Monitoring in EOSC and NI4OS

Developing FAIR and EOSC skills event

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What are we going to talk about

- ❑ Why do I need Monitoring (as a Service Provider)

- ❑ What is ARGO Monitoring in NI4OS

- ❑ Getting **Ready** for Monitoring:

  - ❑ Basic steps, Topologies, Checks and Profiles

- ❑ Kickstart the process and Get **Results:**

  - ❑ Availability, Reliability, Statuses, Alerts

#first topic

Why do I need Monitoring (as a Service Provider)

Why do I need Monitoring?

As a Service Provider (**SP**):

*I offer **n** Services to the Research Community*

Questions:

- Are those services working correctly ?

- How stable are these services ?

- How available are these services ?

- How reliable are these services ?

- How services/components affect each other (dependencies) ?

Why do I need Monitoring?

As a Service Provider (**SP**):

*I offer **n** Services to the Research Community*

Am I happy with the service?

Questions:

*- Are those services **working correctly** ? → User Perspective*

- How stable are these services ?

- How available are these services ?

- How reliable are these services ?

- How services/components affect each other (dependencies) ?

Why do I need Monitoring?

Monitoring based on **user experience** to compute and provide:
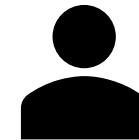
Status	Availability	Reliability	Alerts

Which answer all the following....

Am I happy with the service?

Questions:

☑ *- Are those services working correctly ?* → *User Perspective*

☑ *- How stable are these services ?*

☑ *- How available are these services ?*

☑ *- How reliable are these services ?*

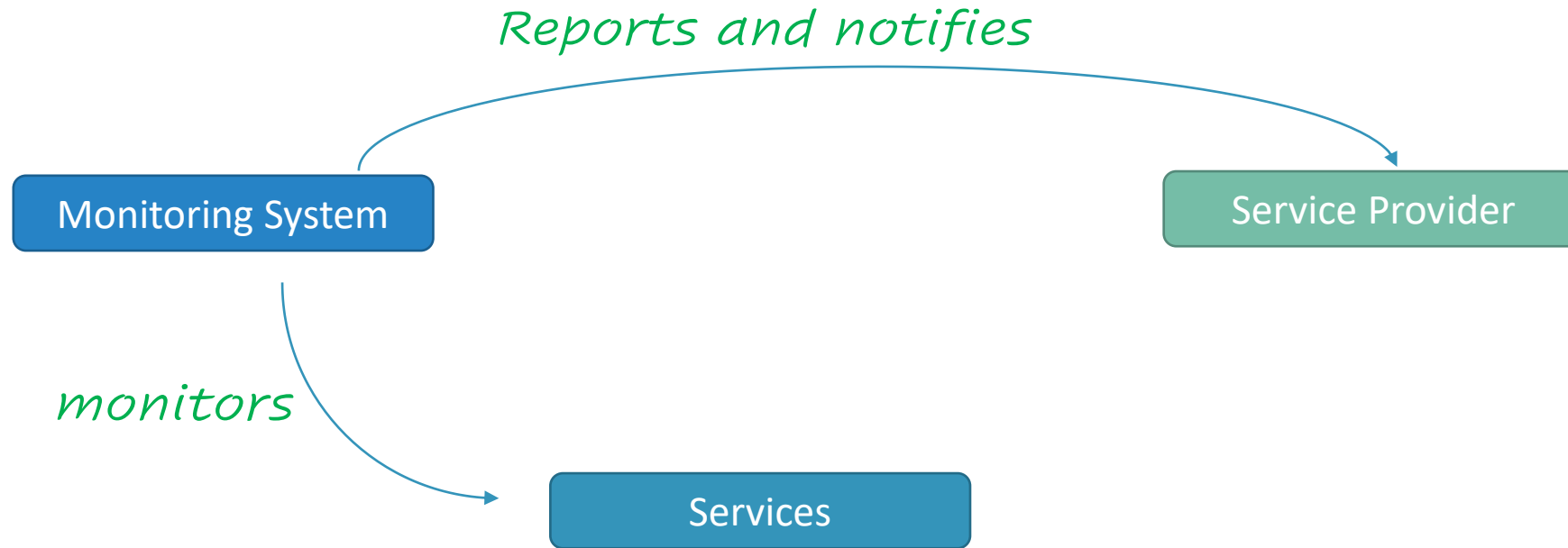☑ *- How services/components affect each other (dependencies) ?*

Why do I need Monitoring?

The feedback loop between Monitoring and SP is an important one

Monitoring System

Service Provider

monitors

Services

Why do I need Monitoring?

The feedback loop between Monitoring and SP is an important one

Reports and notifies

Monitoring System

Service Provider

monitors

Services

Why do I need Monitoring?

The feedback loop between Monitoring and SP is an important one

Reports and notifies

Monitoring System

Service Provider

Fixes and stabilizes

monitors

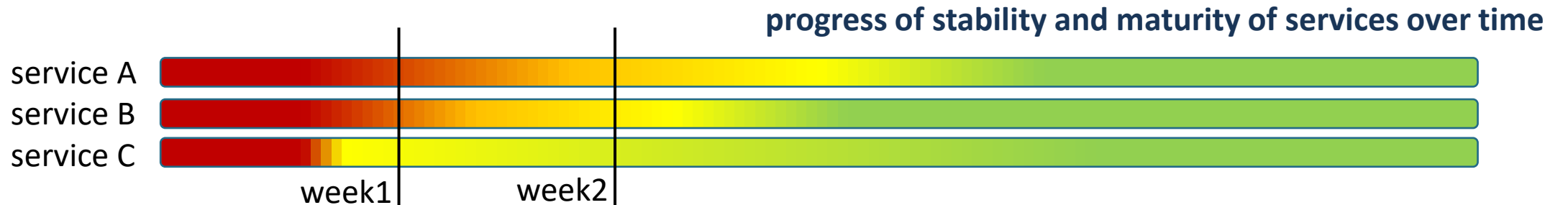Services

Why do I need Monitoring?

