FAIRSFAIR
Fostering Fair Data Practices in Europe

Architecture

Jessica Parland von Essen

12:00–12:15

Three identified themes - outline

Persistent identifiers

Metadata

Semantic interoperability

D2.1

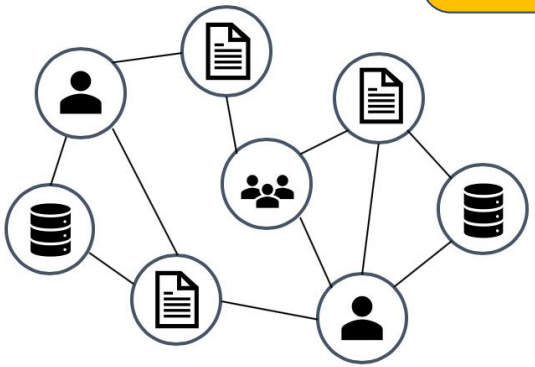
D2.3

PIDs in action

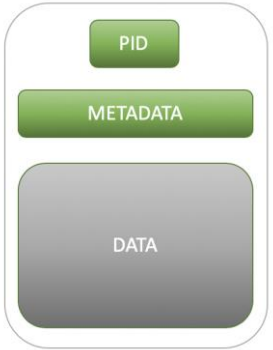
Shallow FAIR and Deep FAIR

Persistent identifiers

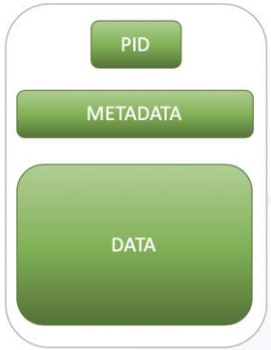
Research Information



Research Data



Necessary research information, PIDs, machine readable license



All data elements are machine accessible

D2.4

https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Organisation/SUK-P/SUK_P-2/2019_OpenScience_Poster12_RDM_UniBas_20190909_fundingFAIRcommunities.pdf (inspired by)

Persistent identifiers

Implementing Persistent Identifiers

Service providers are in a key position in implementing FAIR by

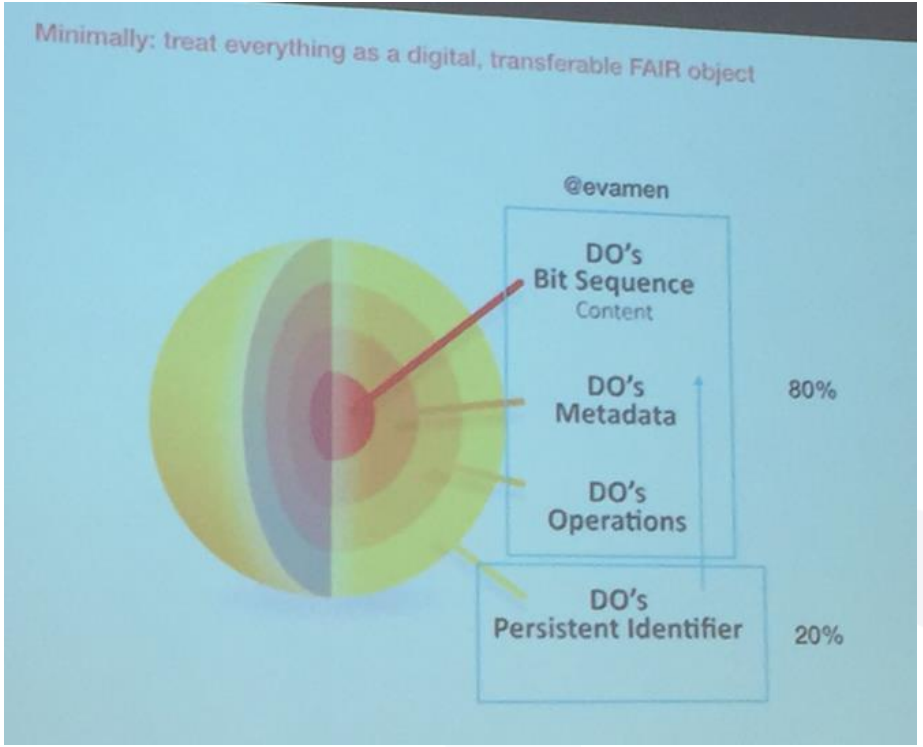
1. assigning and managing PIDs to master data
2. integrating external PIDs and semantic artefacts in their information architecture
3. integrating external PIDs and semantic artefacts in the workflow of (meta)data creation
4. automating the processes of metadata generation and linking as much as possible in user friendly, yet transparent ways.

