



machine-actionable Software Management Plans

Part of EOSC Future RDA Open Call # 6

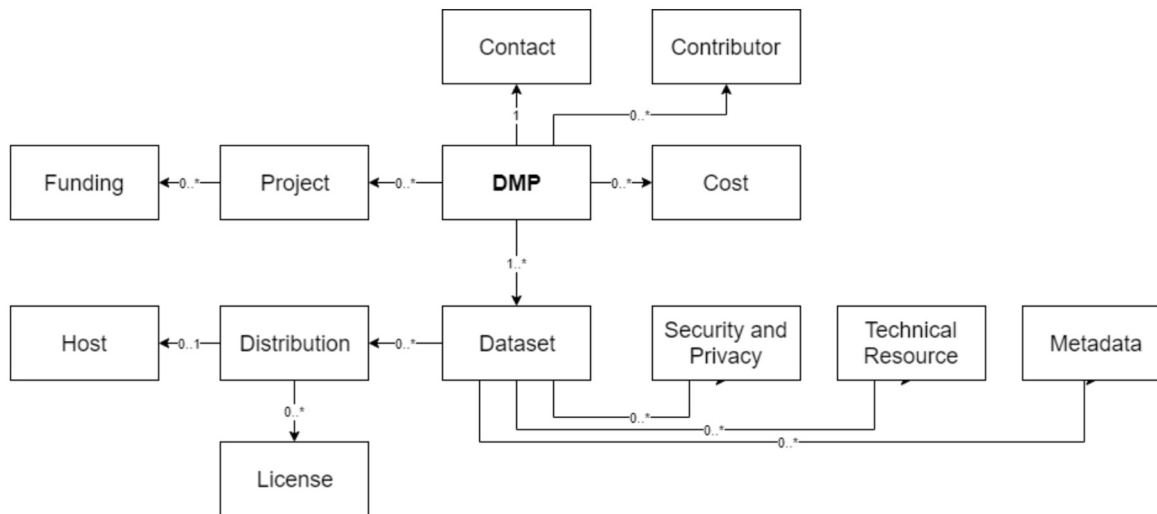
maSMPs workshop, 31 May 2023

Olga Giraldo and Leyla Jael Castro

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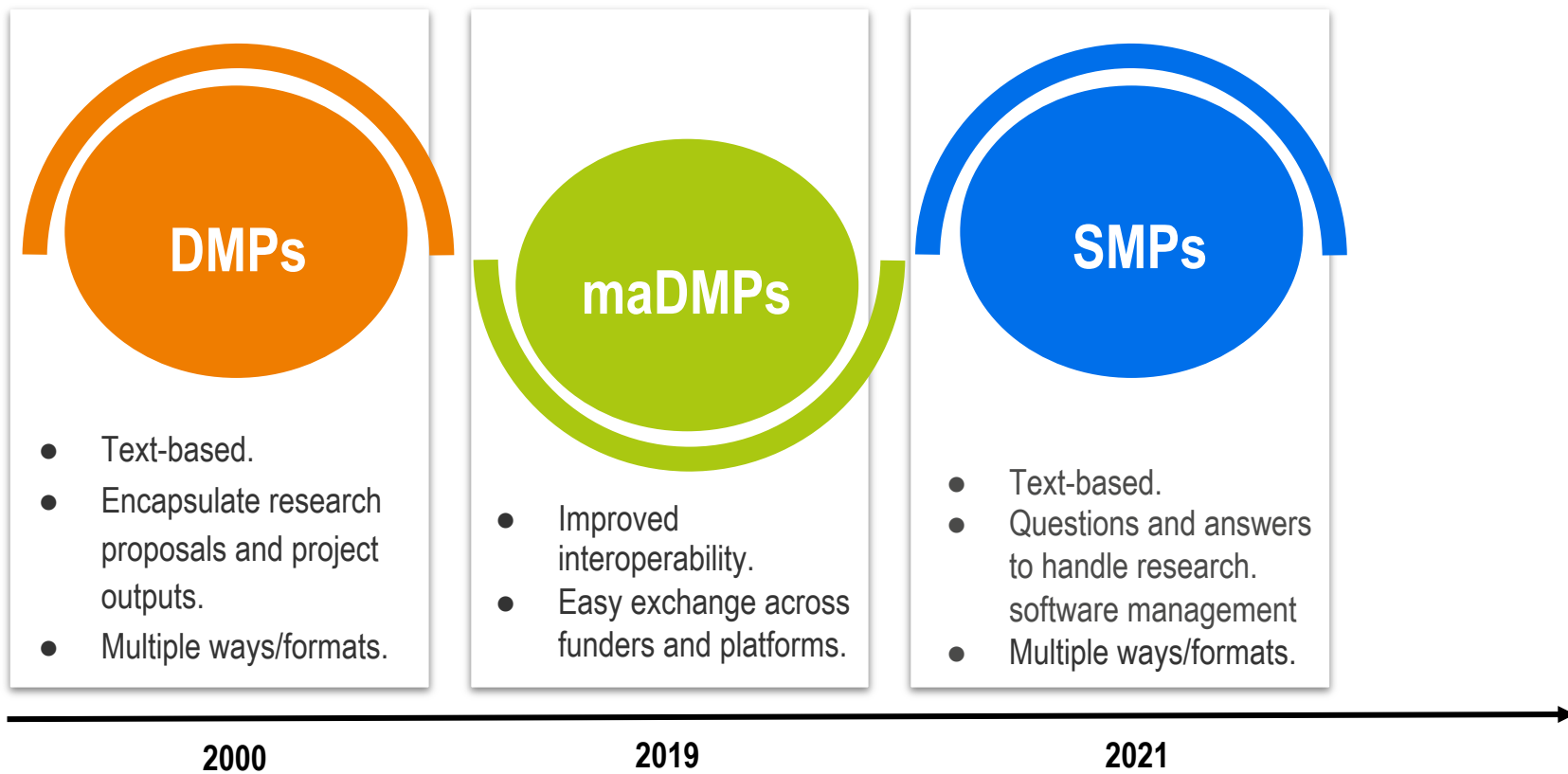


Machine-actionable SMPs



Software Management Plan

Previous work



“Add semantics to the SMP requirements as a way to improve accessibility and usability of research software in life sciences.”

Timeline

December

Conceptualization
of SMP elements



February

Ontology building
and validation



April

Evaluation



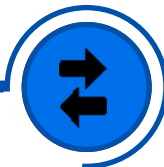
January

Semantic analysis
of existing vocabs



March

Mapping to
schema.org and
Bioschemas



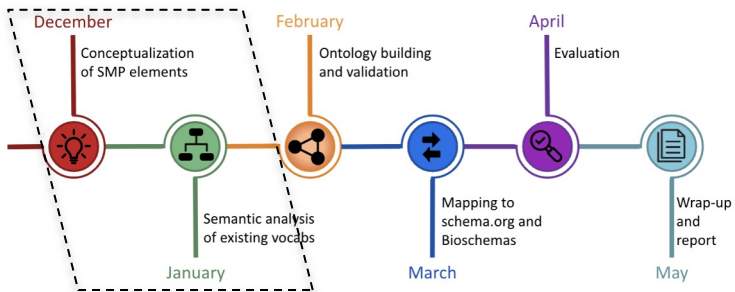
May

Wrap-up
and report



Main results

Conceptualization of SMP elements and semantic analysis



Core requirement (Section 5.1)	Example SMP question(s) (Section 6.1)
Purpose	Please provide a brief description of your software, stating its purpose and intended audience.
Version control	How will you manage versioning of your software?
Repository	How will you make your software publicly available? If you do not plan to make it publicly available you should provide a justification.
User documentation	How will your software be documented for users? Please provide a link to the documentation if available. How will you document your software's contribution guidelines and governance structure?
Software licencing and compatibility	What licence will you give your software? How will you check that it respects the licences of libraries and dependencies it uses?
Deployment documentation	How will the installation requirements of your software be documented? Please provide a link to the installation documentation if available.
Citation	How will users of your software be able to cite your software? Please provide a link to your software citation file (CFF) if available.
Developer documentation	How will your software be documented for future developers?
Testing	How will your software be tested? Please provide a link to the (automated) testing results.
Software Engineering quality	Do you follow specific software quality guidelines? If yes, which ones?
Packaging	How will your software be packaged and distributed? Please provide a link to available packaging information (e.g. entry in a packaging registry, if available).
Maintenance	How do you plan to procure long term maintenance of your software?

