Skills 4 eosc

Data Steward

MINIMUM VIABLE SKILLS PROFILE

- Skills for the European
- Open Science
- Commons

INTRODUCTION

Open Science mission for this role

The Minimum Viable Skillset (MVS) sets out to describe a shared framework for the recognition of competencies required for Open Science practitioners.

Data Stewards put Open Science principles into practice and are a key role for the European Open Science Cloud. They work with stakeholders to establish, govern and maintain processes to collect research data, make it usable for research objectives, facilitate its transformation into research output, assist in quality assurance, and support informed decision–making on its openness for reuse according to ethical, legal and social expectations.

In the EOSC, Data Stewards are likely to be both consumers and providers of services or resources, in their roles as practitioners and champions of Open Science, and as trainers and enablers of others in their organisation (researchers especially).

The MVS includes two variations of the role, one described as 'Coordinator' and the other 'Embedded'.

These titles represent two ends of a spectrum, with 'Coordinator' describing a role providing support across an organisation's research domains and units, and 'Embedded' describing a role close to a research team and to its domain–specific practices. We acknowledge that these roles can overlap, influenced by the availability of resources, and by disciplinary and organisational cultures.

Data Stewardship expertise is typically distributed across a team, drawing on in–house capabilities and external services provided to the Research Performing Organisation, e.g. by Research Infrastructures, Service Providers (e.g scholarly communications), and Competence Centres.

DATA STEWARD COORDINATOR

Coordinator Data Stewards act as a 'centralised knowledge and communication hub' for researchers. They advise and train on policy, guidelines, data management plans and institutional infrastructure and tools implement FAIR and CARE principles across the organisation.

ASSOCIATED FUNCTION TITLES:

Data Steward, Data Librarian, Research Data Management Specialist, Research Data Manager, Research Data Management Consultants, Reproducibility Librarian.

EMBEDDED DATA STEWARD

Embedded Data Stewards serve research teams, faculties, departments, sections of organisations directly involved in producing research outputs, supporting them to plan and implement FAIR and CARE principles, meeting needs of researchers as they arise, and working with others to ensure outputs are preserved and reusable in the long term.

ASSOCIATED FUNCTION TITLES:

Data Steward, Data Manager, Data Curator, Research Data Manager

ESSENTIAL SKILLS AND COMPETENCES

- Cross-domain/ domain-specific knowledge on Open Science practices, policies and regulation and translating these (when necessary) to the appropriate levels of the organisation.
- Service provision to support cross-domain/domain specific Open Science practices including: use of FAIR and CARE principles, Open Access, data optimization, data preservation, archiving and responsible re-use.
- Knowledge about Research Data Management, (personal) data governance and ethics, Open Science data publication and exchange(sharing) services, information security and risk management.
- Raising awareness of the value of good data management among data creators and users, researchers, organisational colleagues, and decision-makers.
- Advise/provide support on the use of infrastructure and tools at the appropriate levels of the organisation, e.g for data storage, data versioning and documentation, FAIR software and databases.
- Training design and delivery to support Open Science practices, policies and practices.
- Monitor the research and funding ecosystem, including possible conflicting motivations, drivers and incentives among different stakeholders.
- Knowledge/awareness of programming, FAIR code and FAIR software and use of standards and ontologies.

SKILLS

SOFT / TRANSVERSAL SKILLS

- Communication.
- Conflict management/mediation (with a patient, empathic approach).
- Critical and analytical thinking.
- Stakeholder engagement and networking to translate and bridge needs.
- Creativity, curiosity and openness (willingness to learn).
- Team management and project management (results oriented planning and organising).

