The SQAaaS platform

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SQA as a Service (**SQAaaS**)

What?

- Web service to compose *workflows to assess EOSC software & services*
- Currently *under development* (EOSC-Synergy), to be added to EOSC portal

Why (goals)?

- Foster **good practices within research software & service development** life cycle
- **Highlight the quality attributes/criteria** of EOSC services

How?

- Through **graphical composition of CI/CD pipelines** (DevOps)
  - **Criterion-driven** arrangement (see slide about SQA criteria documents)
  - CI/CD technology agnostic
- Issuing **digital badges** (Open Badges specification, rich metadata)

The **SQAaaS** platform

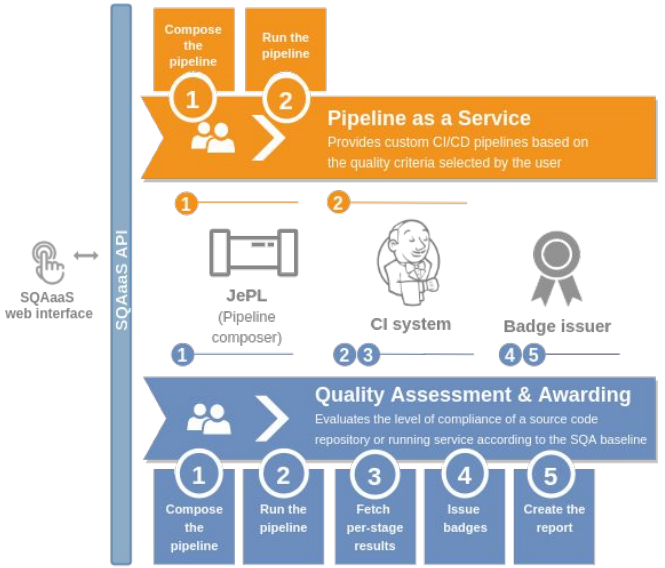
2 modules for a 2-fold objective

1. Bring over novel software engineering SQA practices close to researchers → DevOps
   - Common **struggle for researchers** (many CI tools & languages, not clear SQA criteria, ..)
     - *Graphical composition allows independence from CI/CD technology*
   - Implementation: harnesses **CI/CD pipelines**

⇉ **Pipeline as a Service**

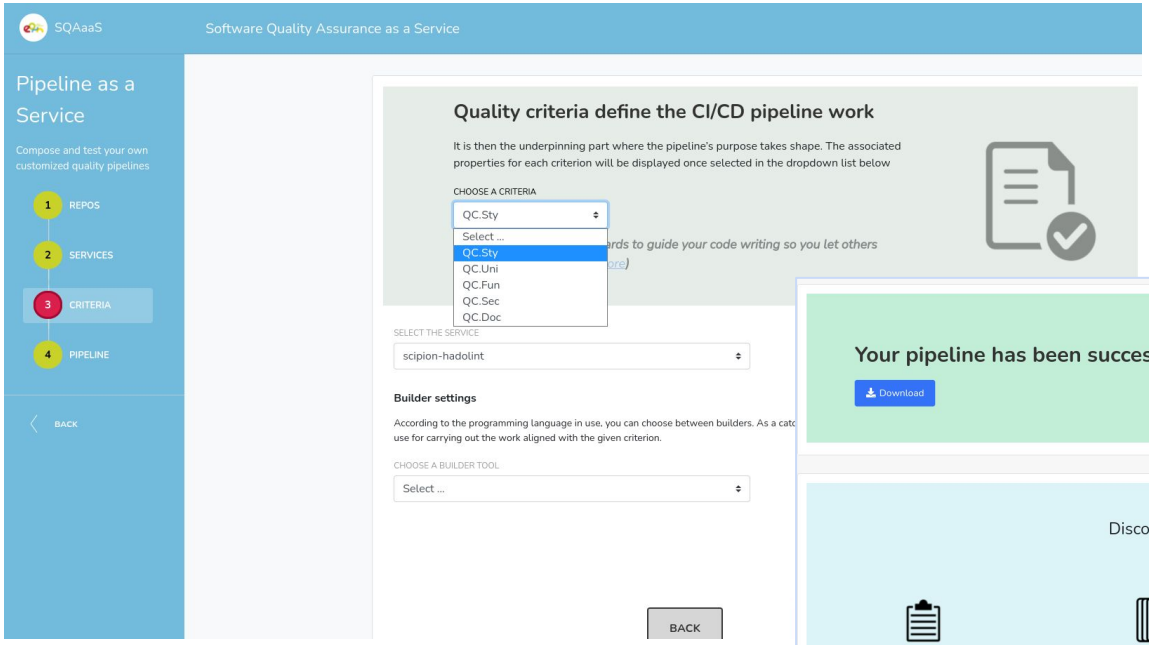
2. Take proper credit for your achievements through a SQA assessment tool
   - Outcome: **verifiable & shareable digital badges**

