

WP3 tasks

Status update & planning



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T3.1: Technology Watch

Task 3.1 (M01-M36): **Technology watch** for tools and services to assess, curate and improve scientific software, code, and workflows quality in the Science Clusters. This task aims to **assess and document the existing tools and services** used in the Science Clusters and elsewhere to improve software quality, metadata, and FAIRness, **align them with best practices**, and **include them in the RSQkit paired with guidelines and best practices**. Tools for security checks, licence infringements and green benchmarking are also considered.

<p>A. Assess existing tools and services (e.g. from EOSC Synergy) usable by the science clusters to evaluate, curate, and improve software quality, metadata, and FAIRness, as well as for security checks, licence</p>	<ul style="list-style-type: none"> ✓ Prepares a first list of tools and services <input type="checkbox"/> Assesses the tools and services : partly done by understanding roles and usage of tools and services in science clusters <input type="checkbox"/> MS8: workshop to evaluate tools and services against WP2 best practices
<p>B. Document the identified tools and services, aligning them with the best practices and recommendations of the pilot communities, and provide guidance on their use within the software life cycle while following the three-tier research software model.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Provides metadata for tools and services aligned with WP2 and TF2 recommendations <input type="checkbox"/> Curates and organises the list of tools and services using these metadata <input type="checkbox"/> Maps tasks in the RSQKit to tools and services
<p>C. Incorporate the catalogue of tools and services into the RSQkit along with guidelines and best practices to enhance the quality, metadata, and FAIRness of research software.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Provides mechanisms to keep the list up-to-date <input type="checkbox"/> Handles new contributions by curating and aligning with the metadata schema

T3.2: Integrated pipelines

Task 3.2 (M07-M36): Consolidation of tools and services to ease their implementation and use in research communities. This task aims to develop **integrated quality indicators** and a **common metadata framework** for software quality, containerize tools and services, develop **actionable pipelines** to assess and improve software quality, and **integrate** software quality **pipelines into** widely used **platforms** for research software engineering and code archival.

<p>A. Develop integrated quality indicators and a common metadata framework for software quality by leveraging and extending existing schemas (such as CodeMeta, Bioschemas Computational workflow/tools) to facilitate the assessment and management of software quality.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Workshop to understand the existing pipelines and indicators used in science clusters <input type="checkbox"/> Maps tools/services to indicators (or vice-versa)
<p>B. Containerize the tools, services, and pipelines to enable easy integration with EOSC and other services for improved software quality.</p>	
<p>C. Create actionable automated pipelines using CI/CD to help assess and enhance software quality, curate and enrich metadata, and provide authors with recommendations for FAIR compliance. When possible, these pipelines provide badges and indication of code maturity within the software life cycle.</p>	
<p>D. Integrate the software quality pipelines with widely used platforms for research software engineering (such as GitHub, GitLab) and code archival (such as Zenodo) to improve the overall quality of research software.</p>	

Task 3.3 (M12-M36): To provide the means to measure globally the software quality in the Science Clusters. This task aims to develop dashboards to collect integrated indicators of software quality and FAIRness in the Science Clusters, integrate them with existing platforms used in the communities, and add specific indicators when needed. Indicators defined at multiple levels reflecting the three tier software classification: basic developer guidelines (EURISE), maturity of Software (CESSDA SML), maturity of Services (EOSC TRLs), FAIRness (FAIR4RS, Software Observatory, ELIXIR SMP)

<p>A. Develop dashboards to collect integrated indicators of software quality and FAIRness in the catalogues and repositories used by the Science Clusters, enabling community members to monitor the performance of their software.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Draft of dashboard architecture <input type="checkbox"/> Dashboard prototype
<p>B. Integrate the dashboards with existing platforms used in the Science Clusters, leveraging APIs RO-Crate FDO (EOSC-Life) and other available means, and surface the quality metadata in community-specific platforms using the metadata framework defined in task 3.2.</p>	
<p>C. Integrate specific indicators from the Science Clusters in their respective dashboards, when required, to ensure that the performance of software can be tracked effectively.</p>	

Objectives for the General Assembly (March 2025)

1. A metadata schema to organize tools and services in the RSQKit → T3.1
2. A list of tools and services for software quality integrated in the RSQKit → T3.1
3. Evaluation of tools and services against WP2 best practices → T3.1 / MS8
4. Tasks in the RSQKit mapped to tools and services → T3.1
5. A first map of indicators with tools and services → T3.2
6. A dashboard prototype or demo of what could be done → T3.3

