ELIXIR Interoperability Platform Face-to-Face (EIP F2F) meeting Agenda

1st - 2nd April 2019

Albury room - Novotel Stansted Airport Hotel - Round Coppice Road Stansted Airport Stansted, Essex, CM24 1SF

https://global.gotomeeting.com/join/847517445
Access Code: 847-517-445

Slides @ http://www.tinyurl.com/eipf2f
(redirects to
https://docs.google.com/presentation/d/1z7Dgo-1wDptvfrPHkSf4O9iZONzoXmVavUFvgcE84bY/edit#slide=id.p3**)**

Attendee list
https://docs.google.com/spreadsheets/d/1hXwCIcFj19W-A5vSHqDZEp30nSVdS3CY-TXhQXVIdeU/edit#gid=0

For Reference:

- *ELIXIR 2019-23 Programme*

1. Introduction and Aims

We will focus on setting out strategic roadmap of activities for 2019-2023 by mapping the EIP key activities and services to the the ELIXIR Communities' use cases and cross-platform interactions. Discussion of the development of specific implementations of tools and services will follow the strategy roadmap at this meeting. We encourage participation both from within the the EIP community, and outside (other platforms, and use case communities), and both

strategy leadership and engineering development levels. Key participant groups for each session are noted, but all sessions are open to all audience.

2. Outcomes:

Discussion and draft of the action plan for EIP 2019-2023 activities mapped to prioritised use cases and cross-platform activities.

3. Meeting Schedule

Time	Topic
Day 1:	
12:00	**Arrival & networking Lunch**
13:00	**EIP 2019-2023 Programme and F2F introduction** (EIP Leadership, Helen Parkinson) Slides: https://docs.google.com/presentation/d/1z7Dgo-1wDptvfrPHkSf4O9iZONzoXmVavUFvgcE84bY/edit#slide=id.g50c4f1b665_0_12
13:15	**2019-2023 Programme Task 2.1: Interoperability at Nodes** This session focuses on national interoperability capabilities, desires and roadmapping A roundtable of each represented node to present their case (5-min for each presenting Node), followed by dialogue on what each Node wants to get as a take-home message from this meeting? - NL: “FAIR Tools” discussion on roadmapping the next-round FAIR tools implementation - Rob Hooft/Chris Evelo/or delegate - FR: Interoperability challenges for integrative bioinformatics - Marie-Dominique Devignes - PT: Roadmap for accessible interoperability -Daniel Faria - BE: Node services with Interoperability aspect (FAIRDOM, PIPPA, ORCAE) -Frederik Coppens - - UK - Carole Goble
14:30	**Task 2.2: Interoperability for Communities** - Competency questions

	(Scenarios & Personae by use cases) (Key participants - Platform coordinators or delegate, Communities representatives) **Biohackathon 2019 Update - Jen Harrow** Stable url here **Community Statements** - **Moderator - John Hancock** - Marine metagenomics - challenges scaling CWL workflows, gap analysis of where we are from metagenomics point of view **Rob Finn** - Rare diseases - FAIRification services & procedure, use case: federated analysis; EIP service: FAIR-enabling registries, use case: making data interoperable by reviewed, shared models **Marco Roos** - IDP community - **Ivan Mičetić** **Key cross-platform activities (Lead - Hub Tech Team representatives, Jerry Lanfear/Sirarat Sarntivijai** - Tools/Compute-Interop communication gaps on CWL implementation in Marine Metagenomics use case (Jen Harrow) - Cross-platform challenges in Plant use case (Daniel Faria/Frederik Coppens) - Container deployment and provisioning strategic implementation study (Jonathan Tedds) - Cross-cutting Workflow WG (Carole Goble, Michael Crusoe) - Training co-production model, quality and impact programme, TeSS registry (Pascal Kahlem and Victoria Dominguez)
15:45	Coffee
16:15	Discussion on Task 2.1 / 2.2 (Moderator: Sirarat Sarntivijai)
17:15 - 17:30	Day 1 wrap-up and decision on Day 2 breakout sessions
Day 2	
8:45	Coffee & arrival
9:15	**Day 2 - Aim and overview - EIP Leadership, Carole Goble**
9:30	**Implementation Study report-back:** - Bioschemas IS - Alasdair Gray - CWL IS - Michael Crusoe - Validation IS - Frederik Coppens

