



FAIR Culture: Agreements on data availability and description, data management plans, recognition and reward, policies - Pillar 2

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Information on the participants, the projects and working groups that they represent, and the spreadsheet used during the workshop can be found in the workshop report: <https://doi.org/10.5281/zenodo.3953979>

All recommendations and the action plan can be found on pp. 59-75 in *Turning FAIR into Reality*: https://ec.europa.eu/info/sites/info/files/turning_fair_into_reality_1.pdf.

This session is about recommendations 4, 5, 6 (priority) and 18, 19, 20, 21. The focus was on the three priority recommendations and on what is missing or undervalued in the TFIR recommendations.

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Ahead of the session we attempted to add the information that participants provided in the spreadsheet to the relevant sub-actions in Turning FAIR into a Reality. Text under “Discussion” was added during and after the workshop session.

Rec. 4: Develop interoperability frameworks

Research communities need to be supported to develop interoperability frameworks that define their practices for data sharing, data formats, metadata standards, tools and infrastructure. To support interdisciplinary research, these interoperability frameworks should be articulated in common ways and adopt global standards where relevant. Intelligent crosswalks, brokering mechanisms and semantic technologies should all be explored to break down silos

4. Develop interoperability frameworks for FAIR sharing		
4.1	<p>Enabling mechanisms must be funded and implemented to support research communities to develop and maintain their disciplinary interoperability frameworks. This work needs to</p>	<ul style="list-style-type: none"> ● Recommendations on semantics and research data management (ExPaNDS, FAIRsFAIR WP2) ● Report on (meta)data interoperability problems, https://doi.org/10.5281/zenodo.3569





	<p>be recognised and incentivised to reward stakeholders for enabling FAIR sharing.</p>	<p>867 (SSHOC)</p> <ul style="list-style-type: none"> • D4.2 Intermediate Analysis Report on Use of IVOA Standards for FAIR ESFRI and Community Data (ESCAPE) • D4.8 the "Final analysis report on use of IVOA standards for FAIR ESFRI and community data and best stewardship practices for value-added data (ESCAPE) • Interim report on interoperability (EOSC Interoperability TF)
4.2	<p>Examples of FAIR use cases and success stories should be developed to convince reluctant research communities of the benefits in defining their disciplinary interoperability framework.</p>	<ul style="list-style-type: none"> • Implementation stories and template (FAIRsFAIR WP3) • Inventory of SSH citation practices https://doi.org/10.5281/zenodo.3595964 (SSHOC) • D3.6 Report on SSHOC format interoperability solution services, including new software (SSHOC)
4.3	<p>Common standards, intelligent crosswalks, brokering mechanisms and semantic technologies should all be explored to break down silos between communities and support interdisciplinary research.</p>	<ul style="list-style-type: none"> • Ontology service development (ExPaNDS WP3) • Integration and harmonisation of metadata catalogues and APIs (FAIRsFAIR WP3, ExPaNDS WP3, PANOSC) • D3.5 Report on integration and exploitation of citation and semantic annotation in SSH catalogues (Aug2021) • Will elaborate on publishing and harvesting repository metadata in a form that could be used to catalogue them. • D3.1 Best practices for on-boarding and related policies: https://zenodo.org/record/3736143#.Xrna0Wgzbc8 (NI4OS) • D3.3 Report Populating EQB, meeting DDI standards (SSHOC) • Use of the Wilkinson et al. 2019 evaluation indicators, which has a





		<p>strong focus on interoperability via use of a number of machine actionable metadata related to knowledge representation and FAIR vocabularies. Detailed in D4.1 (Aug2020) and D4.3 (Feb2022). (EOSC Nordic)</p>
4.4	<p>Mechanisms should be facilitated to promote the exchange of good practices and lessons learned in relation to the implementation of FAIR practices both within and across disciplines. Case studies for cross-disciplinary data sharing and reuse should also be collected, shared and used as a basis for the development of good practice.</p>	<ul style="list-style-type: none">● D3.4 Multilingual ontologies for Occupation, Industry, Regions and cities, Food items, and Religion, with use case (SSHOC)● Implementation stories and template (FAIRSFair WP3)● Competence Centre and Knowledge Bases (FAIRSFair)● Data stewardship training (FAIRSFair WP6)● Final report sprint on practices and resources (EOSC FAIR Practice TF)● Training events on Open and FAIR RDM in the three domains that NI4OS-Europe will provide support: Digital Humanities (done), Climate and Life Sciences

