



GEO contribution to UNISPACE+50

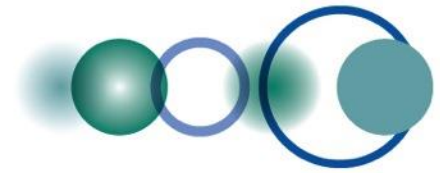
Data accessibility as a target for a joint
UNOOSA/GEO Initiative

Breakout session 3

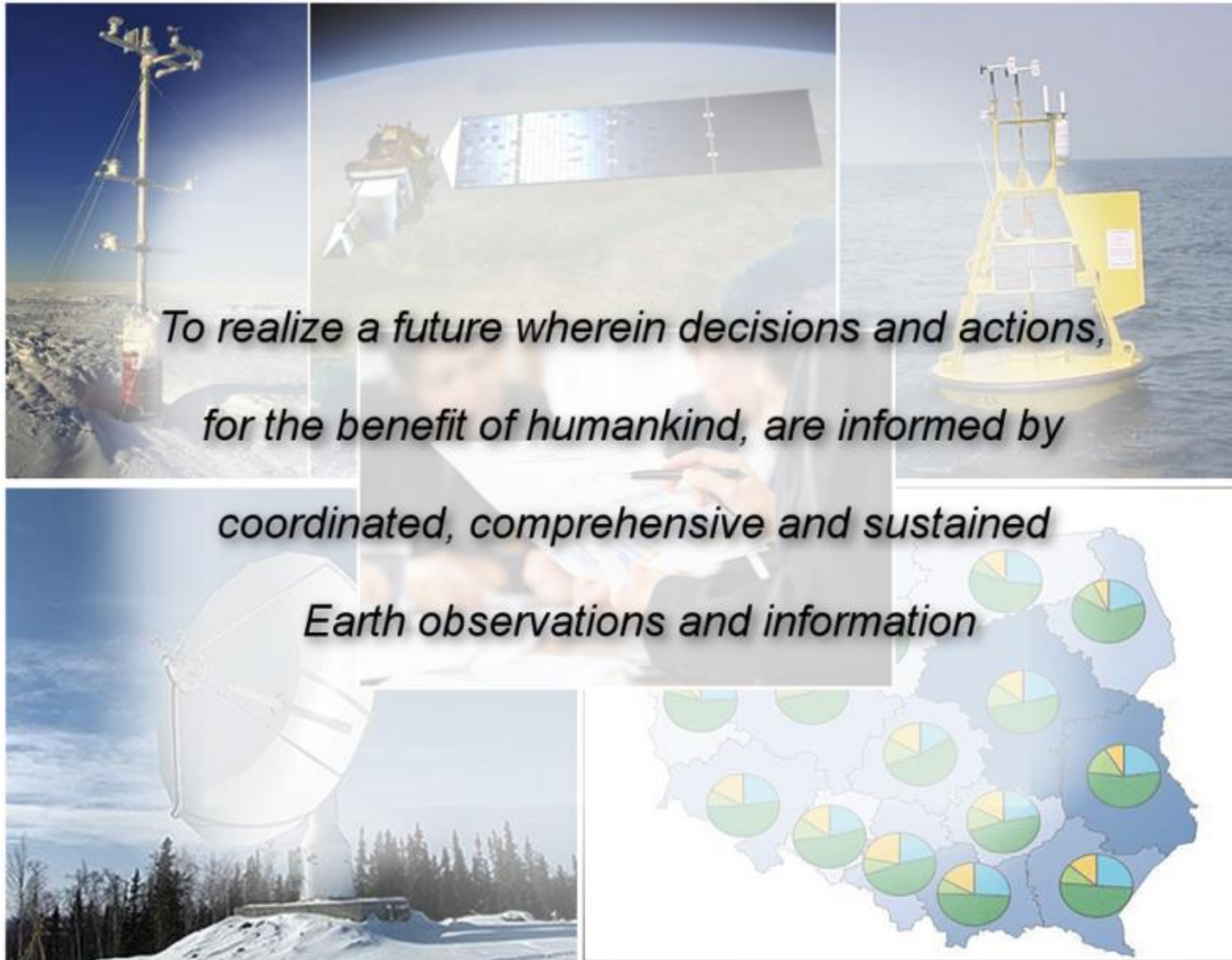
Giovanni Rum
GEO Secretariat

*High Level Forum: Space as a Driver for
Socio-Economic Sustainable Development
20-24 November 2016
Dubai, UAE*