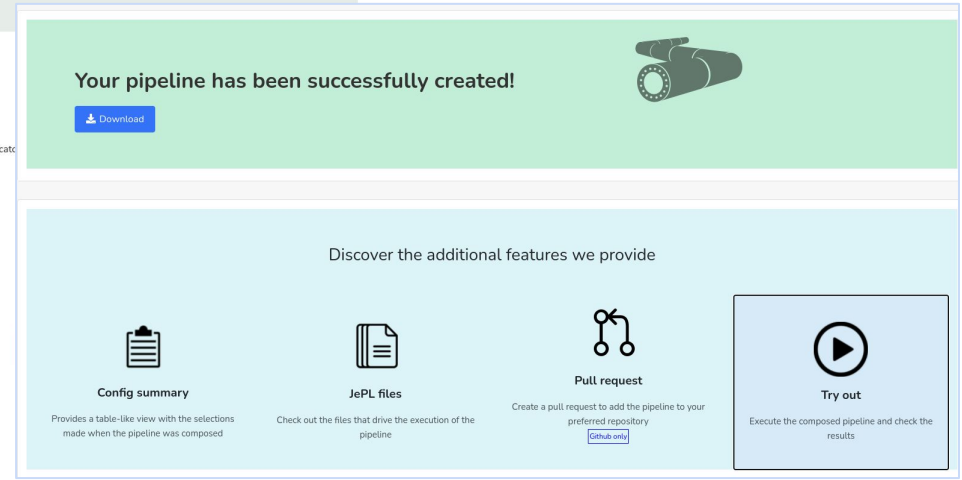
⇉ **Quality Assessment & Awarding**



https://sqaaas.eosc-synergy.eu

SQAaaS portal: **Pipeline as a Service**





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What about **the quality criteria**?

- SQAaaS' single source of truth, 2 sets:
  - **Software**: adopted, mature document
  - **Services**: by virtue of EOSC delivery model

- Criteria identified through **unique codes**, e.g:
  - **`QC.Sec`**: security of code (static analysis),
  - **`SvcQC.Sec`** security of services (dynamic analysis)

- Research oriented, DevOps nature
  - Towards **reproducible & sustainable** research software
  - **Automated** assessment, technology agnostic

- Currently, **defining concrete tooling** for each criterion

- Anyone can contribute
  - **Improved accessibility** through Github
  - Changes drawn upon discussions

http://dx.doi.org/10.20350/digitalCSIC/12543

https://github.com/indigo-dc/sqa-baseline

http://dx.doi.org/10.20350/digitalCSIC/12533

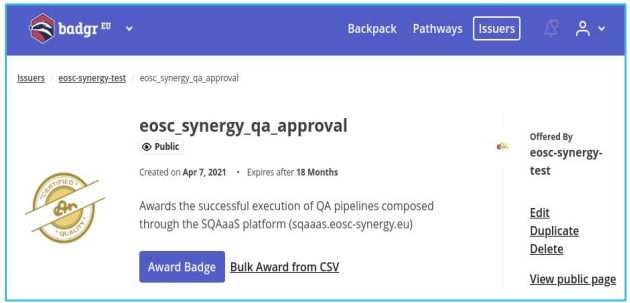
https://github.com/EOSC-synergy/service-qa-baseline

What about **the badges**?

