Machine-actionable Software Management Plans – High Potentials or Just Gimmicks?

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Max Planck Digital Library

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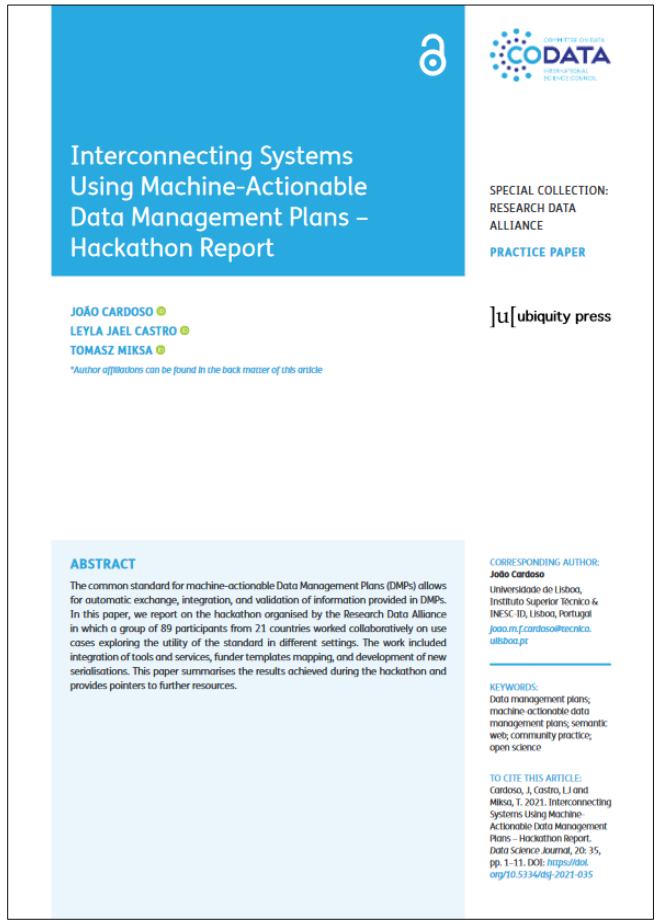
What‘s machine-actionable/-readable?

- “*Data in a data format that can be automatically read and processed by a computer, such as CSV, JSON, XML, etc. Machine-readable data must be structured data.*” https://opendatahandbook.org/glossary/en/terms/machine-readable/
- “Machine-Actionability refers to the information that is consistently structured so that machines can be programmed against such a structure.” https://ds-wizard.org/machine-actionability
- It‘s complicated, see https://rdmkit.elixir-europe.org/machine_actionability.html

Machine-Actionable Data Management Plans



Interconnecting Systems Using Machine-Actionable Data Management Plans – Hackathon Report

SPECIAL COLLECTION: RESEARCH DATA ALLIANCE

PRACTICE PAPER

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ABSTRACT

The common standard for machine-actionable Data Management Plans (DMPs) allows for automatic exchange, integration, and validation of information provided in DMPs. In this paper, we report on the hackathon organised by the Research Data Alliance in which a group of 89 participants from 21 countries worked collaboratively on use cases exploring the utility of the standard in different settings. The work included integration of tools and services, funder templates mapping, and development of new serialisations. This paper summarises the results achieved during the hackathon and provides pointers to further resources.

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KEYWORDS:
Data management plans; machine-actionable data management plans; semantic web; community practice; open science

