CGMS

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# GLOBAL SPACE-BASED INTER-CALIBRATION SYSTEM (GSICS)

WMO-WP-20 provides a brief summary status of the GSICS project. Active progress was recorded during the year 2007, following the first Operations Plan. The third meeting of the GSICS Executive Panel, held on 4 November 2007, refined the Operations Plan for 2008, which foresees namely the start of routine GEO-LEO inter-calibration.

CGMS satellite operators are invited to note the progress of GSICS, and to confirm their continuing support to this project.

# GLOBAL SPACE-BASED INTER-CALIBRATION SYSTEM (GSICS)

## 1 BACKGROUND

The Global Space-based Inter-calibration system (GSICS) was established by WMO and CGMS-XXXIV through adoption of the GSICS Implementation Plan.

Its main goal is to foster inter-calibration activities to ensure comparability and overall consistency of satellite measurements provided by different instruments and programmes, to tie these measurements to absolute references and SI standards, and enable recalibration of archived data. The scope of GSICS activity includes globally coordinated activities for pre-launch instrument characterization, on-board routine calibration, sensor inter-comparison by collocation of individual scenes or overlap between time series, use of Earth-based or celestial references, as well as field campaigns. GSICS serves the needs of climate monitoring and research, numerical weather prediction, and other application areas within the Global Earth Observation System of Systems (GEOSS).

## 2 SUMMARY STATUS

### 2.1 Membership and organization

Current GSICS membership includes CMA, CNES, EUMETSAT, JMA, KMA, NOAA/NESDIS and WMO. Scientists from other organizations also punctually participate in GSICS working groups and activities. NOAA/NESDIS/STAR is acting as the “GSICS Coordination Centre”. The other meteorological satellite operators are acting as “GSICS Processing and Research Centres”. Other partner organizations contributing through e.g. field sites or laboratory activities are designated as “Calibration Support Segments”.

GSICS activity is overviewed by the GSICS Executive Panel, where all GPRCs and the GCC are represented, chaired by Dr Mitch Goldberg (NOAA/NESDIS). The panel is assisted by a GSICS Research Working Group (GRWG) chaired by Dr Xiaoxiang Wu and a GSICS Data Management Working Group (GDWG) chaired by Dr Volker Gärtner.

### 2.2 Major GSICS milestones in 2007

- 22-23 January: GRWG discussed a common technical approach for inter-calibration through Simultaneous Nadir Observation among GEO and LEO satellites;
- 24 April: Second session of the Executive Panel adopted the GSICS Operations Plan for 2007-2008;
- 12-14 June: Joint meeting of GRWG and GDWG refined the technical approach in the light of early results, discussed procedures for interfacing the GCC and the GPRCs, reviewed the overall plan;

- 4 November: Third session of Executive Panel reviewed the status of activities and updated the Operations Plan for 2008.

## 2.3 Ongoing activities

GSICS is currently focused on passive measurements (IR-VIS-MW) from operational satellites, using R&D instruments as benchmarks as appropriate. Inter-calibration among LEO-LEO satellite pairs are performed in IR and MW on a routine basis by NOAA/NESDIS. Inter-calibration among LEO and GEO IR and VIS instruments is being developed in 2007 and should be operational in 2008 for all geostationary satellites of participating organizations. IR hyperspectral instruments (AIRS, IASI) are used as benchmarks.

Results and overall information on GSICS are available through the GSICS website maintained by the GCC:

http://www.orbit.nesdis.noaa.gov/smcd/spb/calibration/icvs/GSICS/index.html

## 2.4 Relations with other organizations

GSICS was presented at the thirteenth session of the GCOS Atmospheric Observation Panel for Climate (AOPC) and strongly supported as an essential element for the implementation of GCOS.

An informal relationship is maintained between GSICS and the CEOS Calibration/Validation Working Group through the participation of some key persons in the two groups. This ensures that the activities of the two groups are developing in complementing each other. In particular, GSICS activity is focused on providing operational inter-calibration information among meteorological satellites.

Contact is also established with the ISCCP project that carries out systematic off-line inter-calibration among geostationary satellites on a monthly basis.

GSICS is expected to be a major partner of the emerging network of Regional/Specialized Satellite Centres for Climate Monitoring (R/SSC-CM). When reviewing the status of R/SSC-CM and GSICS, the third session of the Expert Team on Satellite Utilization and Products (ET-SUP-3) discussed in particular the formal link between R/SSC-CM, CGMS and GSICS. It noted that the R/SSC-CM is expected to report to GCOS, WMO, CEOS and GSICS. For consistency purpose, ET-SUP-3 recommended that the R/SSC-CM Executive Panel report to CGMS rather than GSICS, however it furthermore suggested that the CGMS representative on the R/SSC-CM Executive Panel be a person involved in GSICS, in order to ensure a close relationship between the two organizations.

# 3 CONCLUSION

CGMS is invited to note the suggested linkage between GSICS and CGMS. A verbal update on the outcome of the Executive Panel will be provided at CGMS-XXXV.