



South African Earth Observation Strategy

Conference on Space Partnership for Sustainable Development

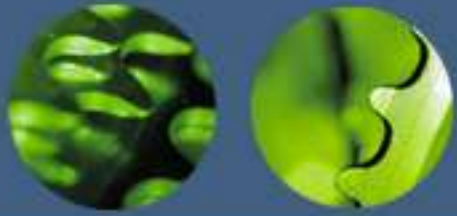
Innovation Hub, 18 April 2011

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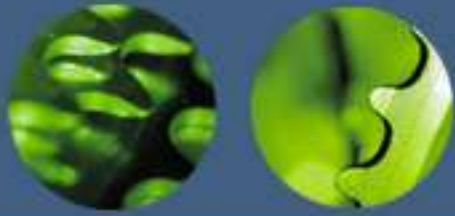
science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

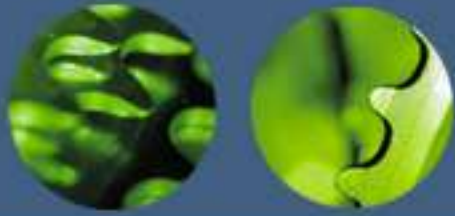


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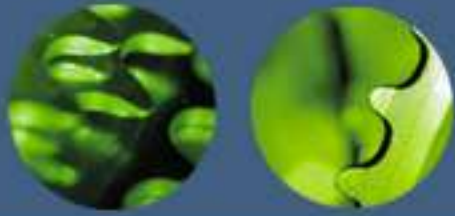
The South African Earth Observation Strategy – SAEOS



