Geophysical Research Abstracts
Vol. 15, EGU2013-6982, 2013
EGU General Assembly 2013

Shared Platform for South African Earth and Environmental Observation Systems: Recent Developments and Improvements

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Over the past 3 years, SAEON has worked with a number of stakeholders and funders to establish a shared platform for the management of dissemination of E&EO research outputs, data sets, and services. This platform is strongly aligned with GEO principles and architecture, allowing direct integration with the GEOSS Broker.

The platform has two important characteristics:

1. It reduces the cost and lead time of provision of similar infrastructure for future initiatives.
2. The platform is domain-agnostic to some degree, and can be used for non E&EO applications. Projects to achive this is under way at present.

The paper describes the application of the platform for a variety of user communities and initiatives (SAEON Data Portal, South African Earth Observation System, Risk and Vulnerability Atlas, BioEnergy Atlas, National Spatial Information Framework, ICSU World Data System Components, and many more), and demonstrates use cases utilising a distributed, service oriented architecture.

Significant improvements have been made to the interoperability functions available to end users and content providers, and these are demonstrated and discussed in detail. Functions include

• Creation and persistence of composite maps, as well as time series or scatter charts, supporting a variety of standardized data sources.
• Search facilities have been extended to allow analysis and filtering of primary search results, and to deal with large meta-data collections.
• In addition, data sources, data listings, news items, images, search results, and other platform content can, with increasing flexibility, be accessed as standardized services that are processed in standardized clients, allowing creation of a rich user interface, and permitting the inclusion of platform functionality into external websites and resources.

This shift to explicit service-oriented, peer-to-peer architecture is a preparation for increased distributed processing and content composition, and will support the concept of virtualization of ‘science gateways’ based on the platform, in support of a growing number of domains and initiatives.