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Session Title:	A Quality Assurance Framework for Earth Observation (QA4EO) to underpin GEOSS with a particular emphasis on Climate change through optical based sensors
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A Quality Assurance Framework for Earth Observation (QA4EO) to Underpin GEOSS with a Particular Emphasis on Climate Change through Optical Based Sensors

Abstract:

The Group on Earth Observations (GEO)'s Global Earth Observation System of Systems (GEOSS) aims to deliver comprehensive "knowledge information products (KIP)" in a timely manner to meet the needs of its nine "Societal Benefit Areas" (SBA) of which in terms of accuracy is climate. These KIP's can only be derived through the synergetic combination of data from multiple sources: satellite, airborne, and in-situ, and these in turn will be operated by many different agencies.

As geophysical measurements from space become increasingly used for climate monitoring and for observing other climate related processes, the need for a consistent indicator of performance (quality indicator) that can be unequivocally relied upon over decades has become essential. This can only be achieved through the consistent implementation of internationally harmonized Calibration and Validation (Cal/Val) procedures. There are a number of on-going and imminent developments (such as NPOESS and Sentinel programmes) which would add focus to a special session on the subject of "Baseline Climate Identification and Global Change".

The Committee on Earth Observation Satellites (CEOS), the space arm of GEO, has led the development of a data quality assurance strategy based on the adoption of a set of key guidelines. These key guidelines have been derived from "best practises" for implementation by the community under the auspices of GEO. This session introduces Quality Assurance Framework for Earth Observation (QA4EO) and provides a forum for discussion on topics that will benefit from such a harmonized approach.

The challenge of devising and implementing correct and traceable Cal/Val activities is one which brings together engineering and geo-scientific expertise that is a natural fit to IGARSS and, with the implementation of major EO programmes, is particularly timely.

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2	**Peter J. Minnett** University of Miami pminnett@rsmas.miami.edu 305-421-4104	Climate Data Records of Geophysical Variables from Spacecraft Radiometry
3	**Gary K. Corlett** University of Leicester gkc1@leicester.ac.uk +44 (0) 116 252 5240	The Need for Mission Overlap in Creating Climate Data Records: Lessons Learned from Analyses of the (A)ATSR Series
4	**Dave L. Smith** Science and Technology Facilities Council (STFC) Rutherford Appleton Laboratory dave.smith@stfc.ac.uk	Pre-Launch Calibration Procedures and the Associated Traceability Issues for Existing and Future Infrared Radiometers in Space
5	**Jan-Peter Muller** University College London jpm@mssl.ucl.ac.uk +44-1483-204151	Standards and Interoperability for Global DEMs
6	**Irwin Alber** Institute of Electrical and Electronics Engineers/ICEO irwin.alber@sbcglobal.net 949-854-3657 Siri Jodha Khalsa (NSIDC)	Some Needed Standards and Best Practices Related for Calibration and Validation of Remote Sensing Data
7	**Haruhisa Shimoda** Japan Aerospace Exploration Agency smd@keyaki.cc.u-tokai.ac.jp	Global Change Observation Mission
8	**Jean-Luc Widlowski** Joint Research Centre (JRC) jean-luc.widlowski@jrc.it Nigel Fox (NPL), Pascal Lecomte (ESA), Philippe Goryl (ESA), Giuseppe Ottavianelli (ESA), Yves Govaerts (EUMETSAT)	Radiation Transfer Models and QA4EO: Current and Future Efforts for Traceability and Validation
9	**Thomas C. Stone** U.S. Geological Survey (USGS) tstone@usgs.gov 928-556-7381	The Moon as a Radiometric Reference Source for On-orbit Sensor Stability Calibration
10	**Gyanesh Chander** SGT, Inc., Contractor to the USGS EROS Center gchander@usgs.gov 605-594-2554 Xiaoxiong (Jack) Xiong (NASA/GSFC)	An Assessment of African Test sites in the Context of a Global Network of Quality-assured Reference Standards