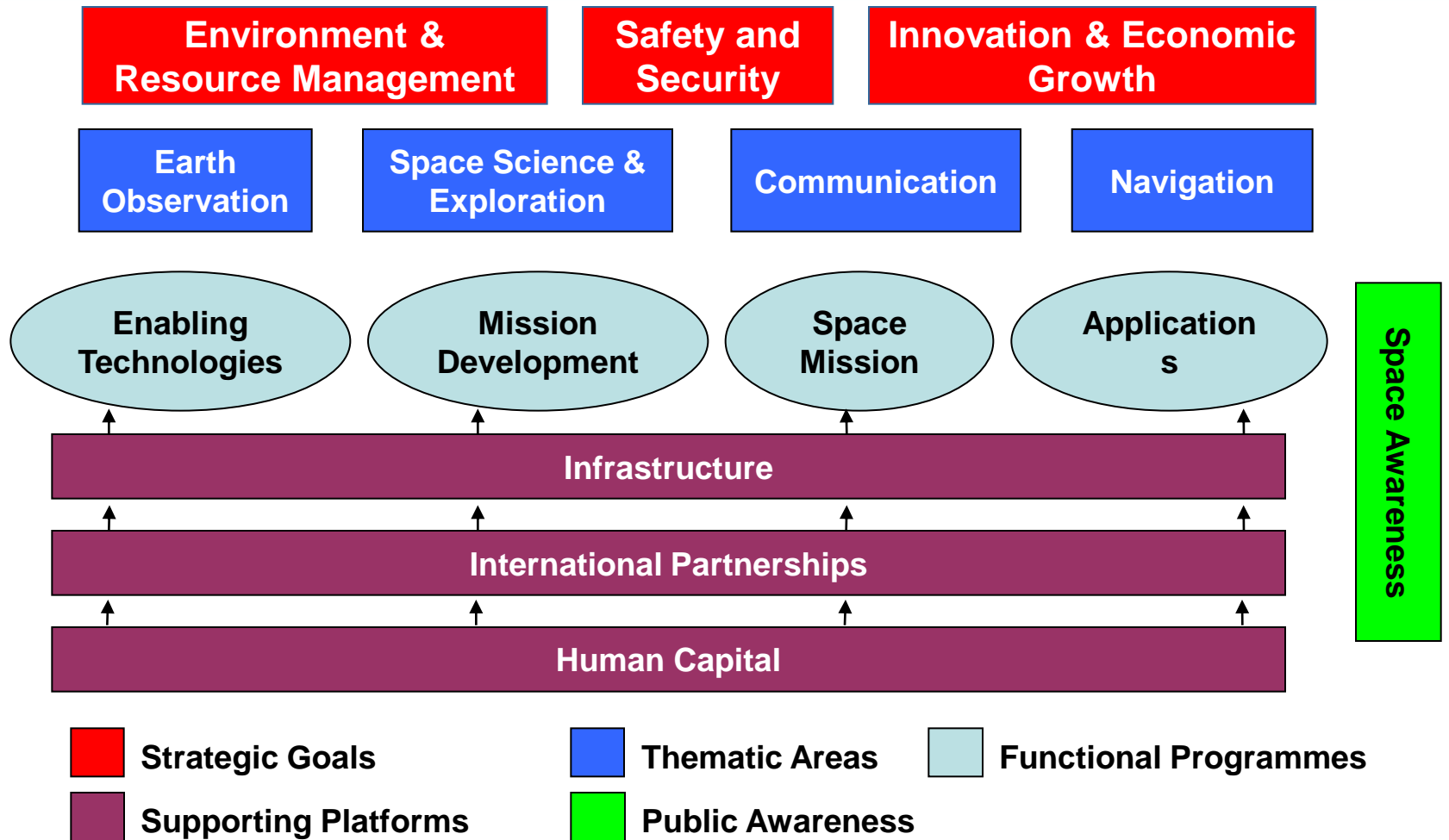
SAEOS Objectives

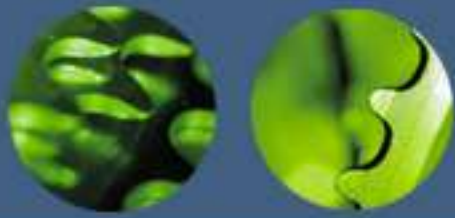
- The strategy captures South Africa's response to the Global Earth Observation Systems of Systems (GEOSS);
- SAEOS coordinates the collection, assimilation and dissemination of earth observation data;
- SAEOS establishes an overarching national framework for Earth observation in South Africa.



