**Decisions**

Decision: It was agreed that DOIs are not a requirement for GSICS products to be promoted to operational status.

Decision(?): Retrieved SRFs could be considered as a GSICS Deliverable, if they are derived on an ongoing basis, as a result of inter-calibration. However, it was recognised that adjustments can be made during commissioning as a result of GSICS algorithms and it would be difficult to review these through the GPPA on a useful timescale.

Decision (TBC): Agreed on terminology:

*GSICS Deliverables include GSICS Products, Tools, Reference datasets, Algorithms and Documents:*

* *GSICS Tools for use by inter-calibration developers, (GIRO, SBAF, …)*
* *GSICS Products for users of satellite data, including calibration corrections/coefficients*
* *GSICS Algorithms, which describe inter-calibration processes, (described by ATBD)*
* *GSICS Documents, including Guidelines, Reports, …*
* *GSICS Recommended Standards, including Solar spectrum, …*

Decision: The solar spectra should be added in the GSICS data base (as the SRFs).

Decision: Baseline DCC algorithm to use the Hu BRDF model

Decision: Baseline DCC algorithm to use MODIS reference dataset = till end 2009.

Decision: It was agreed to start v1 of DCC and Lunar Calibration products

Decision: GSICS should aim to provide users with the most recent available calibration data, at the highest available update frequency. This will allow users to decide how to apply it for their particular application. For example, users interested in trends may not want artificial jumps in the calibration time series, which could be avoided by applying frequent calibration updates - whereas near-time applications may want to minimise additional calibration noise by using the most accurate, stable calibration.

Decision: EUMETSAT to go ahead with the generation of demo products for all current operational Meteosats (including Meteosat-7) using both IASI-A and -B.

Decision: GCC will continue to have a DOI.

**Recommendations**

Recommendation: IMD to investigate to use of another test site during the summer. Additionally, IMG to investigate the use of Dunhuang test site.

Recommendation: collaboration and interactions between the VIS/NIR and UV sub-groups should be in place as there are overlaps in interests, skills and expertise.

Recommendation GPRCs: to investigate available info on overlap between geostationary satellites and usefulness.

Recommendation: ISRO and IMD to clarify the split of the activities in the calibration of INSAT-3D and report on the organisation of the various activities (role and responsibilities).

Recommendation: Scott to report at a further meeting on the progress made on the lunar calibration project (next Lunar Calibration WS or GSICS annual meeting).

Recommendation: DCC teams to provide feedback on the MIIC in order to establish the user requirements.

Recommendation: GSICS sub-groups should consider promoting approved transfer standards and tools to the community, endorsed as being suitable for inter-calibration.

Recommendation: Seb to report at a further stage about the minimum length needed to establish correct drift after deseasonalising the data.

Recommendation: CMA and JMA to consider setting the gain of their imagers to ensure the space count is not zero, to aid lunar calibration.

Recommendation: ISRO to express relative bias as a ratio, as a function of Moon phase angle, following the GIRO documentation.

Recommendation: The guidance in the GIRO documentation encourages thresholds to be avoided in the calculation of the lunar irradiance, by calculating instead the total irradiance in the lunar imagette, then subtracting the contribution from the space component of the image.   Recommendation: KMA to consider comparing only the observed irradiance with that calculated from GIRO, and separately compare the GIRO predictions with the KMA implementation of the ROLO model.

Recommendation: All GIRO users are now encouraged to use the latest official release, v1.0.0, available from the GSICS Wiki.

Recommendation: All GPRCs should consider adding calibration coefficients before and after applying the GSICS Corrections in their netCDF product.

Recommendation: all GPRCs to consider the update of the GEO-LEO IR ATBD in their uncertainty assessment following the EUMETSAT example of adjusting uncertainty estimates to obtain consistency with time series statistics.

Recommendation: ISRO is encouraged to engage with IMD to address the Metop IASI data delivery.

 Recommendation: ISRO is invited to contact the GDWG to have access to these servers.

