



**World Meteorological Organization**  
**Organisation météorologique mondiale**

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Weather • Climate • Water  
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## 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>

<b>Name of Testbed / Lead Centre</b>	<b>CIMO testbed for GAW observations of reactive gases and aerosols</b>
<b>Location of Testbed / Lead Centre</b>	<b>Hohenpeißenberg Meteorological Observatory, 980 m a.s.l. on an isolated mountain 40 km north of the Alps</b> <b>Global Atmosphere Watch – Global Station, Germany</b>

<b>Contact Person for the Testbed/Lead Centre</b>	
<b>Courtesy Title</b>	Dr.
<b>Family name</b>	Plass-Duelmer
<b>First name</b>	Christian
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<b>Has contact person changed in last 2 years?</b>	No
<b>If yes, who was the previous contact person?</b>	

<b>Report on Activities</b>
<b>Main activities that TB/LC carried out in the last 2 years for which results are already available:</b>
<ul style="list-style-type: none"> <li>Results from routine in-situ measurements (since 1994) of reactive atmospheric species (e.g. ozone,</li> </ul>

nitrogen oxides, carbon monoxide, sulphur dioxide, VOCs, hydroxyl, sulphuric acid) within GAW

- Results from routine in-situ measurements of physical, chemical and optical properties of aerosols
- Results from sun photometer measurements within AERONET and the PFR network
- Dobson instrument intercomparison campaign as part of the activities of the RA VI Regional Dobson Calibration Center

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

- International ceilometer intercomparison campaign (12 ceilometers, 6 types, 3 manufacturers, 1 Raman lidar) carried out in collaboration with the Met. Observatory Lindenberg (Germany) between June and September 2015, see <http://ceilinex2015.de>. Focus on aerosol profiling, cloud base height, PBL height.
- Intercomparison of aerosol filter measurements (Berner impactor, Partisol) and measurements of an ACSM (Aerosol Chemical Speciation Monitor)
- Routine operations/measurements of MAX-DOAS (O<sub>3</sub>, NO<sub>2</sub>, partially SO<sub>2</sub>) in collocation with in-situ NO<sub>2</sub> measurements
- Preparatory work for routine ceilometer calibration within E-PROFILE/EUMETNET and TO-PROF (COST ES1303)

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

- [https://www.wmo.int/pages/prog/arep/gaw/ozone\\_2014/documents/Full\\_report\\_2014\\_Ozone\\_Assessment.pdf](https://www.wmo.int/pages/prog/arep/gaw/ozone_2014/documents/Full_report_2014_Ozone_Assessment.pdf) (W. Steinbrecht as lead author of chapter 2)
- [http://www.wmo.int/pages/prog/arep/gaw/documents/FINAL\\_GAW\\_221.pdf](http://www.wmo.int/pages/prog/arep/gaw/documents/FINAL_GAW_221.pdf)

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

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Margit Pattantyús-Ábrahám and Wolfgang Steinbrecht: "Temperature Trends over Germany from Homogenized Radiosonde Data", *J. Clim.*, 28, 5699-5715 DOI: 10.1175/JCLI-D-14-00814.1, 2015

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

- Measurement guidelines for NMHC measurements, draft
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**Has your Testbed/Lead Centre collaborated with one or more CIMO Expert Teams in developing guidance material? Yes**

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

WMO GAW Task Team on Observational Requirements and Satellite Measurements (TT-ObsReq) as regards Atmospheric Composition and Related Physical Parameters – chair G. Carmichael

Inter-Programme Expert Team on Observing System Design and Evolution (IPET-OSDE) – chair J. Eyre

WMO Lidar Qualification Working Group for Meteorology – chair P. Keckhut

**Capacity Building and Training Activities****Which capacity building/training activities have been carried out by the Testbed in the last 2 years?**

- 2 GAW-TEC courses per year together with personnel from our sister station Zugspitze/Germany

**Has your testbed developed a twinning activity / special relationship with a companion station/site from a developing country? Yes****If yes, with which station/site?**

Moussala/Bulgaria (GAW regional station)

**Is your Testbed/Lead Centre making an oral/poster presentation at this year's TECO? No (If yes, please specify Title(s) and Author(s) of the presentation(s))****Recent Changes in Circumstance****Have there been any recent changes in your Test Bed/Lead Centre's capabilities? If so, please specify:**

- Atmospheric profiling capacities enhanced w.r.t. to aerosols by operating a Raman Lidar instrument (POLLY<sup>XT</sup>, 3 wavelengths at 355, 532, 1064 nm, near-field observations at 532 nm, depolarization channel) from October 2015 onwards; new measurement platform established.
- Set-up of ICOS (Integrated Carbon Observing System) measurements at the Hohenpeissenberg television tower comprising CO<sub>2</sub>, CH<sub>4</sub>, CO, T measurements at different height levels, thereby providing data for intercomparison campaigns

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

- New ozone lidar (NDACC station) built up and first system tests successfully performed
- New aerosol lidar (EARLINET station) RALPH (Raman Lidar POLLY<sup>XT</sup> Hohenpeissenberg) see above for details

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

- Another 6 permanent positions (three scientists, 1 engineer, 2 technicians) from 2016 onwards for ICOS operations. Staff was already in place before on temporary contracts

**Future Plans****What are your plans for the next two years?**

- Set-up the German ICOS network (8 stations) by installing measurement containers and tall towers with similar instrumentation for CO<sub>2</sub>, CH<sub>4</sub>, CO and T- measurements
- Routine Lidar operations within EARLINET
- Routine calibration of DWDs ceilometers (CHM15K Nimbus), in order to provide continuously attenuated

backscatter coefficients	
<ul style="list-style-type: none"> <li>Continuation of all GAW-related aerosol and trace gas measurements</li> </ul>	
<b>Is your Testbed/Lead Centre able to continue in the role of a Test Bed/Lead Centre during the coming two years?</b>	Yes

<b>Other relevant information (other activities of special interest to CIMO, etc...)</b>	
<ul style="list-style-type: none"> <li>Regular radiosonde and ozone sonde launches (twice a week during summer half year, three-times per week during winter half year)</li> <li>Long-standing experience (partially since 1967) with ozone measurements (Dobson, Brewer, Microtops for total column ozone, Lidar for stratospheric ozone, ozone sondes for tropospheric profiling, ambient ozone measurements)</li> <li>AERONET station</li> <li>GAW-PFR station</li> <li>Aerosol analysis centre of DWD with special focus on volcanic ash retrievals from ceilometer and Lidar measurements</li> <li>Longest OH/H<sub>2</sub>SO<sub>4</sub> measurement series (based on CIMS technology) word-wide</li> <li>Close collaboration with observatories Jungfraujoch/Switzerland and Sonnblick/Austria in the framework of DACH and GAW</li> <li>WMO class I weather station, 24/7 manned operations including eye observations</li> </ul>	

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<b>Date</b> February 29 <sup>th</sup> , 2016	<b>Name of Person Filling the Form</b> Christian Plass-Dülmer, Werner Thomas
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