Enhancements of the "eHabitat" Use Scenario in GEOSS StP

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The number of interoperable research infrastructures has increased significantly with the growing awareness of the efforts made by the Global Earth Observation System of Systems (GEOSS). One of the Social Benefit Areas (SBA) that is benefiting most from GEOSS is biodiversity, given the costs of monitoring the environment and managing complex information, from space observations to species records including their genetic characteristics. But GEOSS goes beyond the simple sharing of the data as it encourages the connectivity of models (the GEOSS Model Web), an approach easing the handling of often complex multi-disciplinary questions such as understanding the impact of environmental and climatological factors on ecosystems and habitats.

In the context of GEOSS Architecture Implementation Pilot – Phase 3 (AIP-3), the EC-funded EuroGEOSS and GENESIS projects have developed and successfully demonstrated the "eHabitat" use scenario dealing with Climate Change and Biodiversity domains. Based on the EuroGEOSS multidisciplinary brokering infrastructure and on the DOPA (Digital Observatory for Protected Areas, see http://dopa.jrc.ec.europa.eu/), this scenario demonstrated how a GEOSS-based interoperability infrastructure can aid decision makers to assess and possibly forecast the irreplaceability of a given protected area, an essential indicator for assessing the criticality of threats this protected area is exposed to.

The "eHabitat" use scenario was advanced in the GEOSS Sprint to Plenary activity; the advanced scenario will include the "EuroGEOSS Data Access Broker" and a new version of the eHabitat model in order to support the use of uncertain data.

The multidisciplinary interoperability infrastructure which is used to demonstrate the "eHabitat" use scenario is composed of the following main components:
a) A Discovery Broker: this component is able to discover resources from a plethora of different and heterogeneous geospatial services, presenting them on a single and standard discovery service;
b) A Discovery Augmentation Component (DAC): this component builds on existing discovery and semantic services in order to provide the infrastructure with semantics enabled queries;
c) A Data Access Broker: this component provides a seamless access of heterogeneous remote resources via a unique and standard service;
d) Environmental Modeling Components (i.e. OGC WPS): these implement algorithms to predict evolution of protected areas

This presentation introduces the advanced infrastructure developed to enhance the "eHabitat" use scenario.

The presented infrastructure will be accessible through the GEO Portal and was used for demonstrating the "eHabitat" model at the last GEO Plenary Meeting – Istanbul, November 2011.