https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Organisation/SUK-P/SUK_P-2/2019_OpenScience_Poster12_RDM_UniBas_20190909_fundingFAIRcommunities.pdf (inspired by)

FAIR Guiding Principles: all about metadata

80% **Metadata**

20% **Persistent identifiers**



Barend Mons @MRC-Drexel/CODATA workshop. 2018

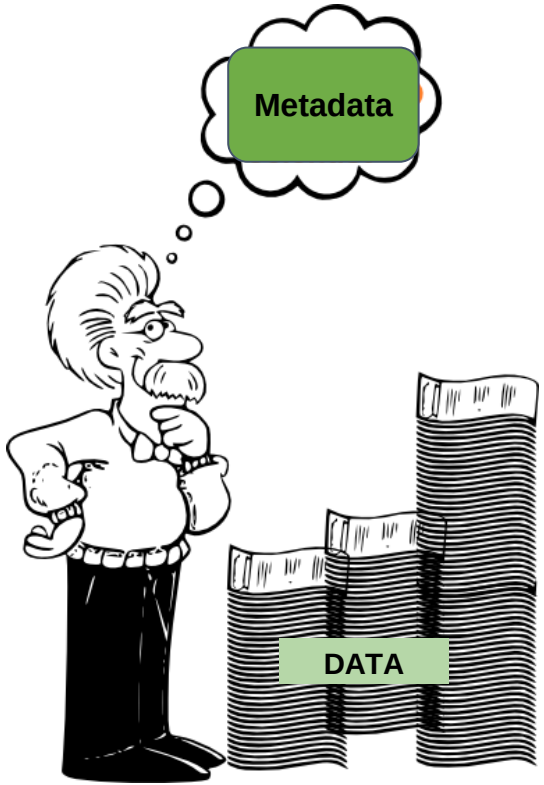
But ...

Metadata are like toothbrushes...

…Everyone thinks that it is a good idea, but nobody wants to use someone else's.

