

Open Science Trails

Machine-actionable DMPs - for controlling and empowering support for research

17.5.2024

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ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN















THESSALONIKI



















Walking the pathways together





OSTrails project – Putting FAIR into practise OSTrails FI Pilot in co-creation with other pilots

OSTrails project

PLAN: Increase the efficacy of DMPs

TRACK: Establish an open, interoperable and high quality SKG ecosystem

ASSESS: Deliver modular and extendable FAIR tests

National pilots #15

GR, PL, HR, NO, IR, RS, AT, ES, CZ, PT, NL, FR, FI, SE, DE

Thematic pilots #9

2 Multidisciplinary / Cross domain, 2 Social Sciences & Humanities, Language Resources, Biodiversity, Marine/Coastal, Physics, Astronomy and particle physics

Horizon Europe pilot



15+9+1 pilots

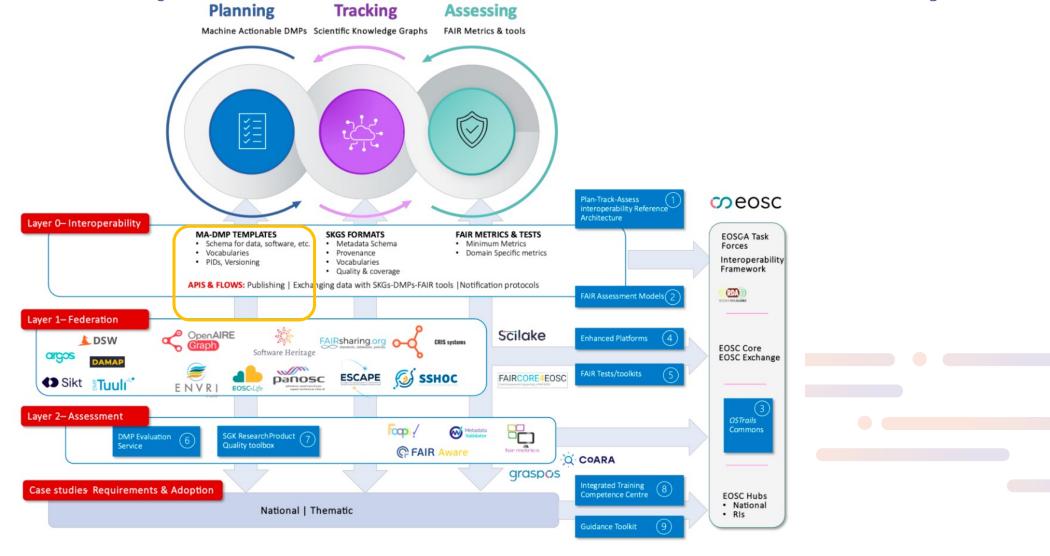


5 ESFRI clusters





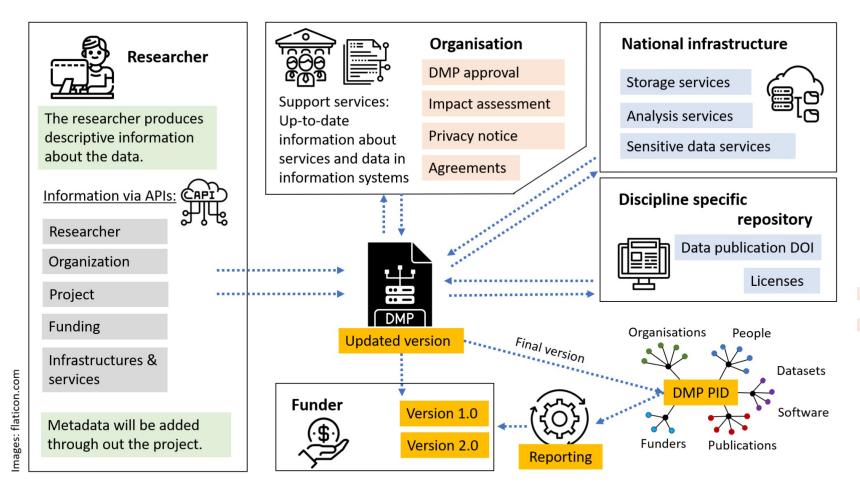
OSTrails - Open Science Plant-Track-Assess Pathways







