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| **World Meteorological Organization**  **Commission for Instruments and Methods of Observation**  **Task Team on Radiation References, First Session** Teddington, UK, 15-17 November 2017 | **CIMO/TT-RadRef-1/Doc. 1.2(2)** |
| Submitted by: The Secretariat  7.11.2017  **DRAFT 1** |

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# explanatory memorandum

1. **Organization of the Session**
   1. **Opening of the Session**

The first Session of the CIMO Task Team on Radiation References (TT-RadRef) will open at 09:00 hours on Wednesday, 15 November 2017, at the National Physical Laboratory (NPL), Teddington, United Kingdom of Great Britain and Northern Ireland.

The meeting will be focussing on the traceability of terrestrial radiation measurements. It will be conducted as a reduced meeting of TT-RadRef, together with the support of participants representing the Baseline Surface Radiation Network (BSRN) and the metrology communities. It will be conducted in the form of a workshop and before the meeting all participants are expected to read the background material that will be provided to them by the Secretariat and to identify key issues that should be addressed/discussed during the meeting.

* 1. **Adoption of the Agenda**

The provisional agenda will be submitted to the Session for adoption.

* 1. **Working Arrangements**

The Meeting will agree on details concerning the organization of its work, including working hours. The documentation and meeting will be conducted in English only.

1. **Report of the Chairperson**

The Chairperson of TT-RadRef will briefly explain the reasons for the reduced meeting.

1. **review of the current status and issues of infrared radiometry**

The meeting will be presented with a series of invited presentations covering the whole traceability chain of terrestrial radiation measurements. At the end of each presentation the meeting be invited to critically review each step of the traceability chain and ascertain its appropriateness.

The presentations will cover:

* The development of the current basic pyrgeometry practises including the evolution of the current equations in field use.
* The practices that were used to set up the World Infrared Standard Group (WISG), the outcomes of relevant measurement campaigns focussed on the assessment and traceability to the World Infrared Standard Group (WISG), such as the International Pyrgeometer Intercomparison held in 2015 at PMOD/WRC in Davos, Switzerland, and the calibration procedures to trace network infrared measurements to the WISG.
* The characterization of modern instruments that could potentially be used as references for the measurement of terrestrial radiation and their traceability to the International System of Units (SI) independent of the WISG. These include the Active Cavity Pyrgeometer (ACP) developed by NREL, and the Infrared Integrating Sphere (IRIS) develop by PMOD/WRC.

1. **issues with the traceabiliy of field measurements**

The meeting will be invited to confirm the appropriateness of the current practices to ensure the traceability of field measurement to SI, including the effectiveness of inter-comparisons to support and sustain the global traceability hierarchy of the WISG, and the outputs of WMO World Radiation Centre.

In the event that the current processes and pathways would need modification, the meeting will be invited to recommend updated processes, and associated activities that would have to be undertaken to support/achieve them.

1. **Recommendations for the traceability of terrestrial radiation measurements**

The meeting will be invited to develop recommendations related to the traceability of terrestrial radiation measurements for the attention of WMO and BSRN. These will encompass among others:

* Advise WMO of the effectiveness of the International Pyrgeometer Comparions to support and sustain the global traceability hierarchy of the WISG, and the outputs of WMO Radiation Centre’s Infrared Radiation Centre.
* Advise WMO if it should still define and be accountable for the longwave reference embodied in the WISG, and if not recommend options.
* Advise BSRN on requirements and timeliness for a modification of the BSRN data base.
* Advise WMO of any issue that may have been identified in the review process and that will require follow-up activities.

The meeting will also be invited to provide advice on the potential impacts of proposed changes to stakeholders including changes to traceability requirements.

1. **Other Business**

Under this agenda item, the meeting will be invited to consider any other issue brought forward by participants at the meeting.

1. **Closure of the Session**

The Session is tentatively scheduled to close around 17:00 on Friday 17 November 2017.

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