

T5.2 “FAIR metrics for research software”

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D5.2 “Metrics for automated FAIR software assessment in a disciplinary context”

Definition of 17 metrics based on the FAIR4RS principles v1.0

- Domain-agnostic metrics
- Social-Science-specific implementation

<https://zenodo.org/records/10047401>

Report “Comparison of tools for automated FAIR software assessment”

Tooling for assessing the FAIRness of software is still relatively new. Comparing four existing tools:

- F-UJI
- FAIR-Checker
- FAIR-Enough
- Howfairis

The first three are for data only, the last one relies on FAIR software principles, not the FAIR4RS principles.

<https://zenodo.org/records/13268685>

M5.6 “Practical tests for automated FAIR software assessment in a disciplinary context”

Implementation of some of the 17 metrics defined in D5.2 into one of the automated assessment tools (F-UJI):

- Originally F-UJI was for data only
- Extension of F-UJI for research software (POC)
 - Merged back into original F-UJI repo
 - Not all metrics have been implemented yet

<https://zenodo.org/records/10890043>

Identifier	Name
FRSM-01	Does the software have a globally unique and persistent identifier?
FRSM-02	Do the different components of the software have their own identifiers?
FRSM-03	Does each version of the software have a unique identifier?
FRSM-04	Does the software include descriptive metadata which helps define its purpose?
FRSM-05	Does the software include development metadata which helps define its status?
FRSM-06	Does the software include metadata about the contributors and their roles?
FRSM-07	Does the software metadata include the identifier for the software?
FRSM-08	Does the software have a publicly available, openly accessible and persistent metadata record?
FRSM-09	Is the software developed in a code repository / forge that uses standard communications protocols?

Identifier	Name
FRSM-10	Are the formats used by the data consumed or produced by the software open and a reference provided to the format?
FRSM-11	Does the software use open APIs that support machine-readable interface definition?
FRSM-12	Does the software provide references to other objects that support its use?
FRSM-13	Does the software describe what is required to use it?
FRSM-14	Does the software come with test cases to demonstrate it is working?
FRSM-15	Does the software source code include licensing information for the software and any bundled external software?
FRSM-16	Does the software metadata record include licensing information?
FRSM-17	Does the software include provenance information that describe the development of the software?