Challenges

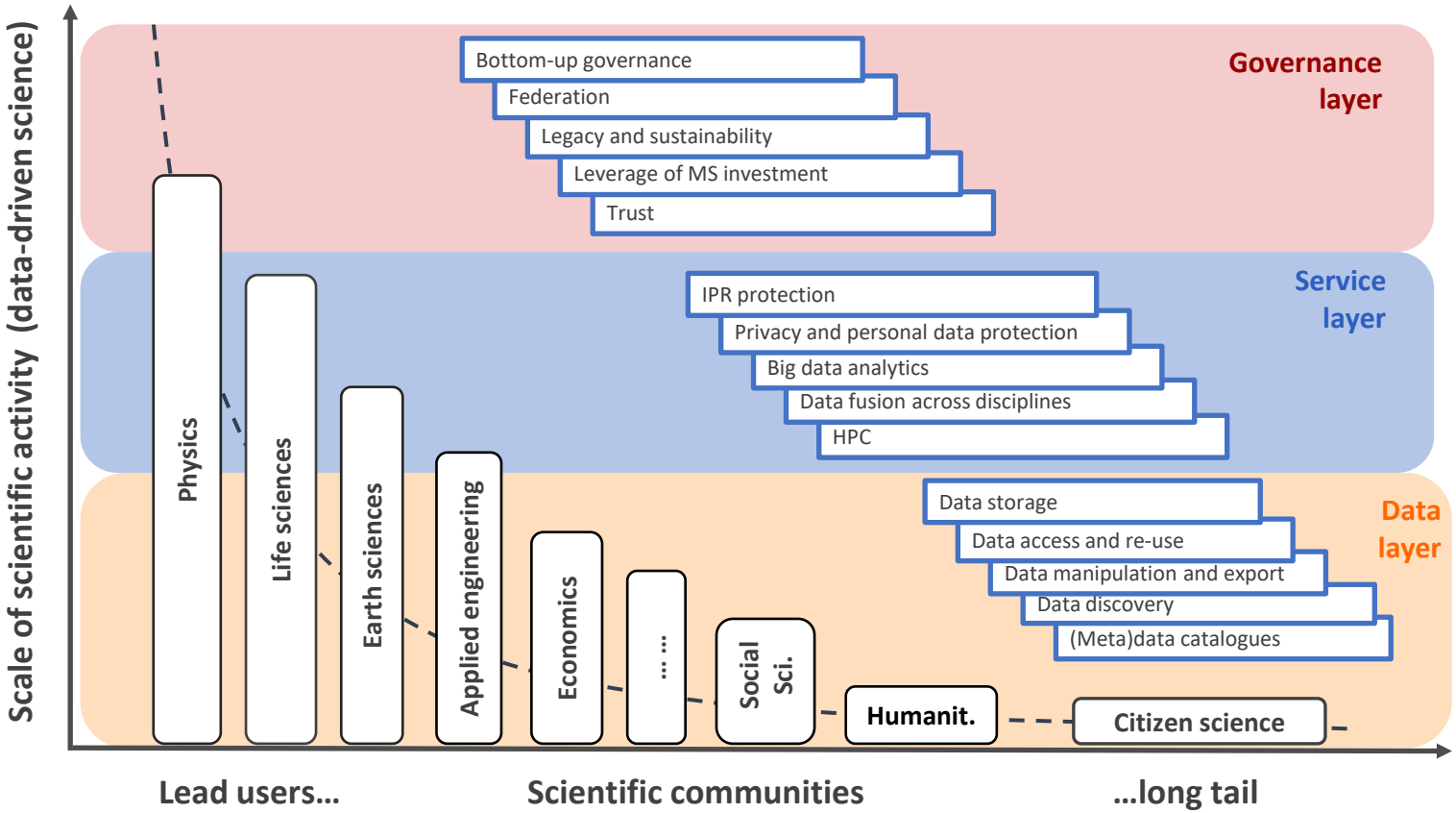
Metadata



- **Inter-cross disciplinary** research
- Metadata **standards**: avoid the *“toothbrush effect”*
- (Meta)data **catalogue integration**
- **Metadata quality** is not only at schema level (metadata formats), but also at scheme (semantic artifacts) and content
- Good research outcomes (publications and data) include **good metadata**, but difficult to balance ***rich/cool/good*** metadata.

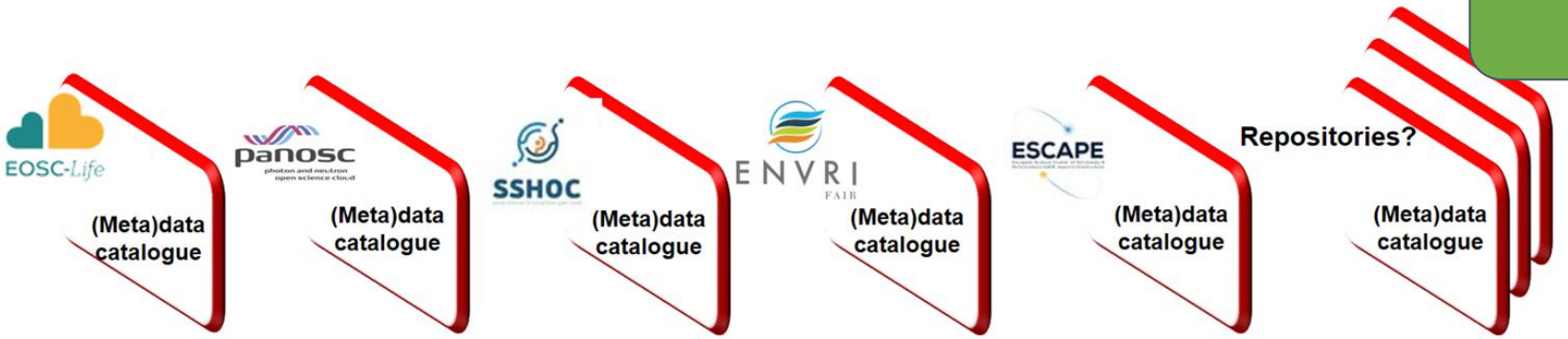
Scientific landscape for EOSC

Metadata



Based on Burgelman

Metadata



DDI

DCAT APPLICATION PROFILE FOR EUROPEAN DATA PORTALS
DCAT-AP

D3.6

M3.7

But do we really understand each other …?