The feedback loop between Monitoring and SP is an important one
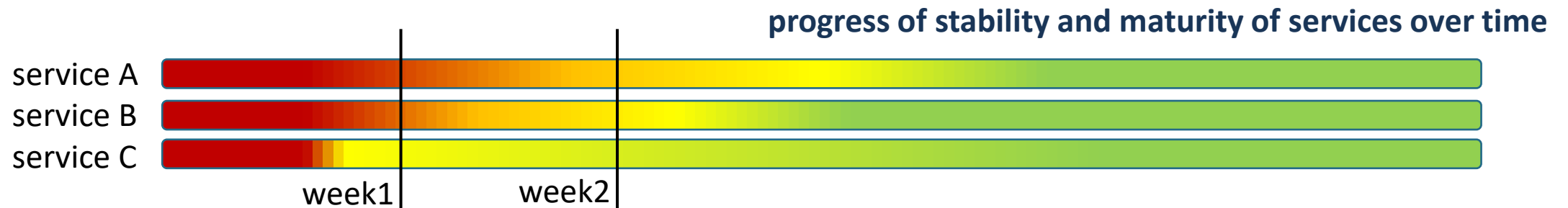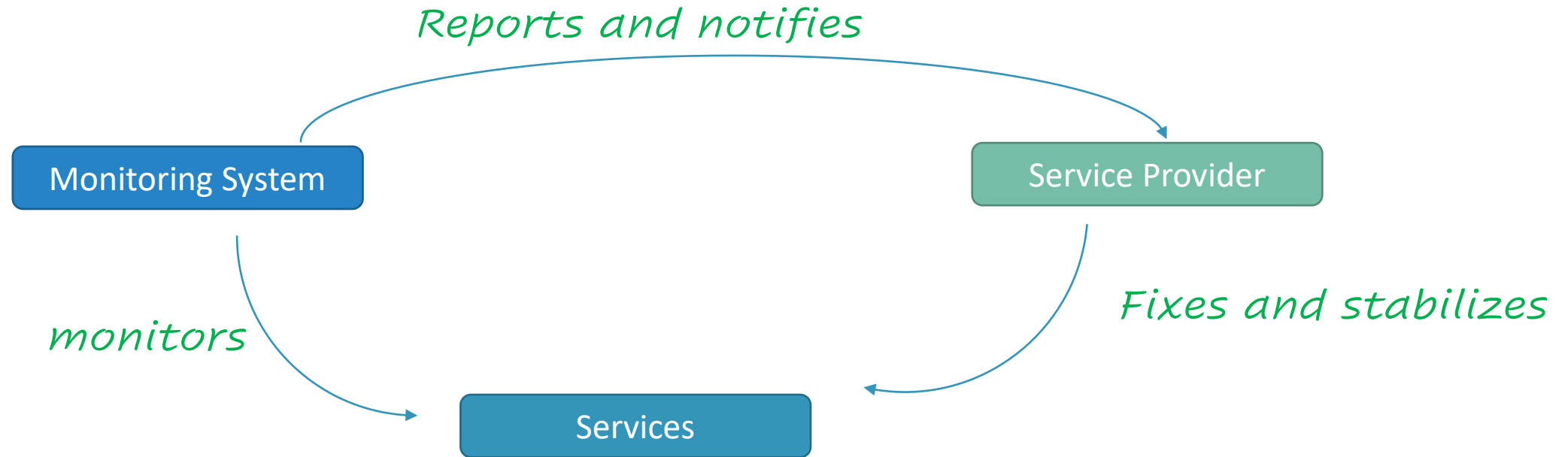
Why do I need Monitoring?

Monitoring in NI4OS through ARGO is an important steppingstone:

- ❑ to be aware of service status, availability and reliability
- ❑ To be quickly notified when something goes wrong
- ❑ To have a feedback loop and a record that proves the improvement in stability and maturity of the offered services
- ❑ As to be able to onboard services at **EOSC**

