological and Hydrological Services (NMHSs), space agencies, relevant international organizations and programmes, observing system developers, and other private and academic sectors, thus ensuring relevant inputs to the updates of both publications.

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Decision justification:

[*Vision for the WMO Integrated Global Observing System in 2040*](https://library.wmo.int/records/item/57028-vision-for-the-wmo-integrated-global-observing-system-in-2040?offset=1)(WMO-No. 1243)

New trends in capabilities and requirements for service delivery, technological innovations, rapid development of the information technology and communication systems, evolvement of the user requirements for observational data as key drivers for weather, water, climate and related environmental services, and new initiatives such as the UN Early Warnings for All initiative, call for an update of the current vision that does not accommodate all that.

Even more, current satellite (space-based) operational and replacement programme planning goes already beyond 2040.

Having considered the current needs, INFCOM decides to undertake the necessary update of the WIGOS vision in the next intersessional period, aiming at endorsement of the updated vision at its fourth session, and envisaging its submission to the twentieth session of Congress in 2027 for approval.

It will be extremely important to ensure wide consultations among the broad community of stakeholders, such as NMHSs, space agencies, relevant international organizations and programmes, observing system developers, and other private and academic sectors in the process of updating the WIGOS vision.

**High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision (WMO-No. 1334)**

The president of INFCOM was requested by Cg-19 to monitor implementation of [Resolution 20 (Cg-19)](https://library.wmo.int/viewer/67177/?offset=3#page=193&viewer=picture&o=custom_bottom_Permalink&n=0&q=) - High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027 in response to the Vision for the WMO Integrated Global Observing System (WIGOS) in 2040, to consider whether and how specific priority actions from the *High-Level Guidance on the Evolution of Global Observing Systems during the period 2023–2027* in response to the Vision (WMO-No.1334) could be turned into new or updated technical regulations and propose an update of this publication to reflect evolution of end user requirements and of observing technology.

Taking into account Cg-19 requests and the current needs, INFCOM decides to undertake the necessary update of the High-Level Guidance (HLG) publications in the next intersessional period, aiming at endorsement of the updated vision at its fourth session, and envisaging the submission of the updates to the twentieth session of Congress in 2027 for approval.

It will be critical to ensure relevant inputs for the updates of the HLG publications through the Statements of Guidance for each Earth System Application Category within the WIGOS Rolling Review of Requirements process and ensure wide consultations with all contributors to this process.

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