

Global Space-based Intercalibration System (GSICS)

Perspective on GSICS GRUAN partnership

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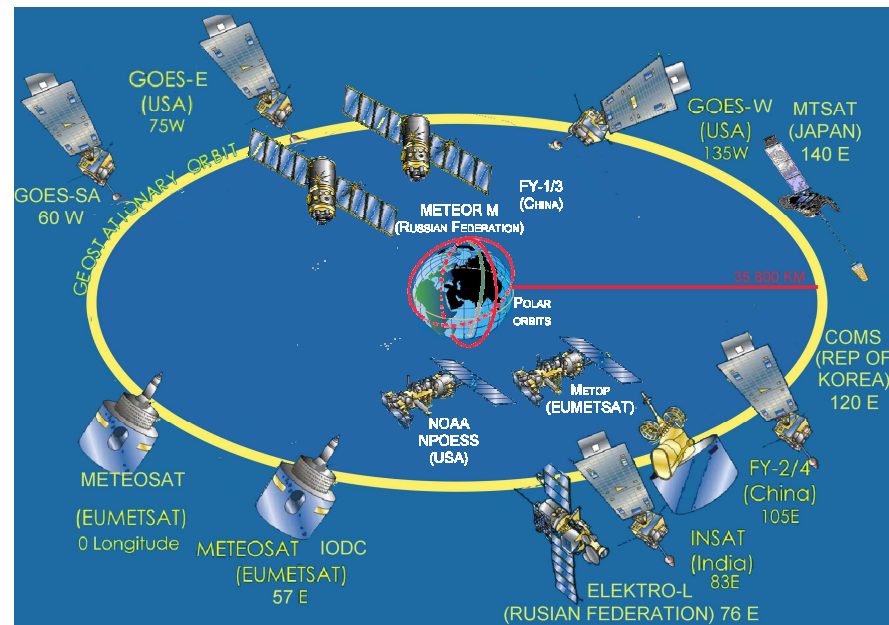
WMO Space Programme Office

Outline

- GSICS background and scope
- Organization
- Current priorities
- Deliverables
- Conclusions: partnership opportunities

GSICS background

- **Longstanding coordination of operational satellites within CGMS**
 - Global satellite planning, back-up arrangements
 - Harmonization of instrument types
 - Standard transmission protocols
- **More integration needed to achieve consistency of multi-satellite datasets**
- **In particular for detection of climate trends and better characterization of observation bias for NWP**

