OBERRED

Open Badge Ecosystem for the Recognition of skills in Research Data management and sharing

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https://oberred.eu/

This reference framework is a generic framework that should be adapted to local situations (countries, disciplines, projects, ...)

GENERAL COMPETENCE	COMPETENCE			SKILLS	METADATA	EXERCISES		ESCO	
Skills grouping (according to a cycle of the data)	Full name of the badge	Badge N°	Abbreviated (if needed) badge name for the badge graphic	General skills targeted	Possible Badge's metadata (to be adapted/detailed according to discipline, area of work and/or project)	Possible validation exercises To validate those skills you might use…	Additional comments to the skills targeted + local and national adaptations	Link to ESCO framework (if available)	Link to other frameworks
Plan and design	**Data models**	A1	Data models	I can identify the different data types, formats, models and standards	I make the difference between "working data" ("hot data") and "archived data" ("cold data ») I know the difference between "embedded data", "underlying date", "raw data" and "gathering data"	- Fill out a quiz with different kind of data - Define which data are "hot" or "cold" - Collect several examples of embedded, underlying, raw data used in your daily research life		http://data.europa.eu/esco/skill/0d6714c6-720e-4985-9791-5ab85d28da79	
	Data policies and open data	A2	Data policies	I am familiar with national and international research data policies	I know the legal principles that govern the opening of research data (in my country, internationally) I know the principles of the GDPR (Europe) and what it implies for the collection of data I am familiar with intellectual property and consortium agreements	- From a list of legal principles tick those that apply to research data - Fill out a quiz consisting of a set of different data types where you will answer whether the data is or is not GDPR compliant	the badge issuer will have to modify or adapt the expected competences according to national legislation	http://data.europa.eu/esco/skill/097c6a36-f031-4d3e-b5c1-62d6ffcb430b	
	F.A.I.R. data	A3	FAIR data	I know the FAIR principles for outputs	I understand how FAIR principles apply to my field of study, discipline, area of work	- List practical tasks you have completed when working with research data and match them to the correct 15 FAIR principles. - Verify if project descriptions from a given list meet the FAIR principles.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
	Data Management Plan (DMP)	A4	DMP	I know what a DMP is I know how to write a DMP according to the existing best practices	I know the DMP template for a Horizon Europe program or other funding agency. I know my institutional DMP template. I know the best practices for DMP existing in my field of study, discipline, area of work. I know where to find a DMP model	- Find a DMP template and adapt it to the specifics of their project. - Match different elements of the DMP to their definitions. - Showcase previous work experience in writing DMPs.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
	Choose a repository	A5	Choose repository	I know where to find a repository relevant for my outputs I know the main criteria for selecting a repository or data warehouse I know repositories' certificates and standards	I know Trustworthy Data Repositories Requirements I'm able to identify repositories (at national, European, and international level) to upload research data according to my discipline	- Assign examples of metadata to their categories. - Find two repositories that would be suitable for your project. - Upload your dataset to the selected repository.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
	Metadata and PID standards	A6	Metadata & PIDs	I know service that deliver persistent Identifiers (PIDs) for my outputs I can properly attribute metadata and PIDs to my dataset	I am able to distinguish between different PIDs (e.g. DOI, Handle, ORCID, SWHID) and know services which assign them I know discipline-related metadata to tag/index my data (e.g. controlled vocabularies)	- Make a list of services delivering PIDs - Complete a quiz identifying different elements of metadata relevant to the data created or collected within your discipline			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
Data collection and management	**Collect data**	B7	Collect data	I know how to collect data originating from sources relevant to my area of work (e.g. digital sources, observation, field work) I can identify relevant sources for data collection	I can create data relevant for my area of work. I can retrieve existing data relevant for my area of work I can enhance data	- Complete a quiz where you answer questions about whether the format is open or closed. - Complete a task in which you indicate which digital tools from the list are used to convert data. - Complete a task in which you convert the data you have collected into one open digital format of your choice.		http://data.europa.eu/esco/skill/79e29b8b-47d1-470d-b7b1-32506bfe7d9a	
	Tools for data collection	B8	Tools for data	I know and can use data collection systems	I know and can use data collection systems (e.g. SQL applications, SPSS, Omeka) relevant for my field of study, discipline area of work I am able to change tools in time if needed I can use advanced functions of a spreadsheet I can manage a digitized corpus of data (full text, images, video, etc.) with the appropriate tools	- Identify and tick tools for data collection from a list of programmes and systems. - Give examples of using formulas or advanced functions of spreadsheets and/or other data collection tools and systems in your work experience.		http://data.europa.eu/esco/skill/a80fb090-63f4-4b05-83a5-2f090deb7757	
Data Description	**Describe data**	C9	Describe data	I know and understand best practices for data documentation I can describe my dataset in a narrative way	I can write data documentation that facilitates interoperability I know best practices for data documentation in my field of study, discipline, area of work	- Prepare a narrative description of your dataset. - Complete a task in which you match disciplines to their corresponding thesauri. - From the list of good practices, select those that relate to data documentation.			
Data formatting and	**Organise data**	D10	Organise data	I know how to structure and organise existing datasets I know how to adjust data sizes, formats for different needs	I can organise data in different categories (e.g. working data and cold data) to facilitate proper research data workflows I am able to use the formats relevant to my discipline I know how to adjust the size of files I manage	- Complete a quiz where you choose relevant data formats for specific examples of data and projects. - Showcase previous experience in categorising and organising data you have worked with.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
				I am familiar with different data	I can adjust the data types cumulation	- Write a text that overroles the relevant resources	To know what is the the		

