



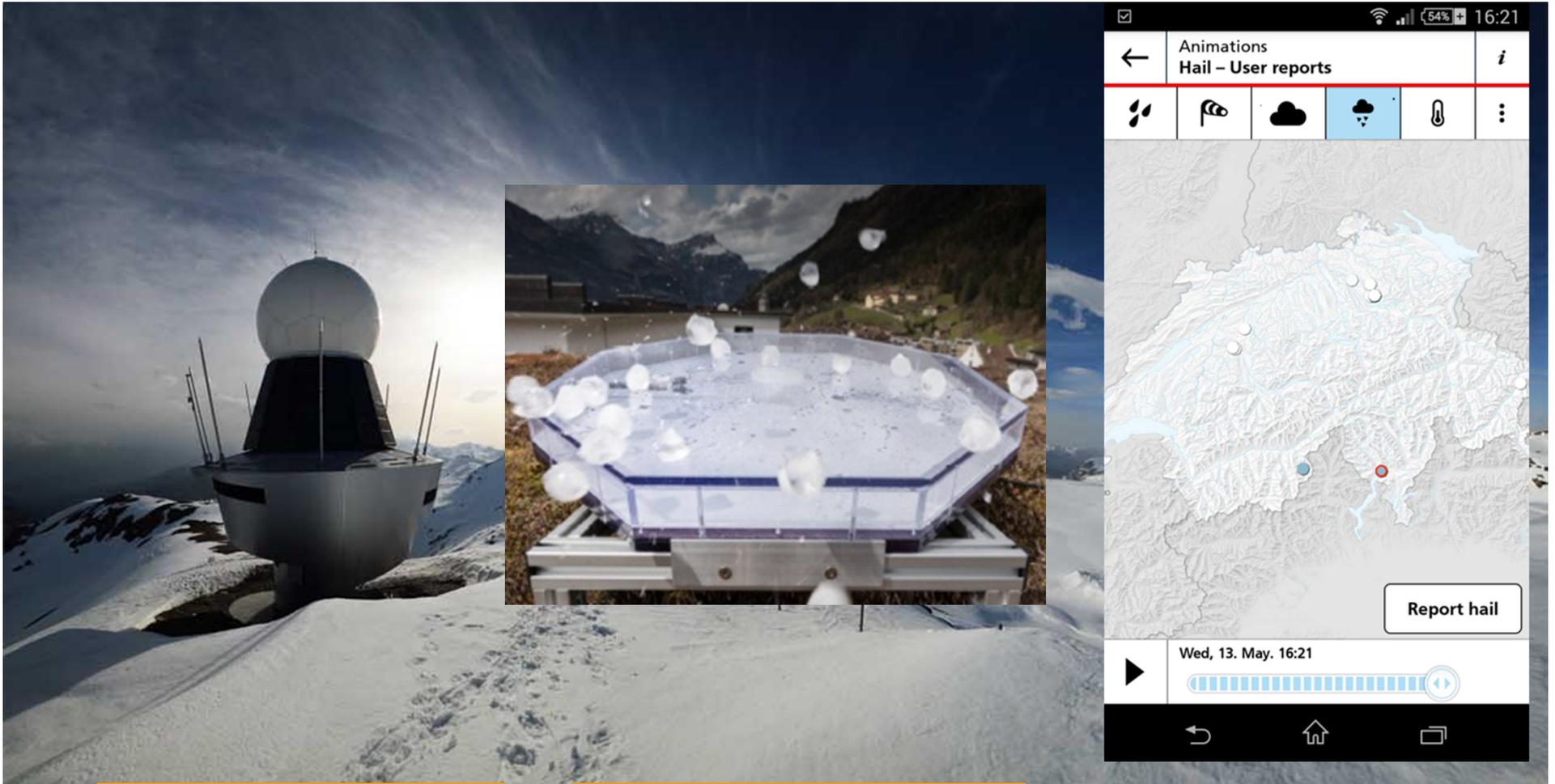
World Meteorological Organization

Weather • Climate • Water

# Report by the President of the Commission for Instruments and Methods of Observation

Bertrand Calpini

# «CIMO embracing WIGOS ...



Remote sensing + In situ observation + crowdsourcing



## ... with a clear mission

Promote:

- high quality observational data
- world-wide compatibility

by:

- Defining technical standards,
- Testing and calibration
- Performing instrument intercomparisons,
- Implementing quality control procedures.
- Increasing expertise and Capacity-building

for:

- Improving quality of products and services



...and a clear path, every day!»

