FAIR **DIGITAL OBJECTS** FORUM

FDO Bulletin 2022-1
March 2022

> ## Participate in the Community Interaction Meeting at 23.3.2022 <small>(see below)</small>
>
> ## Help in Finding Funders for the Robert Kahn Prize
> <small>(see below)</small>

FDO Forum Activities

- The FDO Forum is establishing collaborations with international organizations which of great importance for FDO uptake:

    - A formal collaboration agreement was signed by FDO Forum and **DIN** which is the German Institute for Standards closely liaising with ISO. The goal is that DIN will turn FDO specifications into official standards, finally under the umbrella of ISO. A flyer describing the goals can be found here:
    https://drive.google.com/file/d/1Ijr6CepA83m-4h0uqKVCKKfEdJJGbtQX/view?usp=sharing

    - A presentation at the **BDVA** PPP of European industry with the EC resulted in an agreement to organise joint workshops. Both organizations – BDVA and FDO Forum -see the need for a radical change of current data practices. FDOs are one possible way to go. Industry is interested to understand the potential of FDOs and FDO Forum is interested to understand the needs of industry. The presentation can be found under "presentations" (to come soon).

    - A result of the interactions with DIN and BDVA is that the FDO Forum will need to start **endorsing relevant specification documents** from other organisations such as RDA that have a direct influence on FDO Forum specifications or which serve as basis for FDOs. In this realm collaboration agreements with other initiatives/organisations might become relevant.

- The FDO Forum organised the **panel on Key Pillars of a Future Global Integrated Data Space** with excellent speakers (Luciano Floridi, Jürgen Renn, Beth Plale, Paolo Budroni) and Commenters (Sabina Leonelli, Debora Drucker, Sarah Nusser, Jean Claude Burgelmann) and a large audience (~250 participants). All recordings can be found https://fairdo.org/high-level-panel-data-future/. The intention is now to publish two papers: (1) A written form of the presentations and interactions, (2) a paper where the conclusions from this panel for the concept of the FDOs will be drawn. For the second paper we will invite interested experts from the FDO community to contribute.

- Plans for the **1st International FDO Conference** from 26. to 28. October are taking shape. The week will be started by the 2nd FAIR Convergence Symposium, continued by the FDO Conference and will end in a session where the "Leiden Declaration" on FDO specifications will be confirmed. The FDO conference will address policy makers, researchers engaged in data-driven work and technologists and will include different formats in up to three parallel tracks. If the Robert Kahn Prize becomes a success we will organise also a Hackathon to bring together short-listed teams to demonstrate their solutions. A first outline of the FDO conference will be published soon (https://fairdo.org/events/).

- The FDO Forum started to have a more balanced geo-representation in the Steering Board and welcomed the following new members: Tyng-Ruey Chuang (TP), Lianglin Hu (CN), Alena Rybkina (RU), Washington Segundo (BR), Natasha Simons (AU), Deepak Subramini (IN), Mikiko Tanifuji (JP), and Joseph Wafula (KE).

Community Engagement and Research Infrastructure Outreach

The second **Community Interaction Meeting (CIM),** a regular event to which all members of the FDO Community (those who registered to be on the FDO mailing list) and the RDA FDO-DF IG are invited to particiapte, will take place on 23.3.2022 at 14.00 UTC/15.00 CET. While the first CIM meeting focussed on presenting and discussing the state of discussions and plans of each FDO Forum group, the coming meeting will focus on discussing a first concrete implementation of the FDO concept, its design goals and scientific relevance, its pros and cons, etc. The FDO Forum groups will give very short presentations about their ideas regarding the state of work and plans and then first an implementation will be presented, followed by an extensive discussion. Details about the CIM March 2022 will be communicated soon via the FDO list and the website. We would like to draw your intentions also to the "Demonstrator Paper" which gives an overview about some FDO implementation work which has been done. You can find it here:
https://zenodo.org/record/5872645#.YhILFJYxnb0.

The FDO Forum sees this 2nd CIM meeting as a starting point to increase the interaction with **research infrastructure and e-Infrastructure designers, builders and users**. We intend to organise a series of short workshops in an agile way dependent on the interests that may include panels, workshop inter-actions, demonstrations and training courses. At the CIM meeting we will present possible follow-up topics so that the participants can give their preferences.

Robert Kahn Prize Campaign

The idea to start a Kaggle-like campaign to engage early career researchers and technologists in de-veloping useful and relevant FDO components has been put on the rails now. A first flyer to find sponsors for the RKP has been finalised and Robert Kahn, one of the key experts behind TCP/IP and the Internet, agreed with using his name for this prize. The University of Bremen with physicists now being heavily engaged in FDO work acts as formal host of the campaign, a set of committees has been installed ensuring a high degree of overlap with the FDO Forum and a first document is being discussed to ensure that the needed infrastructure will be available. Four challenges for the prize have been identified: re-pository adaptation via DOIP, smart FDO validators, smart FDO collection builder, open challenge. The flyer to find sponsors can be downloaded here: https://www.robert-kahn-prize.org/. Given that we find sufficient sponsoring we intend to launch the call for participation in Mid-April.
We now ask everyone to help finding sufficient sponsoring. In case of suggestions please send an email to robert-kahn-prize@uni-bremen.de. Please help, since this is of great importance.

FDO Documents

The following documents are currently in the WDx.y commenting state (1) Machine Actionability, (2) FDO Configuration Types, (3) PID Profiles and Kernel Attributes, (4) Granularity, Versioning and Mutability. Also the Document Process Standard document is still in a commenting phase, however, the remaining changes were minimal. A web-table indicates the state of all documents: see
https://docs.google.com/spreadsheets/d/1Rgi31U1XOn8seCjaETXvDRneHT6QSpFEyLhe3UHjWWo/edit#gid=1593800563 .
For all public documents of the FDO Forum it was now decided to create an FDO Forum Community in Zenodo and to retire the current MPCDF Datashare Drive for these purposes to improve accessi-bility. When this migration is completed we will inform the community.