10:00	**Workshop: mapping of RIRs and interoperability resources to use cases and cross-platform activities** Aim - to ensure the RIRs are aligned with communities and each other as well as implementation studies, also interoperability gap analysis. Each group to nominate a rapporteur - Cross-cutting CWL in the examples of Marine metagenomics, Plant - Rare Disease: FAIRification services and Federated Services - Intrinsically Disordered Proteins: What EIP support do we need in IDP Community? - Cross Platform challenges -> Identify the challenges and develop strategy to overcome the challenges - EIP Services mapping to Container Deployment and Strategic Implementation Study - EIP-Training co-production model, quality & impact assessment - what needs to be done?
11:00	Coffee break
11:30	Workshop report-back & discussion
12:30-13:00	Wrap-up - Workshop summary - nominate drafters - Note on EIP action plan outlining / to-do list, and shopping list of highlights and key challenges to revisit at ELIXIR All-hands Meeting in June 2019 - Each EIP programme task lead and task partners to take ownership of their tasks to develop the plan detail.
13:00	Closing networking Lunch

Notes of discussion:

EIP 2019-2023 Programme and F2F introduction (Helen Parkinson)

- Moving forward, still room to shape the actual activities in each task by the task lead
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2019-2023 Programme Task 2.1: Interoperability at Nodes? (13:15)

Netherlands by Marco Roos for Mark Thompson

Discussion of the next round of FAIR infrastructure

- *Specifications* as the outcome products
    - *Generic* data interoperability (high-level interoperability)
- Not (so) FAIR -> FAIRer
    - Plan -> Create -> Publish -> Find & (Re)use -> Evaluation
    - FAIR “Indicator”
- The FAIR Tool Ecosystem
- Questions to EIP:
    - How to improve FAIRification process?
    - Collaborative dev of FAIR enabling services & registries?
    - **FAIR Tool Ecosystem as RIRs? How do they relate/associate?**

<u>France</u>

Discussion of the challenges for integrative bioinformatics

- 31 platforms across IFB-core (www.france-bioinformatique.fr)
    - Interop working group
- 2 Challenges posted to EIP:
    - Interop of data/tools management - designing “dynamic” data management plans (dDMPs) , building an ecosystem of dDMPs (e.g., “ROADMAP” instance, CeSGO)
    - Bridging the gap between imaging and -omics data/processing tools - how to find the best ontology/schema (the semantic metadata), integrated knowledge graphs
- Other topics of interest
    - Medata provenance for workflows
    - Orphanet -> EJP-RD, …

<u>Belgium</u>

FAIRDOM as Data Management Hub, PIPPA for Plant Phenotyping, OrcAE community annotation of Eukaryotes, PLAZA comparative genomics platform: functional analysis

- Challenges:
    - Making BraPI-compliant for MIAPPE components
    - Exposing imaging data to plant phenotype mapping
    - Crowd-sourcing annotation & interoperability *in the cloud* (w/ IT), linking structural annotation to ENA
    - Data integration for functional analysis queries
- MIAPPE-compliant and FAIR: are they aligned? How do they relate? Any FAIR-capable tool?
    - MIAPPE is part of making your data FAIR

<u>Portugal</u>

- In the process of setting up PT-Interop Platform (biodata.pt) - Management, R&D, Services, Dissemination
    - Compute, Training, Communities
- Working focus around Plant (MIAPPE, BrAPI, PPEO/PEAO ontologies, MIAPPE ISA-Tab, MIAPPE spreadsheet)
- Challenges:
    - Researchers struggle to fill in the template spreadsheet and finding the standards/resources ---> **TOOLING**
    - FAIR data management
    - Needing “smart” automated validation (semantic encoding & usage

restrictions)
- ELIXIR-CONVERGE - lead plant pilot
- Training material under development with Eric Pelletier
- For discussion - National Structure of Interoperability alignment with Hub structure, User support

<u>UK</u>

- RIRs at UK: FAIRsharing, ISAtools, InterMine - How do they connect across and connect up?
- Other areas of interest from UK:
    - Toolkit to support Data Management (FAIR-at-Source for Interoperability with a Purpose)
        - FAIRDOM SEEK - integrative toolkit
        - COPO tools
        - ISA tools
    - Workflow Interoperability
        - CWL (Viewer) + MyExperiment (as workflow repository for reusing?)
    - FAIRification of data infrastructure (FAIRmetrics, capability models,
- Challenges
    - **Universal adoption across ELIXIR**
    - FAIR data management toolkits
        - Node-Node Co-operations aiming for national DMPs using UK tools
    - So many interop tools
        - What tools do I do?
        - **How do I use them together?**
    - **Need:**
        - FAIR Common data toolkit
        - EIP services integration - how FAIR are our own tools at EIP
        - Easier take-up
- Emerging Communities
    - Structural Bioinformatics
    - Microbial Biotechnology

Discussion:

- Compartmentalised services: is it a lack of communication or some fragmentation at ELIXIR?
    - Compartments by projects - how do we work the overlap of different projects?
    - Siloed work from Platforms
    - There are national favourites for the components of the toolkit (e.g. DataVerse)
    - “You cannot stop the fragmentation, but how do we bring them together?”

