



South African Earth Observation Strategy

Conference on Space Partnership for Sustainable Development

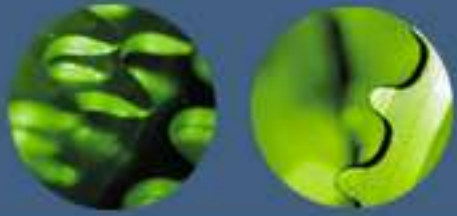
Innovation Hub, 18 April 2011

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Earth Observation Directorate



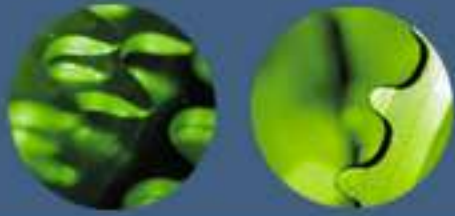
science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

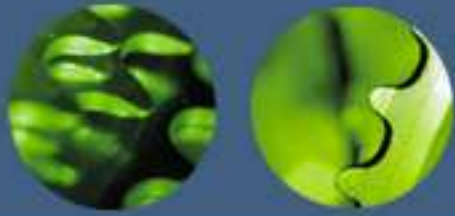


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 - Relation to National Space Strategy
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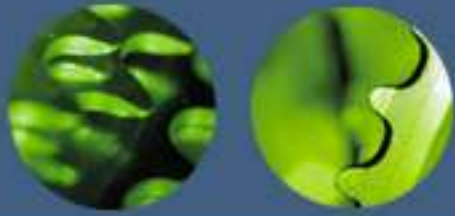
The South African Earth Observation Strategy – SAEOS