progress of stability and maturity of services over time

service A
service B
service C

week1   week2
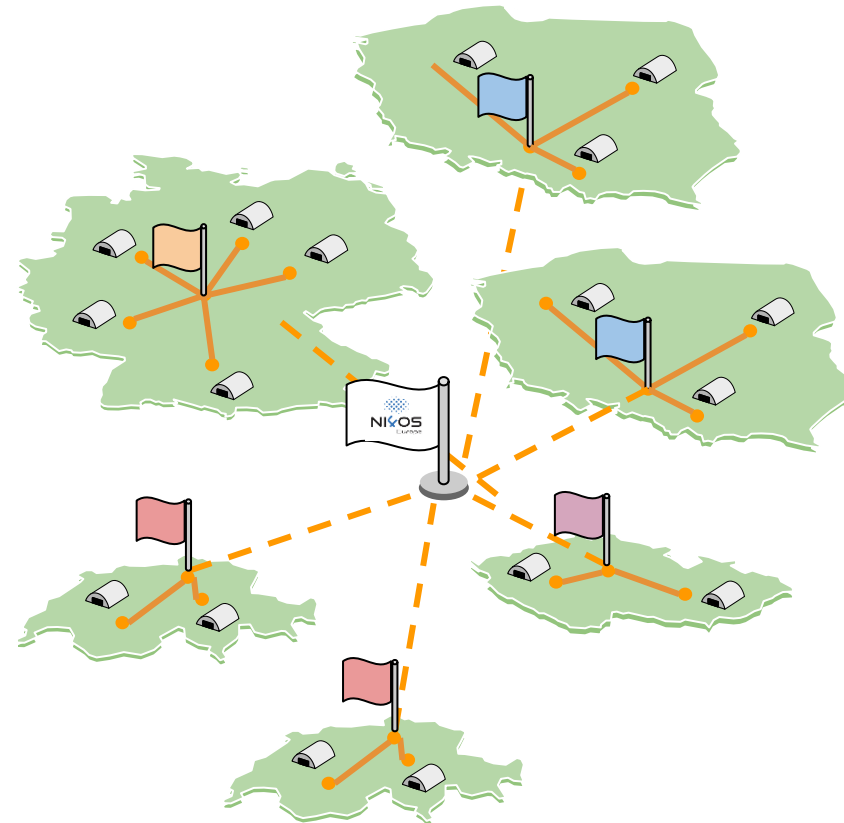
#second topic

What is ARGO Monitoring in NI4OS

ARGO provides Monitoring of NI4OS Services based on **User Experience** and offers a complete solution for:
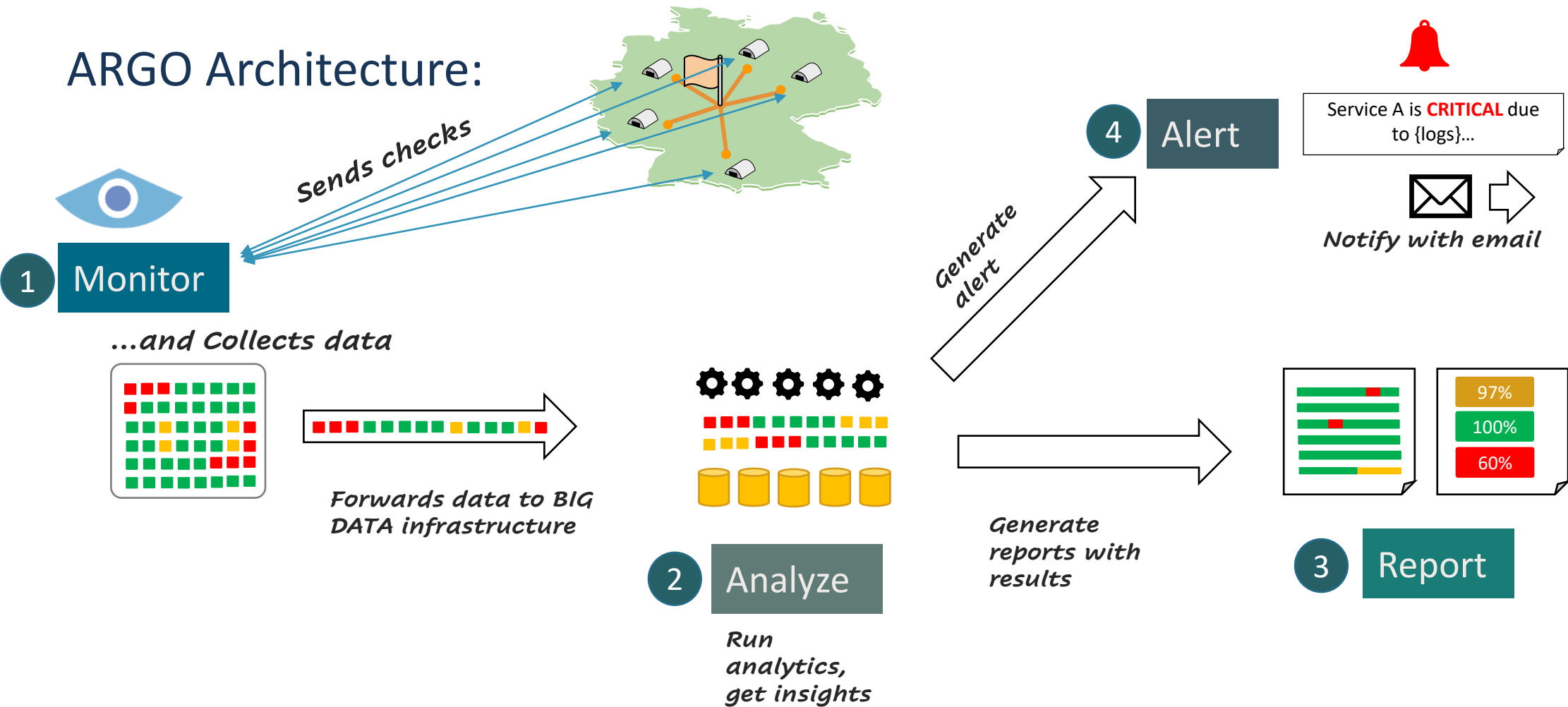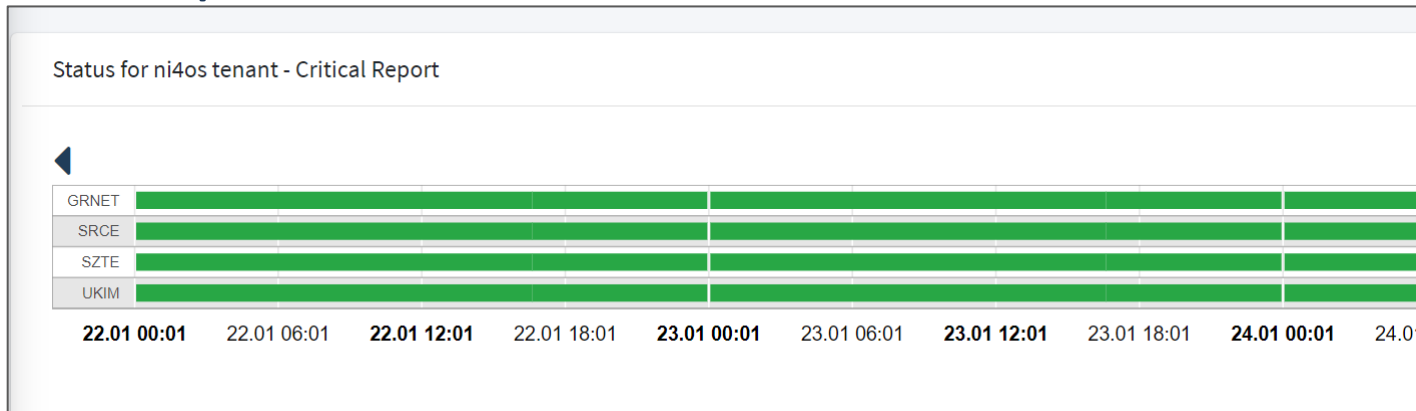
Monitor	Analyze	Report	Alert

What is ARGO Monitoring in NI4OS

ARGO Architecture:

Sends checks

1 Monitor

...and Collects data

Forwards data to BIG DATA infrastructure

2 Analyze

Run analytics, get insights

Generate alert

Generate reports with results

4 Alert

Service A is **CRITICAL** due to {logs}...

