



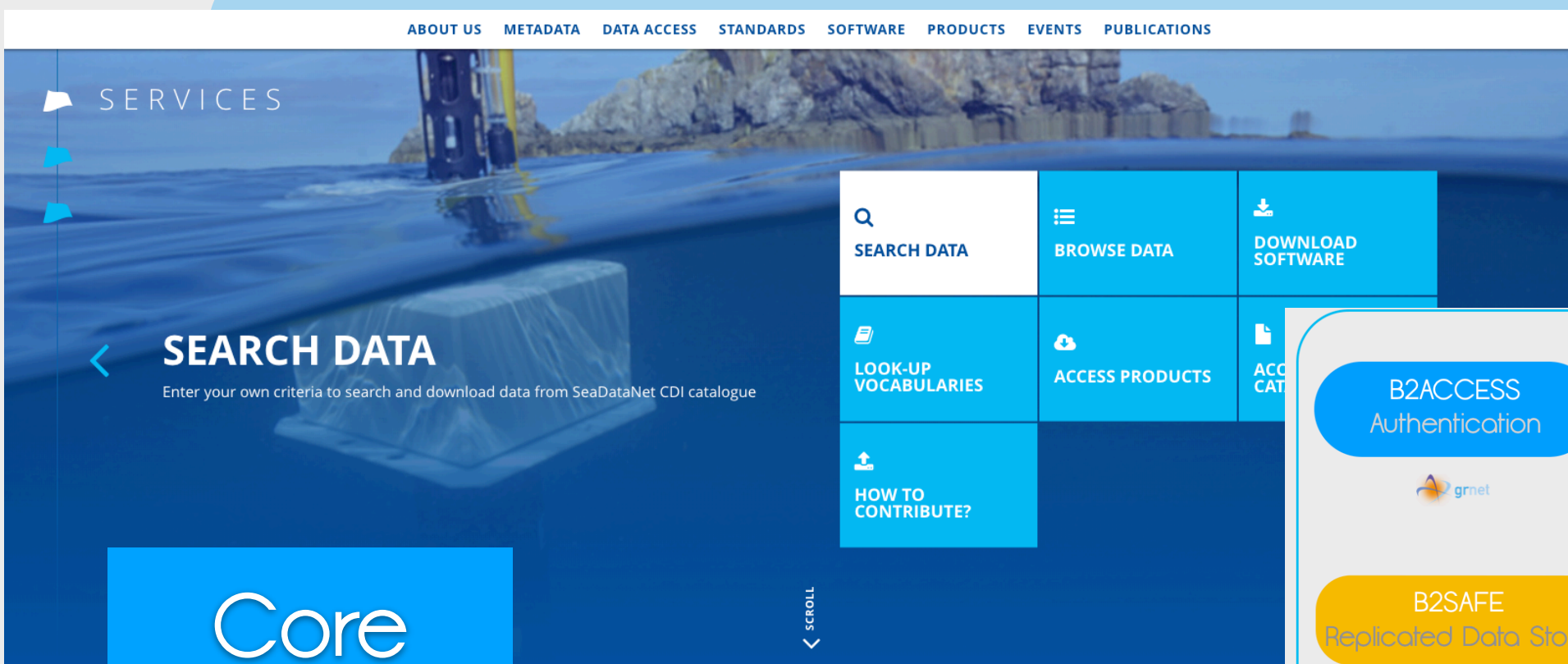
WP6 Monitoring Status

Themis Zamani, GRNET
Angelos Lykiardopoulos, HCMR



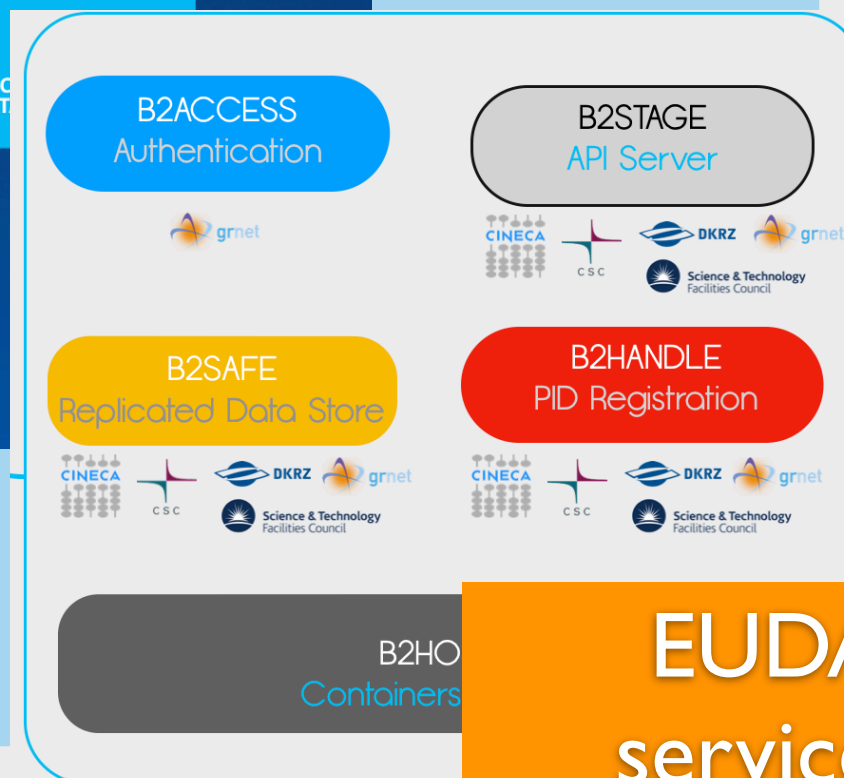
Main Goal

Monitor



Core
Services

Local
Services



EUDAT
services -
infrastructure



ARGO Monitoring

Traditional status monitoring of services is something very useful for operational teams, but for the end users it does not add any value. End users want to know how the **overall services they are relying upon are performing** and whether the delivery of those meets the service level they have agreed.

The new monitoring platform addresses this issue by **emulating what a user will do** with a service and monitors the outcome to **provide availability and reliability from a user's point of view**.

but what does this mean

User's behaviour

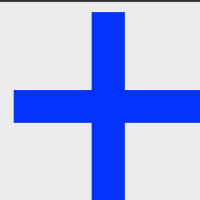
in depth checking of each service functionalities

B2ACCESS is an easy-to-use and secure Authentication and Authorization platform.