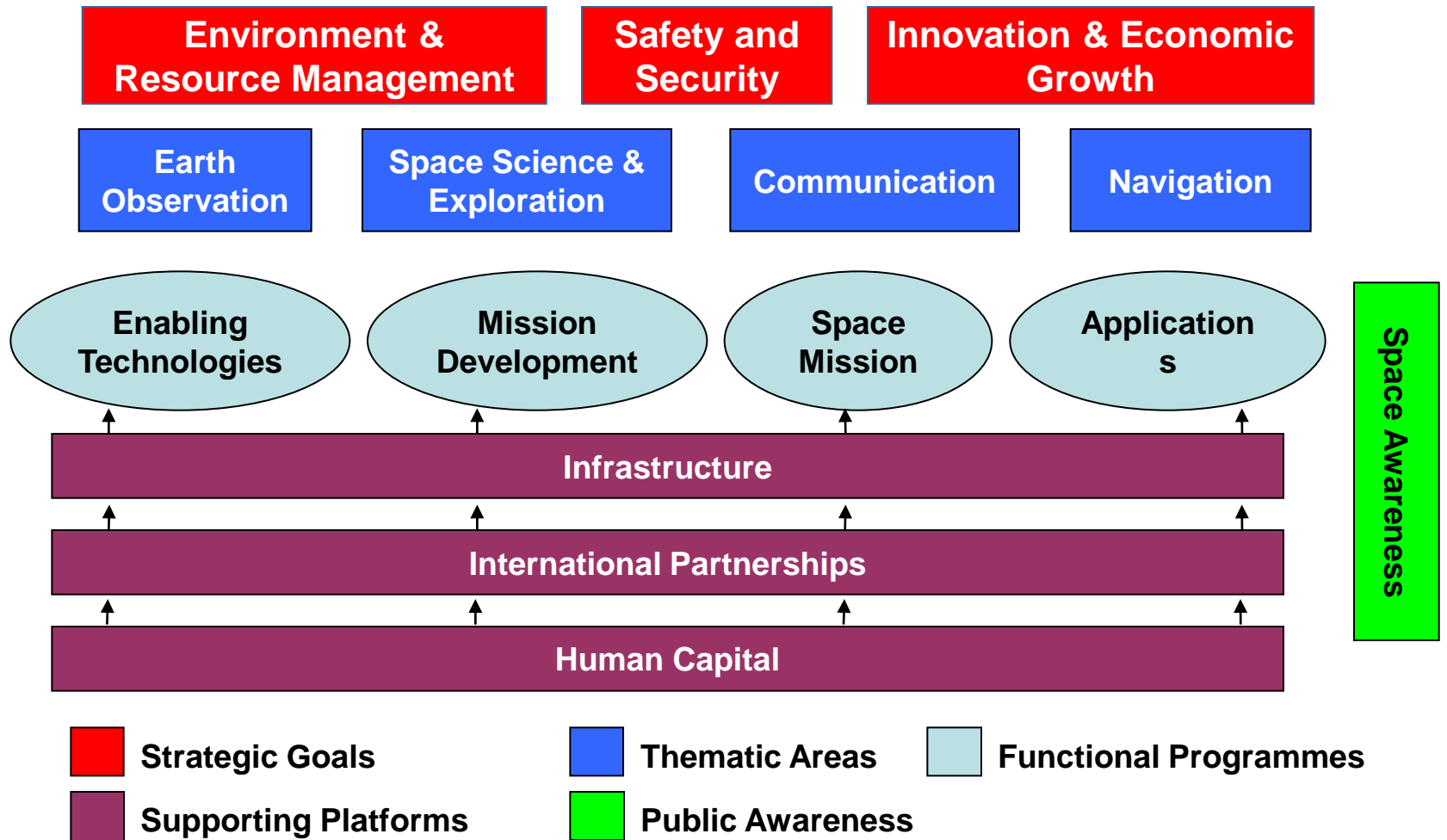
SAEOS Objectives

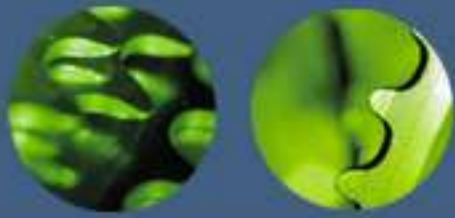
- The strategy captures South Africa's response to the Global Earth Observation Systems of Systems (GEOSS);
- SAEOS coordinates the collection, assimilation and dissemination of earth observation data;
- SAEOS establishes an overarching national framework for Earth observation in South Africa.