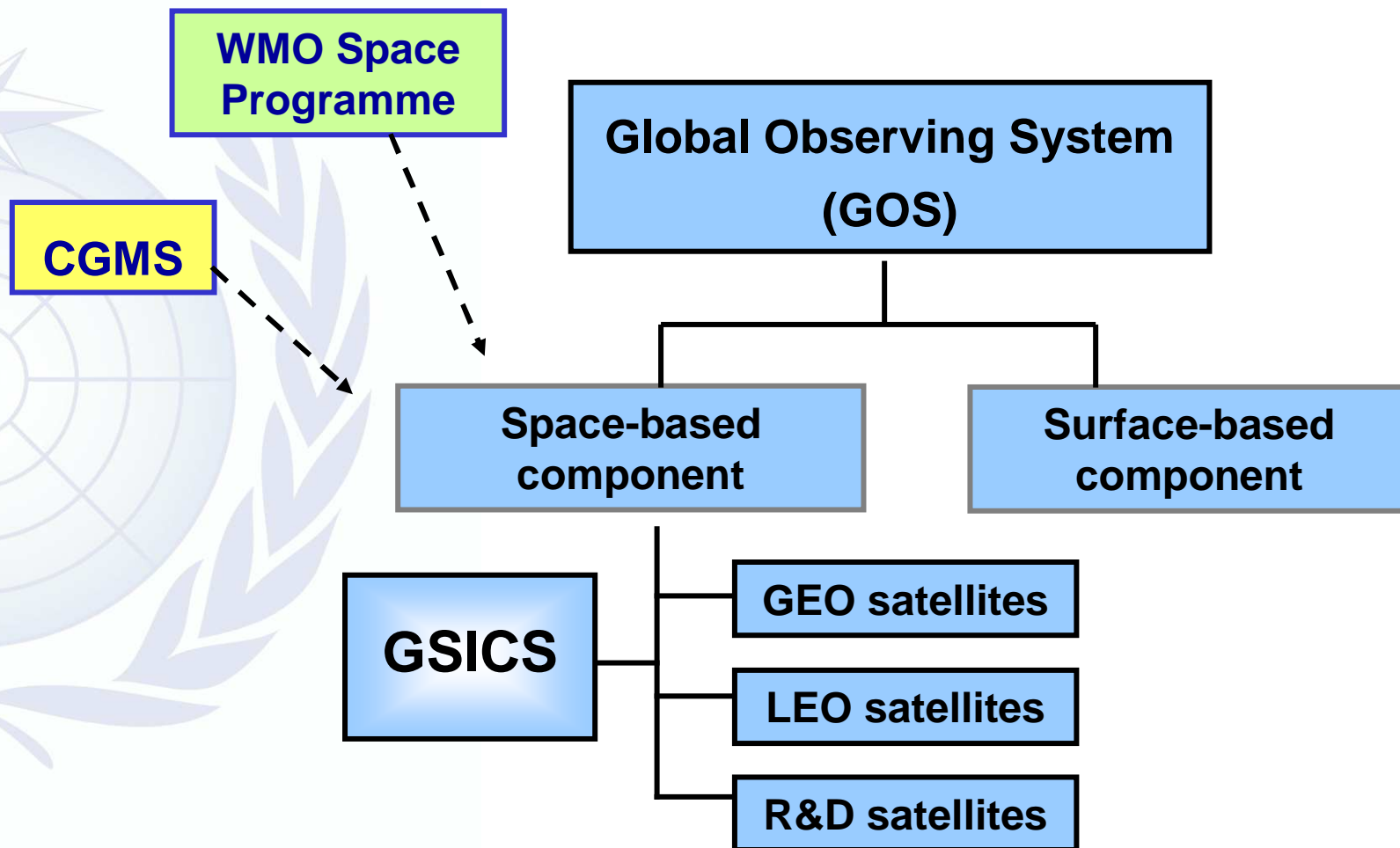




Main Scope of GSICS

- **Instrument calibration**
 - Level 1 (radiances) rather than L2+ (geophysical products)
 - Intercomparison of satellite (passive) measurements
 - Detecting anomalies, improving calibration
 - Traceability to absolute references (SI standards)
-
- Select best practices
 - Adopt common algorithms and procedures
 - Share data, tools, results, experience
 - Harmonize product delivery
-

GSICS within the GOS



Members and partners

- Members:



CMA



CNES



JMA



NASA



NIST



NOAA (GCC)



WMO (Secretariat)

+ *interest expressed by :*

JAXA



ISRO



and ROSHYDROMET



- Partnership with:

CEOS WG on Calibration and Validation

WCRP / GEWEX (ISCCP)