Traditional status monitoring

B2ACCESS http response

B2ACCESS database response

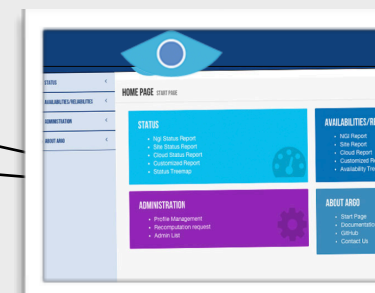


emulating what a user will do



B2ACCESS logging with username

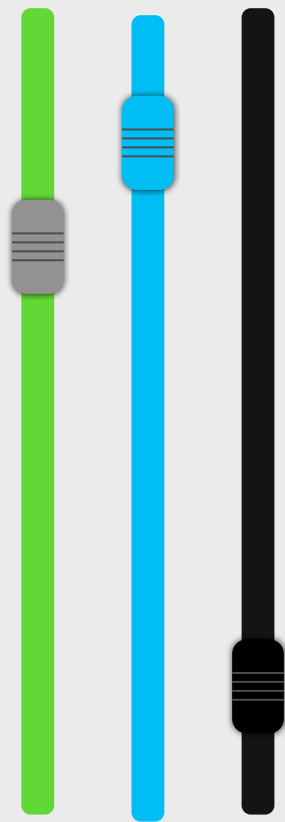
B2ACCESS logging with certificate





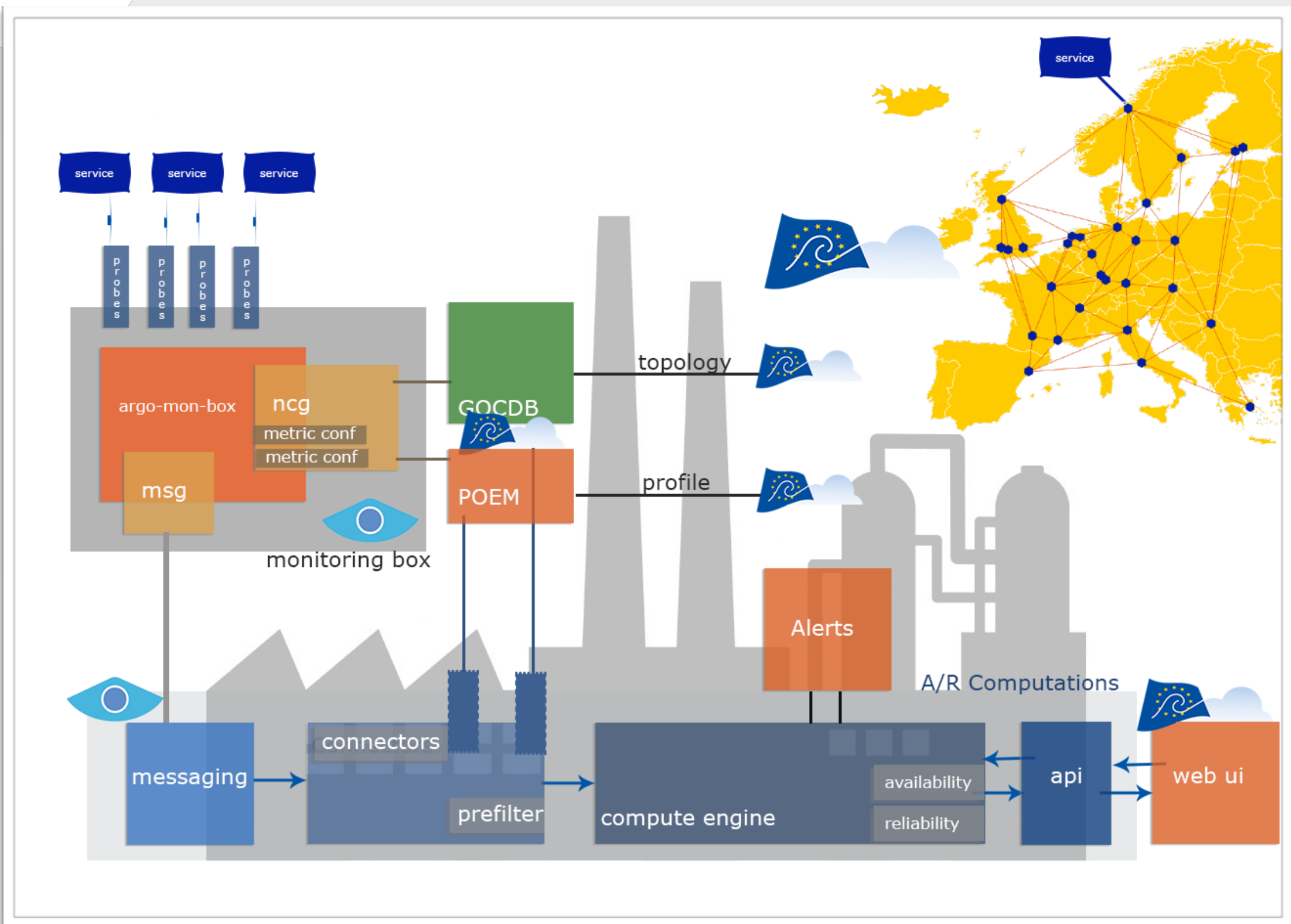
ARGO Monitoring

A flexible framework



- Status, availability and reliability of services
- Provides multiple reports using customer defined profiles [e.g. for management, operations etc]
- Multi-tenant [infrastructures] support in the core framework
- Modular design enables integration with external systems [such as CMDBs, Service Catalogs etc]
- Can take into account
 - custom factors during the report generation [e.g. the importance of a service endpoint],
 - scheduled or unscheduled downtimes

Architecture



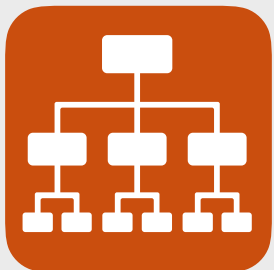


Basic Components



Central Registry

A central registry to record information about the topology of SDC Infrastructure.



Metrics Management

A tool to collect and organise metrics. It instructs monitoring instances what kind of tests to execute for a given service.



Monitoring Engine

It executes the service checks against the infrastructure and delivers the metric data to a ARGO Messaging Service



Basic Components



ARGO Messaging Service

A Publish/Subscribe Service used by internal components - systems to exchange messages via Topics/Subscriptions.



