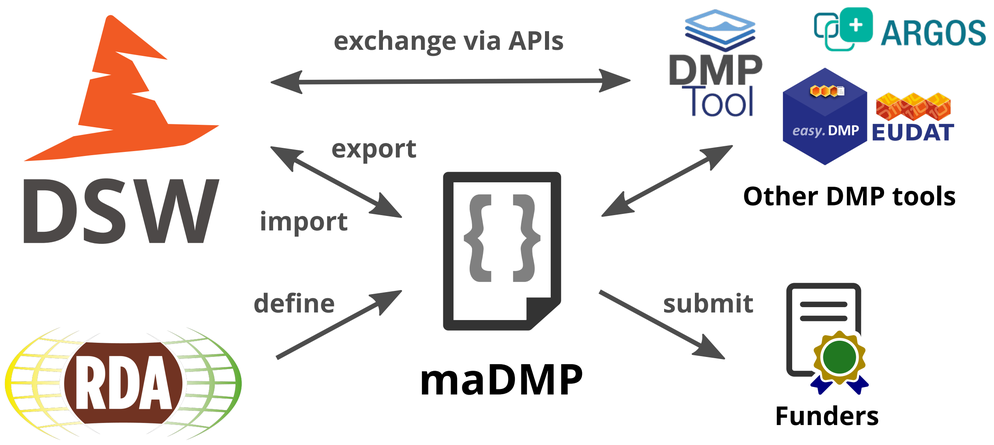
Making DMPs Beneficial to Research Projects with Data Stewardship Wizard

ds-wizard.org

The **Data Stewardship Wizard (DSW)** supports Data Stewardship Planning with a focus on benefits for research projects. Producing a document with a data management plan is a secondary goal. DSW provides guidance through tree-like (conditional) questionnaires, which ask the right questions for the right projects and which **support team collaboration**. The questionnaire structure is collected in knowledge models that can build upon each other: one knowledge model can customize a different one e.g., to incorporate local legal or institutional restrictions and resources. Both questionnaires and knowledge models can evolve over time, and DSW propagates changes so that even if the expertise is updated, the questionnaires do not have to be filled in from scratch. **Documents are generated from questionnaires programmatically** which allows turning a single questionnaire into differently formatted text documents with tailored content. The architecture of DSW allows us to prototype and implement features easily. DSW is already proving its versatility and evolvability, for example in **enhanced interoperability using maDMP adoption**.

