



Form for Regular Reporting of Regional Instrument Centres

(please expand the cells as required to properly reflect your activities)

Terms of Reference for Regional Instrument Centers (RICs) are available under:

<https://www.wmo.int/pages/prog/www/IMOP/instrument-reg-centres.html>

Regional instrument Centre - General Information	
Name of RIC	Calibration Center
RIC's website	https://mgm.gov.tr/eng/calibration-center.aspx
Institute hosting RIC	Turkish State Meteorological Service
City	Ankara
Country	Turkey
Regional Association	RA VI

Contact Person for the Regional Instrument Centre	
Courtesy Title	Quality Manager
First name	Zafer Turgay
Family name	DAĞ
Street and number	Kalaba Mahallesi Kütükçülibey Caddesi No:4
Postal code	06120
City	Ankara
State/Province	---
Country	Turkey
Tel. number(s)	+90 312 302 2209
Fax number(s)	+90 312 361 5356
Email(s)	ztdag@mgm.gov.tr
Has contact person changed since your last report?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

If yes, provide the previous contact person? ---

RIC's staff

(Please specify the number of your managerial and technical staff)

- Managerial: 3
- Technical: 16

Interlaboratory Comparisons

Have you organized any interlaboratory comparison in the last calendar year?
(If yes, please specify the event(s) and final reports, including their web links, if available):

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Have you participated in any interlaboratory comparison in the last calendar year? (If yes, please specify the event(s) and the report(s), including their web links, if available):

Date	ILC	Organizer	ILC Code
10.02.2017	Wind speed (anemometer)	UME	UME-G2AL-TR-K023

Applied International Standards/Norms

Is your RIC accredited according to ISO/IEC 17025?

Yes (please, specify the following):

Accreditation/certification body: TÜRKAK (Turkish Accreditation Agency)

Date of the last audit: 06 March 2017

Link to the Certificate of Accreditation:

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/ashk-en.pdf>

No (please, indicate if you have already applied any quality management system, and provide a reason for a lack of accreditation, if possible)

-

Assessment by a recognized authority other than accreditation body

Was your RIC assessed by a recognized authority other than an accreditation body? (e.g. certification body, NMI, another RIC)

Yes (please, specify the following):

Name of a recognized authority:

Date of the last assessment:

Standard against which the assessment was carried out:

No (please, explain why, if possible)

-

WMO/CIMO [Evaluation Scheme \(excel file\)](#)

Have you filled out the WMO/CIMO Evaluation Scheme (excel) and submitted it to the WMO Secretariat?

Yes (please, specify when you submitted the most recent one):2017

No (please, explain why, if possible)

-

Calibrations of the Members' Instruments

Which calibration services, were provided by your RIC for other Members/countries in the last calendar year? (Please specify)

Year	Type of instruments	Number of calibrated instruments	WMO Member/Country

Capacity Development and Training Activities

Which capacity development/training activities have been carried out by your RIC within the Region in the last calendar year? (please specify events, WMO Members that participated and the number of participants)

• ---

Has your RIC provided services on capacity development and training outside the Region in the last calendar year? (If yes, please specify to whom and when)

<ul style="list-style-type: none">• ---
<p>Which guidance documents, standard procedures or other publications were developed and published by your RIC in <u>the last calendar year</u>? (Please, include full reference and web-link if available)</p> <ul style="list-style-type: none">• ---

Utilization of Resources and Capabilities of the Region
<p>(Have you collaborated with other RICs, RRCs, RTCs, NMHSs or NMIs on standardization of meteorological and other related environmental measurements in <u>the last calendar year</u>? If yes, please specify when and how)</p> <ul style="list-style-type: none">• ---

Recent Changes in Circumstance
<p>Have there been any changes in your RIC's capabilities in <u>the last calendar year</u>? (If so, please specify)</p> <ul style="list-style-type: none">• Wind Speed (Anemometer) Calibration Laboratory scope is changed in 2017• Relative humidity calibration capacity has been doubled with a new humidity generator in 2017.
<p>Have there been any significant changes in your RIC's infrastructure in <u>the last calendar year</u>? (If so, please specify)</p> <ul style="list-style-type: none">• ---
<p>Have there been any changes in your staffing in <u>the last calendar year</u>? (If so, please specify)</p> <ul style="list-style-type: none">• ---

