Roadmap for Planning National RDM Expert Education - Finland's Approach

Anne Sunikka, Aalto University

Manna Satama, University of Eastern Finland

Päivi Kanerva, Tampere University

Susanna Nykyri, Tampere University

Mari-Elisa Kuusniemi, University of Helsinki

Marja Moisio, University of Helsinki

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Agenda

Current situation and need for RDM experts

Examples of previous initiatives

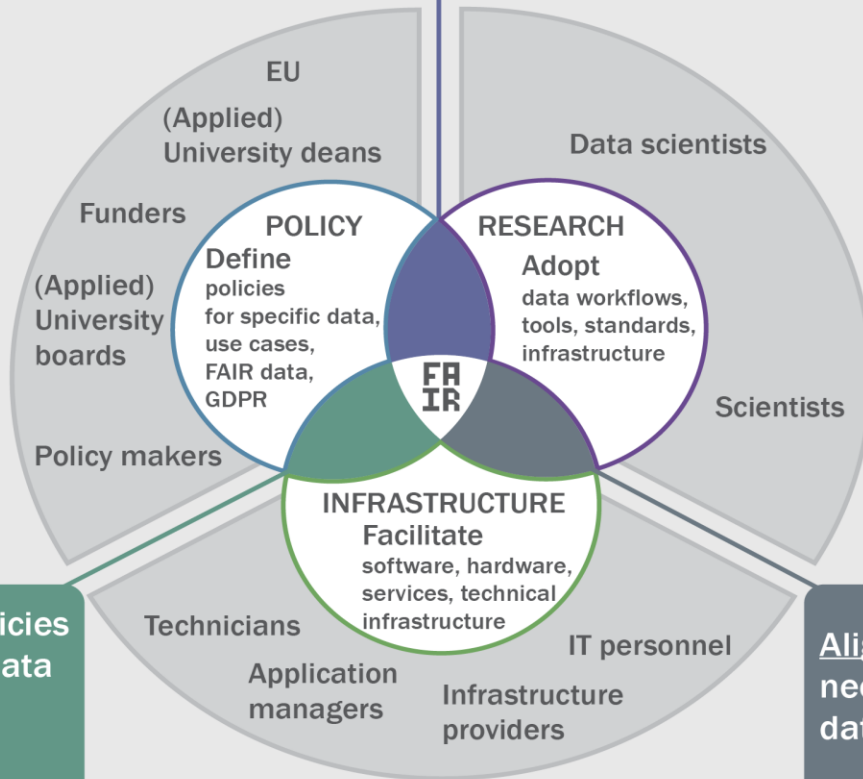Organising the working group and results
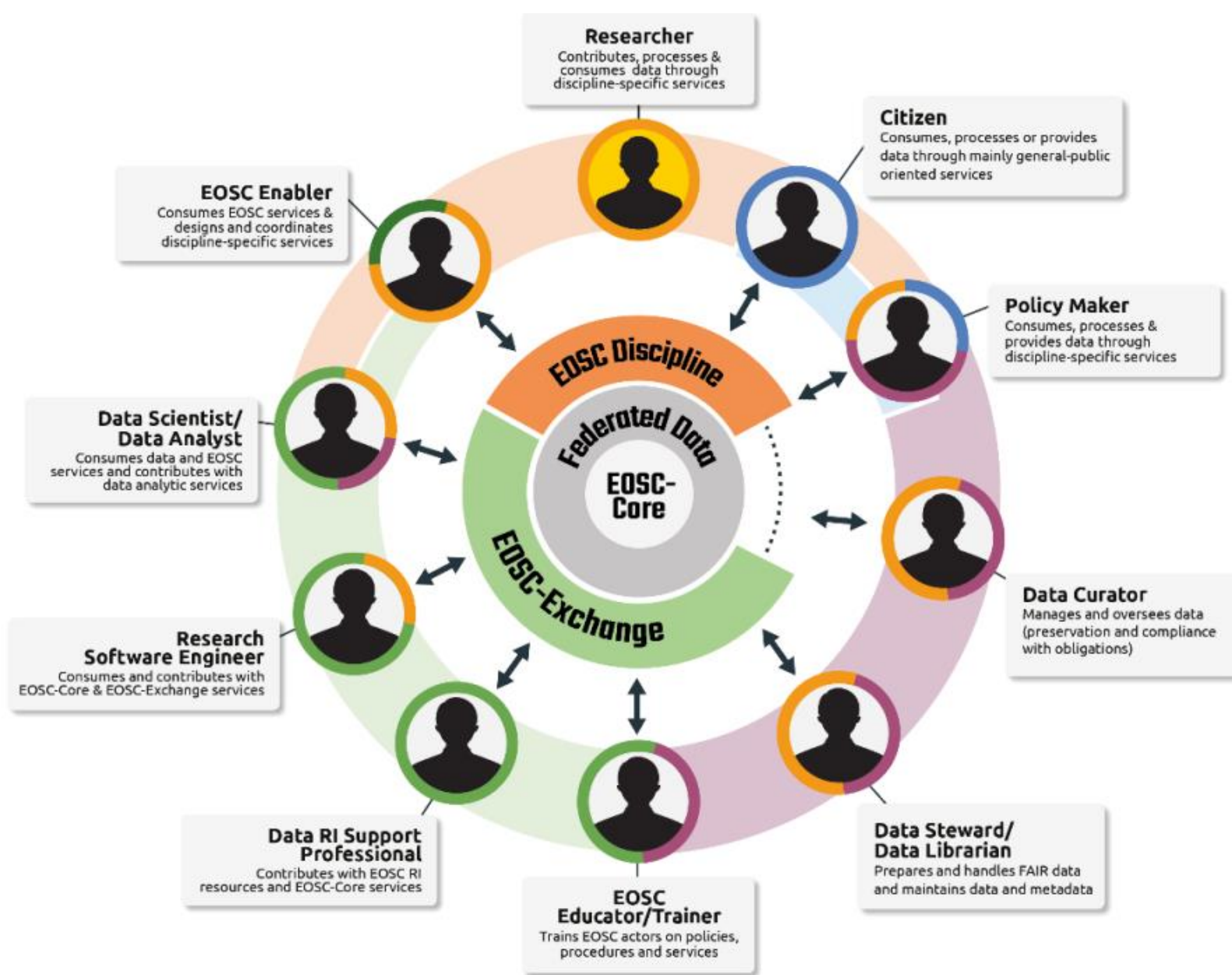
Lessons learned