- Data management toolkit that can be configured with different sets of requirements (adoption of technologies, but not adoption of services)
    - From National level, down to the local communities

- User facing - Which one is adaptable, which one needs tweaking?
    - Issue of funding model - easy to get funding for developing tools, not to adopt existing

- Marco: role of the EIP platform: facilitator, showing what tools are existing

(communication)
- Siloed Platforms are becoming irrelevant when implementing, interop as the "Enabler" - an opportunity around FAIRness, scaling data flow,

- When a service is no longer usable, how are we retiring that service and let the users know? What should be the replacement service?
    - RIR is part of that process
    - People are not saying it out loud that something is not working because of the funding model
    - User's confusion adding to the issue - social networking model does not work. Benchmarking against objective criteria might help (is this tool still up and running? NOT is it favored by the users)
    - Social culture harder to handle
    - ELIXIR needs to have a deprecation process and legacy list - e.g. this resource is no longer active. As an alternative, you may want to use….
- Interop major activities are harder to define - when/how/what to do something using Interop services?
    - How are we going to do what with which tool and when in the process?
    - In comparison to other platform e.g., AAI for federated Compute, TeSS for federated training resources, CDRs for Data? Is that true? Does the Data platform focus on CDR interoperability? I don't think so

- Platforms as a venue to identify interested/relevant parties

Frederik: Usage of the interop tools depends on training people and use cases to work on, which can serve as demonstrators. Needs a strategy.
A round trip Bob and Alice.

Standards Standards Standards - everything is about interoperability

- Scenarios description from users (the user's stories are missing from the user requirements analysis - Bob & Alice stories). Who is the figure responsible from Platform to identify the user's journey/scenario? - gap identified.
    - Like Steve Jobs: We can build what people do not yet know they will need.
    - The stories need to make clear to users that they will run into issues that can be prevented/solved with a tool/resource we have available.

- Incentive to adopt a (new) technology - what is the return on your investment? What is the cost? What is the gain? How do we demonstrate that TO the stakeholders?
    - Building the knowledgehub is part of the answer

Task 2.2: Interoperability for Communities (14:30)

Biohackathon 2019 Update - Jen Harrow

Community Statements - **Moderator - John Hancock**

*Marine **metagenomics***
- CWL everywhere in the metagenomics (Execution frameworks, HPC environments) though not explicitly planned out the in the original EXCELERATE work description.

Demonstrators of workflows (CWL) working in the different cloud environments to recycle tool descriptions and sub-workflows
- Replacing Python with CWL in V5.0 pipeline development
    - Introducing forking for data input (differ from V4.x)
    - Viral annotation (quite different from bacterial and other annotation) - will use CWL
- Challenges:
    - Maturity and compliance between CWL execution environments
    - Data - compute localisation
    - CWL and containers link (container standards e.g., Docker vs uDocker vs Singularity, small vs big, certified containers and infrastructure policies)
- Question:
    - Implicit benchmarking -> when/how do we make it explicit?
    - Compute platforms have monitoring tools - can we incorporate into the workflow steering
    -

Rare Diseases
- Analysis of RD requires input from multiple resources involving many people, many diseases (>6000 diseases from 24 EU networks of RD expert centres)
- 17 M. Euros for EJP-RD for FAIR Infrastructure
    - Centralised + Federated, all must be FAIR
    - Data must be interoperable, **but are they?**
- Who are responsible for making data FAIR?
    - Resource engineer, disease experts, data modeller, data steward, ontologist, FAIR engineering consultant, FAIR data consultant, …
- Challenges:
    - How will the EIP help RD data stewards to do
        - F: Bioschemas? FAIRsharing?
        - A:
        - I:
        - R:
    - Platform for data steward to choose, create, share and mature the application models with peers and modelling experts?
    - tooling and documentation bottleneck, and the format of the document
    - Bob and Alice - data stewards and data consultants
    - Are the resources all registered in FAIRsharing.org? A collection of repositories, databases, standards and policies could be created that could help disseminate information to data stewards and others (e.g. ELIXIR CDR collection - https://fairsharing.org/collection/ELIXIRCoreDataResourcesandDepositionDatabases)

