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Minimum Viable Skillsets
a Briefing for Competence Centres

Introduction

Minimum Viable Skillsets (MVS) are profiles of research data professionals, people whose role includes creating, collecting or using research data (e.g. as evidence).

Each MVS Profile is a short document of around 6 pages, and focuses on key elements of a role that contributes to **Open Science.** This briefing sets out the thinking behind the MVS Profiles, together with their purpose, scope, and the various roles described so far. It also aims to answer questions that **Competence Centres** may have about how MVS Profiles can be used in skills development, or the approach taken to co-creating them.

What is the overall purpose of the MVS?

The main aim is to support curricula and course design. The MVS can be used alongside, or independently of, the FAIR-by-Design approach to course development. Within the FAIR-by-Design methodology, the MVS fits into the early 'discover' and 'design' stages, outlined below[1].

Backward Instructional Design Empowered with FAIR principles
Focusing on both learners and peer instructors

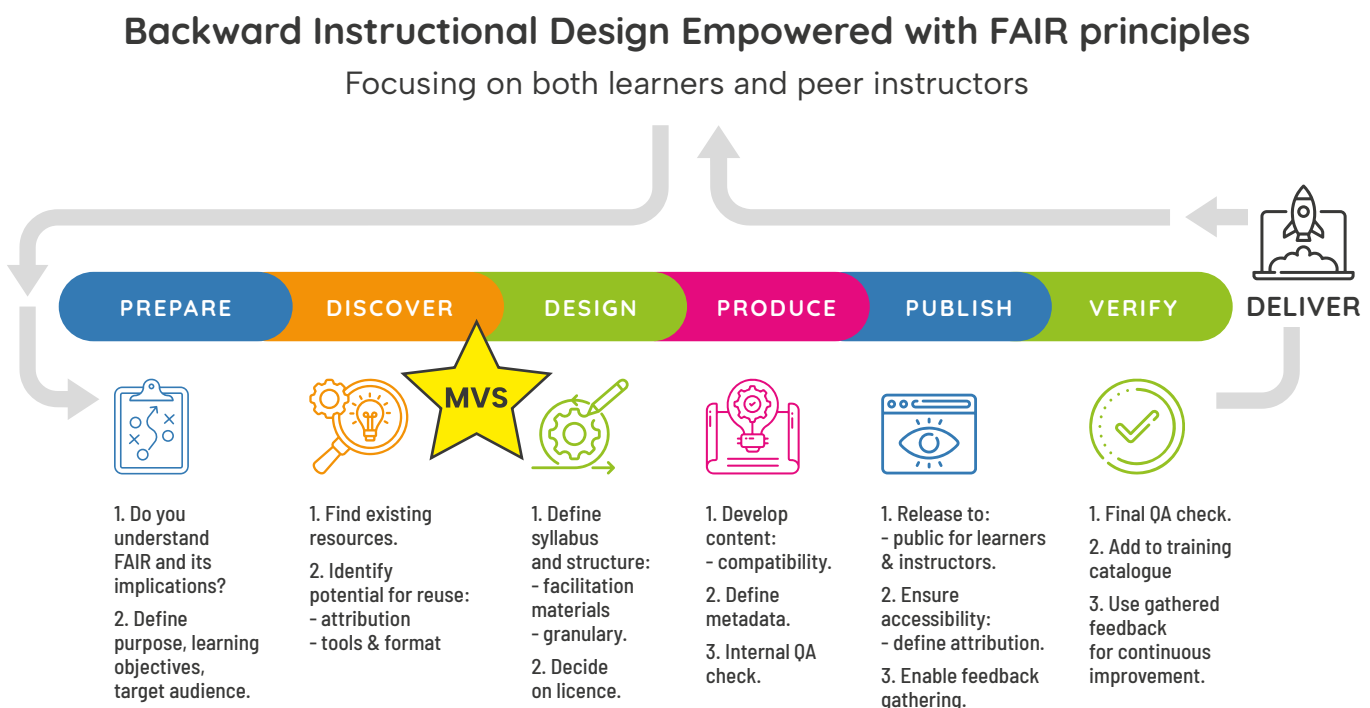| PREPARE	DISCOVER	DESIGN	PRODUCE	PUBLISH	VERIFY	DELIVER
1. Do you understand FAIR and its implications? 2. Define purpose, learning objectives, target audience.	1. Find existing resources. 2. Identify potential for reuse: - attribution - tools & format	1. Define syllabus and structure: - facilitation materials - granulary. 2. Decide on licence.	1. Develop content: - compatibility. 2. Define metadata. 3. Internal QA check.	1. Release to: - public for learners & instructors. 2. Ensure accessibility: - define attribution. 3. Enable feedback gathering.	1. Final QA check. 2. Add to training catalogue 3. Use gathered feedback for continuous improvement.	