Connectors

A bundle of connectors/sync components for various data sources established



Compute Engine

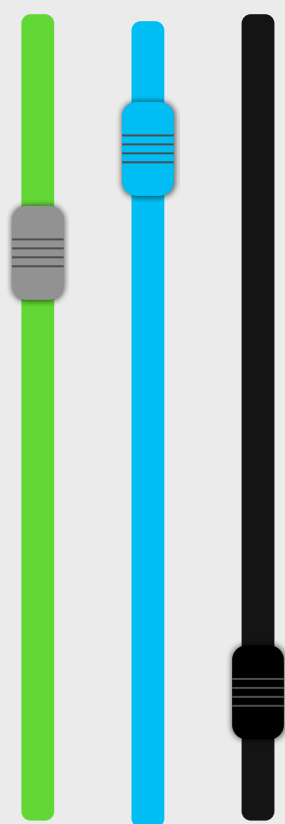
Computes availability and reliability of services and near - real time status events



Notifications

Real-time status events are the basis of alerts. It sends alerts (ex. email, sms), by connecting to external sources to get info about the owner(s) of services, endpoints.

Time Plan



- By M6: Requirements gathering
- By M9: Architecture details defined and development plan in place
- M12 - M18: Further developments and development of initial probes
- M18 - M24: Testing and preparation for production use of the ARGO monitoring service
- 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 and deployment of the new ARGO Portal

Current status

upgrade monitoring system

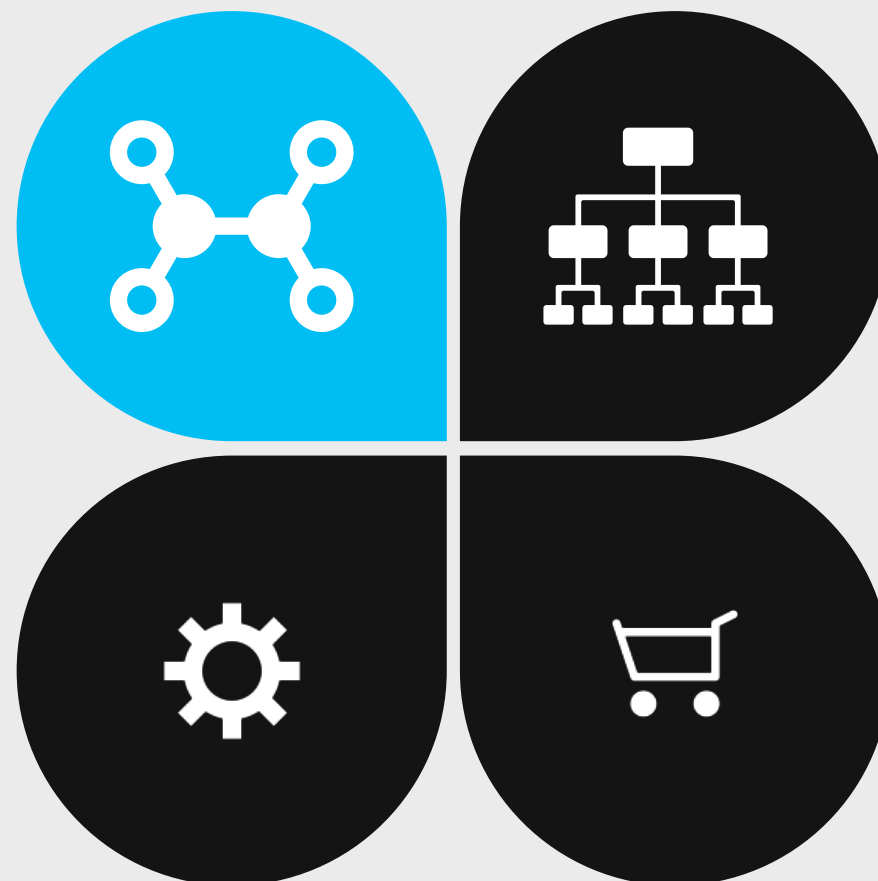
what ?

collect the different sites, services and service types

A central registry to record information about the topology of SDC Infrastructure.

connect

Implementation and deployment of custom connectors for the automatic configuration of the monitoring service



how?

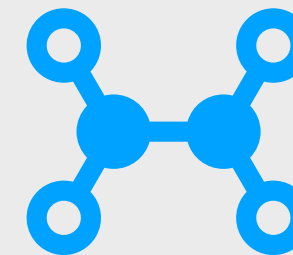
collect and decide on metrics.

Services and associated metrics are grouped into profiles that instruct monitoring instances what kind of tests to execute for a given service.

configure

configure the monitoring engine

decide on the configuration of the monitoring engine by deciding on the 1st type of reports.



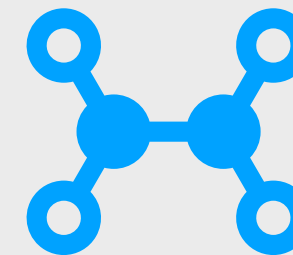
A central registry to record information about the topology of the SDC e-Infrastructure.

This information includes contact addresses (e.g. site contact, site security contact, site support contact) as well as resources and services being provided by each site, and scheduled downtimes.

Name	NGI	Infrastructure
FZ-JUELICH	SDC-ALL	Production
IGME-GR	SDC-ALL	Production
GRNET	SDC-ALL	Production
BODC	SDC-ALL	Production
BSH	SDC-ALL	Production
OGS	SDC-ALL	Production
CNR	SDC-ALL	Production
ENEA	SDC-ALL	Production
ISMAR	SDC-ALL	Production
ISAC	SDC-ALL	Production