MAIN ACTIVITIES – COORDINATOR ROLE

- Contributes to Open Science policy development by engaging with (inter)national policy-making, bringing the cross-disciplinary expertise needed for local policy development, implementation and monitoring.
- Understands research stakeholder needs and contributes to developing, implementing and monitoring institutional RDM policy and Data Governance, along with tools and services to support these. Promotes and communicates the importance of Open Science and FAIR to all levels within the organization (e.g. policy makers, senior management, researchers, postgraduates etc.).
- Analyses trends in data management infrastructure, tools, and methods that potentially improve the organisation's implementation of FAIR and CARE principles to enhance support for decision-making on Open Science. Advises on (meta)data standards and contextual documentation for data archiving.
- Monitors RDM skills of researchers and research support staff in the institute and refers researchers to RDM related facilities and services.
- Develops and delivers training tailored to learners' needs, aligned with wider institutional policies and plans.
- Maintains networks of RDM and research support related colleagues.

MAIN ACTIVITIES – EMBEDDED ROLE

- Develops Data Management Plans templates tailored for research teams and supports researchers in writing a DMP according to the relevant template. Includes provision for post project archiving and FAIR sharing (standards, metadata, licensing, repository selection).
- Supports researchers in good practice on data and/or software/code when writing applications to funders, implements this good practice as a regular aspect of doing research, and liaises with (technical) RDM experts inside and outside the institute to adopt effective solutions to challenges.
- Advises and supports researchers on data-infrastructure and tools, and adoption of innovative techniques or tools, including those provided by relevant (inter)national data-infrastructure and tools.
- Identifies gaps and takes action if needed to ensure ethical conduct and awareness of the potential impacts of data reuse, management and sharing on wider society.
- Advises on the use of disciplinary standards and ontologies, and relevant community practices that are applied in producing FAIR research outputs.
- Supports researchers on legal and regulatory compliance aligning local practices with ethical conduct through connections with the institutional privacy officers, legal advisers, and research ethics bodies.
- Develops and delivers training tailored to learners' needs, aligned with wider institutional policies and plans.
- Maintains networks of RDM and research support related colleagues.

CONTRIBUTES TO WHICH OPEN SCIENCE OUTCOMES?

- Digital research objects are as FAIR and open as possible and as closed as necessary.

- Opportunities are identified for creating or connecting with professional Open Science networks at institutional, cross-institutional, regional, national, or international levels.

- Relevant competence centres with a FAIR data and Open Science support role are utilised effectively according to local needs and policies.

- Open Science skills and practices are facilitated and enhanced using, where appropriate, EOSC resources and services, including any relevant Open Educational Resources .

- Research data and other digital objects are effectively managed to ensure their suitability for archiving and sharing, and advancement of research methods appropriate to the discipline(s).

Further information - Open Science skills terms

OS skills terms match the essential skills in this MVS to competence definitions from relevant taxonomies. The selected terms offer further information to help identify the learning objectives for skills development. Sources: European Skills, Competences and Occupations ontology (ESCO), ResearchComp, terms4FAIRskills, Center Scientific Collaboration and Community Engagement.

ESCO Research Skills: Demonstrate disciplinary expertise; Manage findable accessible interoperable and reusable data; Manage intellectual property rights; Apply research ethics and scientific integrity principles in research activities; Operate open-source software; Increase the impact of science on policy and society; Interact professionally in research and professional environments.

ESCO Transversal Skills: Negotiate compromises; Respect the diversity of cultural values and norms; Maintain psychological well-being; Think critically; Think analytically; Advise others; Participate actively in civic life; Demonstrate curiosity; Approach challenges positively; Adapt to change; Lead others; Work in teams; Meet commitments; Organise information, objects and resources.

ResearchComp: Manage research data; Develop networks; Teach in academic or vocational contexts; Promote open innovation; Promote the transfer of knowledge; Build mentor–mentee relationships.

Terms4FAIRskills: Data policy; knowledge to contextualise fair principles to domain; Service level management; Data curation; Preservation; Open access publishing; Data access risk assessment and mitigation; Information security; Securing sustainable funding; Software preservation; Metadata exposure;

CSCCE: Consultation and listening; Advocacy; Landscape analysis.

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