Discussion

Recommendations - interoperability, semantics, good practice

- are the recommendations ready/in progress/planned and who is being targeted by the recommendations?
 - **ExPaNDS** - D2.2/2.7 Draft/Final Recommendations for FAIR Photon and Neutron Data Management. (Aug 2020/Feb 2022) - ExPaNDS is currently looking at the metadata that is available at the different stages of the experimental lifecycle and which of these metadata are essential for FAIR. The aim is to produce a conceptual framework for FAIR metadata for the experimental lifecycle. ExPaNDS will then take this further and recommend PIDs or metadata standards where it seems reasonable to do so. The resulting framework will then be implemented through various other activities of the ExPaNDS project (e.g. data catalogues, DMPs, data analysis services). For the final deliverable, ExPaNDS also plans to look at the recommended framework in relation to use cases. Different people/roles/machines are involved with collecting/providing metadata at different stages of the experimental lifecycle.



- **PaNOSC** will make fair recommendations as part of the data policy update. This is in collaboration with ExPaNDS.
- **FAIRsFAIR** WP2 - D2.1 “Report on FAIR requirements for persistence and interoperability” and D2.2 “FAIR Semantics: First recommendations”, that are [open for community review](#), are primarily targeted to “technical” people.
- **EOSC FAIR WG**: the WG has four Task Forces.
 - Interoperability Task Force:
 - Draft EOSC Interoperability Framework to be shared one of these days for consultation.
 - FAIR practice task force:
 - Report on FAIR practice will be written at the end of June and will be made available for consultation mid-July (following a webinar on 9 July 2020)
 - [The Task Force constantly updates the reference list for FAIR in practice](#)
- **ESCAPE** - the IVOA meeting made progress last week on an interoperability framework for astronomy – that will go into ESCAPE project, which is helping the ESFRI projects to interface with EOSC-related tools and facilities.
- Remark: a lot of these activities are going on **within** research communities, but much research work is **cross-disciplinary**. Therefore it is between research communities that apparently have nothing in common, like heritage and industry, that we need data to be FAIR, as well as FAIR-enabling tools to enable collaboration. SSHOC deliverable “[D3.1 Report on SSHOC \(meta\)data interoperability problems](#)” could be an example.

Metadata catalogues

- which repositories will you aim to engage and is there potential to align this activity across projects?
 - **NI4OS** - WP5 has compiled a list of repositories per country that NI4OS partners have started reaching out in order to work with repository managers and enable metadata exchange between literature, data and software repositories across domains but also more generic once found within academia and research. Interoperability of other types of repositories will be explored, but is not a priority.
 - **ExPaNDS** - many facilities have their own catalogues, but they - aim to - connect through PaNOSC. ExPaNDS works to enable the data analysis services for the EOSC scale. The work on metadata for different stages of the life cycle feeds into this. Also they are developing the ExPaNDS ontology, to ensure that we have not just a common syntax but also common semantics in the metadata catalogues and data analysis services.
 - **FAIRsFAIR** - looking across disciplines. A basic question is “What is a metadata catalogue?”, because different people have different expectations, which is tricky when one tries to align catalogues.



- **PaNOSC** - Photon and neutron facilities have their own metadata approaches. PaNOSC is providing an API to search across multiple metadata catalogues, run data analysis on data they find (this is work done in WP3, which is closely linked with ExPaNDS). Federated AAI (from EOSC) is integrated into PaNOSC services as part of WP6 Eosc Integration.
- **Action** - projects may want to share information on repositories that will be involved in metadata catalogue work and testing, in order to avoid overlap and get good representation across domains and RPO types.