- **Standardization**

- CIMO Guide / Intercomparisons / ICA / BIPM, ISO

- **Capacity development**

- CIMO TECO, training courses, guidance material, low cost observation technologies

- **Looking forward**

- Use current-day technologies / collaborate with other TCs & ISO & private sector

- **Efficiency and effectiveness**

- Teleconferencing / Public Private Partnership



## ... with major achievements in 2011-2015:

1. Update of the **CIMO Guide**
2. Solid Precipitation Intercomparison Experiment (**SPICE**, still undergoing)
3. Collaboration with the HMEI and **ISO**
4. International Cloud Atlas **ICA**
5. **Capacity development** (TECO, training courses, guidance material)



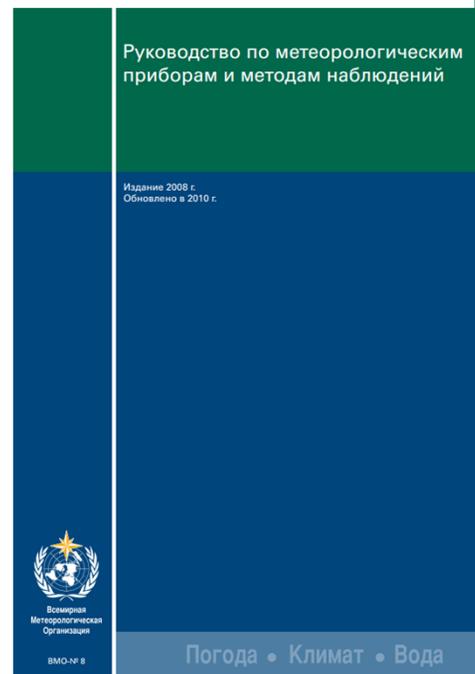
# I. Updated CIMO Guide in the spirit of WIGOS

- ***CIMO Guide Ed 2014*** A major update of the Guide to Meteorological Instruments and Methods of Observation (CIMO Guide) was approved by CIMO-16 (2014)
- ***Collaboration*** with CAS, CBS and JCOMM
- ***Including***
  - New Part on **Satellite Observations**
  - Fully revised chapters on
    - Measurement of **upper-air pressure, temperature, humidity**
    - Measurement of **atmospheric composition**
    - Electromagnetic methods of **lightning detection**
    - Measurements of **Weather Radar**



...in 4 WMO languages

The CIMO Guide (2008 Ed, Updated in 2010) is now available in:



Спасибо



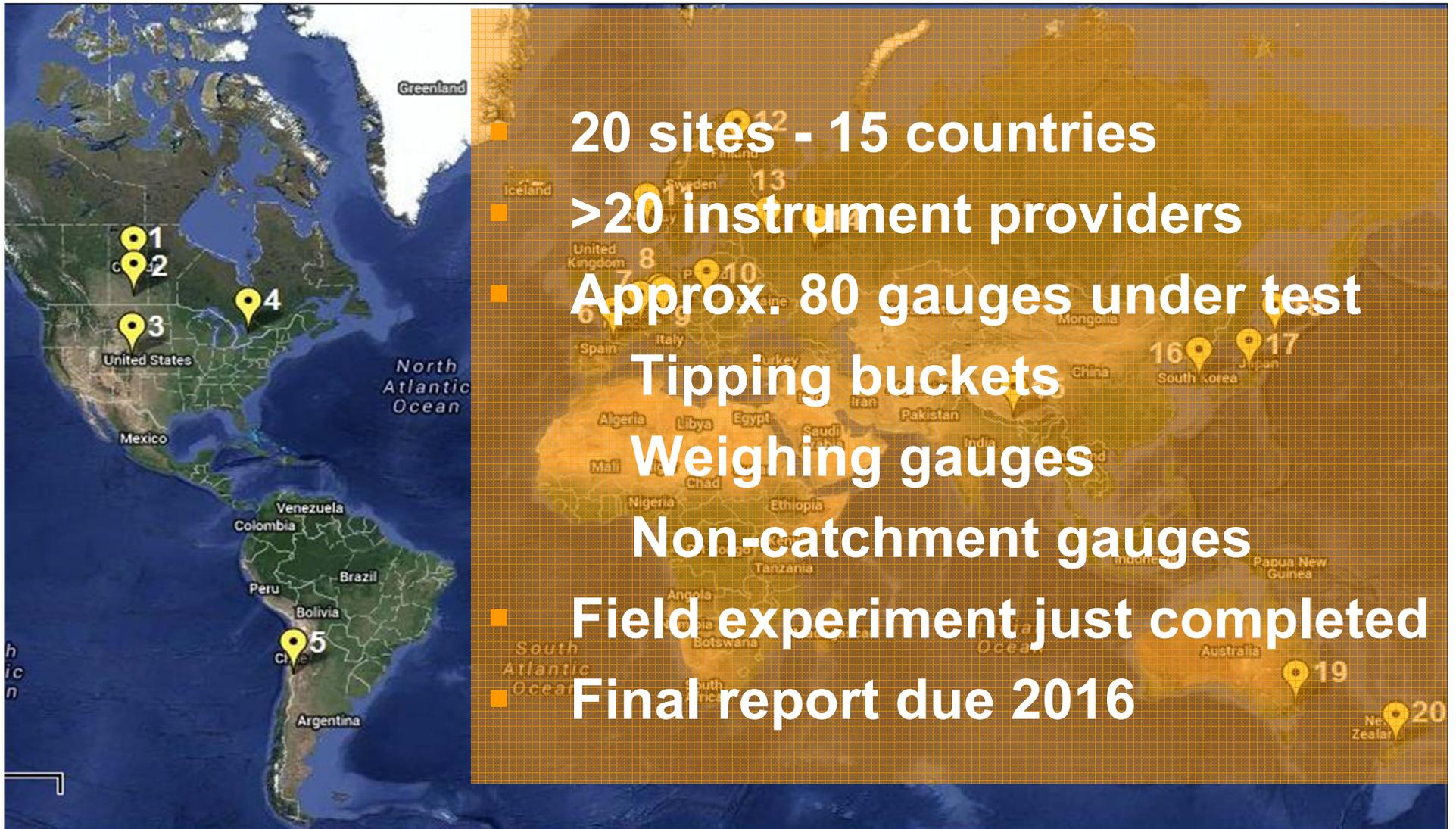
Gracias



Merci



## II. WMO Solid Precipitation InterComparison Experiment (SPICE)



# WMO Solid Precipitation Intercomparison Experiment (SPICE)

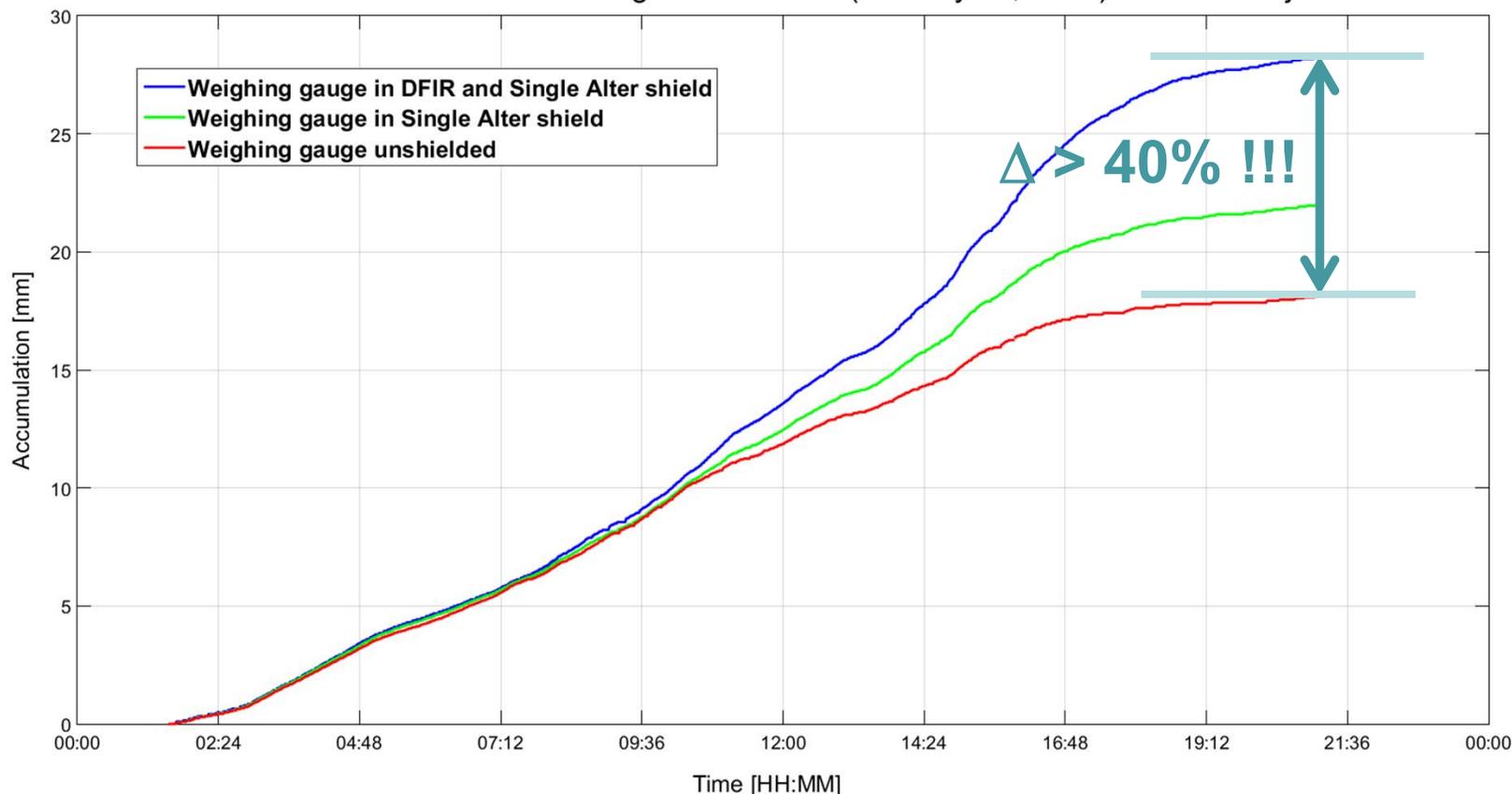


# WMO Solid Precipitation Intercomparison Experiment (SPICE)



# WMO Solid Precipitation Intercomparison Experiment (SPICE)

Accumulation over 24 hours during a snow event (January 14, 2014) at Weissfluhjoch site



The World Meteorological Organization Solid Precipitation InterComparison Experiment (WMO-SPICE) and its applications

Editor(s): M. E. Earle, S. Morin, R. M. Rasmussen, M. A. Wolff, and D. Yang

