SDC Kick-Off Meeting, Riga, Latvia,
30 Nov. - 01 Dec. 2016

SeaDataNet

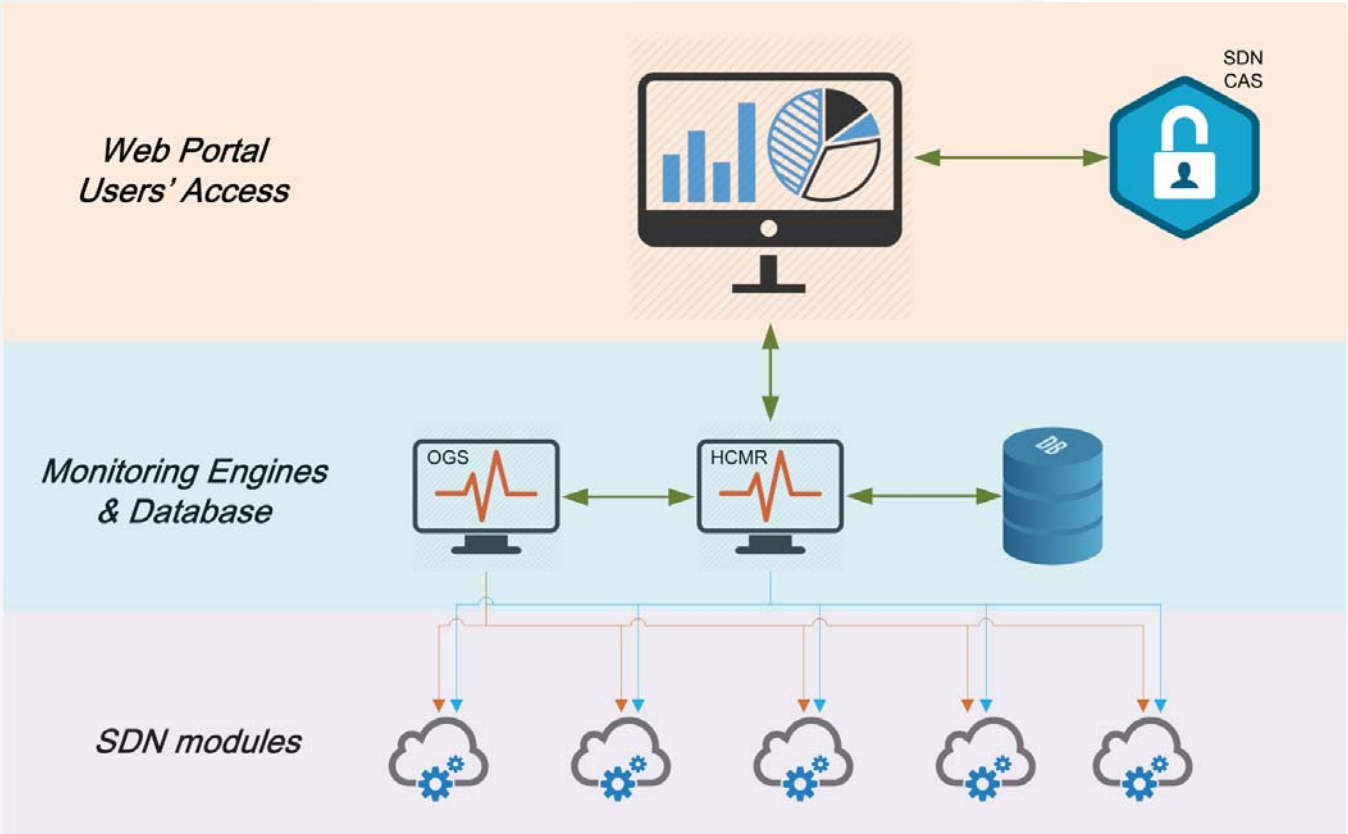
PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

SeaDataCloud
Monitoring system incl. upgrading plans (WP8.5)

