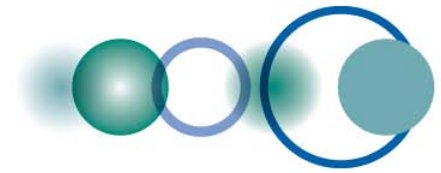


GEO/CEOS Workshop on Quality Assurance & Validation Processes

NIST, Gaithersburg, 6-8 May, 2008



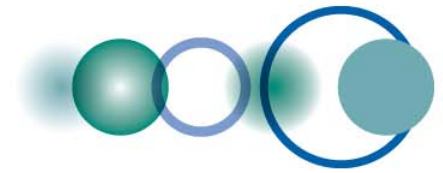
The Cape Town Ministerial Summit 2007

Earth Observation for Sustainable Growth and Development

The Summit allowed:

- To highlight early progress of GEO and key achievements in the Implementation of GEOSS;
 - The First 100 Steps to GEOSS,
 - The Full Picture)
- To bring emerging priorities to the attention of Ministers;
- For Ministers to commit to these priorities through The Cape Town Declaration.

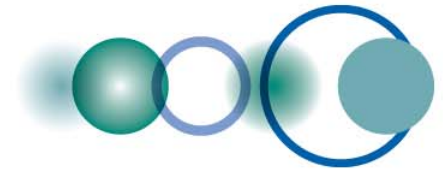




The Cape Town Declaration

- Value of Earth Observations
- Data Sharing Principles
- Commitment to Sustainable, Interoperable Systems
- Protection of Frequencies
- Need to Explore Ways and Means for the Sustained operations of...
...GEOSS Components





Priorities for the 2008-2010 timeframe

- **Harmonisation of portals (data and services)**
- **Ensuring sustainability of observing systems**
- **Bringing new funding**
- **Cost benefit analysis**
- **Web Portal process**
- **Iridium NEXT**
- **Data Sharing principles**
- **R.E.D.D.**
- **HARON**
- **New GEO Work Plan 2009-2011**



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Browse Resources by Societal Benefit Areas

DISASTERS

HEALTH

ENERGY

CLIMATE

WATER

WEATHER

ECOSYSTEMS

AGRICULTURE

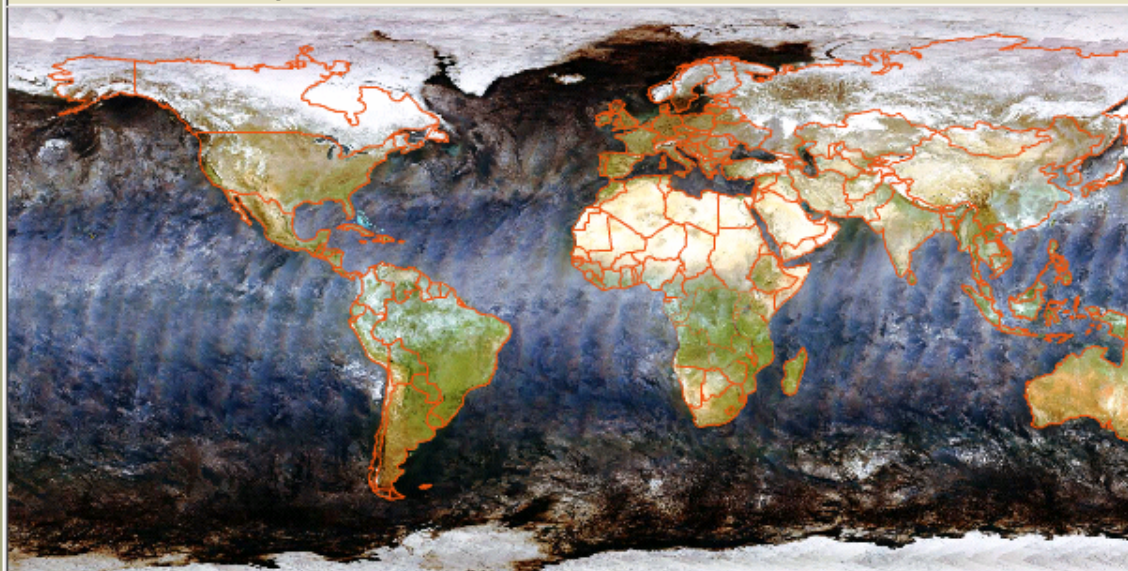
BIODIVERSITY

Resources Provided by

Select GEO Member

GEO Clearinghouse

Browse Resources by Location



Navigation icons: Home, Back, Forward, Stop, Refresh, Print, Wordpad, Find

Overview Map

Select Location

EVENTS

IGARSS, 23-27 July 2007, Barcelona, Spain

The 27th International Geoscience And Remote

SHOWCASE

The Elbe region in Saxony was affected by heavy flooding following strong rainfall in conjunction with snowmelt in the Krkonose

