

GLOBAL SPACE-BASED INTERCALIBRATION SYSTEM (GSICS)

Summary of Joint Meeting of the GSICS Research and Data Working Groups

JMA Headquarters, Tokyo, Japan, 28-30 January 2009

INTRODUCTION

The Global Space-based Inter-Satellite Calibration System (GSICS) Research Working Group (GRWG) and the Data Management Working Group (GDWG) met 28-30 January 2009 in Tokyo, Japan. The Japan Meteorological Agency (JMA) hosted the meeting at its headquarters. Volker Gärtner and Fred Wu, chair of GDWG and GRWG, respectively, co-chaired the meeting. Yoshiro Kozawa, Director-General of JMA Observations Department, welcomed the delegates at the beginning of the meeting. Tetsu Hiraki, Director-General of JMA, hosted a reception for the meeting in the evening. Meeting participants are very appreciative of JMA for logistical support and hospitality.

The meeting was composed of a two-day joint session for review and discussion of issues of mutual interest to both working groups, with a one-day break out session in between. Attending the meeting (Fig. 1) were 24 delegates and 6 observers from 15 government agencies, universities, and inter-government organizations. These include Chiba University, China Meteorological Administration (CMA), Centre National d'Etudes Spatiales (CNES), European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), Japan Aerospace Exploration Agency (JAXA), JMA, Korea Meteorological Administration (KMA), National Aeronautics and Space Administration (NASA), NOAA, Seoul National University, University of Tokyo, University of Wisconsin (by telephone), Utah State university, and World Meteorological Organization (WMO). The agenda is attached as Annex 1 and participants are listed in Annex 2. Presentations are available at <http://www.star.nesdis.noaa.gov/smcd/spb/calibration/icvs/GSICS/index.html>.



Figure 1: Group picture of participants of GSICS Research and Data Management Working Group (GRWG & GDWG) Meeting at JMA, Tokyo, Japan, 28 January 2009.

SECTION A: JOINT SESSION

J. Lafeuille briefed on the outcomes of the 9th Consultative Meeting on High Level Policy on Satellite Matters (CM-9). He noted that GSICS was widely supported and encouraged; that Indian Space Research Organization (ISRO) indicated interest to join GSICS; and that GSICS has been proposed as a pilot project for the WMO Integrated Global Observing System (WIGOS). He also briefed on the outcomes of the 4th (July 2008) and 5th (November 2008) Executive Panel Meetings (EXP-4 & EXP-5), in particular the 2009 Operation Plan and the resulting tasks for both Working Groups. Participants reviewed all the tasks and, with minor revision, agreed to carry out all as assigned.

D. Tobin briefed on Climate Absolute Radiance and Refractivity Observatory (CLARREO), in particular the sampling strategy and its impact on inter-calibration. Participants recognized the importance of CLARREO as accurate and SI-traceable benchmark measurements in space, which is especially valuable to GSICS. Participants would also like to collaborate with CLARREO to add emphasis on intercalibration with GEOs.

Participants heard progress reports from GRWG chair, GDWG chair, and GSICS Coordination Center (GCC) director; from representatives of GSICS Processing and Research Centers (GPRCs), including, EUMETSAT, NOAA, JMA, KMA, and CMA; and from T. Hewison on hierarchical structure for the Algorithm Theoretical Basis Document (ATBD) as the framework for GSICS. Participants were pleased with the progresses, in particular all GPRCs are now capable of generating some GSICS products, and some of the GSICS activities have led to positive impact on satellite operation.

The maturity and availability of GSICS products bring out many interesting possibilities that are worthwhile to pursue. Nevertheless, participants felt the need to focus on selective core products that the satellite users need the most and the GSICS community is the most capable of producing. The consensus is that the initial GSICS core product should be centered on quantifying the inter-satellite bias that depends on satellite, channel, time, and may be other factors, and is well characterized in terms of uncertainty. However, the core product should not be called bias, which suggests that the product is only a constant for each data sample. "Correction" is better, as it suggests applying a function (e.g. linear, or non-linear correction) without assuming that it is constant, the reduction of the bias being one of the consequences of applying the correction function. It was felt that the word "GSICS" should be in the name, as this will be its core product. It was recommended to develop "GSICS Correction" as one of its core products.

It was recommended that every GPRC test an optimized algorithm of its choice to produce the GSICS Correction for its satellites. In addition, NOAA GPRC is to produce the GSICS Correction for all satellites with the baseline algorithm, which will serve GSICS community for quality control and algorithm improvement. All algorithms are to be documented with the hierarchical ATBD. GCC is to coordinate the harmonization of GSICS Correction dissemination in terms of internet access (web portal etc.), format, frequency, and so forth. A GSICS Users Workshop is planned, in conjunction with the 2009 EUMETSAT Satellite Meteorology Conference in Bath, UK, September 2009; GSICS Correction will be presented, along with other information, services, and products.

SECTION B: GRWG BREAKOUT SESSION
(Some of the discussions also occurred during the Joint Session)

1. Discussions that led to GRWG recommendations

Working Group meeting

Background

At its inaugural meeting in October 2006, the GSICS Executive Panel envisioned semi-annual meetings for GSICS working groups, which were held as scheduled for three times. The current meeting, however, has been one year from the previous meeting for various reasons. In fact, after the intensified building phase of GSICS infrastructure and with the complementary use of web-meetings, it was suggested that an annual face-to-face working group meeting may be sufficient.

Another concern is the balance between discussions on business and research at the working group meeting. While primarily devoted to reviewing past progresses, resolving current discrepancies, and planning for future activities, the GRWG set aside approximately one day in each of its meetings for members to present their research results and agency activities. These sometimes are not closely related to the current focus of GSICS.

Discussion

The option of holding the GRWG meetings before, during, or after conferences was discussed and rejected. These meetings require participants' full attention for three days. Dedicated annual meeting seems the best solution. Members are encouraged to host these meetings in turn.