Recommendation: IMD and ISRO are strongly encouraged to produce a unique product.

Recommendation: CMA is encouraged to extend the RAC smoothing window in order to centre the time window.

Recommendation: CMA is encouraged to investigate if the same approach for the smoothing (rolling window) is applicable for FY-3C/IASI daily products.

Recommendation: Masaya to report on his investigation about the stationary tests using AIRS and IASI.

Recommendation: Tim to establishment of the user requirements based on input from SCOPE-CM projects.

 Recommendation: ISRO to report progress on analysis of the double difference with AIRS / IASI such as Masaya is doing

Recommendation: EUMETSAT to report on blending method (DCC + Lunar) at the next annual meeting.

Recommendation: after Dave suggestion, the IR sub-group to look into the cold end.

Recommendation: JMA to consider investigating alternative regression algorithms for GEO-LEO IR.

Recommendation:  the lunar calibration community to investigate the possibility of using lunar observations for inter-channel calibration following the NASA/NOAA approach (MODIS/AVHRR, see paper Cao 2009). EUMETSAT and JMA to collaborate on this issue.

Recommendation: IVOS members of the Lunar Calibration Community to investigate the use of lunar observations for MTF post-launch characterisation.

Recommendation: the reference instrument’s expert should be part of the GSICS Research Working Group in order to provide support to the GRWG (after comment by Dave).

Recommendation: users are requested to provide feedback to WMO on the new version of OSCAR.

Recommendation: The PIs of inter-calibration algorithms are encouraged to attend the annual GRWG/GDWG meeting.

Recommendation: GRWG members are invited to have a look at the presentations made by the GDWG that are relevant to their activities.

Recommendation: IVOS to set a mailing list such as the gsics-dev@googlegroups.com in order to ensure good communication.

**Actions**

Action: S. Wagner (EUMETSAT) to draft letter of support from GSICS for ARCSTONE proposal to send to Jérôme by end April 2015. [Post-meeting note: This action has already been closed by ARCSTONE team.]

Modify Action (GRWG06\_17): GCC to check the available info on overlap between geostationary satellites (Masaya mentioned that the info was communicated to Fangfang some years ago). GCC should forward the available info to Jérôme, who will support this action through OSCAR.

Action: GCC (Manik Bali) to write a prototype guide to product selection as part of GSICS Product Guide and circulate for review by 2015 GUW. [From WMO point of view, this is a very important action]

Action: GRWG Chair to add a meeting on NWP in the agenda of the next GSICS web meetings in 2015/2016.

Action: GCC to prepare policy on GSICS data and code use and sharing based on Lunar Data Policy as a draft for by 2015 GUW.

Action: IMD to report on results of investigation into suitability of Runn of Kutch as a test site for INSAT-3D calibration, following ground characterisation, and share details with GSICS by email.

Action: D. Jouglet to investigate the availability of POLO in SADE database and report to GSICS.

Action: KMA to present the use BJ Sohn's DCC algorithm to build a BRDF model.

Modify Action (GWG\_13.30): Transfer responsibility to GCC to coordinate.

Action: Fred to follow up on the availability of information on Metop/AVHRR instruments, for which NOAA is responsible.

Action: Tim to put Pradeep in touch with 3G activity to assess uncertainties in RAOB-Sat

Action: JAXA to correspond with Microwave Sub-Group to consider whether GSICS products could/should be generated for active instruments such as DPR.

Action: KMA to clarify during the discussion on lunar data policy the position of KMA wrt to their data (already closed).

Actions: Close actions on Isaac Moradi and AIRS flag files, as no longer needed.

Action: Outstanding action on ISRO and GCC to coordinate for implementation of GEO-LEO IR by ISRO - add IMD to ISRO.

Action GLCWS\_14.2 (from Lunar Calibration Workshop): to resolve different VIIRS oversampling factors - still open.

Action: EUMETSAT to circulate report on investigation of the impact of the GSICS correction on atmospheric motion vector winds and other products.

