

**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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Our ref.: 02685/2022/1/ONM/MQC/UAI-2022-Call-for-Operators 22 February 2022

Annexes: 2 (available in English only)

Subject: Call for nomination of independent radiosonde system operators/technicians for the WMO 2022 Upper-Air Instrument Intercomparison Campaign (UAI-2022), Lindenberg, Germany

Action required: (1) Disseminate the call for nomination of independent operators to radiosonde operators/technicians from your country.  
(2) To nominate independent radiosonde system operators/technicians to participate in the WMO UAI-2022 **by 20 March 2022**.

Dear Sir/Madam,

The WMO 2022 Upper-Air Instrument Intercomparison Campaign will be organized in Lindenberg, Germany, from 8 August to 17 September 2022, with the main objective to assess the performances of various operational upper-air observing systems. The intercomparison will not only include radiosonde systems, but also a variety of surface-based remote-sensing systems, and aircraft-based observations. Further details on the intercomparison, such as the detailed intercomparison project plan can be found on the [WMO website](#).

This campaign follows the previous WMO upper-air intercomparison series, the last one having been organized in Yangjiang, China, in 2010. The intercomparison will test about 10–12 radiosonde systems from different manufacturers. To enable an independent comparison of the participating radiosonde systems (including testing the user-friendliness), these will not be operated by the manufacturers, but rather by independent operators/technicians, who will be trained by the radiosonde manufacturers at the beginning of the campaign.

This intercomparison provides a unique opportunity for additional training of technical staff from Members in the operation of radiosonde systems and for the international coordination of sounding activities and capabilities. The technical staff will: (i) be fully involved in the team conducting the intercomparison, (ii) receive the necessary training for the specific radiosonde systems, and (iii) operate these for the duration of the campaign. The staff will learn from colleagues and provide feedback about the usability of the sounding systems.

Operators will stay in Lindenberg for the entire duration of the campaign (staff rotation is not expected). They will be trained by manufacturers and will support up to three different radiosonde systems. They will be part of the operator teams and will be required to operate the systems assigned to them, for relevant day and night soundings. They will also contribute to the evaluation of the usability of the various radiosonde systems. More details on this capacity-development opportunity are provided in [Annex 1](#).

To: Permanent Representatives of Members with WMO

cc: Hydrological Advisers

Herewith, we are inviting you to nominate radiosonde operator(s) from your country that would be willing and able to take part in the intercomparison as independent operators. Operators must have been trained as meteorological technicians (see Basic Instruction Packages for BIP-M and BIP-MT in the [Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology, volume I – Meteorology](#) (WMO-No. 1083)) or trained to an equivalent standard by their National Meteorological and Hydrological Service (NMHS). They must have current experience with radiosonde system(s) and must have sufficient verbal and written skills in English.

Preference will be given to personnel from developing countries. Applications from women are also highly encouraged as WMO is committed to gender mainstreaming. Limited travel support may be offered depending on available funds.

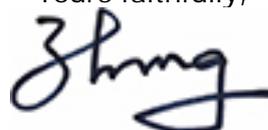
In view of the ongoing COVID-19 pandemic, the host is taking all measures to ensure the safety of the participants, operators and staff. Operators are encouraged to make early arrangements for visas and vaccinations to ensure they will be able to enter Germany. Operators will have to comply with the rules and restrictions that are imposed by the German Government. It should be noted that these rules are subject to change at short notice. More details regarding regulations and exceptions are available [here](#).

Technical staff interested in participating in the intercomparison as independent operators are requested to fill in the [online questionnaire](#) as soon as possible, but **no later than 20 March 2022**. For ease of preparation of the required information, the list of questions on which the questionnaire is based is provided in [Annex 2](#).

A short letter nominating the radiosonde operator(s) to take part in UAH-2022 must be submitted to the WMO Secretariat by the relevant Permanent Representative of the nominated operator(s) **by 20 March 2022** at the latest, to the attention of Ms Isabelle Rüedi, Head, Measurement, Quality and Compliance Unit ([iruedi@wmo.int](mailto:iruedi@wmo.int)). This letter must also indicate whether financial assistance is requested, in the form of a lump sum in lieu of per diem and/or travel support.

