OUTCOME OF THE 9th CONSULTATIVE MEETING ON HIGH LEVEL POLICY ON SATELLITE MATTERS (CM-9) AND THE 4th and 5th EXECUTIVE PANEL (EXP-4,5)

Jerome Lafeuille
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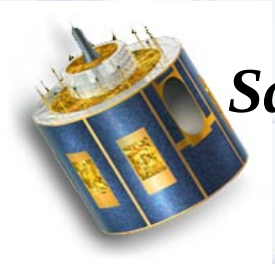
Three main areas

Enhance the space-based GOS



Satellite operators CGMS & CEOS

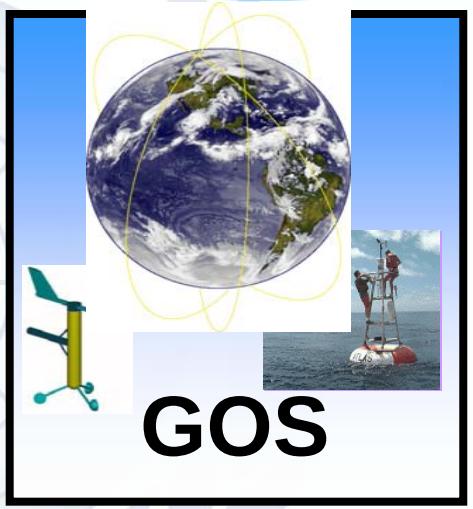
Users: all WMO & co-sponsored programmes

Enhance access to sat data

Enhance users' capability to benefit from satellites

A component of GEOSS

WMO: Focus on Weather-Water-Climate and applications



Other observing systems

systems

systems

9 SBAs

- Weather
- Climate
- Water
- Disasters
- Agriculture
- Health
- Energy
- Biodiversity
- Ecosystems

Vision for the GOS:
1. The GOS evolution process

Requirements

Requirements

Requirements

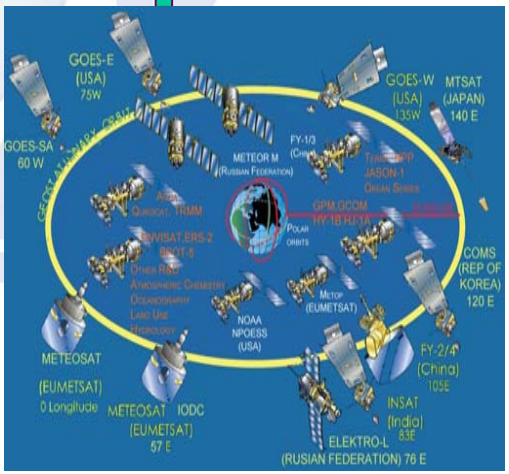
Requirements

Long-term vision of the GOS

Gap analysis

Implementation Plan

Members' Space Agencies programmes



Vision for the GOS in 2025:
2. Enhancements in the New Vision

- Core operational GEO missions
  - All with IR hyperspectral sounding, lightning detection
- Core operational LEO Imagery and IR-MW sounding
  - All with hyperspectral IR, on 3 sun-synchronous orbital planes

- Ocean surface topography
- Radio-Occultation Sounding
- Ocean Surface Wind
- Global Precipitation
- Earth Radiation Budget
- Atmospheric Composition
- Special imaging for ocean colour, vegetation
- Dual-angle view IR imagery

Observations performed so far on a R&D basis should be planned on an operational basis