Core idea of the machine actionable Data Management Plans - maDMPs



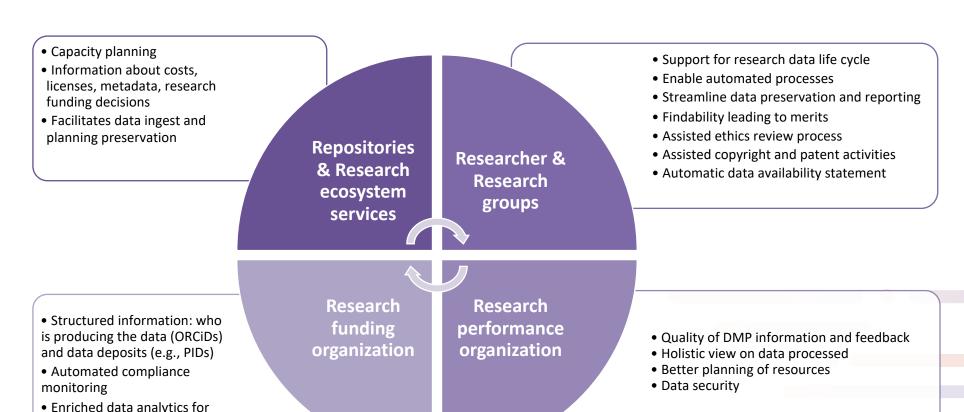
Our aim in OSTrails

Turning DMPs from static narratives to living, interconnected resources

Making DMPs the instrument of choice for assessing and improving quality of RDM



Benefits of machine actionable data management plans (maDMPs) - as integral part of research practise







impact assessments

Objectives of OSTrails FI Pilot as part of entire OSTrails project objectives

maDMP

Turning Data Management Plans from static narratives to living, interconnected resources



DMPs for RDM

Making DMPs the instrument of choice for assessing and improving quality of RDM



SKGs

Ensure that Scientific Knowledge Graphs are accessible, interoperable and exploited in a more networked scholarship

FAIR metrics

Development of modular and extensible FAIR tests

Web of FAIR

Advance the vision of the European Open Science Cloud (EOSC) Web of FAIR data and services



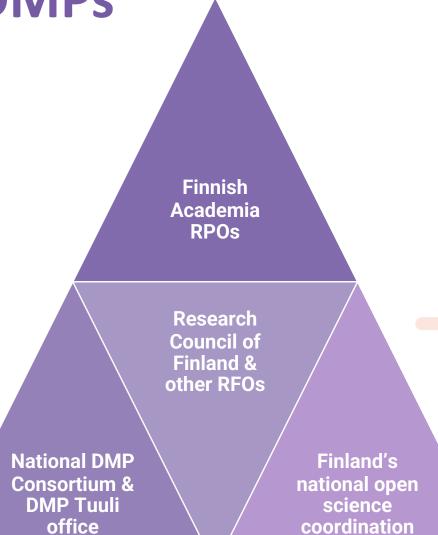


OSTrails National pilot in Finland

- towards maDMPs

Strategic importance

- Facilitate greater impact & success for the Finnish research community with digitalizing & FAIR by design
- Engage researchers and experts to use maDMPs for their own success & RPOs to use APIs for research ecosystem
- Test DMP tools and maDMP template in various settings for higher UX
- Indicate needs and define impactful use cases for maDMP template
- Participate to co-development







Focus in KPI

1 maDMP useful

for #60 RPOs &RFOs

OSTrails FI Pilot – Use cases

Identify characteristics of local requirements to support the integration of assessment methods

Use case I

Develop maDMP templates to address national funders and local infrastructure (PIDs, CRIS, repositories)

Use case II

Co-define DMP evaluation criteria and assess DMPs quality according to national policy and criteria

Evaluate

Test and evaluate methods, tools and services prior incorporation into systems





Timeline & Objectives: Streamline FAIR by embedding connectivity & actionability



Design

- Plan-Track-Assess Interoperability Reference Architecture (OSTrails IRA)
- DMPs, SKGs and FAIR assessments are seamlessly coupled and provide end-to-end solutions within EOSC



- Enhance DMP & SKG & FAIR platforms with new capabilities for automation and enable interoperation
- Streamline FAIR assessment from early research stages



Empower Fairness

- Develop set of methods, tools, services, guidance & training to support assessment at all levels
- FAIR of DOs
- DMP completeness & adequacy
- SKGs accuracy & coverage