Breaking News

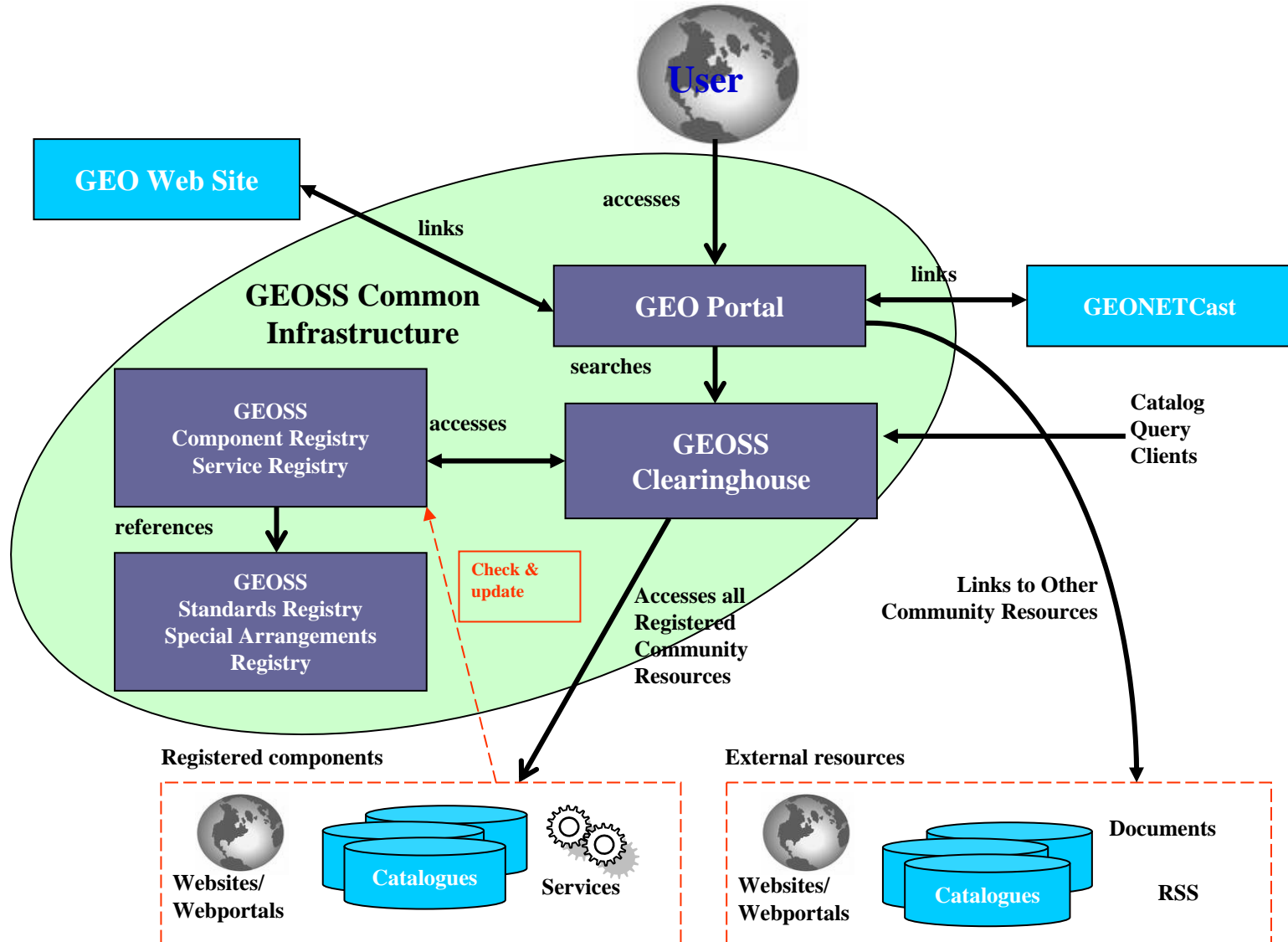
Intense rainfall and the rise of the Parana and Gualeguay rivers produced severe flooding in the Santa Fe and Entre Rios provinces, affecting mainly the cities of Santa Fe, Rosario and Gualeguay in Argentina. Three people were killed and the total number of evacuees was estimated at between 30,000 and 40,000.

more...