- Land Surface Imaging
- Synthetic Aperture Radar
- Space Weather instruments

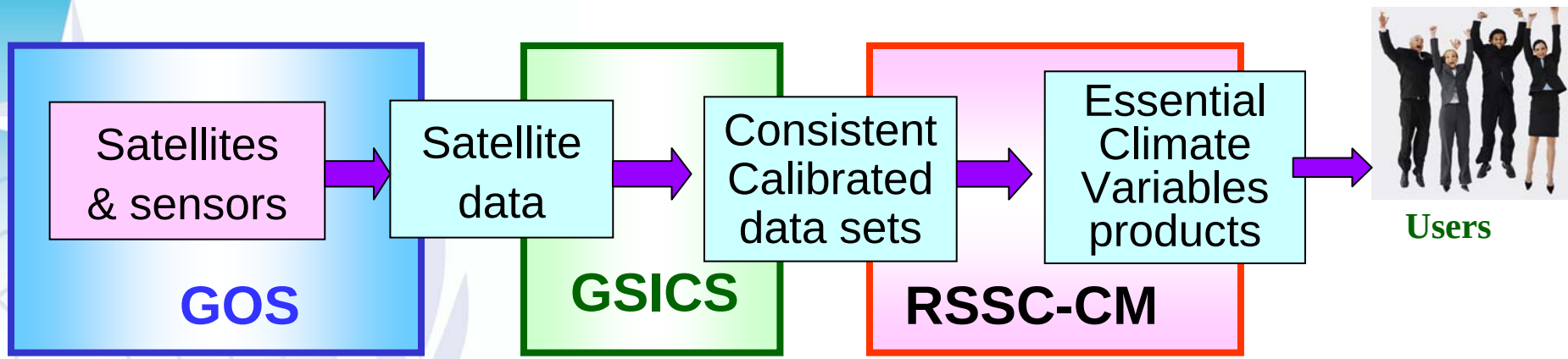
Integrating new missions

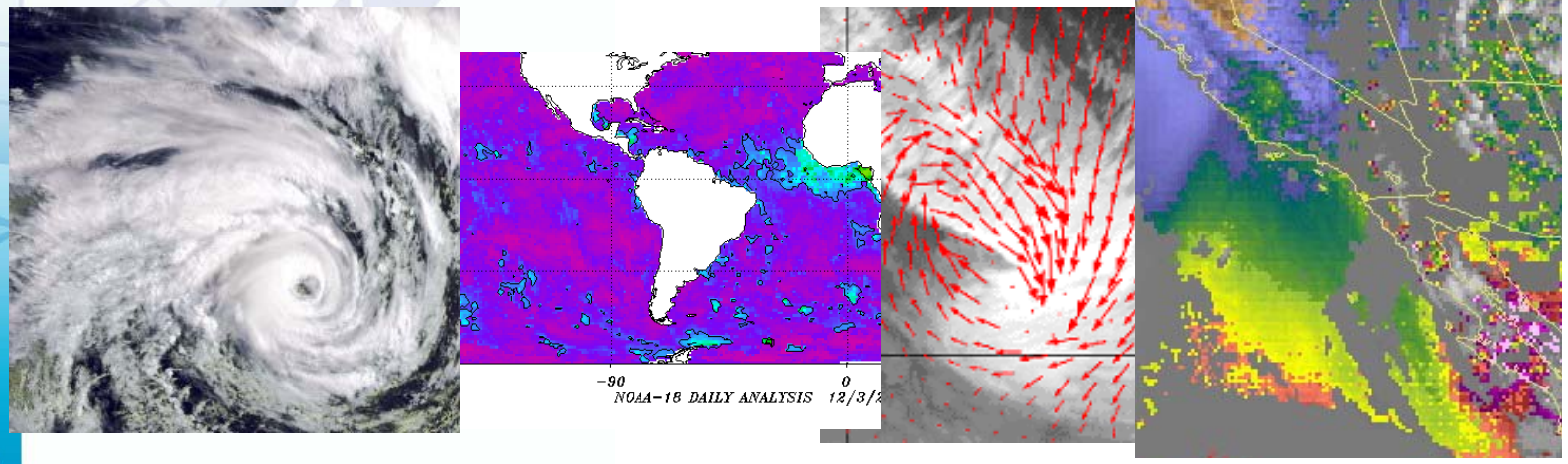
Vision for the GOS in 2025: 3. Challenges

- Diversified capabilities
  - Complex planning
- Requires more resources
  - Affordable with wider community of GOS contributors
- Need enhanced cooperation to ensure data exchange and consistency
- Commitments on long-term continuity requires transitions from R&D to operations
  - Guidelines for WMO to facilitate the R2O transition

Regional/Specialized Satellite Centres

for sustained generation of quality-controlled products





WMO OMM

Agencies contributing to the GOS

CMA

EUMETSAT

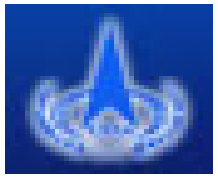
IMD

JMA

KMA

NOAA

ROSHYDROMET



USGS

WMO
OMM

A busy launch plan !

