FDO-SEM: MOTIVATION, OBJECTIVES, USE CASE

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#FAIRconvergence

WHY THIS WORKING GROUP

Challenges / Gaps:

- still not clear what the minimum set of attributes making a FDO is
- lack of models for representing attributes and relationships in a semantically unambiguous and machine-actionable way
- lack of models on how mappings between FDOs from different domains can be operationalized
- lack of show cases and reference implementations
- lack of models that properly combine insights of the two strands of DO and LD

⇨ a **LD-compliant approach to FDOs** is needed:
unique opportunity that FDOs are not restricted to just PIDs
but also include SW approaches

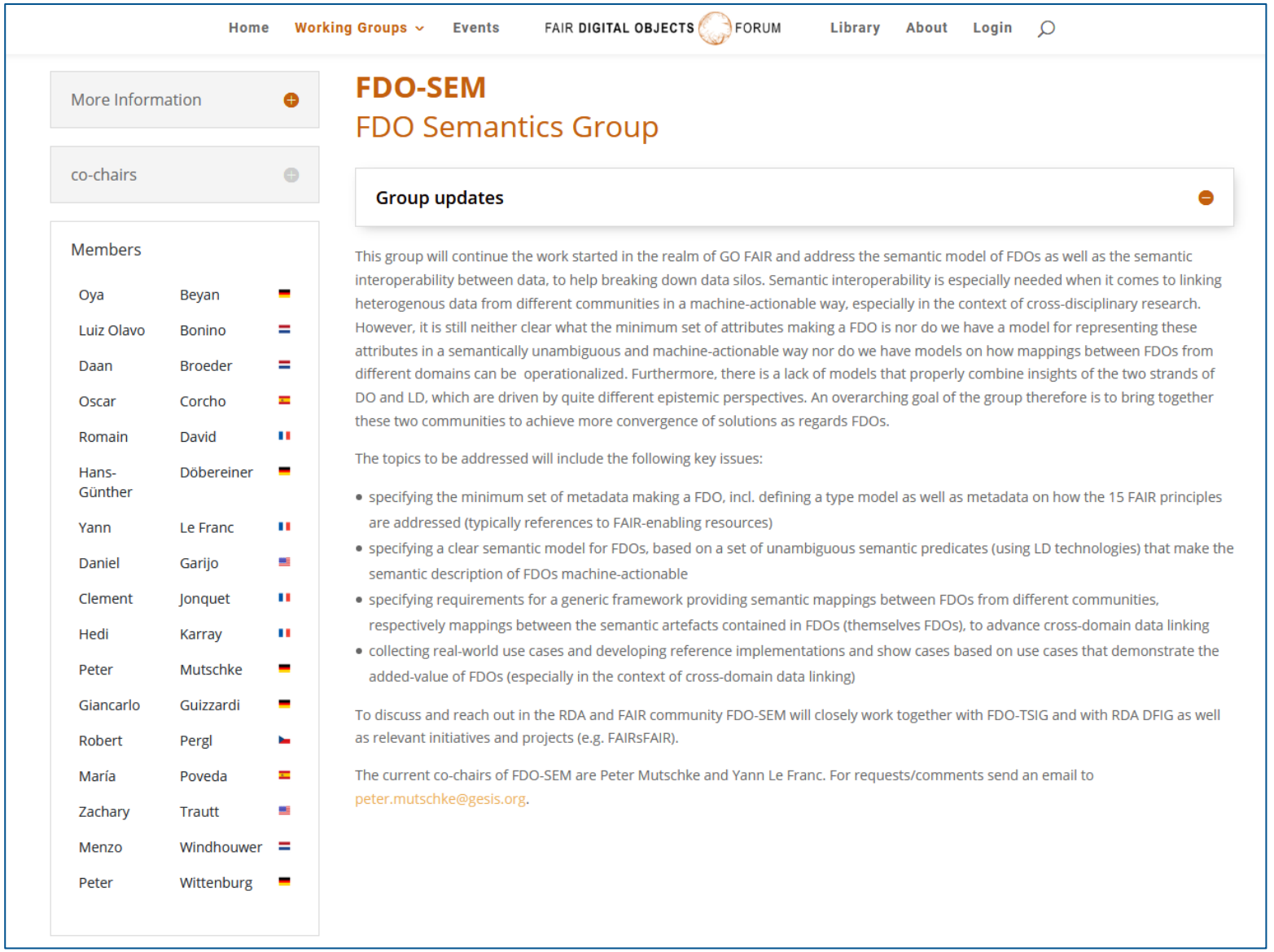
OBJECTIVES

Semantic model of FDOs to make FDOs semantically more interoperable (needed when it comes to link heterogenous data from different communities)

