

FAIR research data integration in CRIS at FAU Erlangen-Nürnberg

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 - 4 FAIR Data
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- Founded in 1743
- More than 3,600 members of academic staff
- More than 2,300 employees in administration
- 624 Professors
- More than 220 Mio. Euro Third-party funding.

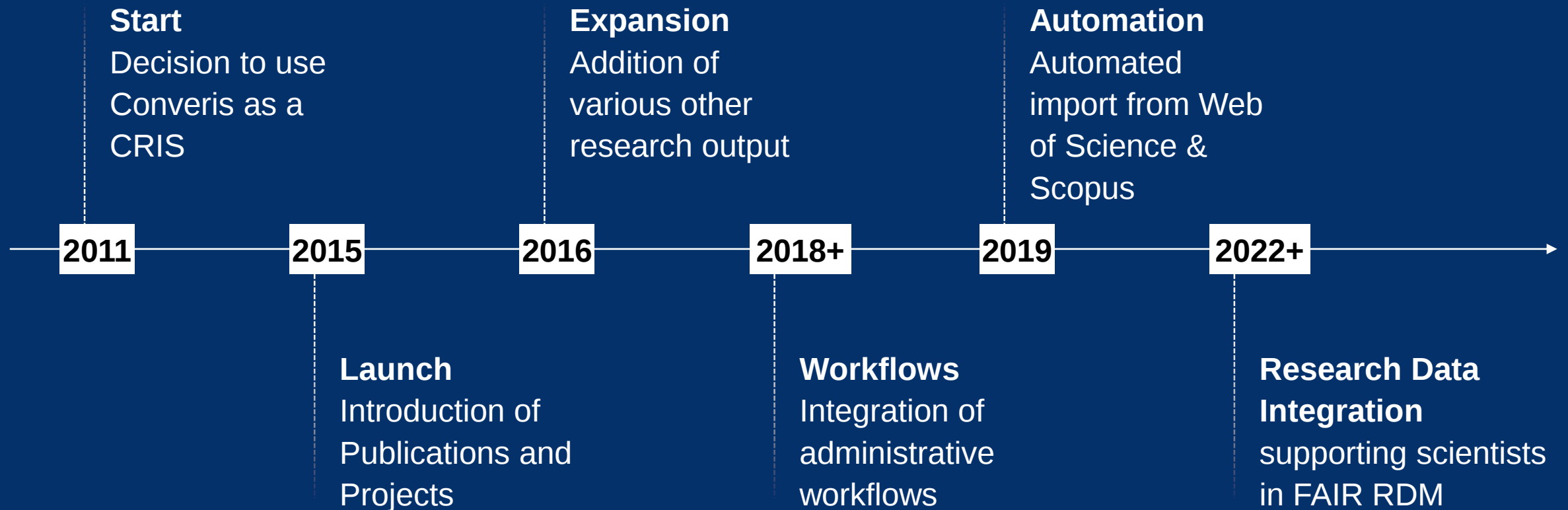


One of Germany's Top 10 Research Universities

- More than 38,000 students in
- 267 degree programs, among them
 - 81 Bachelor's degree programs and
 - 94 Master's degree programs



FAU CRIS



Current content: 125k publications, 9k research projects, 2k awards, ... - in total 1m datasets and 2.5m relations.

Motivation and Challenges

“In the future, the handling of research data will receive more attention than before in assessment and evaluation.”

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- ... DFG (German Research Foundation) stated on March 14th 2022*
 - Data publications is research outcome and so part of research information

* https://www.dfg.de/foerderung/info_wissenschaft/info_wissenschaft_22_25/index.html

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- Should we build up a new meta-data system for meta-data or just use our CRIS?
- Can we support FAIR research data management by using our CRIS?