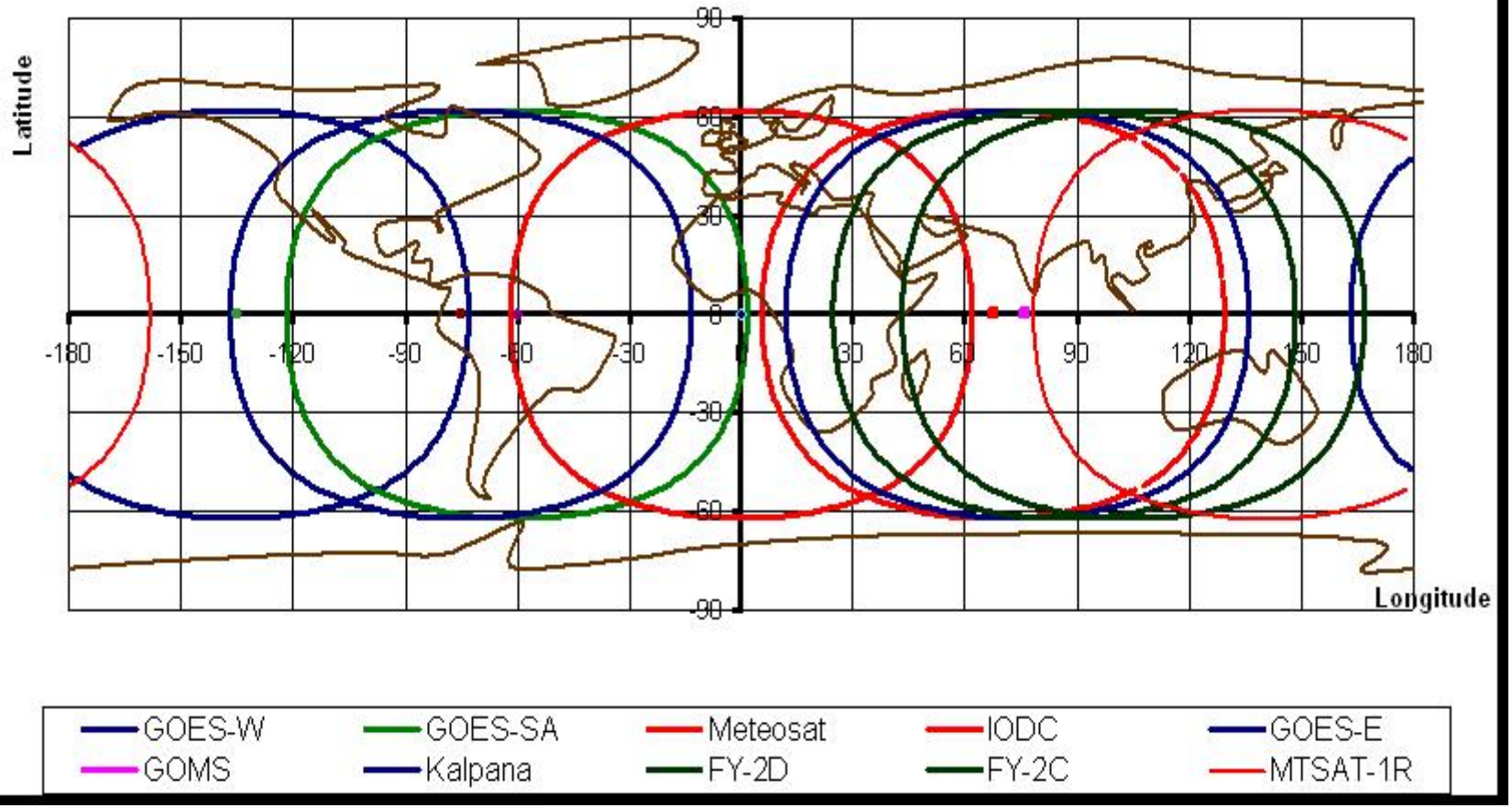
- May 08: FY-3A (CMA)
- June 08: Jason-2 (CNES-EUMETSAT-NASA-NOAA)
- Dec 08: FY-2E (CMA)
- 23/01/09: GOSAT (JAXA)