- specifying the **minimum set of metadata** making a FDO, incl. type model and metadata on how the 15 FAIR principles are addressed (typically references to FAIR-enabling resources)
- specifying a unique and clear semantic model for FDOs, based on a **set of unambiguous semantic predicates** that makes semantic descriptions of FDOs machine-actionable (by bring together insights of the two strands of DO and LD)
- specifying requirements for a generic framework providing **semantic mappings** between FDOs from different communities, respectively mappings between the semantic artefacts contained in FDOs (themselves FDOs)
- reference implementations and **show cases** based on real-world use cases that demonstrate the added-value of FDOs (especially in the context of **cross-domain data linking**)

WEBSITE & GROUP MEMBERS

FAIR DIGITAL OBJECTS FORUM



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More Information

co-chairs

Members

Oya	Beyan
Luiz Olavo	Bonino
Daan	Broeder
Oscar	Corcho
Romain	David
Hans-Günther	Döbereiner
Yann	Le Franc
Daniel	Garijo
Clement	Jonquet
Hedi	Karray
Peter	Mutschke
Giancarlo	Guizzardi
Robert	Pergl
María	Poveda
Zachary	Trautt
Menzo	Windhouwer
Peter	Wittenburg

FDO-SEM
FDO Semantics Group

Group updates

This group will continue the work started in the realm of GO FAIR and address the semantic model of FDOs as well as the semantic interoperability between data, to help breaking down data silos. Semantic interoperability is especially needed when it comes to linking heterogenous data from different communities in a machine-actionable way, especially in the context of cross-disciplinary research. However, it is still neither clear what the minimum set of attributes making a FDO is nor do we have a model for representing these attributes in a semantically unambiguous and machine-actionable way nor do we have models on how mappings between FDOs from different domains can be operationalized. Furthermore, there is a lack of models that properly combine insights of the two strands of DO and LD, which are driven by quite different epistemic perspectives. An overarching goal of the group therefore is to bring together these two communities to achieve more convergence of solutions as regards FDOs.

The topics to be addressed will include the following key issues:

- specifying the minimum set of metadata making a FDO, incl. defining a type model as well as metadata on how the 15 FAIR principles are addressed (typically references to FAIR-enabling resources)
- specifying a clear semantic model for FDOs, based on a set of unambiguous semantic predicates (using LD technologies) that make the semantic description of FDOs machine-actionable
- specifying requirements for a generic framework providing semantic mappings between FDOs from different communities, respectively mappings between the semantic artefacts contained in FDOs (themselves FDOs), to advance cross-domain data linking
- collecting real-world use cases and developing reference implementations and show cases based on use cases that demonstrate the added-value of FDOs (especially in the context of cross-domain data linking)

To discuss and reach out in the RDA and FAIR community FDO-SEM will closely work together with FDO-TSIG and with RDA DFIG as well as relevant initiatives and projects (e.g. FAIRsFAIR).

The current co-chairs of FDO-SEM are Peter Mutschke and Yann Le Franc. For requests/comments send an email to peter.mutschke@gesis.org.

