

## FAIR Data Commons Application Use Cases

Sabrine Chelbi<sup>1</sup>, Thomas Jejkal, Gulzaure Abdildina, Rossella Aversa, Nicolas Blumenröhr, Laura Frank, Germaine Götzelmann, Volker Hartmann, Vandana Jha, Felix Kraus, Philipp Ost, Andreas Pfeil, Yusra Shakeel, Rainer Stotzka, Philipp Tögel, Danah Tonne, Elias Giulio Georg Vitali <sup>1</sup>Karlsruhe Institute of Technology – Scientific Computing Center sabrine.chelbi@kit.edu

FAIR Data Commons offers various generic tools and services, which are actively used by different projects and communities. They are valuable to foster data and metadata management by providing standardized and easy-to-use interfaces. FAIR Data Commons supports different communities

with their data and metadata management, as well as data storage in specific repository instances. Moreover, it provides different services, which enables the creation and handling of FAIR Digital Objects as well as their visualization. In addition, it provides services to enable the annotation of texts and images, and the creation and publishing of vocabularies. All the designed and implemented tools aim to facilitate the work of researchers by enabling access and reuse of data from different domains.

## Materials Science Use Cases

📙 🔒 Nff	a.eu MetaF	Repo Search			Login	
	Search					
	INDEX <ul> <li>metastore-mri_schema</li> </ul> PROGRAM	✓ 4	3 MRI @ 0.001 KG <a>15.2737566983 T</a> <b>7 samples CuSO4 0 - 100 mM</b> Bruker BioSpin MRI GmbH (Biospec 152/11) StudyID: 1.2.840.10008.5.1.4.1.1.4.1	Show 20 🗸 User nmrsu		
	<ul> <li>['Acquisition PV-360.3.3',</li> <li>'ParaVision 360.3.3']</li> <li>['Acquisition PV-360.3.1',</li> <li>'ParaVision 360.3.1']</li> <li>pova programma</li> <li>USERNAME</li> <li>nmrsu</li> <li>prova nome</li> </ul>	2 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MRI       @ 0.001 KG       > 15.2737156516 T         A series of protocols, to be used to test         Bruker BioSpin MRI GmbH (Biospec 152/11)         StudyID: 1.2.840.10008.5.1.4.1.1.4	User nmrsu		

tend	Scientists' Applications & Workflows								Mat :	
Frontend	Web GUI "App Store", "Recipes", "Workflows" Access to Workflows					Data & Metadata Visualization Access to ELNs				
	Knowledge Graph Representation, Tools & Standards Access & Interact with KG								ices	
	Data Collections Explorer		SPARQL Endpoints			Linked Data Platform (Coscine)		Coscine)	Serv	
¥	Central Met	adata			Data l	Data Integration			ot &	
men	Semantic Artifacts								ncep	
/iron	Workflow Environment								e Co	
t Env		General W	orkflows	Soft	Software Repositories / Version Control			nanc		
Development Environment	Workflow Preparation				Software Tools Machine Learning / Statistics		Statistics	Harmonization, Data Governance Concept & Services		
elopi	Data Representation: FAIR Digital Objects								ta G	
Dev	Tools for Services Tools for Managing Da						ata		, Dai	
	FAIR Digital Object Lab		Co	Coscine		NFDI-MatWerk Dashboard GUI			tion	
	FDO Maker =		Typed PID Maker		M	Metadata Extraction & Mapping Service			izat	
	Typed PID Maker GUI		PID Management Service		e	RO-Crate-Java Library				non
	FDO-scope Data		Data Ty	Data Type Registry Tu		Turntable API Meta		adata Editor		larr
յց nt	Data & Metadata Services								-	
Provisioning Environment	Coscine FAI Data Point		/erk Data MatWerk ository Repos			/			E4NFDI rvices	
Prov Envir	RADAR4KIT	Dataverse Zenodo	/ PID Servi (Handl	SK(	MatWerk OSMOS blogy Service	NEP Virtual Access	Web Annotation Protocol Server AIMS			
				IT Infr	astructu	re				