GEO Vision



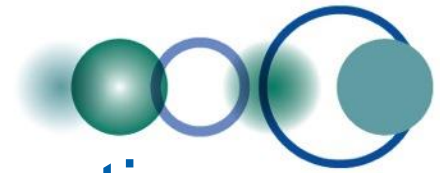


The GEO Strategic Plan 2016-2025



- 1. Enabling elements:** **GEOSS (Access to Data, information, Knowledge), User needs and observational gaps, Capacity Building**
- 2. Demonstrating EO key role:** from R&D activities to developing and demonstrating prototype, end-to-end services
- 3. Creating and keeping awareness:** policy relevance, “buy-in” from decision-makers, user engagement, communication & outreach, strengthening the GEO Community
- 4. Ensure functioning** of the GEO collaboration framework

GEOSS
Global Earth Observation System of Systems



GEOS the Global Earth Observation System of Systems



A set of coordinated, independent Earth observation, information and processing systems that interact and provide access to diverse information for a broad range of users in both public and private sectors.



Ensuring access to Data, information, Knowledge

- **GEOSS Data Sharing Principles (DSPs)**
- **Providers coordination**
- **GEOSS Information System**
or **GEOSS Common Infrastructure (GCI)**
- **GEO Data Management Principles (DMPs)**



GEOSS Data Sharing Principles (2016-2025)

