Professionalising the Research Software Engineer and Data Steward roles - towards models for collaboration and good practice

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Overview

• Background: FAIRsFAIR Policy and Practice
• Why are roles being professionalised and why does collaboration matter?
• What is FAIRsFAIR doing about it?
• Professionalising Research Software Engineers
• Professionalising Data Stewards
• Common themes, routes towards good collaboration
• Next steps for FAIRsFAIR
• Discussion
To supply **practical solutions** for the use of the FAIR data principles throughout the research data life cycle. Emphasis is on **fostering FAIR data culture and the uptake of good practices** in making data FAIR.

**T3.3** will develop and implement standards for FAIR data management and support uptake. We will identify areas of practice … where changes would have greatest effect in furthering the FAIR principles…
Policy and practice recommendations

- Defining the policy environment
- Developing sustainable business models
- Professionalising RDM training and engagement
- Supporting data management planning
- Defining interoperability frameworks
- Guiding the choice of data and services
- Ensuring trusted curation
Why are roles being professionalised?

Priority Recommendation

Rec. 10: “Professionalise data science and data stewardship roles and train researchers”:

Steps need to be taken to develop two cohorts of professionals to support FAIR data: data scientists embedded in research projects, and data stewards who will ensure the management and curation of FAIR data. All researchers also need a foundational level of data skills.
Why are roles being professionalised?

Key recommendations for universities and libraries

Support the development of professional communities in emerging roles such as data stewards and RSEs, and for trainers and leaders of digital skills initiatives.
Why are roles being professionalised?

Research Software Engineers and Data stewards/Data librarians are identified as actors in the EOSC ecosystem.

“What is clearly missing is a set of guidelines or similar support measures to help policy makers develop and formalise clear career pathways that are custom designed to target new research staff profiles aligned with open science.” (p. 56)
What is FAIRsFAIR doing to support these?

- Working with others - e.g. RDA Professionalising Data Stewardship IG forthcoming survey on models of data stewardship provision
- Gathering examples - Implementation stories e.g. of how institutions coordinate the support capabilities to enable FAIR
- Framework for RDM services to self-assess levels of maturity of their capabilities, including support for professionalisation of roles
- FAIR Data Stewardship Professional Competence Framework ([link](#))
What is a Research Software Engineer?

“A Research Software Engineer (RSE) combines professional software engineering expertise with an intimate understanding of research.”
Professionalising Research Software Engineers

- Software is vital to research
- People who develop software must be recognised
- Career paths need to be created
Creating a network

- First workshop for RSEs in 2013
  - discussed organisation and co-ordination and resulted in the creation of the UK Research Software Engineers Association
- In 2015, EPSRC created RSE Fellowships
- RSE Conference, first held in 2016
- Network of RSE groups
- RSE leaders network
- RSE Society - replaced Association in 2019
Internationalisation

- Australia/New Zealand: @rse_aunz
- Belgium: be-rse.org, @rse_be
- Germany: de-rse.org, @RSE_de
- Netherlands: nl-rse.org, @nl_rse
- Nordic: nordic-rse.org, @nordic_rse
- UK: society-rse.org, @ResearchSoftEng
- USA: us-rse.org, @us_rse
Professionalising data stewards

• Professionalising “requires proper recognition of data stewards, career perspectives, suitable training, visibility, a good position in the organisation, focused coordination and an institutional policy” (LCRDM report)

• Partly about embedding data stewardship in university curricula- focus of FAIRsFAIR competence framework informed by increasing consensus about the relevant competences from recent projects (e.g. EDISON, EOSCpilot FAIR4S, ZonMW/ELIXIR, Danish Forum, LCRDM, OECD, NPOS Project F)

• Book sprint (this week) to offer practical material to support HEI staff in integrating FAIR in teaching and curricula, e.g. model courses, learning units, curricula, exercises, supporting material etc. - due December 2021
Stewardship - overlapping roles and responsibilities

Data steward as intermediary role
first point of contact for researchers to get help from others (?)

Overlapping roles demand collaboration - but how?

“In reality, roles such as, data scientist, RSE, data analyst, data steward, data manager, data librarian, or digital curator, encompass a range of competencies but people with these job titles have different skill sets based on their particular speciality. In small research teams, generalists may be needed, whereas larger teams may have more specialist requirements.”

OECD Digital Skills report, p.24

- Less work on models describing what makes these relationships work
- To help institutions and research group build effective teams and career paths for respective roles
Pointers from the Dutch Landscape

No single model for how these roles are situated in institutions

- But some common varieties of Data Steward role
Pointers from the Dutch Landscape

No single model for how these roles are situated in institutions

- Focus on Policy, Infrastructure, or Research
- Embedded or Generic

ZonMw/ELIXIR data stewardship roles in the data stewardship landscape
‘Models’ task group developing survey with FAIRsFAIR collaboration

- How do services that provide data stewardship roles vary?
  - Key functions offered
  - Target communities
  - Service maturity
  - Challenges
  - Organisational context
Related FAIRsFAIR activities

- Interviews for ‘Implementation Stories’ - case studies on how data stewards and/or RSEs are coordinated
  - What has led your organisation to develop these roles, and how do they complement each other?
  - How in practice does this work, e.g. how do people in these roles get allocated to specific research groups or projects, what justifies the costs, and what helps the support roles overcome challenges to work effectively together?
  - In what contexts have the Data Steward or Research Software Engineer roles made most difference, and how has this been recognised?
Common themes for DS/RSE Collaboration ‘stories’

1. How tools to enable FAIR are being co-designed
2. How training courses are being co-developed
3. How workflows for providing support on policy compliance involve both roles
How tools to enable FAIR are being co-designed

1. DeiC FAIRification workshops with GO-FAIR to create metadata templates
How training courses are being co-developed

1. Netherlands eScience Center and TU Delft course for Carpentries on FAIR Data for Climate Science
How workflows for providing support on policy compliance involve both roles

1. Support resources at Imperial College London

https://www.imperial.ac.uk/computational-methods/software-data/
Discussion

Help us prioritise effort on sharing guidance and examples

• Please go to menti.com
  and enter the code: 6017 2337

• Do you have examples to share? Please get in touch!
Menti responses

Go to www.menti.com and use the code 6017 2337

What FAIR-enabling examples and guidance would be useful from FAIRsFAIR?

- How tools to enable FAIR have been co-designed: 3.5
- How training courses have been co-developed: 3.7
- How workflows for supporting policy compliance involve both roles: 3.7
- How to assess maturity of RDM service capabilities for FAIR: 2.9
- How others are supporting data stewardship - RDA survey analysis: 3.8
Thanks! Kiitos!

To follow up on anything, please do get in touch at:

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Resources and further reading

Research Software Engineers:

- Hettrick, Simon (2016). A not-so-brief history of Research Software Engineers: [https://www.software.ac.uk/blog/2016-08-17-not-so-brief-history-research-software-engineers-0](https://www.software.ac.uk/blog/2016-08-17-not-so-brief-history-research-software-engineers-0)
- Society of Research Software Engineers (n.d). History: [https://society-rse.org/about/history/](https://society-rse.org/about/history/)

Reports:

Resources and further reading


EOSCPilot (FAIR4S) https://eoscpilot.eu/content/d75-strategy-sustainable-development-skills-and-capabilities


Danish Forum/ DeiC: https://www.deic.dk/sites/default/files/Data%20Steward%20Education%20in%20Denmark_0.pdf