A. Lykiardopoulos[1], I. Liabotis[2], O. Prnjat[2], M. Vinci[3], S. Iona[1], B. Matthews[4]

1. HCMR, Athens, Greece
2. GRNET, Athens, Greece
3. OGS, Trieste, Italy
4. STFC, Didcot, UK

Existing SDN Monitoring System Architecture

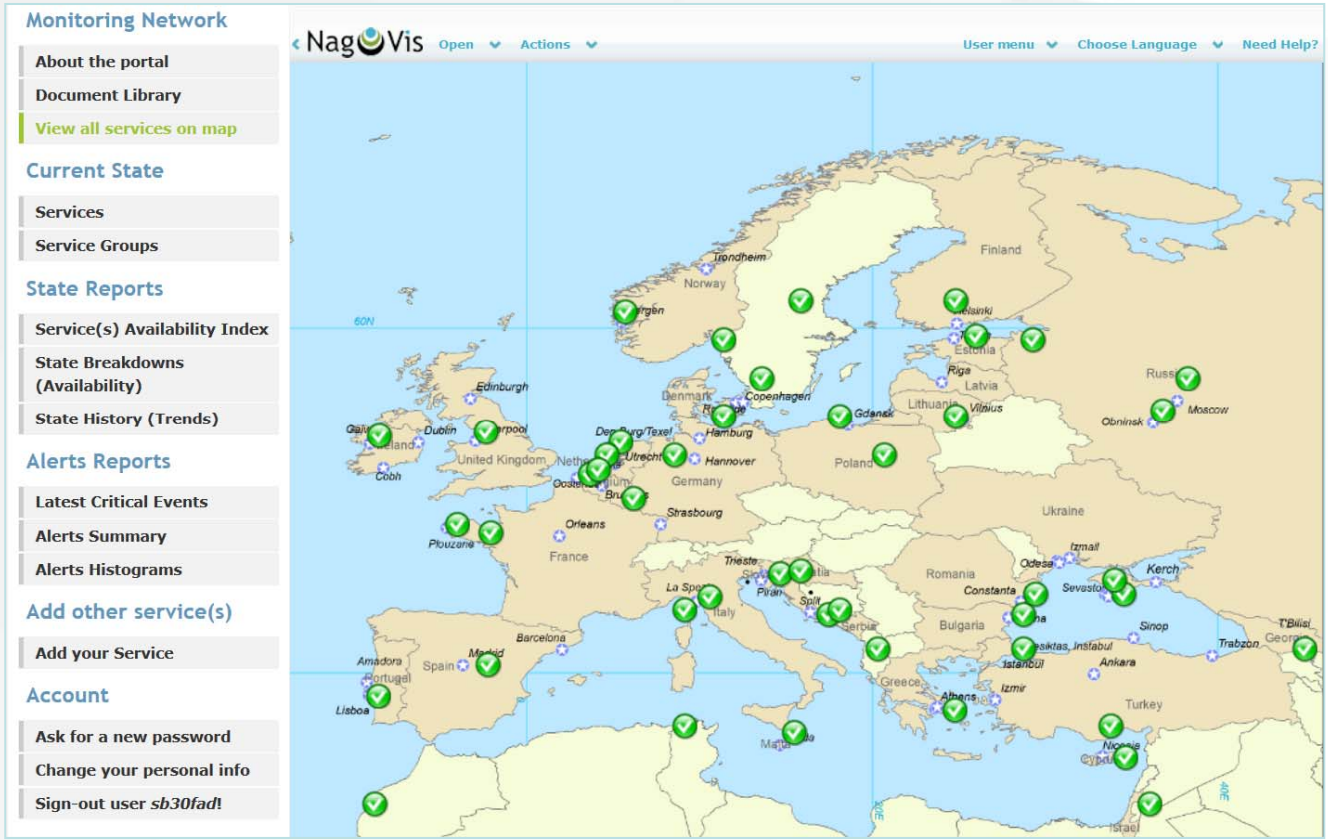


Monitored Modules so far

The monitored SeaDataNet modules are divided into two groups of services:

- The **Core Services**, which are centrally-based provided services:
  - Common Data Index (CDI) portal
  - European Directory of Marine Organisations (EDMO) portal
  - European Directory of the initial Ocean-observing Systems (EDIOS) portal
  - European Directory of Marine Environmental Research Projects (EDMERP) portal
  - European Directory of Marine Environmental Research Projects (EDMED) portal
  - Cruise Summary Reports (CSR) portal
  - SeaDataNet homepage
  - SDN Central Authentication Service
  - Common Vocabularies Web Services
  - Request Status Manager (RSM)
- The **Local Services**, which are services provided by the partners' locally situated infrastructures
  - 86 Download Managers supporting SeaDataNet (49), GeoSeas, UBSS and EMODNet-Chemistry-Bathymetry projects

On-line map visualization of SeaDataNet monitored modules



SeaDataCloud
Network Monitoring in cloud environment

- ARGO Service Monitoring
- The new system will have the following characteristics:
  - Same monitoring engine (Nagios)
  - Similar mathematical formula for total availability index
  - Similar users schema
  - High availability and reability implementation (HCMR & OGS)

  - New Web UI
  - Enhanced reporting system
  - Connection with external services (CMDBs, Service catalogs)
  - Direct management of SLAs