In prep.: Special issue jointly organized between Atmospheric Measurement Techniques,

Earth System Science Data, Hydrology and Earth System Sciences, and The Cryosphere

[http://www.earth-syst-sci-data.net/special\\_issue400\\_78.html](http://www.earth-syst-sci-data.net/special_issue400_78.html)

# III. The New Edition of the International Cloud Atlas

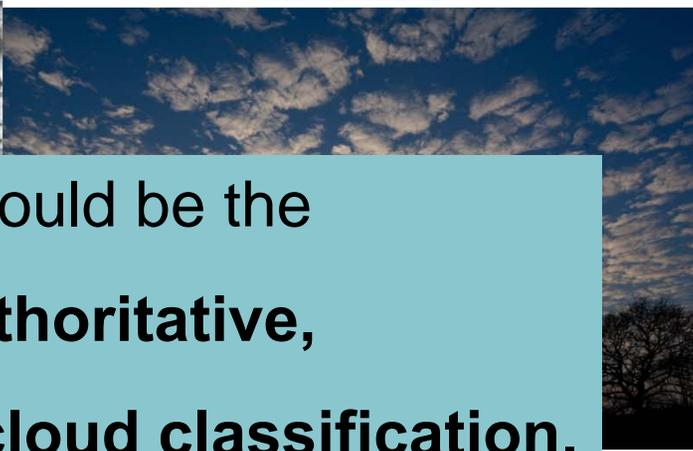
- New cloud classifications
- New imagery
- New Cloud Identification Aids
- Glossary
- Web-based structure
- Plan:
  - End of 2015: All material assembled
  - End of 2016:
    - The new ICA Edition 2016 as a webbased tool.