Welcome to GEOportal

The GEOportal provides an entry point to access remote sensing, geospatial static and in-situ data, information and services. The site is currently under construction with a planned release of the operational ESA contribution to the

The GEO Portal – GEOSS Common Infrastructure

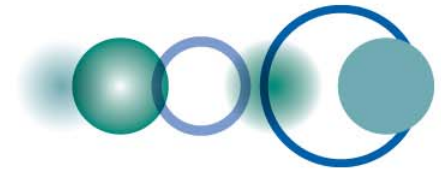


GREENHOUSE GAS MARKET 2007

**BUILDING UPON A SOLID FOUNDATION:
THE EMERGENCE OF A GLOBAL EMISSIONS TRADING SYSTEM**

Carbon
Markets Loom
on the Horizon
- €500 Billion



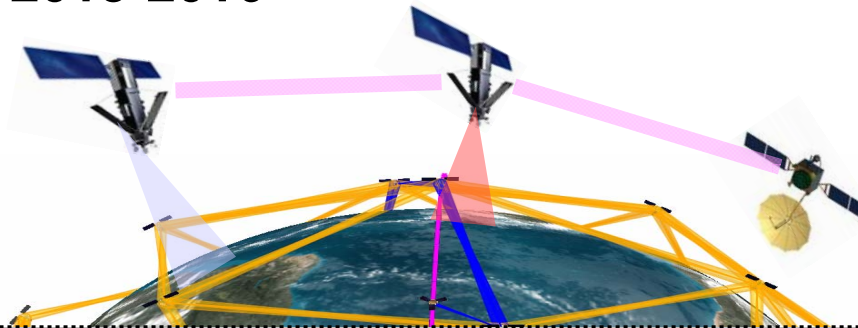


- **Iridium's NEXT-generation satellite constellation**
 - Seamlessly replace current constellation; ensures mission continuity
 - Maintains attributes which make Iridium unique: global coverage, security, availability, LEO architecture
 - Backward compatible with present applications and equipment
 - Provides new and enhanced capabilities -- speed, bandwidth, flexibility – and enables new generation of user equipment
 - Potential for new applications beyond mobile communications, **i.e. Earth Observations**
- **Initial design begins in 2006**
- **System deployed 2013-2016**

Secondary Payloads

Imaging and Sensor
Applications in E.O.

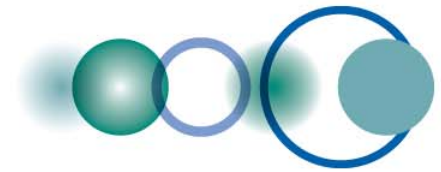
Climate Change,
Science



C3

Global Command,
Control and
Communications
for Independent
Satellites

**Unique Global Opportunity for Space Assets Leveraging NEXT
Communications Backbone**



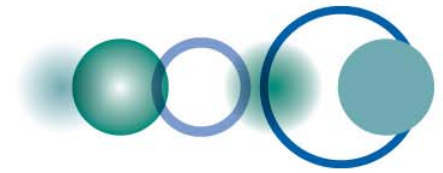
NEXT Earth Observation Mission (cont)