Login with your MarinetID and
check your services

detailed instructions will follow



Login with your MarineID and check your services

1

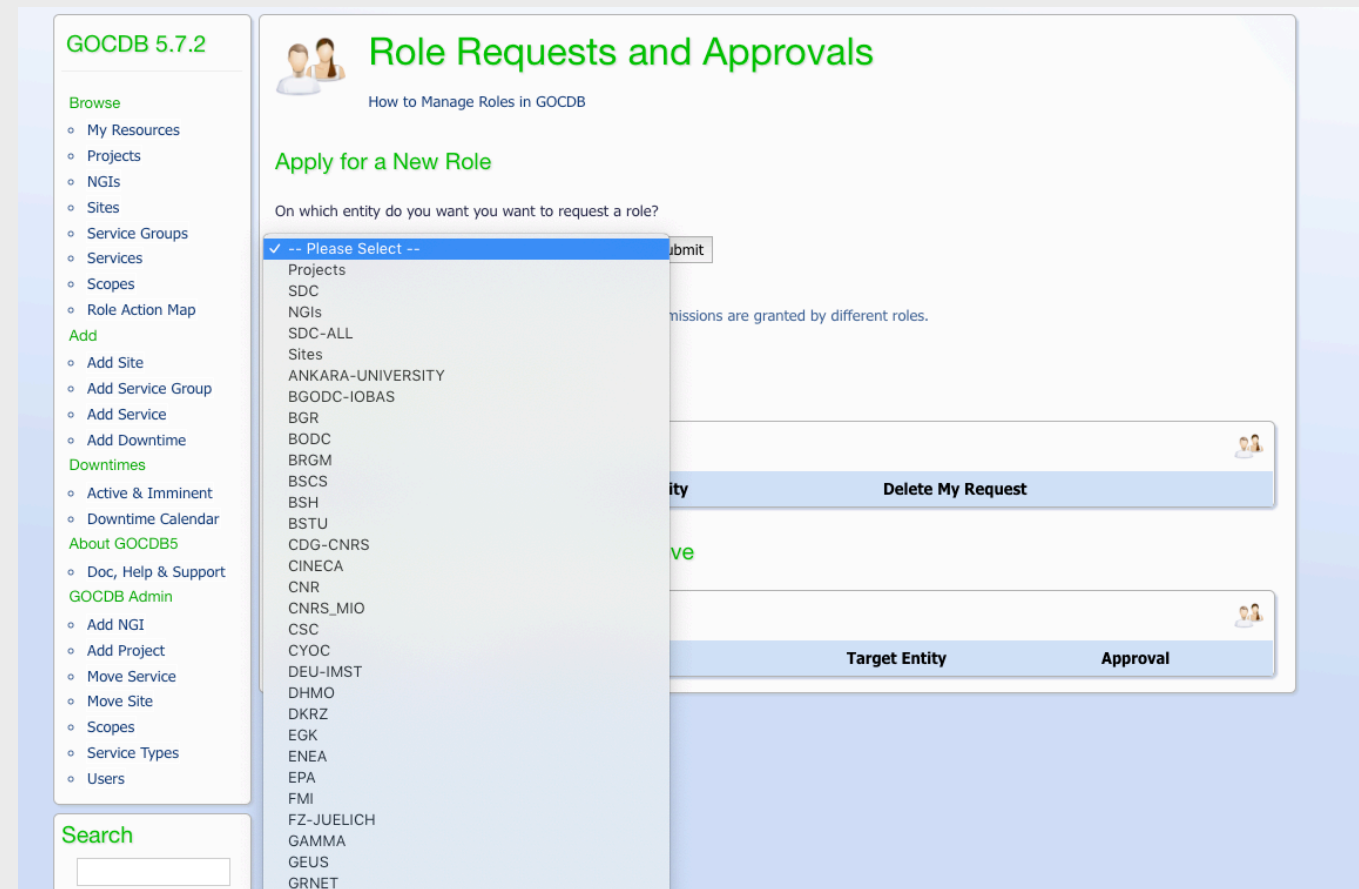
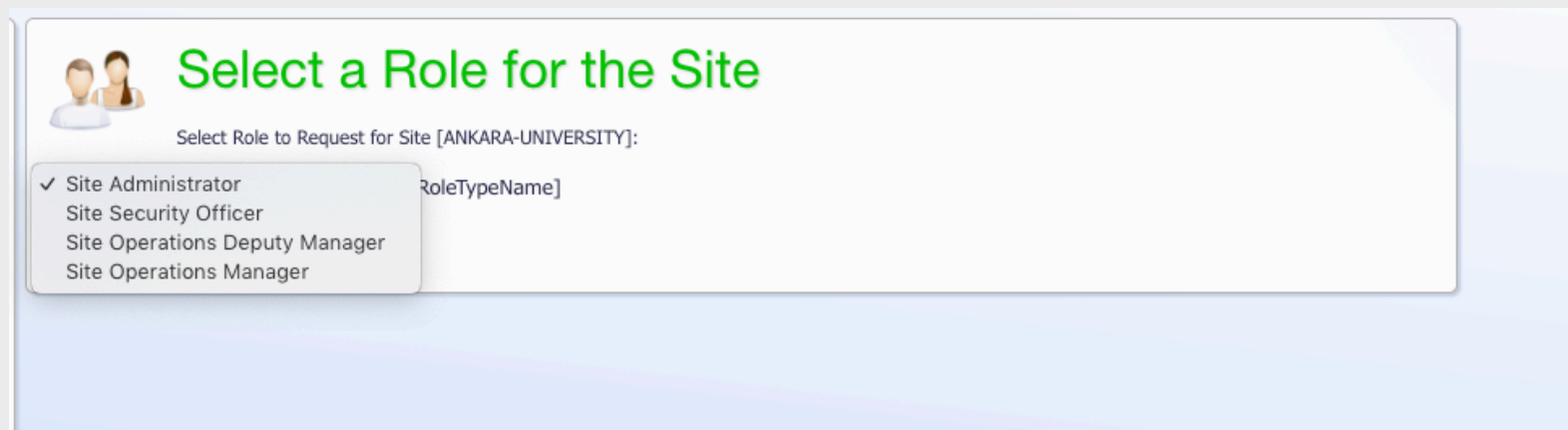
Visit topology site
(<https://goc-sdc.argo.grnet.gr>)
and login with your Marine-ID

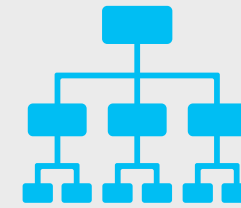
2

Register as a user and verify your
identity

3

Request role to manage your site
and services



How ? poem-sdc.argo.grnet.gr

A web application used in ARGO monitoring framework that holds list of services, metrics, metric configurations and probes used within an e-infrastructure.

Profiles that instruct monitoring instances what kind of tests to execute for a given service.

eu.seadatanet.org.downloadmanager-TCP	Production
eu.seadatanet.org.downloadmanager-check	Production
eu.seadatanet.org.homepage-TCP	Production
eu.seadatanet.org.homepage-check	Production
eu.seadatanet.org.login-TCP	Production
eu.seadatanet.org.login-check	Production
eu.seadatanet.org.nagios-check	Production
eu.seadatanet.org.nagvis-check	Production
eu.seadatanet.org.rsm-check	Production