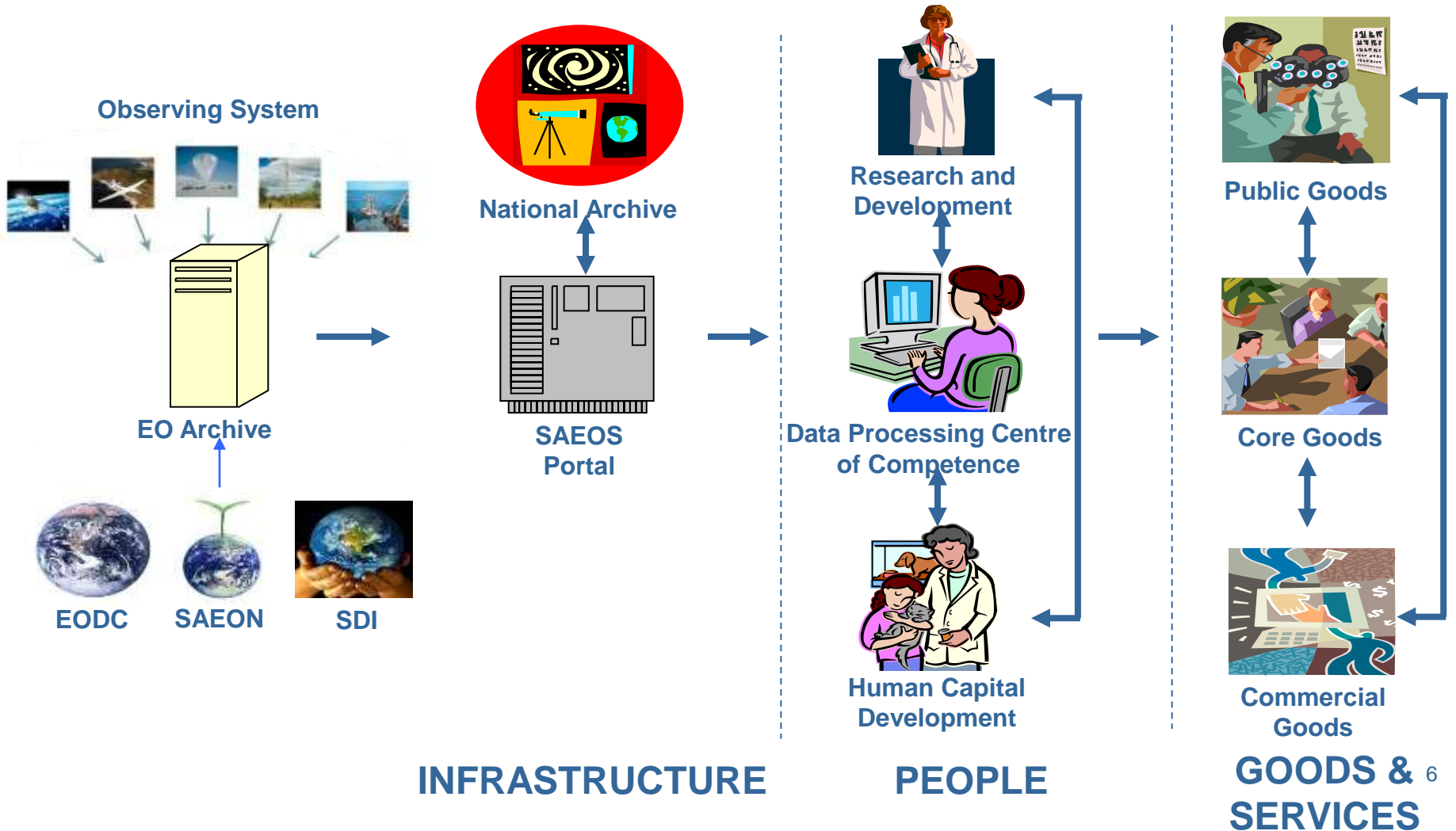


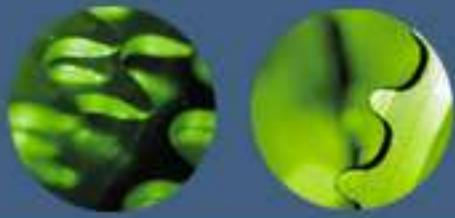
Space Strategy





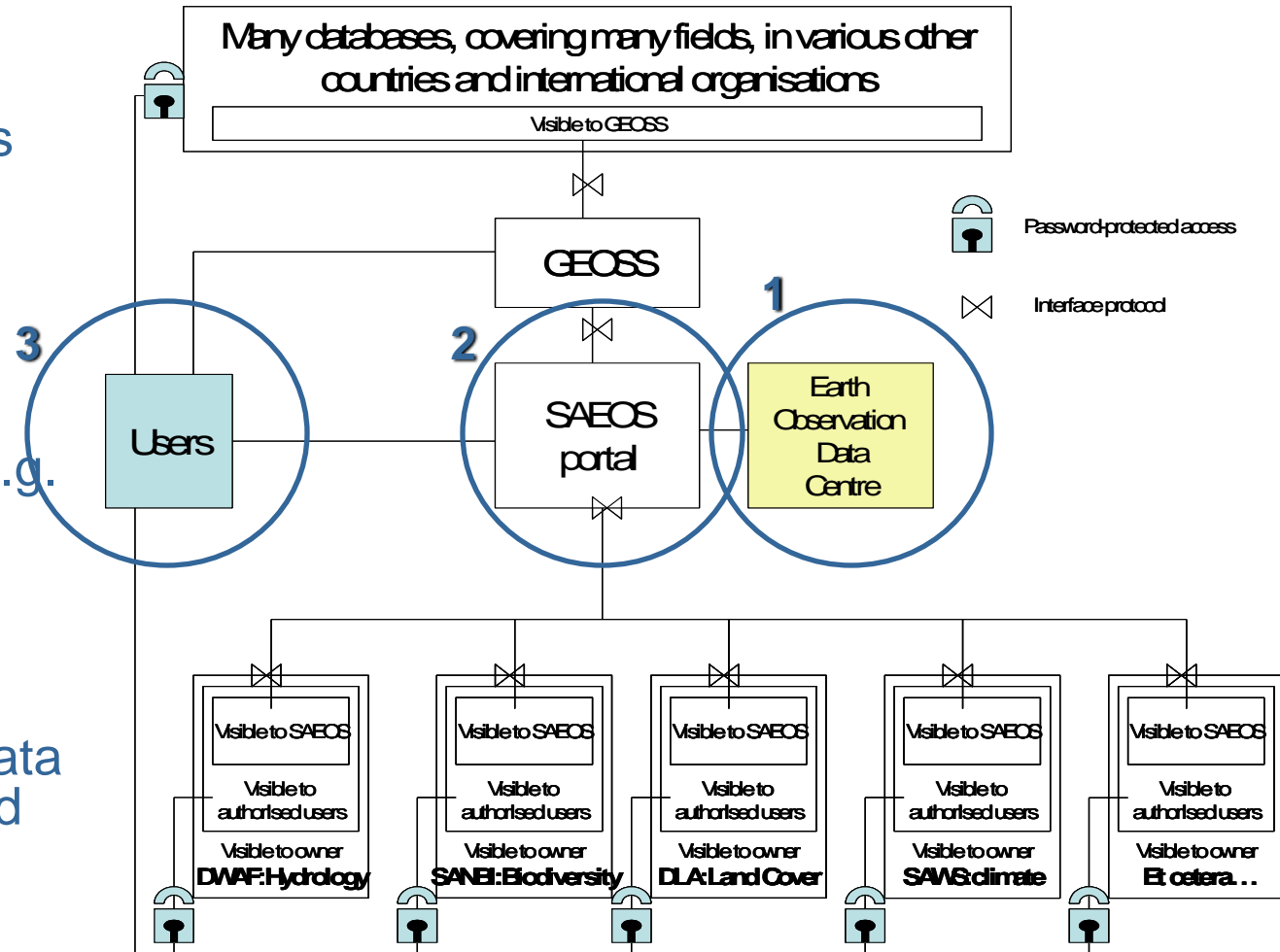
Earth Observation Value Chain

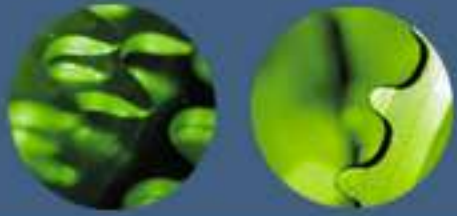




SAEOS

- maximises SA EO investments through coordination of South Africa's EO capacities
- fosters application development
- links them to complementary capabilities globally e.g. through GEO and GMES-Africa
- "system of systems" drawing on GEOSS interoperability and data sharing standards and principles





SAEOS Earth Observation Data Centre

- Acquires, processes, archives and distributes space information and products
- Components:
 - Earth Observation Catalogue
 - Data Information Management System – EO (DIMS-EO)
 - Image processing system – SARMES
 - Hardware
 - Tape library (1 Pb)
 - 14 x dual and quad core processing units,
 - Acquisition systems (TS 5, LPGS, Orbital Systems)