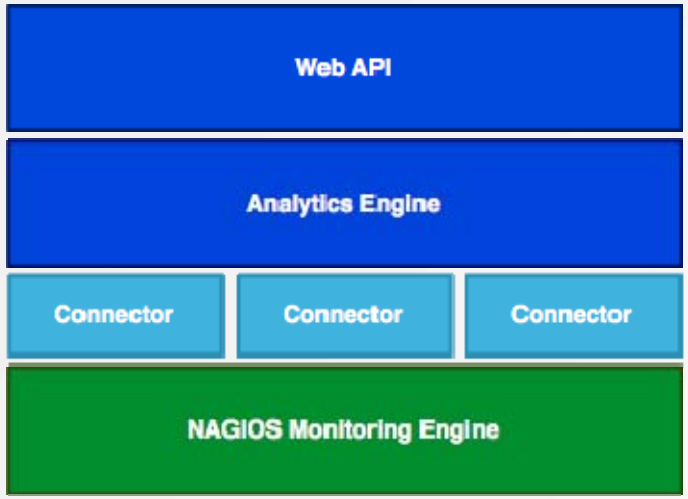
Status, Availability & Reliability
ARGO Service Monitoring

Status

For status monitoring, ARGO relies on Nagios. All probes developed for ARGO follow the Nagios conventions and can run on any stock Nagios box.

ARGO provides an **optional set of addons** for the stock Nagios that provide features such as auto-configuration from external information sources, publishing results to a an external messaging service etc.

Status, Availability & Reliability
ARGO Service Monitoring

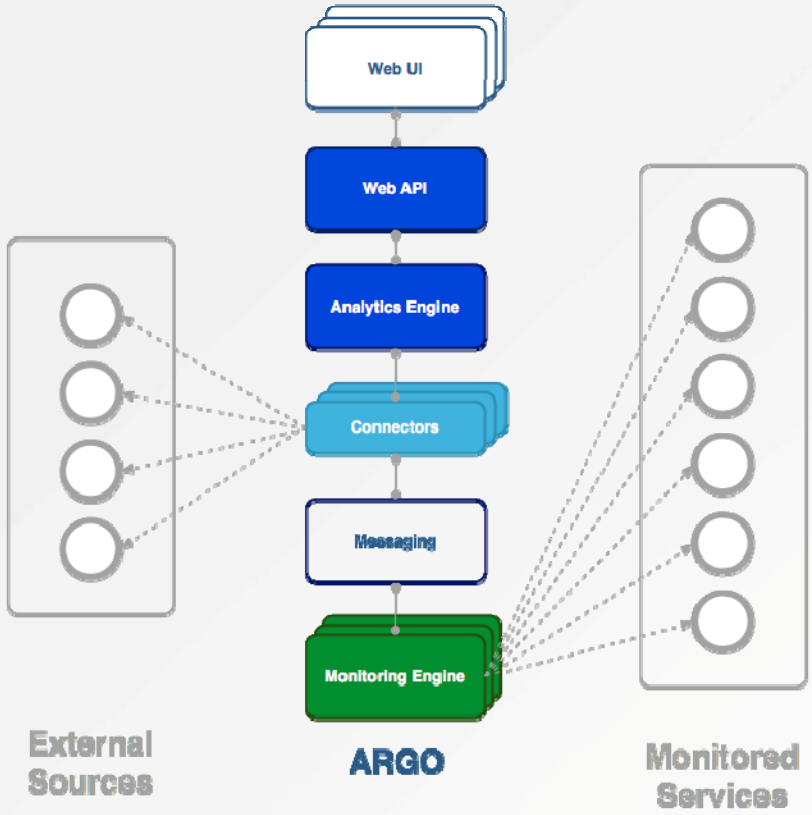


Availability & Reliability

For Availability & Reliability monitoring ARGO, introduces a modular architecture, which relies on Nagios for service endpoint monitoring and which can ingest in the Nagios monitoring results in order to **track** a vast number of **monitoring metrics**, provide real-time **notifications** and **status reports** and **monitor SLAs/OLAs.**

ARGO comes in two flavors: **A standalone version** for deployment in low density e-Infrastructures with a limited number of services and **a cluster version** for deployment in high density e-Infrastructures with a large number of services.

Modular Architecture
ARGO Service Monitoring



ARGO Components

At its core, ARGO uses a **flexible** monitoring engine (Nagios), a **powerful** analytics engine and a **high performance** web API.

Embracing a **modular**, **pluggable architecture**, ARGO can easily support a **wide range of e-Infrastructures**.

