2015 GSICS Users’ Workshop, 22 September 2015, Toulouse France

Prepared by L. Flynn, GCC Director

This document contains the GSCIS Coordination Center (GCC) report on the 2015 GSICS Users’ Workshop. First, we would like to thank EUMETSAT, and Tim Hewison in particular, for hosting the workshop as part of their recent Meteorological Satellite Conference.

**Overview**

Thirty calibration researchers and product users participated in the annual Global Space-based Inter-calibration System (GSICS) Users’ Workshop. The workshop was arranged as an afternoon session of the 2015 EUMETSAT Satellite Conference but allowed participation without registration in the main conference. The agenda for the Workshop is provided as an attachment. Wenjian Zhang, Director of the WMO Observing and Information Systems Department gave a short welcome to open the meeting. The first part of the meeting provided an introduction to the purpose, activities and products of GSCIS and the GSICS Coordination Center. The second part was an interactive session allowing attendees to request more information. The third part was presentations by product users on their experiences and expectations. The fourth part was summaries and discussion of responses to a series of questionnaires on GSICS current and desired new activities. The questionnaires had been circulated in the weeks before the workshop. The success of GSICS can be observed in the broad array of participation around the globe by representatives of meteorological and research institutes from China, Japan, Korea, US, India, and the European Union, and the coverage of their activities over measurements from instruments across the spectrum from Microwaves to the Ultraviolet. Presentations can be accessed at

 <https://gsics.nesdis.noaa.gov/wiki/Development/UsersWorkshop2015> .

**Detailed** Report

The first session consisted of four presentation providing background on GSICS and its evolving mission. Jerome Lafeuille (WMO) challenged participants to help to formalize GSICS user requirements for products and deliverables, establish requirements for pre-launch characterization data, and assist in reviewing the products and services delivered by GSICS. Product developers Tim Hewison (EUMETSAT) and Dave Doelling (NASA) reviewed GSICS comparison methods for IR and Visible instrument measurements and led discussions on reference instrument criteria, lunar calibration, product update frequencies, diurnal variations (especially for GEO ring inter-calibration), instrument acquisition and orbital stability and other product creation issues. Manik Bali (UMD/ESSIC) introduced the GSICS Product Catalog and its content, and solicited feedback on its format and on product metadata needs. The second session was a continuation of the discussion of the topics introduced in the first session.

The third session was a series of six presentations from users of GSICS products, providing their experiences, warnings, plans and preferences for product applications. Roger Saunders (UK Met Office) demonstrated the capability of Numerical Weather Prediction (NWP) models to help to understand and evaluate spectral and radiometric calibration products and provided recommendations for relative frequency of the updates for different measurement characteristics. Lei Yang (CMA) gave a condensed but comprehensive presentation on the GSICS activities for CMA’s GEO (FY-2) and LEO (FY-3) instruments and measurements including plans for lunar calibration work. Chang-Suk Lee (Pukyong National University) showed the good improvement in Communication, Ocean, and Meteorological Satellite (COMS)/Meteorological Imager (MI) Sea-Surface temperature records after applying GSICS-derived bias corrections. Regis Borde (EUMETSAT) identified issues faced in implementing GSICS corrections for Meteosat-7 and evaluating their impact on products.

The session continued with Karsten Fennig (DWD) covering a variety of issues present regarding requirements for generating Fundamental CDRs including differentiating between corrections and offset adjustment to a reference, traceability to original records, and the importance of reviewed documentation, such as ATBDs and validation reports. It concluded with Sante Laviola’s (ISAC –CNR) talk on factors affecting inter-calibration of the 183 GHz microwave channels and a discussion of the criteria for selection of a microwave reference instruments.

The fourth session was a series of reports, summaries and discussions on responses to the survey consisting of Users’ Feedback Questions. Reports on the submissions were provided by the GDWG Co-Chair, GRWG Subgroup Chairs, the GCC Deputy Director, and the GRWG Vice-Chair. Among the high interest topics in this final session were the following: 1. The content, format and traceability involved in providing intermediate products; 2. The need and sources for Spectal Band Adjustment Factors (SBAFs) and tools to work with the bandpasses; 3. The selection and evaluation of reference sensors for visible, microwave and ultraviolet sensor; 4. The identification of reference solar spectra (in coordination with CEOS) and their uncertainties and their representation of solar activity (especially below 400 nm); 5. The dual applications of GSICS adjustments for operational and climate purposes and interactions with the frequency and uncertainty of the products; and 6. Identification of best practices and shared resource development for ground-based calibration.

The web-based Survey will remain open for additional responses until at least 31 December 2015 at  <https://docs.google.com/a/noaa.gov/forms/d/1sXbhrq85aPa5Yh-gycNleX47CKkdjDZgb2lMY97-6sY/viewform> .

