

**WMO OMM**

World Meteorological Organization  
Organisation météorologique mondiale  
Organización Meteorológica Mundial  
Всемирная метеорологическая организация  
المنظمة العالمية للأرصاد الجوية  
世界气象组织

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Annexes: 2 (available in English only)

Subject: WMO-International Telecommunication Union Regional Seminar for Commonwealth of Independent States Countries "Earth observations for Sustainable Development Goals: technologies, spectrum, applications, impacts" to be held in Almaty, Kazakhstan, on 16 and 17 September 2024

Action required: To notify the WMO Secretariat whether the relevant experts will be able to attend the meeting, at your earliest convenience, but preferably **not later than 31 July 2024**

Dear Sir/Madam,

I am pleased to inform you that WMO and the International Telecommunication Union (ITU) are organizing the joint Regional Seminar for Commonwealth of Independent States (CIS) Countries entitled "Earth observations for Sustainable Development Goals: technologies, spectrum, applications, impacts". The seminar will be held in Almaty, Kazakhstan, on 16 and 17 September 2024, hosted by the Ministry of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan in cooperation with the Regional Commonwealth in the Field of Communications. The seminar will be conducted face-to-face in English, with simultaneous interpretation in Russian.

The seminar aims to increase National Meteorological and Hydrological Services (NMHSs) awareness of the importance of meteorological related spectrum protection and the growing need for their participation in national and international spectrum management activities, especially in the framework of preparation to ITU World Radiocommunication Conferences. It will also provide spectrum managers and state telecom administrators with an overview of contemporary Earth observation and meteorological applications' use of radio spectrum and their future development and will illustrate the socioeconomic importance of these services within the context of the United Nations Sustainable Development Goals (SDGs). Additionally, the seminar will be a great opportunity for information exchange between NMHSs and national regulatory authorities in the region.

A provisional agenda, working documents as well as logistic information for the seminar is posted on the WMO [web page](#).

In this regard, I wish to invite relevant experts from your organization to participate in the seminar.

It is hoped that the cost of the participation of your experts will be borne by your organization. If, however, it is not possible, WMO is prepared to consider, upon request, providing financial support which may consist of travel cost (most economic air fare according to the most direct route) and/or per diem for one of your experts.

To: Permanent Representatives of Azerbaijan, Belarus, Kyrgyzstan, Tajikistan with WMO (limited distribution)

Regarding insurance coverage for non-staff members, may I draw your attention to the following:

*Non-staff members of WMO who are authorized to travel at the Organization's expense and/or who are receiving a DSA from WMO must ensure they are fully responsible for expenses incurred in the event of death, illness or injury during official travel and attendance at meetings on behalf of the Organization. They are, therefore, fully responsible for arranging life, health, accident, as well as any other forms of insurance with an adequate level of coverage for the duration of such meetings and events.*

*WMO liability is limited to the performance of services or attendance at a meeting on behalf of the Organization, is covered by an injury and illness benefit insurance which provides a limited coverage for medical, emergency and supplementary official travel expenses.*

For administrative purposes I should be grateful if you could kindly notify in the WMO Secretariat Ms Natalia Donoho, at [ndonoho@wmo.int](mailto:ndonoho@wmo.int), at your earliest convenience, but preferably not later than **31 July 2024**, whether your experts will be able to attend the seminar.

I would also like to stress the importance of the recently established WMO network of [National Focal Points on matters related to Radio Frequency](#). It is important to emphasize that capacity development is the cornerstone of this initiative. National Focal Points should become instrumental in promoting WMO positions at national, regional, and international levels. Therefore, I would like to encourage you to submit your nomination(s) to the WMO Secretariat at your earliest convenience.

I take this opportunity to thank you for your continued support to the activities of the WMO.

Yours faithfully,



Ms Ko Barret  
for the Secretary-General

## BACKGROUND PAPER

### ENHANCING EARTH OBSERVATION AND METEOROLOGY THROUGH EFFICIENT SPECTRUM MANAGEMENT

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According to United Nations forecasts, by 2050, the world's population will reach 9 billion people. The task of ensuring the basic essential needs of humanity – water, food, adequate living conditions – becomes critically important in the face of gradual depletion of natural resources, climate change, and the increasing number of natural disasters. Recognizing the urgent need to develop measures to overcome potential crises, leaders of the global community have established 17 Sustainable Development Goals (SDGs), for which optimal management mechanisms should be found, reducing consumption through efficient use of resources and ensuring the protection of our planet's natural ecosystems.