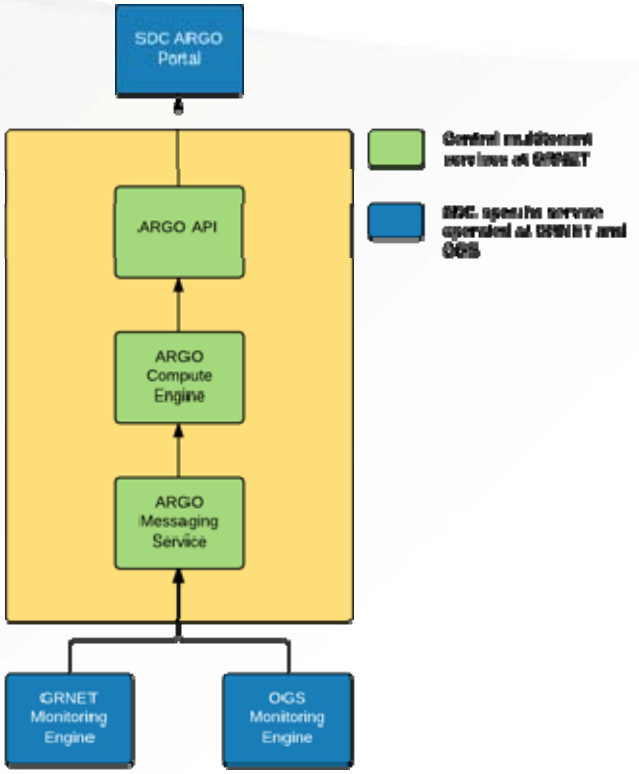
Through the use of **custom connectors**, ARGO can connect to multiple external **Configuration Management Databases** and **Service Catalogs**.

WP8.5 - Upgrading the operational Monitoring system – Workplan

- Migration to the ARGO Monitoring Framework
  - To provide service monitoring metrics for availability and reliability for the SDC services
- Two monitoring engines are going to be operated in High Availability Mode
  - One node at GRNET and one node at OGS
  - built-in monitoring probes for the services provided by the EUDAT infrastructure
- GRNET and HCMR will provide training and guidance for the system usage as well as for probe development if requested from managers of core services
  - Training and support to SeaDataNet partners who are going to implement custom ARGO monitoring probes for SeaDataNet specific services

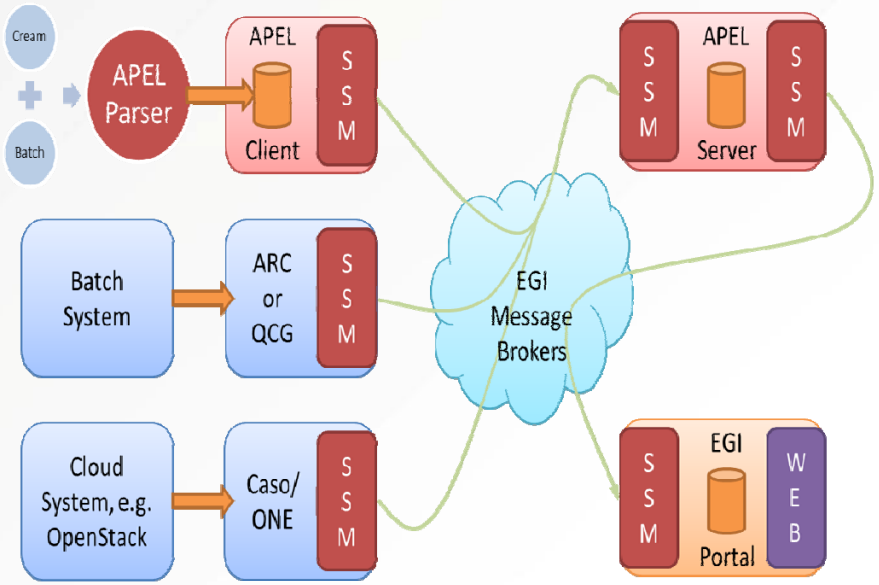
WP8.5 - Upgrading the operational Monitoring system – Workplan Implementation

1) New ARGO tenant configuration
2) Definition of metric, availability and reliability profiles
3) Implementation and deployment of:
    a) custom connectors for the automatic configuration of the monitoring service based on the SDC service information
    b) Deployment of HA Monitoring Engines
    c) Deployment of monitoring probes
4) Training for the development of new probes
5) Adaptation and deployment of the ARGO Visualization Portal for the SDC needs



WP8.5 – adding usage monitoring via APEL

- Service and data usage accounting
  - Who is accessing what
- APEL – accounting repository developed and used in the European Grid Infrastructure (EGI)
  - Integrate into the EUDat infrastructure for SDC
    - Using ActiveMQ / ARGO
  - Integrating clients services
  - Add further data usage accounting functionality
    - Changes in STOMP messages
  - Present information via ARGO UI



WP8.5 – Time Plan

By M6	Requirements gathering
By M9	Architecture details defined & development plan in place (including probe development)
M12 - M18	Further developments and deployment of initial probes developed by SDC service providers (including EUDAT specific probes). Modifications to APEL.
M18 - M24	Testing and preparation for production use the ARGO monitoring service and APEL in SDC
M24	SDC ARGO Monitoring in production including initial set of services being monitored
M34	SDC ARGO Monitoring for the full set of the SDC services

http://www.seadatanet.org