Working Groups

Joint Work on Typing
Three meetings were held until now to push the work on an FDO Typing System as a collaboration between three FDO Forum Working Groups (TSIG, SEM, BIG). A paper presented by Larry Lannom initiated discussion and it is expected that this paper can serve as a guideline. We aim for this document to be finalized in February/March to an official WD0.1 document according to the FDO process standard. The major goals remain: (1) Only typing issues related to FDOs will be addressed. (2) In the focus will be to define the set of mandatory and optional elements that are required to describe genres of types.

In this respect will make use of existing work as much as possible such as from EDAM, CMDI, DDI, OBI, etc. and need to build in flexibility (4) A unified structure (type of FDO Types) will have to be specified as basis for interoperability. (5) Ways to integrate already existing community concepts need to be solved. (6) An infrastructure existing of registries and some tools needs to be defined.

eING (eInfrastructure Group)
This group was meant to be a temporary group to develop a specific demonstrator case which integrated two different repositories using different technologies and data organisations by using DOIP and to collect a variety of existing DO/FDO demonstrators into one paper. This paper has been published via Zenodo (https://zenodo.org/record/5872645#.Ygi50ZYxnb0) and therefore the eING group will stop. Its work will be pushed ahead by BIG, TSIG and eventually in the realm of the Robert Kahn Prize campaign.

TSIG (Technical Specification & Implementation Group)
TSIG mainly discussed the FDO Requirement Specification so that it could be entered into the official commenting process as a WD0.3 document based on the FDO Framework V1.02 as agreed at the Paris meeting in 2019. It also turned three existing specification documents to WD0.1 documents to enter the formal commenting process (FDO Configuration Types, PID Profiles & Attributes, FDO Granularity). After a short discussion withing TSIG they will be open to FDO Forum commenting so that we expect them to become open for community wide commenting in May.
TSIG mainly drove the DIN collaboration agreement, identified a gap in the specifications (how to deal with community metadata) and together with BIG started the discussion about the technical framework needed to support the Robert Kahn Prize.
Ivonne Anders (DKRZ Hamburg) was confirmed as 4th TSIG co-chair in addition to Claus Weiland, Larry Lannom and Peter Wittenburg to share the load of the work, to foster a generation transition and to improve gender balance.

BIG (Basic Infrastructure Group)
After a comprehensive discussion about the options for a homogenisation of PID resolution and an elaboration of the methods of access to an FDO and specific allowed formatting in December 2021, BIG started this year with a couple of suggestions on how to attract people to use FDOs. Here beside the persuasiveness of special outstanding applications and convincing use cases the necessity of education and training was mentioned. The current focus is the implementation of a testbed infrastructure that can be used in the context of emerging hackatons and build a backbone for possible life demos of the October conference. Such an infrastructure will mainly consist of PID and data type registry services possibly augmented with cloud services for storage and virtual machines.

SEM (Semantic Group)
In the beginning of 2022 SEM formed a working group with regular meetings following-up the hackathon of 2021 on applying FDOF as defined by Luiz Bonino to selected use cases. The objectives of the working group are twofold: (1) to develop a reference application of FDOF; (2) evaluating FDOF regarding its applicability aiming at identifying gaps, open issues, and requirements to improve FDOF. As a starting point we selected the "River Thames" use case which has also been discussed at GO Inter hackathons in 2020. The use case involves a dummy csv table containing monthly mean dissolved lead (ppb) in water taken from the river Thames by sampling, together with metadata described by three different semantic artefacts: Sensor Network Ontology (OWL), EnvThes (SKOS) and ENVO (Owl). The goal of the use case is to investigate how FDOF can be used to build a FDO-like representation of the table and the semantic artefacts and to investigate how both can be integrated.

CWFR (Canonical Workflows for Research)
The CWFR group finished the work on the special issue on CWFR of the DI Journal which will appear soon. A workshop plan for 2022 has been worked out and will be announced soon. A generation change in co-chairing was done, i.e. the co-chairs are now: Amirpasha Mozaffari, Zhiming Zhao, Alessandro Spinuso, Nikolay Skvortsov, Peter Wittenburg. We would like to thank Limor Peer and Alex Hardisty for all their work.

FIPP (FAIR Implementation Profiles and Practices)
The FIPP WG is focusing on the role of FAIR Implementation Profiles (FIP) in the FDO space. FIPs impact the FDO development in 2 principal ways: (1) FIPs provide a socio-technical approach for driving the explicit and systematic community agreements on the use of FAIR implementations including domain-relevant community standards (as per R1.3). Hence, FIPs can catalyze convergence both within and between disciplinary domains. In preparation for the 1st International FDO Conference from 26. to 28. October, FIPP WG activities will leverage FIPs in gaining commitment to FDOs among a critical

mass of circumscribed communities (ESFRIS, EU Programs, JRC, etc.) and broader stakeholders; (2) Once a community of practice declares a FIP (in machine-readable format), the FIP itself becomes a type of FAIR metadata that describes the technical and semantic composition of FAIR digital objects that will be subsequently created by that community. The FIPP WG will explore how FIPs may be used to instruct computation agents to interpret, interoperate with, and perform operations on FDOs as they are constructed under given FIPs. The FDO-FIP group is co-chaired by Erik Schultes and Barbara Magagna, and has active members from the original FIP working group. The group welcomes participation by experts in FAIR implementation, FDOs and convergence. For requests/comments send an email to erik.schultes@go-fair.org.