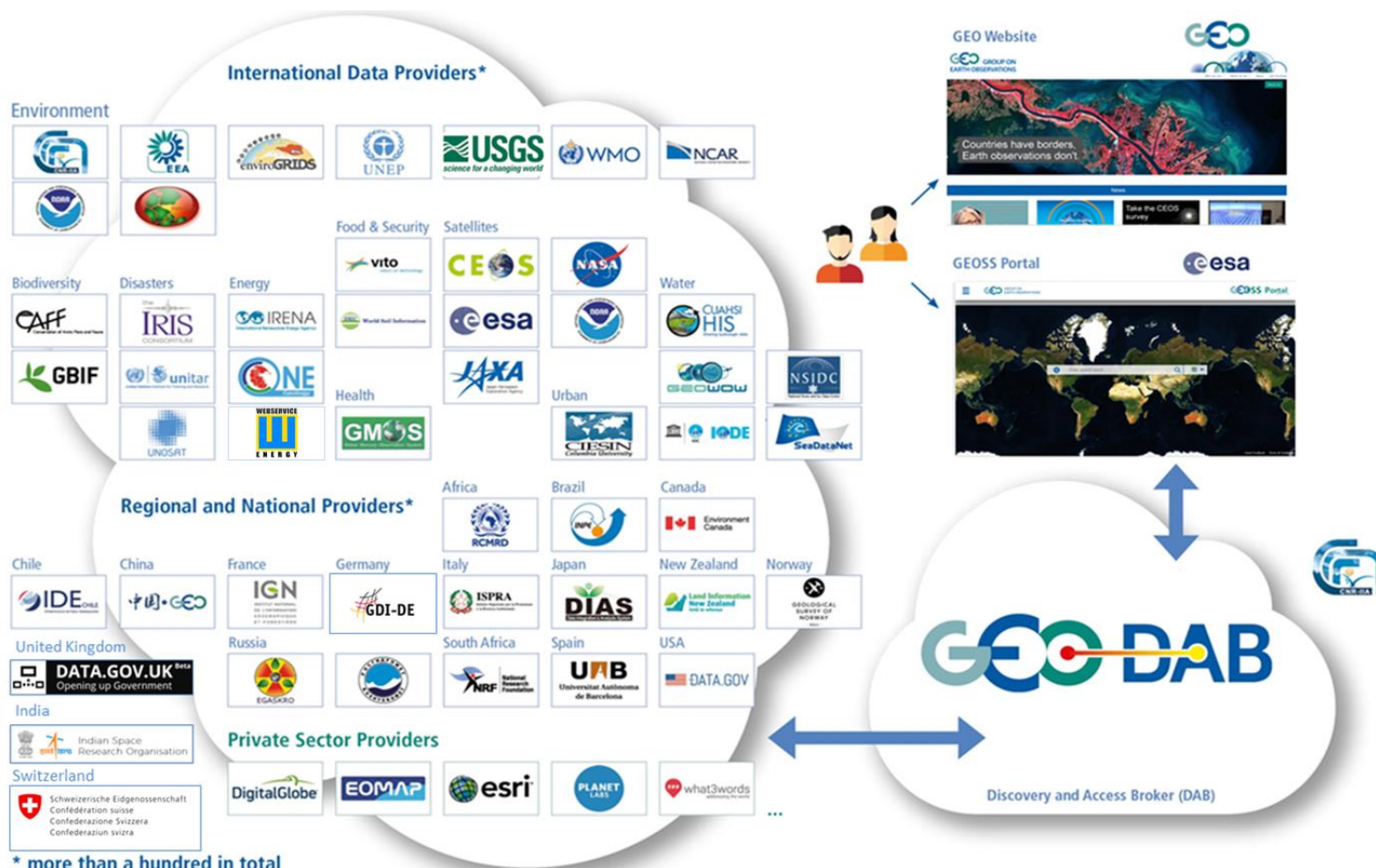
- **Open Data by default**

- data, metadata and products will be shared as Open Data by default, by making them available as part of the GEOSS Data Collection of Open Resources for Everyone (Data-CORE) without charge or restrictions on reuse, subject to the conditions of registration and attribution when the data are reused;
- where international instruments, national policies or legislation preclude the sharing of data as Open Data, data should be made available with minimal restrictions on use and at no more than the cost of reproduction and distribution; and

- **Minimum time delay**

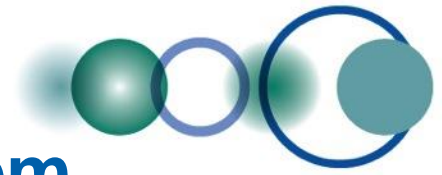
- all shared data, products and metadata will be made available with minimum time delay.