Use cases and success stories

- is a format for your use cases already defined and is there potential to share use cases across projects to show good practice in different domains?
 - **FAIRsFAIR WP3** - designed a template for sharing [implementation stories](#) of how use cases relating to the “Turning FAIR into Reality” action points are being met, whether in FAIRsFAIR or elsewhere. The stories will be based on interviews and desk research and shared via the FAIRsFAIR competence centre. FAIRsFAIR is actively seeking collaboration on this.
 - An informal EOSC Cluster Collaboration group, coordinated by SSHOC, and comprising the cluster projects’ communication and engagement representatives, is also discussing common science use cases that they propose EOSC should meet. A template has been circulated in the group for that purpose (no URL available).
 - **EOSC FAIR WG** - the FAIR Practice Task Force [collected](#) published reports and selected stories. If people have reports from their communities with relevant stories, please add them. The Task Force also invites feedback.
 - **NI4OS** - D3.1 Best practices for on-boarding and related policies: <https://zenodo.org/record/3736143#.Xrna0Wgzbc8>

Views from European Group of FAIR Champions:

More **cooperation** amongst institutional/thematic/research communities repositories and infrastructures needed. Interdisciplinary and **sustainable tools and standards** are much needed so that data can be FAIR for different disciplines and communities of research. CSIC, as a multidisciplinary research institution, is used to sharing experiences through interviews. It may be possible to select of their some stories and translate them from Spanish into English for sharing. (FAIR Champion 1)

Rec. 5: Ensure data management via DMPs

Any research project producing or collecting research data must include data management as a core element necessary for the delivery of its scientific objectives, and should address this in a Data Management Plan. The DMP should include all the relevant project outputs and be regularly updated to provide a hub of information on FAIR Digital Objects



Rec. 5: Ensure data management via DMPs		
5.1	Research communities must be required, supported and incentivised to consider data management and appropriate data sharing as a core part of all research activities. They should establish a Data Management Plan (DMP) at project outset to consider the approach for creating, managing and sharing all research outputs (data, code, models, samples etc.).	<ul style="list-style-type: none">● Recommendations for FAIR Photon and Neutron Data Management. (ExPaNDS WP2)● D3.4 Recommendations on FAIR practice (FAIRsFAIR)● Producing a FAIR DMP via Argos and contributing to enhancing the Argos tool with standards (NI4OS)● D4.1 – Best Practices Elicitation including Data Management Plans (EOSC Synergy)● ESFRIs have high level data management plans that are integrated into their operations, and under their responsibility. At a different level, projects and researchers are being required to specify a DMP in research proposals. ESCAPE WP4 is promoting certification of repositories (CoreTrustSeal) to raise awareness. (ESCAPE)
5.2	DMPs should be living documents that are implemented throughout the project. A lightweight data management and curation statement should be assessed at project proposal stage, including information on costs and the track record in FAIR. A sufficiently detailed DMP should be developed at project inception. Project end reports should include reporting against the DMP.	<ul style="list-style-type: none">● D3.4 Recommendations on FAIR practice (FAIRsFAIR)
5.3	DMPs should be tailored to disciplinary needs to ensure that they become a useful tool for projects. Research communities should be inspired and	<ul style="list-style-type: none">● D2.4/8 (Active) DMPs for Photon and Neutron RIs (ExPaNDS)● DMP template for facilities will





	empowered to provide input to the disciplinary aspects of DMPs and thereby to agree model approaches, exemplars and rubrics that help to embed FAIR data practices in different settings	be developed in WP2 (PANOSC) <ul style="list-style-type: none">• Not a priority in our WP, but one use-case in WP5 on DMPs (EOSC Nordic)• D4.4 DMP certification tool particularly focused on licensing aspects (demo (github/source link ?) due July 2020) (NI4OS)• Argos collection of templates will be enhanced with discipline specific standards and guidance throughout the project to facilitate tailored to specific disciplines needs training events performed by NI4OS-Europe partners.
5.4	The harmonisation of DMP requirements across research funders, universities and other research organisations, as has been initiated by Science Europe and some RDA groups, should be further stimulated.	<ul style="list-style-type: none">• D3.4 Recommendations on FAIR practice (FAIRsFAIR)