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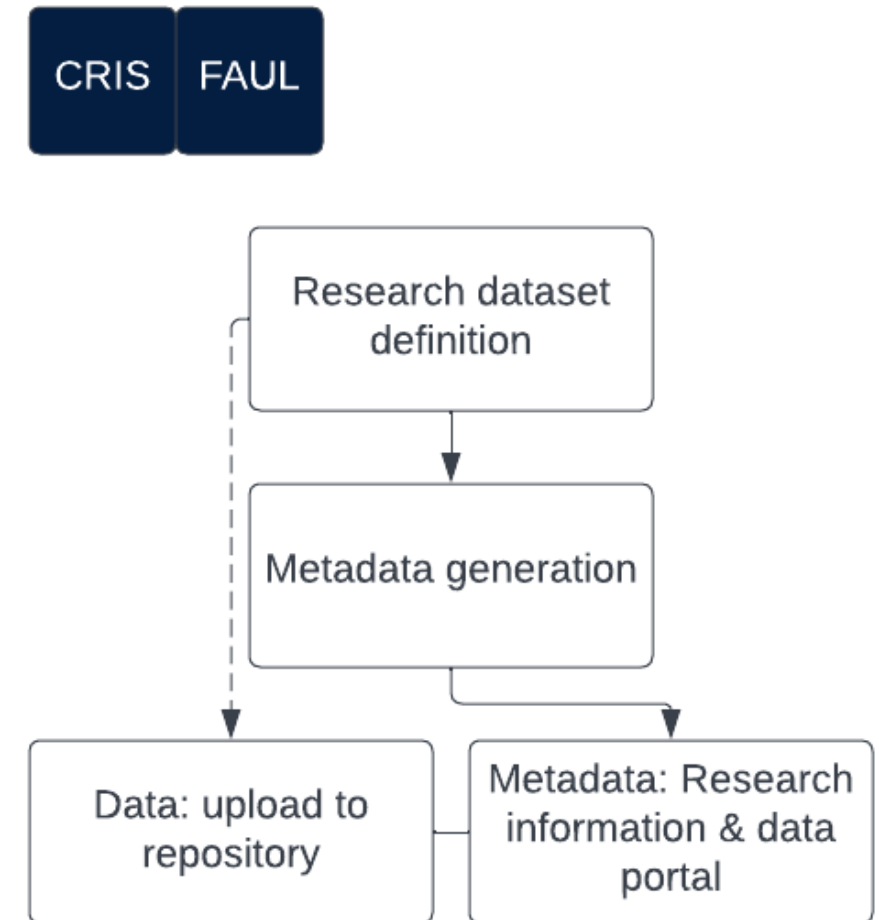
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- OF COURSE we will use our CRIS!
- FAIR principle support is vital!

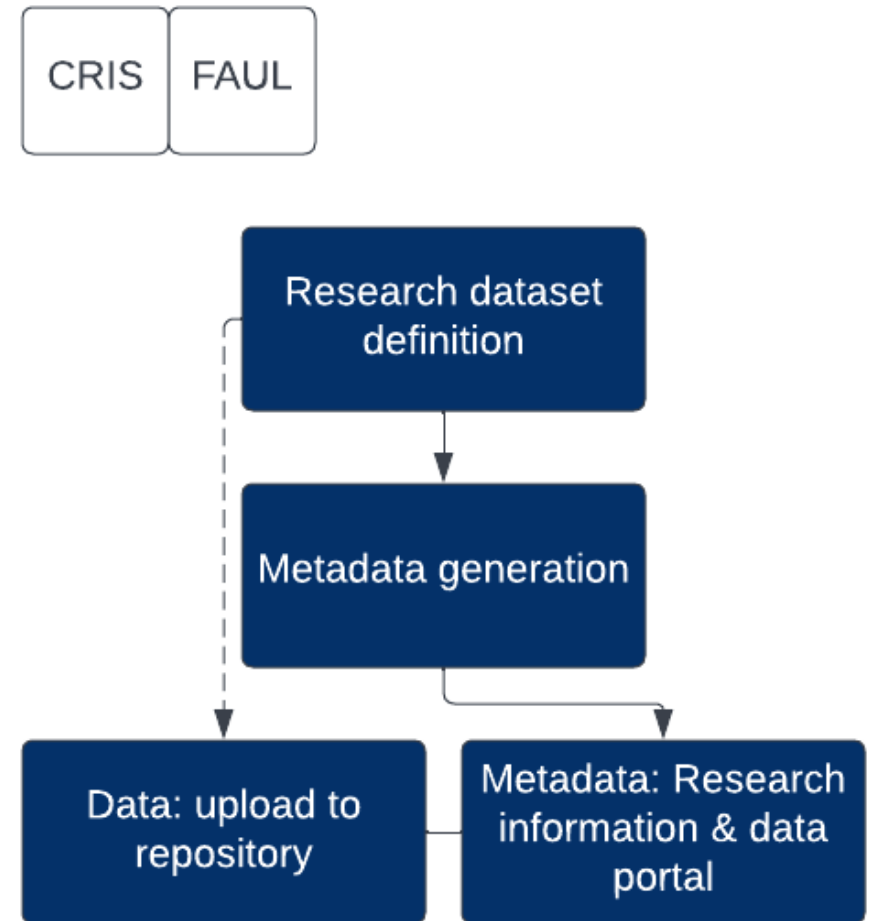
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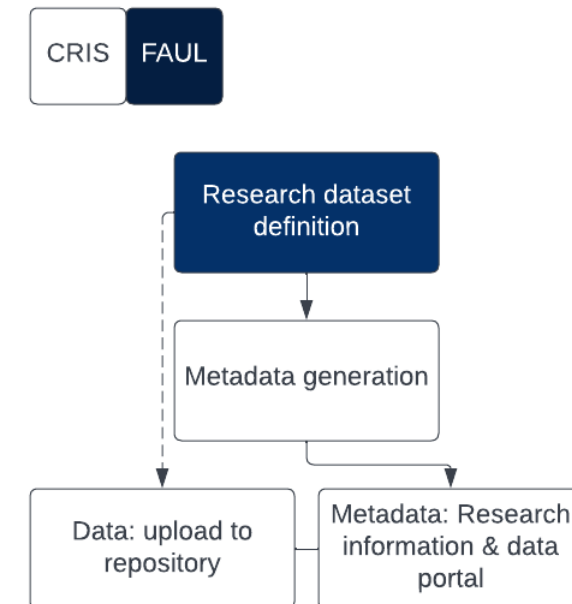
- Research meta data standard: DataCite Metadata Schema (4.4 currently)
 - Schema gives detailed description of research data
 - Three levels of obligation for attributes:
 - Mandatory (e.g. title, identifier)
 - Recommended (e.g. subject, description)
 - Optional (e.g. language, version)
- By using a common meta-data schema, we are able to use different repositories at the end
- We think that some recommended or optional attributes should be mandatory for better FAIR meta-data (e.g. description)
 - Because we control the data collection with our CRIS, we can do this