6

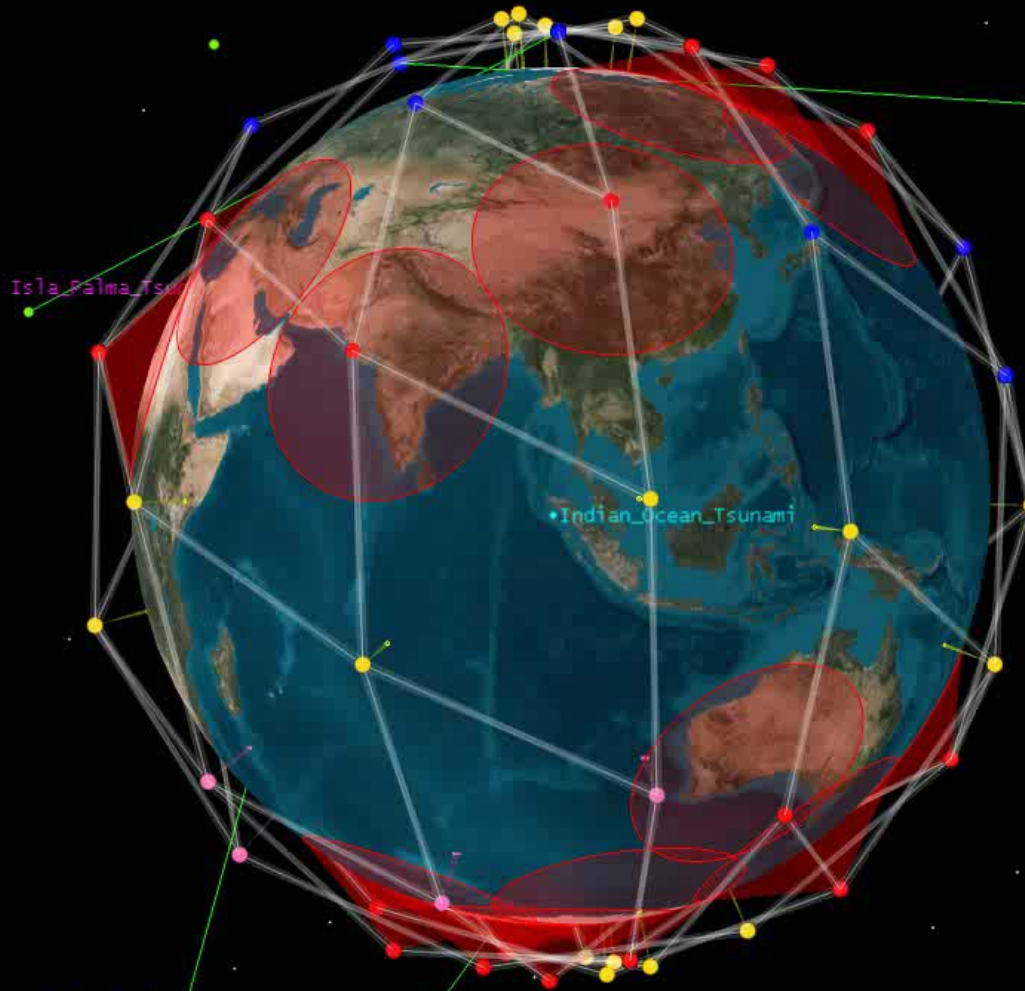
- Sensor selection to maximize EO capability and minimize impact (cost) on commercial Iridium satellite design
- Iridium NEXT ground infrastructure to collect data from the constellation
- To use existing data processing infrastructure as far as possible
- Data to be made available to all GEO members

<u>Sensor</u>	<u>Quantity</u>	<u>Measured Parameter(s)</u>
Altimeter	24	Wave height & wind speed; mean sea level; ice height
GPS Occultation	12	Atmospheric water vapour content & temperature profile
Optical Imager	6	Broad band radiometer; ocean colour & land imaging
Radiometer	24	Earth radiation budget; energy source for climate system

N.B. Sensor selection is open to discussion, e.g. atmospheric chemistry is also being considered but SARs are too large. Also land imaging is well covered in the planned Landsat Continuity missions.



Radiation Budget
Altimeters
GPS Occultation
Ocean Color



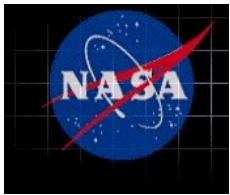
Isla Palma Tsu

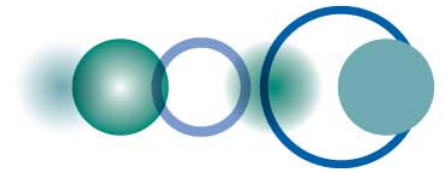
Indian Ocean Tsunami

Elapsed Hours
0.0027778 Time Step: 10.00 sec



SERVIR: Geospatial One Stop Shop for Disaster Management in Central America & Mexico