Discussion:

DMP templates

- Which disciplines/sub-disciplines are being covered, are you aiming to work with specific DMP tools and will you develop associated guidance?
 - **NI4OS** - interested to support both researchers and data stewards. NI4OS uses the [Argos](#) tool for writing its DMP (due November 2020).
 - **PaNOSC** - Photon and neutron facility users have to apply for beam time, and they need to understand the volume of data they will produce. These facilities produce a lot of data, and users are not necessarily used to managing large volumes, or working with data management plans. A machine-actionable DMP (maDMP) tool is being implemented to access the beam time proposal mechanism and ask users e.g. what volume of data will be created. This will assist in identifying services that can be made available from the facility to manage the data. It will help facility managers in provisioning the resources to curate the data and analyse it. PaNOSC has a training WP, as there is a need for training and guidance of users of the facilities and the research



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infrastructures providing them. This also will help Research Infrastructures to take responsibility for helping researchers provide the data access statements they need to meet Journal requirements.

- **ExPaNDS** - deals with similar DMPs and communities as PaNOSC. For the integration with funder requirements ExPaNDS creates a template that is automatically populated as much as possible, to reduce the amount of work. A maDMP should follow the user through the life cycle. Currently there is no collaboration with the RDA "[DMP Common Standards](#)" [Working Group](#), but that may emerge from this workshop session ;)
- **FAIRSFair** - recommends (in D3.4, to appear) the DCC for DMPonline to apply the RDA standard for machine-actionable plans, to support use cases for informing repositories or data centres about what requirements DMP authors have indicated in their plans. FAIRSFair WP3 also intends to gather and share examples of how similar use cases are being met in other projects.
- **EOSC Synergy** - also caters to commercial partners, with different SLAs. They notice that DMPlanning in industry is really different from the academic research setting, and unrelated to the life cycle.

View from European Group of FAIR Champions:

In the current national initiative setting up federated data management infrastructures across Austrian universities a core building block is the development and full integration of maDMPs driving and connecting the various repositories, cross-linking to the institutional registries (CRIS systems) and providing APIs for funders to ease the administrative load and ensure the information in DMPs is (automatically) collected from the relevant sources and continuously updated. DMPs have served well the purpose of awareness raising about data management, but there is now a need to push on to the next step of making DMPs useful for them, using structured DMPs that are living documents, and are filled as little as possible by researchers. (FAIR Champion 2)

The astronomical Virtual Observatory is the interoperability framework for astronomy data and services. The International Virtual Observatory Alliance (since 2002) is the body that oversees the development of standards that form the basis of the framework. As the Euro-VO member in IVOA I use my champion role to widely inform the astronomy community about this framework, and the rapidly emerging context of Open Science, FAIR and EOSC. (FAIR Champion 3)

Giving support and evaluating DMPs is consolidating as a service in universities/research performing organizations (eg, it is becoming but another library service within the portfolio of research data management services). Harmonizing DMPs within institutions and calculating the cost and effort dedicated by institutions are key to plan solid data intensive workplans. (FAIR Champion 1)





Research Council of Spain is mandating FAIR data to its researcher community since its OA mandate entered into force in 2019. The institutional repository has prepared a harmonised [DMP template](#) to help researchers fit their plans to include institutional aspects of data management. Training for research project managers has also been introduced to ensure they can learn about things close to their day to day work, like metadata standards and other things that it is their responsibility to act on – leaving it to the institutional side to complete the DMP on the services they will provide for e.g. preservation. (FAIR Champion 1)

Rec. 6: recognise & reward FAIR Data & stewardship

FAIR data should be recognised as a core research output and included in the assessment of research contributions and career progression. The provision of infrastructure and services that enable FAIR data must also be recognised and rewarded accordingly