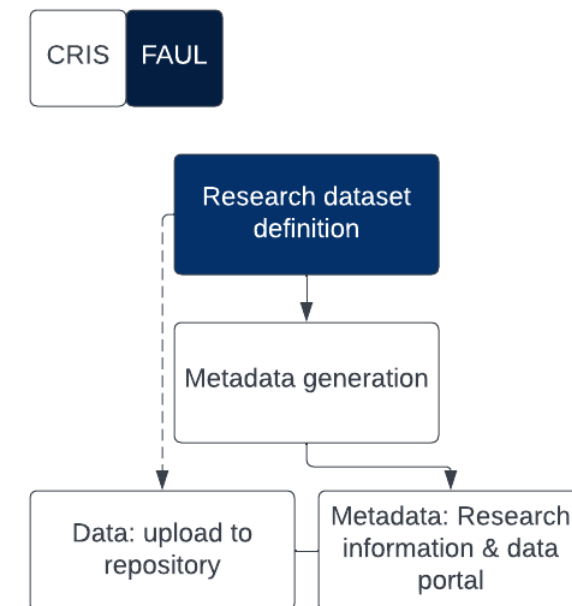
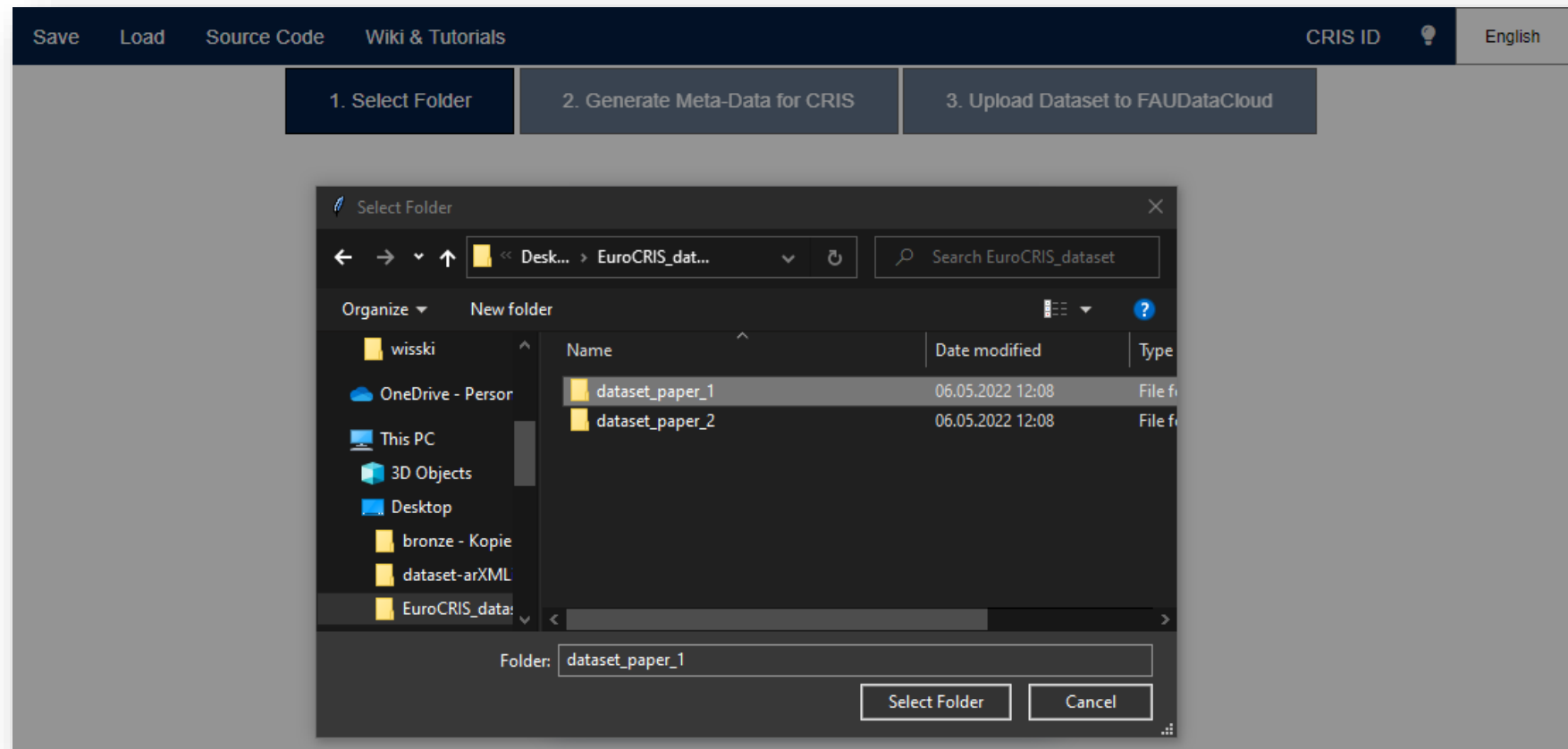
Solution & Workflow

