



Form for Regular Reporting of CIMO Testbeds and Lead Centres

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

Terms of Reference for CIMO Testbeds and Lead Centres are available under:
<http://www.wmo.int/pages/prog/www/IMOP/Testbeds-and-LC.html>

Name of Testbed / Lead Centre	Lindenberg Meteorological Observatory – Richard-Aßmann-Observatory (Deutscher Wetterdienst – DWD, German Meteorological Service)
Location of Testbed / Lead Centre	Lindenberg / Germany

Contact Person for the Lead Centre	
Courtesy Title	Mr Dr
Family name	Berger
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Has contact person changed in last 2 years?	Yes
If yes, who was the previous contact person?	Dr Frank Beyrich

Report on Activities

Main activities that LC carried out in the last 2 years for which results are already available:

- Systematic and comprehensive intercomparison of temperature-structure-parameter observations from airborne, tower and scintillometer measurements
- Installation of new measurement systems for soil variable measurements (soil temperature, soil moisture, soil heat flux) below grass and bare soil at the boundary-layer field site Falkenberg and at a pine forest site

Main activities that LC carried out in the last 2 years for which results will soon be available:

- Testing of the operational capabilities of the microwave scintillometer RPG-MWSC160 – comprehensive reporting and dialogue to / with the manufacturer on required system software modifications and improvements in view of a prospected routine operation
- Assessment of different methods for the determination of cloud cover and cloud type using radiation sensors, ceilometers, cloud radar, Nubiscope and hemispherical sky cameras sensitive in the visible and infrared wavelength range
- Determination of vertical radiative flux and net radiation profiles in the atmospheric boundary layer and up into the stratosphere using tethered balloons and radiosondes, respectively.
- Determination of nocturnal AOD and precipitable water vapor (PWV) using moon photometry

Which guidance documents/standard procedures were developed during the last 2 years (please include full reference and web-link if available)?

- None

Which IOM reports / peer-reviewed publications were published in the last 2 years (please include full reference and web-link if available)?

- Braam, M.; F. Beyrich, J. Bange, A. Platis, S. Martin, B. Maronga, A. F. Moene, 2016: On the Discrepancy in Simultaneous Observations of the Structure Parameter of Temperature Using Scintillometers and Unmanned Aircraft. *Boundary-Layer-Meteorol.* **158**, 257-283, doi: 10.1007/s10546-015-0086-9
- Schulz, J.-P.; G. Vogel, C. Becker, S. Kothe, U. Rummel, B. Ahrens, 2016: Evaluation of the ground heat flux simulated by a multi-layer land surface scheme using high-quality observations at grass land and bare soil. *Meteorol. Z.* **25**, 607-620; doi: 10.1127/metz/2016/0537

Title(s) of IOM report(s) presently being developed by your Lead Centre: (please specify level of development: draft, ready for review, ...)

- none

Has your Lead Centre collaborated with one or more CIMO Expert Teams in developing guidance material? Yes

If yes, with which CIMO Expert Team(s)?

CIMO ET-ORST (B.1), CBS ET-SBO

Capacity Building and Training Activities

Which capacity building/training activities have been carried out by the Lead Centre in the last 2 years?

- None

Has your Lead Centre developed a twinning activity / special relationship with a companion station/site from a developing country? No

If yes, with which station/site?

Does not apply

Is your Lead Centre making an oral/poster presentation at this year's TECO? Yes / No (If yes, please specify Title(s) and Author(s) of the presentation(s))

- Intended, decision TBD in response to the call for papers

Recent Changes in Circumstance

Have there been any recent changes in your Lead Centre's capabilities? If so, please specify:

- No relevant changes

Have there been any recent changes in your Lead Centre's infrastructure? If so, please specify:

- Currently, building activities are under way to improve the infrastructure for radiation and boundary layer measurements

Have there been any recent changes in your staffing? If so, please specify, and advise whether replacement staff have the required competencies:

- Several changes in scientific and technical staff over the past two years, new staff members carefully selected to obey the competences needed for running testbed tasks at high standard, several scientists that were previously working on project money at MOL-RAO could be hired as permanent staff members

Future Plans

What are your plans for the next two years?

- Automatic detection and quantitative characterization of low-level clouds (derivation of cloud cover and cloud base height / ceiling) from a combination of ground-based remote sensing instruments (nubiscope + ceilometer + Doppler lidar + hemispherical sky cameras sensitive in the visible and infrared wavelength range)
- Further testing of the operational capabilities of the microwave scintillometer RPG-MWSC160 based on new system software versions
- Derivation of turbulence and boundary layer parameters from IR Doppler lidar measurements
- Concurrent measurements of window and windowless broadband infrared radiometers to examine the impact on infrared measurement traceability
- Determination of vertical radiative flux and net radiation profiles on a regular basis using radiosondes

Is your Testbed/Lead Centre able to continue in the role of a Test Bed/Lead Centre during the coming two years?

Yes

Other relevant information (other activities of special interest to CIMO, etc...)

- none

14.03.2018

Date

Frank Beyrich (on behalf of Franz Berger)

Name of Person Filling the Form