

# FDO Project for Germany

Peter Wittenburg<sup>‡</sup>, Hans Günther Döbereiner<sup>§</sup>, Stefan Weisgerber<sup>|</sup>, Giovanna Morigi<sup>¶</sup>

<sup>‡</sup> Unaffiliated, Berlin, Germany

<sup>§</sup> University Bremen, Bremen, Germany

<sup>|</sup> DIN, Berlin, Germany

<sup>¶</sup> University Saarland, Saarbrücken, Germany

Corresponding author: Peter Wittenburg ([peter.wittenburg@mpcdf.mpg.de](mailto:peter.wittenburg@mpcdf.mpg.de))

Reviewable v 1

Received: 29 Sep 2022 | Published: 12 Oct 2022

Citation: Wittenburg P, Döbereiner HG, Weisgerber S, Morigi G (2022) FDO Project for Germany. Research Ideas and Outcomes 8: e95806. <https://doi.org/10.3897/rio.8.e95806>

## Abstract

In Germany there is much agreement on a necessary step towards convergence in the domain of digital entities across sectors given the increasing number of emerging data spaces in research, industry and public services. Therefore a group of FAIR Digital Objects (FDO) experts is working on a proposal that will

1. demonstrate the functionality of FDOs, their added value and the scalability of their components,
2. establish an active FDO community across sectors and disciplines collaborating beyond the project,
3. establish a network of key persons promoting and advancing the FDO standard and its applications in collaboration with the FDO Forum,
4. implement a set of FDO applications for selected use cases from economy and applied research,
5. advancing the further development of FDO specifications and their transformation to international standards and
6. support the international FDO Forum initiative.

In addition to the standard activities such as PR, outreach, organising meetings, management etc. the project is designed to support a few major pillars:

- A basic infrastructure for FDOs will be made professional and usable by everyone interested based on what has already been developed in the realm of the FDO Forum.
- Three use cases will be implemented to serve as demonstrators of FDOs: (a) A testbed of a set of repositories from research and industry including those that are applying standards developed in industrial initiatives such as Industry 4.0 and Int. Data Space Association. (b) Processes in time will be modelled with FDOs to demonstrate the secure mechanisms provided by FDOs. (c) Time will be spent on implementing methods where FDOs help to organise the huge data space as it will emerge in future. These use cases need to be worked out in the 3-year project that will act as demonstrators across borders.
- Three research motivated use cases will be tackled as well. The collaborating experts believe that it is important already now to introduce quantum computing and their possible impact on data spaces. The group of experts also wants to not only implement FDO applications but also wants to investigate the foundations of FDOs. In addition, two concrete cases have been selected to demonstrate the value of FDOs (cancer database, tomography imaging).
- A Thinktank is planned to discuss many upcoming aspects related to FDOs and these large data spaces such as legal and ethical aspects, philosophy of information, social impact of digital transformation, codification of roles and usage scenarios, etc.
- Other goals of the project are to further develop the FDO specifications in close collaboration with the FDO Forum based on the insights from the implementations, transform the specifications to international standards, and set up certification mechanisms. These activities will be led by standardisation organisations (DIN, DKE) which are embedded in ISO/IEC groups.

It is an explicit wish of the funding institution for FDOs to help to create a global integrated data space which requires a close collaboration with existing industrial initiatives such as Big Data Value Association, Industry 4.0, Int. Data Space Association, Gaia-X etc. Therefore, the project partners are currently in discussion with these initiatives to bring in their expertise and components wherever that makes sense. Industry for example is busy formalising “roles” and “usages” which is not a topic of the FDO Forum.

The project partners are in close contact with the German FDO experts already contributing to the FDO Forum discussions to integrate their expertise where possible into the project. Although the project will focus on activities in Germany we will seek to reach out to other European countries and beyond. It is obvious that the project will need to invest in training from the beginning leveraging on the already existing knowledge in the FDO Forum, DONA and ePIC for example.

We are currently in discussion with the funding agency in shaping this project with the intention to start it already in 2022. With this project being granted we hope to be able to advance the international attempts to achieve a higher degree of convergence and thus efficiency in the domain of digital objects.

## **Keywords**

FAIR, FAIR Digital Objects, Data Management, Data Tracking, Data Space

## **Presenting author**

Stefan Weisgerber

## **Presented at**

First International Conference on FAIR Digital Objects, presentation