Notify with email

3 Report

97%

100%

60%

What is ARGO Monitoring in NI4OS

Examples of ARGO results

Status for ni4os tenant - Critical Report

Month		2020-11			2020-12	
		Av	Re		Av	Re
GRNET		99.97	99.97		99.81	99.81
SRCE		100	100		100	100
SZTE		N/A	N/A		100	100
UKIM		100	100		99.98	99.98
		Av	Re		Av	Re

Showing 1 to 4 of 4 entries

Last Status Checks

Show `10` entries   Search: [_____]

	Endpoint (Group)	Metric	Timestamp	
OK	UKIM (webinar.ni4os.eu)	org.nagios.WebCheck	2021-01-27T16:03:31Z	🔍
OK	GRNET (argo-mon2.ni4os.eu)	org.nagios.NagiosWebInterface	2021-01-27T16:03:27Z	🔍
OK	GRNET (agora.ni4os.eu)	eudat.itsm.spmt-healthcheck	2021-01-27T16:03:03Z	🔍
OK	SRCE (argo-mon-devel.ni4os.eu)	org.nagios.NagiosWebInterface	2021-01-27T16:02:51Z	🔍
OK	UKIM (training.ni4os.eu)	org.nagios.WebCheck	2021-01-27T16:02:51Z	🔍
OK	GRNET (repo.ni4os.eu)	org.nagios.WebCheck	2021-01-27T16:01:45Z	🔍
OK	SRCE (argo-mon.ni4os.eu)	org.nagios.NagiosWebInterface	2021-01-27T16:01:40Z	🔍
OK	GRNET (argo.ni4os.eu)	org.nagios.ARGOWeb-AR	2021-01-27T16:00:50Z	🔍
OK	GRNET (argo.ni4os.eu)	org.nagios.ARGOWeb-Status	2021-01-27T16:00:31Z	🔍
OK	SZTE (publicatio.bibl.u-szeged.hu)	org.nagios.WebCheck	2021-01-27T16:00:04Z	🔍

#third topic
Getting **Ready** for Monitoring

Getting Ready For Monitoring

Checklist for Service Providers:

- ❏ *Basic Steps*

- ❏ *What is my topology?*

- ❏ *What checks are relevant to my services ?*

- ❏ *How my services affect each other?*

- ❏ *When do we consider something to be problematic?*

Getting Ready For Monitoring

Checklist for Service Providers:

- ☐ *Basic Steps* → *Initial Contact and info*

- ☐ *What is my topology?* → *Declare list of hostname/services*

- ☐ *What checks are relevant to my services ?* → *Probes and metrics*

- ☐ *How my services affect each other?* → *Aggregation profiles*

Getting Ready For Monitoring

Checklist for Service Providers:

Let's start also with an example scenario:

"I'm a Service Provider and I offer the following service":
repository: http://repo.ni4os.eu/

"I want to start monitoring my service through ARGO"

Getting Ready For Monitoring

❑ *Basic Steps* → *Initial Contact and info*

Visit Monitoring guide for SPs at **ni4os wiki:**

https://wiki.ni4os.eu/index.php/Monitoring_guide_for_SPs

Until we start using helpdesk
Send an email to :
argo@ni4os.eu

Getting Ready For Monitoring

❑ *What is my topology?* → *Declare list of hostname/services*

Service	Hostname	Production	Monitored	Notifications	Contacts
repository	http://repo.ni4os.eu/	Yes	Yes	Yes	...

❑ *Where do I define the above?*
   → **GOCDB**

   ❑ A configuration database
      at **gocdb.ni4os.eu**.

Getting Ready For Monitoring

- ❏ *What checks are relevant to my services ?* → *Probes and metrics*

- ❏ *Define the basic characteristics of your service (**HTTP, HTTPS access etc...**) **with Monitoring team** to quickly select basic relevant tests from ARGO library and provide monitoring*

Getting Ready For Monitoring

❏ *What checks are relevant to my services ?* → *Probes and metrics*

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For example:

http://repo.ni4os.eu/

Repository service
- HTTPS Access

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Repository service
- HTTPS Access

Load basic checks/metrics

Getting Ready For Monitoring

❑ *What checks are relevant to my services ?* → *Probes and metrics*

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For example:

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Repository service
 - HTTPS Access
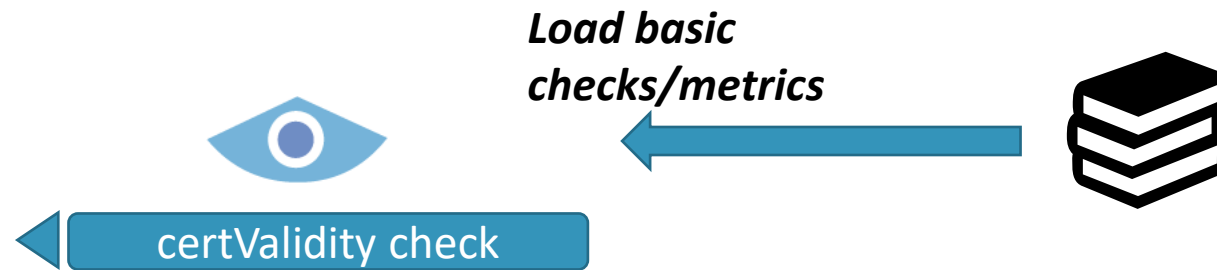
Load basic checks/metrics

certValidity check

Getting Ready For Monitoring

❑ *What checks are relevant to my services ?* → *Probes and metrics*

❑ *Define the basic characteristics of your service* (**HTTP, HTTPS access etc…**) **with Monitoring team** *to quickly select basic relevant tests from ARGO library and provide monitoring*

For example:

Load basic checks/metrics

http://repo.ni4os.eu/

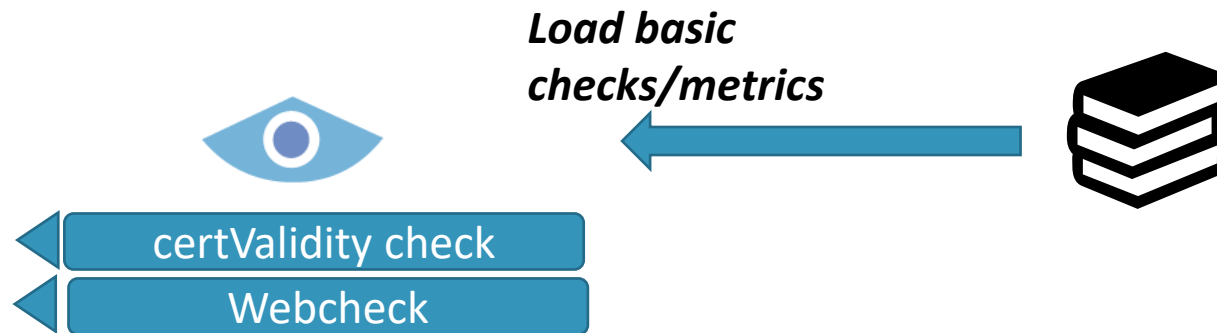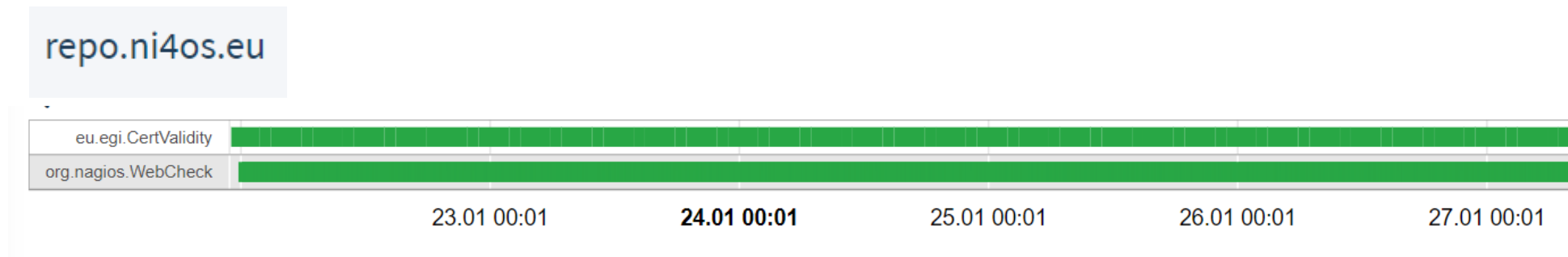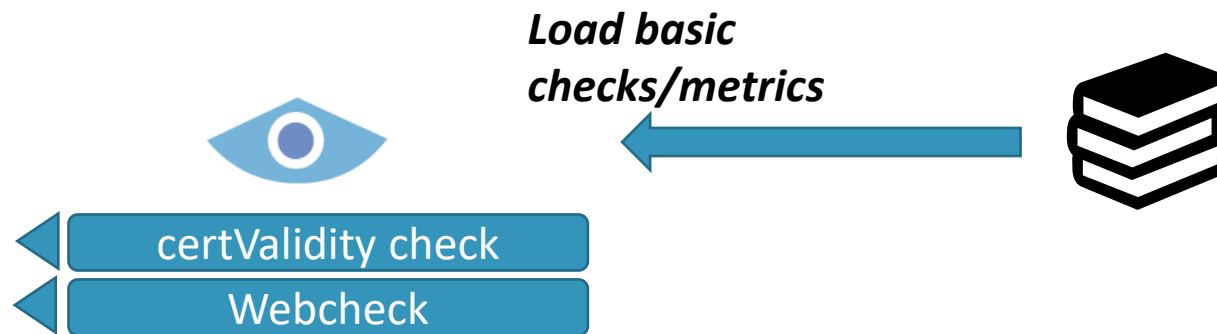**Repository service**
- HTTPS Access

certValidity check

Webcheck

Getting Ready For Monitoring

❑ *What checks are relevant to my services ?* → *Probes and metrics*

❑ *Define the basic characteristics of your service (**HTTP, HTTPS access etc...**)
with Monitoring team to quickly select basic relevant tests from ARGO
library and provide monitoring*

For example:

http://repo.ni4os.eu/

Repository service
- HTTPS Access

**Load basic
checks/metrics**

certValidity check

Webcheck

repo.ni4os.eu

eu.egi.CertValidity	
org.nagios.WebCheck	

| 23.01 00:01 | 24.01 00:01 | 25.01 00:01 | 26.01 00:01 | 27.01 00:01 |

Getting Ready For Monitoring

❑ *What if I need more advanced checks?*

…User Experience checks

*In the case of repository probes that check **Publish/List**/Retrieval of items.*

Contact monitoring team

→ *If service is of **specific type,** there might be appropriate probes in the library or available on the internet*