The GRWG is tasked to focus on the research aspects of GSICS, which is explorative in nature. Ample latitude, therefore, is needed to discuss a wide range of topics, the choices of which are to large extent the discretion of members. On the other hand, it is recognized that the annual face-to-face meeting is best for activities that require nearly simultaneous and immediate responses from all members. One compromise is to enhance the use of modern communication tools such as web meeting, pre-recorded presentations, and Visit View for research discussion. At the annual GRWG meetings, approximately one day will be allocated to discuss research; however members are encouraged to limit their topics to those directly related to GSICS.

Recommendation

Conduct a dedicated working group meeting annually, hosted by members in turn. Utilize modern communication tool to present and discuss research outside of GRWG annual meetings. Allocate one day during the GRWG annual meeting for important topics that requires all members' attention or reaction.

Internal communication

Background

The participating organizations have formally designated their participants in the GRWG, however many GRWG activities involve more than these members. There were occasions when certain message did not communicate to the individual who participated in certain GSICS activities. On the other hand it is not necessary or appropriate to always inform all about all topics.

Discussion

The nomination and subsequent replacement of working group members is strictly the responsibility of each organization, represented by its Executive Panel Member. For official business, it is generally sufficient to inform the members of GRWG, who may inform other relevant individuals in their respective agency. For general matters, a channel should be available to communicate with broad GSICS community.

Recommendation

Restructure the mailing group into one that is for GSICS Community and one (actually several) that is for members of GSICS working groups etc. In future and in consultation with GDWG, another mailing group may be created for GSICS Users. Nominated Working Group Members are responsible for communications with relevant individuals in their agency.

CLARREO

Background

D. Tobin presented an overview of CLARREO and his study about the impact of various sampling strategy on inter-calibration. Participants recognized its importance as accurate and SI-traceable benchmark measurements in space, which is especially relevant to GSICS.

Discussion

Tobin's study focused on LEO-CLARREO inter-calibration. While that is well done and extremely important, participants would also like to extend the study to GEO-CLARREO inter-calibration. Compared with LEO-CLARREO, GEO-CLARREO may have more collocations that are less uniform, and its overall impact on inter-calibration is not obvious. It is important for the GEO community to know what to expect from CLARREO, and possibly to help optimize CLARREO design.

Recommendation

CLARREO (POC D. Tobin) to expand its simulation study of CLARREO sampling strategy to cover both LEO and GEO, in collaboration with GRWG (POC F. Wu). GRWG Members, through F. Wu and D. Tobin, to provide feedback to the CLARREO team on the sampling strategy and its potential for GEO collocations.

GSICS users' workshop

Background

The Terms of Reference of GRWG include “Organize annual workshop to review the GSICS research programme” and “Recommend to the GSICS Executive Panel topics for scientific workshops and sessions at scientific meetings to advance the objectives of GSICS”. The EP recommended a workshop for selected GSICS beta users that can assess the feasibility of GSICS products and its impacts on these users' products.

Discussion

Participants welcome the concept of Users' Workshop. It is suggested to hold the first of such workshops in conjunction with EUMETSAT Conference in September 2009 at Bath, UK. In the future such workshop may be held in conjunction with annual Calibration Conference at Logan, Utah.

Recommendation

Prepare the first GSICS Users' Workshop in September 2009, Bath, UK. The Organizing Committee should be composed of M. Goldberg (chair), V. Gärtner, J. Lafeuille, P. Minnis, F. Wu, and one representative each from CMA and JMA (TBD). Selected users should include ECMWF, Hadley Center, ISCCP, CM SAF, Land surface community (contact B. Ryan), CEOS CVWG, and others.

Instrument data

Background

Critical instrument data for COMS, e.g., spectral response function, are not available.

Discussion

These data are critical in GSICS collaboration.

Recommendation

KMA to publish relevant COMS data, e.g., spectral response function.

METEOSAT data for CNES

Background

CNES requested subset of METEOSAT data over SADE targets.

Discussion

These data are critical in GSICS collaboration.

Recommendation

EUMETSAT to provide the subset of Meteosat data to CNES over their targets.

Brief summary of GSICS products and services

Background

Participants reviewed the GSICS Product and Service Roster prepared by GCC and recognized this as an important effort in coordinating GSICS activities among GPRCs.

Discussion

Guided by CERES experience, it is highly beneficial to provide a short summary of the product and service available from GSICS. Names do not convey sufficient information, especially for those new to GSICS. Detailed documents or manual can also turn users away. One page is usually a good compromise.

Recommendation

GCC to provide a one page summary for each product and service on the roster. May use CERES products summary as template.

Check list for product acceptance

Background

Participants reviewed the GSICS Product Acceptance Procedure prepared by GCC and recognized this as another important effort in coordinating GSICS activities among GPRCs.

Discussion

Past experience indicates that completing a check list, instead of filling out a form, is as effective but much easier to use.

Recommendation

Use check list (instead of form) for Product Acceptance.

Coordination of inquiry on instrument anomaly

Background

After the recent IASI power-down and power-up, there were speculations that the data quality was compromised.

Discussion

Although this has been neither formally reported by any one nor confirmed by the GSICS community (that includes the instrument operator), it may affect users' confidence in the instrument and its data quality. Such anxiety could be avoided if users know of a reliable channel that can clearly communicate the relevant information.

Recommendation

GCC to coordinate inquiry and response to instrument anomalies (e.g., decontamination, recovery) through GSICS web and links to GPRCs.

POC for GSICS operations and product acceptance

Background

Upon proposal from the GCC, the EP requested point of contact (POC) from each GPRC for matters related to GSICS operation and product acceptance, respectively. J. Lafeuille asked the views of the working group before asking for nominations.

Discussion

Participants felt that, by default, respective GDWG and GRWG members can serve, at least initially, as POC for GSICS operation and product acceptance, respectively.

Recommendation

Unless otherwise defined by each respective GPRC, the GDWG member should be its POC regarding GSICS operation; the GRWG member should be its POC regarding GSICS Product Acceptance.

GSICS publications

The GSICS website and Quarterly produced by GCC are important media to inform GSICS interested users. References of relevant publications should be included in the newsletter and the website.

Recommendation

All GSICS partners to send to GCC (Bob.Iacovazzi@noaa.gov) their publications relevant to GSICS, for inclusion of their reference in the GSICS Quarterly and the website. (Note: See also recommendation GDWG03_04, adopted by GDWG, in Section C below.)