Figure 1. MVS place in the FAIR-by-Design methodology

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(1)   Filiposka, S., et al. (2023). D2.2 Methodology for FAIR-by-Design Training Materials (1.4). Zenodo. https://doi.org/10.5281/zenodo.8305540

Whether used with FAIR–by–design or independently, the MVS offers a high–level view of the competences needed for a role. The 'essential skills' inform the learning objectives that trainings are designed to meet. For trainings, the MVS can be used as a source of search phrases for finding existing learning resources that may be available from relevant competence hubs, knowledge bases, or similar training catalogues and registries.

What does a MVS Profile contain?

The MVS lists skills and competences that would be needed for someone in the role to carry out Open Science practices. These practices will inevitably vary, depending on contextual factors like the specific organisation, or the research domain. To clarify these 'background assumptions', the MVS Profiles lists underlying assumptions about the organisational context and mission for Open Science, and what the role would be expected to contribute to that mission, in terms of activities and outcomes.
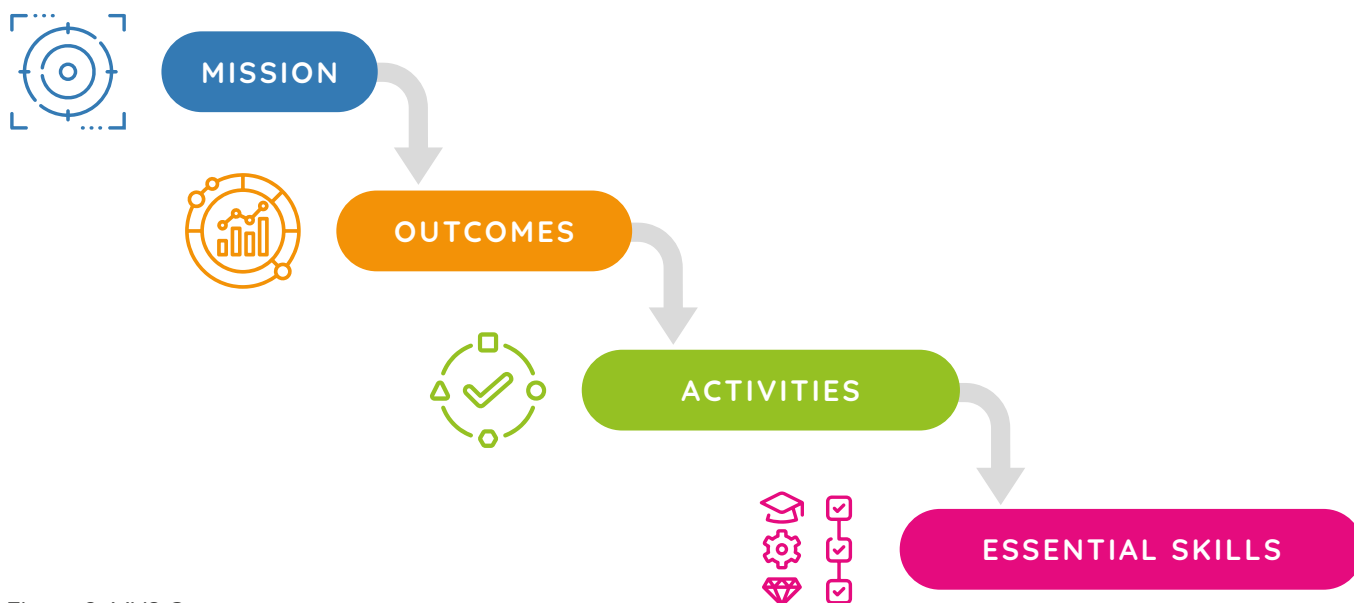

Figure 2. MVS Content

Each MVS also includes 'open science skills terms' selected from taxonomies, including the **ESCO ontology** (European Skills, Competences and Occupations). The terms can help identify learning resources for a role, either by indicating relevant search terms or by providing trainers with links to definitions that can be used to describe learning objectives or outcomes.