→ *Discuss with the owner of the service to implement **a checking probe***

Probe Development

Discuss
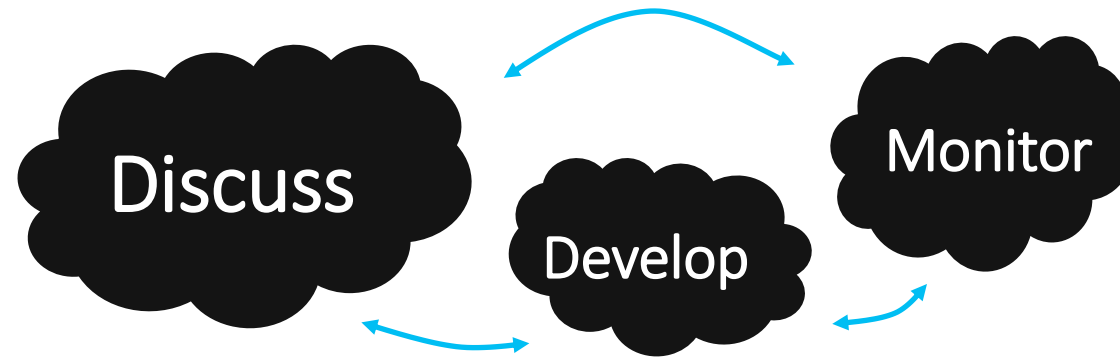
Develop

Monitor

Discuss

what to check

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

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.
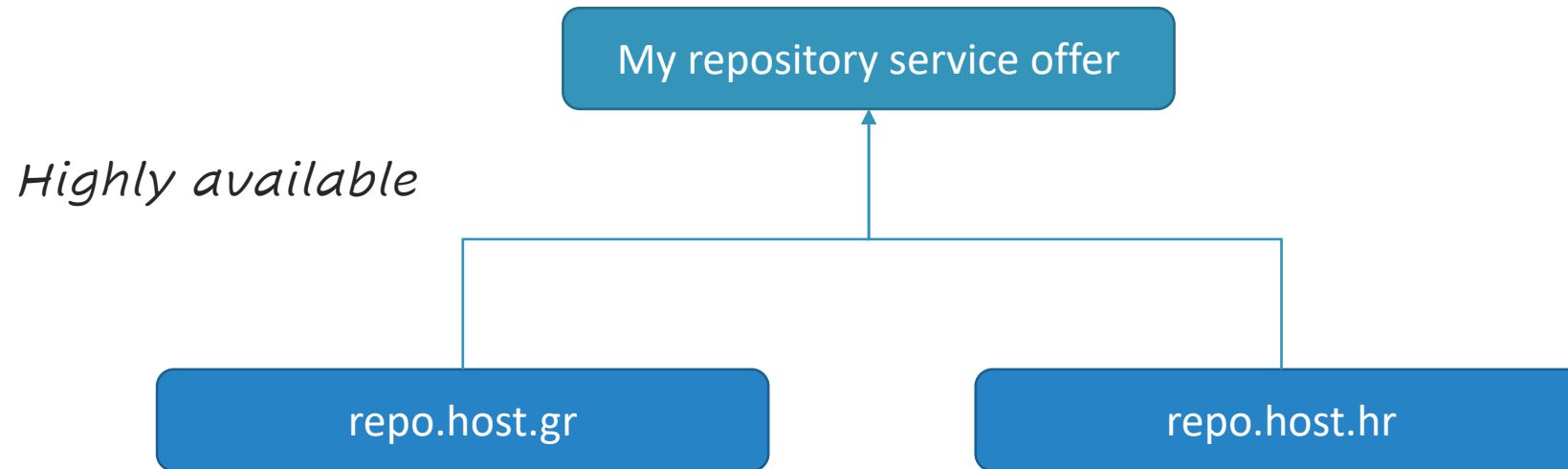
Monitor

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!!!

Getting Ready For Monitoring

❑ *How my services affect each other?* → *Aggregation profiles*

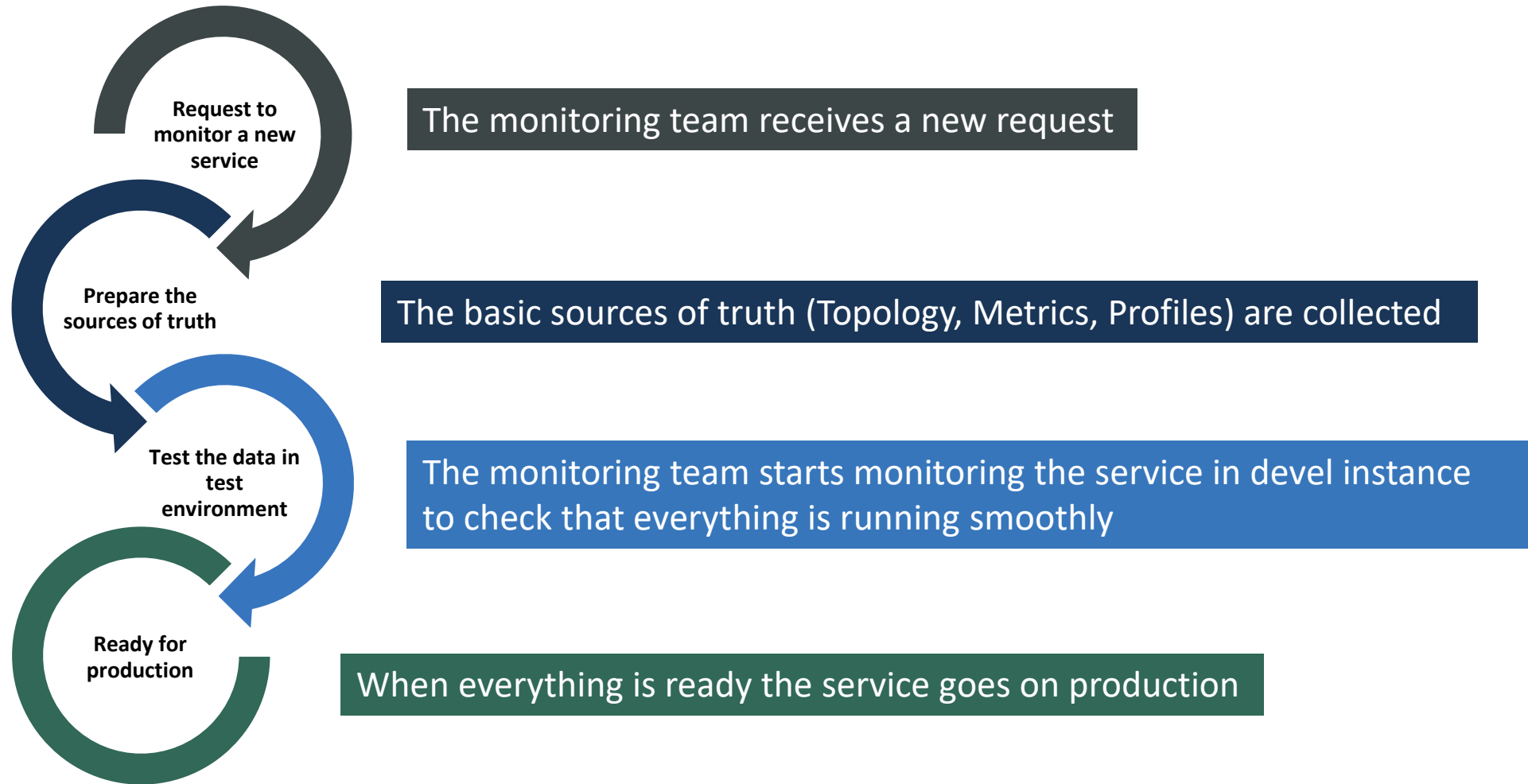Define how monitored items are grouped and form hierarchies