2. Discussions that led to GRWG actions

GSICS 2009 Operation Plan

Background

EP-5 approved GSICS 2009 Operation Plan.

Discussion

The Plan was broken down for individual member and working group before the meeting for review. At the meeting, participants reviewed the Plan together in its entirety, with minor suggestions for modifications, e.g., additional member want to contribute a task, some tasks are better assigned to other members, and some tasks need revised finish time.

Action

Pending final approval of the modification by the EP, members are to carry out the GSICS 2009 Operation Plan.

GSICS hierarchical ATBD

Background

ATBD is a critical document for GSICS. A hierarchical structure has been specifically designed for GSICS ATBD and accepted by GRWG.

Discussion

The GPRC members agreed to describe their algorithms in ATBD. To facilitate compliance with the hierarchical structure, one month is allocated after the contents of the ATBD are complete and before the final ATBD is submitted to GCC. Since JMA, CMA, and KMA algorithms are based on NOAA's algorithm, their ATBDs can also be modified from that of NOAA, therefore NOAA is encouraged to distribute its ATBD in March.

Action

All GPRCs shall prepare its ATBD, to be reviewed at the web meeting in May 2009 and submitted to GCC by June 2009. NOAA shall distribute its ATBD before the web meeting in March 2009.

GSICS Correction

Background

GSICS Correction is recognized as the first core product.

Discussion

It is imperative to define, generate, distribute, and evaluate the GSICS Correction quickly, at the minimum before the Users' Workshop. Since currently all GPRCs have some capability of inter-comparing their GEO with AIRS and/or IASI, the first priority is to achieve and maintain routine comparisons. These may be generated with various algorithms optimized for specific GEO or agency priority, so the next step is for all GPRCs to document their algorithm (see related action) and harmonize the presentation of their results.

In the meantime, NOAA GPRC is encouraged to produce GSICS Correction for all GEOs using a common baseline algorithm. This is neither in lieu of those produced by respective GPRCs, nor as an alternative; rather, the purpose is to provide the GSICS community with a reference for algorithm comparison and improvement.

Action

Each GPRC shall initiate routine inter-comparison for its GEO by March 2009, with its choice of algorithm and format for the product. The documentation and harmonization of these products shall be discussed at the March and May GRWG web meetings. The initial release shall occur by June 2009 for review and beta-testing in summer 2009. NOAA GPRC shall produce GSICS Correction for all GEOs using a common baseline algorithm to facilitate algorithm comparison and improvement.

GSICS Product Acceptance Procedure

Background

GCC requested feedback from GRWG for the GSICS Product Acceptance Procedure.

Discussion

GRWG recognized this as an important effort in coordinating GSICS activities among GPRCs. The best way to gain experience and provide feedback is to try it out.

Action

All GPRCs shall evaluate the Product Acceptance Procedure with the LEO-LEO products and possibly with a GSICS product of its choice, and provide feedback on scientific criteria to be met by GSICS products by June 2009.

SADE data for GSICS

Background

CNES partially opened its SADE database for GSICS. However, most of its targets are in North Africa deserts, which is not visible by several GEOs.

Discussion

In response, CNES agreed to characterize two additional targets as accurately as those in SADE, provided that enough measurements taken on these targets by various instruments are provided to CNES (e.g. geostationary, MODIS, FY-1, FY-3 , etc.) with format and data content as presented during the GRWG4 meeting. Of course, CNES will also use data from its own instruments (mainly PARASOL/POLDER and VEGETATION) to perform this characterization. GRWG is requested to select these two targets.

Action

B. J. Sohn shall coordinate with CMA, JMA, KMA, NOAA, and NASA to identify the targets by June 2009.

GSICS Implementation Plan

Background

EP requested the GSICS Working Groups to review the GSICS Implementation Plan endorsed at its inaugural meeting in October 2006, in the light of experience.

Discussion

GRWG should review the Plan as requested.

Action

F. Wu shall coordinate a review of GSICS Implementation Plan by December 2009.

3. Summary of recommendations from GRWG-4

Recommendation GRWG4_1 Working Groups Meetings

- 1.1. Conduct dedicated meetings annually, hosted by members in turn.
- 1.2. Utilize modern communication tools to present and discuss research outside of the annual meetings.
 - 1.2.1. NOAA to gain the capability of hosting web meeting by March 2009
- 1.3. Allocate one day during the GRWG annual meeting for important research topics that require many members' attention or reaction

Recommendation GRWG4_2 Internal Communications

- 2.1. Re-organize the mailing groups
 - 2.1.1. GSICS Community: Open to all interested
 - 2.1.2. GSICS Working Groups: Members only
 - 2.1.3. GSICS Users: to be established, in consultation with GDWG
- 2.2. Members be responsible for communications within their agency

Recommendation GRWG4_3 CLARREO

- 3.1 CLARREO (POC D. Tobin) to expand its simulation study of CLARREO sampling strategy to cover both LEO and GEO, in collaboration with GRWG (POC F. Wu).
- 3.2 GRWG Members, through F. Wu and D. Tobin, to provide feedback to the CLARREO team on the sampling strategy and its potential for GEO collocations.

Recommendation GRWG4_4 Hold the first GSICS Users' Workshop in September 2009, Bath, UK. The Organizing Committee should be composed of M. Goldberg, J. Lafeuille, P. Minnis, V. Gärtner, and one representative each from CMA and JMA (TBD). Selected users should include ECMWF, Hadley Center, ISCCP, CM SAF, Land surface community (contact B. Ryan), CEOS CVWG, and others.

Recommendation GRWG4_5 KMA to publish relevant data, e.g., spectral response function

Recommendation GRWG4_6 EUMETSAT to provide subset of Meteosat data to CNES over their targets

Recommendation GRWG4_7 GCC to provide a one page summary for each product and service on the roster. May use CERES products summary as template.

Recommendation GRWG4_8 Use check list (instead of form) for Product Acceptance

Recommendation GRWG4_9 GCC to coordinate inquiry and response to instrument anomalies (e.g., decontamination, recovery) through GSICS web and links to GPRCs.