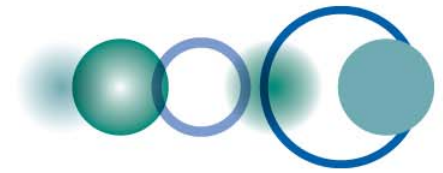




CBERS Data for Africa and the Caribbean

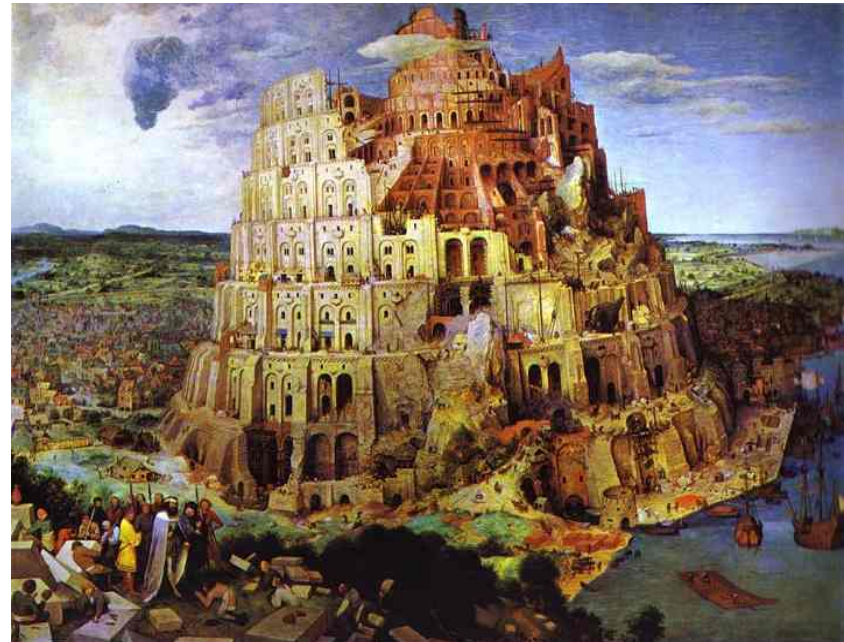


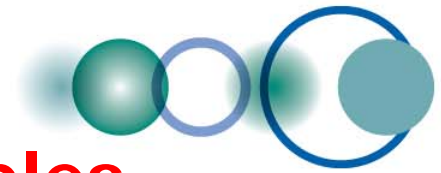
*China Brazil Earth Resources Satellite



GEO Data Sharing Principles

- **Full and Open Exchange of Data...Recognizing Relevant International Instruments and National Policies and Legislation**
- **Data and Products at Minimum Time delay and Minimum Cost**
- **Free of Charge or Cost of Reproduction for Research and Education**





GEOSS Data Sharing Principles

The societal benefits of Earth observations cannot be achieved without data sharing.

The following are GEOSS data sharing principles:

- There will be full and open exchange of data, metadata, and products shared within GEOSS, recognizing relevant international instruments and national policies and legislation.**
- All shared data, metadata, and products will be made available with minimum time delay and at minimum cost.**
- All shared data, metadata, and products free of charge or no more than cost of reproduction will be encouraged for research and education.**

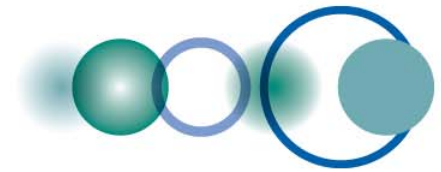
Use of data or products does not necessarily imply agreement with or endorsement of the purpose behind the gathering of such data.



DA-06-01 White Paper and Implementation Guidelines for the GEOSS data Sharing Principles

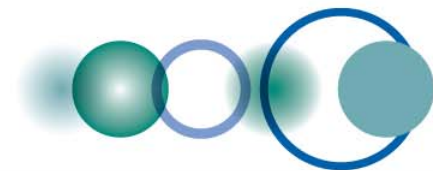
Process for recognition and Acceptance of the Paper by GEO Members and Participating Organisations and Implementation of its elements

- a) Update of White Paper in the light of comments made during and after the ADC Codata Workshop in Washington in (September) and during GEO IV Codata side event- (by mid- end January '08) - **completed****
- b) Following Announcement at GEO IV, distribution of updated version to ADC and other GEO Committees with invitation for comments (by 25 January '08). - **completed****
- c) Following receipt of comments by the GEO Committees the paper should be distributed to GEO Principals with request to have the Paper passed on within Member Countries and Participating Organisations to their respective experts for comments (March/April '08).**
- d) Update of the paper following comments by Members and POs. (by July '08)**