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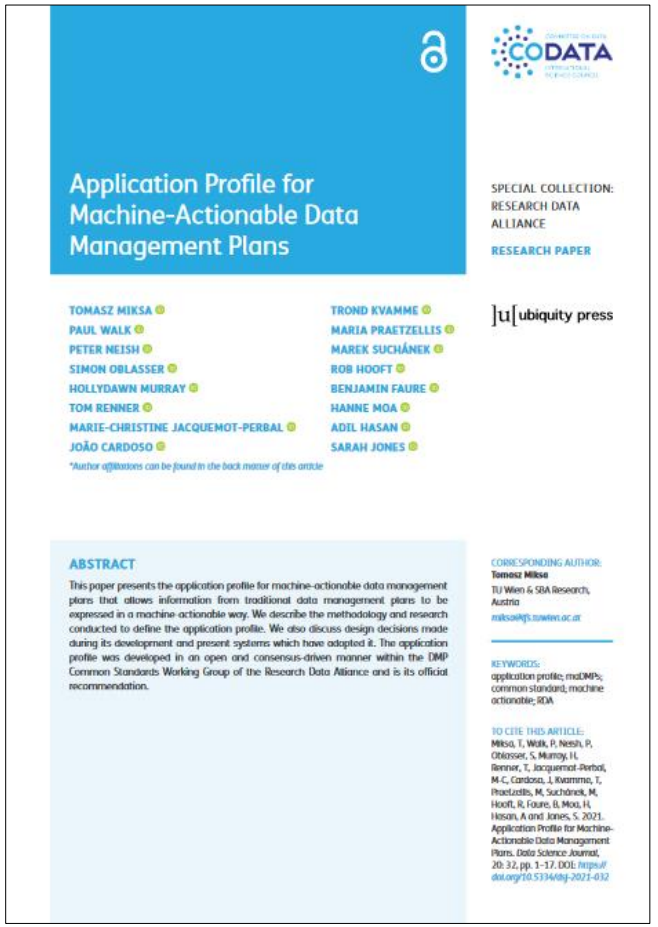

Application Profile for Machine-Actionable Data Management Plans

SPECIAL COLLECTION: RESEARCH DATA ALLIANCE

RESEARCH PAPER

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ABSTRACT

This paper presents the application profile for machine-actionable data management plans that allows information from traditional data management plans to be expressed in a machine-actionable way. We describe the methodology and research conducted to define the application profile. We also discuss design decisions made during its development and present systems which have adopted it. The application profile was developed in an open and consensus-driven manner within the DMP Common Standards Working Group of the Research Data Alliance and is its official recommendation.

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application profile; maDMPs; common standard; machine actionable; RDA