Technical interoperability: the ability of different information technology systems and software applications to communicate and exchange data.

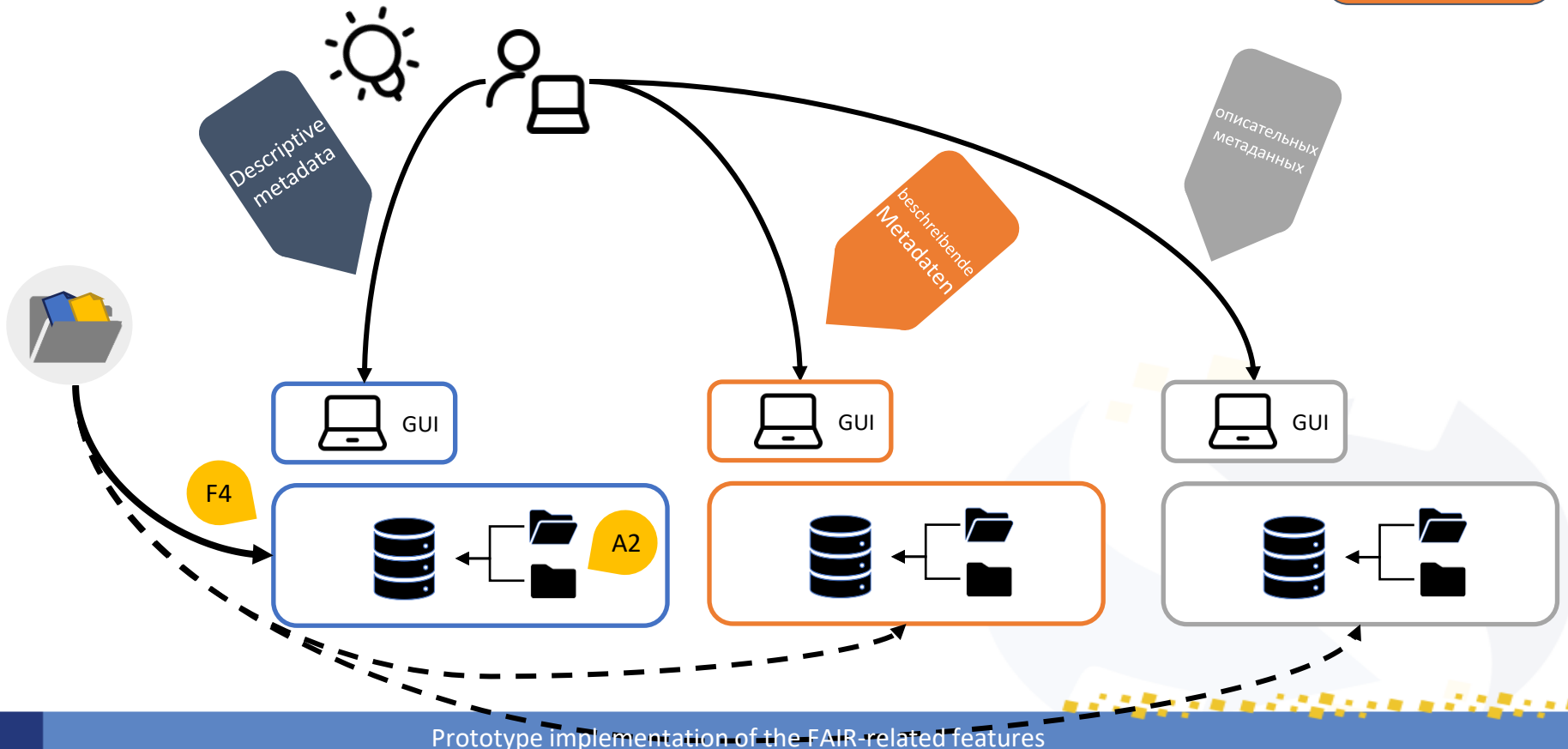
Semantic interoperability: the ability of computer systems to exchange data with unambiguous, shared meaning.