Frederike Schmitz. (2020). The roles of data stewards in the data stewardship landscape identified in Denmark and the Netherlands.
Zenodo. https://doi.org/10.5281/zenodo.4321265

Actors in the EOSC ecosystem: roles and interactions

Researcher
Contributes, processes & consumes data through discipline-specific services

Citizen
Consumes, processes or provides data through mainly general-public oriented services

EOSC Enabler
Consumes EOSC services & designs and coordinates discipline-specific services

Policy Maker
Consumes, processes & provides data through discipline-specific services

Data Scientist/ Data Analyst
Consumes data and EOSC services and contributes with data analytic services

EOSC Discipline

Federated Data

EOSC-Core

EOSC-Exchange

Data Curator
Manages and oversees data (preservation and compliance with obligations)

Research Software Engineer
Consumes and contributes with EOSC-Core & EOSC-Exchange services

Data RI Support Professional
Contributes with EOSC RI resources and EOSC-Core services

EOSC Educator/Trainer
Trains EOSC actors on policies, procedures and services

Data Steward/ Data Librarian
Prepares and handles FAIR data and maintains data and metadata

ICT-Specific *Developing Software*

Library & Information Science *Understanding Data*

Discipline Specific *Conducting Research*

General Public

Current situation and need for RDM experts

Good research data management (RDM) is an essential skill for researchers

Lack of RDM experts

Lack of comprehensive and systematic education for RDM experts

Lack of awareness of RDM skills as professional skills

High-quality education program seeks to remedy the situation

Recommendations from Denmark

- Offering a two-year Bachelor in data stewardship, also through the Open University (upskilling programme also for mature students)

- A 1-year master programme in data stewardship, open to bachelor, master and PhD students.