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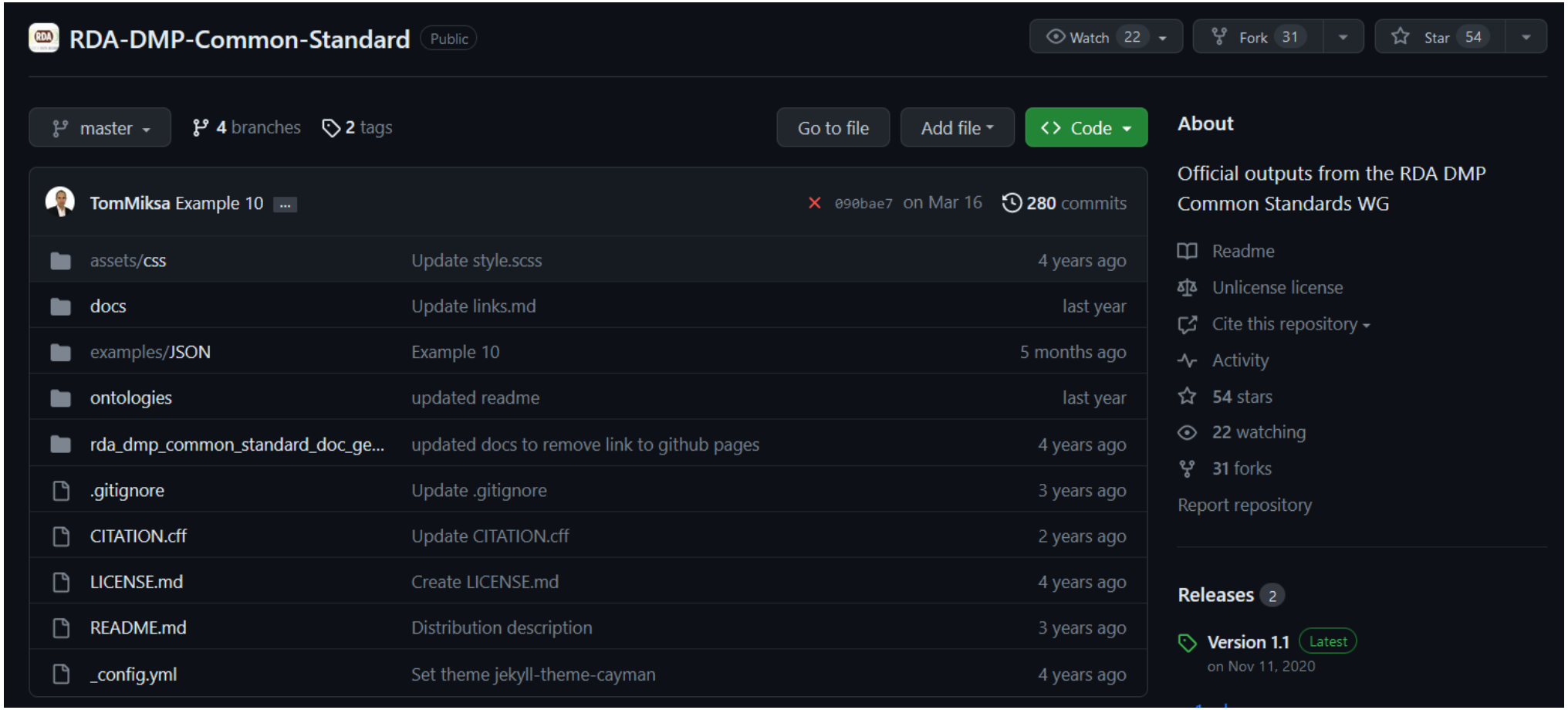
RDA DMP Common Standard for machine-actionable Data Management Plans



https://github.com/RDA-DMP-Common/RDA-DMP-Common-Standard

maDMPs in RDMO

README.md

rdmo-plugins

Import and export plugins for RDMO. Included are plugins for maDMP, DataCite (Kernel 4.3), and the Radar metadata schema.

Since the RDMO questionaires and the domain does not contain all information needed for maDMP, DataCite, or Radar, the exports will not produce valid files. We will fix this in the future.

Please visit the RDMO documentation for detailed information.

Please note that the re3data plugin was moved to a seperate repository.

https://github.com/rdmorganiser/rdmo-plugins/tree/master

Export

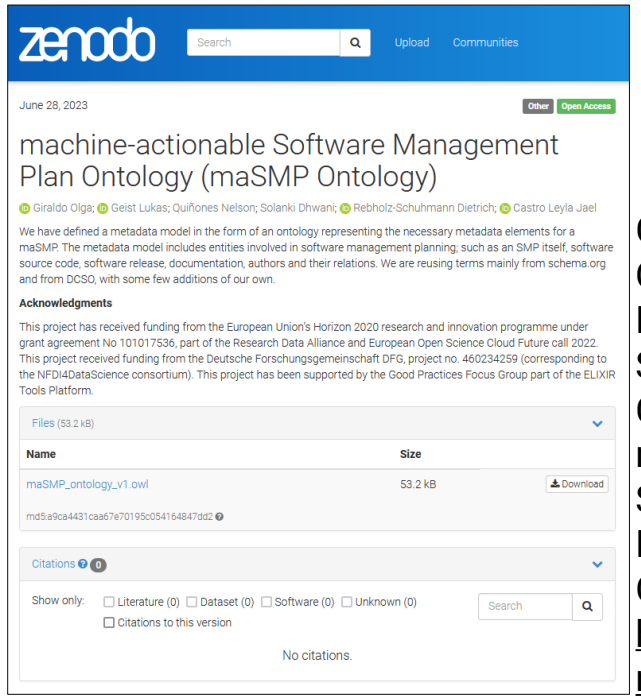
RDMO XML
CSV comma separated
CSV semicolon separated
as maDMP JSON
as DataCite XML