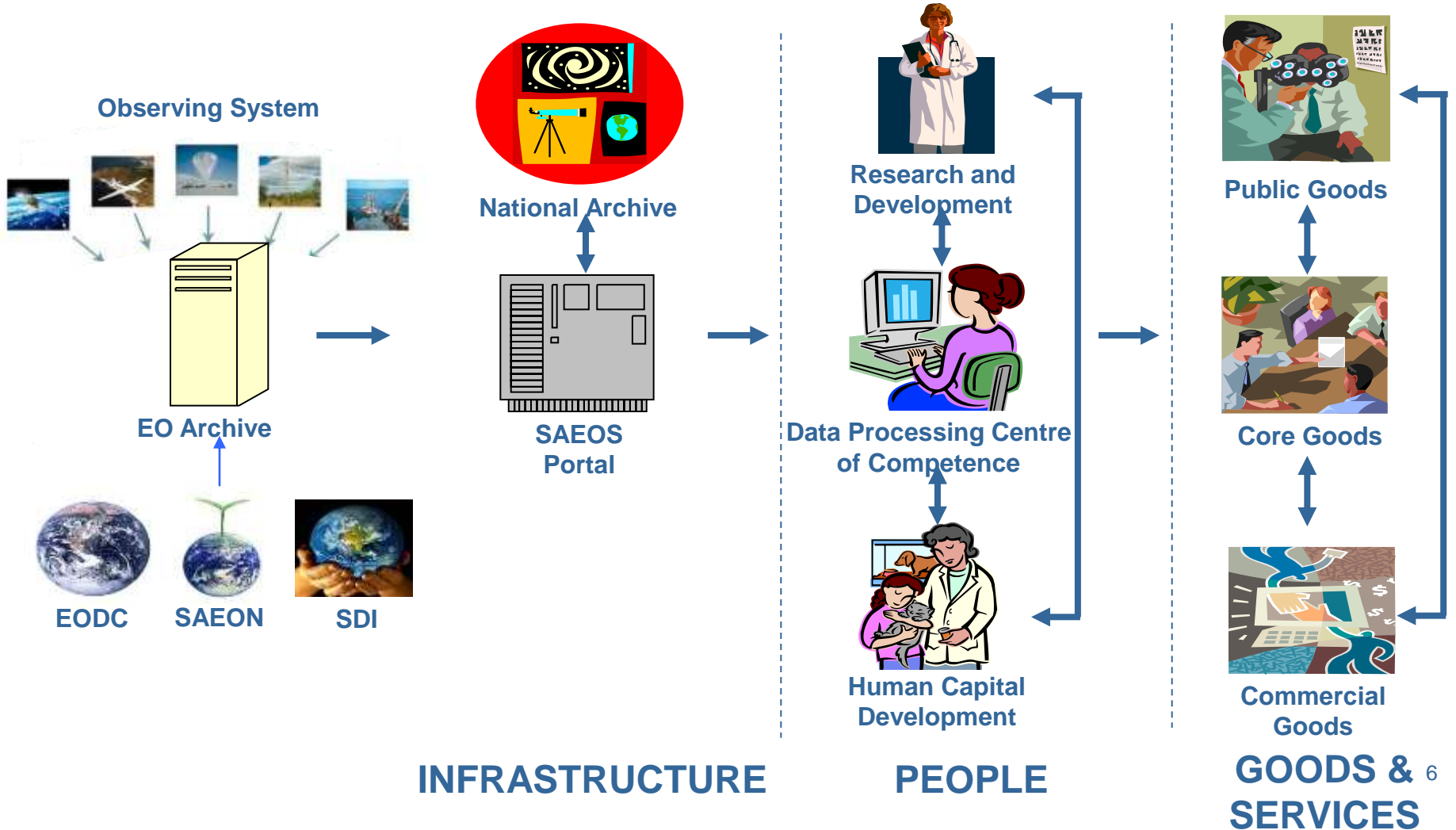


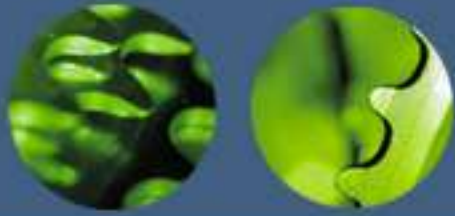
Space Strategy





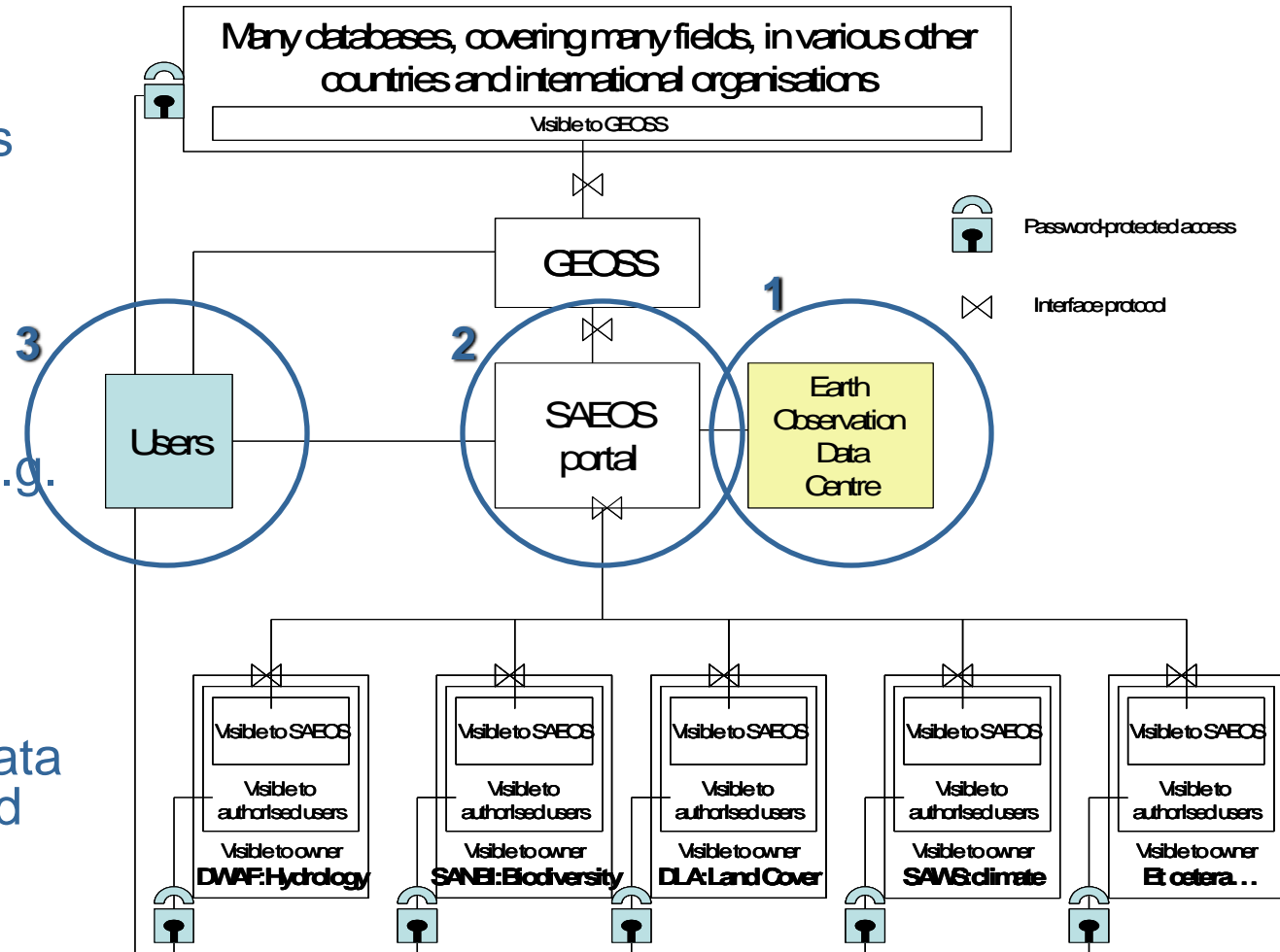
Earth Observation Value Chain

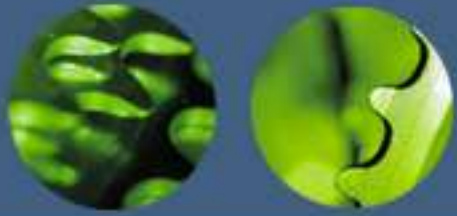




SAEOS

- 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)