Followed in 2009 by:

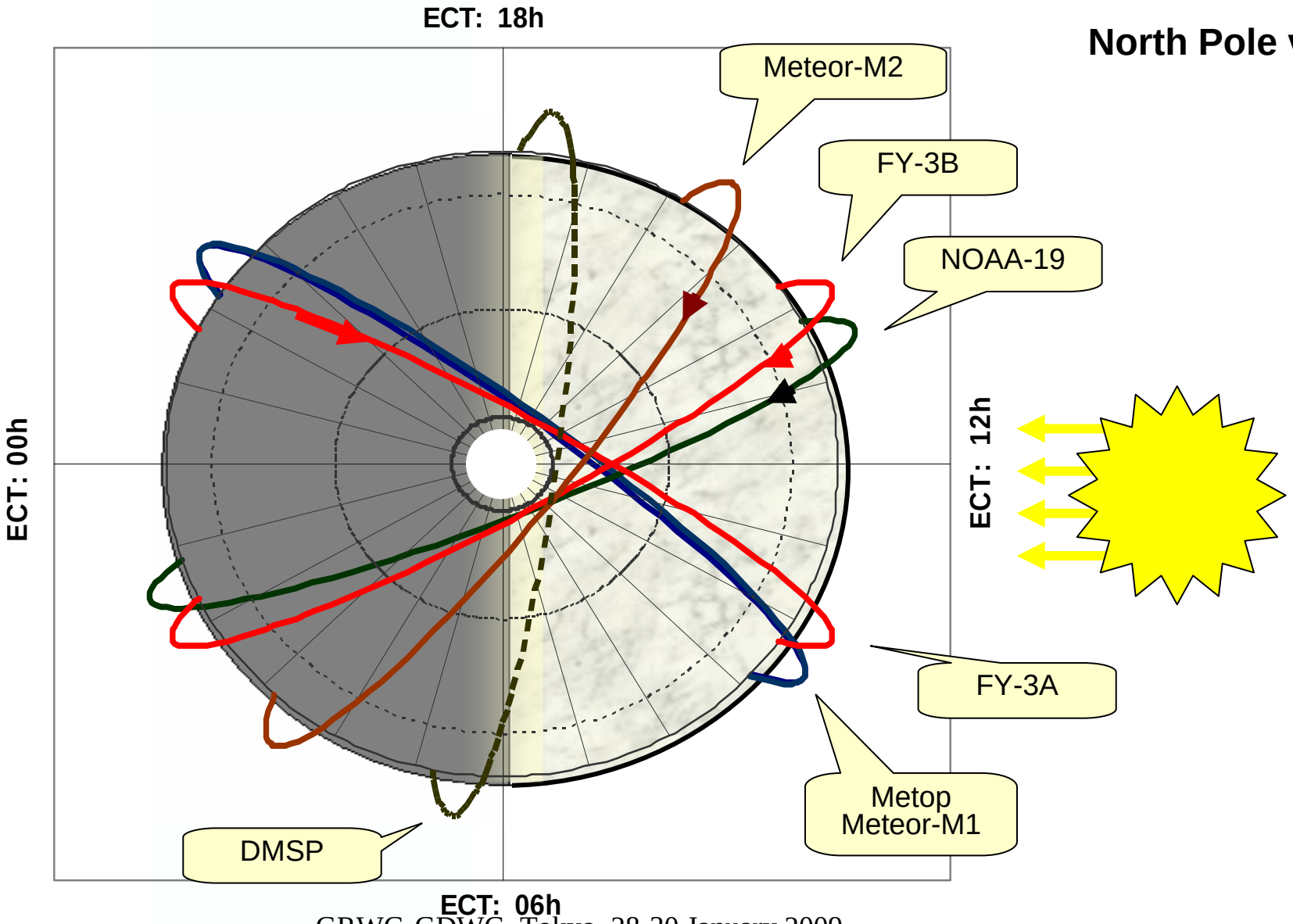
- OCO (NASA)
- NOAA-N' (NOAA)
- GOES-O (NOAA)
- SMOS (ESA)
- Glory (NASA)
- Meteor-M1 (Roshydromet)
- Elektro-1 (Roshydromet)
- COMS-1 (KMA)
- Cryosat-2 (ESA)
- Oceansat-2 (ISRO)
- GOCE (ESA)
- SARAL (ISRO/CNES)
- INSAT-3D (ISRO)
- MeghaTropiques (ISRO-CNES) (Now Feb 2010)