Co-create & adopt

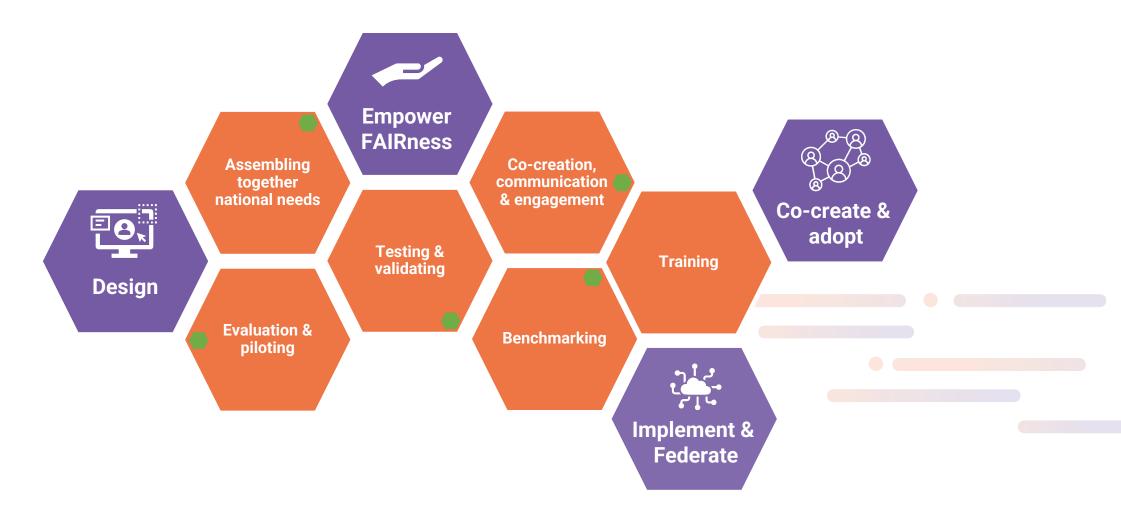
- Bring together different communities to co-create, validate & evaluate for applicability in real world
- Create federated Plan-Track-Assess Infrastructure

Initial design M1-M8 Co-development & Evaluation (I) M9-M24 Co-development & Evaluation (II) M25-M33 Adoption M34-M36





Way of working in the OSTrails FI Pilot







Target stages by 10 maDMP principles outcome OSTrails FI Pilot from WS1 04/2024

- 1. **DMP integration:** Ethical valuation, Data protection, Agreements, Thesis writing & supervision (incl. PhD), Data storage, Data publishing
- 2. Automated systems: Evaluation service, maDMP commenting automatically, AI assisted, Activate data protection process, Automatic risk notifications
- **3. Policies:** Data protection policies, Data storage policies (during & after research project), Data publishing and sharing policies, a lot of work ongoing monitoring of policies needed
- 4. Ecosystem of DM: Maturity, Data model, <u>Metadata</u> warehouse, Harvesting information, PIDs for DM, Interoperability & findability
- **5. PIDs & controlled vocabularies:** Linking ontologies, ROR, Fairsharing, ORCID & integrations utilising PIDs, API

Ref. Miksa, Simms, Mietze, Jones, (2019). Ten principles for machine-actionable data management plans. PLOS Computational biology. https://doi.org/10.1371/journal.pcbi.1006750





Target stages of maDMP principles outcome OSTrails FI Pilot from WS1 04/2024 II

- **6. Common data model for maDMP:** Common questions; Ensuring information needed can be harvested
- 7. DMPs available for human & machine consumption: Data protection processes & Ethical review process (needs human readability) Need shared vocabularies & APIs; agreement what information is shared/common.
- **8. DM evaluation & monitoring supported:** Access to (i) DMP related information, (ii) DMPs; Objectivity of DM evaluation; Feasibility of the study; Systematic evaluation process for DMPs
- **9. DMPs are livable & maintained:** Define existance of DMPs in RDM, maDMPs to make automatic processes; Process remindering at certain stages of process.
- **10. DMPs are made publicly available:** DMPs should be defined as public docs; use well designed & maintained DMPs as lead to Data papers that bring merits to researcher

Ref. Miksa, Simms, Mietze, Jones, (2019). Ten principles for machine-actionable data management plans. PLOS Computational biology. https://doi.org/10.1371/journal.pcbi.1006750





Development towards national maDMP template FI National pilot from WS2 05/2024

- O Building on the structure of the RDA maDMP Standard information model
- Developing template further to assess what information should be included and made structural
- Linking with relevant other structural DMP data models
- Identifying the relevant existing standards, and ontologies to be utilised
- Empedding ecosystem research services into maDMPs
- Evaluating in series of three workshops how to develop further for national needs the RDA maDMP standars (forthcoming 06/06/2024 & 03/09/2024)
- What information should be linked / harvested with other information systems?
- Work continues in WS3 06/06/2024 please join co-development and the National pilot events: https://wiki.eduuni.fi/display/csckorkeakoulut/2024-06-06+OSTrails+FI+pilot+workshop+III





OSTrails FI Pilot schedule

Workshop III **Clarifying use cases** and legislative requirements, data Workshop I privacy, GDPR and Interlinked Preparation & FAIR affecting Reporting on processes maDMPs national needs for 08/04/2024 02/2024 06/06/2024 maDMPs M1 M3 M4 M5 M8 National Pilot FI Workshop II Workshop IV Clarifying use cases Kick-off Workshopclarifying 05/03/2024 the use cases for minimum criteria maDMPs for light maDMP 03/09/2024

07/05/2024





Thank you!









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