

WORKSHOP CONCLUSIONS

ON INTER-COMPARISON OF LARGE SCALE OPTICAL AND INFRARED SENSORS

The Infrared/Visible Optical Systems (IVOS) Sub-Group to CEOS Working Group Cal/Val is trying to promote international and national collaboration in the area of calibration and validation of all Infrared/Visible Optical Sensors and therefore assists in the improved application of data from satellite sensors. This is of particular relevance in the framework of GMES, where the strive towards operationalisation of Earth observation remote sensing postulates accurate and quality-assured data. In this context one of the major roles of IVOS is also to identify and agree on calibration/validation requirements and standard specifications between CEOS members.

With a view to the current availability of wide-swath/large-scale optical satellite data globally, IVOS felt it to be a matter of priority to provide the opportunity for representatives of Agencies and leading Institutions in this field to exchange their views and priorities and to propose joint activities leading to a harmonization of cal/val procedures at the respective entities. This would enhance the compatibility and enable the combination of satellite data from different sources thus making a further step towards the operationalisation of Earth Observation from satellites and the production of higher-level data products.

Over 50 scientists from all over the world attended the Workshop at ESTEC addressing the pressing issue of compatibility of Earth Observation image data obtained by satellites. They recognised that evidence for the claim that the climate of our planet is rapidly changing could only be given with satellite data, the uncertainty of which has been reduced to a minimum.

The 33 very high quality contributions addressing mainly:

- Instrument specific calibration strategies and methodologies
- Inter-comparisons of products and retrieval procedures
- Experiments of vicarious calibration

A subsequent Round Table discussion lead to a set of proposed future activities for the space agencies in this field. The IVOS Committee formulated two recommendations to CEOS members to be realised:

1) Initiate a study to:

- Document a reference methodology to predict TOA radiance for currently flying and planned wide swath sensors;
- Create and maintain a web site with links to all instrument characteristics needed for inter-comparisons, ideally in a common format;
- Create and maintain a database of instrument data for specific vicarious calibration sites and their characteristics in a common format.

2) Organise a field campaign to:

- Perform surface and atmosphere measurements for vicarious calibration in the 2006/2007 timeframe to allow for diligent preparation and cross-calibration of in-situ sensors.

In general it was stated that continuous observation of Earth from space is crucial for the monitoring and understanding of our changing climate. However, it is now imperative that observations made by different satellite instruments from different space agencies not only be well calibrated but also comparable with products from different satellites to enable the synergistic combination of data in order to lead to quantitative global data products.