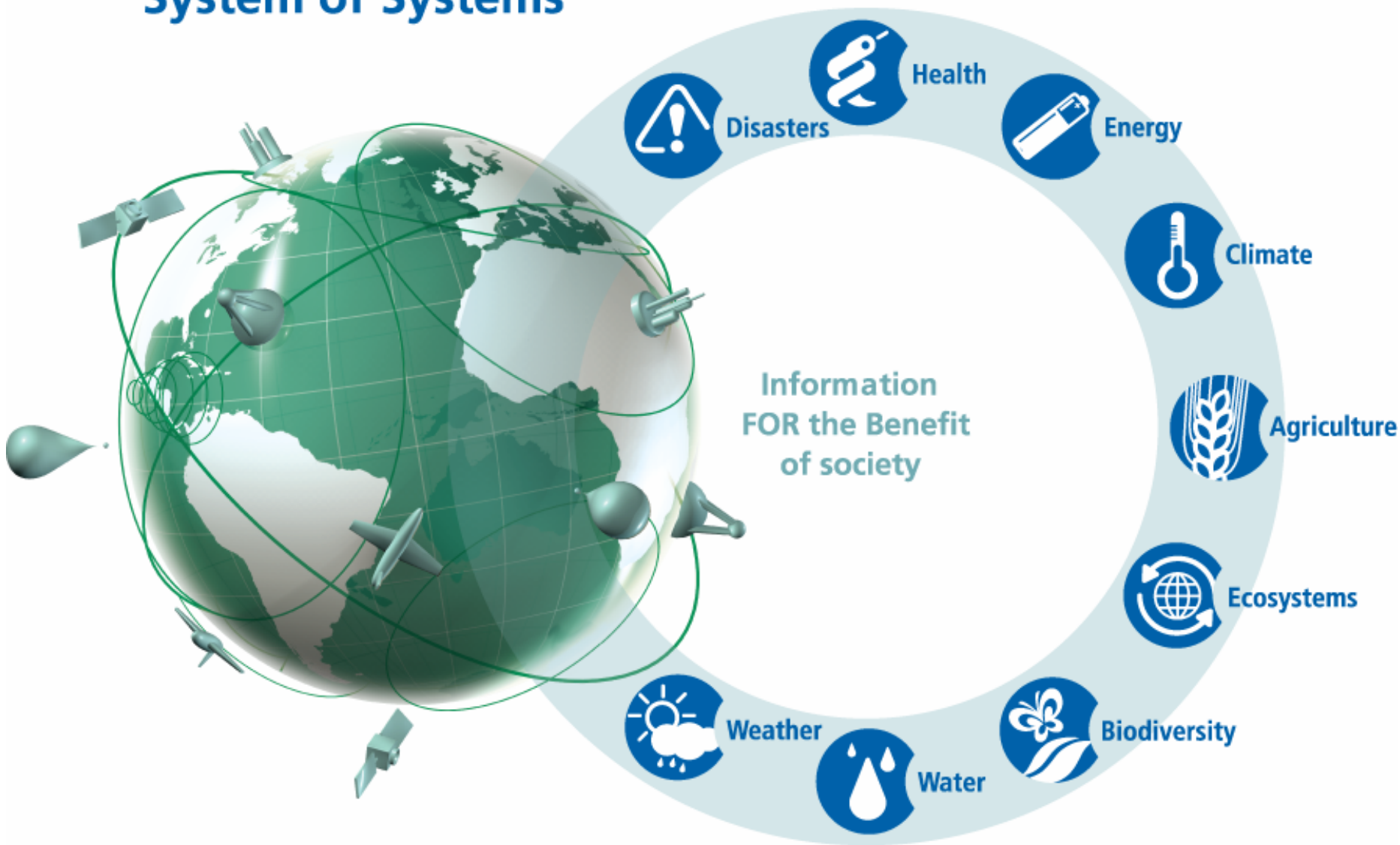


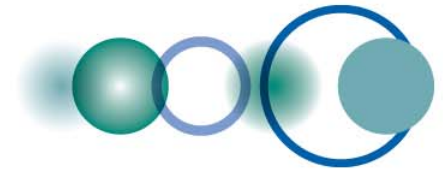
DA-06-01 White Paper and Implementation Guidelines for the GEOSS data Sharing Principles - continued

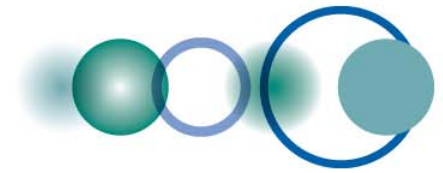
- e) In parallel the dialogue with experts identified in Members and POs should be started on the compatibility between White Paper guidelines and THEIR current data sharing practices.**
- f) Establishment of an implementation strategy/plan for the guidelines (July '08)**
- g) White paper together with implementation strategy (outcome of dialogue with members and POs) should be prepared for July Executive Committee meeting**
- h) Submission of sharing principles and guidelines with implementation plan to GEO Plenary V for discussion (October '08)**