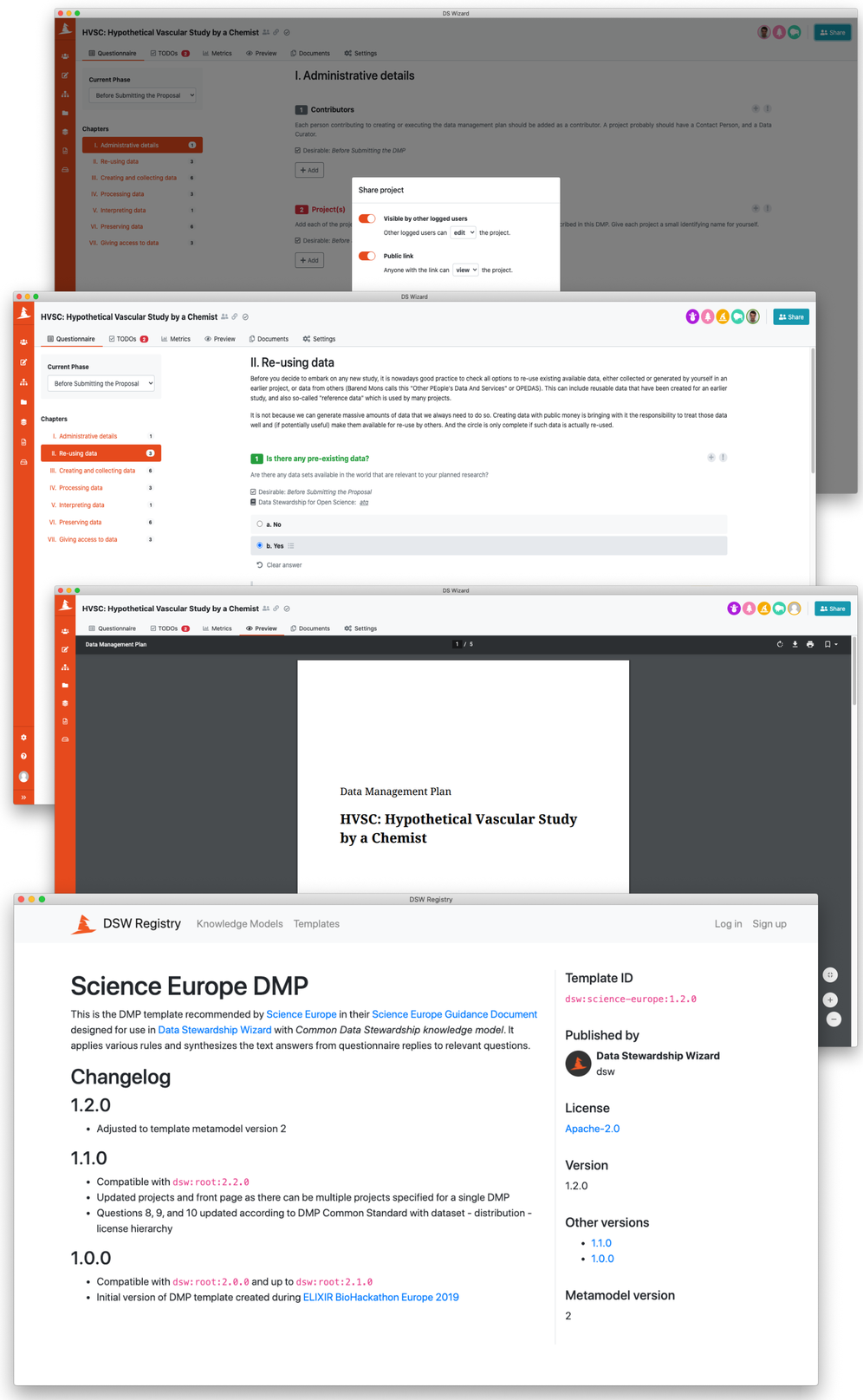
Machine-Actionable DMPs

During the **RDA Hackathon on maDMPs 2020**, DSW proved its qualities in terms of adaptability and extensibility. The RDA DMP Common Standard (DCS) is a metadata application profile to provide interoperability between various systems supporting **machine-actionable DMPs** (maDMPs). It is defined as a JSON schema but a corresponding OWL ontology (DCSO) is available as well. In the scope of two days, we managed to adjust the common data stewardship knowledge model with DCS and **develop an export template** that from a questionnaire can produce both maDMP in JSON and in several RDF formats. Next, we also **prototyped a feature to import replies** to a questionnaire from maDMP. As the goal was to achieve interoperability between DMP tools, we interchanged the maDMPs with several other tools **already during the two day hackathon**. Finally, we managed to set-up a submission of maDMP from DSW directly into DMPtool just by clicking the “Submit” button.



Collaborative DMPs

Composing a Data Management Plan is an activity in which different project team members should participate. Each team member can contribute with specific experience or knowledge. Moreover, everyone should be aware of the decisions that will directly affect the data stewardship of their projects. For these reasons, we recently bundled questionnaires, documents, preview, and other related features into “**Projects**”. Such a Project can be **easily shared through its URL**. The Project owner can **set permissions** for other registered DSW users but also for the public. When others open the project, they can **directly see active collaborators**. All **changes are live**, so when anyone changes the answer, it is automatically saved, and everyone can see it immediately. This behaviour is something that people know, for example, when they use **Google Docs**. It is straightforward, simple, and yet very powerful.



DMP as a Template-Based Document

A document in DSW is a snapshot of a questionnaire made by a **transformation defined by a Jinja2 template**. The most basic template just puts all the questions from the questionnaire together with replies and produces a human-readable document in **HTML, PDF, docx, or LaTeX**. A lot more advanced is our template made satisfying the **Science Europe DMP** model. Instead of outputting replies “as is” it **synthesizes textual answers** based on various replies in the questionnaire. Then, we have the maDMP template that works similarly but outputs JSON and uses the structure fixed by the standard. Anyone can develop their own templates with basic knowledge of programming and the Jinja2 templating language. To make the work more comfortable, we have developed our **Template Development Kit (TDK)** – a command-line utility for creating, downloading, packaging, and uploading DSW templates, including efficient file watch functionality.

Call to Action

The DSW is strongly **user-feedback driven**; therefore, we encourage our users to share their experiences and ideas in order to enhance DSW further. We recently launched the **Ideas page** (ideas.ds-wizard.org) where users can easily browse, suggest, discuss, and prioritize feature requests for the DSW. Also, the newly established **Advisory Board** consists of European experts who help us to **steer the DSW development based on their expertise** in data management planning, data stewardship, or data FAIRification. We invite you to become a part of the project, too, by actively using the DSW and letting us know about your experience and ideas for improvements.

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