Organisational interoperability: the way in which organisations align their business processes, responsibilities and expectations to achieve commonly agreed and mutually beneficial goals.

Legal interoperability: the broader environment of laws, policies, procedures and cooperation agreements needed to allow the seamless exchange of information between different organisations, regions and countries.

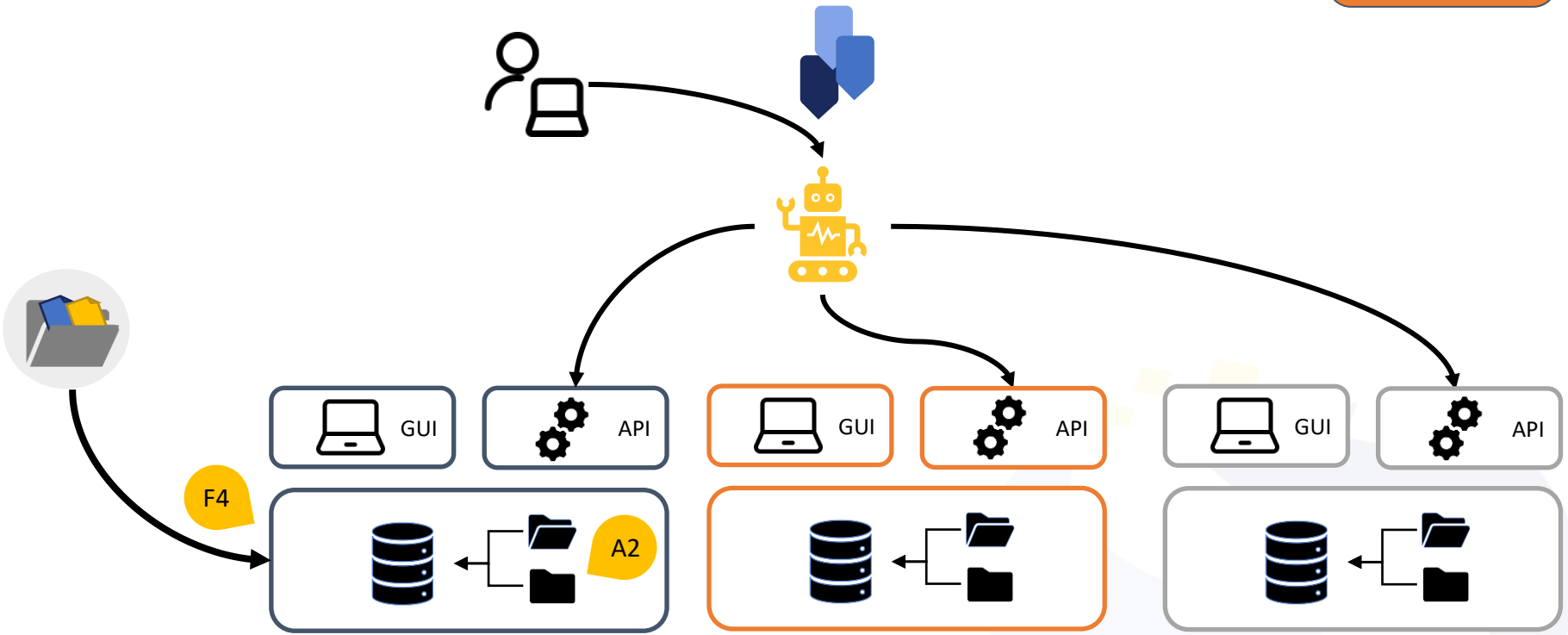
Repositories exposing metadata

