WMO OMM

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

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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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 Centres (RICs) are available under:
https://www.wmo.int/pages/prog/www/IMOP/instrument-reg-centres.html

Regional instrument Centre - General Information	
Name of RIC	RIC Tsukuba
RIC's website	http://www.jma.go.jp/jma/jma-eng/jma-center/ric/RIC_HP.html
Institute hosting RIC	Japan Meteorological Agency
City	Tsukuba
Country	Japan
Regional Association	Region II

Contact Person for the Regional Instrument Centre		
Courtesy Title	Mr	
First name	Kouichi	
Family name	NAKASHIMA	
Street and number	1-2 Nagamine	
Postal code	305-0052	
City	Tsukuba	
State/Province	Ibaraki	
Country	Japan	
Tel. number(s)	+81 298 51 4123	
Fax number(s)	+81 298 51 1670	
Email(s)	kouichi.nakashima@met.kishou.go.jp ric-tsukuba@met.kishou.go.jp	
Has contact person changed since your last	☐ Yes	☒ No

report?	
If yes, provide the previous contact person?	

RIC's staff

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

- Managerial: 3
- Technical: 5

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)**:**

- Interlaboratory comparison in the field of temperature, humidity and pressure in RA-II, V and VI in 2018 - 2019 (WMO-MM-ILC-2018-THP-2).

  This ILC is organized by RIC Tsukuba with participation by RIC Ljubljana (RA VI), the University of Ljubljana, Faculty of Electrical Engineering (UL-FE) (RA VI), RIC Tsukuba (RA II), RIC Beijing (RA II), RIC Melbourne (RA V) and RIC Manila (RA V), and related equipment was provided by UL-FE and RIC Ljubljana. Coordination on the European side is provided by UL-FE.

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)**:**

- No.

Applied International Standards/Norms

Is your RIC accredited according to ISO/IEC 17025?

☒ **Yes** (please, specify the following):

Accreditation/certification body: National Institute of Technology and Evaluation (Japan)

Date of the last audit: 29-Aug-2017

Link to the Certificate of Accreditation: https://www.nite.go.jp/en/iajapan/jcss/labsearch/pdf/d0295m-e.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)

- RIC Tsukuba is accredited by ISO/IEC 17025.

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):11 May 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
2018	Barometer	1	Vanuatu

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)

- No.

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)

- Technical training for Fiji Meteorological Service (FMS)

In August 2018, four technical officers from FMS attended training on meteorological instrument calibration at RIC Tsukuba. The course was part of the Japan International Cooperation Agency (JICA) Project for Reinforcing Meteorological Training Function of FMS.

In September and October 2018, two JMA experts were despatched to FMS to attend the JICA third country training program in meteorological instrument calibration as supervisors and instructors. Twelve trainees from ten WMO Members in Oceania participated in the program as part of the JICA Project for Reinforcing the Meteorological Training Functions of FMS.

Which guidance documents, standard procedures or other publications were developed and published by your RIC in the last calendar year? (Please, include full reference and web-link if available)

- No.

Utilization of Resources and Capabilities of the Region

(Have you collaborated with other RICs, RRCs, RTCs, NMHSs or NMIs on standardization of meteorological and other related environmental measurements in the last calendar year? If yes, please specify when and how)

- JMA/WMO Workshop on Quality Management of Surface Observations - RA II WIGOS Project (Tokyo, Japan, 19-23 March 2018)

  The experts from RIC Beijing and RIC Manila attended the workshop and gave a presentation of their activities.

  The documents and presentations on the workshop are available at:

  http://www.jma.go.jp/jma/en/Activities/qmws_2018/qmws_2018.html

Recent Changes in Circumstance

Have there been any changes in your RIC's capabilities in the last calendar year? (If so, please specify)

- No.

Have there been any significant changes in your RIC's infrastructure in the last calendar year? (If so, please specify)

- No.

Have there been any changes in your staffing in the last calendar year? (If so, please specify)

- No.

Future Plans and any other relevant information

(Please provide plans/projects of your RIC for this calendar year, and add any other information you find relevant about your RIC)

- <Future plan>

  Report on ILC in RA-II, V and VI (WMO-MM-ILC-2018-THP-2) will be finalised and submitted to be published as IOM report in 2019.