- CRIS: research information system 😊
- FAUL: meta data generation & upload software

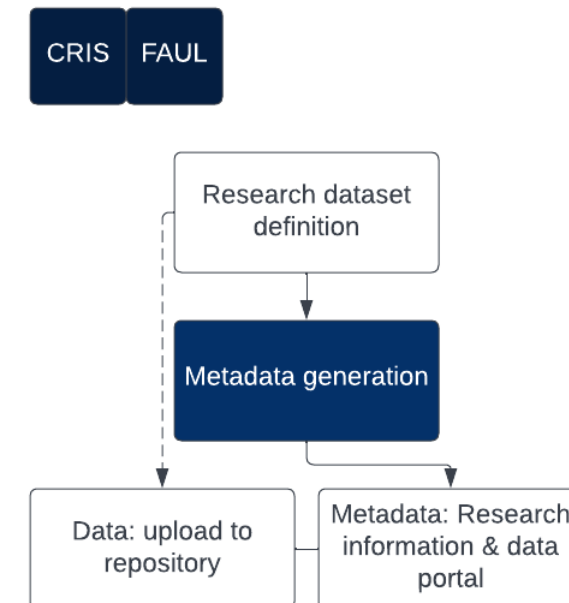








Save Load Source Code Wiki & Tutorials CRIS ID English								
1. Select Folder			2. Generate Meta-Data for CRIS		(deactivated) Upload Dataset to FAUDataCloud			
filename	status filename	rename	remove from list	filepath	mimetype	size	checksum	modification date
data.csv	✓		✗	C:/Users/muuq04uwuv/Des	application/vnd.ms-excel	133545538 byte		2022-05-06T12:10:27
image.png	✓		✗	C:/Users/muuq04uwuv/Des	image/png	118428 byte		2022-05-06T12:10:27
script.py	✓		✗	C:/Users/muuq04uwuv/Des	text/x-python	13194 byte		2022-05-06T12:10:27