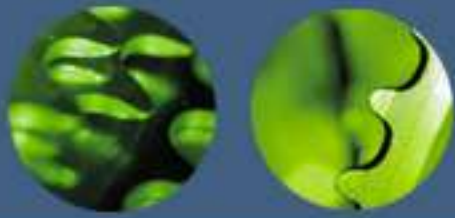
Catalogue
Servers



LTO4 Tape Library

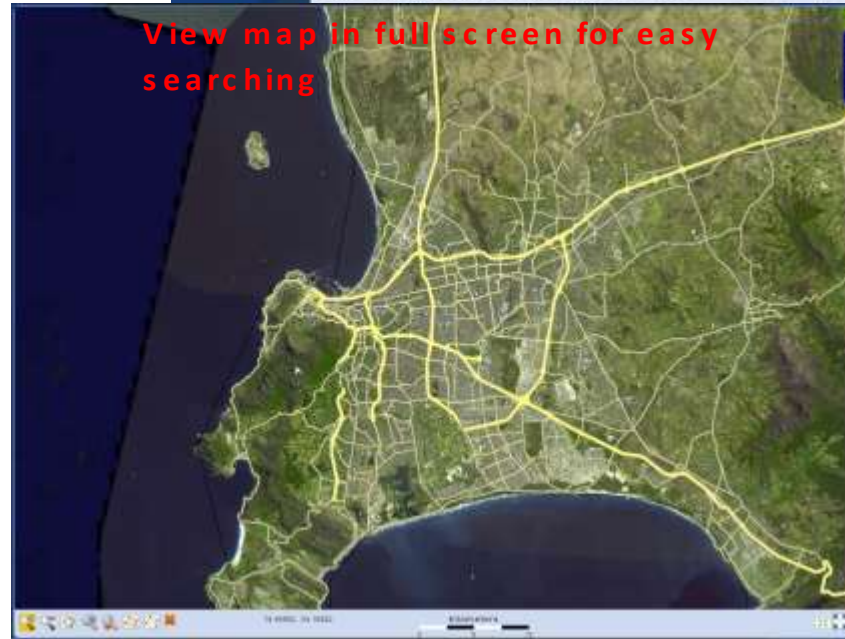


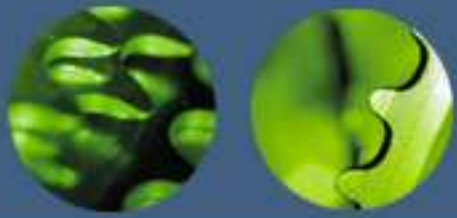
Image
Processing
Servers



Earth Observation Catalogue

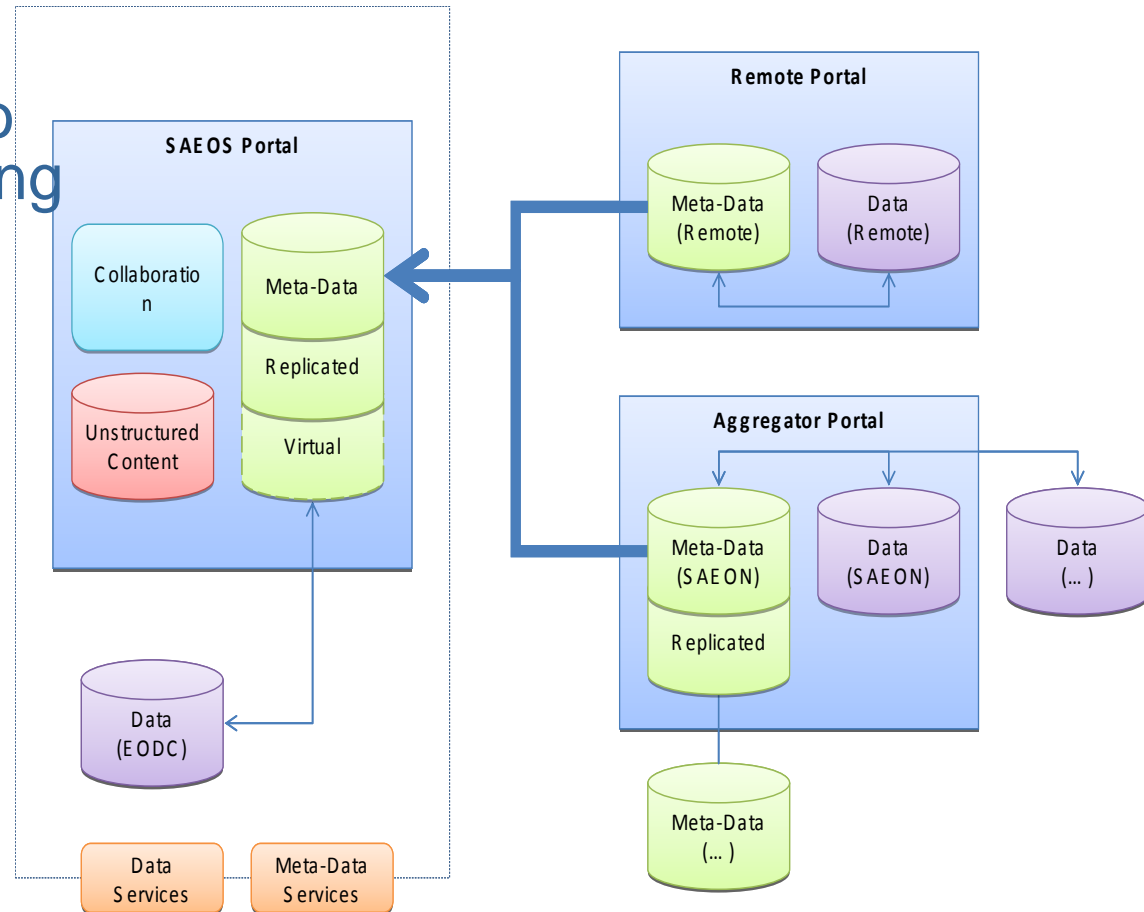
- ❖ Front interface to the end user
- ❖ Centralised catalogue for multi-sensor product searches
 - ❖ Landsat, SPOT, SAC-C, CBERS, SumbandilaSat, MODIS, ERS
- ❖ Product search through a visual “Globe”
- ❖ Catalogue designed and implemented using only “open source” software
- ❖ Product archive greater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