Future Plans and any other relevant information
<p>(Please provide plans/projects of your RIC for <u>this calendar year</u>, and add any other information you find relevant about your RIC)</p> <ul style="list-style-type: none">• International Training Course on "Basics of Calibration", October 2018• Automation project of Temperature and Humidity Calibration Laboratory is planned in 2018.• New pitot-tube type anemometer is planned to be invested as working standard in 2018.• Organization of the Interlaboratory Comparison (ILC) on Wind Speed (Anemometer) Calibration in RA VI in 2018.• Training Course on "Basics of Calibration" to staff of Afghanistan Meteorological

Service, April 2018.

Are you in agreement with publishing this reporting form on WMO/CIMO website?

Yes

No

Date

Name and Signature of Person in Charge of RIC

ANNEX

(Following information will be a part of your RIC's website as published on the [WMO/CIMO website](#))

Specific information on Instrument Calibration Capabilities					
<u>Temperature:</u>					
Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC) *	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Resistance Thermometer	0.01 °C	Triple Point of Water Cell YUKAL-L1	8 mK	14.April.2017	YUKAL (Yeditepe University Calibration Center)
Resistance Thermometer	$-40\text{ °C} \leq T \leq +50\text{ °C}$	SPRT Isotech 909Q, Fluid calibration bath FLUKE 7341, Fluid calibration bath FLUKE 7381	40 mK	04.May.2017	TUBITAK-UME (National Metrology Institute)
Resistance Thermometer	$-40\text{ °C} \leq T \leq +50\text{ °C}$	PRT Hartscientific 5615-1521, Climate chamber VÖTSCH VC ³ 7018	130 mK	21.December.2017	TSMS (Turkish State Meteorological Service) Calibration Center
Fully Immersed Liquid in Glass Thermometer	$-40\text{ °C} \leq T \leq +50\text{ °C}$	SPRT Isotech 909Q, Fluid calibration bath FLUKE 7341, Fluid calibration bath FLUKE 7381	60 mK	04.May.2017	TUBITAK-UME (National Metrology Institute)
Thermometer with display	$-40\text{ °C} \leq T \leq +50\text{ °C}$	SPRT Isotech 909Q, Fluid calibration bath FLUKE 7341, Fluid calibration bath FLUKE 7381	50 mK	04.May.2017	TUBITAK-UME (National Metrology Institute)
Thermometer with display	$-40\text{ °C} \leq T \leq +50\text{ °C}$	PRT Hartscientific 5615-1521, Climate chamber VÖTSCH VC ³ 7018	130 mK	21.December.2017	TSMS (Turkish State Meteorological Service) Calibration Center
<p>Status of accreditation (date of the latest accreditation): 06 March 2017</p> <p>Link to the accreditation certificate:</p> <p>https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/ashk-en.pdf</p> <p>Accreditation body: TÜRKAK (Turkish Accreditation Agency)</p>					

Relative Humidity:

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC) *	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Relative Humidity measuring instruments	$10 \%rh \leq RH \leq 80 \%rh$	Thunder Scientific 2500 Humidity Generator (at the fixed temperature point of $(23\pm 1) ^\circ C$)	1,2 %rh	14.April.2014	TUBITAK-UME (National Metrology Institute)
Relative Humidity measuring instruments	$81 \%rh \leq RH \leq 95 \%rh$	Thunder Scientific 2500 Humidity Generator (at the fixed temperature point of $(23\pm 1) ^\circ C$)	2,0 %rh	14.April.2014	TUBITAK-UME (National Metrology Institute)
Relative Humidity measuring instruments	$10 \%rh \leq RH \leq 80 \%rh$	Vaisala HMP76 (M170), Climate chamber VÖTSCH VC ³ 7018 (at the fixed temperature point of $(23\pm 1) ^\circ C$)	2,5 %rh	11.July.2017	TSMS (Turkish State Meteorological Service) Calibration Center