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CRIS ID
English

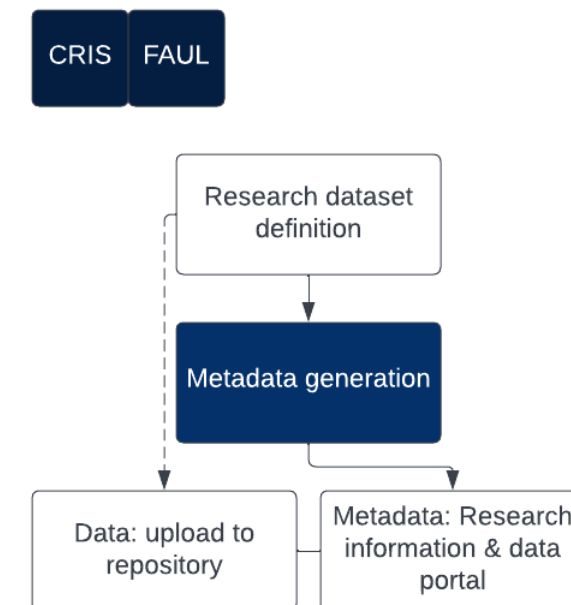
1. Select Folder
2. Generate Meta-Data for CRIS
3. Upload Dataset to FAUDataCloud

filename	status filename	rename	remove from list	filepath	mimetype	size	checksum	modification date
data.csv	✓					133545535 byte		2022-05-06T11:56:27
image.png	✓					118428 byte		2022-05-06T11:56:27
script.py	✓					13194 byte		2022-05-06T11:56:27

Interface locked: generating checksums for your dataset

data.csv

Please wait...



CRIS: step 1a

- Add title
- Add authors
- Upload FAUL meta data file

New FAUDataCloud archive request

Upload meta data

Konfiguration *

Step

Upload list of files

Title of dataset *

euroCRIS demo dataset

Owner of this dataset

Name / Function	Organisational unit	Type of Card	
Dr. Marcus Walther Wissenschaftler/In	FAU Competence Unit Research Data and Information (CDI)	Internal	  

Notifications will be sent to this person (not necessarily an author).

FAU_L meta data file

	Document	File	
1		meta-data.json(1).txt (975 bytes)	

CRIS: step 1b

- CRIS analyses file content
- Content of dataset is listed

CRIS demo dataset

euroCRIS demo dataset

Request preparation ... Admin Info ▼

Konfiguration

Step

Add meta data ▼

Title of dataset

euroCRIS demo dataset

Owner of this dataset

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Files

	File	
1	 data.csv 07bd8004066e538d22f9ec13d35388d80e01dd924ddd3128081c07acde87927f	
2	 image.png 14bfbda1b6983dfa0c4f677e35ea9eeb33a45657b8ba1b0a07d299f8afc943ad	
3	 script.py 3e67e090f8ff5337bdb218d6369c839f9296880e30a4e5694d1819bd7bff3abe	

CRIS: step 2

- Add meta data for each file

Details *

Additional name
Recording of temperatures

Data type *

Simulation model

Select Type of data

- Software
- Computational Notebook
- Simulation model
- Raw data from measurements or recordings
- Derived data
- Sound
- Audiovisual media (e.g. film, video)
- Studies (survey, interview)
- Image
- Collection of different types
- Data Management Plan
- Other type (provide details below)

Details *

Additional name
Recording of temperatures

Data type *

Raw data from measurements or recordings

Details on "other" data type (if selected above)

Data format *

CSV

Proprietary format short description

Description of the file content *

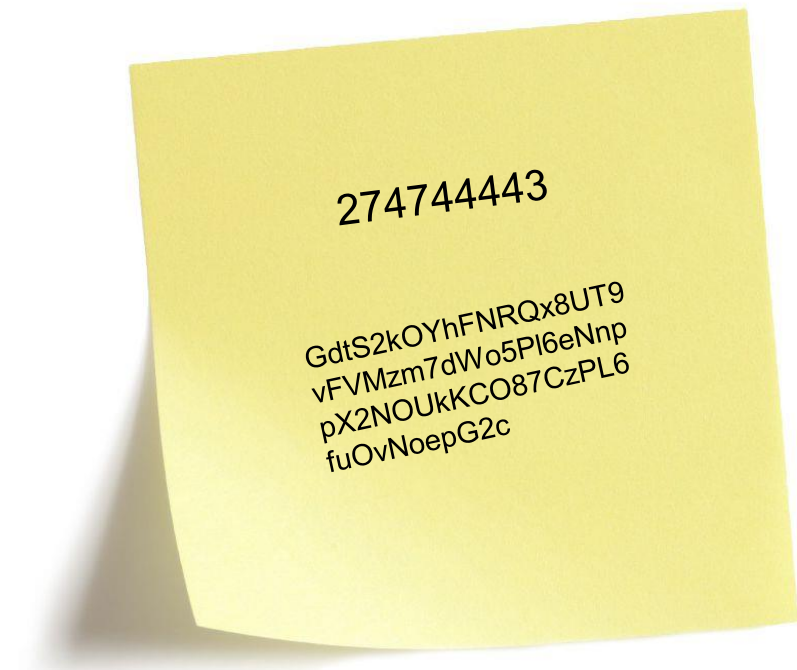
Temperature in degress Celsius using lab thermometer Nimbus 2000.