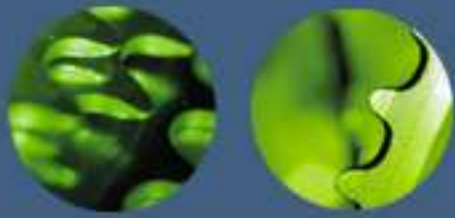
**Catalogue
Servers**



LTO4 Tape Library

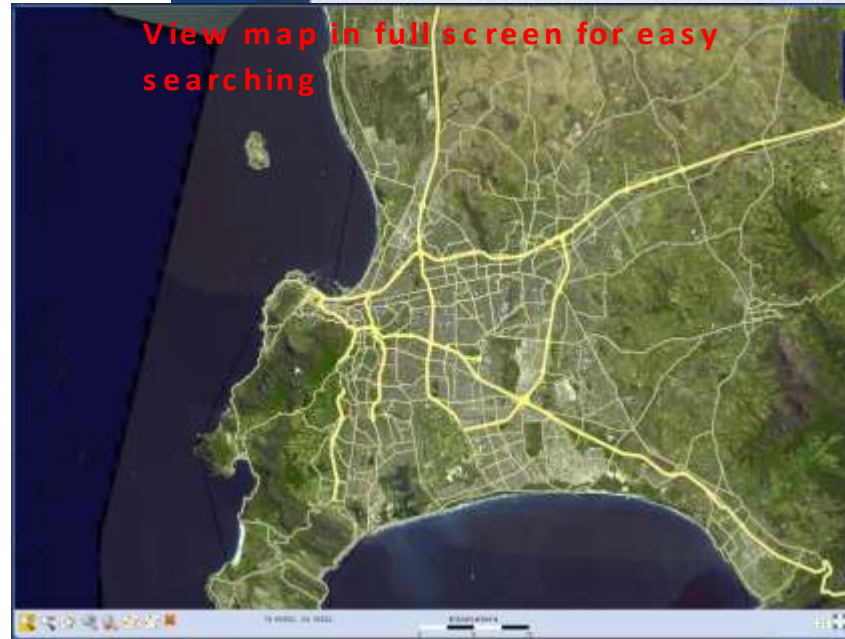


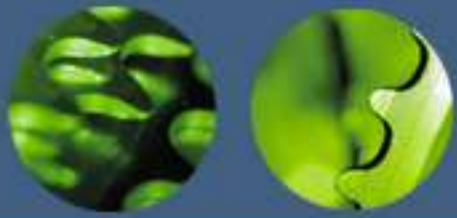
**Image
Processing
Servers**



Earth Observation Catalogue

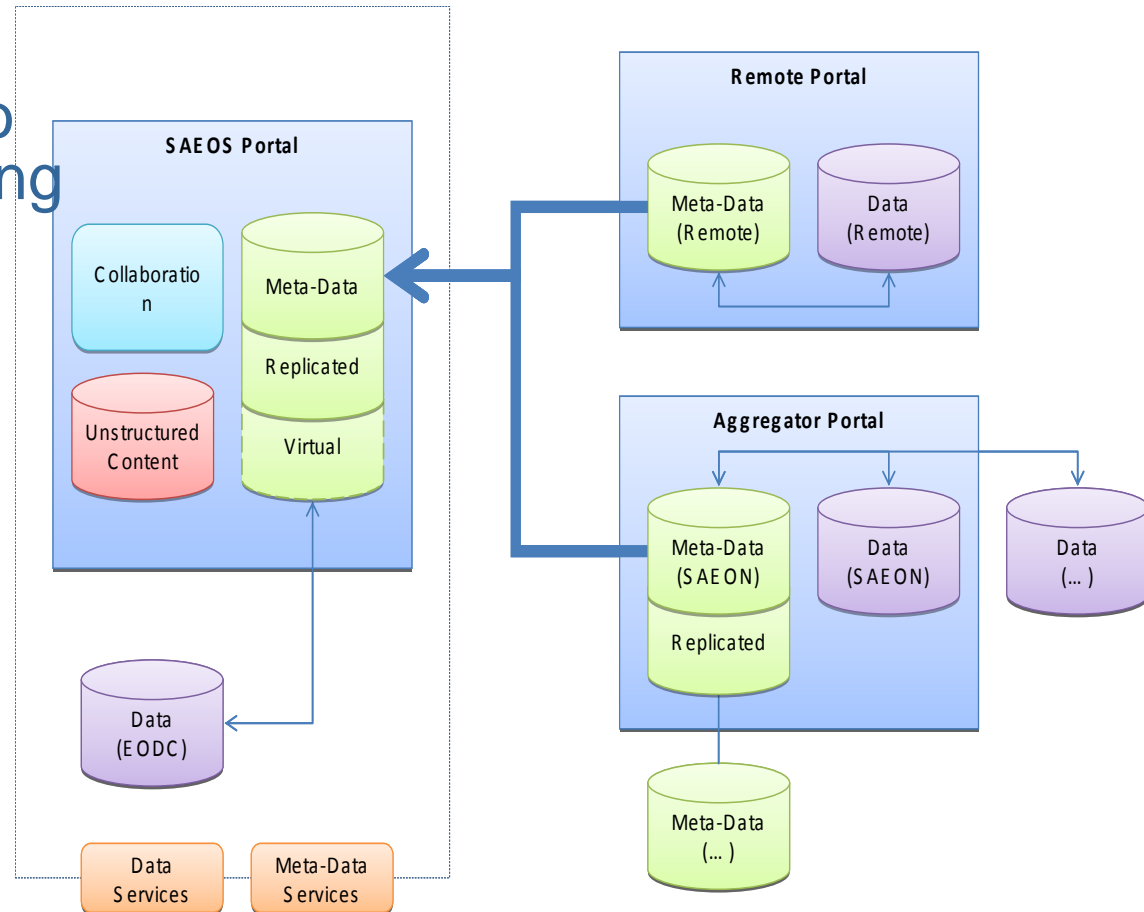
- ❖ Front interface to the end user
- ❖ Centralised catalogue for multi-sensor product searches
 - ❖ Landsat, SPOT, SAC-C, CBERS, SumbandilaSat, MODIS, ERS
- ❖ Product search through a visual “Globe”
- ❖ Catalogue designed and implemented using only “open source” software
- ❖ Product archive greater than 150 Tb, dated since 1972

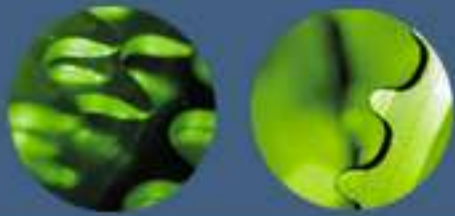




SAEOS Portal

- A 'catalogue of catalogues', facilitating user requests access to data from the contributing databases.
- Web accessible, user-oriented entry point
- online collaboration for researchers in each societal benefit area
- Provides metadata to potential users,
- Reminds users to acknowledge the data source