https://fairdo.org/wg/fdo-sig/

GO FAIR

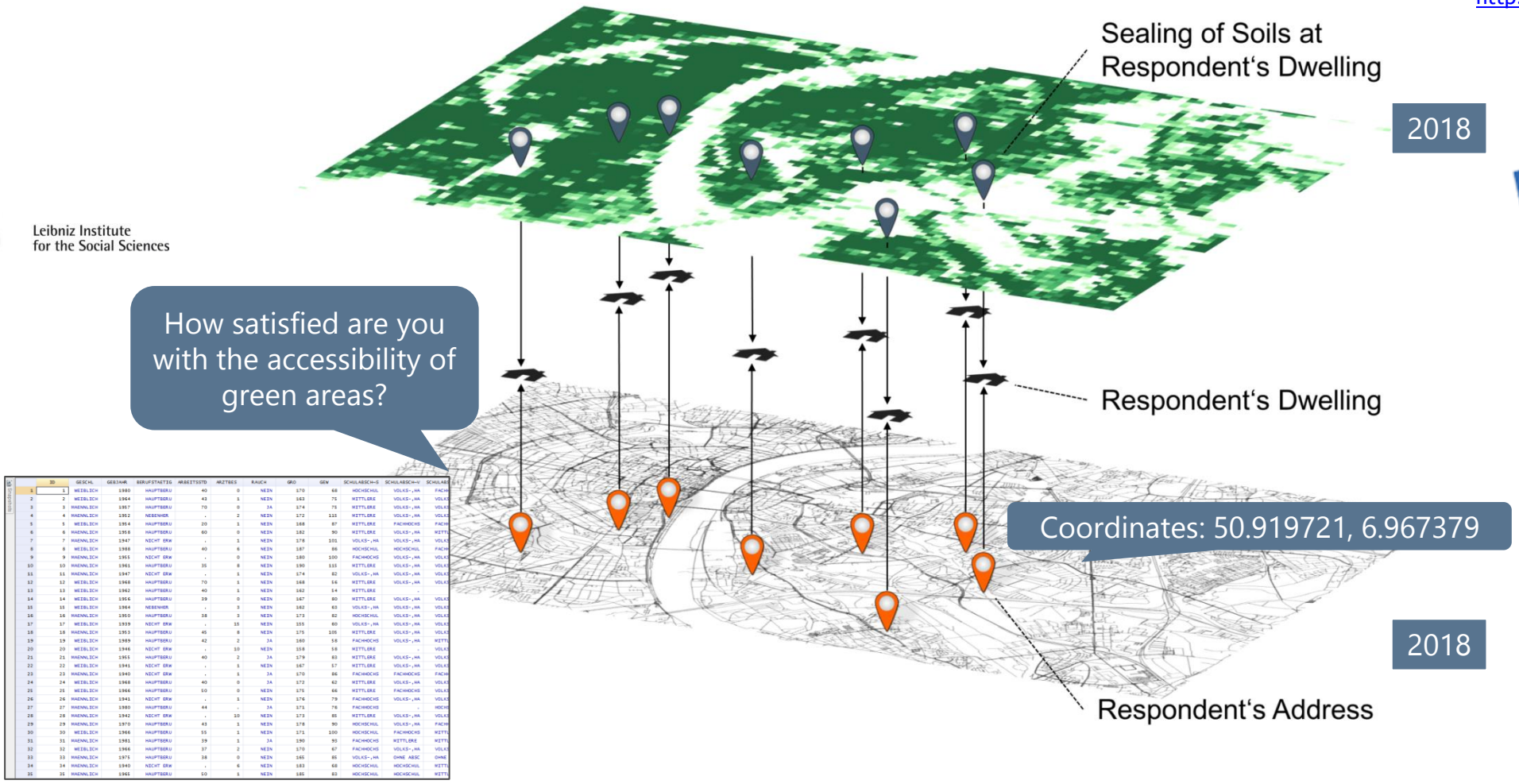
SORA USE CASE

Linking survey data to spatial data (DFG project SoRa)