CRIS step 3

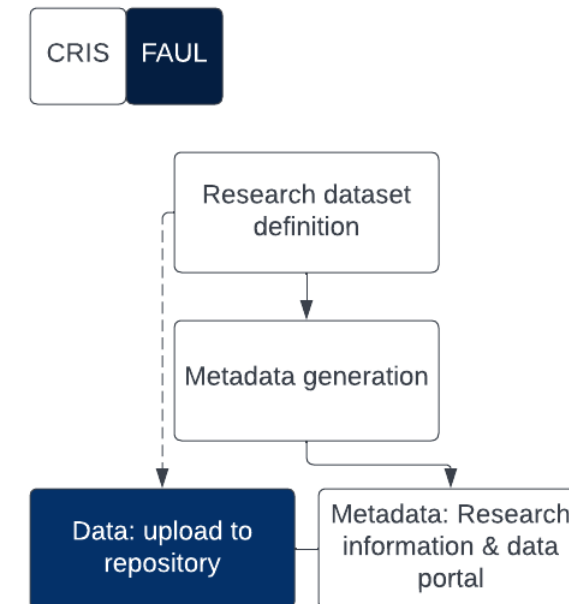
- Relate the dataset to other research information already in the system (optionally, but strongly recommended)
 - Publications
 - other datasets
 - Projects
 - Awards
 - Research fields
 - Research infrastructure
 - ...
- No need to enter author details

CRIS: step 4

- CRIS checks storage limit for chair
 - Approval workflow
- CRIS generates upload token
 - permissions granted on upload system
- User enters CRIS' id to get the token into FAUL



Save Load Source Code Wiki & Tutorials CRIS ID English								
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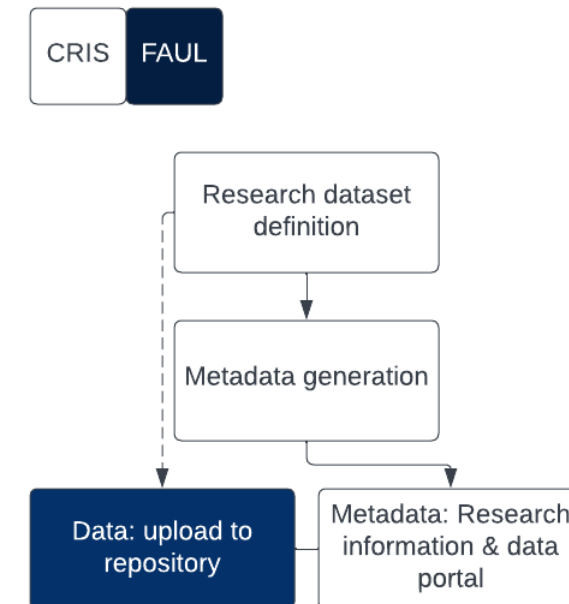
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script.py	✓					13194 byte	3e67e090f	2022-05-06T11:56:27

Interface locked: uploading your dataset to the FAUDataCloud

data.csv

Please wait...