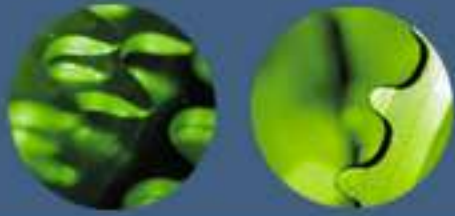




SAEOS Portal

- 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





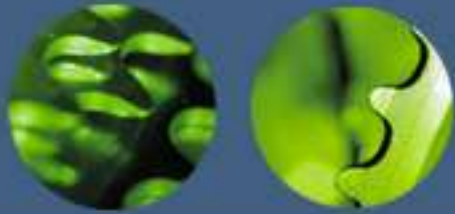
SAEOS Portal

- 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

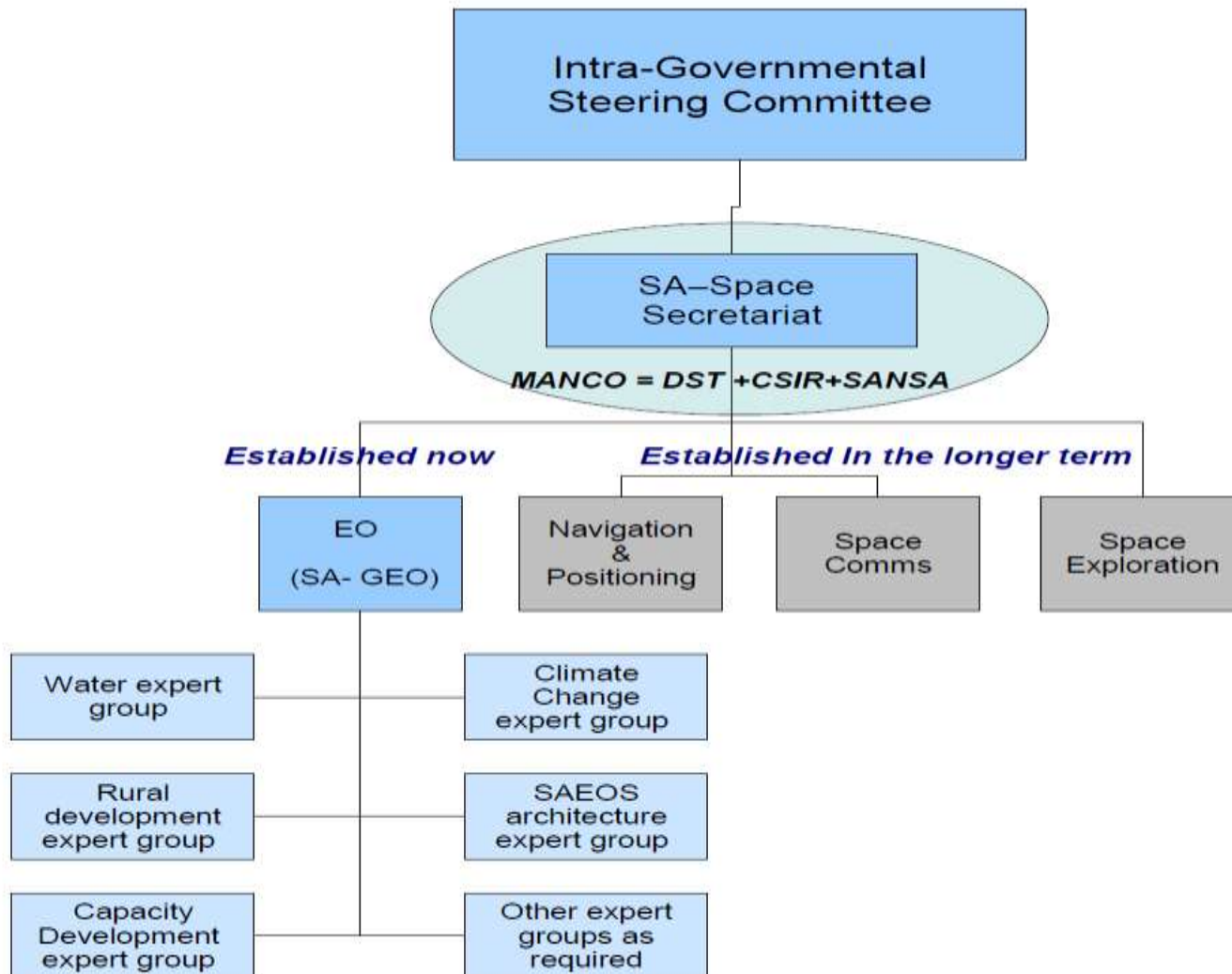
The screenshot displays the SAEOS Portal interface. At the top, there is a navigation bar with links for Home, Search, Stakeholders, Catalogue, Data Services, and Documentation. The main content area is titled 'Societal Benefit Areas' and features a list of articles with accompanying images. The articles are:

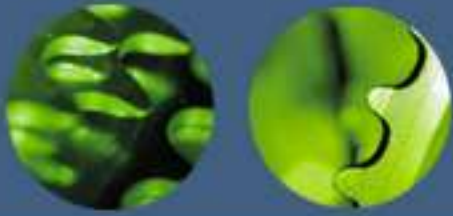
- Agriculture**: Both the basis of human existence and a major impact on the environment in which humans live. Sustainability of agriculture and security of food supply are some of the most important global problems of modern society. (Links: [Agriculture](#), [R&V](#))
- Biodiversity**: is declining at a record rate, and its monitoring is increasingly important, both from the perspective of understanding natural and anthropogenic factors influencing it, and to design responses. (Links: [SAEON](#), [SAHRI](#), [SANDPARK](#))
- Climate**: is one of the most important scientific, social, and economic issues confronting our long-term quality of life. Monitoring and observation, together with forecasts of future outcomes, form a critical input into political and economic decision-making. (Links: [CSAG](#), [AMST](#))
- Disasters**: are much more manageable (and sometimes predictable) if information is clear at hand - on the location, severity, and aspects of events. Goals include better understanding of vulnerability, better preparedness, and improved responses. (Links: [AETS](#), [ROAD-C](#), [RIVA](#))

On the right side of the page, there is a 'Log in' section with fields for 'Login Name' and 'Password', a 'Log In' button, and a 'Forgot your password?' link. Below this is a calendar for April 2011, showing the 17th as the current date.