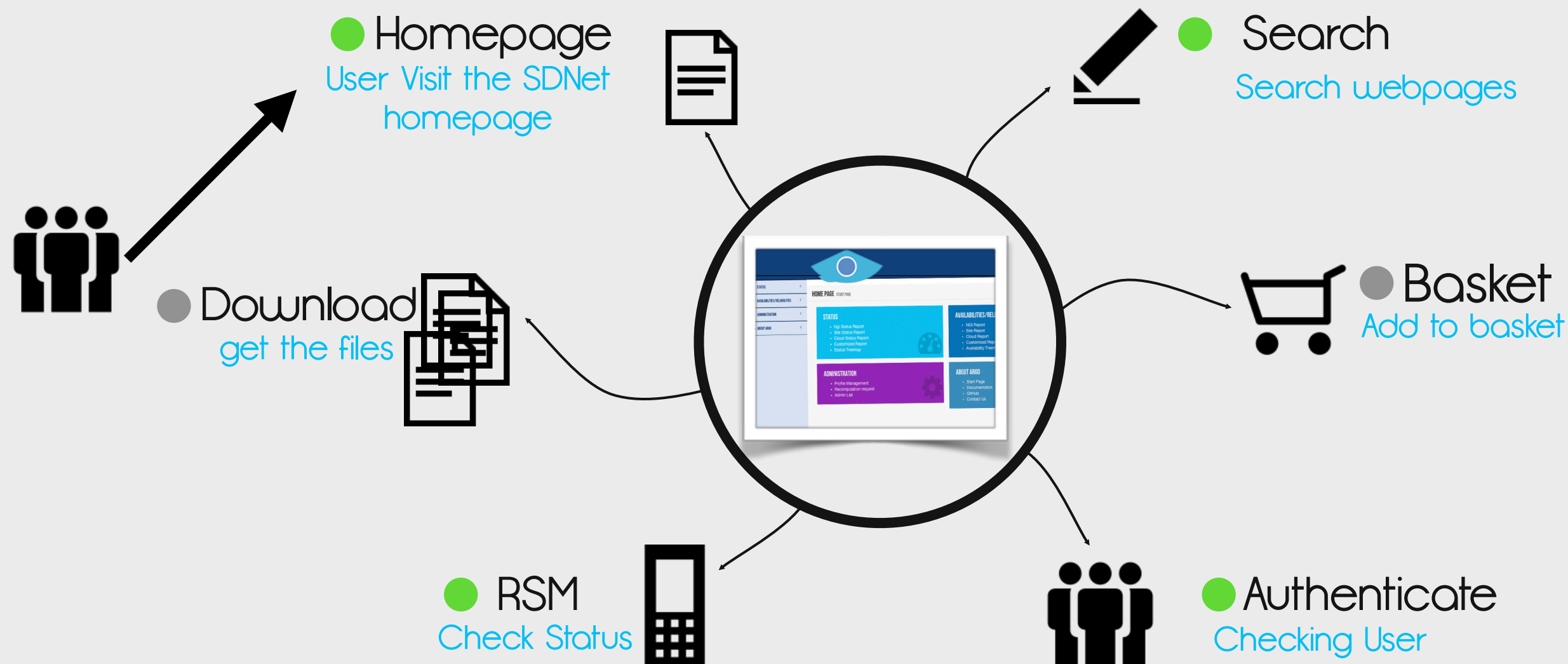
check if a user may login
to B2ACCESS

check if a user can search for
a dataset

check if a user can add
something

Core Services

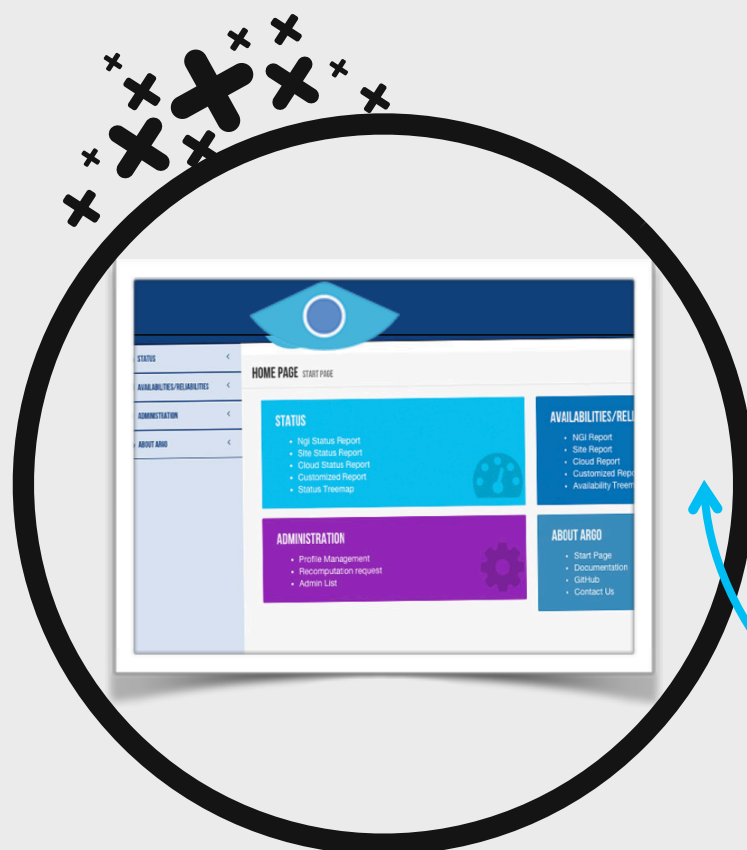
Monitoring The Process





Core Services

SDC Core Services CDI components



Homepage

www.seaDataNet.org

Search

CSR_SEARCH:
EDIOS_SEARCH:
EDMED_SEARCH:
EDMERP_SEARCH:
EDMO_SEARCH

Authenticate

B2ACCESS
CAS

Vocabularies

RSM



SDC CDI

EUDAT Services



B2ACCESS
Authentication



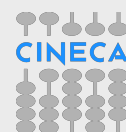
B2STAGE
API Server



DKRZ



B2SAFE
Replicated Data Store



DKRZ



B2HANDLE
PID Registration

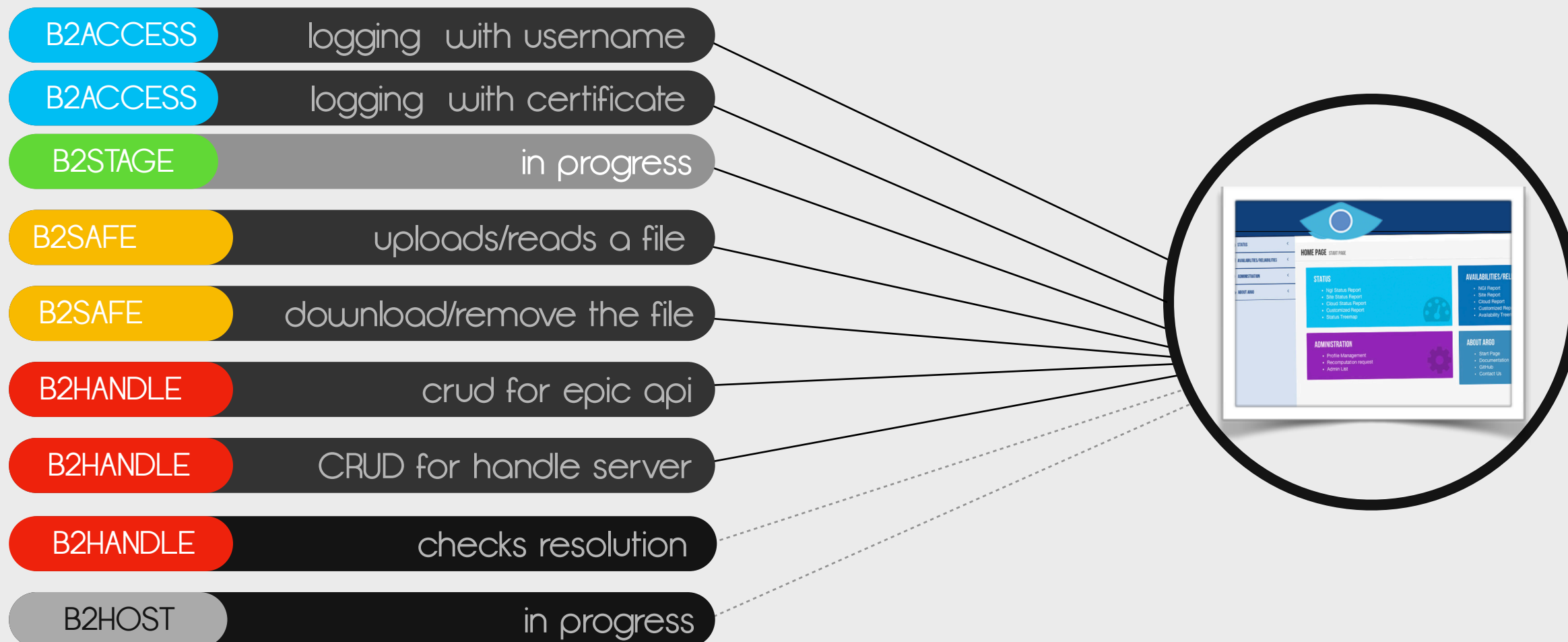


DKRZ



B2HOST
Containers Cluster

EUDAT Services - First version of functionality checks in all B2* services





Important Points

What we monitor In Numbers

92

Sites (eg. MARIS)

a data centre that exposes some SDC services. A "Site" is a grouping of resources collating multiple Service Endpoints (SEs).

8

Probes - (eg, sdc-homepage)

A probe is a thorough investigation into a crime :). A piece of software that checks the functionality of a service.