May I once again take the opportunity to express my appreciation for your interest in, and contributions to the activities of the Instruments and Methods of Observation Programme.

Yours faithfully,



Dr Wenjian Zhang  
for the Secretary-General

## Excerpt from the Project Plan for the WMO Upper-Air Instrument Intercomparison Campaign

Ref.: 02685/2022-1.6 I/ONM

### Capacity-Building of Operational Personnel

#### *Expectations:*

The operation of the radiosondes and the receiving systems during the radiosounding field campaign will be performed by independent personnel. The rationale for doing so is:

- To evaluate the user-friendliness (see Annex 7) and ease of operability of the radiosonde systems, which is a relevant factor in the procurement process for WMO Members,
- To enable an independent comparison of the radiosonde systems,
- To train staff from WMO Members in the operation of radiosonde systems with preference to staff from developing countries.

The operators of the radiosonde systems will be recruited from WMO Members as a form of capacity-building. If operators cannot be recruited from WMO Members, [Deutscher Wetterdienst \(DWD\)](#) will provide the operators.

The training of the operators on each radiosonde system will be performed by the manufacturer. The manufacturer will take responsibility for appropriate training and capacity-building with their systems.

The timeline of the radiosounding field campaign provides for a two-week period in order to set up and test the radiosonde system, and for the manufacturer to train the operator. During this preparatory phase, three soundings will be performed to verify the proper operation of the systems. After this setting-up period the manufacturers will leave the campaign site and hand over control to the operators. A hotline, or another means of 24/7 support will be provided by the manufacturers to assist in the event of possible problems with the radiosonde system.

Technical staff may be trained in the use of multiple systems (up to three) to be able to support more than one manufacturer.

The training and capacity-building will be conducted in English.

The operators are expected to stay on site for the duration of the training and the field campaign (approximately 5 weeks).

#### *Process to recruit technical staff:*

WMO will issue a call for interest requesting assistance from its Members and will specify the expectations. The Project Team will review the nominations and make the best efforts to match the skills of the nominees with the needs of its Members and the manufacturers.

The Project Team will try to assign technical staff from countries other than the manufacturer's country of origin to operate the radiosonde system.

#### *Qualification profile of technical staff:*

- Expected level: "Basic Instruction Package for Meteorological Technicians" (see [Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology, volume I – Meteorology](#) (WMO-No. 1083))

- Must have current experience with radiosonde system(s)
- Must have sufficient verbal and written skills in English

*Funding for the capacity-building activity:*

Funding for technical staff to attend the training and to participate in the intercomparison project needs to be provided.

Possible funding sources could be a combination of:

- Manufacturers
- WMO
- The nominating Member
- Other sources?

*Training process:*

Training will be provided by the manufacturers during the two-week preparatory phase in the first half of August 2022, prior to the intercomparison, while the systems are being set up and tested.

The expected outcome of the training sessions is that the technical staff will be capable to perform the following radiosonde system specific tasks:

- Unpack and prepare the radiosonde
- Start and configure the sounding system software
- Operate the receiving equipment
- Perform ground checks or other baseline tests as required by the manufacturer
- Bring the working radiosonde to the launch site and connect it to the sounding rig
- Verify proper operation and telemetry reception
- Monitor the receiving software during the sounding as required by the manufacturer
- Proper termination of the sounding and generation of the product data files
- Copy data files to the proper campaign storage locations
- Appropriate note taking of ancillary observations during a sounding
- Alert the Project Team about any unusual systems behaviour and request the manufacturer to report and contribute to the solution of issues
- Provide feedback and contribute to the final assessment of the capacity-building process

A possible extension of the training may include a preliminary quality review of the collected data by analysing skew-T diagrams or other appropriate graphical representations of the sounding data.