Within the framework of achieving the SDGs, special importance is placed on Earth observation and meteorological systems. They make a direct or indirect contribution to the achievement of all Goals without exception. Additionally, data obtained through the use of relevant remote sensing systems are indispensable for monitoring the results of actions taken. For example, about 30 out of 232 indicators developed to monitor the progress of SDGs achievement can only be assessed using data obtained from Earth remote sensing satellites.

From the perspective of using Radio Frequency spectrum, it is pertinent to note that in this case, it is necessary not only to provide access to this natural resource for the relevant complex of radio systems but also to guarantee complete radio silence in bands used globally for studying various characteristics of the atmosphere and Earth's surface through controlling emissions of natural origin.

For over 140 years, starting with the International Telegraph Union and the International Meteorological Organization in the late 1800s, which respectively become the ITU and WMO in the 1950s, there has been fruitful collaboration and partnership between the global meteorological and telecommunication agencies. While WMO focuses its efforts on meeting the needs for making and disseminating weather, climate, water, and related environmental observations and corresponding services and applications, ITU, as international steward of the radio spectrum, allocates the necessary radio frequencies to allow the interference-free operation of radio-based space and terrestrial systems and applications employed for weather, water and climate monitoring.

More effective communication of the added value of the economic and societal benefits provided by existing and future meteorological observations needs to be developed. Future spectrum management must be based on careful balance of public and private interests to define a worldwide harmonized way for efficient spectrum use and requires more active involvement of meteorological agencies in the decision-making process.

The seminar aims:

- To increase awareness of NMHS of the importance of meteorological related spectrum protection and the growing need for their participation in national and international spectrum management activities.
- To provide spectrum managers and state telecom administrators an overview of contemporary meteorological applications' use of radio spectrum and their future development as well as to illustrate the socio-economic importance of these services within the context of the SDGs.
- To encourage information exchange between national meteorological and hydrological services and national regulatory authorities.

The regular WMO-ITU Seminar is intended to kick-off a post-World Radiocommunication Conference 2023 (WRC-23) cycle. The following topics are to be discussed:

- *Overview of WMO and ITU activities for Earth observation and meteorology*, and meteorological and hydrological infrastructure that underpins weather and related environmental services worldwide.
- *Radio technologies of Earth observations and meteorology*: A general overview of existing radio systems and new technological development will be considered.
- *Space agencies outlook*: Consideration of current and future missions, applications, existing and future spectrum requirements.
- *Economic value of Earth observation, Societal Benefits, and Empowering Decision Making*.
- *Impact of RFI on spectrum use for Earth observation*: The situation with the degradation of measurements and interference cases, especially in passive bands, should be highlighted, and possible ways to keep the spectrum clean, such as regulation, monitoring, reporting, enforcement, to be discussed.
- *Results of WRC-23 and preparation for WRC-27*: Lessons to be learned for future conferences are to be discussed to improve preparation for the next WRC. Preliminary discussion of agenda items of the future WRC targeted at defining interests and potential threats to the spectrum used by Earth observation and meteorological agencies to define priorities and strategies for the next study cycle.

The seminar is opened for specialists from state regulatory bodies, national meteorological or hydrological services, frequency management and space agencies, R&D institutions, equipment developers and manufacturers from CIS countries.

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DRAFT PROGRAMME

WMO-ITU REGIONAL SEMINAR "EARTH OBSERVATIONS FOR SUSTAINABLE  
DEVELOPMENT GOALS: TECHNOLOGIES, SPECTRUM, APPLICATIONS, IMPACTS"

16 and 17 September 2024, Almaty, Kazakhstan

	16 September 2024		17 September 2024
0930–1000	Opening	0900–1030	Space agencies outlook: Evolution of Earth observation programmes
1020–1200	Overview of WMO and ITU activities for Earth observation and meteorology	1100–1230	Space agencies outlook: Evolution of Earth observation programmes
1330–1530	Radio technologies of Earth observations	1400–1530	Impact of RFI on spectrum use for Earth Observation
1600–1800	Economic value of Earth observation, Societal Benefits and Empowering Decision Making	1600–1730	World Radiocommunication Conference issues

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