IDP
- What we are missing in IDP communities
    - Metadata implementation of “data: records beyond “data catalog” and “data set”
        - Need Bioschemas mark-up in the IDP not currently implementing Bioschemas markup for data integration/findability across different IDP DBs

    - Integration of different IDP databases containing different data types of IDP -> integration between DBs - import to IDP DBs (from UniProt, ELM, EU-PMC, IDEAL, DIBS, MFIB,...)
    - Export to corresponding CDRs (to InterPro, UniProt, IntAct)
        - Designing DisProt identifiers - how do we make identifiers for disordered region in the protein?
    - Need for ontologies for data description
    - Identifiers for disordered regions
    - ***Good exercise for IDP community and EIP - finding the optimal solution on identifier which tools do you really want in IDP community? ***
        - General value in EIP discussing interop needs with new Communities
- Changes of practices in CDRs to be more interoperable with new data?
    - Bioschemas example as a route?
    - How do CDRs accommodate additional requirements ??? Communication is good to understand why things are the way they are. There is also operational implementation that contribute to what may restrict how CDRs take in incoming new data.

Key cross-platform activities (Lead - Hub Tech Team representatives, Jerry Lanfear/Sirarat Sarntivijai) 16:00

<u>X-Platform (1): CWL enable reuse ,extension,scaling and reproducibility of scientific workflows</u>

- Tools-CWL: cross-cutting activities with Interop through different use cases: Metagenomics, Plant
- Challenges:
    - CWL vs Native workflow
    - How can Nextflow workflow be augmented with CWL expression? Should they?
        - Nextflow CAN be augmented in CWL expression but not for execution
    - ROLite -> the ‘all-in-one’ JSON-LD

<u>X-Platform (2): Cross-platform challenges in Plant use case</u>

- Interop-Data : BrAPI developed, but maybe missing a few concepts (that may exist in MIAPPE). Samples deposited in BioSamples, but missing standard concept of “sample”
- Interop-Interop : Need BrAPI <-> ISA Tab link, that is MIAPPE-compliant, need validation
- Interop-Compute/Tools: CWL
- MIAPPE, BrAPI, ISA-TAB/ISA-JSON all need to link together but not fully capable yet (note that are also no funds to do work)
- Questions
    - Training for people to use the standards? - No, this is the question of tooling that masks metadata technicality implementation
    - Contrast with the IDP use case (new community), in Plant use case, a lot of experts and maturity of services - still very challenging to bridge the different components together - still a learning process, e.g., MIAPPE got simplified to fit the purpose from having both MIAPPE and BrAPI already matured, then bringing them together is also difficult.

    - BrAPI is fully ELIXIR, MIAPPE is a wider community of development, there is latency when linking the two together in the case that we need to request new concept from MIAPPE
    - Alignment EMPHASIS and other Project challenges
    - End-to-end stories (e.g., data generation -> using the data in application) are still missing - not missing completely but different parts exist in different places/projects

X-Platform (3): Container deployment and provisioning strategic implementation study (Jonathan Tedds)

- Compute/Tools-Interop challenges from Container/Cloud Strategic Implementation Study
    - Common standards for computational infrastructures (data finding and transmission, software deployment, tasks execution, etc.)
    - Possible alignment/contribution to GA4GH standards
    - Provenance extraction from workflow execution
- Planned work:
    - Leveraging EOSC-Life Workflows infrastructure
    - Coordinating ELIXIR Data Discovery and Transfer Services
    - ELIXIR Infrastructure for orchestrating Containers & Workflows
    - Demonstrators at selected cloud infrastructures
- Challenges to be identified by the demonstrator: EOSC-Life <-> myExperiment
- Report-back that is more than 'what have you done?', need to also capture 'what have you learned?' that is far more useful.