- Clearly define what a data stewardship is in the curriculum.

- Using teaching and learning activities that have a degree of flexibility to support both internship programmes and the student's academic course work.

- An innovative combination of on-campus teaching and online learning, bootcamps and workshops, preferably developed and taught in collaboration with local industry, departments and organisations.
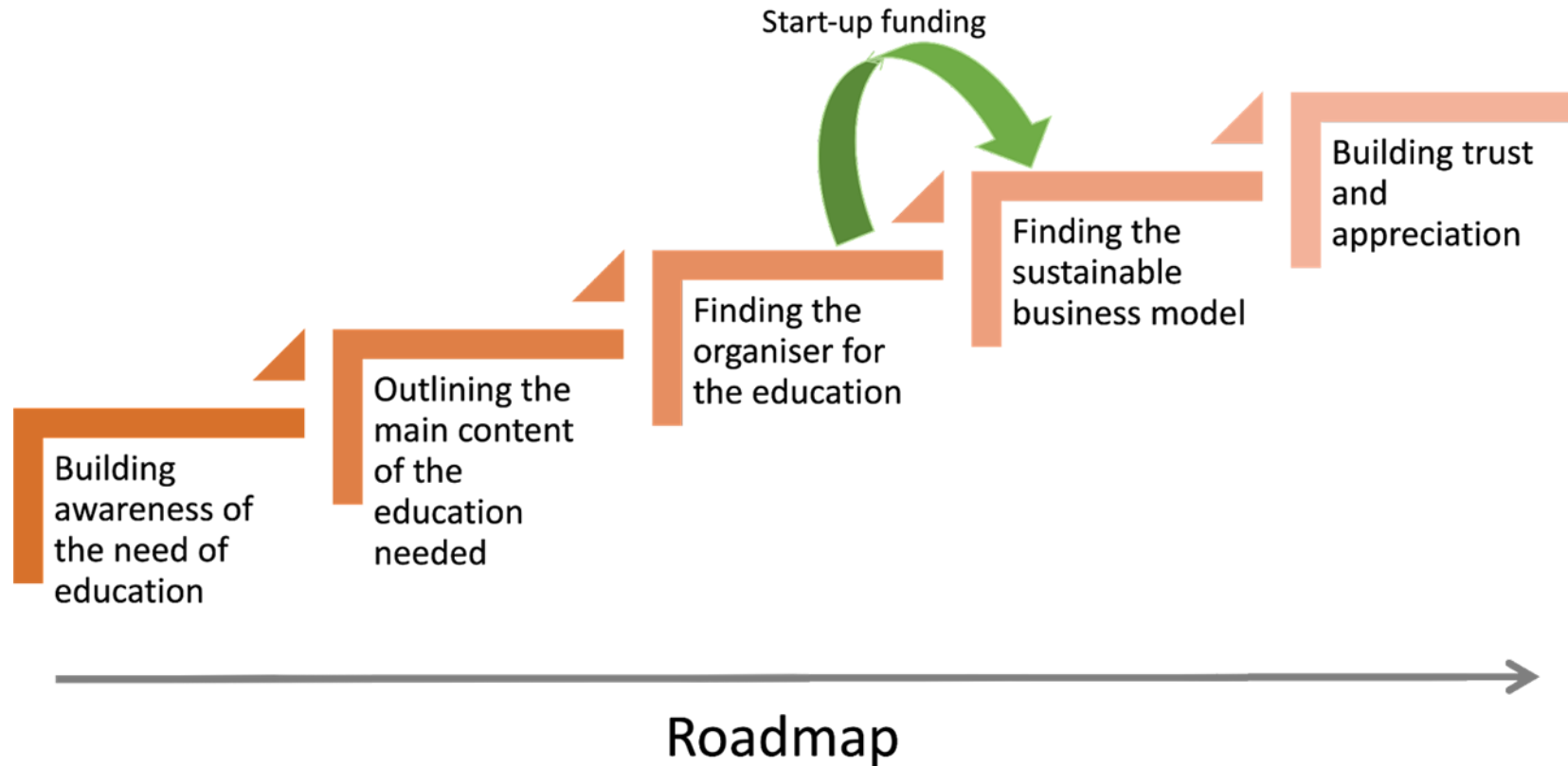
Recommendations from the Netherlands