GEOS Information System a simple scheme



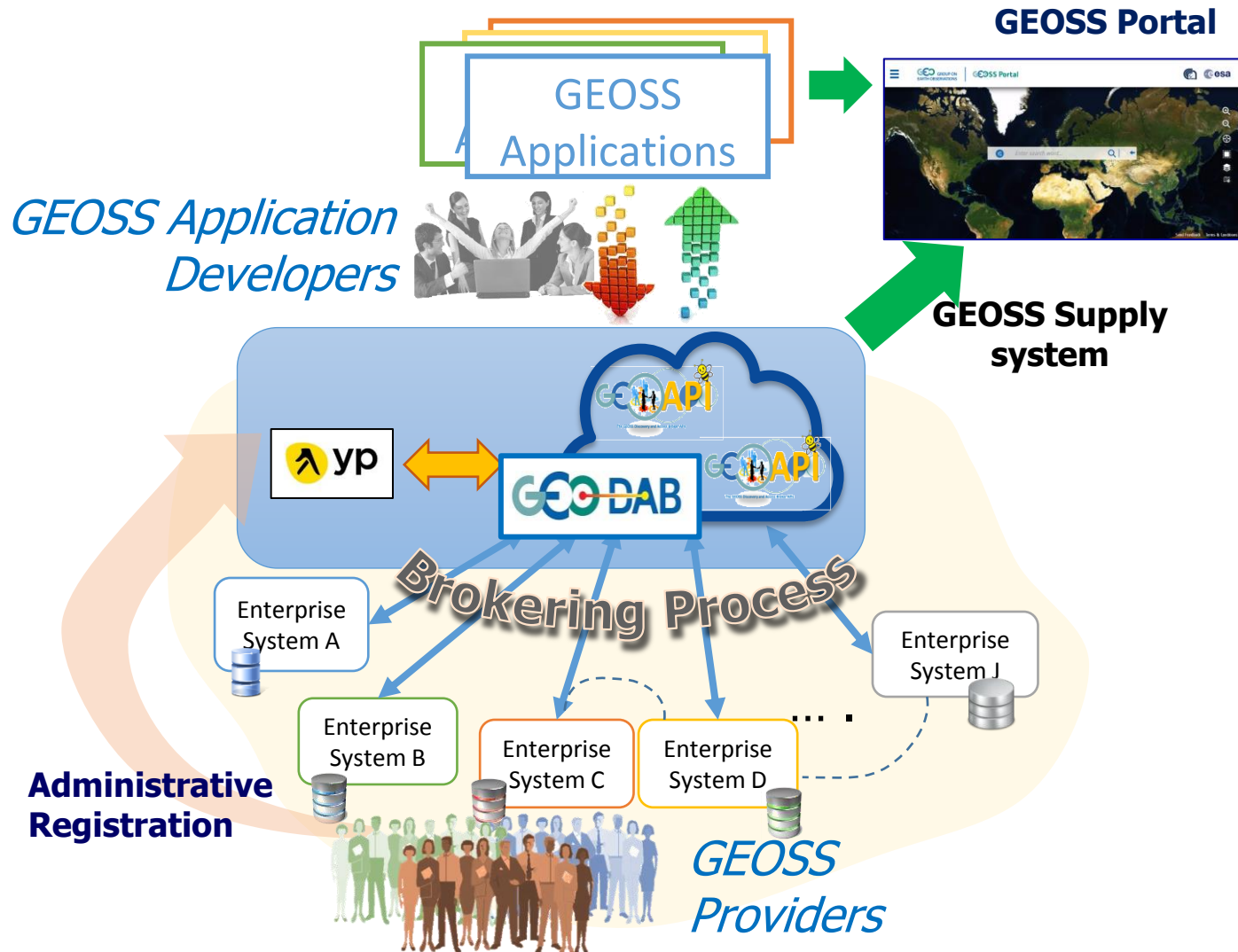
* more than a hundred in total

Some figures on GEOS Assets: 152 brokered catalogs, approx 200 ml resources discoverable and accessible



GEOS Information System

A little bit of complexity





GEO Data Management Principles (DMPs)

The value of Earth observations are maximized through data life-cycle management based on ten Principles supporting five themes:

DISCOVERABILITY

- DMP-1: Data and metadata discoverable

ACCESSIBILITY

- DMP-2: Data accessible via online services

USABILITY

- DMP-3: Encoding
- DMP-4: Documentation
- DMP-5: Traceability
- DMP-6: Quality

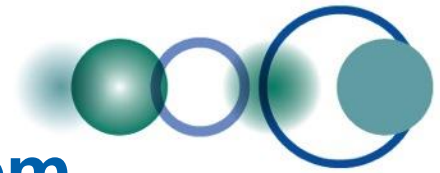
PRESERVATION

- DMP-7: Preservation
- DMP-8: Verification

CURATION

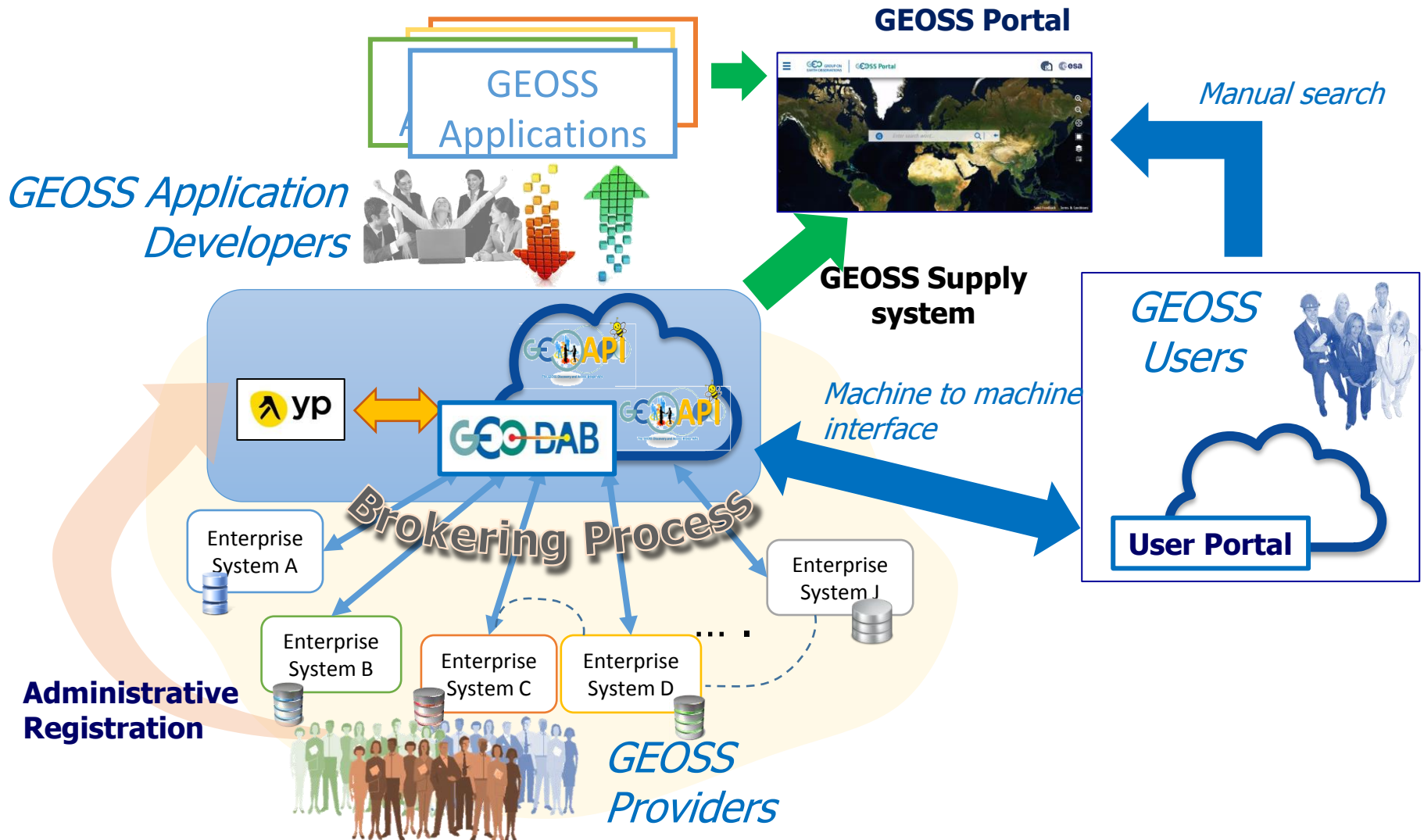
- DMP 9: Review and reprocessing
- DMP 10: Persistent and resolvable identifiers

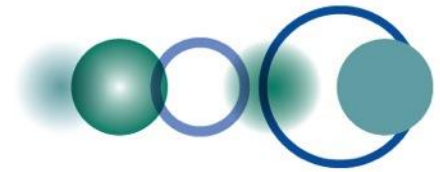




GEOSS Information System

Including the users in the picture...





GEOSS View(s)



- Allow the machine to machine interface
- Are enabled by the APIs (Application Programming Interface)
- Are defined as a **Subset of the whole GEOSS resources defined by applying, via the DAB, a set of clauses**
 - *Discovery clauses* (e.g. spatial envelope, keywords, sources, etc.)
 - *Access clauses* (e.g. data format, access protocol, CRS, etc.)



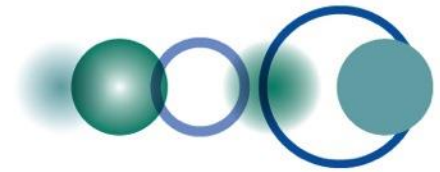
Provider-defined View – i.e. Server-side APIs

2



Consumer-defined View – i.e. Client-side APIs

3



A proposal in support of UNISPACE+50 (1)

Key Partners:

- UNOOSA and GEO,
- open to Countries and International Organizations

Activities focus

- Access to pre-identified sets of data and information, such as thematic (climate, health, etc..) and/or Geographic (country, region), serving specific users /group of users.