Semantic inter-operability



Metadata for machines

Semantic inter-operability



Semantic inter-operability

The FAIR Data Point

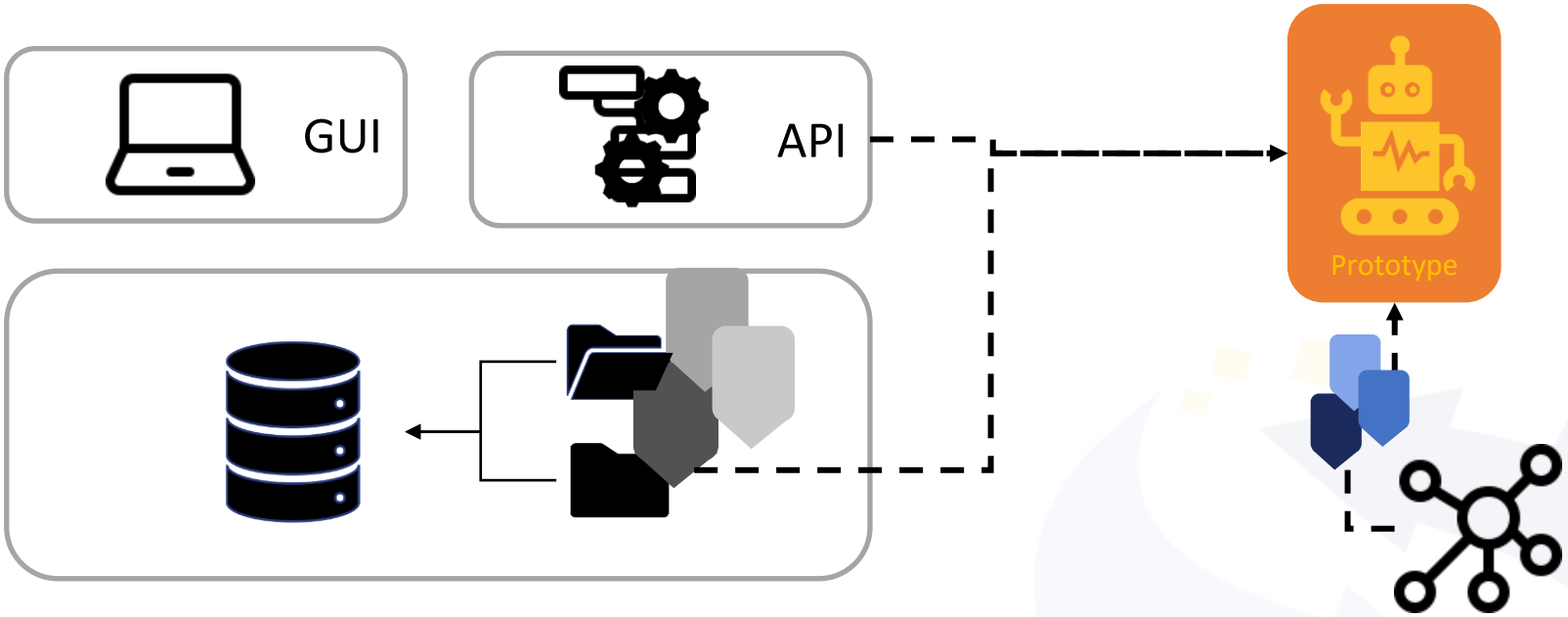
Helping repositories expose following the FAIR principles by creating a reference implementation of the FDP

A solution based on semantic metadata standards
(DCAT, Dublin Core and Linked Data)

A layer for semantic interoperability with triple store and API

The FAIR Data Point (FDP)