*Training schedule:*

It is expected that manufacturers may be required to provide multiple training sessions to train all staff needed for a system.

Because of the significant initial training requirements during the set-up phase, it may be advantageous to arrange a staggered set-up of the different manufacturers. The initial set-up period may take 2–3 days at the beginning of the set-up and testing periods.

The training sessions need to be spread out over the course of the two-week set-up and pre-campaign testing period. Each training session should take between 2–3 days including a launch of the respective radiosonde (as part of the larger rig).

During the intercomparison campaign, regular review meetings of the technical staff may be required to evaluate the operations and provide a process to eliminate operational errors and troubleshoot problems that may arise.

Operators are also expected to participate in pre-flight coordination meetings.

Review of the data by the manufacturers will be essential to assure that potential operator errors are identified and corrected early.

The Project Team should identify one or two training managers, with the following responsibilities:

- To coordinate the training activities of the manufacturers
- To support the operators in completing their tasks and to be a point of contact for issues that may arise
- To assure that operator performance does not negatively influence the performance of the radiosonde intercomparison
- To define the evaluation and feedback processes (regular sounding meetings and feedback documents)

At the end of the campaign, the training manager will coordinate the documentation of the capacity-building process and solicit input from all external operating staff to provide a final document.

## APPLICATION FORM

for

**Independent Radiosonde System Operator/Technician for the  
WMO Upper-Air Instrument Intercomparison Campaign, 2022  
Lindenberg, Germany**

Ref.: 02685/2022-1.6 I/ONM

PLEASE NOTE: This questionnaire must be filled in electronically (available [online](#))

1.	Member country	
2.	Operator/Technician proposed for participation	
	Family name	Preferred Title: Dr <input type="checkbox"/> Mr <input type="checkbox"/> Ms <input type="checkbox"/>
	First name	
	Organization	
	Address	
	Telephone	
	Email	
	Position presently held	
3.	Work experience of proposed Operator/Technician <sup>1</sup>	
	Brief description of your current duties/work:	
	Which educational degree/training did you obtain?	

<sup>1</sup> Please provide a short CV of the proposed operator/technician

	Were you trained as meteorological technician (BIP-MT, WMO-No. 1083 <sup>2</sup> )? Yes <input type="checkbox"/> No <input type="checkbox"/>
	Did you undergo a training equivalent to BIPM-MT provided by your NMHS? Yes <input type="checkbox"/> No <input type="checkbox"/>
	Which radiosonde system are you currently operating?
	Which other radiosonde system(s) have you operated in the past, if any:

4.	Observing station at which you have been performing radiosonde launches most recently
	Station name/location:
	From (month/year): To (month/year):
	Were the soundings from this station reported on the GTS? Yes <input type="checkbox"/> No <input type="checkbox"/>
	WIGOS Station Identifier (if appropriate):

5.	Expected benefit
	Which benefit do you expect to gain from participating in the WMO Upper-Air Instrument Intercomparison 2022 as independent operator/technician?

6.	Knowledge of English			
		Excellent	Good	Fair
	Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Speaking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Oral understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<sup>2</sup> See Basic Instruction Packages for BIP-M and BIP-MT in the [Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology, volume I – Meteorology](#) (BIP-MT, WMO-No. 1083)

7.	<p data-bbox="233 208 687 237">Additional comments/information</p> <hr/> <p data-bbox="233 275 1145 304">Feel free to provide any additional comments that you deem useful</p>
8.	<p data-bbox="233 526 876 555">Endorsement by the Permanent Representative</p> <hr/> <p data-bbox="233 593 1425 752">I certify that the Permanent Representative of my country with WMO supports my application to take part in the UAII-2022 as an independent radiosonde system operator/technician and that he/she agrees to send a letter to WMO, nominating me for this activity and indicating whether financial support is requested in the form of a lump sum in lieu of per diem and/or travel.</p> <p data-bbox="233 817 671 846">Name of person filling this form:</p>

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