Action: NOAA to report on plans to incorporate GOES-R/ABI in ICVS.

Action: NOAA to provide their GEO-LEO IR algorithm code to IMD.

Action: GCC to investigate application of DOIs to NOAA's operational GOES-IASI products and associated version control and report.

Action: Dave to investigate the use of MIIC to generate data for near-real-time processing of DCC using VIIRS.

Action: Dave to investigate potential to transfer the MIIC technology to other data centres.

Action: Jérôme to draft proposal on terminology for GSICS deliverables based on this discussion and circulate for review before Exec Panel, then the User Workshop.

Action: Rob to propose new terminology, based on the term "homogenised" or "MODIS (or whatever)-equivalent".

Action: EUMETSAT to circulate Rob’s review of FCDR inter-calibration requirements to GRWG/GDWG, identifying which type of inter-calibration product could meet each of these.

Action: GCC to review these FCDR inter-calibration requirements, in the framework of the GSICS User Product Guidance, to identify common inter-calibration types, which are not specialised to specific applications, and report to GRWG. These could be considered as potential future GSICS products.

Action: A. K. Sharma to interact with GDWG to provide INSAT-3D SRFs.

Action: EUMETSAT to interact with KNMI to see if they could process the SCIAMACHY data to have the SBAFs for the last two bands (beyond 1900nm). NASA is ready to provide the code.

Action: KMA to deliver their RTM DCC BRDF model.

Action: Jack Xiong (NASA) to deliver the MODIS spectral response to the GSICS wiki

Action: Sebastien Wagner (EUMETSAT) to deliver the Wehrli solar spectrum to the GSICS wiki

Action: GCC to add link from SRF page on GSICS Wiki to NASA's SRF plotting page, where these can be visualised.

Action: Fred to implement Sebastien's deseasonalisation method and compare with Fangfang's and report back.

Action: NASA to consider providing centralised processing of MODIS DCC data

Action: Seb to present at a further web meeting on DCC the extracted time series for the NIR16 channel.

Action: Lin and Seb to circulate statistics of mode/mean/median for review by email.

Action: KMA to provide BJ model for review by web meeting (duplicate action)

Action: Tim to propose the approach of issuing frequent GSICS corrections to the Exec Panel and Users Workshop.

Action: Jack to put MODIS solar irradiance spectrum on GSICS Wiki (duplicate action)

Action: Sebastien to circulate these revised proposed policies for approval by Lunar Calibration Community within 1 month by 1 June 2015.

Action: Sebastien to organise a web meeting to close the discussion on the GIRO + GLOD policy, seeking attendees' agreement by 1 June 2015.

Action: Dave to ask Constantine Lukashin to participate in accounting for spectral differences. But this will not happen this year.

Action: Dave to check availability of lunar observations in the Hyperion dataset by 1 April 2015.

Action: Jack Xiong and Dave Doelling to report plans to investigate the double difference between MODIS and VIIRS lunar observations in preparation to transfer the calibration reference and at web meeting.

Action: Dave to investigate whether CLARREO could fund dedicated observation campaigns to tie lunar irradiance models to an absolute SI-traceable scale.

Action: Sebastien to circulate survey on participation in the planned activities to develop lunar inter-calibration to members of lunar calibration community.

Action: Sebastien to organize a web meeting to report on the progress made on inter-calibration using the Moon (between October and December 2015).

Action: GCC to introduce one reviewer for JMA GEO-LEO IR products.

Action: GCC to guide GPAT to encourage reference to existing uncertainty analysis for similar products in the same class after the first to allow only Type A time series analysis of random uncertainties.

Action: NOAA to update the product user guide for GOES-IASI products accordingly.

Action: Tim to cooperate with the GDWG to develop a version control document. [Closed 2015-04-15: Will be implemented in product User Guides]

Action: EUMETSAT to update the GEO-LEO IR ATBD and operational implementation to inflate the coefficient uncertainties to obtain consistency with time series estimates of the random component. [Closed 2015-04-20].