Semantic inter-operability



Sandbox running, reference implementation upcoming

D2.6

Co-development

Semantic inter-operability

Developer repositories

DRYAD

dabar
DIGITAL ACADEMIC ARCHIVES AND REPOSITORIES

Data INRAE

MOVEBANK
For Animal Tracking Data

KNOWLEDGE REPOSITORY
Central University of Punjab, Bathinda

B2SHARE

EUDAT

Tester repositories

NBN atlas

PHAIDRA

SciencesPo

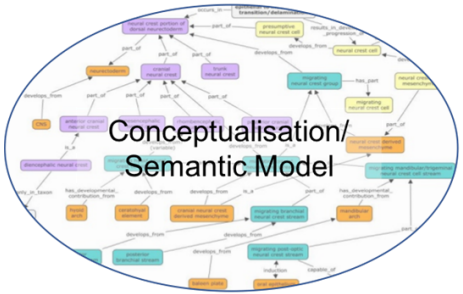
DataverseNO

FRDR DFDR
FEDERATED RESEARCH DATA REPOSITORY
DÉPÔT FÉDÉRÉ DE DONNÉES DE RECHERCHE

M2.3

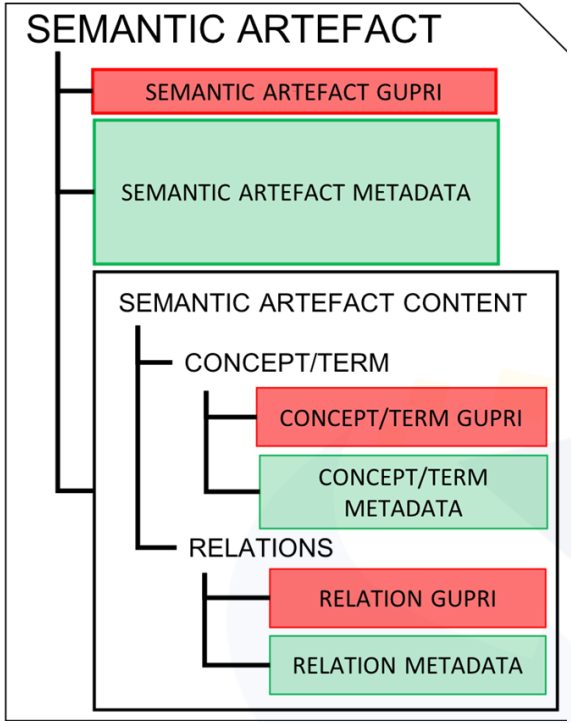
Semantic interoperability

Semantic inter-operability



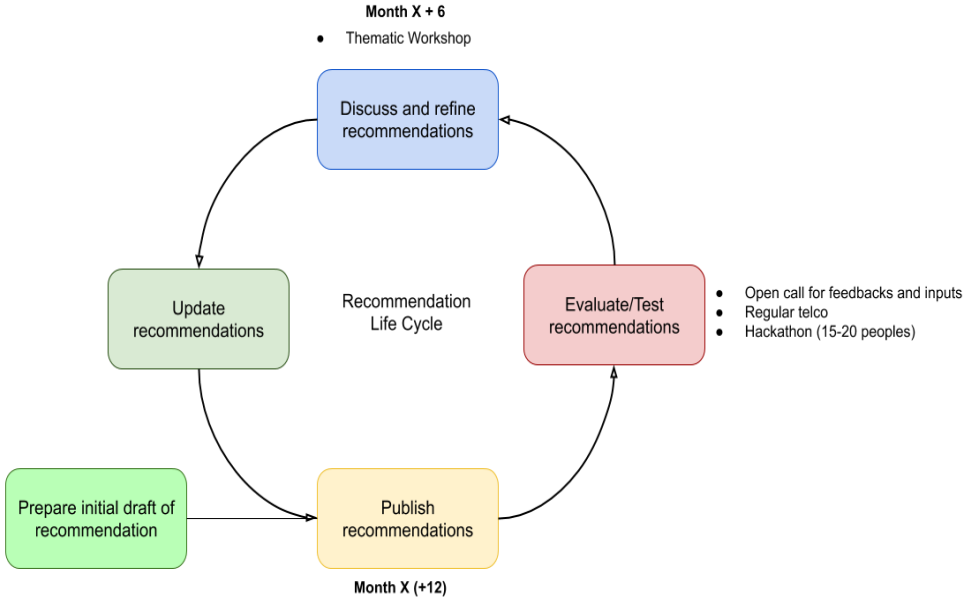
serialised as

is a serialisation of



D2.2 **D2.5**

Recommendations for FAIR semantics



Semantic inter-operability

D2.2 First set of recommendations

- 17 preliminary recommendations for implementing FAIR
- 10 Best Practices for creating semantic artefacts

D2.5 Second set of recommendations

D2.8 Third set of recommendations

M2.3 **M2.6** **M2.9**

Solutions for better interoperability

Persistent identifiers
Recommendations that support different use cases and contexts

FAIR semantics
Recommendations for creating FAIR semantic artefacts

Metadata
Aligning and integrating metadata