111

Services -

(eg. seadatanet.org - eu.seadatanet.org/homepage)

it is a service endpoint that implements an SDC node/function such as downloadManager, for instance. It is a single entity formed by a hostname, a hosted service (Service Type) and a URL.

25

Metrics (eg, eu.seadatanet.org/homepage-check)

A metric as part of a probe provides visibility into the health of a system, helps understand trends in usage or behavior, and to understand the impact of changes made.

16

Service Types - (eg. eu.seadatanet.org/homepage)

"Service Type" is a technology used to provide a service. Service types are pieces of software while service endpoints are a particular instance of that software running in a certain context.

17

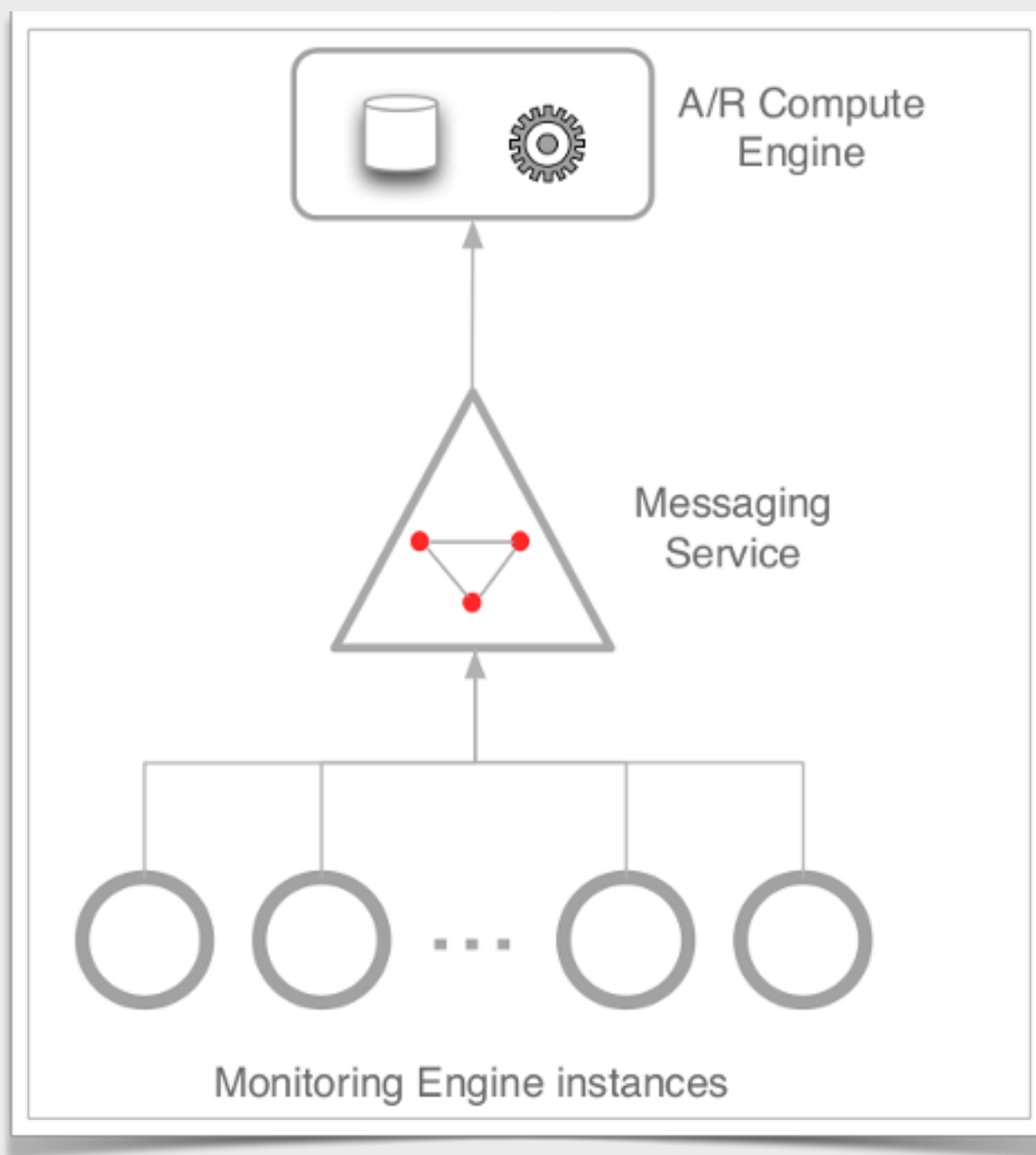
Service Group -(eg, homepage)

a collection of services that can be grouped by some aspect/functions (i.e. some services that are implemented and deployed for a community). A "Service Group" is an arbitrary grouping of existing service endpoints that can be distributed across different physical sites.