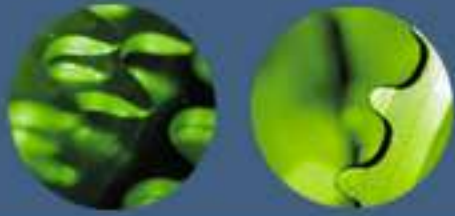


SA -GEO



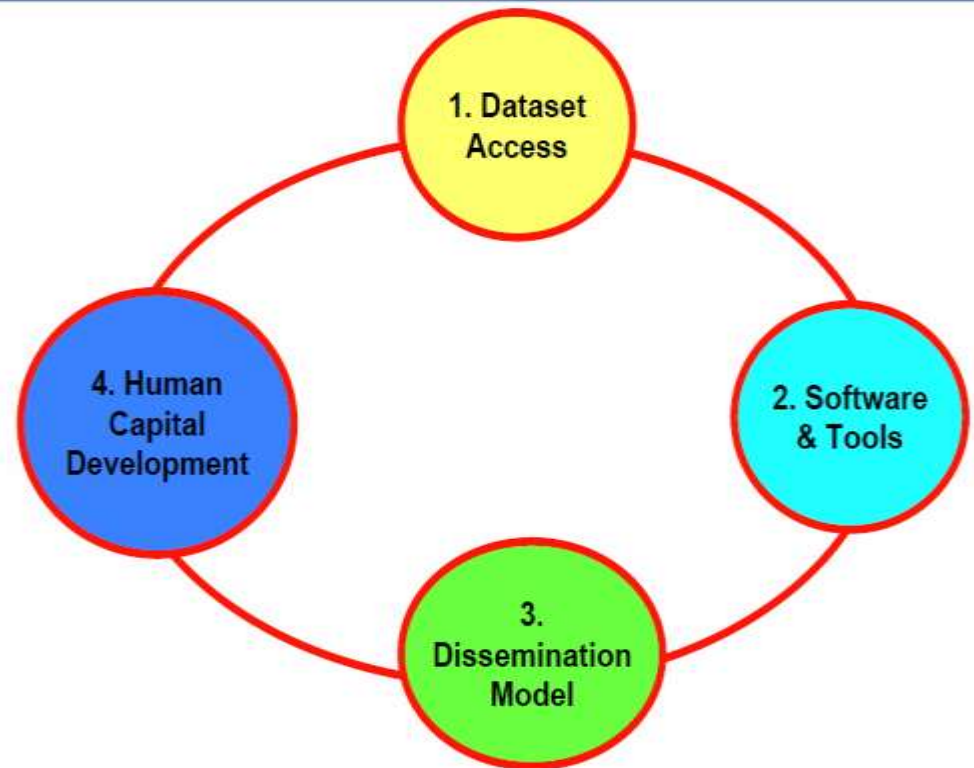


Linkages and Collaborations



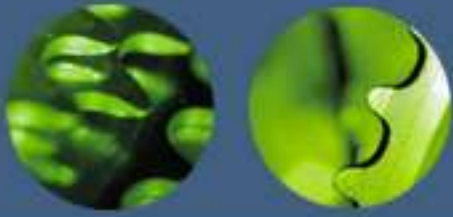
Data Democracy and SAEOS EODC

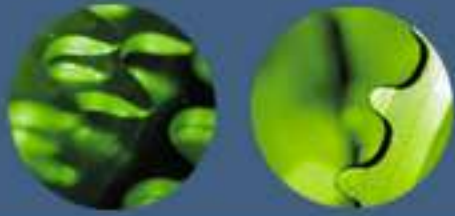
- GEOS Data Core
- Sentinel Data
- GMES -Africa
- Other data sets



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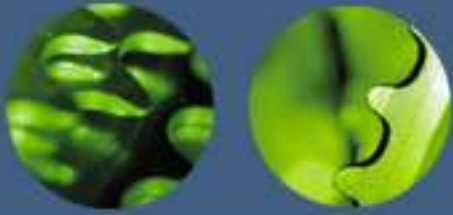
Sumbandilasat imagery programmed to support GMES and FAO Area Frame Sampling Schemes





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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