Bruker BioSpin MRI GmbH 3

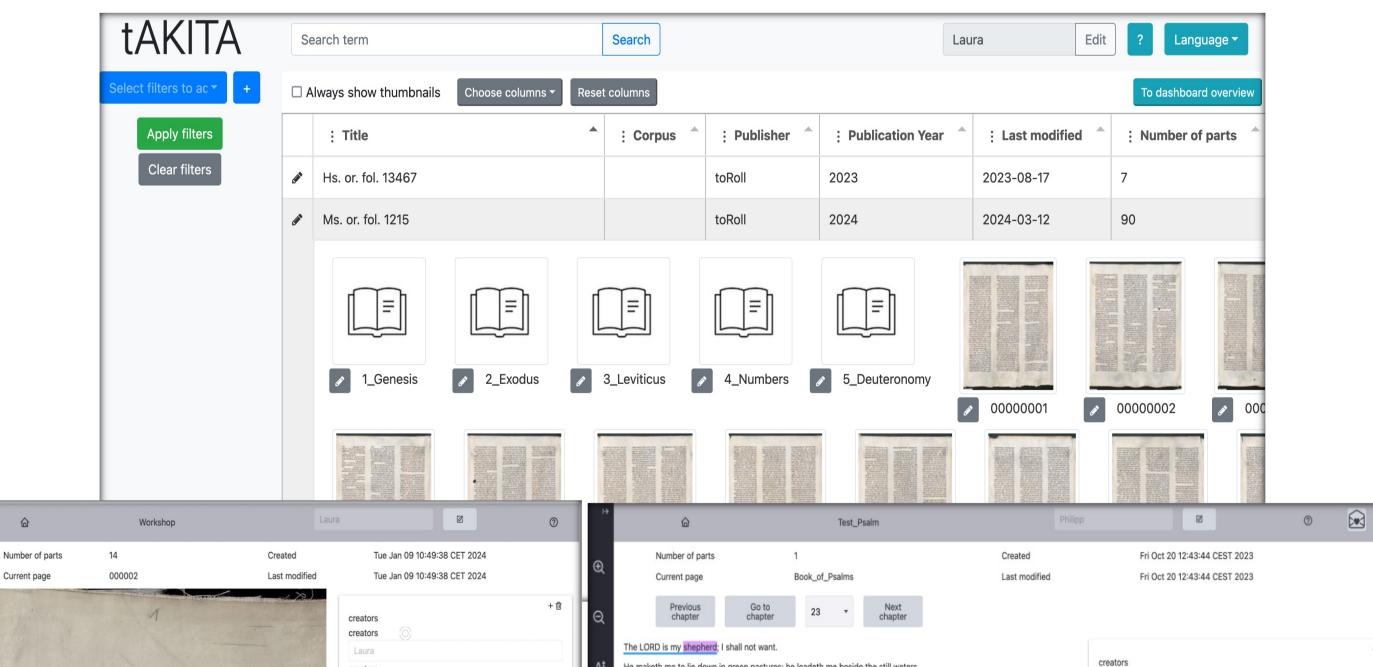
INSTRUMENT MANUFACTURER

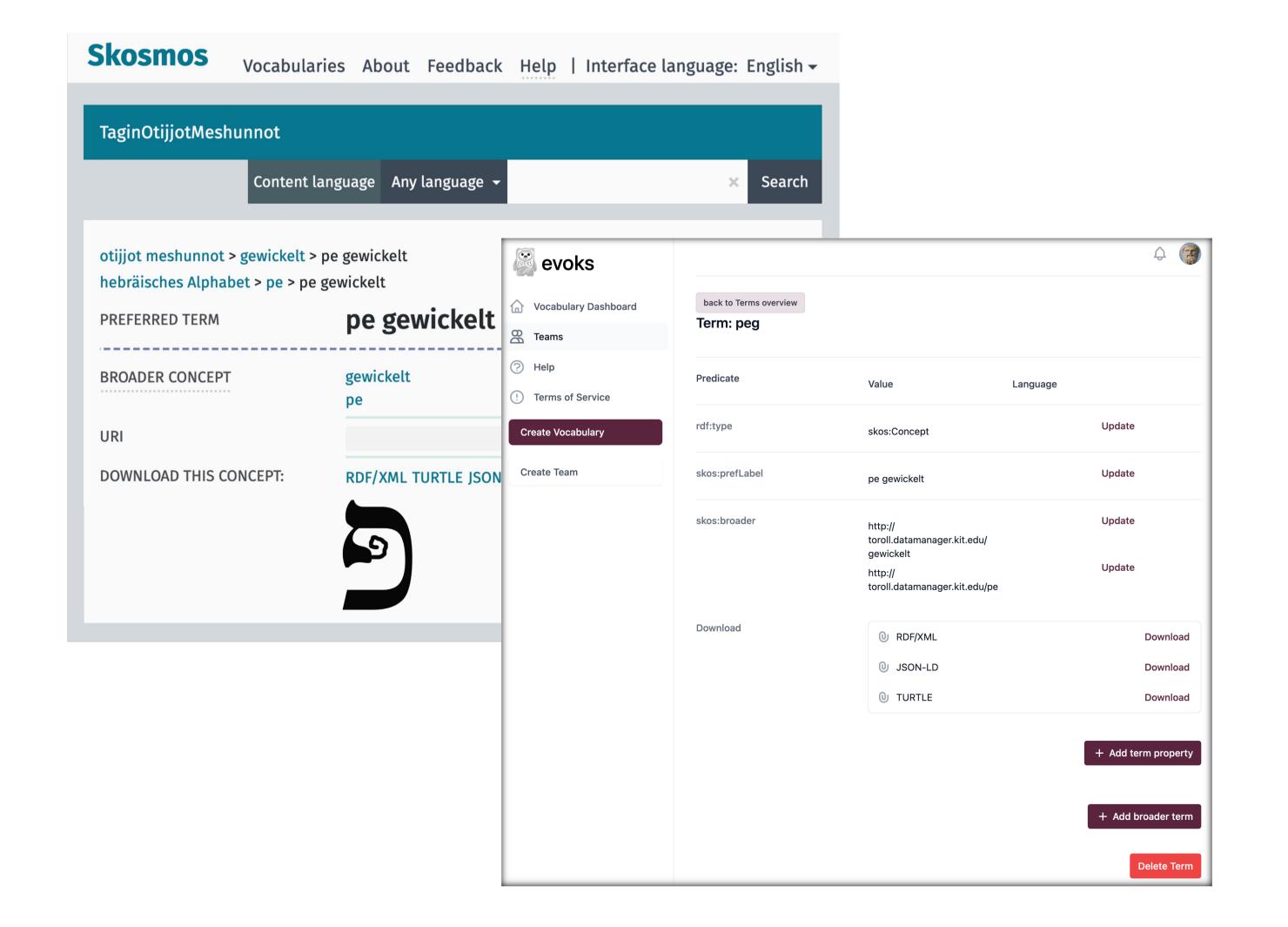
 Legend and Color Coding:
 Component provided by
 Component under construction
 Component provided by
 Architecture layer
 Sub-categories

