# GSICS MW SubGroup

## 18 July 2018 – 1100-1230 UTC

**GSICS Microwave Sub-Group web meeting**
**Tuesday, 18 July 2018**
**1100 UTC**
**Meeting number (access code): 952 607 734**
**Meeting password: lower case acronym that we usually use…**

**https://eumetsat.webex.com/eumetsat/j.php?MTID=m4e3ff1e7954f633b6300d8bcfc42f52b**

**Join by phone**
Global call-in numbers: https://eumetsat.webex.com/eumetsat/globalcallin.php

# Agenda for Today

1. Introductions, old business, action items (Ralph) (10 min)
2. Status of on-going activities/action items/EP (Tony, Manik) (15 min)
3. Ideas for NRT MW intercalibration products (Tim) (10 min)
4. CEOS WGCV and GSICS interactions (Cheng-Zhi) (10 min)
5. Science/Agency Reports (15 min each)
   - MW Humidity Sounder FCDR for the Copernicus Climate Change Service (Timo)
   - Data assimilation of MW measurements at CMA (Qifeng)
   - Microwave radiometry at CLS: ground processing, instrumental monitoring and atmospheric parameter retrievals (Bruno)
6. AOB, wrap up, next meetings, etc. (5 min)

Over 50 members!

# Members

Signed up as of July 2018

- NOAA (and affiliates) - Ralph Ferraro (Chair), Huan Meng, Cheng-Zhi Zou, Tony Reale, Mark Liu, Manik Bali (Univ. Maryland), Isaac Moradi (Univ. Maryland), Hu ("Tiger) Yang (Univ. Maryland), Wenze Yang (Univ. Maryland), Johnny Luo (City College New York), Xailei Zou (Univ. Maryland), Lin Lin (Univ. Maryland), John Yang (Univ. Maryland)
- EUMETSAT (and affiliates) – Tim Hewison, Karsten Fennig, Viju John, Jörg Ackermann, Sabatino DiMichele, Sante Laviola, Vinia Mattoli, Sreerekha Thonipparambil, Christophe Accadia, Timo Hanschmann, Martin Burgdorf (Hamburg Univ.), Imke Hans (Hamburg), Ralf Bennartz (Vanderbilt Univ.), Bruno Picard (CLS)
- NASA (and affiliates) – Ed Kim (GSFC), Tanvir Islam (JPL), Linwood Jones (Univ. of Central Florida), Rachael Kroodsma (Univ. of Maryland), Wes Berg (Colorado State Univ.), Thomas Holmes (GSFC)
- NIST – Derek Houtz, David Walker, Dazhen Gu
- ECMWF – Steve English, Heather Lawrence
- CMA (and affiliates) – Songyan Gu, Qifeng Lu, Lin Chen, Hu Yang, Xiaolong Dong, Shengli Wu, Xiuqing Hu
- KMA (and affiliates) – Jun Park, Dong-Bin Shin (Yonsei University, South Korea), Dohyeong Kim, Minju Gu
- JAXA (and affiliates) - Misako Kachi, Takashi Maeda
- IISC – Ram Ratan

# Open & New Action Items

| Action Id | Item | Summary | Lead | What to Do | Expected Completion | Actual Completion | Deliverable Usage | Status |
|---|---|---|---|---|---|---|---|---|
| A.GMW.2017.6g.1 | MW RTM comparison | MW co-chair to develop set of specific tasks to be performed by the Subgroup to intercompare RTM output over static references and surface models. Tasks to be identified within 6 months (Sep. 2017). | Isaac Moradi | Information | 2018-08-01 | | | Open |