GPM XCalibration group

GCOS (GRUAN) being investigated

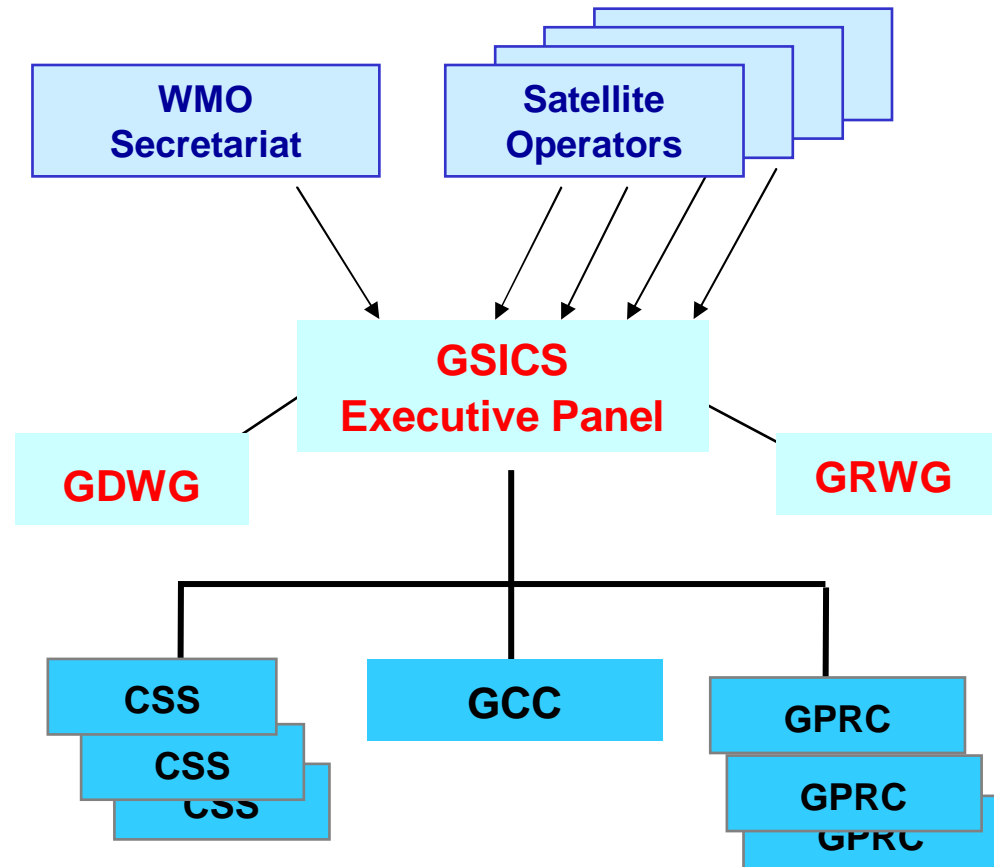
GSICS structure

- **Governance**

- Executive Panel
- Data Management WG
- Research Working Group

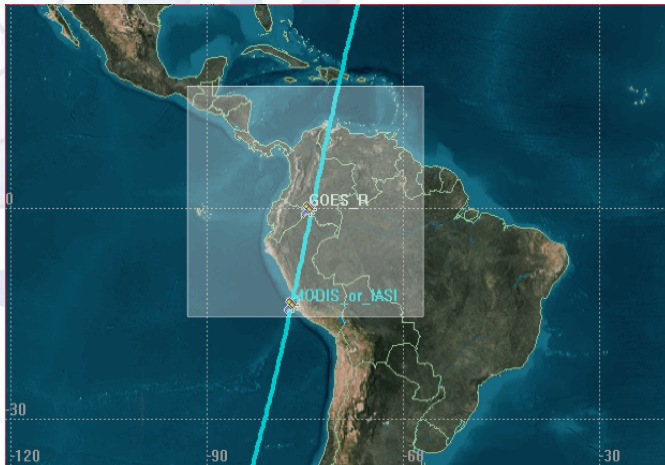
- **Operational structure**

- GSICS Coordination centre
- Production/Research centres
- Calibration Support Segments

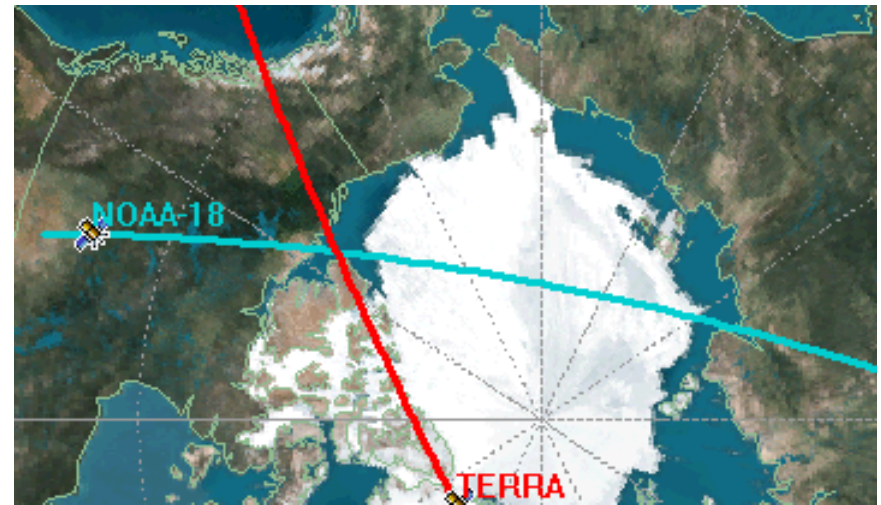


GSICS initial activities

- Routine intercalibration of on-orbit LEO and GEO instruments using simultaneous overpass