MetaRepo is a Metastore instance for NFFA Europe project. It is a metadata and schema repository, which enables researchers to manage their metadata documents related to a specific resource. To allow access to the repository, frontend-collection offers an intuitive graphical user interface. Additionally, a customized generic search UI is provided. The above graphic illustrates the architecture of the NFDI-MatWerk project. Various services, enabling data and metadata management as well as FAIR DO handling, are used. These tools are implemented within the HMC context.

## **Digital Humanities Use Cases**

+ 自





		creators	A	He maketi me to ne down in green pastilles, ne readent me beside the still waters.	creators
8		adsfd		He restoreth my soul: he leadeth me in the paths of righteousness for his name's sake.	Philipp
		modified		Yea, though I walk through the valley of the shadow of death, I will fear no evil: for thou [art] with me; thy rod and thy staff	modified
		2024-03-14T20:40:53.000Z		they comfort me.	
	ברא אולהים את השמים ואת הארץ	motivation	0	Thou preparest a table before me in the presence of mine enemies: thou anointest my head with oil; my cup runneth over.	2024-05-13T08:59:56.000Z
	והאריז היתה תהו ובהר וחשר על פנ	describing		Surely goodness and mercy shall follow me all the days of my life: and I will dwell in the house of the LORD for ever.	>  Selected text: The LORD is my shepherd
:	תהום ורויה אלהיים בירדניו על פני המיים	id	Φ		>   Linked mrw-annotation: shepherd
8	דיאמיר אלהים יהי אור ויהי אור וירית אלהים את האור כי טוב ויברל אלהים ביו	Copy ID			>  a Label: Book_of_Psalms1715590765380 Save
	האור ובין החשך ויקרא אלהים לאור יום	Tag: tagin			>  Classification: metaphor Save
_	רלאשר ארא לילה ויהי ערב ויהי בקו	Classification: beit101 Save			>  Analysis: {"auxiliaryText":{"ops":[{"insert":"The LORD is my "},
ŝ	יום אחד ריאמר אלהים יהי רקיע בתוך המים ריהי מרדים ביי מידים לייה				Analyze Modify Selection

tAkita represents a user interface to access the stored objects as well as their appropriate metadata and data<sup>1</sup>. Furthermore, it functions as an annotation editor for text and image material. The annotations are based on the Web Annotation Data Model and are stored in the Web Annotation Protocol Server.

**EVOKS** is a vocabulary editor enabling the collaborative creation, editing, and curation of vocabularies in SKOS format. These vocabularies can be easily published within a SKOSMOS instance, which represents an open-source web-based SKOS browser and publishing tool.



Reference <sup>1</sup> Staatsbibliothek zu Berlin - PK: <u>https://tinyurl.com/Tora-Rolle\_</u>Ms. or. fol. 1215