Rec. 6: Recognise & reward FAIR Data & stewardship		
6.1	Policy guidelines should recognise the diversity of research contributions (including publications, data sets, code, models, online resources, teaching materials) made during a researcher's career and explicitly include these in templates and schema for curricula vitarum, for researchers' applications and activity reports.	<ul style="list-style-type: none">● D4.1 Incentives for supporting ORDM and FAIR, https://zenodo.org/record/3736148#.XoYMflgzY2w (NI4OS)● D4.8 the "Final analysis report on use of IVOA standards for FAIR ESFRI and community data and best stewardship practices for value-added data". It should include some consideration of recognition of data stewardship. (ESCAPE)● Policy enhancement recommendations (FAIRsFAIR D3.3)
6.2	Credit should be given for all roles supporting FAIR data, including data analysis, annotation, management and curation, as well as for participation in the definition of interoperability frameworks, whether contributing to existing resources or developing new.	<ul style="list-style-type: none">● Policy enhancement recommendations (FAIRsFAIR D3.3)● D3.4 Recommendations on FAIR practice (FAIRsFAIR)● Badging could play a role here too● Incentives are mapped and innovated for FAIR uptake in T4.3 (2021-2022) and will be



		detailed in D4.4 (Apr2022). (EOSC Nordic)
6.3	<p>Evidence of past practice in support of FAIR data should be included in assessments of research contribution. Such evidence should be required in grant proposals (for both research and infrastructure investments), among hiring criteria, for career advancement and other areas where evaluation of research contribution has a legitimate role to play. This should include assessment of graduate students.</p>	<ul style="list-style-type: none"> ● Badge issuing (for Software & Service Quality Assurance) - linked to but not focused on FAIRness Assessment. (EOSC Synergy M3.4) ● Badging of FAIR datasets, FAIR Assessment (manual and automated) (FAIRsFAIR T4.5) ● D4.1 Incentives for supporting ORDM and FAIR, https://zenodo.org/record/3736148#.XoYMfIgzY2w (NI4OS). In the WP for training, NI4OS has mentioned the adoption of badges for train-the-trainer activities performed within the NI4OS countries by its national representatives, but not for FAIR in particular.
6.4	<p>Contributions to the development and operation of certified and trusted infrastructures that support FAIR data should be recognised, rewarded and appropriately incentivised in a sustainable way.</p>	<ul style="list-style-type: none"> ● D4.1 Incentives for supporting ORDM and FAIR, https://zenodo.org/record/3736148#.XoYMfIgzY2w (NI4OS) includes provisions for certifications and technical operations that are driven by Open and FAIR RDM

Discussion

FAIR Assessment and badging

- Have you defined criteria for assessing FAIRness and have you defined a mechanism for badging yet?
 - **EOSC Synergy** - The focus of badging in EOSC Synergy is on quality assurance, not primarily on FAIR. The idea is to have a range of badges with associated metadata, for different levels of quality. Badging comes close to EOSC rules of Participation: one could for instance give service providers a badge that is associated to the level of their service. The notion of badges can also be linked to maDMPs (see above). EOSC Synergy also pays attention to software quality,





see “State of the art regarding digital badge issuing technologies” (<http://dx.doi.org/10.20350/digitalCSIC/12505>) and “A set of Common Software Quality Assurance Baseline Criteria for Research Projects” (<https://github.com/indigo-dc/sqa-baseline>) . EOSC Synergy is interested in partnering with other projects, although this is not linked to a formal deliverable.

- **FAIRsFAIR** - WP4 puts effort into piloting with FAIR data assessment, both manual and automated.
- **Remarks/discussion:** the topic of badging raises several questions about their own quality, e.g. who issues the badges, how to handle changes of the “badged” content, how to choose from different - i.e. competing - “flavours” of FAIR badges, how to ascertain their credibility.

View from EOSC FAIR WG:

Defining metrics and certification will support **rewarding FAIR data & stewardship** by helping to identify people and services which put best practices into action (but they should be applied with care).