| Action Id | Item | Summary | Lead | What to Do | Expected Completion |
|---|---|---|---|---|---|
| A.GMW.2018.9a.1 | MW CDR GSCIS product | Are diurnal cycle affects included in the NOAA MSU/AMSU CDR time series generated by NESDIS (Cheng-Zhi Zou)? If not, then its a candidate for a GSICS product. | Manik Bali | Information | 2018-10-01 |
| A.GMW.2018.9e.1 | MW ISO | GSICS (C. Zou) and CEOS WGVC (X. Dong) to coordinate on best practice for MW Sensors and coordinate on the development of a MW ISO sensor document (similar to other wavelengths) lead by Dong's group. | Cheng-Zhi Zou | Information | 2019-03-01 |
| A.GMW.2018.9g.1 | MW GPSRO reference | GPSRO focal points (X. Zou/Lin and S. Hu) to further evaluate their results for effects of cloud water and cloud ice and report back to the group within 6 months. | Scott Hu | Analysis | 2019-10-01 |
| A.GMW.2018.9k.1 | MW Best Practices | In order to determine best practice for pre and post-launch (include best practices for MW SNO inter-comparisons) best practices and share proposed best practices matrix with MW members and develop consensus. | Manik Bali---Need a Tiger Team | Information | 2018-10-01 |
| A.GMW.2018.9k.2 | MW Best Practices | Manik will survey existing satellite operator monitoring pages and present finding within 6 months. | Manik Bali—Need a Tiger Team | Information | 2018-10-01 |
| A.GMW.2018.9k.3 | MW Best Practices | Manik will ask around to find these websites and make them available. | Manik Bali—Need a Tiger Team | Information | 2018-10-01 |
| A.GMW.2018.9k.5 | MW CDR as an in-orbit reference | To determine if the NOAA CDR (MSU/AMSU/ATMS) is a viable in-orbit reference, Zou and Bali will report back to the group after a forthcoming paper is published. | Cheng-Zhi Zou | Information | 2019-03-01 |
| A.GMW.2018.9l.1 | MW in-orbit reference | Collect and document "best practices" from NASA GPM X-Cal group to see if GMI can serve as an in-orbit reference. | Ralph Ferraro/Rachel Kroodsma | Information | 2018-12-31 |

# Backup Slides

# Scope of Microwave Sub-Group

- Understanding the users' requirements for inter-calibration products for microwave instruments
  - Imagers + sounders – passive only (initially, but eventually consider active if there is a need…)
  - Retrospective calibration (CDR's and their components like geolocation, scan biases, inter-satellite)
  - Forward looking calibration (near-real time uses)
- Identifying existing products that could meet those requirements, but first….
  - Need to define criteria…Reference standards (sensor(s), models, calibration methodologies….)
  - And then a process that adheres to GSICS principles
- We should also focus on tools/algorithms like SNO, Double Difference, RTM, etc.
  - Might be something more feasible in near term?
- Define data standards (jointly with GDWG)
- Encourage the creators of those products to submit them to the GSICS Procedure for Product Acceptance (GPPA), once its defined for MW
  - Candidates include Cheng-Zhi Zou (MSU-AMSU), Karsten Fennig (SSMI), GPM X-Cal LUT's
- Coordination with other groups (e.g., CEOS WGCV MW, GPM X-Cal) would also be required to generate standards and best practices

# Focus Topics for 2017-2018

- Defining CLEAR PATH for **GSICS MW products and algorithms**
  - Methodologies *(Jun Park, Rachel Kroodsma)*
    - SNO, Double difference, etc.
  - Reference Standards *(Manik Bali, Isaac Moradi, Derek Houtz)*
    - A particular sensor? Likely to be wavelength dependent (e.g., window, $O_2$, $H_20$); A RTM?
  - LUT/Correction Tables *(Karsten Fennig, Cheng-Zhi Zou, Viju John)*
    - Near real-time and climate; they will be different
- Tying together other groups/opportunities
  - GPM X-Cal *(Wes Berg, Rachel Kroodsma)*
  - CEOS MW subgroup *(Cheng-Zhi, Xiaolong Dong)*
  - Expanding active participation *(Manik Bali, Ralph Ferraro)*
  - GRUAN *(Tony Reale, Cheng-Zhi Zou)*
  - FIDUCEO *(Martin Burgdorf)*
  - GAIA-CLIM *(Heather Lawrence/Steve English)*
- Continued participation by subgroup at meetings of relevance:
  - GSICS; CEOS;CALCON, Microrad, AMS Sat. Met, EUMESAT Satellite, etc.