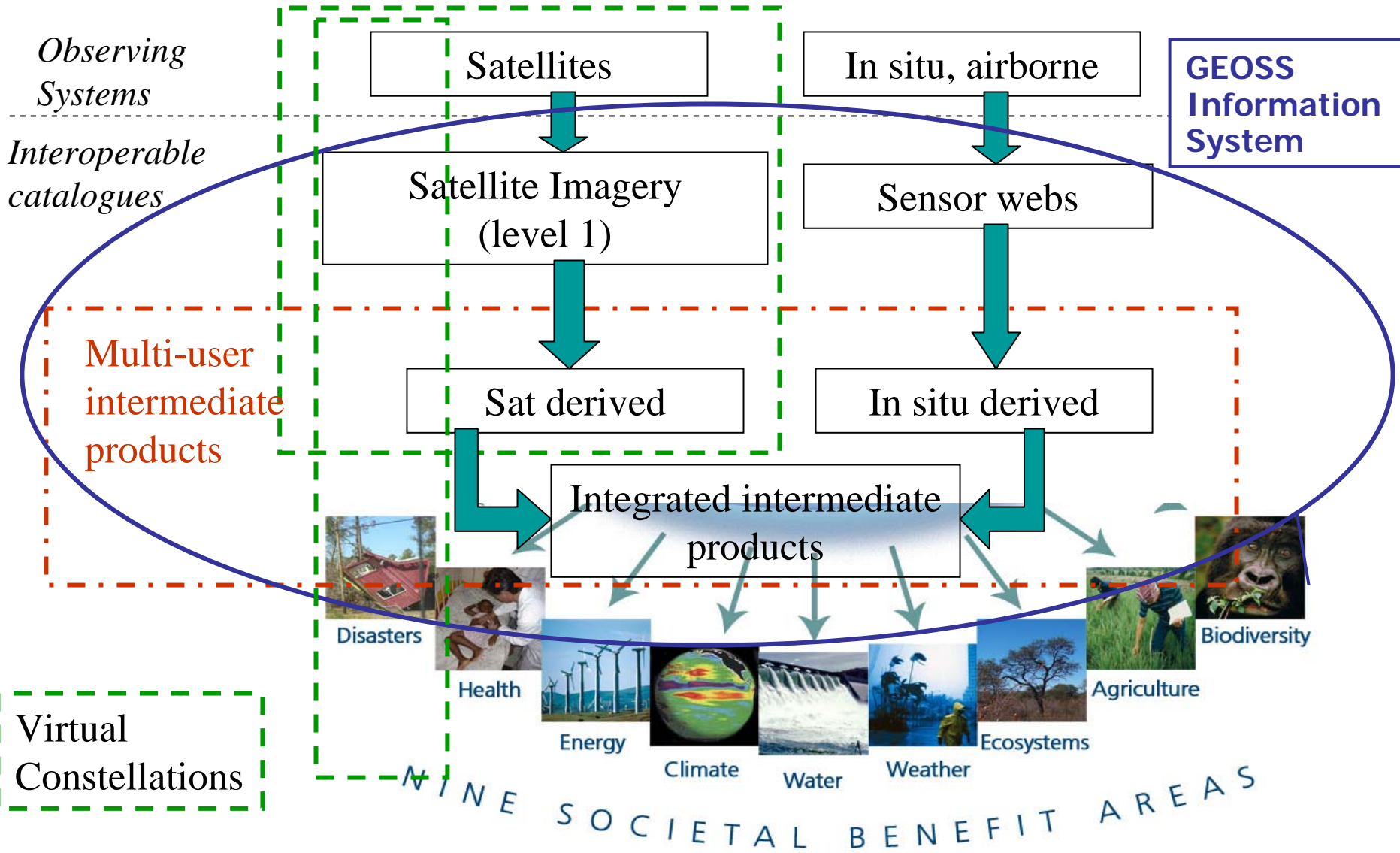
THE Global Earth Observation System of Systems