JSON Raw Data Headers

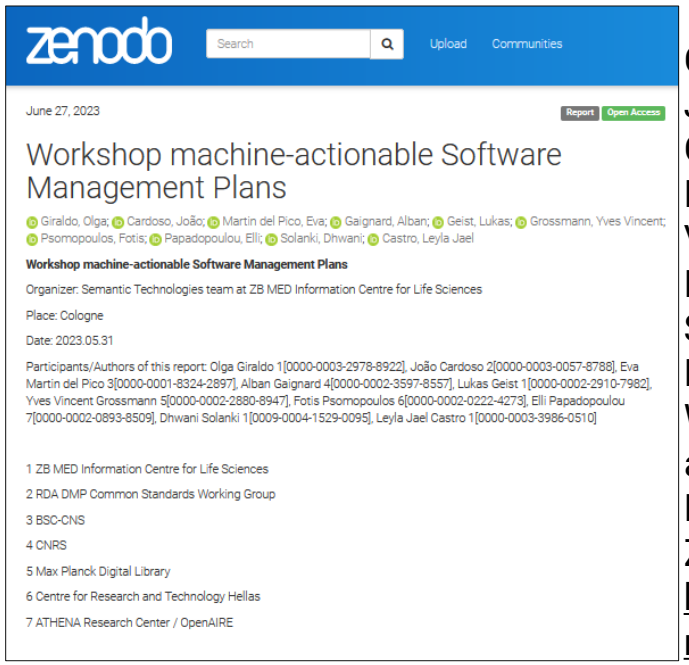
Save Copy Pretty Print


```
{
  "dmp": {
    "title": "maDMP for RDMO to maDMP",
    "created": "2023-08-17T17:09:44.249606+00:00",
    "modified": "2023-08-17T17:11:23.394360+00:00"
  }
}
```