This Briefing includes the current version of the MVS Profile for **Data Steward**, one of the most significant roles needed for Open Science.

What is the range of MVS Profiles?

An MVS Profile describes key skills and competences for Open Science that may be expected of someone in a role that participates in research (e.g. a Data Steward).

There are MVS for a variety of roles integral to the European Open Science Cloud (EOSC). They vary on three main aspects: the type of organisation that employs the role, or the domain the role specialises in, or the career stage. **Figure 3.** shows the current range of MVS.

Importantly the profiles are intended to be easy for you to adapt, reflecting on your own organisational requirements.
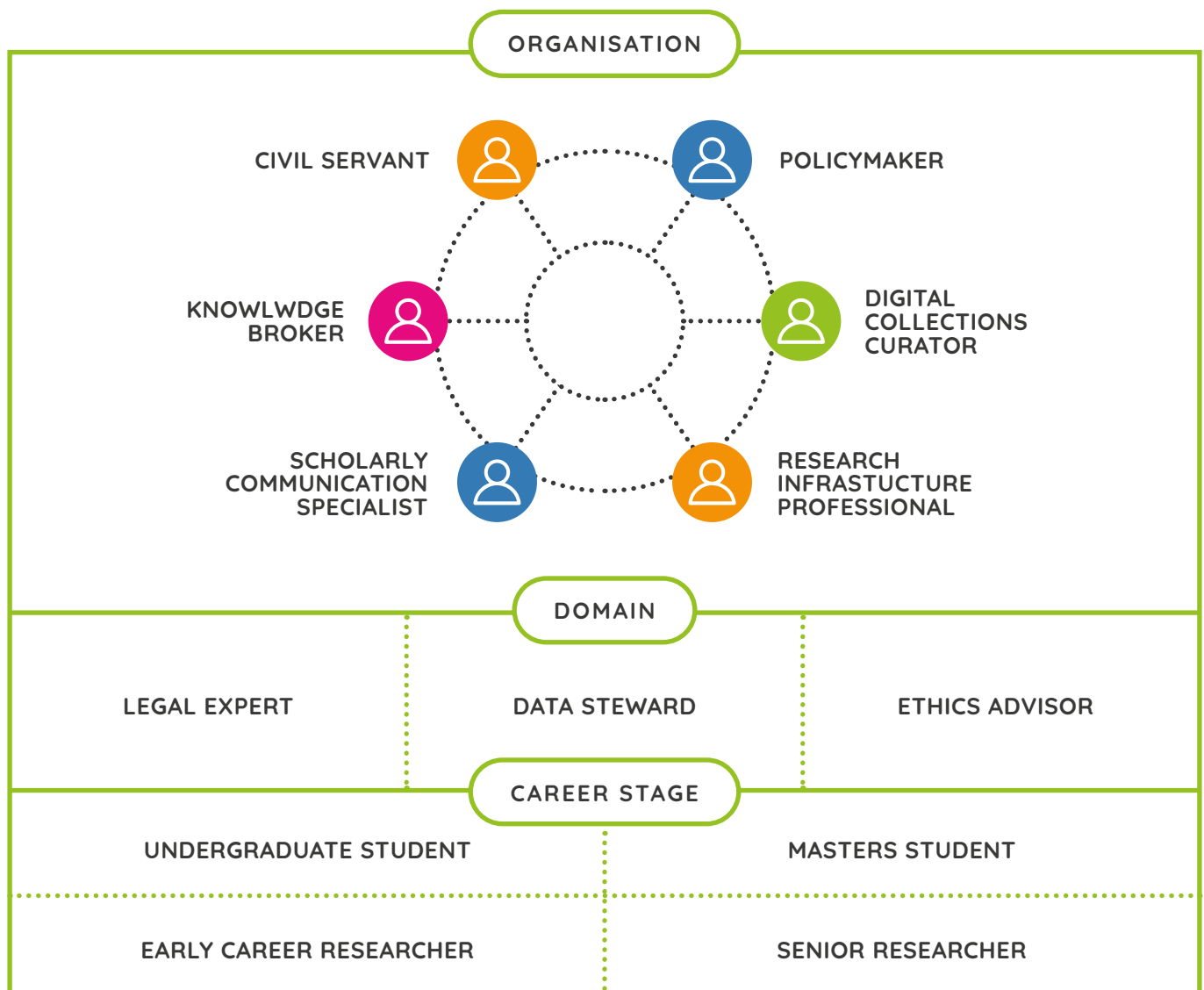