Recommendation GRWG4_10 Unless otherwise defined by each respective GPRC, the GDWG member should be its POC regarding GSICS operation; the GRWG member should be its POC regarding GSICS Product Acceptance.

Recommendation GRWG4_11 All GSICS partners to send to Bob Iacovazzi their publications relevant to GSICS, for inclusion of their reference in the GSICS Quarterly and the website.

4. Summary of actions from GRWG-4

Action GRWG4_1 Members shall carry out the modified GSICS 2009 Operation Plan by December 2009.

Action GRWG4_2 All GPRCs shall prepare its ATBD, to be reviewed at the web meeting in May 2009 and submitted to GCC by June 2009. NOAA shall distribute its ATBD before the web meeting in March 2009.

Action GRWG4_3 All GPRCs shall routinely produce the GSICS Correction for its GEO by March 2009, with its choice of algorithm and format for the product.

Action GRWG4_4 The documentation and harmonization of the GSICS Correction shall be discussed at the March and May web meetings. The initial release shall occur by June 2009.

Action GRWG4_5 NOAA GPRC shall produce GSICS Correction for all GEOs by March 2009, using a common baseline algorithm to facilitate algorithm comparison and improvement.

Action GRWG4_6 All GPRCs shall evaluate the Product Acceptance Procedure with the LEO-LEO products and a GSICS product of its choice, and provide feedback on scientific criteria to be met by GSICS products by June 2009.

Action GRWG4_7 B. J. Sohn shall coordinate with CMA, JMA, KMA, NOAA, and NASA to identify the targets by June 2009.

Action GRWG4_8 F. Wu shall coordinate a review of GSICS Implementation Plan by December 2009.

5. Review of actions from previous meeting

Eight of the ten actions generated at GRWG-III were closed. One is in progress (not due) and is in good status. One is waiting for update of status.

ACTION No.	ACTION	ACTIONEE	STATUS
GRWG-III 01	Implement inter-calibration of FY-2C/D with AIRS.	P. Zhang Jun 2008	Completed Dec2008
GRWG-III 02	Implement inter-calibration of MTSAT with AIRS/IASI.	Y. Tahara Jun 2008	Completed 02Jul2008
GRWG-III 03	Implement inter-calibration of METEOSAT-9/8/7 with IASI.	M. König Jun 2008	Completed Jun2008
GRWG-III 04	Implement inter-calibration of COMS with AIRS.	S. Chung Dec 2009	In Progress
GRWG-III 05	Implement inter-calibration of GOES-11/12 with AIRS/IASI	X. Wu Jun 2008	Completed Aug2008
GRWG-III 06	a) Web address sent to members b) Members review the content, request additional information, and provide information upon request c) Maintain the web	J. Lafeuille & Members Continuing	(a) done (b) and (c) on-going
GRWG-III 07	Recommend a reference temperature to use for reporting radiance uncertainty	T. Hewison Mar 2008	Completed 10Mar2008
GRWG-III 08	Evaluate the feasibility of using HYPERION data to characterize DCC spectrally.	X. Wu May 2008	Completed 03Jul2008
GRWG-III 09	Provide water ice absorption spectrum from IASI data to assist investigation of the 13.3 μm channel cold bias	D. Blumstein Apr 2008	Completed 09Apr2008
GRWG-III 10	Recommend a single "flag file" to be adopted by all AIRS users	M. Gunshor May 2008	?

Table 1: Status of GRWG-III Actions

SECTION C: GDWG BREAKOUT SESSION

1. Purpose of the meeting

The purpose of the GDWG breakout meeting was to review specific data management issues. Amongst them was the GSICS web presence and GSICS collaboration server issues. Furthermore it was intended to identify the work achievable by the GDWG for the next months.

The group discussed the following items:

- Location of the GSICS Central Website.
- Review of the GPRC web sites.
- Creation of a GSICS portal.
- Harmonisation of GSICS product presentation.
- Provision of calibration data from the CNES SADE Database.
- Operational issues for the GSICS Collaboration Servers.

2. GDWG discussions

Location of the GSICS central web site: “gsics.wmo.int”

The WMO agreed that they will create a website with the domain name “*gsics.wmo.int*” on the WMO Web site, following the same approach as for other WMO partnership projects (e.g. CGMS web site: “*cgms.wmo.int*”). This new central page will be the top level home page for GSICS with the following characteristics:

- This page shall be relatively static and provide general information for GSICS i.e. its mission statement and organisational goals. Information from the already existing GSICS web pages shall be used for the preparation of this page.
- The top level page will be created and hosted on the WMO web server.
- A link shall be made to the current NOAA GCC website, as this is the place where most of the detailed GSICS information is presented. This information need some update (see action **GDWG03_02**) nevertheless.
- From the GCC Web site links shall be available to all other GPRC GSICS related websites. These links shall point directly to the GPRC GSICS related pages and **NOT** the home page of the GPRC sponsoring organisations.

Action GDWG03_01: WMO to implement the new GSICS domain page (gsics.wmo.int) on the WMO Web site and populate it with general GSICS information. This shall be coordinated with the NOAA GCC. **End of March 2009.**

Review of NOAA GCC GSICS web pages

The main web information for GSICS is hosted at:

<http://www.star.nesdis.noaa.gov/smcd/spb/calibration/icvs/GSICS/index.php>

The Group reviewed the GCC website and identified the need for various updates. Also several suggestions for enhancements were offered to the GCC from the GDWG.

The current mission statements and the organisational goals are considered to be redundant on this website, provided that equivalent information appears on the central homepage at *gsics.wmo.int*. These pages should be reviewed and updated with support from the GPRC partners. Updates of the high level pages shall be ready for approval by the Executive Panel at their next meeting. This information shall also be used for the preparation of a GSICS flyer promoting GSICS in general.

Action GDWG03_02: Update the information on the GCC web site under the *GSICS Community* and the *Organisation* sections. The updates shall be presented to the next GSICS Executive Panel meeting for endorsement. **End of March 2009.**

Recommendation GDWG03_01: Creation of a GSICS flyer promoting GSICS based on the updated information from the GSICS central website.

It was emphasised that in the *Organisation* section of the GCC web site the role of the GSICS working groups (Terms of Reference) should appear more clearly.