Demo

High Availability

Multiple Instances



Once the 1st version of topology is ready

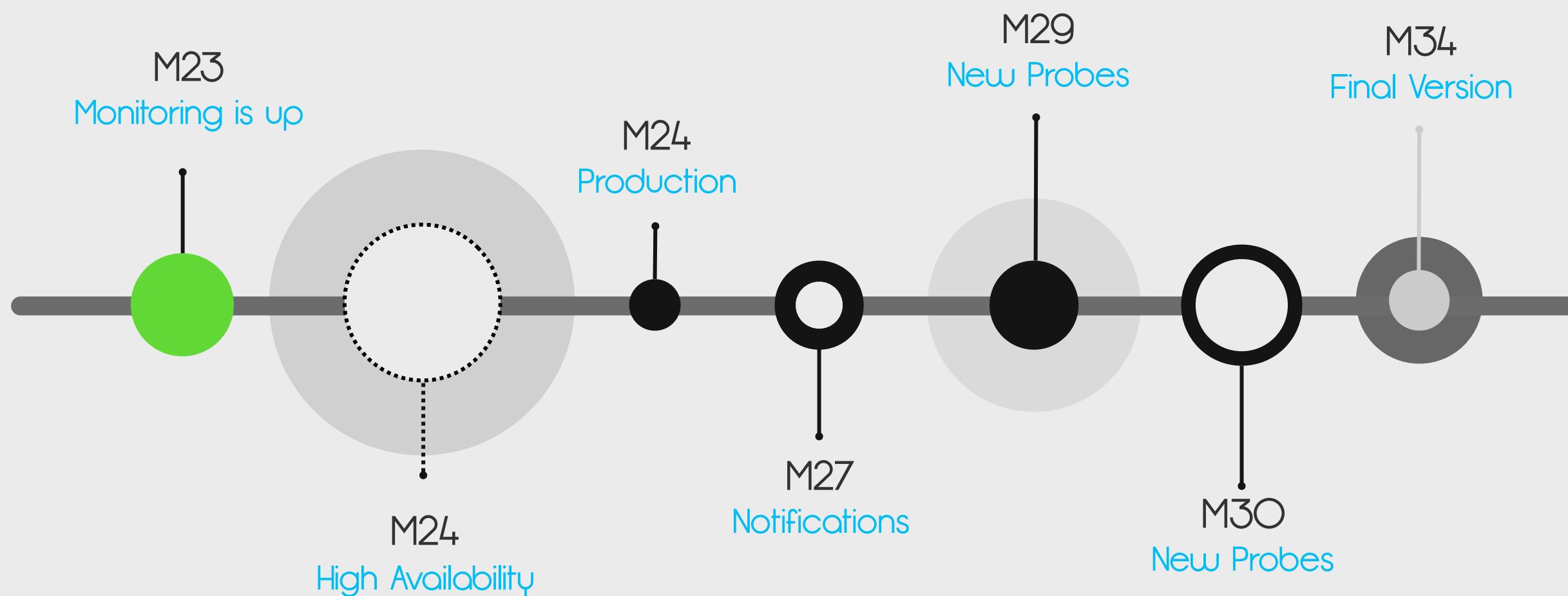
a second instance of monitoring engine will be deployed in OGS.

Monitoring result collectors can listen on the message broker service, retrieve the results and forward them to the compute engine.

Work in progress

Next Steps

What is next





Alerts & Notifications

Multiple Formats

Real-time status events are the basis of notification alerts, during computations



Connects to external sources to get info about the owner(s) of services, endpoints and whether or not to send the notifications. (Configuration Database)

It is specifically designed to reduce the number of unnecessary events by ensuring that alerts

- is not a duplicate
- has a severity



```
[ B2GETHER ] - Metric eu.eudat.b2access.unity-cert@(b2access.eudat.eu:b2access.unity) is CRITICAL

Alert ID: 40d62fa1-0466-4218-ba32-092d7d450c62
Create Time: 2018-05-30 07:28:49.583000
Monitored Time: 2018-05-30T07:27:29Z
Processed Time: 2018-05-30T07:28:47Z
Repeated: true
Resource: B2GETHER/b2access.unity/b2access.eudat.eu/eu.eudat.b2access.unity-cert
Event: metricstatus
Severity: Indeterminate -> Critical
Status: Open

plain text

MORE DETAILS:
-----
Question? Email Eudat Monitoring Team(mailto:eudat-mon@lists.grnet.gr)
- the monitoring team
```


```
[ NCP-LCG2 ] - Endpoint pcncp23.ncp.edu.pk:SRM is WARNING

Alert ID: 8232e0df-f6c6-4db3-b9db-1f82bcda737e
Create Time: 2018-05-31 20:20:39.677000
Monitored Time: 2018-05-31T20:20:08Z
Processed Time: 2018-05-31T20:20:39Z
Repeated: false
Resource: NCP-LCG2/SRM/pcncp23.ncp.edu.pk
Event: endpointstatus
Severity: Critical -> Warning
Status: Open

plain text

MORE DETAILS: http://argo.egi.eu/lavoisier/status_report-endpoints?site=NCP-31T21:20:08Z&report=Critical&accept=html

Question? Email EGI Monitoring Team(mailto:argo-ggus-support@grnet.gr)
- the monitoring team
```