- To formalise, adopt and implement the basic components of job profiles for data stewards and research software engineers (RSEs)
- To recognise and reward data stewards and RSEs and secure their position in close proximity to research personnel, including professional development and adequate remuneration.
- To create an open, continuous learning-on-the-job culture (soft skills, networking and practice exchange with peers).
- To formalise the diverse, existing training efforts aim to develop a certified data steward educational curriculum.
- To develop a skills tool for data stewards and organisations to assess responsibilities, tasks and competences, combined with navigation to training and training materials.

Jetten, M., Grootveld, M., Mordant, A., Jansen, M., Bloemers, M., Miedema, M., & van Gelder, C. W. (2021). Professionalising data stewardship in the Netherlands. Competences, training and education. Dutch roadmap towards national implementation of FAIR data stewardship. https://zenodo.org/records/4623713

Organising the work of the working group

Start-up funding

Building awareness of the need of education

Outlining the main content of the education needed

Finding the organiser for the education

Finding the sustainable business model

Building trust and appreciation

Roadmap

Practicalities of working together

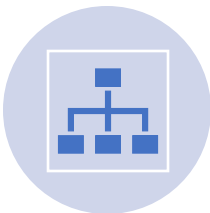Previous history of working together within the open science coordination

Libraries in the forefront of development efforts

Ca. 20 organisations and 45 participants from universities, universities of applied sciences and research institutes took part in the working group

All the meetings were online, a total of 17 meetings, from Feb -22 to Jan -24.

In addition, separate meetings in the subgroups.

Subgroup 1: Building awareness of the need of data stewardship education

Task: Build awareness for RDM education through promotional materials, identifying key audiences including the Ministry of Education and Culture, higher education institutions, companies, and the Open science and research community.

Results: A PowerPoint presentation as their main promotional tool
- Background and the aims of the project
- Need for the professionalization of Data Stewardship
- Data stewards and other professionals working with data
- Current situation internationally and nationally
- Recommendations

Going forward: The chosen education organizer will continue to develop and disseminate the relevant materials.

Subgroup 2: Outlining the main content of the training

Task: A modular training curriculum, designed to enhance both technical and interpersonal skills. Curriculum design influenced by Skills4EOSC's and the University of Vienna's accredited certificate course.

Results: The curriculum covered different RDM professional profiles (policy-oriented, research-oriented, data science/analysis-oriented, and infrastructure-oriented roles) with an additional "agent of change" role.
The curriculum proposed five modules, with optional add-on training for specialized topics:

      Module 1: Basics of RDM and Open Science
      Module 2: IT and Data Science fundamentals
      Module 3: FAIR Data principles in the research data lifecycle
      Module 4: RDM support (consulting and training)
      Module 5: Practical application through project work.

Going forward: These modules could be tailored to suit various professional roles, enabling participants to apply knowledge within their own contexts, targeting professionals, researchers, and advanced students.

Subgroup 3: Find an organiser and start-up funding for the education

Task: Find a organizer and secure funding for RDM education. The chosen organizer should be credible, capable of awarding credits, and knowledgeable about RDM needs.
A preferred funding models based on a participant-pay approach to ensure sustainability.