Views from European Group of FAIR Champions:

CSIC institutional mandate came into force last year and 2020 is the first year of implementation. The level of **compliance** will have an impact on institutional research assessment exercises. (FAIR Champion 1)

Contributions to data, services and software is becoming more recognised in Astrophysics, but FAIR and "stewardship" are still relatively new in the vocabulary of researchers. Effort is being made to highlight these in the various European and US roadmaps and decadal plans for the field. Inclusion in the Astronet roadmap will be important in Europe. (FAIR Champion 3)

Rec. 20: deposit in Trusted Digital Repositories

20.1 In place

*What have the projects **already done** that addresses this recommendation? This should build on the information in the spreadsheet. Please check that there is a link to the concrete deliverable.*

20.2 Planned

*What are the projects represented **developing or planning** to do? Again, this should build on the information in the spreadsheet: information about a planned deliverable, i.e. title, due date, short description*



- D3.3 Demonstrate ICAT and SciCat released with **APIs** compatible to (ExPaNDS, Feb 2022)
- Development of common metadata catalogue **API** and implementation report from facilities. Could include work towards **trusted certification**. (PANOSC)
- One of the goals of the project is to **certify specific processes** of RDM. Within the work of WP4 and WP5 best practices for repositories are examined (NI4OS)
- Activity to support the **certification of repositories**. Results will be published in D4.5 "Implementation of certifications and data standards" (EOSC Nordic)
- Support for repositories to achieve **CoreTrustSeal certification** and maturity model (FAIRSFair WP4)
- D3.3 Policy enhancement **recommendations**, D3.4 Recommendations for FAIR practice, D3.5 Description of **transition support** for repositories (FAIRSFair)

View from the EOSC FAIR WG

The **recommendations on certification** of FAIR enabling services will support the policies of depositing data in trusted repositories by allowing data producers to identify them.

Views from European Group of FAIR Champions:

DIGITAL.CSIC got awarded with DSA late 2015. Too much **strain on repositories** coming for several types of certifications may be counterproductive and ineffective. (FAIR Champion 1)

A series of digital repositories are being developed for a range of content types (e.g. source code, publications, file-based data repositories, structured (RDBMS) based data) as part of the national digitization initiative for Austrian universities. This may be complemented with an additional high-security infrastructure currently set up at TU WIEN for highly sensitive data (medical and commercial) based on the principles of the DEXHELPP infrastructure that has been operational at TU WIEN for several years to support data visiting of sensitive data. (FAIR Champion 2)

Rec. 18: cost data management

18.1 In place

*What have the projects **already done** that addresses this recommendation? This should build on the information in the spreadsheet. Please check that there is a link to the concrete deliverable.*

- Training on Open and FAIR RDM also focuses on two aspects of RDM costs: how researchers can calculate costs following the different steps of a data management lifecycle, and how institutions/ providers can calculate the costs to build curation services (NI4OS)





Discussion:

In the strawman and tinman reports the EOSC Sustainability WG presented a funding model for a Minimum Viable EOSC. These reports are a good reference for institutions and projects, also in relation to costing the trade-off between humans and machines.

18.2 Planned

*What are the projects represented **developing or planning** to do? Again, this should build on the information in the spreadsheet: information about a planned deliverable, i.e. title, due date, short description*

- D3.3 Policy enhancement recommendations, D3.4 **Recommendations** for FAIR practice (FAIRsFAIR)

Views from European Group of FAIR Champions

This is a paramount issue for research performing institutions with research data policies in place and **should be a priority recommendation**. CSIC mandate covers long tail and big data and different infrastructures are being put in place to provide all types of services. Long term curation is very closely linked to preservation and global FAIR Data practices and recommendations and research organizations/funders **policies need to be more closely aligned**. Institutional services being offered to its researcher community includes curation, deposit, DOI minting, publication and preservation of institutional research data. For research institutions and research communities to take FAIR data management seriously it is necessary to **budget** it properly. (FAIR Champion 1)

Cost estimation is a key component in the maDMP infrastructure developed at TU WIEN, with an initial focus on provisioning of cost information by the central computing facilities for processing and bit-stream preservation, to be expanded with more complex cost models for additional stewardship activities as services are being rolled out. (FAIR Champion 2)

Rec. 19: select and prioritise FAIR digital objects

19.1 In place

*What have the projects **already done** that addresses this recommendation? This should build on the information in the spreadsheet. Please check that there is a link to the concrete deliverable.*