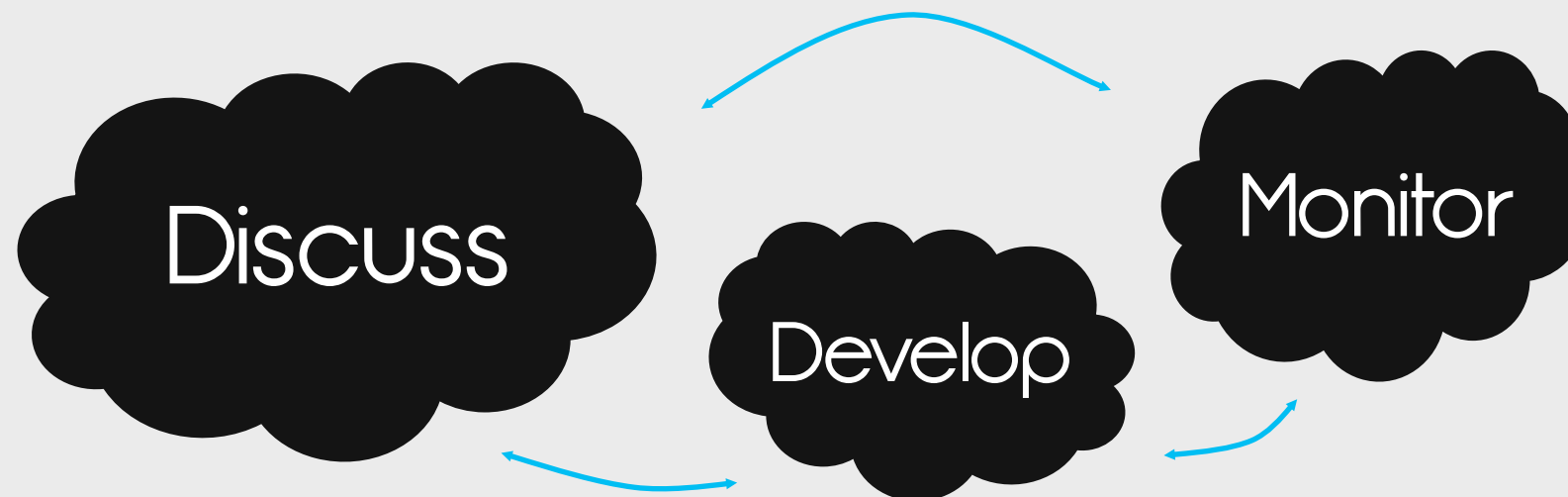
```
[ SDC_INFRASTRUCTURES ] - Metric eu.eudat.b2safe.irods-crud@eudat-node2.esc.rl.ac.uk:b2safe.irods is CRITICAL

Alert ID c1c01079-8199-4ab1-950f-bc02935b6797
Create Time 2018-11-06 12:36:03.686000
Monitored Time 2018-11-06T12:35:31Z
Processed Time 2018-11-06T12:36:03Z
Repeated true
Resource SDC_INFRASTRUCTURES/b2safe.irods/eudat-node2.esc.rl.ac.uk/eu.eudat.b2safe.irods-crud
Event Type metricstatus
Severity Indeterminate -> Critical

html format
```

Probe Development

Specify and Document



Discuss

what to check

Discussion with representatives – developers of each service in order to agree on a set of monitored metrics.

sdc-probes@lists.hcmr.gr

New ticket so as to support and help.

Develop

how to check

Development and testing of probe[s].
The development lifecycle includes: coding of the probe, documentation, testing and packaging.

guidelines, documentation and training material is available.

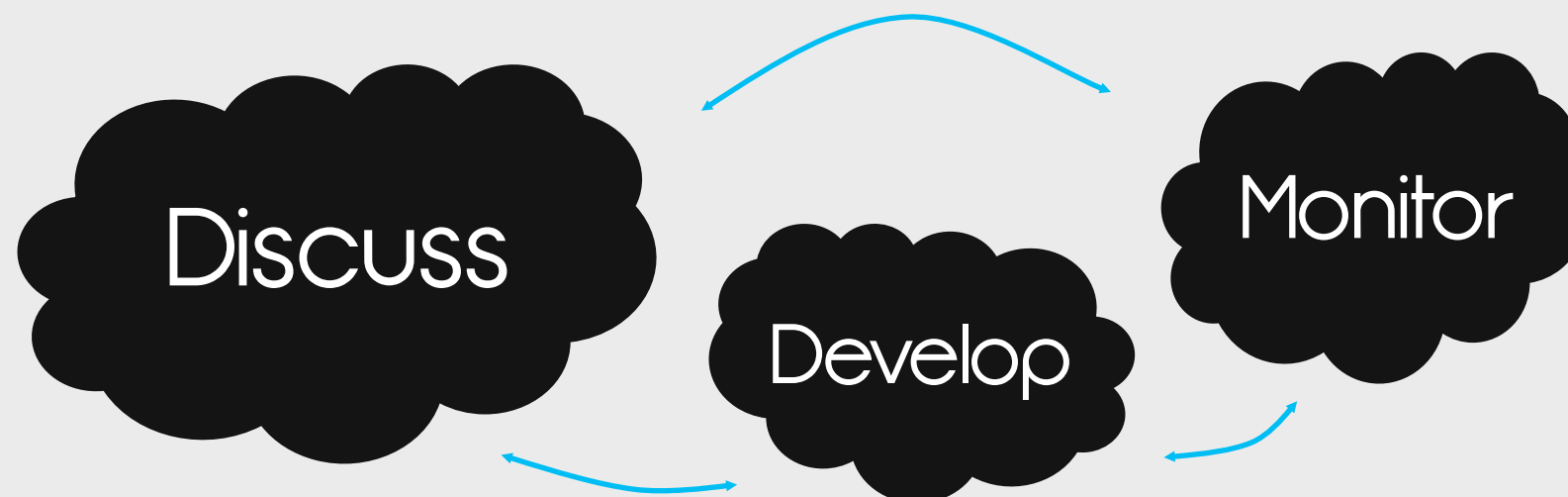
Monitor

starting to check

The lifecycle of the deployment of the service probe is based on the following repetitive steps: a) test, verify. if it passes the tests b) guidelines for the service owners are created. The monitoring team makes the necessary configurations. c) The A/R report[s] changes!!!

1st Test Case

Validate the Process



Discuss

BODC

Discuss about the functionalities of Vocabulary.

Develop

step by step

probe development taking in account core functionalities

guidelines, documentation and training material is available.

Monitor

starting to check

deploy in production



Probe Development

A List of services to monitor from the user point of view

● Homepage

● Basket
Operations

● RSM

● RSM / Download

● Download
Manager

● Shopping Robot

● B2HOST

● B2STAGE

● BODC Search

● EDMED Search

● EDMOD Search

● EDMERP Search

● CSR Search

What
else?



QuestionTIME

Thank you