Results: Tampere University was selected for planning and organizing, supported by a grant from the Ministry of Education and Culture.
The preliminary plan for the training includes: a year of planning, an on-site kickoff in the beginning of 2025, online sessions, and a practical internship.
Modular design allows for partial or full completion, with a certificate awarded for completing the full 15 credit program.

Going forward: The training will take places twice, in 2025 and 2026 in collaboration with national partners: CSC - IT Center for Science , Open Science and Research Coordination (AVOTT), and FSD Finnish Social Science Data Archive(FSD), and international collaborators, especially, the University of Vienna's Data Steward training.

Lessons learned 1 (2)

Previous collaboration and trust is important.

Productive to be divided into smaller subgroups quite early in the process.

There are several excellent examples and training materials available – what to keep and what to leave out is a difficult decision.

Need for flexibility and ability to prioritize.

Advisory group to discuss the curriculum and practical implementation.

Planning was done as a collaborative effort and funding was applied only when the organizer was chosen.

Lessons learned 2 (2)

The organizing organization was chosen fairly early in the process.

Commitment and management support of the chosen organization is vital (e.g. 30% own funding).

Decisions from ministries can take a surprisingly long time.

The conditions of funding might differ from the applied conditions, e.g. the target group of the applicants and the funding model changed.

Good relations with the decision makers in the Ministry is important.

Understanding the funding decision was somewhat difficult.

In summary

The objectives of the initiative are:
1. To develop comprehensive training modules catering to the specific requirements of RDM experts.
2. To ensure a steady supply of skilled data management experts across various sectors including research organisations, public administration, and companies.

National collaboration continues through advisory board

The first application period ends 10/2024, the intake is 20 students, and the course starts 3/2025

Tight collaboration with University of Vienna's programme; similar certificate and curriculum

Ties to working life, e.g. bonus points for visiting relevant companies

Students study in small groups (peer-to-peer support)

Ideas for final project are developed together with the advisory group

https://www.tuni.fi/en/research/data-management-training-development-project

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- University of Vienna. Data steward course, Become a Data Steward (univie.ac.at)

Participants of the working group

Minna Ahokas	CSC – IT Center for Science	Minna Marjamaa	Laurea University of Applied Sciences
Pauli Assinen	University of Helsinki	Marja Moisio	University of Helsinki
Lise Eriksson	Åbo Akademi University	Elina Mäntylä	University of Turku
Katja Fält	Tampere University	Niina Nurmi	University of Helsinki
Malin Fredriksso	Åbo Akademi University	Elina Nurminen	Metropolia University of Applied Sciences
Siiri Fuchs	CSC – IT Center for Science	Susanna Nykyri	Tampere University
Enrico Glerean	Aalto University	Janne Nyström	Arcada University of Applied Sciences
Catarina Harjunen	Åbo Akademi University	Liisa Näpärä	National Library of Finland
Lucie Hradecka	Aalto University	Jukka Rantasaari	University of Turku
Nina Hynnä	Häme University of Applied Sciences	Päivi Rauste	CSC – IT Center for Science
Helena Jäntti	University of Eastern Finland	Taina Saarenpää	University of Lapland
Päivi Kanerva	Tampere University	Manna Satama	University of Eastern Finland
Riitta Koikkalainen	National Library of Finland	Riikka Sinisalo	LUT University
Joona Koiranen	Metropolia University of Applied Sciences	Anna Småros	Arcada University of Applied Sciences
Mari Elisa Kuusniemi	University of Helsinki	Anne Sunikka	Aalto University
Ari-Pekka Kvist	University of Oulu	Maria Söderholm	Finnish Environmental Institute
Katja Laine	University of Vaasa	Mika Virtanen	University of Oulu
Mietta Lennes	University of Helsinki	Anne-Marie Tuikka	Turku University of Applied Sciences
		Qingbo Xu	Hanken School of Economics