Action GDWG03_03: GCC to highlight the role of the GRWG and GDWG by providing the ToRs on the GCC web site. **End of March 2009.**

The *Personnel* section on the website shall be updated to contain on the primary points of contact for each GPRC. All primary points of contact shall be nominated by members of the Executive Panel and passed via WMO to the GCC to update the page.

It was noted that some persons on the lists have almost never attended the WG meetings and others were not included. Therefore a need was identified for updating the relevant member lists.

Recommendation GDWG03_02: All GPRCs are reminded to identify their primary point of contact and inform the GCC via a member of the GSICS Executive Panel.

The *Meeting* section shall be used as a central location where presentations, agendas and documentation shall be uploaded prior to the GSICS WG meetings. Presently the distribution of information prior to the meeting is limited. It is hoped that the advance distribution will make more actual discussion time available for the face to face meetings of the groups in future.

Recommendation GDWG03_03: All GSICS attendees shall send their meeting documents to the GCC for upload to the Meeting page prior to the GSICS meeting. This shall be done at least two weeks prior to the meeting.

The working group agreed that the *News* section is an important way to let users of the GCC web site know what is evolving from the GSICS project. In addition to this, the *Newsletters* section (pointing to links to download *GSICS Quarterly* bulletin) is a very good means of publishing news that can be sent to interested parties via Email. It was agreed that this is one area where improvements can be made with minor effort. CMA, JMA and KMA stated that they are considering contributing more to the *News* section and the *GSICS Quarterly* bulletin in the future.

Recommendation GDWG03_04: All GPRCs are encouraged to collect news articles to promote the work done by the GSICS project and forward them to the GCC.

The *Products* section needs examples of products from each GPRC. The aim is to have examples of all products which are listed in the GSICS product roster.

Action GDWG03_04: All GPRCs shall send examples of their products to the GCC. **End of May 2009.**

It was discussed by the working group that the *Document >> Instrument Performance* section shall be updated with links to relevant instrument performance characteristics pages located on each GPRC website. This is useful information to support cross calibration calculations.

Action GDWG03_05: All GPRCs shall propose content of the *Instrument Performance* pages which they intend to display on their own web sites (ref CGMS36 - NOAA WP14). **End of July 2009.**

In addition to this, the *Documentation* section shall provide additional basic documents for GSICS. For example, the Procedure for Product Acceptance, and reference links to the Climate and Forecast Meta Data Conventions and WMO Filename Formats. Furthermore, some clear statements shall be introduced to state which basic documents are describing binding conventions and procedures.

Action GDWG03_06: GCC to start collecting this information for inclusion into the documentation section. **End of March 2009.**

Concerning documents, it was a wish of both Working Groups to also investigate which mechanisms could be used for collaboration via the internet.

Action GDWG3_07: A mechanism for document review and comments by all partners should be investigated by NOAA. **End May 2009**

It was agreed by the Working Group that it is necessary to install a 'members only' area on the GCC website. A single username and password should be passed to all GSICS members to access these pages.

Action GDWG03_08: GCC shall investigate the possibility of creating a 'members only' area, and if feasible implement it on the GCC site and the GSICS wiki. **End of March 2009.**

NOAA had demonstrated the use of the TWiki software, which runs the GSICS wiki, during the preparation of scientific documents for the Joint Working Group session. The Working Group agreed that this software shall now be tested by all partners. To facilitate this, a joint effort should be taken to prepare a first sample ATBD using the TWiki software.

Action GDWG03_09: Robert Iacovazzi, Aleksandar Jelenak and Tim Hewison to prepare an example ATBD document and to provide a recommendation on whether TWiki fulfils its proposed use in the GSICS project. **End of July 2009.**

Recommendation GDWG03_05: All GSICS members, especially the operations point of contacts, are encouraged to register for using the GSICS wiki.

The *Links* section needs to be reviewed and updated.

Action GDWG03_10: GCC to review and update the **Links** section. **End of March 2009.**

The Group agreed that the *Opportunities* section shall be removed, as this type of announcements can appear in the *News* section.

Action GDWG03_11: GCC to remove the *Opportunities* section. **End of March 2009.**

Thereafter the group briefly reviewed the GSICS pages of JMA and EUMETSAT.

Review of JMA GSICS web pages

The group complimented JMA for their impressive GSICS web pages. It was appreciated that the pages allow the download of results in different formats. It was suggested that this feature should be available on other GPRC's web sites.

Action GDWG03_12: All GPRCs to investigate whether the JMA website download option can be offered on their pages. **End of March 2009.**

Review of EUMETSAT GSICS web pages

The Group felt that the GSICS presentation on the EUMETSAT web site presenting the Inter-Calibration services is confusing as it refers to GSICS but also seems to include other calibration data derived by EUMETSAT. It was recommended that all EUMETSAT calibration information should appear in the GSICS project pages of EUMETSAT. It was suggested to remove the information on the GSICS Working Groups from the EUMETSAT GSICS pages, as this information shall be available from the central GSICS web sites (see Action GDWG03_03).

Action GDWG03_13: EUMETSAT to review and overhaul the structure and content of their GSICS web pages. **End of May 2009.**

Review of CMA GSICS web pages

A demonstration of the CMA GSICS prototype web pages was made during the joint session. The joint session took note and was pleased to hear that it is envisaged to release the CMA GSICS web pages in due time. It was recommended to CMA that the content for international usage should be presented in the English language.

Common actions after review of all web pages:

Further small actions were identified. It was highlighted that for promotion purposes all partners shall display the updated GSICS logo on their GSICS pages. NOAA was asked to provide this to the partners.

Action GDWG03_14: NOAA to provide the GSICS partners with the updated GSICS logo. **End of March 2009.**

Action GDWG03_15: All partners shall display this GSICS logo on their GSICS related pages. **End of April 2009.**

Creation of a GSICS Portal.

It was furthermore emphasised again that the GSICS web sites should be developed into a GSICS Web Portal. This Portal shall provide potential users with:

- Access to all GSICS services.
- A clearing house functionality (allow to discover all GSICS products and services).

The need for a GSICS Web Portal specification document was identified and the GCC was asked to make a start on preparing such a document for discussion at a future GSICS WG meeting.