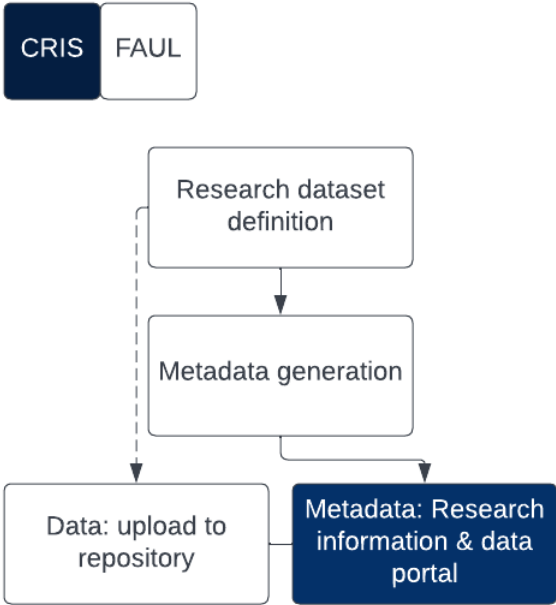
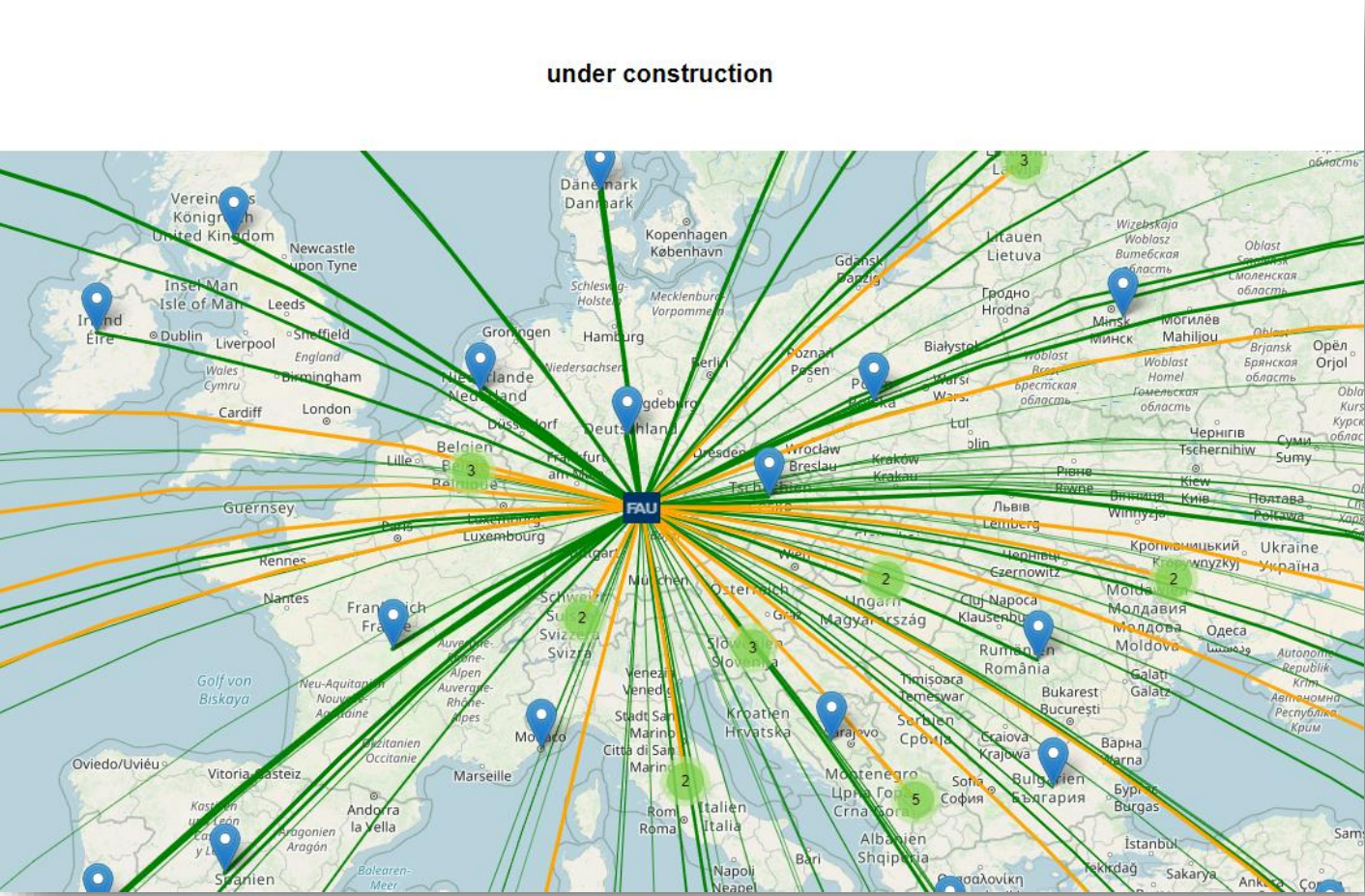


Back to FAIR data...

- Dataset visibility is controlled inside CRIS
 - Internal access: neither meta-data nor data is publically available, but both can be shared using private URIs
 - Public Meta-Data: Only the data is not publically available. DOI is assigned automatically
 - Open Data: meta data and data are available to the public
- Data portal supports OAI Protocol for Metadata Harvesting