Category	Skill	Code	Short	Description 1	Description 2	Tasks	To be adapted	URL	EOSC framework
				data (full text, images, video, etc.) with the appropriate tools					
Data Description	Describe data	C9	Describe data	I know and understand best practices for data documentation I can describe my dataset in a narrative way	I can write data documentation that facilitates interoperability I know best practices for data documentation in my field of study, discipline, area of work	- Prepare a narrative description of your dataset. - Complete a task in which you match disciplines to their corresponding thesauri. - From the list of good practices, select those that relate to data documentation.			
Data formatting and storage	Organise data	D10	Organise data	I know how to structure and organise existing datasets I know how to adjust data sizes, formats for different needs	I can organise data in different categories (e.g. working data and cold data) to facilitate proper research data workflows I am able to use the formats relevant to my discipline I know how to adjust the size of files I manage	- Complete a quiz where you choose relevant data formats for specific examples of data and projects. - Showcase previous experience in categorising and organising data you have worked with.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/eos
	Store data	D11	Store data	I am familiar with different data storage software solutions for active, operational data I can manage software solutions for data storage (databases, servers, virtual machines)	I can adjust the data storage solution to my dataset. I can manage a database system. I can configure cloud-based solutions for data storage	- Write a text that presents the advantages and disadvantages of the database chosen for the project or explains why no database is used. - Create and upload a diagram that represents the data integration process.	To be adapted by the issuer according to the need and the local context. For example "I know how to install and configure a MySQL database".	http://data.europa.eu/esco/skill/a7f0fbe0-c546-4f30-8e41-34a58c64567e	
	Secure data	D12	Secure data	I apply information security policies. I know how to develop information security strategy	I know the security requirements of my organization I am able to keep software for data storage up to date	- Complete a quiz with basic security requirements of your organisation. - Give example(s) of the ways in which you have adopted information security strategy in previous projects.		http://data.europa.eu/esco/skill/86d2e2ea-1ba2-4aa6-b465-8a1f9abc81b8 http://data.europa.eu/esco/skill/3579208e-49b3-4ce4-98e7-20e41b1ce8d4	
Data quality assurance	Clean and normalise data	E13	Clean & normalise	I can clean and normalise a dataset according to the requirements of my laboratory, discipline or other framework	I can detect duplicates, incomplete, erroneous data I can use programming solutions for data reconciliation (fuzzy matching etc.). I know and can use software for data cleaning and normalisation (e.g. OpenRefine).	- Give an example of a routine associated with the project. - From the set of standards choose the ones that are compatible with the policy of your institution.		http://data.europa.eu/esco/skill/50b100ea-74fd-4706-99db-3e4ca55e51b8 http://data.europa.eu/esco/skill/07889c08-7220-47c8-96f7-6068fbea00dc	
	Assess data quality	E14	Assess data	I understand the concept of data quality I can determine the quality criteria for the data (well formatted, well indexed, up to date, etc.). I can implement or enforce the quality process	I can enforce open standards to ensure the quality of my data according to the standards of my discipline I can set up procedures for data quality assessments and use tools for that	- Complete a quiz where you verify the quality of data in a showcased dataset. - Identify examples of data quality assessment tools for your discipline.		http://data.europa.eu/esco/skill/54c9c155-9293-4329-8ed2-2e76e8b519d4	