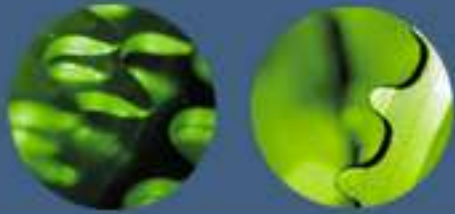




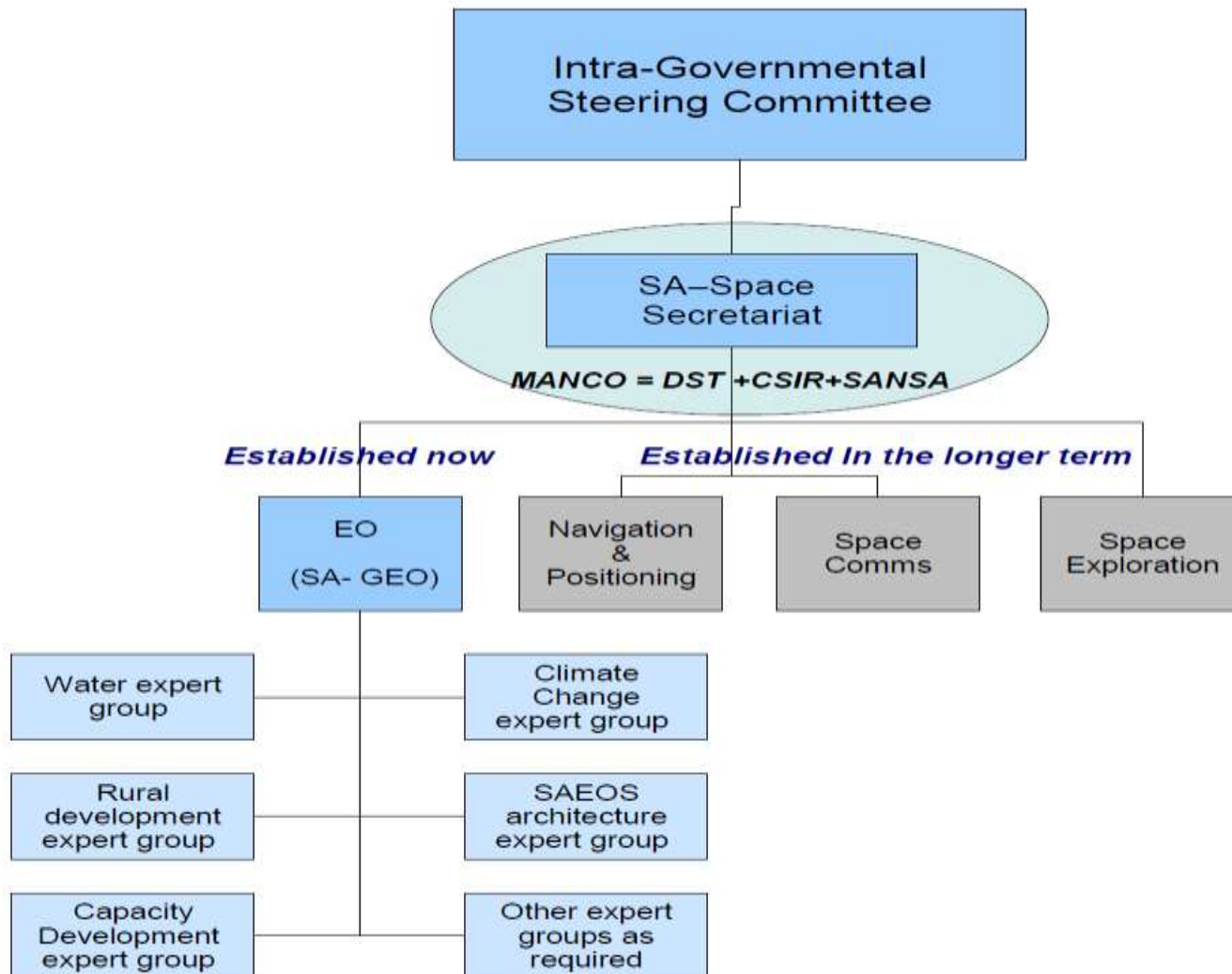
SAEOS Portal

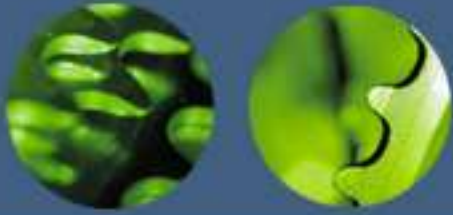
- Supports a
 - A variety of data formats and data sources,
 - Different levels of data use: basic data to value addition and decision support.
- Serves the requirements of
 - SAEON and the execution of its mandate
 - The Risk and Vulnerability Atlas (R&VA)
 - The World Data Centre for Biodiversity and Human Health in Africa
 - Sensor Web
 - A range of other smaller initiatives