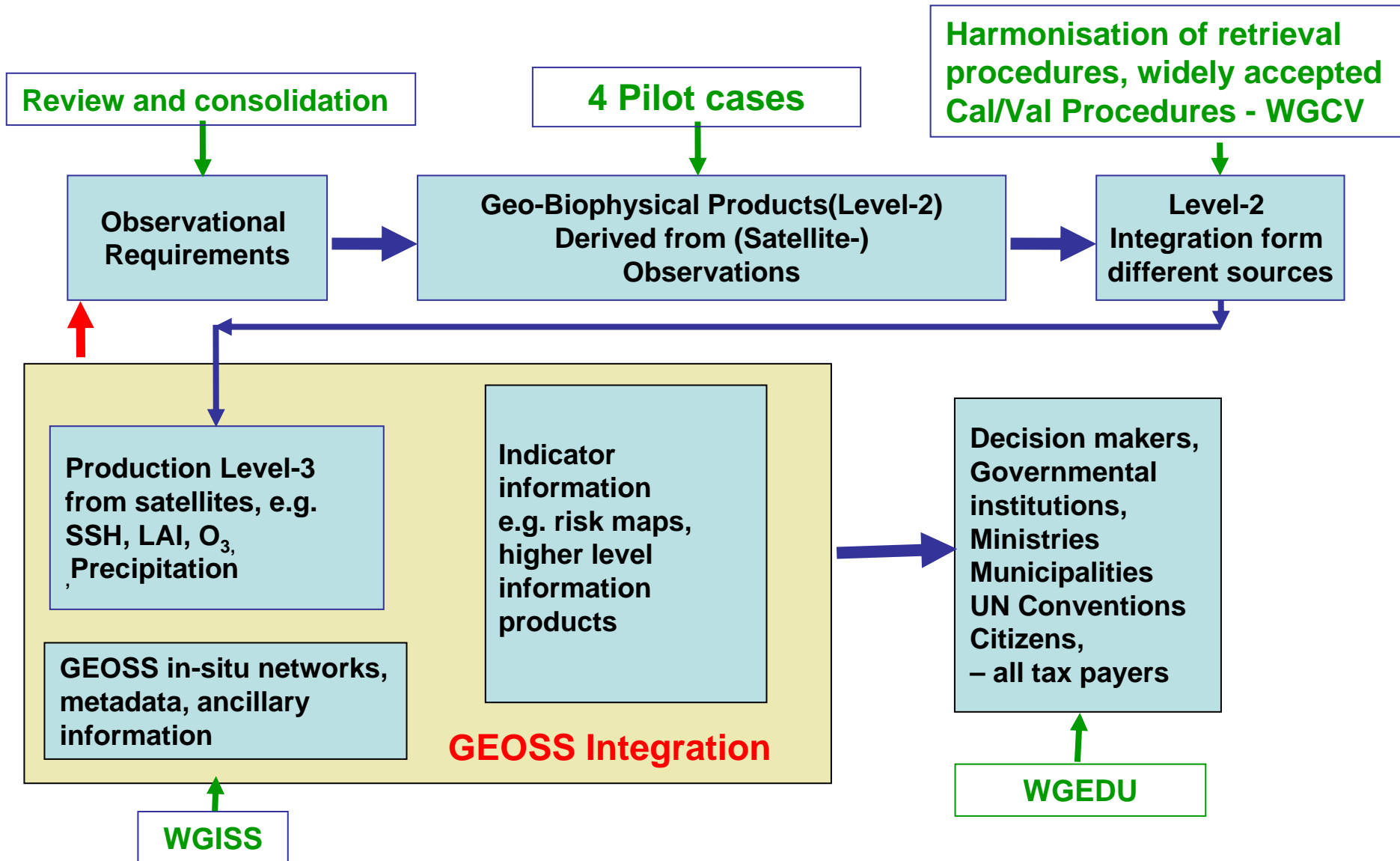


Virtual Constellations within GEOSS

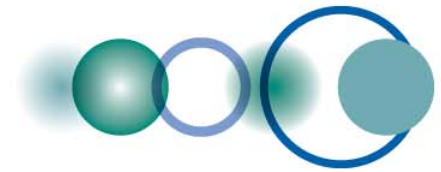




CEOS – areas of potential emphasis for the future

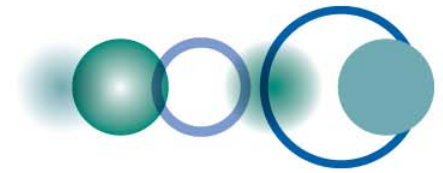


Conclusions



- **Data Quality assurance is one of the main (three?) pillars of the GEOSS Implementation**
- **DA-06-02 is expected to provide the platform for the community to converge its practices, standards and procedures for calibration of data and validation of products/information**
- **The original “White Paper” and the “Quality Control...Guidelines...” by WGCV form the basis (“bible” – this could become the “GEOSS QA Handbook”) for this process, the Cal/Val portal should be the vehicle for bringing the community together (communication/ sharing standards and procedures)**
- **Momentum should be kept and the implementation started**
- **The use of implementation- meetings/workshops and regular reports is encouraged (Suggestion: A WIKI approach may ease communication and encourage community to contribute)**
- **Broadening the Task Team will help**

Conclusions



A few more points:

- **Framework**
- **Platforms**
- **Harmonisation**
- **Adapters**
- **Fitness to purpose**
- **Not to forget: Traceability is the by-word**