Expected results in 2018

- Pilot projects demonstrating the capability to access a recurring set of identified resources through the GEOSS Portal and/or through "user portals" (possibility to strengthen the SPIDER Knowledge Portal, considered as a "user").
- a methodology/toolbox for further application.



A proposal in support of UNISPACE+50 (2)

Technical approach

- **Builds on the current and planned capabilities of the GEOSS Common Infrastructure**

Phasing

- **Definition phase: 1st half of 2017 (GEO, UNOOSA, other partners and selected users sit together and define what cases to develop)**
- **Implementation phase 2017-2018**
- **Incremental results from up to 2018**



An on going development: **GEO CRADLE**

GEO-CRADLE is a EC funded Coordination Action.

It seeks to identify common needs, create synergies, and integrate capacities and it fosters the regional cooperation and integration of monitoring capabilities and networks, and scientific skills in the N. Africa, Middle East, and the Balkan territories.

Thematic Areas



*Adaptation
to Climate
Change
(ACC)*



*Improved
Food
Security –
Water
Extremes
Management
(IFS)*

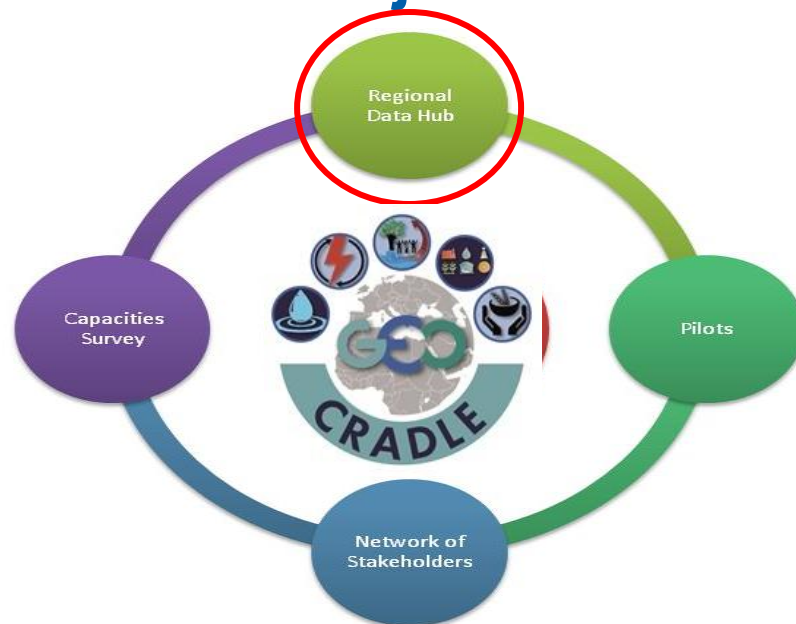


*Access to
Raw
Materials
(ARM)*



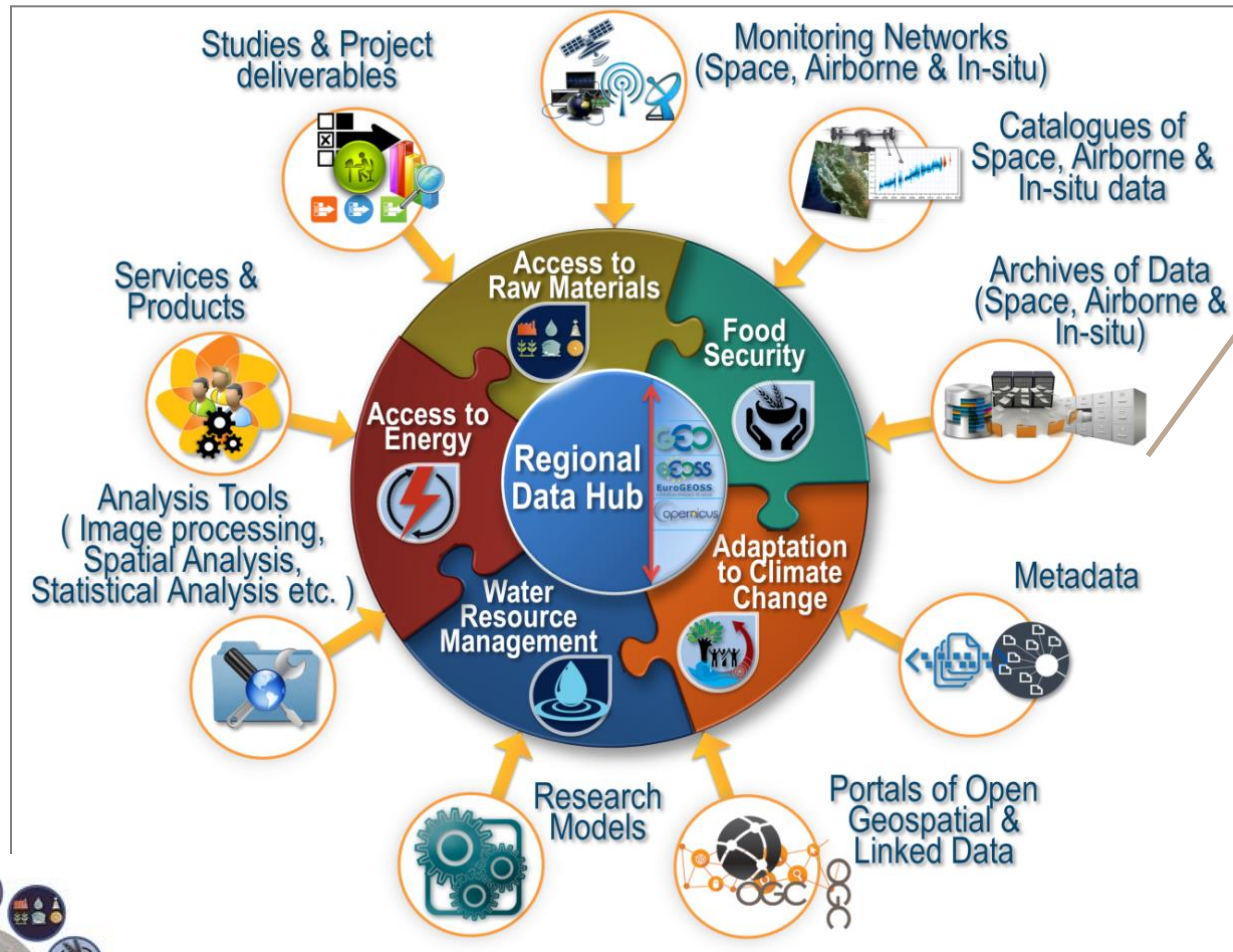
*Access to
Energy
(SENSE)*

The Project Pillars





The Concept of Regional Data Hub (RDH)



“one-stop-shop” for region-specific data/information/knowledge access for EO players, service providers, and end users.