X-Platform (4): Cross-cutting Workflow WG (**Michael Crusoe**)

- CWL giving a type of "openAPI" for tools descriptions
- Compliance testing of tools if you just add basic descriptions
- myExperiment will only include workflow descriptions not tools
- Keeping versions is also needed , bio.tools hasn't dealt with this elegantly currently (so history as well as latest spec)
- We've talked about this a LOT, but **what is the action plan to resolve this issue**?
    - CWL as which one? Tool's descriptor formaliser /OR/ Workflow?
    - When used as Tool's descriptor formaliser - how do we maintain/manage history versioning of the tool's description? Provenance and validation? (not in anybody's work plan right now?
    - How do we leverage the effort put in using CWL as tool's descriptor for native workflow applications (e.g., those in Galaxy Tool Shed)? What are the bottlenecks?
    - Main gaps come from Galaxy has domain specific data types where CWL is more generic and makes it more verbose eg doesn't have bioinformatics data types
        - User interface features are less elaborate than in Galaxy
        - Some datatypes not easily made into a string/variable
    - Colleagues in US are NHGRI funded to improve CWL so some of these features may become
    - Find an action plan in discussions tomorrow (see https://docs.google.com/document/d/1-mUA5BDAJzBD8tFCRhomLRloSK8PO9OGOBdnqQ3P2O0/edit#)

X-Platform (5): Training co-production model, quality and impact programme, TeSS registry (Pascal Kahlem and Victoria Dominguez)

- How Training Platform helps EIP training activities

Need to add training materials manually to TeSS. *It would be good to understand how we can use Bioschemas markup to harvest these.*

Day 2

Aim and overview - EIP Leadership, Carole Goble (9:15)

Implementation Study report-back: (9:30)

Bioschemas (9:30 - 9:39)

- Example of use that schema.org cannot cover - the biological entities e.g., genes, proteins ---> needing Bioschemas types
- 24 profiles (some need finalising)
- Very productive at Biohackathon -> identifying new approach in developing new types to be more schema-friendly (less ontology-restrictive)
    - 8 profiles refined, 7 new profiles, 11 new deployments (with more to follow)
    - Tools: generator, validator, search
    - Schema.org extension
- Where is Bioschemas being used in ELIXIR?
    - TeSS specialised search
    - FAIRsharing automated data curation
    - MarRef -> BioSamples data exchange without the need for APIs
- Next step: working to include Bioschemas into schema.org
- Under-construction: buzzbang bio-entity search
- Bioschemas F2F meeting 8th May 2019 Amsterdam
- Interoperability by Bioschemas is less obvious than Findability
    - Has to be done via e.g. JSON-LD/RDFa, but very confusing to the new adopters, less ontology more schematic
    - Not interoperability in terms of full biology integration ===> LIGHT-weighted linking (e.g., in biological modeling of patient data is a totally different story when mentioning interoperability)
    - Needs clear separation of the practices

CWL (9:40 - 9:49)

The EOSC Life -CWL briefing is here - lets add to this! (Sira will copy over the notes from here and organise the content into the EOSC-life briefing)

- Implementation (Study) to **Production!**
    - In production usage at EMBL-EBI (ENA, UniProt)
    - Being reused by IT-node use cases
- CWLProv GigaScience Paper now accepted (YaY)
- CWL v1.1 under review
- CWL tool in a fork of Galaxy (Galaxy-CWL fork), also including workflows in Galaxy workflow editor GUI -- working to move from fork into master branch as next step
- The remaining challenges:
    - “InterProScan is a problem” (Rob Finn) - big lumpy box of big workflows

    - Provenance reporting issue - combining standards and versioning history keeping, ROlite may be part of the solution
    - Container validation that satisfies the local security requirements
        - Execution strategy is the answer (e.g., for GDPR and policy to handle this)
        - “Container validation by default”
        - The Container SIS is also addressing this in their cases (Tools/Compute Platforms)
    - CLI CWL executor for HPC (toil-cwl-runner) needs additional community contribution
- CWL can describe workflows AND tools used in that workflow, CWL itself is not a platform but can be used on Galaxy platform for example -> CWL as a standard and ecosystem.

Data Validation (9:50 - 9:59)

- Biosamples is where the interoperability happens with BrAPI endpoints, BrAPI JSON schema (and JSON-LD schema), ISA tools (objects, JSON, configurator, validator), BRAVA validation, Bioschemas, ELIXIR validation - **V1.1 frozen now**
- MIAPPE (also in FAIRsharing)
    - Checklist data model v1.1
    - PPE ontology
    - JSON schema & JSON-LD schema
- ELIXIR & EIP plans
    - Shared infrastructure (ELIXIR JSON validator, Bioschemas - jsonld - ShEx)
    - First-mile platform (FAIRDOM, RIR) validate export to submit to CDRs/EDDs, ORCAE example
    - Validate input data for workflows (in Container SIS)
    - EOSC-life Plant demonstrator
    - ELIXIR-CONVERGE proposal
- Independent cases of validation tools/cases need to be linked/joined up to understand the consolidated learning