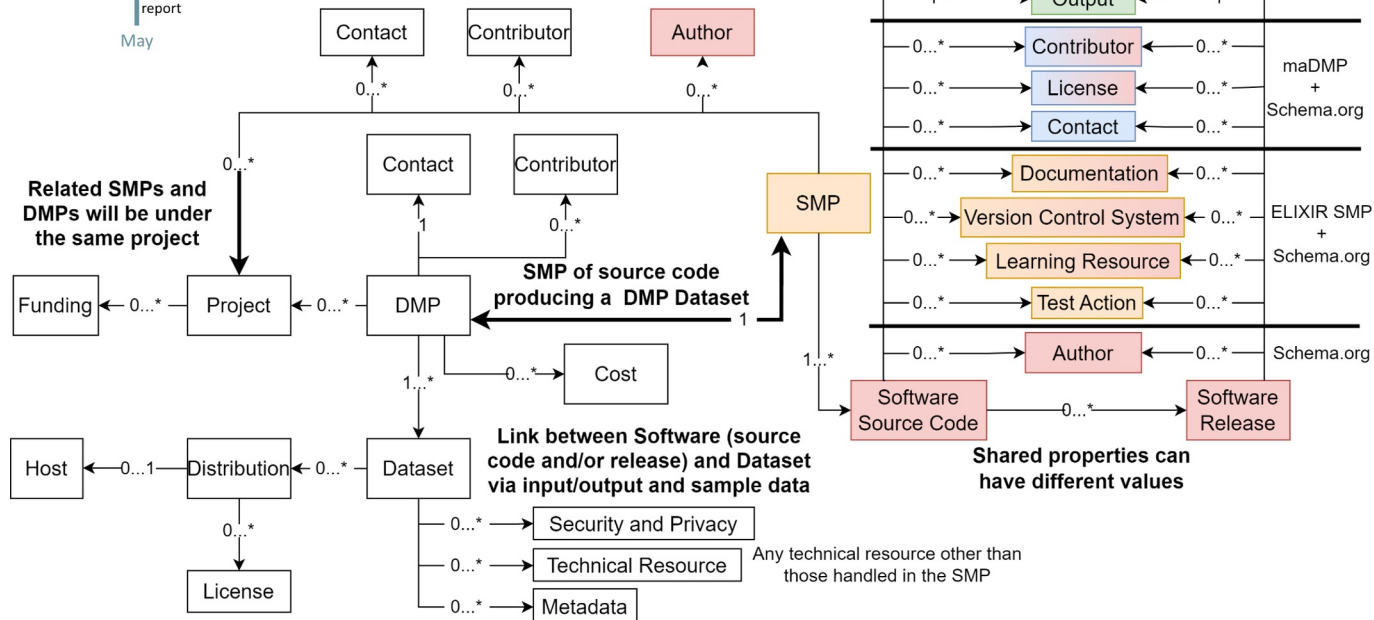
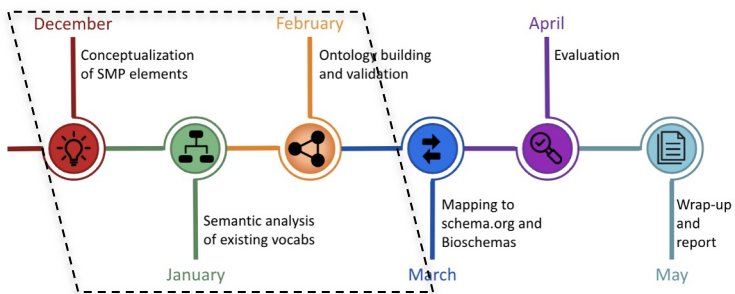
- Software Management Plan
- ▾ Accessibility & License
 - What is the name of the software?
 - ▶ ○ How can the software be accessed by third parties?
 - ▶ ○ Does your software have a license?
 - ▾ Documentation
 - ▶ ○ What type of documentation is available, provided with the software?
 - ▶ ○ Is the purpose of the software stated in the documentation?
 - ▶ ○ Does the documentation describe how to use the software?
 - ▾ Testing
 - ▶ ○ What type of testing do you use?
 - ▶ ○ Are sample data and/or parameters that can be used to test the software?
 - ▾ Interoperability
 - ▶ ○ Do you use well-established standard input/output formats?
 - What programming languages are you using in your project?
 - ▾ Versioning
 - ▶ ○ Do you use a version control system?
 - ▶ ○ Do you use Semantic Versioning?