Action: GCC (Manik) to provide feedback on the user guide (GEO-LEO IR product) [Closed 2015-04-20].

Action: KMA to investigate the possibility to extract the data before the MBCC is applied, and in collaboration with NOAA to assess the impact of MBCC on the data. KMA to report back at the next GSICS annual meeting.

Action: ISRO to explore NOAA MBCC more into detail and to apply it. ISRO to report back at the next GSICS annual meeting.

Action: ISRO to report back on their investigations on SRF retrieval.

Action: CMA to report back on their investigations on SRF retrieval.

Action: EUMETSAT (Rob Roebeling) to report on the progress in FIDUCEO regarding SRF retrievals using AIRS data with input from John Mittaz.

Action: JMA to investigate and provide a report on the uncertainty analysis to support progress to Pre-Operational mode.

Action: Tim to ask ECMWF for double differencing of geostationary ring.

Action: IMD/ISRO to contact the IMD NWP and NCMRWF about double differencing of geostationary ring.

Action: Tim to conduct a survey to identify a date among GPRC so that they produce the GSICS corrections for that date and provide them to Dave.

Action: Dave to report on the analysis of GEO-GEO double-differences.

Action: Tim to provide SBAF tool to support the analysis of GEO-GEO double-differences.

Action: NASA-MODIS (Jack) to consider investigating alternative regression algorithms in radiance instead of Tb and report at next GRWG annual meeting

Action: CMA to report on generalising regression in GEO-LEO IR products to include polynomial terms and report by next GRWG meeting

Action: NOAA to investigate inter-channel calibration with IASI.

Action: GRWG Chair to coordinate review by all GPRCs of requirements for inter-calibration references for GEO-LEO IR products.

Action: Denis and Tim to review capabilities of IASI and AIRS and CrIS to meet the requirements for inter-calibration reference for GEO-LEO IR products.

Action: Fred to invite Pagano and Yong Han to join this review of requirements for inter-calibration reference for GEO-LEO IR products as relevant instrument experts

Action: Dave to investigate how to share the existing data set for MODIS 0.6µm band (2002-end of 2009) with the GRWG.

Action: Larry Flynn (NOAA) to consider mechanisms to provide delayed CrIS data for FY-2 inter-calibration.

Action: Manik to interact with Jérôme to push forward the development of the expert system as a tool to select inter-calibration reference instruments

Action: Tim to provide to Manik a list of parameters from his scoring proposal to include them into the expert system.

Action: Seb needs to iterate with Pete on what to put in place to share the GIRO code and the GLOD (GSICS Lunar Observation Dataset).

Action: GDWG to arrange web meeting to discuss alternatives to the current action tracking tool.

Action: GDWG will come with a proposal on how to number the actions. The action tracking tool should include the actions coming from the web meetings.

Action:  CMA to consider nominating Scott Hu as vice-chair of the GRWG.

Action: JMA to consider nominating Arata Okuyama as vice-chair of the GRWG.

Action: KMA to consider Dohyeong Kim’s current role as vice-chair of the GRWG.

Action: CNES to consider nominating Bertrand Fougnie as vice-chair of the GRWG.

 Action: GCC takes this feedback on-board and will propose an approach more like conference papers.

Action: Jérôme to circulate a draft GSICS Functional Architecture, which could serve as an input to the future WIGOS Functional Architecture document.

Action: Jérôme to provide the GCC with a draft structure of what is expected for a Guide to GSICS, which could be ultimately integrated in a future Guide to WIGOS.

Action: GRWG Chair to set up an additional web meeting on SBAF determination

Action: JMA and JAXA to investigate the possibility to organise the next GRWG/GDWG annual meeting.

Q: Will GCC now port these actions into the [GSICS Operations Plan](https://gsics.nesdis.noaa.gov/wiki/Development/GsicsOperationsPlan)?

yes