LEO-LEO intercomparison by SNO



*GEO-LEO
intercomparison*

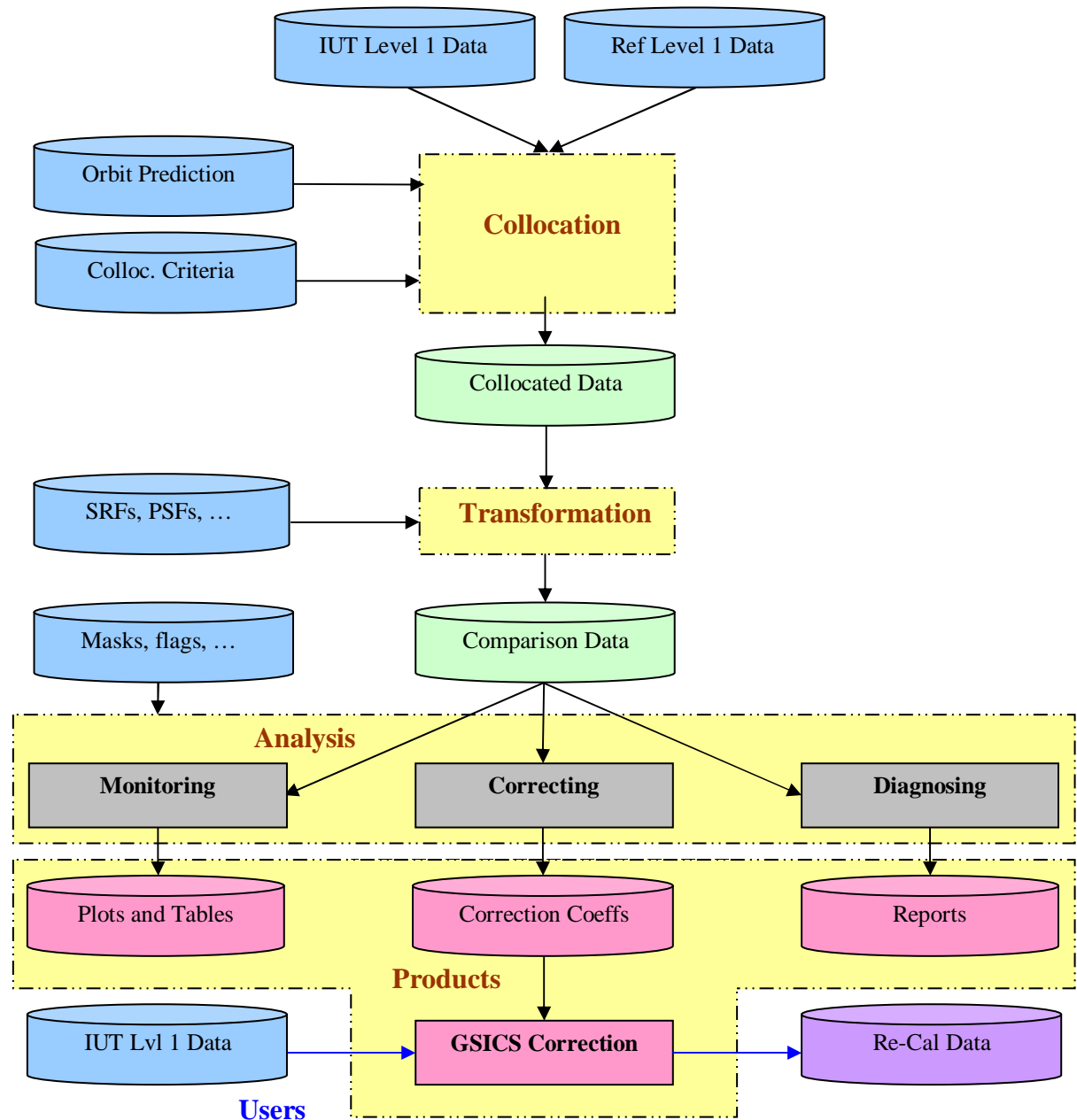
Priorities

- Infrared multispectral sensors against reference instruments
 - Current reference: IASI, AIRS
- Visible sensors intercalibration using
 - Deep convective clouds, Sun glint on ocean surface, moon
 - Deserts or bright land surfaces
 -
- Microwave sensors (AMSU, GPM constellation)