Action GDWG03_16: GCC to make a start on preparing a specification document to capture the requirements for a GSICS Web Portal. **End of 2009.**

Harmonization of GSICS product presentation.

The Working Group spent some time discussing the optimization of the GSICS product display on the websites. It was recommended that the GSICS results be stored in the agreed NetCDF3 formats and then made available for display by the GCC. The exchange format for GSICS (NetCDF3) will allow for an easier display of results generated by the different partners. The delivery to external users could be done in any other user specific format, as long as the basic information is made available in NetCDF3 within the project.

The GRWG is asked to define the content of the GSICS NetCDF files.

Action GDWG03_17: GRWG to define the content of their NetCDF files with support from the GDWG. **End of March 2009.**

Provision of data from the SADE database.

Denis Blumstein (CNES) was invited to discuss the data access for the SADE database to support the GSICS project. CNES proposed to open the SADE database for GSICS members for desert targets.

Two access options were principally be envisaged:

1. delivery upon user request.
2. systematic routine data transfer onto a FTP server.

The group agreed that access option 2 was the preferred one.

The question remained how to organize the data on that server. The Working Group suggested that CNES follow the principles used for the GSICS collaboration servers. It was agreed that in order to access the FTP server, each GPRC would nominate one dedicated person who has to register to get access.

The following actions resulted from this discussion.

Action GDWG03_18: CNES to clarify and define the data (content, sizes, etc.) provided from the SADE database onto a dedicated FTP server. **End of May 2009.**

Action GDWG03_19: CNES shall clarify the joint access conditions (data policy ?) for the FTP server where the SADE data is located.

Action GDWG03_20: All GPRC shall nominate one person to access the SADE FTP server where the SADE data will be presented.

Action GDWG03_21: All GSICS partners are invited to provide some of their sensor data to populate the SADE FTP server with their additional database.

Recommendation GDWG03_06: CNES to consider following the principles and design of the GSICS collaboration servers.

GSICS collaboration server issues.

After a brief presentation of the current status of the GSICS data management server design (presented by Peter Miu, EUMETSAT), discussions began to focus on creating the first version of the GSICS collaboration servers. NOAA and EUMETSAT have data management servers which are close to reach an operational status. CMA, JMA and KMA were encouraged to develop their own servers. In the mean time, the partners are also invited to upload their datasets onto the already existing systems.

Recommendation GDWG03_07: All GPRCs are invited to create their own GSICS collaboration server.

To make the setup of additional GSICS collaboration servers easier, it deemed useful to create a specification document which outlines the services, directory structures and operational parameters together with some hardware specifications.

Action GDWG03_22: NOAA and EUMETSAT shall prepare operational service specification documentation for the current collaboration servers, specifying the services, directory structures and operational parameters these servers shall offer.

This document shall be submitted to all GPRCs for comment and if necessary update. Once reviewed, the GSICS executive panel shall further review the document and when applicable, endorse it as the operational service specification that all GSICS data management servers shall follow in order to be part of the collaboration servers.

Action GDWG03_23: NOAA and EUMETSAT to facilitate redundancy of the collaboration server services by mirroring datasets. Investigation shall take place to specify how datasets can be automatically uploaded between data management servers. **End of July 2009**

Recommendation GDWG03_08: All GPRC are invited to test the EUMETSAT and NOAA collaboration servers once they are operational and comment on the usability and services provided.

Recommendation GDWG03_09: All NetCDF data sets created by the GSICS working group shall adopt the Climate and Forecast Meta-data naming conventions.

At the end of the GDWG03 session the group briefly discussed the optimal times for holding the web based discussions, using Centra. It was agreed that from next time onwards the

meeting time should be 10h30 UTC as this would allow not extending the working day too late for the Asian colleagues.

Recommendation GDWG03_10: The group recommended that the time for web meetings of the GISCS Working Groups shall be 10h30 UTC.

At the end of the GDWG03 meeting the group expressed their appreciation and thanks to NOAA GCC for hosting the current GSICS website.

3. Summary of recommendations from GDWG-3

Recommendation GDWG03_01: Creation of a GSICS flyer promoting GSICS based on the updated information from the GSICS central website.

Recommendation GDWG03_02: All GPRCs are reminded to identify their primary point of contact and inform the GCC via a member of the GSICS Executive Panel.

Recommendation GDWG03_03: All GSICS attendees shall send their meeting documents to the GCC for upload to the Meeting page prior to the GSICS meeting. This shall be done at least two weeks prior to the meeting.

Recommendation GDWG03_04: All GPRCs are encouraged to collect News articles to promote the work done by the GSICS project and forward them to the GCC.

Recommendation GDWG03_05: All GSICS members, especially the operations point of contacts, are encouraged to register for using the GSICS WIKI.

Recommendation GDWG03_06: CNES to consider following the principles and design of the GSICS collaboration servers.

Recommendation GDWG03_07: All GPRCs are invited to create their own GSICS collaboration server.

Recommendation GDWG03_08: All GPRC are invited to test the EUMETSAT and NOAA collaboration servers once they are operational and comment on the usability and services provided.

Recommendation GDWG03_09: All NetCDF data sets created by the GSICS working group shall adopt the Climate and Forecast Meta-data naming conventions.

Recommendation GDWG03_10: The group recommended that the time for web meetings of the GISCS Working Groups shall be 10.30h UTC.

