SeaDataNet monitoring infrastructure near real time status updates, rich alerts, trends and insights.

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SeaDataCloud (SDC) is a standardized system for managing the large and diverse data sets collected by the oceanographic fleets and the automatic observation systems. SDC includes national oceanographic data centres of 35 countries, active in data collection. The whole platform operates a unique virtual data management system providing integrated data sets of standardized quality on-line. The SDC infrastructure is extended in order to efficiently store, replicate and deliver the required datasets. In order to fulfil its objectives the SDC infrastructure needs to be constantly monitored for the availability and reliability of the whole system as well as for each service separately. The main scope of the monitoring service is to provide valuable and reliable services so as to ensure that the end-user has a consistent and reliable experience when interacting with the services.

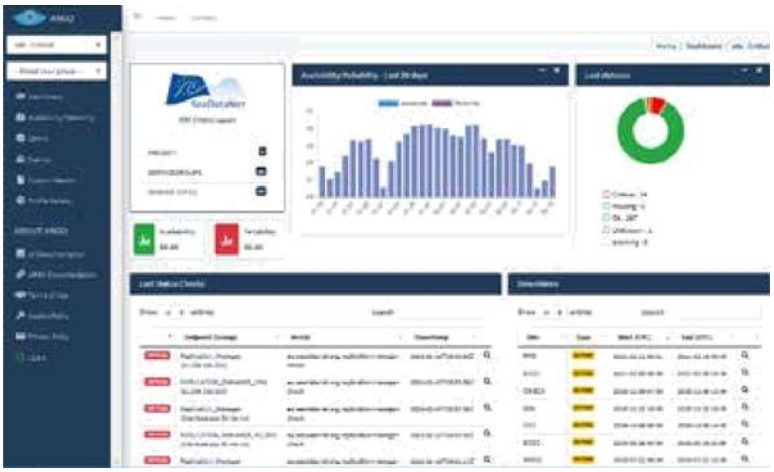

Figure 1: Main dashboard of the SeaDataNet monitoring service

The SDC Monitoring is based on ARGO, a lightweight service for Service Level Monitoring designed for medium and large sized Research Infrastructures. ARGO monitors services by emulating typical user scenarios that allows to derive the quality of service the actual user gets. It offers near real-time status updates which allow both end-users and site admins to have an overview of the services offered at any given point in time via a web user interface and via enriched email notifications, containing more information about incidents and how they affect the connected services. The rich monitoring data collected in ARGO service - data which is used for providing Availability, Reliability and status results - is actually stored in a highly flexible big-data friendly form using state-of-the-art computational

pipelines and formats. This provides the ability to reuse & analyze the data in different ways such as to highlight service usage patterns and provide a number of trends and insights.

Figure 2: Status of all the SeaDataNet services

ARGO monitors the various instances of SDC services and organizes them in hierarchies and groups that reflect the relationships between them: how instances contribute to provide a user-facing service or how they organize themselves to provide high availability. Main services are the upstream and downstream services, the vocabulary services (which includes all semantic related services), the VRE (which includes all the service types and instances that contribute to the offering of the Virtual Research Environments) and the Replication Managers . In Virtual Research Environments (VRE), multiple types of services in several nodes cooperate as components to provide a unified dashboard with a plethora of functionalities to the end-users. ARGO not only monitors individually the proper function of these services but also combines them in logical groups and hierarchies to reflect and accurately monitor the reliability of their interoperability so as to ensure that the top-level service offer (VREs) works as expected.

Figure 3: Status of the SeaDataNet VRE