



NASA Agency Report 2017

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Presentation Overview

- ❖ Agency's GSICS Activities, Action & Achievements Summary
- ❖ Agency's support to GDWG Activities (**NA**)
- ❖ Agency's support to GRWG Activities
- ❖ Agency's Instruments Updates & Planned launches – relevant to GSICS if any
- ❖ Introduce/Confirm the Agency's Personnel supporting GSICS
- ❖ Agency's GSICS activities to be discussed in this joint meeting.



Agency's GSICS Activities, Actions & Achievements Summary (1)

❖ *Activities and Achievements (GSFC/LaRC):*

- Improvements: pre-launch and on-orbit calibration (GSFC)
- Applications: lunar calibration and calibration inter-comparisons (GSFC)
- Calibrated the 2000 to 2017 constellation of GEO visible and IR radiances referenced to Aqua-MODIS C6 in the CERES Edition4A products (LaRC)
 - Used all-sky tropical ocean and DCC ray-matching as well as desert and DCC invariant target methods
- Completed and released VIIRS L1B V2.0.0 (GSFC)
- Delivered calibration improvements in MODIS L1B C6.1 (GSFC)
- Optimized DCC invariant target method for all visible and SWIR bands and applied the method to characterize the MODIS RVS trending (GSFC/LaRC)
- Coordinated with IVOS web meetings for a reference solar spectra (Dave)
- Provided MODIS/VIIRS calibrated lunar irradiance for GSICS related and/or interested activities (GSFC)
- Supported S-3 OLCI SD BRDF characterization (Jack)
- Documentation: conference proceedings and journal papers



Agency's GSICS Activities, Actions & Achievements Summary (2)

Action Id	Item	Summary	Lead
GVNIR.2016.2n.1	GSICS products with INSAT-3D	Dave to provide MODIS data to ISRO to perform inter-calibration using DCC.	NASA(Dave)
GVNIR.2016.4a.1	lunar calibration and Earth View discrepancy	Aisheng and Tom to interact in order to investigate the discrepancy between the lunar calibration results and the Earth View results on both Terra and Aqua MODIS.	NASA(Aisheng), USGS(Tom)
GVNIR.2016.4n.1	Progress toward DCC Demo product	Dave will work with KMA to implement the GSICS DCC process to promote KMA to demonstration product.	NASA(Dave)
GVNIR.2016.4o.1	Progress toward DCC Demo product	Dave to provide information on Aqua MODIS for GOES instruments.	NASA(Dave)
GVNIR.2016.4p.1	Discussion Outstanding issues on DCC algorithm, Demo products & GPPA, Journal article	Dave to coordinate the writing of a paper on the GSICS DCC GEO-LEO algorithm.	NASA(Dave)
GVNIR.2016.7d.1	GRWG Summary and Agree Actions	NASA(Dave) to work with KMA for KMA to enter DCC demo-phase.	NASA(Dave)
GVNIR.2016.7d.2	GRWG Summary and Agree Actions	Dave to contact IVOS Chair and ACC to coordinate a recommended update to reference solar spectrum to convert from radiance to reflectance by setting up web meeting.	NASA(Dave)
GVNIR.2016.7i.1	Topics & Chairing next Web Meetings	Dave to contact Nigel about joint web meeting.	NASA(Dave)
GVNIR.2016.7i.5	Topics & Chairing next Web Meetings	Dave to provide EUMETSAT with VIIRS data to generate inter-calibration of all SEVIRI warm channels using the DCC method.	NASA(Dave)
GVNIR.2016.7i.6	Topics & Chairing next Web Meetings	Dave to organise a web meeting about the publication on DCCs.	NASA(Dave)
GWG.2016.7j.3	Date & Place of Next WG Meetings	Dave to contact D. Tobin (CLARREO group) to check the possibility to organise the meeting in NOAA, Madison.	NASA(Dave)



Support to GDWG Activities (NA)

❖ *A maximum of 1 slide highlighting your agency's support to GDWG.*

- *Summary of the tasks your agency's supports in the GDWG.*
- *Overview of the resources and time taken for this support.*
- *Identify issues with this support, if any.*



Support to GRWG Activities

❖ *Tasks NASA Supports*

- Reflective solar calibration reference transfer (MODIS to VIIRS), including calibration traceability and accuracy assessments
- Lunar calibration support for GSICS related activities
- Improvements and applications of calibration inter-comparison methodologies
- NASA ROSES Satellite Calibration Inter-consistency Studies A.34)
 - 3-year funding at 1 FTE (Doelling) for SBAF development and Aqua MODIS to S-NPP VIIRS inter-consistent calibration coefficients

❖ *Resources and Effort (time taken)*

- NASA effort not directly funded for GSICS activities

❖ *Issues*

- No dedicated resources



Agency's Instruments Updates & Planned launches

❖ *Current Missions/Instruments*

- EOS Missions (OMI, MODIS, AIRS, AMSU, ...) since 1999, 2002, 2004
- EO-1 since 2000
- S-NPP (OMPS, VIIRS, CrIS, ATMS, ...) since 2011
- Landsat 8 OLI since 2013

❖ *Future Satellites and Programs*

- JPSS (NOAA): 2017 (J1), 2021 (J2)
- TSIS: 2018 (T-1), 2020 (T-2)
- TEMPO: 2018
- CLARREO Pathfinder: 2020
- Landsat 9 OLI (USGS): 2021
- PACE: 2022

❖ *CubeSats and Small Satellite Program*



Introduce/Confirm the Agency's Personnel supporting GSICS

❖ *GRWG Members*

- MCST and VCST at GSFC: Jack Xiong (lead), Amit Angal, Tim Chiang, Ben Wang, Truman Wilson, and Aisheng Wu (sensor pre-launch and on-orbit calibration, lunar calibration, calibration inter-comparison)
- CERES Cal Team at LaRC: Dave Doelling (lead), Raj Bhatt, Ben Scarino, Conor Haney, and Arun Gopalan (GEO visible channel calibration, DCC)
- AIRS, SeaWiFS, and OLI participants: Tom Pagano (JPL), Gene Eplee (GSFC), and Lawrence Ong (GSFC)
- NASA GRWG members provide support to GSICS when their funded tasks are aligned with GSICS activities

❖ *GDWG Members (NA)*

❖ *Key Agency Personnel*

- Jim Butler (GSFC): GSICS EP
- Kurt Thome (GSFC): CEOS WGCV



Agency's GSICS activities to be discussed in this joint meeting.

❖ *GSICS Activities of Agency Interests*

- Calibration reference (reference sensor; solar spectral)
- Calibration inter-comparison and inter-calibration, including calibration transfer methods
- Lunar calibration related topics
- The NASA SBAF tool development and enhancement
 - Needs the latest calibrated GOME-2 (Lang) and SCIAMACHY (Krijger) datasets.
 - Needs updated or new sensor spectral response functions

❖ *Agency Activities of GSICS Interests*

- Pre-launch calibration and characterization
- Calibration traceability (pre-launch to on-orbit)
- Ground Cal/VAL activities



Thank you for your attention

WMO GSICS Portal

<http://gsics.wmo.int>

GSICS Coordination Centre

<http://www.star.nesdis.noaa.gov/smcd/GCC/index.php>

GSICS Product Catalog

<https://www.star.nesdis.noaa.gov/smcd/GCC/ProductCatalog.php>

GSICS Wiki

<http://gsics.atmos.umd.edu/wiki/Home>