4. Summary of actions from GDWG-3

In addition to the recommendations, the following list of actions was established:

Ref. No.	Action	Actionees & due dates
GDWG03_01	WMO to implement the new GSICS domain page (gsics.wmo.int) on the WMO Web site and populate it with general GSICS information. This shall be coordinated with the NOAA GCC.	WMO End of March 2009
GDWG03_02	Update the information on the GCC web site under the <i>GSICS Community</i> and the <i>Organisation</i> sections. The updates shall be presented to the next GSICS Executive Panel meeting for endorsement.	GCC End of March 2009
GDWG03_03	GCC to highlight the role of the GRWG and GDWG by providing the ToRs on the GCC web site.	GCC End of March 2009
GDWG03_04	All GPRCs shall send examples of their products to the GCC.	GPRC End of March 2009
GDWG03_05	All GPRCs shall propose content of the <i>Instrument performance</i> pages which they intend to display on their own web sites (ref CGMS36 - NOAA WP14).	GPRC End of July 2009
GDWG03_06	GCC to start collecting this information for inclusion into the <i>Documentation</i> section.	GCC End of March 2009
GDWG03_07	A mechanism for document review and comments by all partners should be investigated by NOAA.	GCC End of May 2009
GDWG03_08	GCC shall investigate the possibility of creating a 'members only' area, and if feasible implement it on the GCC site and the GSICS wiki.	GCC End of March 2009
GDWG03_09	Robert Iacovazzi, Aleksandar Jelenak and Tim Hewison to prepare an example ATBD document and to provide a recommendation on whether TWIKI fulfils its proposed use in the GSICS project.	EUMETSAT, GCC End of July 2009
GDWG03_10	GCC to review and update the <i>Links</i> section	GCC End of March 2009
GDWG03_11	GCC to remove the <i>Opportunities</i> section.	GCC End of March 2009

GDWG03_12	All GPRCs to investigate whether the JMA website download option can be offered on their pages.	GCC End of March 2009
GDWG03_13	EUMETSAT to review and overhaul the structure and content of their GSICS web pages.	EUMETSAT End of May 2009
GDWG03_14	NOAA to provide the GSICS partners with the updated GSICS logo.	GCC End of March 2009
GDWG03_15	All partners shall display this GSICS logo on their GSICS related pages.	GPRC End of April 2009
GDWG03_16	GCC to make a start on preparing a specification document to capture the requirements for a GSICS Web Portal	GCC End 2009.
GDWG03_17	GRWG to define the content of their NetCDF files with support from the GDWG.	GRWG End of March 2009
GDWG03_18	CNES to clarify and define the data (content, sizes, etc.) provided from the SADE database onto a dedicated FTP server.	CNES End of May 2009
GDWG03_19	CNES shall clarify the joint access conditions (data policy ?) for the FTP server where the SADE data is located.	CNES End of May 2009
GDWG03_20	All GPRC shall nominate one person to access the SADE FTP server where the SADE data will be presented.	GPRC End of March 2009
GDWG03_21	All GSICS partners are invited to provide some of their sensor data to populate the SADE FTP server with their additional database.	GPRC End of 2009
GDWG03_22	NOAA and EUMETSAT shall prepare operational service specification documentation for the current collaboration servers, specifying the services, directory structures and operational parameters these servers shall offer.	EUMETSAT, GCC End of July 2009
GDWG03_23	NOAA and EUMETSAT to facilitate redundancy of the collaboration server services by mirroring data sets. Investigation shall take place to specify how datasets can be automatically uploaded between data management servers.	EUMETSAT, GCC End of July 2009

5. Status of open actions from previous GDWG meetings

For completeness the open actions from the previous meetings are listed below:

Ref. No.	Action	Actionee	Status Jan 2009
WG 2 / 01	Development of a GSICS data management server	Peter Miu 4th Quarter 2008	Ongoing at EUMETSAT and NOAA. On track
WG 2 / 06	GPRCs shall create common style/tables for graphs and tables. Supply this common style to GCC. NOAA, JMA and EUM have similar styles.	GPRCs End July 2008	Initial design of the presentation styles is available. GRWG needs to give feedback on the styles used by NOAA, EUMETSAT and JMA on their Web pages.
WG 2 / 07	GPRCs shall create their GSICS web pages.	EUMETSAT, JMA, 4th Quarter 2008	Some Web sites exist. Other partners are invited to follow.
WG 2 / 08	GCC investigate necessary steps to develop the central GSICS Web site into a GSICS portal.	GCC End 2009	Open.
WG T1 / 03	File extension .nc has to be requested for NetCDF.	Deadline: end 2008	Ongoing. Positive feedback from WMO received.
WG T1 / 05	Link to GPRC product pages (JMA and EUM) to be put on GSICS website (see WG 2 / 05).	GCC (Robert Iacovazzi) Deadline: 15/11/08	
WG T1 / 08	Clarification regarding copyrights source of data	To be communicated to Exe Panel by GDWG chair Deadline: 7 November 2008	Unclear status. To be taken up again.
WG T1 / 09	A demonstration on JAVA viewer will be shown at next GDWG meeting in Tokyo.	NOAA (Aleksandar Jelenak) Deadline: End January 2009	Open.

AGENDA

3rd Meeting of GSICS Data Working Group (GDWG-3) and 4th Meeting of GSICS Research Working Group (GRWG-4)

28 - 30 January 2009, JMA
JMA Headquarter, Tokyo, Japan

DAY 1 Wednesday 28 January 2009 / Joint Session

10:00 – 10:15	Opening Remarks	Y. Kozawa
10:15 – 10:30	GSICS Executive Panel Meeting	J. Lafeuille
10:30 – 10:45	Action Review Exec-5	J. Lafeuille
10:45 – 11:00	GRWG Chair Report & Action Review	X. Wu
<u>11:00 – 11:15 Coffee Break / Continued Discussion</u>		
11:15 – 11:30	GDWG Chair Report & Action Review	V. Gärtner
11:30 – 11:45	GCC Director Report & Action Review	R. Iacovazzi
11:45 – 12:15	Short Verbal Status Reports on Progress in last 12 months Towards Operational Implementation of GSICS Goals	GPRC's & WMO
12:15 – 12:45	Feasibility of Hierarchical ATBD	T. Hewison
<u>12:45 – 14:15 Lunch / Discussion on Chairs and Director Reports</u>		
14:15 – 14:45	Documentation of ATBD in Twiki	A. Jelenak
14:45 – 15:15	GSICS Product Roster and Acceptance Procedure	R. Iacovazzi
15:15 – 15:45	Summary of GSICS Web Site and Servers	EUM, JMA, NOAA, CMA, WMO
<u>15:45 – 16:00 Coffee Break / Continued Discussion</u>		
16:00 – 16:30	Presentation and Harmonization of GSICS Products	M. Koenig / D. Kim
16:30 – 17:00	Sample Data Sets, Plots, and Tables	All
17:00 – 17:30	Gather Discussion Items on Above for GDWG-III	All