Figure 3. Data Professional Roles with MVS

The Data Steward MVS follows after this introduction to provide an example. For further description of other roles in Figure 3 please see the **MVS Catalogue** on Zenodo and GitHub.

What uses cases are there for Minimum Viable Skillsets?

The profiles aim to help in training design, and should also be helpful in the following contexts:

- **Team leaders of researchers and data professionals, aiming to build capacity in Open Science.** The MVS offers a simple format for self-assessing and comparing competences across the roles relevant in their context, to find opportunities to fill them within the organisation.

- **Professional networks:** aiming to build the competences of any of the relevant professional roles, and Competence Centres aiming to develop their capabilities as centres of expertise in Open Science. Here the MVS may help to identify any competence gaps they may want to target.

- **Policymakers, Civil Servants, and Knowledge Brokers:** aiming to shape Open Science policy, or apply results of Open Science as evidence for policy-making. These roles have their own MVS. More generally, where policy measures include capacity building for OS, the MVS may help define the competence areas to prioritise.

- **R&I Legal and ethics experts:** These roles have their own MVS. More generally, the MVS may help identify other roles, such as Data Stewards, that require their expert input.

How were MVS co-created?

The Skills4EOSC project initiated the MVS by drawing on skills resources already available, e.g. competence frameworks or other resources, such as reports about capacity development for the data professional roles concerned. Each MVS was drafted by a dedicated team, including partners who would be responsible for delivering training later in the project.

Each team drafted statements summarising points under each heading of the **MVS template**, together with reference lists of the source material for the selected role. Terms (*keywords*) were then selected from the generic competence taxonomies available.

Competences are at the core of the MVS, and the Profiles provide links to definitions of these competences by adding terms selected from published taxonomies, including the European Skills, Competences and Occupations (ESCO) ontology, ResearchComp, terms4FAIRskills, and CSCCE Glossary. These offer a rich source for trainers to use when defining the learning objectives or outcomes of courses they are designing.

How can Competence Centres adapt MVS Profiles to their needs?

MVS Profiles are plain text documents, designed to be adapted by anyone that wants to reuse them. They are available under a CC–BY licence, so we ask only that you cite the original contributors to any MVS that you adapt, and mention this as the original source in a document log. The steps to adapt an MVS are straightforward:

1. Consider the roles to be targeted and select the MVS profiles that are closest in terms of their mission for OS, main activities they are expected to participate in, or the outcomes they should contribute to.

2. Review the MVS profile to identify any content that needs adapted to the needs of the Centre and the relevant target group, focusing first on the overall mission, then the activities and outcomes.

3. Consider changes in the competences that may be required, taking account of any skills gap analysis that may be available for the target group. The OS skills terms listed at the end of the document are a rich source of additional wording that may help you adapt the MVS to your needs.

4. Optionally, you can publish the adapted MVS in the MVS GitHub repository, either as a new version of one with the same title, or as as an additional role that relates to one or more of those already available.

Skills4EOSC also welcomes any comments or proposed changes to the existing MVS. Until March 2025 the project is committed to considering any changes necessary, based on feedback. To do this, please check the guidance on the **MVS GitHub here**.

Proposals to co–create new MVS are also very welcome. If you would like us to discuss this with you please contact **info@skills4EOSC.eu**.

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