Source: <https://smw.ds-wizard.org/>

Source: <https://doi.org/10.5281/zenodo.7248877>

“Identification of terms that help to describe each requirement.”

Metadata schema for a maSMP



- An overview of concepts used in the metadata schema for maSMPs is available at: <https://github.com/zbmed-semtec/maSPMs>

Metadata schema for a maSMP

Software Source Code (aka SoftwareSourceCode in schema.org)		Software Release (aka SoftwareApplication in schema.org)	
Property name	Possible values (range)	Property name	Possible values (range)
identifier	PropertyValue, Text, URL	identifier	PropertyValue, Text, URL
name	Text	name	Text
description	Text	description	Text
license	Text, URL	license	Text, URL
author	Organization or Person	author	Organization or Person
contributor	Organization or Person	contributor	Organization or Person
citation	CreativeWork, Text, URL	citation	CreativeWork, Text, URL
conditionsOfAccess	Text	conditionsOfAccess	Text
isAccessibleForFree	Boolean	isAccessibleForFree	Boolean
codeRepository	URL	releaseNotes	Text, URL
programmingLanguage	ComputerLanguage, Text	memoryRequirements	Text
targetProduct (aka Software Release)	SoftwareApplication	operatingSystem	Text
archivedAt	URL	processorRequirements	Text
discussionURL	URL	storageRequirements	Text
usageInfo	CreativeWork, URL	supportingData	Dataset
version (i.e., semantic version)	Text	version (i.e., semantic version)	Text
hasContact	Organization or Person	hasContact	Organization or Person
input	FormalParameter, Dataset	input	FormalParameter, Dataset
output	FormalParameter, Dataset	output	FormalParameter, Dataset
hasAPIDocumentation	Documentation	hasAPIDocumentation	Documentation
hasDeveloperDocumentation	Documentation	hasDeveloperDocumentation	Documentation
hasUserDocumentation	Documentation	hasUserDocumentation	Documentation
hasLearningResource	LearningResource	hasLearningResource	LearningResource
hasVersionControlSystem	SoftwareApplication	hasVersionControlSystem	SoftwareApplication
hasReadme	URL	hasReadme	URL
testedWith	TestAction	testedWith	TestAction

From schema.org

From maDMP

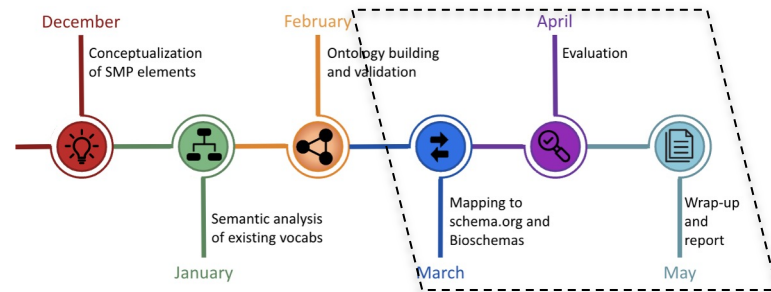
From Bioschemas

From maSMP
(New elements)

- The first version of maSMPs ontology is available at:
 - [10.5281/zenodo.7976401](https://zenodo.org/record/7976401)
 - <https://github.com/zbmed-semtec/maSMPs/tree/main/ontologies>

Next steps

- To evaluate the results of this validation process,
- To align different efforts,
- To promote adoption.



Thank you!