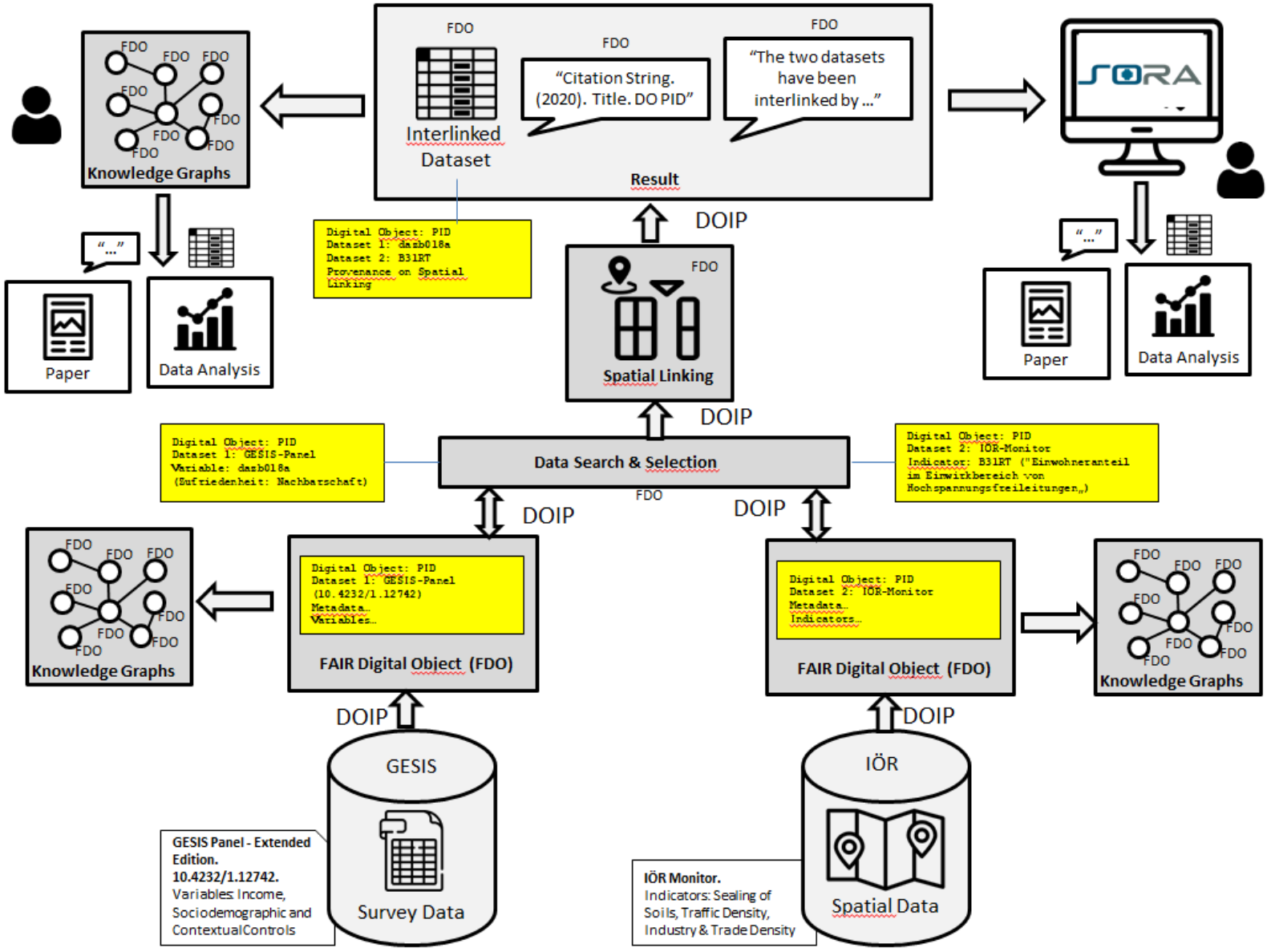
http://www.sora-projekt.de/

gesis Leibniz Institute for the Social Sciences

Leibniz Institute of Ecological Urban and Regional Development

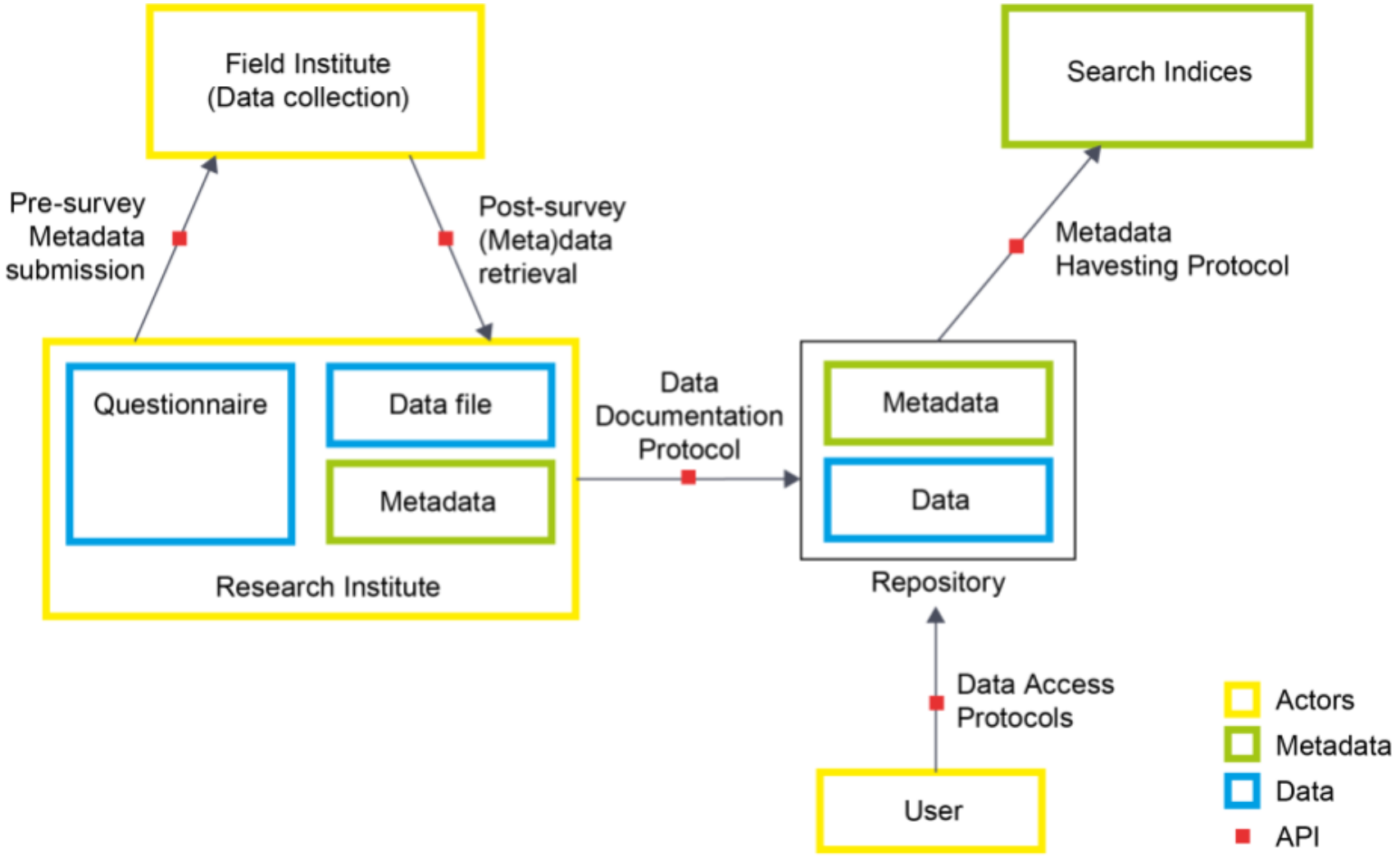


SORA: MODEL OF END-TO-END WORKFLOW BASED ON FDO



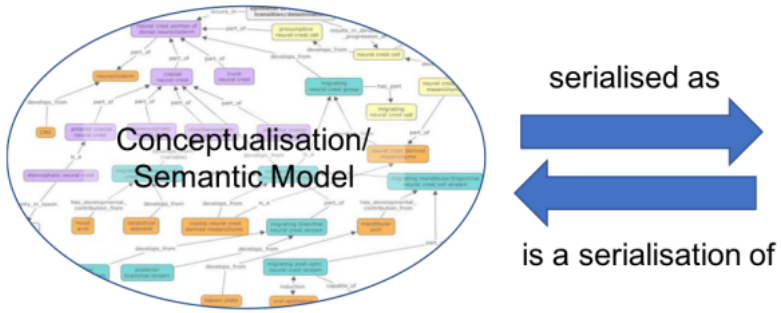
NFDI USE CASE

Shared access for items, scripts and streaming data in the Educational Sciences and the Social Sciences: FDO interfaces between different stakeholder services

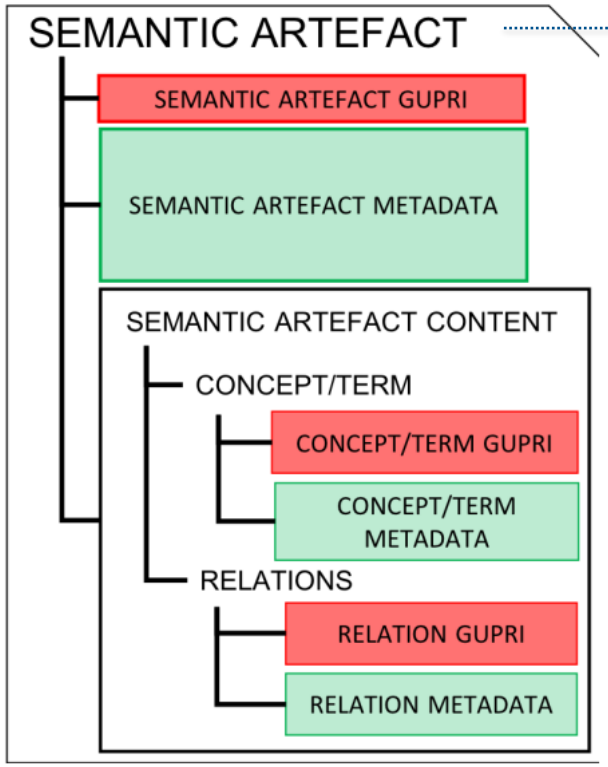


FDO & FAIRSEMANTICS

"The **vocabularies** used for metadata or data **also need to be findable, accessible, interoperable, and reusable** in their own right so that users (including machines) can fully understand the meaning of the terms used in the metadata." [1]



Common structure of semantic artefacts [2]



"specific type of data, used to describe or annotate other data" [2]

Specific challenge: **interoperability** of vocabulary services

FDO model for semantic artifacts strongly required

[1] A. Jacobsen et al. (2020): FAIR Principles: Interpretations and Implementation Considerations, Data Intelligence 2(1-2)
[2] FAIRsFAIR (2020): D2.2 FAIR Semantics: First recommendations

Thank you!