19.2 Planned

What are the projects represented **developing or planning** to do? Again, this should build on the information in the spreadsheet: information about a planned deliverable, i.e. title, due date, short description

- Implicitly support **FAIR Digital Objects** towards data providers, but not explicitly towards researchers (EOSC Nordic)

View from the EOSC FAIR WG

FAIR Practice TF: practices of different communities. (**Francoise Genova**)

Views from European Group of FAIR Champions

This closely links with long term preservation strategies. Recommendations and know how about **selection criteria** in long term digital preservation plans may be handy for this task (eg <https://unesdoc.unesco.org/ark:/48223/pf0000244280>, <http://www.digitalpreservation.gov/about/initiatives.html>) and see how well they may be adapted for FAIR Digital Objects. Considerations about **copyright** and preservation are also important (for instance, it is addressed in new Copyright Directive in the EU). (FAIR Champion 1)

Rec. 21: incentivise reuse of FAIR outputs

21.1 In place

What have the projects **already done** that addresses this recommendation? This should build on the information in the spreadsheet. Please check that there is a link to the concrete deliverable.

21.2 Planned

What are the projects represented **developing or planning** to do? Again, this should build on the information in the spreadsheet: information about a planned deliverable, i.e. title, due date, short description

- Federated EOSC services (ExPaNDS)
- D4.1 Incentives for supporting ORDM and FAIR, <https://zenodo.org/record/3736148#.XoYMfIgzY2w>, has been published but incentives have not been adopted through national initiatives (NI4OS)
- D2.2 : National OSC initiatives models (due August 2020) (NI4OS)
- Will also be addressed to some extent in: D4.4 Policies and incentives, D4.3 FAIR uptake (EOSC Nordic)



Views from European Group of FAIR Champions

Under evaluation. On a general note, support, good practices and recognition of efforts that show, measure and monitor the degree and extent of FAIR data reuse are very handy- also to conduct return on investment analyses. (FAIR Champion 1)

Whole-Pillar.1 What's missing in the recommendations and actions in this pillar?

What do projects do - related to implementing FAIR in the context of the EOSC - that is not covered by the original recommendations? Should it be included in an updated action plan and revised set of recommendations? Please focus on this pillar.

Discussion:

proposal to move supporting recommendations up to priority level:

- **Participant 1:** it's not so much "missing from the original recommendations", but one could argue that recommendation 18 about costs should be a "priority recommendation" in TFIR rather than a "supporting recommendation".
- **Participant 2:** similarly, the role of trust and building (recommendation 20) trust should be moved up the ranking of importance.
-
- more awareness raising and tools for "rightfully restricted can be FAIR enough"
- **Participant 3:** in promoting FAIR data and implementing the recommendations, the focus often seems to be limited to data that can be open. Maybe we should focus a bit more on the mass of data that, for valid reasons, can't be opened. There should be a stronger focus on "FAIR for closed data". It could help motivate researchers towards FAIR if they know it can be restricted for subject privacy or industrial commercialisation reasons. This has motivated the concept of data visiting vs data sharing. There is a need for solutions to make that easier, for example through automated processes for requesting access via the metadata record, through anonymisation, and through encryption techniques that allow computational access for processing without anyone seeing the data. This is not absent from the TFIR recommendations, but people don't see it because they tend to identify FAIR with Open.
- **Participant 4:** we see this also in the repository world: rightfully restricted data are often considered "not FAIR" as the detailed criteria are difficult to apply without leading to a low rating, even for well-managed data that needs to be restricted.

More awareness raising that FAIR plays a role in Open Science:

- **Participant 2:** FAIR (as a movement) should do more to make the link between FAIR and Open Science transparent. The ethical value of FAIR for research seems to have got a bit forgotten among conversations about interoperability, certification and metrics. At the most basic level FAIR can play a massive role in something as simple as making sure researchers - as well as research software developers and data stewards - get visibility and credit for the work they have done in terms of dataset generation



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and data support. This helps to re-distribute value away from just publication to other parts of the science system, which fits inside the theme of Open Science. Note: this also relates to Recommendation 6 (recognise & reward).