Data Portals, Databases and Links being mapped or linked to the RDH

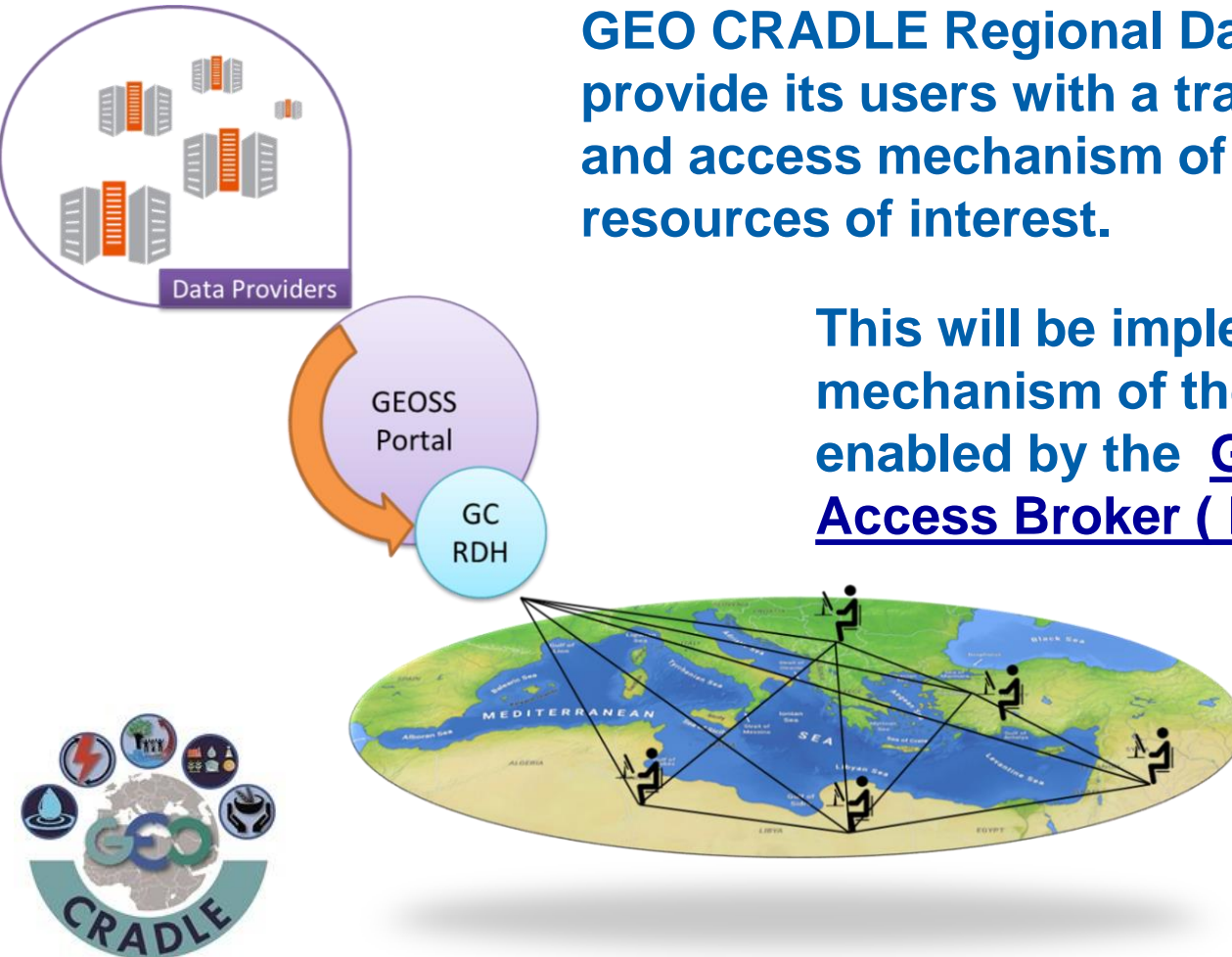


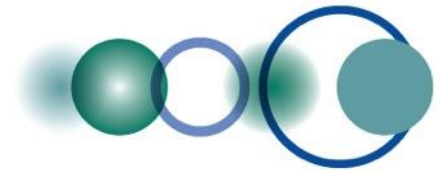


Regional Data Hub – Connection with GEOSS Portal

GEO CRADLE Regional Data Hub (GC-RDH) will provide its users with a transparent discovery and access mechanism of the GEOSS portal's resources of interest.

This will be implemented through the mechanism of the “GEOSS views”, enabled by the GEO Discovery and Access Broker (DAB) APIs

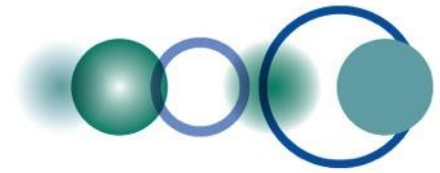




Why GEOSS Portal?

- One of the exploration and innovation main objectives of GEO-CRADLE; to showcase the added value of applications built upon GEO DAB APIs
- Plethora of resources: 152 brokered sources, more than 80 Millions GEOSS Data Core elements
- High degree of interoperability: supports several service interfaces (e.g. OpenSearch, OAI-PMH, OGC WPS, etc.)





GEOSS Portal

<https://www.geoportal.org/>



Discovery and Access Broker

<http://www.geodab.net/>



Application Programming Interface

<http://earthobservations.org/article.php?id=184>

<http://www.geodab.net/test-apis>



GEO CRADLE

<http://geocradle.eu/>

Thank you !

grum@geosec.org

GEO Website

<http://www.earthobservations.org/index.php>