# Why must we revise the ICA?

**OLD**

**NEW**

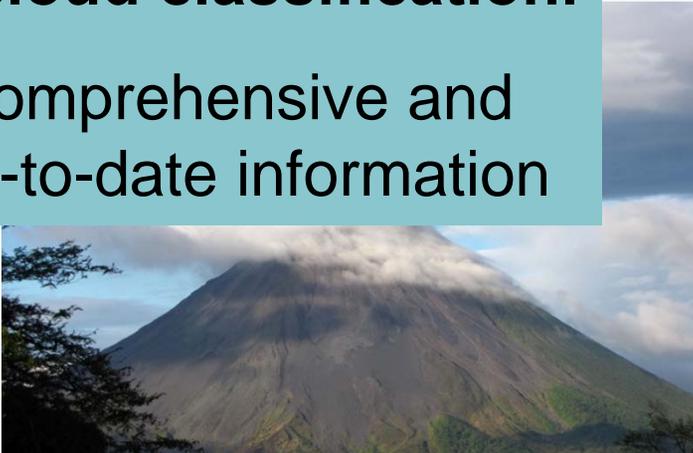
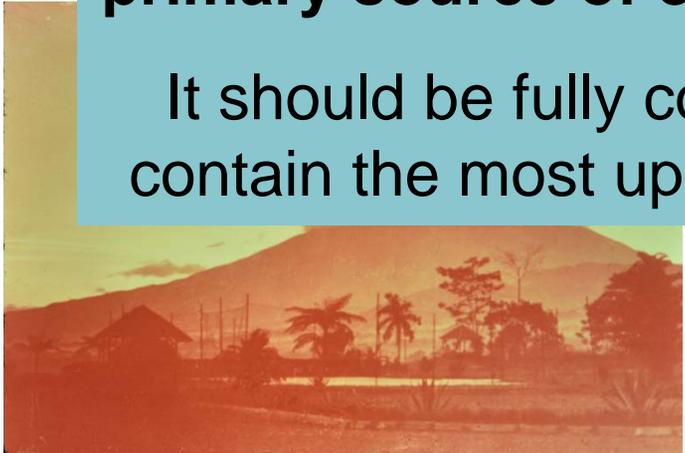


The ICA should be the **world's authoritative, primary source of cloud classification.**

It should be fully comprehensive and contain the most up-to-date information

Altocumulus  
stratiformis  
translucidus perlucidus  
over SE England

@ Richard Griffith



Orographic cap cloud

@Sally Wilkinson



## IV. Common WMO-ISO standards\*

- 1<sup>st</sup> common WMO-ISO standards approved: **Siting classification** for surface observing stations on land
- “Ground-based remote sensing of wind by heterodyne pulsed **Doppler lidar**”
- “Ground-based remote sensing of precipitation – **Weather radar**“, Part 1 “Weather radar system performance and operation”: just initiated
- In the pipeline: Wind profilers, Radiation, Rainfall intensity classification

\* An ISO standard is a document describing a procedure to be followed, and does not have the meaning of a WMO standard practice that requires Members to implement it. ISO standards are voluntary, as long as they are not prescribed in regulatory documents, such as the WMO Technical Regulations and Manuals, laws, etc...



## V. Capacity Development as an on-going requirement in CIMO

- CIMO Guide regular updates
  - CIMO TECO as major events for Capacity building including PPP
  - Transitioning from manual to automatic observations – Integrated guidance to Members on AWS\*
  - Adapting to consequences of Minamata
  - Replacing obsolete instruments
  - Supporting the strengthening and growth of Regional Instrument Centres
  - Web access to relevant information, guidance & training material
  - In close collaboration with the Education and Training office
- 
- \* Whole of life-time planning philosophy



# CIMO as a building block in WIGOS

- *Increased focus on remote-sensing (surface and space-based)*
  - Weather radar practices-standardization, Wind profilers, integrated data products
- *WIGOS Standardization*
  - Regular update of the CIMO Guide
  - WMO-ISO Standards (where it brings a benefit)
  - Update of the International Cloud Atlas
- *Intercomparison:* International Pyrheliometer Comparison, SPICE, Aerosol/Volcanic Ash detection or upper-air measurements (feasibility studies are currently on-going)



# CIMO and CBS in ICG WIGOS

OPAG IOS	
WIGOS Pre-Operational Phase	Tues 26th May 17:45
Users' readiness for the new generation of meteorological satellites	Wed 27th May 13:30
Observing Systems Capabilities and Review Tool (OSCAR)	Wed 27th May 17:45
EUMETSAT and Africa	Thu 28th May 17:45
Creating volunteer observing networks	Fri 29th May 17:45
Space weather	Tues 2 <sup>nd</sup> June 13:30
WIGOS for RA-I	Weds 3rd June 17:45
Expansion and enhancement of the aircraft-based observations (AMDAR)	Fri 5th June 12:45
Information session on Guide to NMHS participation in radio frequency coordination	Mon 8th June 17:45
Socio- Economic Benefits of Meteorological and Hydrological services	Thu 28 <sup>th</sup> May 1330

Ref. CBS President report

CIMO Guide and New Edition ICA	Tues 26th May 12:45
<u>Brochure at disposal during CG17th</u> <ul style="list-style-type: none"> <li>&gt;&gt;&gt; «Mercury is banned»</li> <li>&gt;&gt;&gt; «Metrological Traceability for Meteorology»</li> </ul>	



**World  
Meteorological  
Organization**

Weather • Climate • Water

Thank you for your attention

**IMOP/CIMO website:**

<http://www.wmo.int/pages/prog/www/IMOP/IMOP-home.html>