#fourth topic

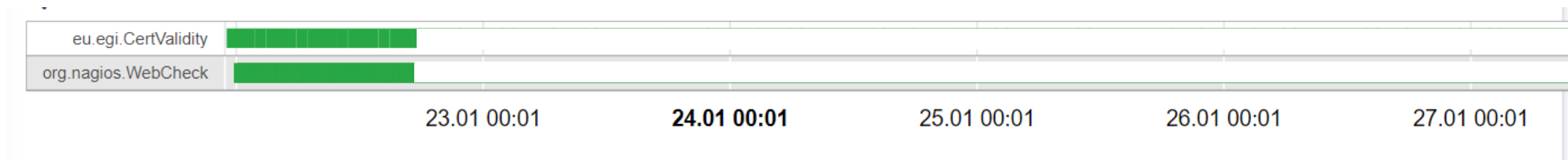# Kickstart the process and Get Results

Kickstart the process and get Results

Request to monitor a new service

The monitoring team receives a new request

Prepare the sources of truth

The basic sources of truth (Topology, Metrics, Profiles) are collected

Test the data in test environment

The monitoring team starts monitoring the service in devel instance to check that everything is running smoothly

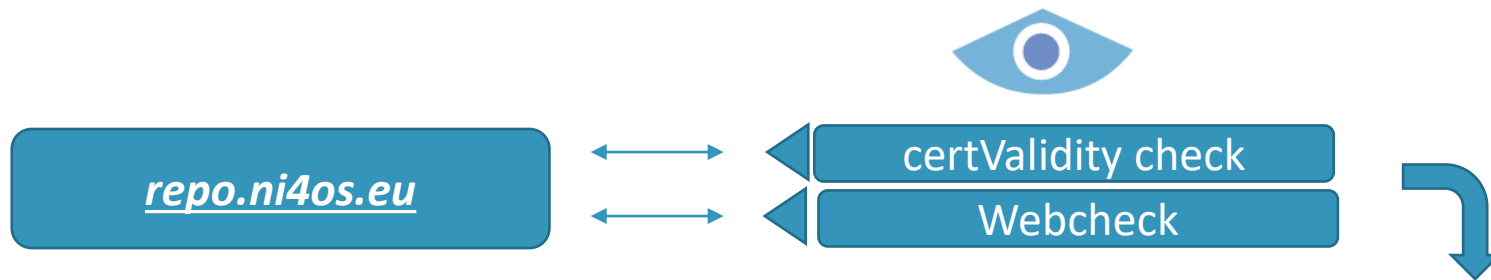**Ready for production**

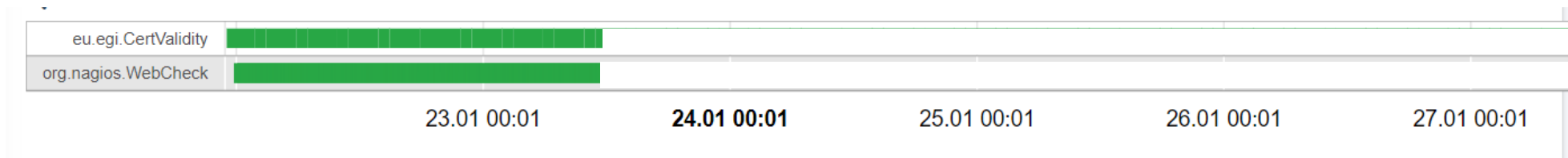When everything is ready the service goes on production