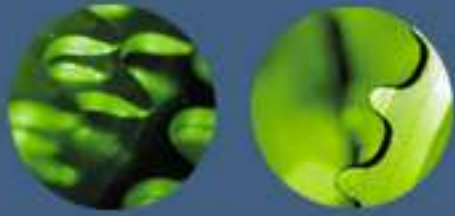


SA -GEO



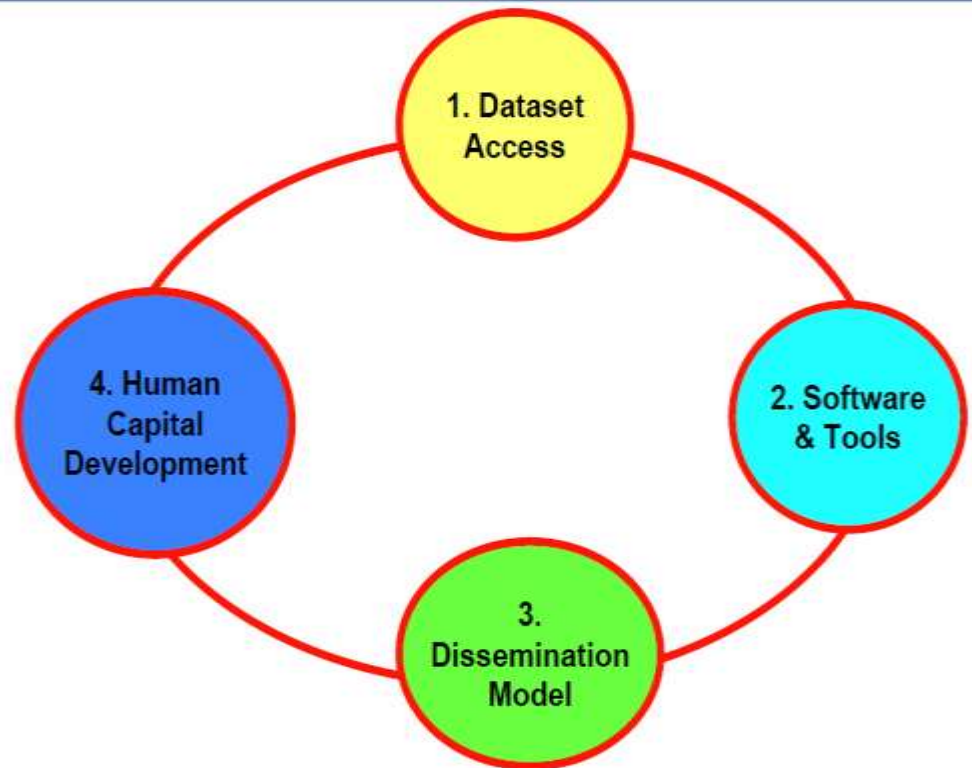


Linkages and Collaborations



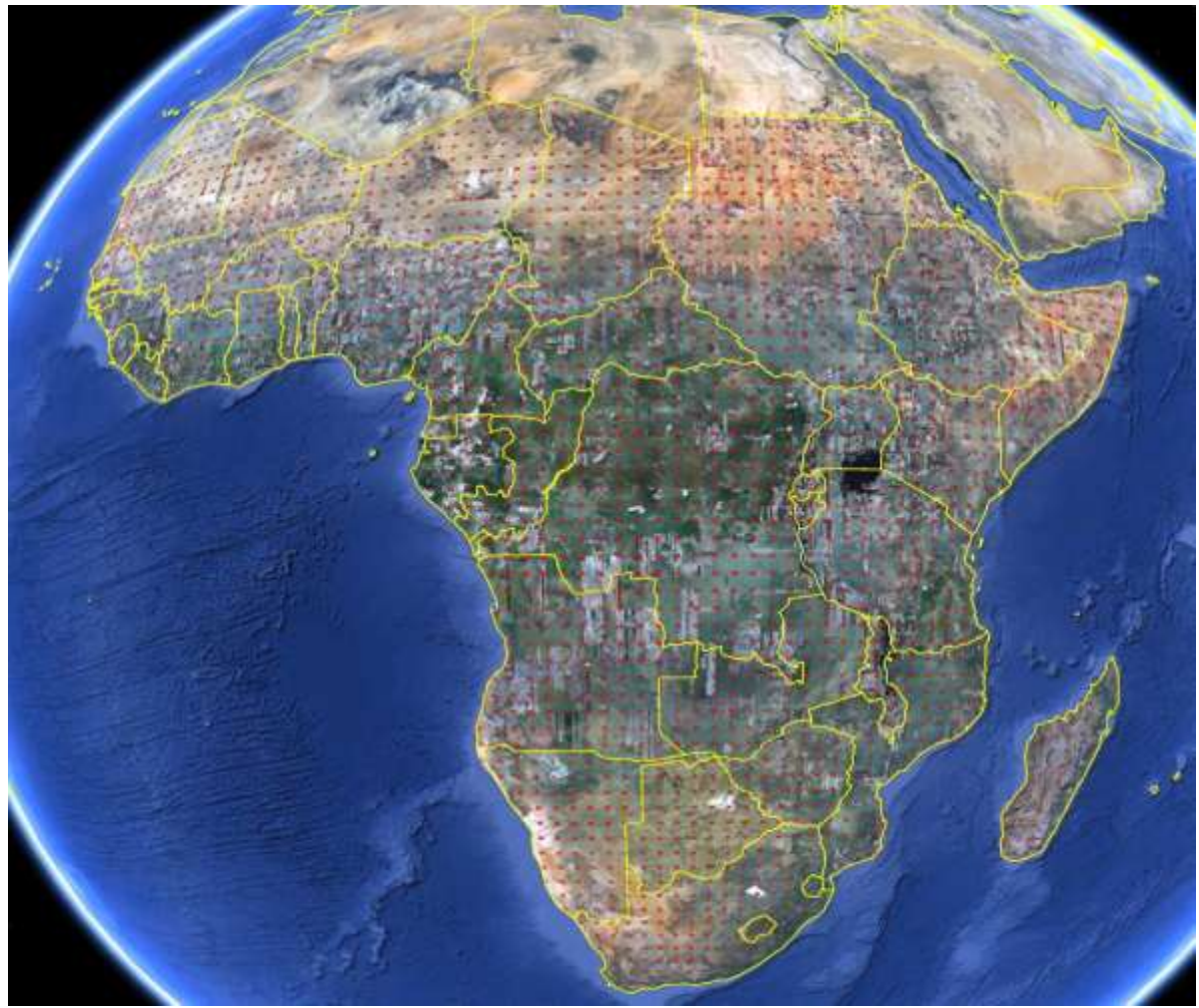
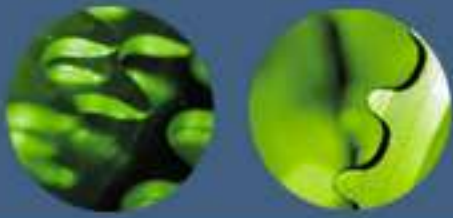
Data Democracy and SAEOS EODC

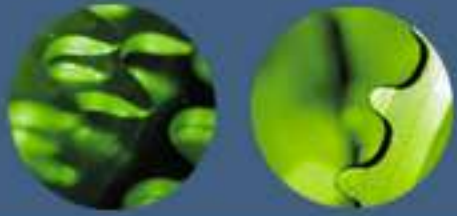
- GEOS Data Core
- Sentinel Data
- GMES -Africa
- Other data sets



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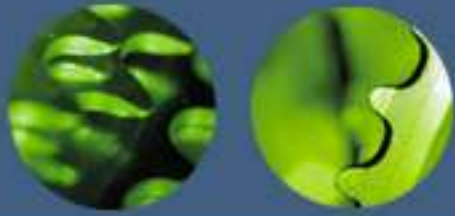
Sumbandilasat imagery programmed to support GMES and FAO Area Frame Sampling Schemes





Possible collaboration opportunities

1. Interoperability tests, joint technology development, etc.. Some specific examples:
 - Bi directional catalogue harvesting;
 - SAEOS portal plans to do some work on ontology-supported search enhancements, EU already funding a project:
<http://meetingorganizer.copernicus.org/EGU2011/EGU2011-5963-5.pdf>
2. Sensor Web implementations that can be applied generically at any data provider
3. INSPIRE (EU Geospatial Data Infrastructure) must have significant synergy with SAEOS and NSIF, engagement and discussion needed to kick this off.



THANK YOU

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