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DOPA, a Digital Observatory for Protected Areas including Monitoring and Forecasting Services

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The Digital Observatory for Protected Areas (DOPA) is a biodiversity information system currently developed as an interoperable web service at the Joint Research Centre of the European Commission in collaboration with other international organizations, including GBIF, UNEP-WCMC, Birdlife International and RSPB. DOPA is designed to assess the state and pressure of Protected Areas (PAs) and to prioritize them accordingly, in order to support decision making and fund allocation processes.

To become an operational web service allowing the automatic monitoring of protected areas, DOPA needs to be able to capture the dynamics of spatio-temporal changes in habitats and anthropogenic pressure on PAs as well as the changes in the species distributions. Because some of the most valuable natural ecosystems and species on the planet cover large areas making field monitoring methods very difficult for a large scale assessment, the automatic collection and processing of remote sensing data are processes at the heart of the problem. To further be able to forecast changes due to climate change, DOPA has to rely on an architecture that enables it to communicate with the appropriate modeling web services.

The purpose of this presentation is to present the architecture of the DOPA with special attention to e-Habitat, its web processing service designed for assessing the irreplaceability of habitats as well as for the modeling of habitats under different climate change scenarios. The use of open standards for spatial data and of open source programming languages for the development of the core functionalities of the system are expected to encourage the participation of the scientific community beyond the current partnerships and to favour the sharing of such an observatory which could be installed at any other location.

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