Kickstart the process and get Results

Kickstart the process and get Results

repo.ni4os.eu

certValidity check

Webcheck

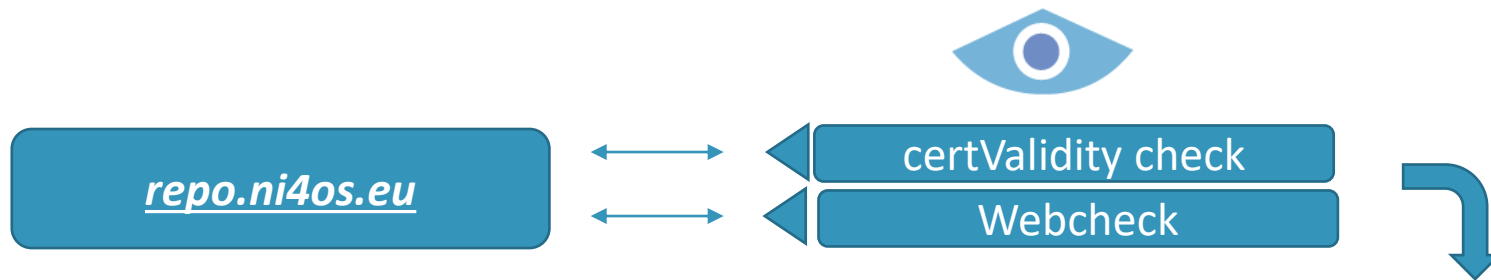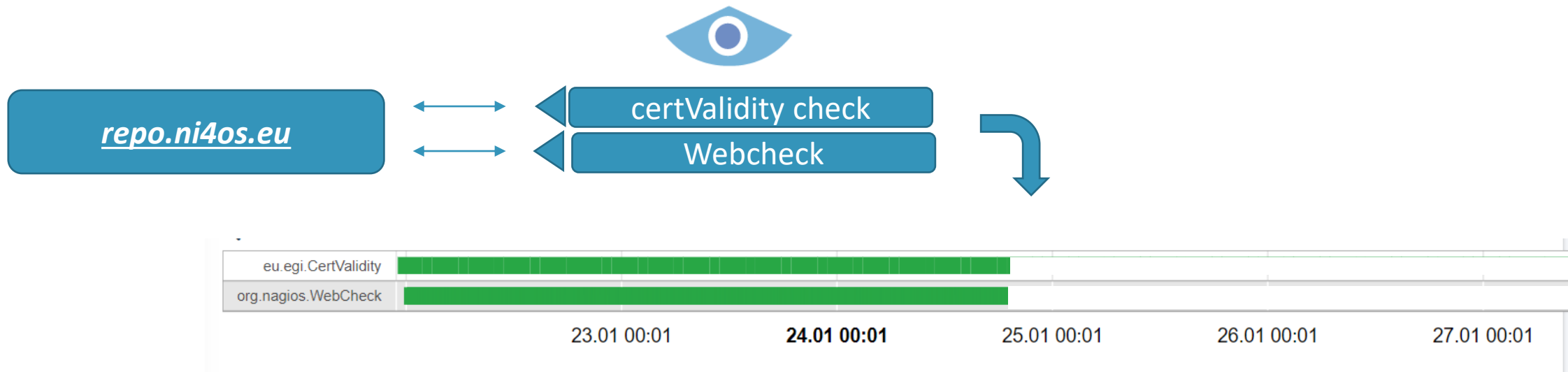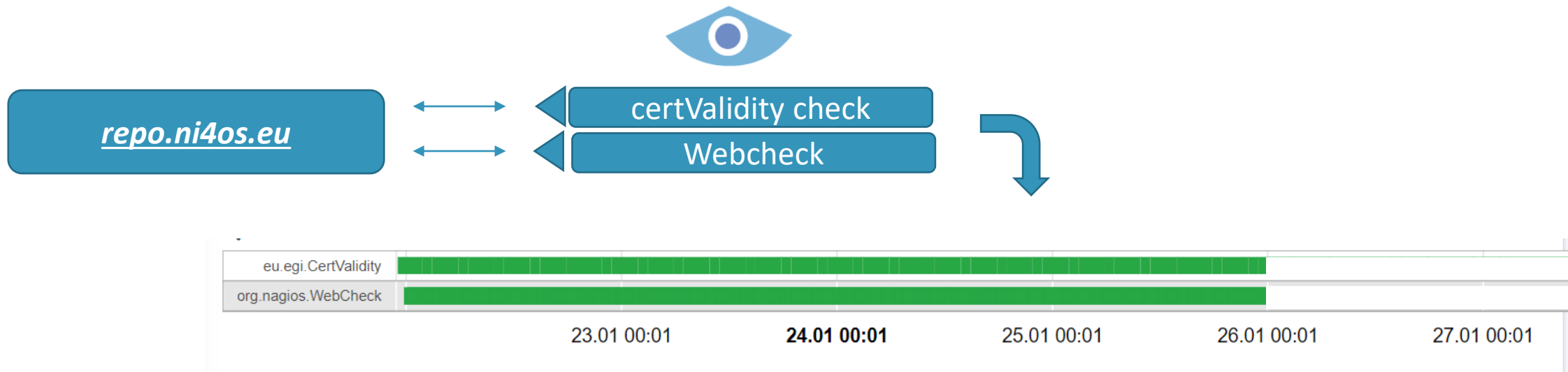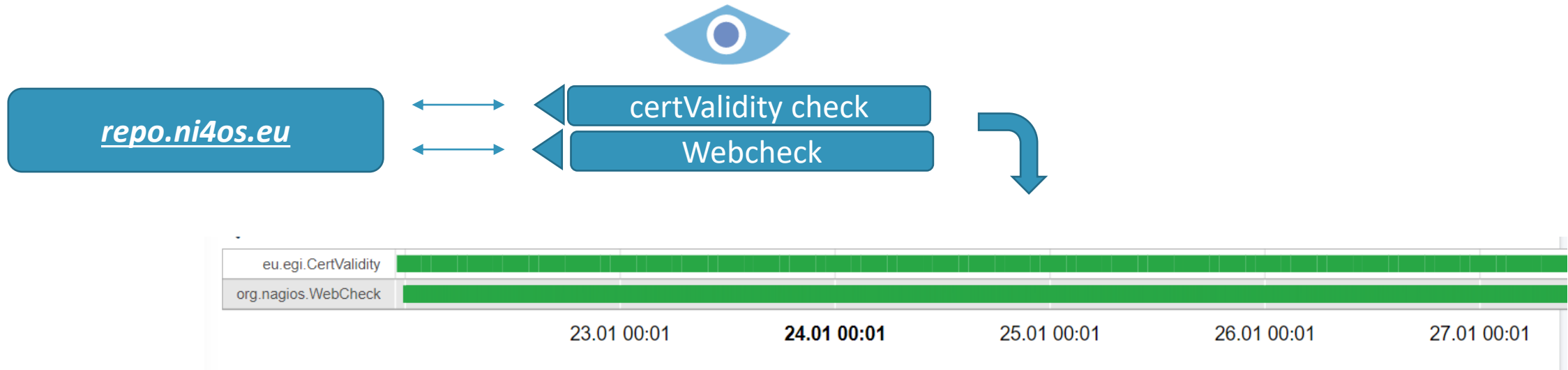|	23.01 00:01	24.01 00:01	25.01 00:01	26.01 00:01	27.01 00:01
eu.egi.CertValidity					
org.nagios.WebCheck					

Kickstart the process and get Results

Kickstart the process and get Results

Kickstart the process and get Results

repo.ni4os.eu

certValidity check

Webcheck

	23.01 00:01	24.01 00:01	25.01 00:01	26.01 00:01	27.01 00:01

eu.egi.CertValidity

org.nagios.WebCheck

Kickstart the process and get Results - Alerts

Is there a problem with your service?

An alert should be sent !

analyse the monitoring results and **send alerts** based on a **set of rules!**

[KR-KNU-T3] - Service CREAM-CE is CRITICAL

Alert ID	5bde6370-51bb-4945-aa5b-2556c8aa4ae1
Create Time	2018-04-17 09:46:17.753000
Monitored Time	2018-04-17T09:46:11Z
Processed Time	2018-04-17T09:46:17Z
Repeated	false
Resource	KR-KNU-T3/CREAM-CE
Event Type	servicestatus
Severity	Indeterminate -> Critical
Status	Open

MORE DETAILS

Questions? Email EGI Monitoring Team

the monitoring team

● SITE BUDAPEST is *Critical*

SITE BUDAPEST became *Critical* **at** 2019-09-10T06:17:51Z

The ENDPOINT affected is

● grid143.kfki.hu (SRM)

due to **METRIC** org.sam.SRM-Put

Thanks!

https://ni4os.eu/

https://twitter.com/NI4OS_eu

https://www.facebook.com/NI4OS/

Thank You...

Any questions?