Research Software Open Call

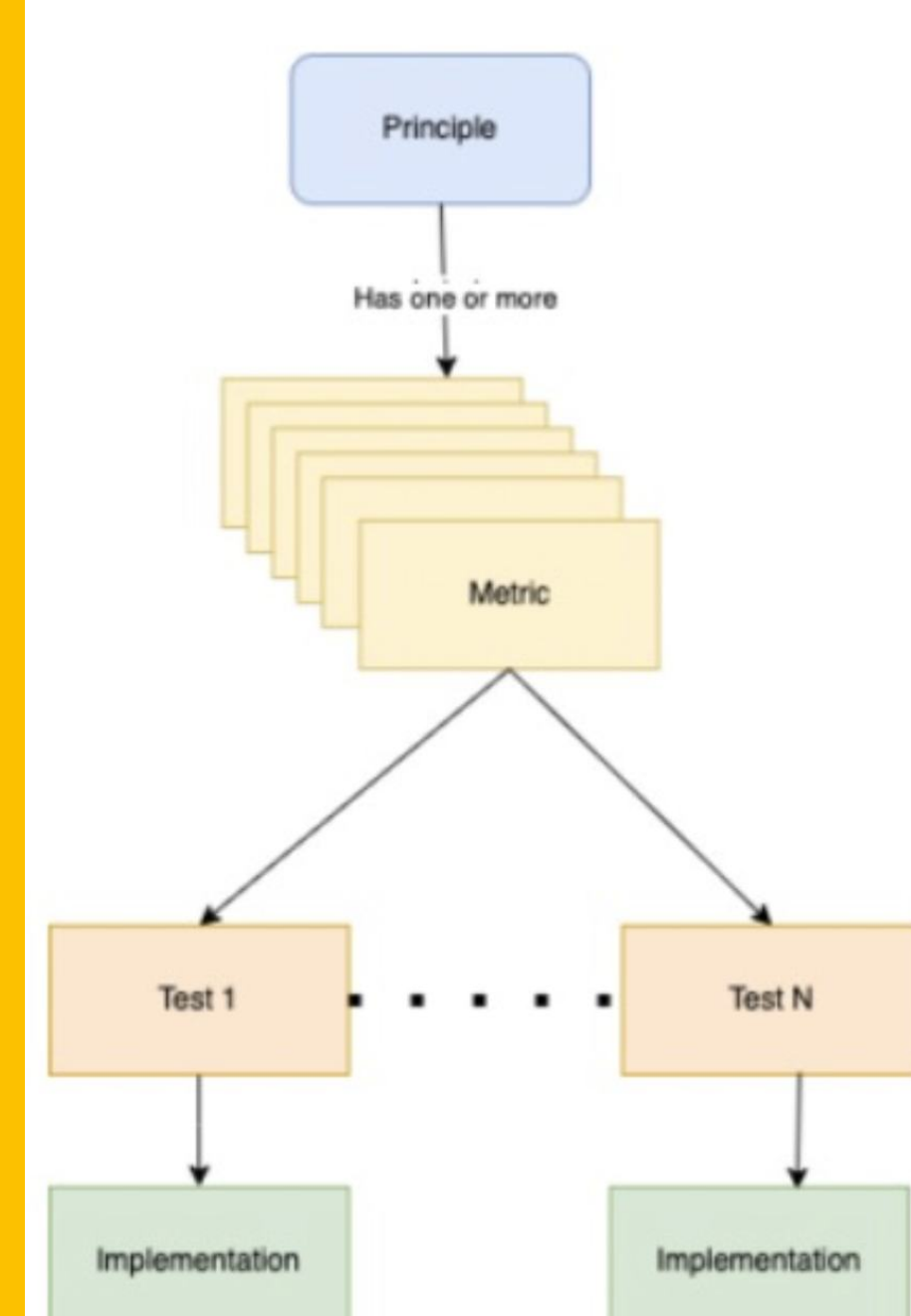
Participants piloting the F-UJI tool extension for research software

- 11 participants across Europe & scientific communities
- Total of three workshops in 2024

D5.2 - Metrics for automated FAIR software assessment in a disciplinary context.

From metrics to measurement - example for FRSM-15

- Each principle can have one or more metrics associated with it.
- The F-UJI implementation for data expects each metric to be mapped to exactly one FAIR principles.
 - The FAIR4RS metrics often relate to multiple principles.
 - For FRSM-15 we decided to choose “essential” as the guiding principle.
- Easy to implement.
- Hard to recognise bundled components & to map content of software licence to see if it covers all components.



In order to automate the assessment, every principle needs to be presented by one or more criteria, which we call **metrics**, which then will be turned into an actual test that will be implemented in an automated assessment tool

Field	Generic Metric Description										
Metric Identifier	FRSM-15										
Metric Name	Does the software source code include licensing information for the software and any bundled external software?										
Description	Clear software licensing enables reuse.										
FAIR4RS Principle	R1.1: Software is given a clear and accessible licence.										
RSMD Rec	RSMD-6.2, RSMD-6.4, RSMD-6.5, RSMD-6.6										
Assessment/Metric Tests	<table border="0"> <tr> <td>Requirements</td> <td> <ul style="list-style-type: none"> • Software source code • Software </td> </tr> <tr> <td>Method</td> <td>Check the software and its documentation for the presence of a licence</td> </tr> <tr> <td>Essential</td> <td>The software includes its LICENCE file</td> </tr> <tr> <td>Important</td> <td>The source code includes licensing information for all components bundled with that software</td> </tr> <tr> <td>Useful</td> <td>The software licensing information is in SPDX format</td> </tr> </table>	Requirements	<ul style="list-style-type: none"> • Software source code • Software 	Method	Check the software and its documentation for the presence of a licence	Essential	The software includes its LICENCE file	Important	The source code includes licensing information for all components bundled with that software	Useful	The software licensing information is in SPDX format
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