Achievements

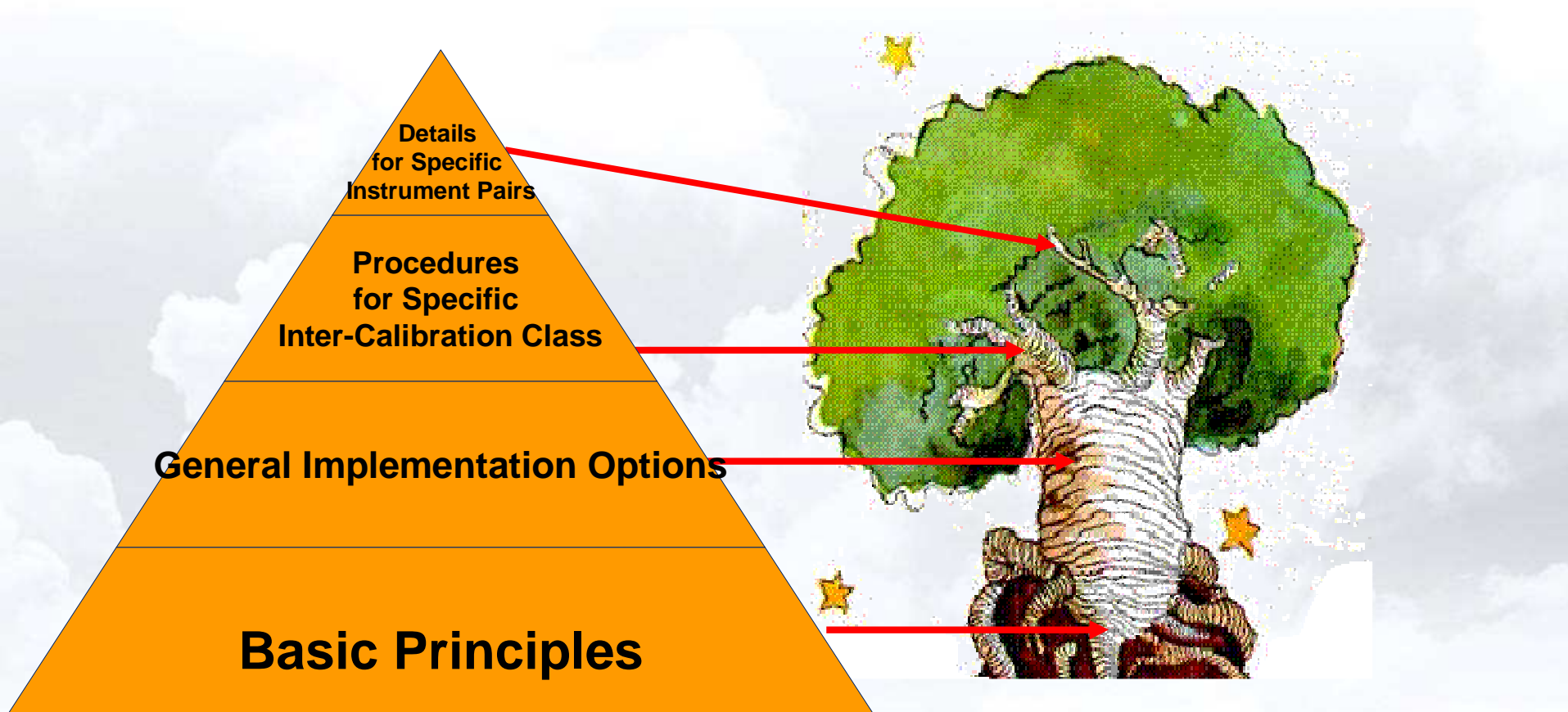
- Scientific
 - Refining methodology
 - Developing common procedures
Algorithm Theoretical Baseline Documents
- Data management
 - Collaborative server infrastructure
 - File naming/parameter naming convention
 - netCDF implementation
- Products
 - Demonstration / Preoperational /Operational
 - « GSICS Corrections »
- User outreach
 - Quarterly newsletter, websites
 - User workshops

A series of processes to
minimize
and/or
account for
any and all
differences
due to
observing
conditions

