



## **GENESI-DR perspectives and goals of a wide research infrastructure for the Earth Science community**

**L.Fusco**

Earth Observation Directorate, European Space Agency, ESRIN, Frascati, Italy  
([luigi.fusco@esa.int](mailto:luigi.fusco@esa.int))

GENESI-DR, short for Ground European Network for Earth Science Interoperations - Digital Repositories, has the challenge of establishing open and seamless access to Earth science digital repositories for European and world-wide science users. GENESI-DR will operate, validate and optimise the integrated access and use available data, information, products and knowledge originating from space, airborne and in-situ sensors from all digital repositories dispersed all over Europe to demonstrate how Europe can best respond to the emerging global needs relating to the state of the Earth, a demand that is unsatisfied so far.

GENESI-DR has identified the following priorities:

- To provide a base for (establishing) a world-wide e-infrastructure for Earth science with European leadership;
- To offer guaranteed, reliable, easy, effective, and operational access to a variety of data sources, and demonstrate how the same approach can be extended to provide access to all Earth science data;
- To harmonise operations at key Earth science data repositories limiting fragmentation of solutions;
- To demonstrate effective curation and prepare the frame for approaching long term preservation of Earth science data;

- To validate the effective capabilities required to access distributed repositories for new communities, including education, and assess benefits and impacts;
- To integrate new scientific and technological derived paradigms in operational infrastructures in responds to the latest Earth science requirements.

To reach its objectives, the project proposes a repetitive approach built around a virtuous cycle of innovation where GENESI-DR services and enhanced capabilities will be validated against user needs for accessing and sharing Earth science data, and results of application activities. The proposed technology development and exploitation plan will proceed in line with supporting standardisation and evolution of data policies. To improve the accessibility of all related data, coordination, harmonisation and standardisation activities are an absolute must. GENESI-DR includes such activities and will establish links with relevant major global international Earth science organisations and programmes such as:

- Space agencies and satellites operators coordination bodies (e.g., CEOS)
- Global institutional environmental programmes (e.g., GMES, GEO, GEOSS)
- International Earth science programmes (e.g., IGOS, GCOS, GOOS. . . )
- Standardisation bodies (e.g., CCSDS, ISO, OGC)

Cooperation with EGU and other key Earth Science initiative to better support international cooperation is in the GENESI-DR identified priorities. The GENESI-DR project, started on January 2008, has the duration is 2 years and it is organised around four Networking Activities, two Services Activities and two Joint Research Activities.