maSMP

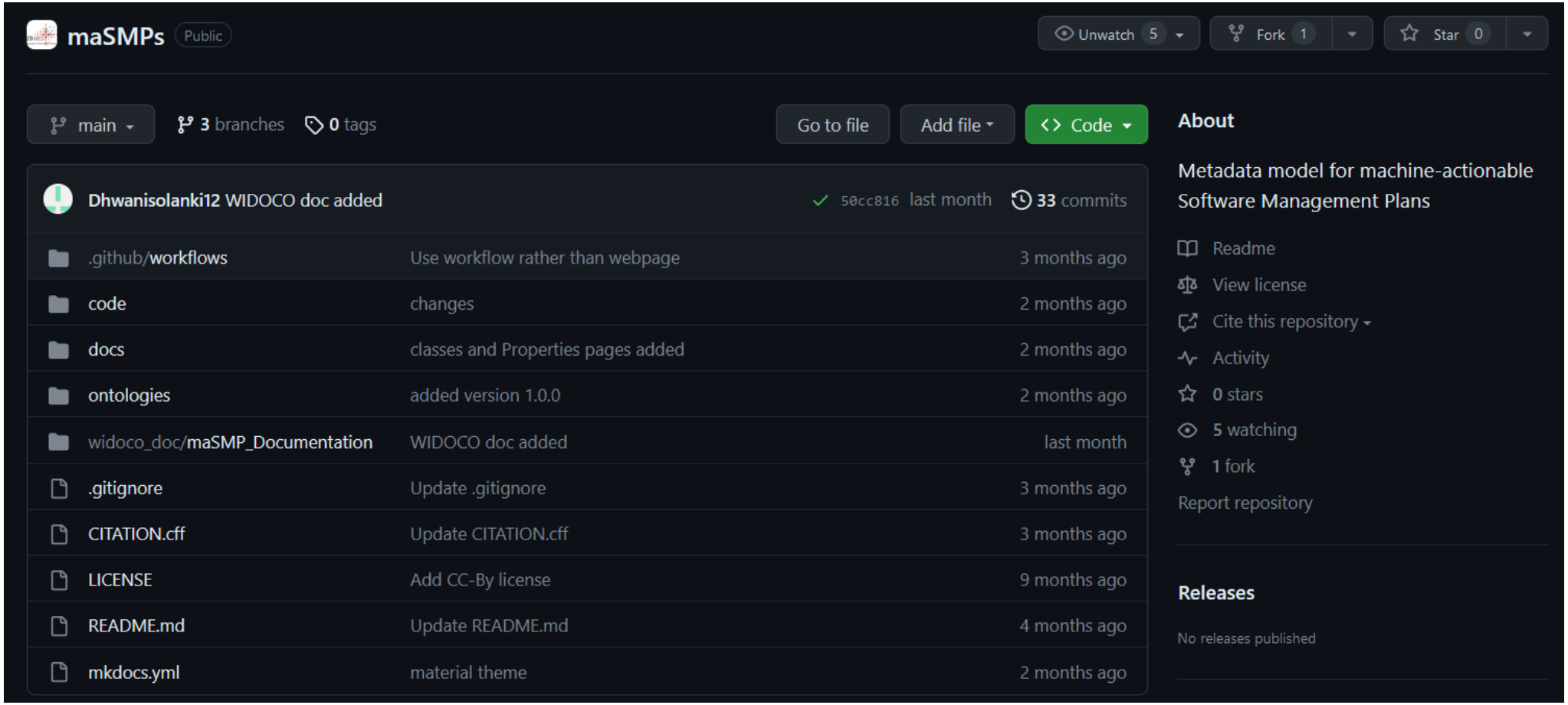


Giraldo Olga, Geist Lukas, Quiñones Nelson, Solanki Dhwani, Rebholz-Schuhmann Dietrich, & Castro Leyla Jael. (2023). machine-actionable Software Management Plan Ontology (maSMP Ontology) (1.0.0). Zenodo. https://doi.org/10.5281/zenodo.8089518, CC BY 4.0.