The GCC identified three actions from the meeting and feedback as follows:

**2015 UW Proposed Action #1 on GCC and GDWG:**

GCC is to develop and propose a model to help reduce the complexity involved in creating, distributing and using GSICS products. Provide users with a beta version of the GSICS data distribution model designed to help users navigate through the GSICS products and download the required variables more easily. One way of proceeding is to accept feedback from members on the proposed Beta version of the product catalogue. Feedback on the plotting tool and other services such as the wiki will be requested too.

**2015 UW Proposed Action #2 on GCC:**
GCC is to draft a strawman User Requirements’ document and send it out for review.

**2015 UW Proposed Action #3 on GCC:**
GSICS users are requested to develop lists of the type of information that they think should be acquired during pre-launch characterization and made available to the users to support user preparation, and communicate this information to the GCC.

# GSICS Users Workshop 2015

Hosted at EUMETSAT Meteorological Satellite Conference

Room 2, MeteoFrance[?](https://gsics.nesdis.noaa.gov/wiki/bin/edit/Development/MeteoFrance?topicparent=Development.UsersWorkshop2015" \o "Create this topic" \t "_blank) Conference Centre, Toulouse, France, 22 September 2015, 13:00-17:30.

Agenda

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| 13:00-14:00 | A. Introducing GSICS –and Current Products + Announcements1. Jerome Lafeuille – [Introducing GSICS + terminology](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/A1_Lafeuille_GSICS_Intro-2.pptx)
2. Tim Hewison – [IR Product announcements + Update policy](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/A2_Hewison_IR_Announcements.pptx)
3. Dave Doelling – [VIS/NIR Product announcements](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/A3_Doelling_VISNIR_Announce_2015_09.pptx) – seeking beta testers
4. Manik Bali – [Servers, Catalogs, and Tools – how to access GSICS data](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/GSICS_Users_workshop_France.pptx%3EGSICS_Users_workshop_France.pptx%3C/a%3E)
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| 14:00-14:30 | B. Questions and Answers on GSICSInteractive questions from audience |
| 14:30-14:45 | Scheduled Break |
| 14:45-15:45 | C. Feedback from beta testers/Users - presentations on external users' experience1. Roger Saunders (UKMO) - Spectral Corrections
2. Yai Lang (CMA) – Benefits from GSICS algorithms for FY-3 calibration
3. Chang-Suk Lee (PKNU) - Current status and preliminary results on GSICS-based FCDR of COMS
4. Regis Borde (EUMETSAT) – [Feedback on GSICS Correction for Meteosat-7](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/C4_Borde_GSICSpres_4_EUM_Conference_2015.pptx)

(+ Randhir Singh - Discussion on Meteosat Water Vapor impact)1. Karsten Fennig (DWD) - [FCDR Requirements](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/C5_Fennig_FCDR_requirements.pdf)
2. Sante Laviola (ISAC-CNR) – Requirements for microwave inter-calibration
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| 15:45-17:30 | D. Discussions on 7 User Feedback Questions1. Masaya Takahashi (JMA) - GSICS Intermediate data and GEO Ring requirements
2. Dohyeong Kim (KMA) - GSICS IR Products – Diurnal cycle

(Discussion of survey results provided before the meeting)1. Dave Doelling (NASA) – VIS Products
2. Ralph Ferraro (NOAA) – [Microwave Products](https://gsics.nesdis.noaa.gov/pub/Development/UsersWorkshop2015/D4_Ferraro_Microwave_Questions.pptx) - Remotely
3. Rose Munro (EUMETSAT) – UV Sub-Group
4. Manik Bali (NOAA) – Expectations from a Reference Instrument
5. Tim Hewison (EUMETSAT) – Other Products
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Attendance List

Myoung-Hwan Ahn Ewha University

Manik Bali UMD/ESSIC

Ken Carey ERT, Inc.

Regis Borde EUMETSAT

David Doelling NASA

Ralph Ferraro NOAA (Remotely)

Karsten Fennig DWD

Lawrence Flynn NOAA

Bertrand Fougnie CNES

Paul Griffith Harris

Chistopher Hanson EUMETSAT

Andrew Heidinger NOAA

Tim Hewison EUMETSAT

Misako Kachi JAXA

Dohyeong Kim KMA (Provided input before the meeting.)

David Kunkee The Aerospace Corp.

Jerome Lafeuille WMO

Ruediger Lang EUMETSAT

Sante Laviola ISAC –CNR

Chang Suk Lee PKNU

Yuan Li NSMC/CMA

Rosemary Munro EUMETSAT

Eric Pequignot CNES

Noh-Hun Seong PKNU

Randhir Singh ISRO (Provided input before the meeting.)

Masaya Takahashi JMA

Sebastian Wagner EUMETSAT

Likun Wang NOAA/STAR

Hu Yang UMD/ESSIC

Lei Yang NSMC/CMA

Fangfang Yu NOAA

Wenjian Zhang WMO

XiaoxiongXiong, NASA

Yong Zhang NSMC/CMA