- <Other relevant information>

  RA II WIGOS Workshop - Regional WIGOS Centres and its services for Members (Tokyo, Japan, 6-9 March 2019)

  The documents and presentations on the workshop are available at:

  https://www.jma.go.jp/jma/jma-eng/jma-center/rwc/event/RWCws_2019/index.html

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

☒ Yes ☐ No

20 February 2019 — Date

Hideo Tada — 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

Temperature:

Instrument Undergoing Calibration	Calibration Range	Reference standard, Equipment	Calibration and Measurement Capability (CMC)*	Traceability of Reference equipment	
				Last standard calibration date	Calibration body
Contact Type Thermometer	-40~50 °C	Platinum resistance thermometer NSR-160 (Netsushin)	From -40 °C to less than 0 °C : 45 mK, 0 °C : 13 mK, from more than 0 °C up to 50 °C : 36 mK (Level of confidence approximately 95 %)	27 August 2018	Tanaka Kikinzoku Kogyo K.K. Isehara Works Thermometer Calibration Laboratory

Status of accreditation (date of the latest accreditation): 29 August 2017
Link to the accreditation certificate:
https://www.nite.go.jp/en/iajapan/jcss/labsearch/pdf/d0295m-e.pdf
Accreditation body: National Institute of Technology and Evaluation (Japan)
(http://www.nite.go.jp/en/iajapan/information/index.html)

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
Dew point hygrometer	Dew point From -5~0 °C	Chilled-mirror dew point hygrometer (display) DewStar S-1M-0 (sensor) DewStar S-2S-0K (Shinyei technology, Japan)	Dew point 0.12 °C (Level of confidence approximately 95 %)	14 February 2018	National Metrology Institute of Japan
	Dew point From 0~25 °C		Dew point 0.09 °C (Level of confidence approximately 95 %)		

Electronic hygrometer	Relative humidity from 20~30 % at calibration temperature 20~26 °C		Relative humidity 0.8 % (Level of confidence approximately 95 %)		
	Relative humidity from 30~95 % at calibration temperature 20~26 °C		Relative humidity 1.7 % (Level of confidence approximately 95 %)		
	Relative humidity from 20~30 % at calibration temperature 20~26 °C(*)		Relative humidity 0.6 % (Level of confidence approximately 95 %)		
	Relative humidity from 30~95 % at calibration temperature 20~26 °C(*)		Relative humidity 1.4 % (Level of confidence approximately 95 %)		

(*)Calibration which regards a dew point hygrometer as the hygrometer of a relative humidity indication.
Status of accreditation (date of the latest accreditation): 29 August 2017
Link to the accreditation certificate:
https://www.nite.go.jp/en/iajapan/jcss/labsearch/pdf/d0295m-e.pdf
Accreditation body: National Institute of Technology and Evaluation (Japan)
(http://www.nite.go.jp/en/iajapan/information/index.html)

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
Digital Pressure Gauge	50~1150 hPa	Pressure balance AV-02 (Futaba sokki)	The lager one of the two 0.0085% or 7.5 Pa (Level of	19 September 2018	National Metrology Institute of Japan

			confidence approximately 95 %)		

Status of accreditation (date of the latest accreditation): 29 August 2017
Link to the accreditation certificate:
https://www.nite.go.jp/en/iajapan/jcss/labsearch/pdf/d0295m-e.pdf
Accreditation body: National Institute of Technology and Evaluation (Japan)
(http://www.nite.go.jp/en/iajapan/information/index.html)

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	0.5~90 m/s	0~20m/s Ultrasonic anemometer DA-700 (Sonic, Japan)	N/A	1 December 2017	National Metrology Institute of Japan
		20~90m/s Pitot tube JB151254 (Tsukuba Rikaseiki, Japan), Differential pressure gauge MT210 (2sets) (YOKOGAWA, Japan)		5 March 2018	

Status of accreditation (date of the latest accreditation): No
Link to the accreditation certificate:
Accreditation body:

Precipitation:

Instrument Undergoing Calibration	Calibration Range	Reference Standard, Equipment	Calibration and Measurement Capability (CMC)*	Traceability of Reference Equipment	
				Last Standard Calibration Date	Calibration Body

Status of accreditation (date of the latest accreditation):
Link to the accreditation certificate:
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

Status of accreditation (date of the latest accreditation):
Link to the accreditation certificate:
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.