Status and plans on:
cgms.wmo.int

CURRENT GEOSTATIONARY COVERAGE



Equatorial Crossing Times of planned polar orbiting missions in 2010/2011



CM-9 Discussion on GSICS

- GSICS Activitity widely supported and encouraged
- ISRO wished to contribute (INSAT, Kalpana)
- Welcomed GSICS-CEOS/WGCV collaboration
- Confirmed GSICS as an integration project for the space-based GOS => Pilot Project for WIGOS

WMO Integrated Observing Systems (WIGOS)

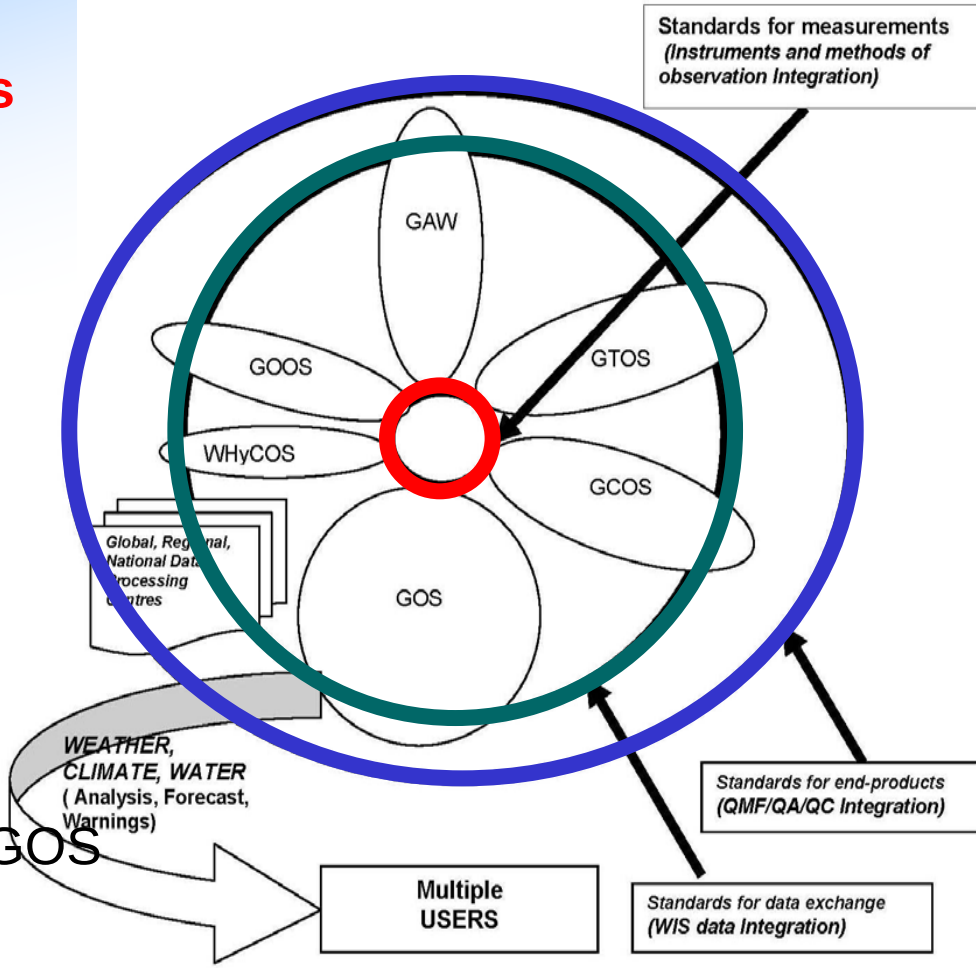
Concept of Operations

3 levels of integration:

- **Standardization of instruments**
- **WIS information infrastructure**
- **End-product quality**

SP actions contribute to integration:

- ✓GSICS (level 1)
- ✓IGDDS, RARS (level 2)
- ✓RSSC-CM (level 3)
- ✓Vision/Optimization of the GOS



GSICS proposed as a WIGOS Pilot Project

Objectives :

- Capitalize experience gained in GSICS
- Provide evaluation of GSICS with respect to WIGOS
- Ensure involvement of space-based observation components and space agencies in WIGOS
- Support involvement of beta-users in end-to-end demonstration

EXP-4 : main outcome

Minutes : http://www.wmo.int/pages/prog/sat/documents/GSICS-EXP-4_FinalReport.pdf

- GCC to implement operational (JMA) code for GEO-LEO and adapt it to each GEO, to serve as baseline algorithm for comparison/benchmarking purpose.
- All GPRCs to perform operational GEO-LEO intercalibration using possibly optimized version of baseline algorithm

- Discussed the draft GSICS Products and Services Roster
- Discussed the draft t Procedure for Product Acceptance
- GSICS Visibility: report to CGMS-36 on GSICS achievements

EXP-5 : main outcome

Minutes : http://www.wmo.int/pages/prog/sat/documents/GSICS-EXP-5_FinalReport.pdf (Includes the GSICS 2009 Operations Plan)

- Info
  - CNES proposed mechanism for SADE data access
  - Guidelines for pre-launch instrument characterization to be finalized
- Adopted:
  - GSICS Products and Services Roster
  - Procedure for Product Acceptance
- Noted the CEOS WGCV Quality Assurance Framework for Earth Observation (QA4EO) noted, to be reviewed by GSICS
- Established GSICS 2009 Operations Plan
- GSICS to be proposed as a pilot project for WIGOS

GSICS 2009 Operations Plan Structure

- Project meeting milestones
- Outreach /user interaction
- Data management and other cross-cutting tasks
- LEO-LEO UV, VIS,IR, MW intercomparison
- GEO-LEO intercomparison, algorithm development and implementation

ACTIONS FOR GRWG-GDWG deriving from the Executive Panel

Three sources of actions for GRWG/GDWG

- Actions agreed by the group
- Actions assigned by theExPanel
- Tasks in the annual Operations Plan

Two major actions for GSICS

illustrating the respective roles of GCC and GPRCs

EXP-4.10	GCC to implement operational JMA code for MTSAT-AIRS/IASI, and adapt it to each GEO, in order to serve as GSICS baseline algorithm for comparison/benchmarking purpose plan.	August 2009
EXP-4.11	All GPRCs to perform operational GEO-LEO intercalibration using possibly an optimized algorithm with respect to the baseline algorithm	August 2009

Main tasks involving GRWG in the 2009 Operations Plan

Establish end-to-end demonstration toward an operational GSICS by including beta users in the GSICS process
Improve and harmonize presentation of results in graphs and tables
Establish scientific (and data management) criteria to be met by GSICS products
Adopt a mechanism for SADE data requests from GSICS partners, (implementation by CNES)
Propose/evaluate new targets sites for inclusion into SADE
Recommendations for instrument performance monitoring website (action from CGMS36)
Develop a procedure to calculate the best estimate of a calibration of a particular instrument channel at a given point in time
Advise on acceptance of LEO-LEO products following the agreed procedure

Specific WG actions from the action list

3.6	GCC (F. Weng) to report on calibration of MW channels
4.12	Review the GSICS Implementation Plan and consider the relevance of drafting an update or an additional strategy document
4.13	Initiate preparation of a GSICS Users workshop in 2009
4.17	Detailed Implementation of the hierarchical ATBD structure to be finalized by GRWG
5.1	NOAA to report on CLARREO at GRWG4
5.2	CNES to report on SADE data request at GRWG/GDWG
5.7	**Refine the specification of products and services in the GSICS roster**
5.10	**Review the WGCV Quality Assurance Framework for Earth Observation (QA4EO)** http://calvalportal.ceos.org/CalValPortal/showQA4EO.do?section=qa4eoIntro