Addressing FA in FAIR

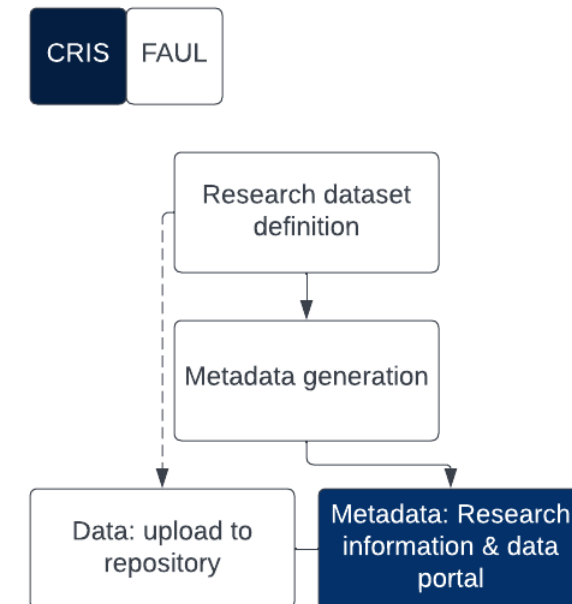
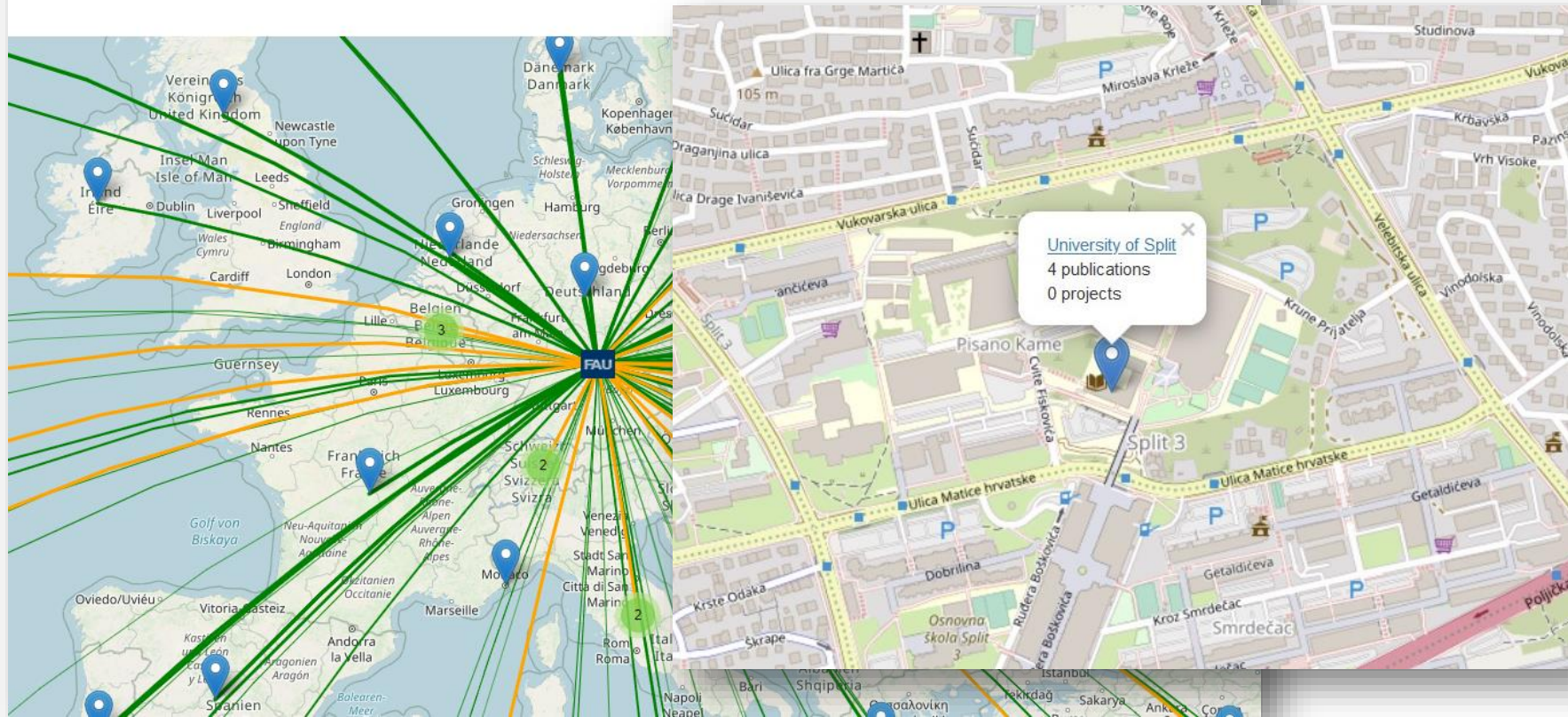
Research Information & Data Portal



Addressing FA in FAIR

Research Information & Data Portal

under construction



Summary

-
- No additional system for research meta-data handling
 - DataCite 4.4. implemented in our CRIS
 - Not the schema itself, but all relevant attributes
 - Workflow and software to support the whole process of data set management
 - Portal for integrated research information and research data driven by CRIS