Status of accreditation (date of the latest accreditation): 06 March 2017

Link to the accreditation certificate:

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/ashk-en.pdf>

Accreditation body: TÜRKAK (Turkish Accreditation Agency)

Atmospheric pressure:

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC) *	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Absolute Pressure Barometers	$750 \text{ mbar} \leq p \leq 1050 \text{ mbar}$	Quartz barometer Paroscientific 765-16B, Pressure chamber Elite PCS-600	0,12 mbar	17.November.2017	TSMS (Turkish State Meteorological Service) Calibration Center
Absolute Pressure Barometers	$750 \text{ mbar} \leq p \leq 1050 \text{ mbar}$	Quartz barometer Paroscientific 785-30A, Pressure generator DHI type PPC4	0,08 mbar	23.Agust.2017	TUBITAK-UME (National Metrology Institute)

Status of accreditation (date of the latest accreditation): 06 March 2017

Link to the accreditation certificate:

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/ashk-en.pdf>

Accreditation body: TÜRKAK (Turkish Accreditation Agency)

Wind:

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC)*	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Anemometer (Pitot tube, propeller, thermal, cups, ultrasonic etc.)	$1,0 \text{ m/s} \leq V < 3,0 \text{ m/s}$	Pitot Tube Micromanometer Furness Control FCO510 / B675, in Wind tunnel	3,0 %	15.March.2017	TUBITAK-UME (National Metrology Institute)
Anemometer (Pitot tube, propeller, thermal, cups, ultrasonic etc.)	$3,0 \text{ m/s} \leq V \leq 35,0 \text{ m/s}$	Pitot Tube Micromanometer Furness Control FCO510 / B675, in Wind tunnel	2,0 %	15.March.2017	TUBITAK-UME (National Metrology Institute)

Status of accreditation (date of the latest accreditation): 06 March 2017

Link to the accreditation certificate:

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/ashk-en.pdf>

Accreditation body: TÜRKAK (Turkish Accreditation Agency)

Precipitation:

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC) *	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Rain gauge (Tipping, weighting...)	10 mm/hour ≤ I ≤ 300 mm/hour	Mass set Baykon F1 class, Mettler Toledo XP4002SDR Electronics balance, with Watson Marlow 520Du peristaltic pump	1,0%	18.June.2014 22.May.2015	TUBITAK-UME (National Metrology Institute) TSE (Turkish Standards Institution)

Status of accreditation (date of the latest accreditation): This Laboratory is not accredited, but it also works in accordance with TS EN ISO/IEC 17025 Standards.

Link to the accreditation certificate: Not accredited scope;

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/adhk-en.pdf>

Accreditation body:

Other (please specify if applicable):

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC) *	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Global Radiation (Pyranometer)	0 Watt/m ² ≤ G ≤ 700 Watt/m ²	Kipp&Zonen CMP22 pyranometer under constant light intensity	1,0 %	17.April.2013	Kipp&Zonen
Wind direction measuring instruments (Wind vane)	0° ≤ RY ≤ 360 °	Electronics Teodolite SSMI DE2	4°	22.October.2015	TUBITAK-UME (National Metrology Institute)
Electrical Calibration Laboratory Current(DC,AC), Voltage (DC,AC), Resistance (DC), Frequency (Hz)	at the scope	Electrical calibrator FLUKE 5520A, Digital Multimeter 8½ digit KEITHLEY 2002	at the scope	21.September.2017 22.Nowember.2017	TSE (Turkish Standards Institution)

Status of accreditation (date of the latest accreditation): These Laboratories are not accredited, but they also work in accordance with TS EN ISO/IEC 17025 Standards.

Link to the accreditation certificate: Not accredited scope;

<https://mgm.gov.tr/FILES/kurumsal/kalibrasyon/adhk-en.pdf>

Accreditation body:

* A CMC (calibration and measurement capability) is the smallest uncertainty (k=2) of measurement that can be expected to be achieved by the RIC during a calibration under normal conditions. This CMC is evaluated by the RIC itself and described in the scope of accreditation of the RIC, if available.