Evening: Reception (Invitation by Mr T. Hiraki, Director General of JMA)

DAY 2 Thursday 29 January 2009**Joint Session Continued**

09:00 – 09:45	CLARREO	D. Tobin
09:45 – 10:00	Update on Access to SADE Database	CNES
10:00 – 10:45	Guidance to the 2 Working Groups	All
<u>10:45 - 11:00 Coffee Break / Continued Discussion</u>		
11:00 – 12:30	GRWG-IV Breakout Session / GDWG-III Breakout Session	
<u>12:30 – 14:00 Lunch / Discussion on Action Items</u>		
13:30 – 15:30	GRWG-IV Breakout Session / GDWG-III Breakout Session	
<u>15:30 – 15:45 Coffee Break / Continued Discussion</u>		
15:45 – 17:30	GRWG-IV Breakout Session / GDWG-III Breakout Session	
17:30	Adjourn	

DAY 3 Friday 30 January 2009

09:00 – 09:15	GSICS Users Workshop	All
09:15 – 09:30	Communication within GSICS & WG Membership	All
09:30 – 10:30	Drafting Working Group Reports	GRWG + GDWG
<u>10:30 – 10:45 Coffee Break / Continued Discussion</u>		
10:45 – 11:30	Drafting Working Group Reports	GRWG + GDWG
11:30 – 12:15	Summary of the GDWG-III Outcomes	V. Gärtner
<u>12:15 – 13:45 Lunch / Discussion on Action Items</u>		
13:45 – 14:30	Summary of the GRWG-IV Outcomes	X. Wu
14:30 – 15:15	Review and consolidate action plans Recommendations to GSICS Executive Panel	All
<u>15:15 – 15:30 Coffee Break / Continued Discussion</u>		
15:30 – 15:45	Short Demo on Centra Features	M. König
15:45 – 16:15	Any Other Businesses	All
16:30 – 16:45	Closing Remarks	V. Gärtner
17:00	Meeting Adjourns	

DAY 2 Thursday 29 January 2009

GDWG-III breakout session

Status reports:

11:00 – 11:15	EUMETSAT	EUMETSAT GSICS Data Management Server Design	P. Miu
11:15 – 11:30	NOAA	Meta data Standards	A. Jelenak
11:30 – 11:45	JMA	Update on JMA Activities	
11:45 – 12:30	Discussion about NOAA and/or EUMETSAT servers:		All
	<ul style="list-style-type: none"> • Technical and/or security issues • Short TWiki tutorial (usage of TWiki and how it works) • Will the servers mirror each other or store different data? 		

12:30 – 14:00 Lunch / Discussion on Action Items

14:00 – 14:15	Storage locations for data and information (Raw data, analysis data sets, plots, tables, presentations and papers, documentation, etc)		All
14:15 – 14:45	File and parameter naming conventions		All
14:45 – 15:15	Content of sample data sets		All
15:15 – 15:30	Creation of GSICS portal		All

15:30 – 15:45 Coffee Break / Continued Discussion

15:45 – 16:10	Hierarchical Structures for GSICS ATBD		All
16:10 – 16:40	Homogenizing presentation of GSICS output		All
16:40 – 16:50	Current status of gsics.wmo.int		J. Lafeuille
16:50 – 17:30	Priority list GSICS web site and server developments		All
17:30	Adjourn		

DAY 2 Thursday 29 January 2009

GRWG-IV Breakout Session

Status Reports:

11:00 – 11:30	FY-2C/2D GSICS Status Report from CMA's GPRC	X. Hu
11:30 – 11:45	Impact of Spatial and Temporal Atmospheric Variability on GSICS Inter-Calibration Algorithms.	T. Hewison
11:45 – 12:00	IASI Radiance Monitoring at EUMETSAT During the Recovery from an Incident in December 2008	M. König
12:00 – 12:30	IR Intercalibration Algorithm and Recent Visible Calibration Activities	Y. Tahara and A. Okuyama

12:30 – 13:30

13:30 – 14:00	MTSAT IR intercalibration and VI Vicarious Calibration Activities	D. Kim B.J. Sohn
14:00 – 14:30	GSICS GEO-LEO Inter-Calibration Activities at NOAA	F. Wu
14:30 – 14:45	MTSAT Visible Calibration Activities at NASA/Langley	D. Doelling
14:45 – 15:00	Roadmap for Visible Inter-Calibration	P. Minnis

15:00 – 15:30 Coffee Break / Continued Discussion

15:30 – 16:00	WGCV Quality Framework Review	D. Doelling
16:00 – 16:30	Summary of 2008 Progresses and 2009 Plan	F. Wu
16:30 – 17:00	Future Direction for GRWG GPRC perspective Meteosat-HIRS inter-calibration	P. Zhang
17:00 – 17:30	Action Review	F. Wu
17:30	Adjourn	

LIST OF PARTICIPANTS

Last Name	First Name	Affiliation	GRWG	GDWG
Hu	Xiuqing	CMA	X	
Zhang	Peng	CMA	X	
Li	Yuan	CMA		X
Blumstein	Denis	CNES	X	
Gärtner	Volker	EUMETSAT		X
Hewison	Tim	EUMETSAT	X	
König	Marianne	EUMETSAT	X	
Miu	Peter	EUMETSAT		X
Kurino	Toshiyuki	JMA	X	
Nakayama	Ryuichiro	JMA		X
Yoshimatsu	Kazuyoshi	JMA		
Kato	Koji	JMA		X
Okuyama	Arata	JMA	X	
Tahara	Yoshihiko	JMA	X	
Sohn	ByungJoo	KMA	X	
Kim	Dohyeong	KMA	X	
Hwang	YoungHooi	KMA		X
Doelling	David	NASA/Langley	X	
Minnis	Patrick	NASA/Langley	X	
Tobin	Dave	UW/SSEC	X	
Wu	Xiangqian	NESDIS/STAR	X	
Iacovazzi	Robert	NESDIS/STAR		X
Jelenak	Aleksandar	UCAR		X
Scott	Deron	USU/SDL	X	
Lafeuille	Jerome	WMO		X