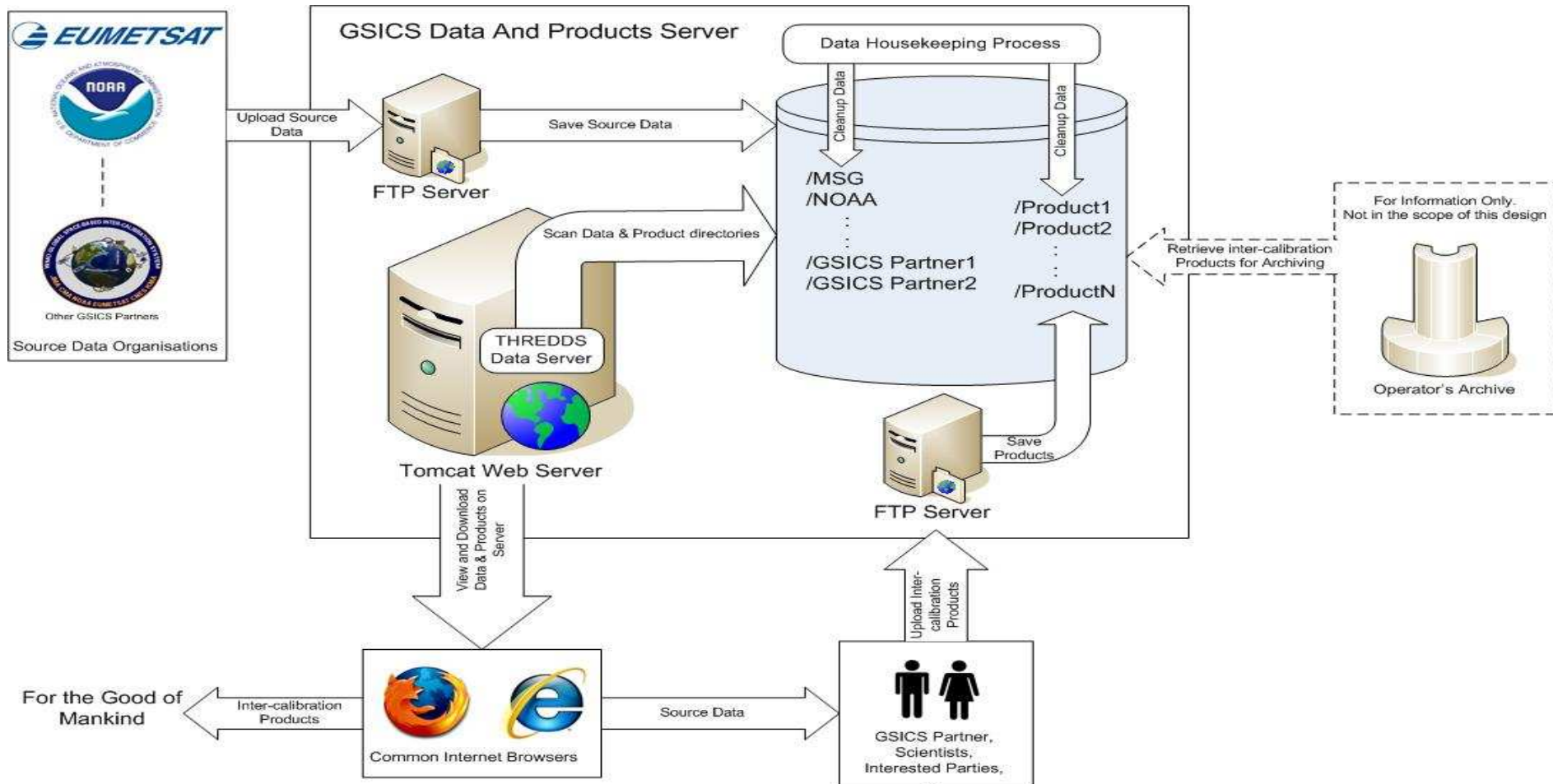


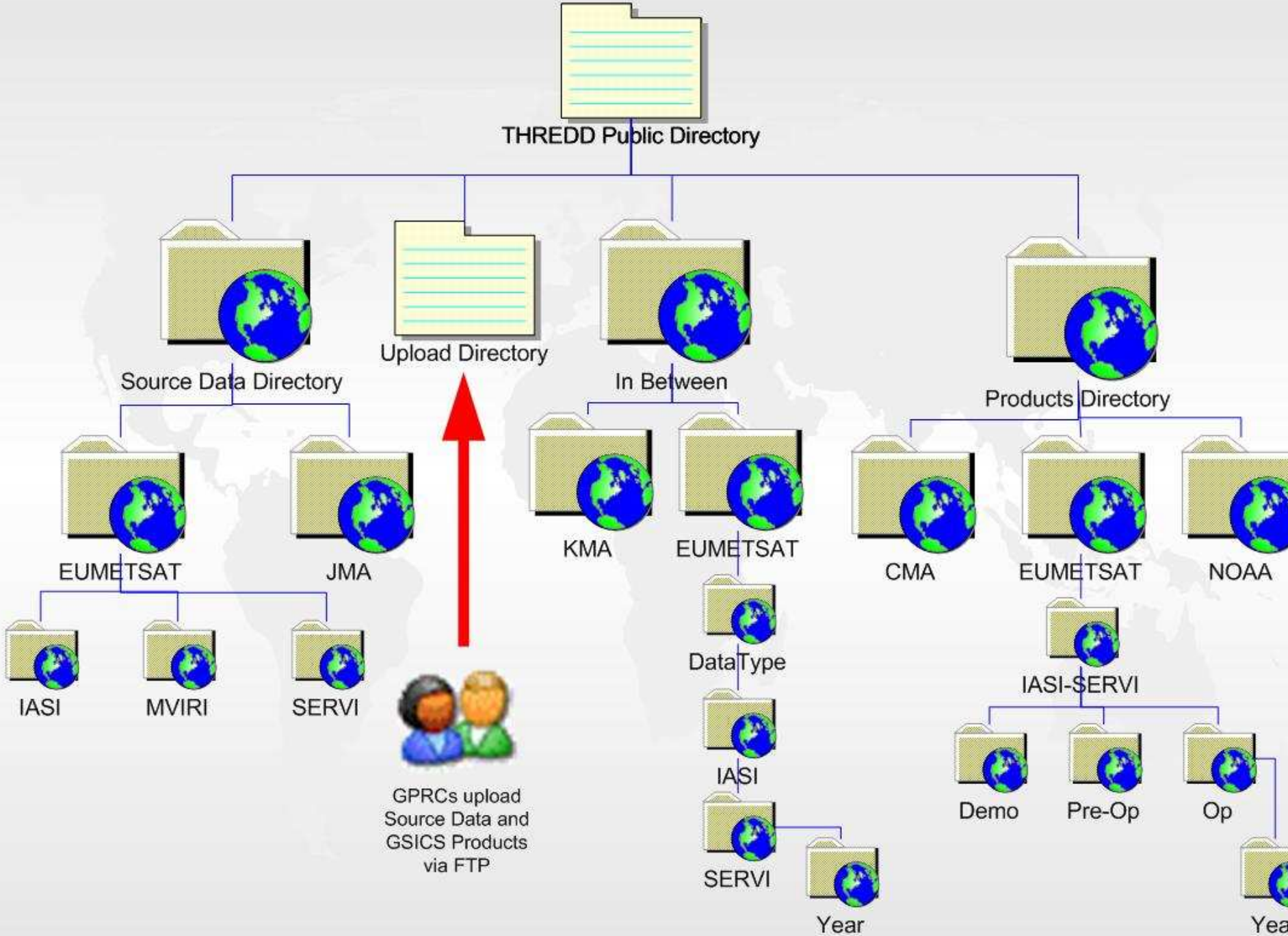


Principles of Hierarchical ATBD (Reminder)



GSICS Data and Products Servers High Level Design





GCC 2008: GSICS Virtual Library



New GPRC Web Sites



◆ EUMETSAT Main Page:

http://www.eumetsat.int/Home/Main/What_We_Do/InternationalRelations/CGMS/SP_1214310159208?l=en

Near-realtime displays of Meteosat-IASI inter-calibration results:

http://www.eumetsat.int/Home/Main/Access_to_Data/IntercalibrationServices/SP_1222354446018?l=en

◆ JMA

Main Page: <http://mscweb.kishou.go.jp/monitoring/calibration.htm>

GRUAN GSICS collaboration opportunities

- Are GSICS and GRUAN measuring similar objects ?
 - Different sampling
 - Variables: SW radiation at surface, Radiances at TOA
- Relative comparisons rather than absolute references
 - Consistency check
 - Refining uncertainty estimation
 - Improving atmospheric correction estimates
- Data management aspects

<http://gsics.wmo.int>