Break-out - mapping EIP services to use case and x-platform activities (Until 11:00)

Proposals:

- Merging CWL and Containers
- Training infiltrates the other groups and the groups embrace them
- Can we see how Bioschemas could be used in each of the groups? In FAIRplus squad? Do we have up to date use cases?
- Eating dog food

Rob Hooft would like to discuss Research Objects and Digital Objects (GEDE/GO-FAIR)

Break (11:00)

CWL meeting:

- https://twitter.com/biocrusoe/status/1107542831902547968
    - https://renci.org/technical-reports/tr-19-01/
    - “[with CWL we are] able to scale the workflows across geo-distributed regions across clouds and place the jobs close to the input datasets for improved performance in network I/O and reduced cost for egress network traffic.”
    - https://renci.org/technical-reports/tr-19-02/
    - “running the CWL workflows [using] “cost-aware” [scheduling] saves up to $2,092 (92.2%) in total for 30 workflow runs”
- NIH Data Commons Not moving data BDBags….RO-based bags
-
- Dummies guide to CWL, and would be useful to have a diagram (slide deck
- Would be useful to have use cases and counter examples where it could not be used
- Spotify type video/cartoon https://labs.spotify.com/2014/03/27/spotify-engineering-culture-part-1/
- clarify what it is good for /training
- EOSC Life -CWL briefing is here - where we are trying to gather user stories, gap analysis
- Roadmap for CWL
    - GA4GH and how things are going to be done are there standards around CWL and ELIXIR blessed ?
    - User driven choice of what to use TOIL, kubernetes etc
- Whats it in scope for ELIXIR to support?
    - If it’s execution, we need a “workflow as a service” and a compute provider view
    - What is the fall back as ELIXIR needs to support this if decide to use CWL workflow
        - Galaxy would not be the fall back as a CWL default runner.
        - ELIXIR needs to support the fall back
        - How is that done amongst the nodes?
        - Service bundles - its software development
        - Should this be a discussion with compute platform although they are focused on orchestration and now really development support CWL?
        - Need to collect user stories and platform experience , who are we serving ?
        - Task:collect user story and how can we support them
        - Gap analysis : which platform will do what (EIP, ECP?, SIS)
        - Need to deliver within the next 6 months something that works within EOSC-life
            - Which demonstrators from EOSC-life should we align with ?
            - Use CWL for the registry part, although Michael not sure when export function finalised for CWL
            - WP2 (workflows) and WP 7 (compute), WP3 (demonstrators) WP6 (prov)
            - Need to share workflows and focus on interop and assume ROLite and CWL as description language and Galaxy
            - Discussion when does a workflow become a tool and when is a container become a tool (need clarification around these issues for user stories -within 2 months)
                - Carole’s group starting to deploy this in IBISBA
            - Need MVP EOSC-life workflow platform for the new

demonstrators to submit end of year (Nov)
    - myExperiment 2.0 will be a CWL registry pointing to workflows that ELIXIR will support and don't want to archive this
    - 3 key challenges
        - Explaining CWL to the user
        - Defining CWL interoperability
        - Data management planning analysis (identifier management)
        - identifiers in workflows - minids
    - Identifiers.org needed and need reference data sets IDs (DOIs) and IDs that are cited

FAIRification

- Resource for scaling up BYODs especially bringing in more trainers

EIP support for IDP

X-Platform challenges

Discussions:

- Funding not coming in from ELIXIR to support scaling up in all aspects
- Interactions with other communities
    - Anything central? currently strategic and not operational. How do make this more operational?
    -

https://www.dona.net/digitalobjectarchitecture

- Outreach task in EIP
- DISSCo and GO-FAIR driven, appears in the Turning FAIR into Reality Roadmap
- GEDE Digital Object Topic Group (Nick Juty is attending for ELIXIR EIP)
- https://www.rd-alliance.org/group/gede-group-european-data-experts-rda/wiki/gede-digital-object-topic-group

Data Stewards

- https://en.wikipedia.org/wiki/Data_steward - is this what we mean?
- https://osf.io/mjk9t/ Data Stewardship – addressing disciplinary data management needs, 2018-01-22 01:20 PM | Last Updated: 2018-01-29 01:32 PM