Using Open Badges v2.1 specification

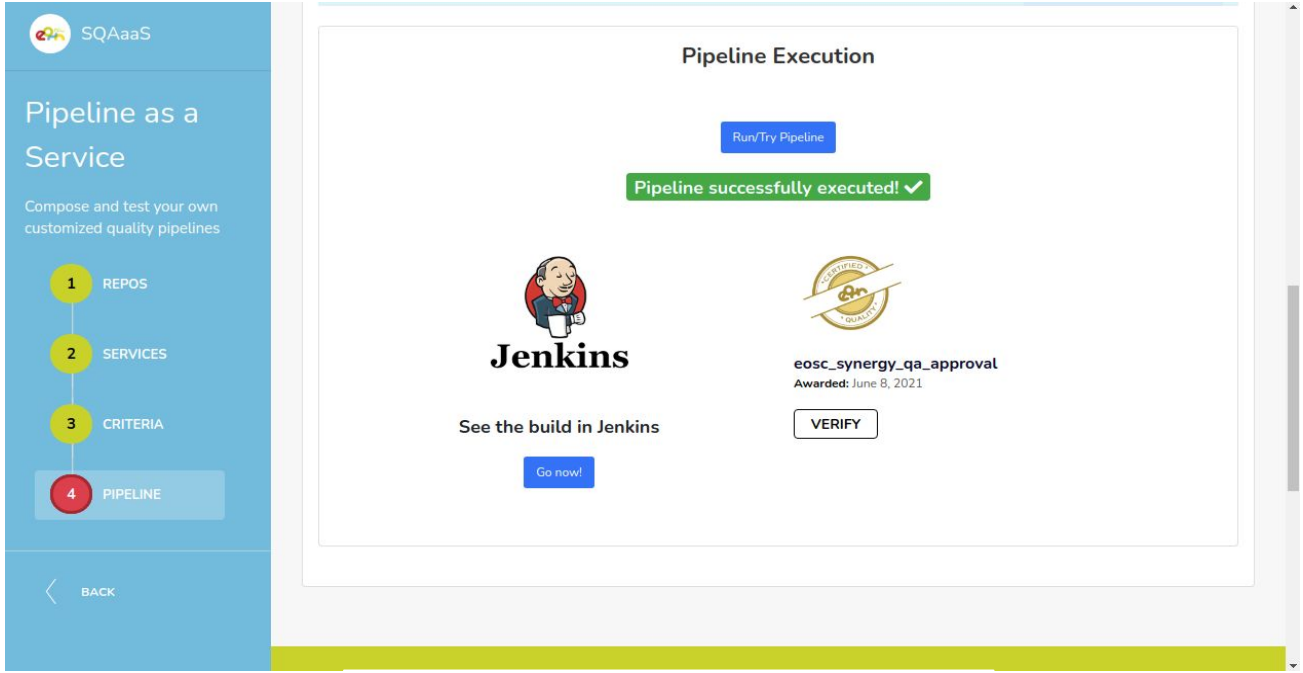
- **EOSC-Synergy issuer profile** in Badgr Europe
  - Upon execution of the QA assessment pipeline
  - 3 different levels of compliance

- Digital **badge's metadata** provides..
  - Earning criteria: specific Software & Service criteria being fulfilled
  - Evidence: permalink to CI system build, including i) code version, ii) artefacts, iii) build reports



https://eu.badgr.com/public/issuers/aS1lWKgIR4u8bGjPZUzAyg/badges

SQAaaS portal: **badges**



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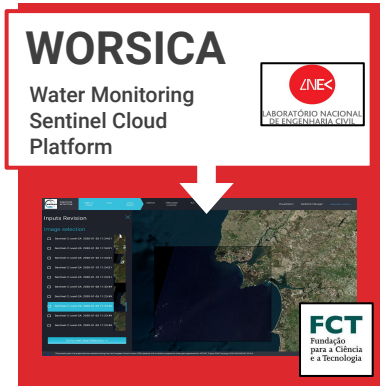
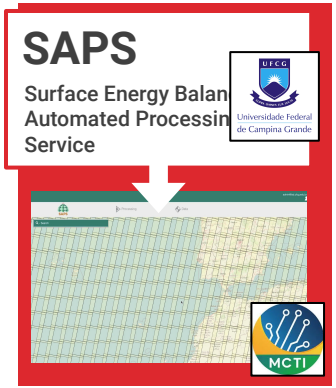
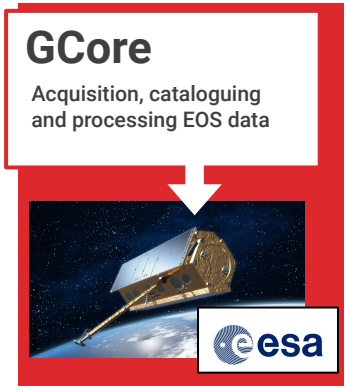
Who is using SQAaaS?