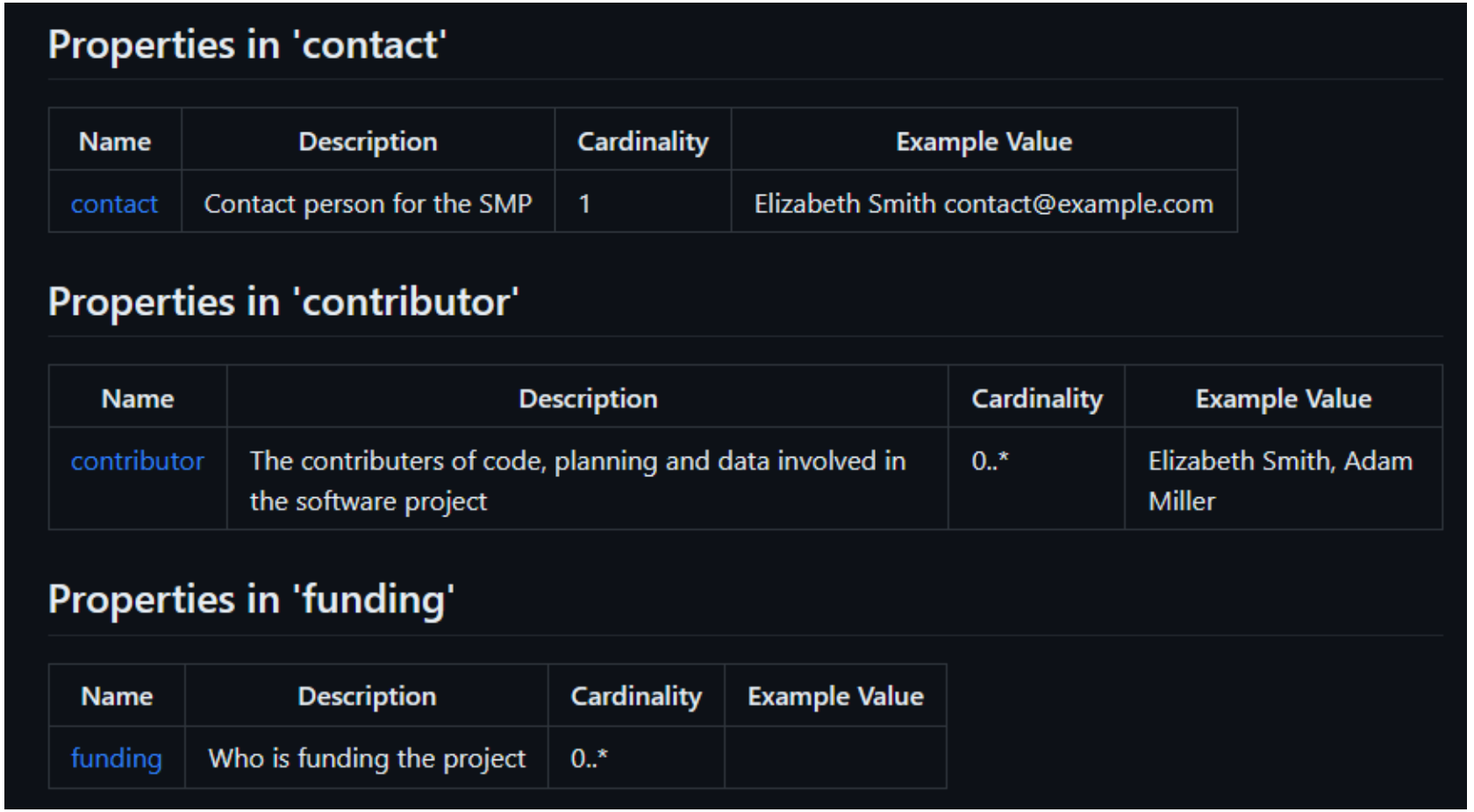
Giraldo, Olga, Cardoso, João, Martin del Pico, Eva, Gaignard, Alban, Geist, Lukas, Grossmann, Yves Vincent, Psomopoulos, Fotis, Papadopoulou, Elli, Solanki, Dhwani, & Castro, Leyla Jael. (2023). Workshop machine-actionable Software Management Plans. Zenodo. https://doi.org/10.5281/zenodo.8087357, CC BY 4.0.

Metadata model for machine-actionable Software Management Plans



Specially by Leyla Jael Castro (ZB Med): https://github.com/zbmed-semtec/maSMPs

Metadata model for machine-actionable Software Management Plans



Properties in 'contact'

Name	Description	Cardinality	Example Value
contact	Contact person for the SMP	1	Elizabeth Smith contact@example.com

Properties in 'contributor'

Name	Description	Cardinality	Example Value
contributor	The contributers of code, planning and data involved in the software project	0..*	Elizabeth Smith, Adam Miller

Properties in 'funding'

Name	Description	Cardinality	Example Value
funding	Who is funding the project	0..*	

Specially by Leyla Jael Castro (ZB Med): https://github.com/zbmed-semtec/maSMPs

Advantages

- Standardised answers can be evaluated by machine
- Unification and standardisation of responses
- Better comparability of maSMP among each other
- …

Disadvantages

- One is rather dependent on standardised answers → fewer free fields in RDMO catalogues → and narrowing answer options
- Technically it is much more complicated than non-machine-readable management plans
- Are input and output for the delevopment in a good ratio?
- …

Current Use Scenarios

?

Possible Use Scenarios

- Automated filling of SMPs
- Autosuggestion for SMPs
- Fully and rich metadata push for SMP publication
- Evaluation of research software projects, i.e. by research institutions
- Monitoring of funders regarding deliverables
- …

Thank you for your attention!

Remarks, questions etc. afterwards: grossmann@mpdl.mpg.de