Quality is essential for enhancing usability and fostering adoption of EOSC services

SQAaaS is validating the EOSC-Synergy Thematic Services

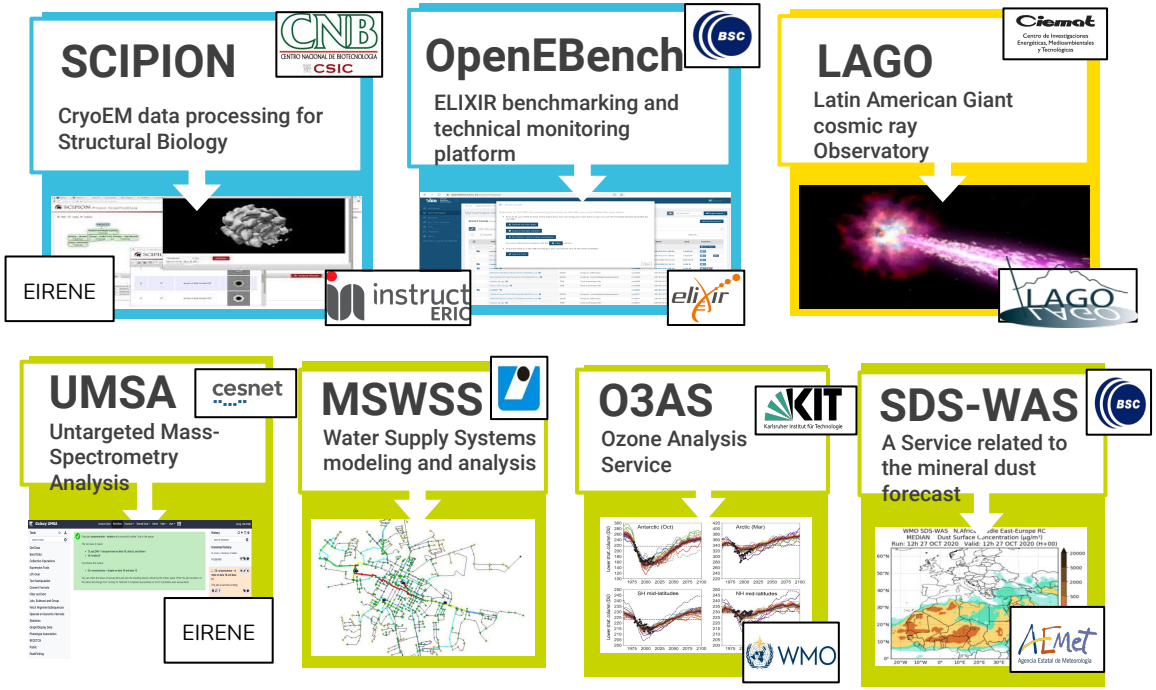






Earth Observation

Who is using SQAaaS?



Biomedicine & Astrophysics

and Environment

Code languages:
↑Python, Java

Code platforms:
↑GitHub, Gitlab

Distributed as:
↑Docker images

Deployment:
↑Infrastructure Manager
↑Kubernetes

Who is using SQAaaS?

Synergies (CSIRT & SQAaaS)

1. Feedback from the security PoV (**CSIRT ➞ SQAaaS**)
    a. Security **criteria**:
        i. Improve the current set of requirements for individual Software and Services
    b. Security **tools**:
        i. Identify the relevant tools for security assessment

2. Extend automated security assessment & acknowledgement in the EOSC (**SQAaaS ➞ CSIRT**)
    a. **Composition of pipelines** for EOSC services (help covering security framework)
        i. Automated validation, incorporate new tools to cover both SAST and DAST
    b. **Issue digital Badges** specific to Security
        i. Badge metadata including evidence of security assessment
        ii. Can be shared/displayed in EOSC portal

Thank you

For further information:

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