Data processing and analysis	Integrate data	F15	Integrate data	I can aggregate data. I can integrate and harmonize various types of data	I am able to convert between different data formats, standards. I am skilled in integrating data from various sources. I am able to enrich datasets to provide interoperability	- Identify examples of aggregated data. - Enrich your data and explain step-by-step how you did it.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/eos
	Analyse data	F16	Analyse data	I can investigate datasets in order to identify relevant patterns, trends I am able to retrieve information for data analysis I am able to draw conclusions from data analysis	I am familiar with pattern recognition and/or statistical analysis. I know and can use tools supporting data analysis I know how to interpret the results of data analysis	- Showcase previous work experience in data analysis. - Make a list of tools relevant to different types of data analysis within your areas of interest.			
	Data Reproducibility	F17	Reproducibility	I am able to ensure the reproducibility of research based on a given dataset	I can use tools, methods, standards and prepare their documentation which guarantees reproducibility in obtaining research results	- Choose from the list the appropriate tool for specific needs. - Explain how to make your results reproducible for co-workers.			
	Visualise data	F18	Visualise	I understand the role of data visualization and can visualise data with digital tools	I am able to use a relevant data visualisation software to visualise and search my data I can propose an interface to visualise my data	- Prepare a list of examples of software for data visualization. - List concrete experiences where you conducted data visualisation and/or used data visualisation tools.		http://data.europa.eu/esco/skill/348b74cd-49ce-4844-8bdf-ec188b497213 http://data.europa.eu/esco/skill/c3e36d05-8ae8-447f-bb2b-6f9409f85389	
Data Archiving	Archive data	G19	Archive	I am able to ensure long term preservation of data through archiving	I know how to transfer my work data to a repository for archiving I know archiving centers or warehouses	- Explain why long-term data storage should be provided and how this can be done. - Select from the list of actions those that relate to data archiving.			
Publication and discoverability	Publish data	H20	Publish data	I know how to publish my data according to my needs and my discipline I publish my data "as openly as possible, as closed as necessary" and know how to make my results reusable for peers	I respect my institution's data release policy I can assign authorship to a dataset (i.e. "data collected" or co-workers). I am able to indicate all the references associated with the uploaded dataset	- Fill out a quiz in which you point out mistakes in examples of published data and suggest possible improvements. - Showcase previous work experience in publishing data and different tasks involved (respecting the release policies, assigning authorship, indicating references).			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
	Disseminate data	H21	Disseminate data	I know how to present my datasets and results in a communicative way understandable to different stakeholders	I am able to produce reports, guides, interpretable files, visuals, ... to explain data management I can share my data and results with a wider audience through popularization activities (e.g. social media posts, workshops, consultations with citizens etc.)	- Generate a visualization of your data set. - Prepare a plan for an information campaign aimed at a wider audience in which you present the results of your project.			Eosc framework, p76 (and next) of https://eoscpilot.eu/sites/default/files/eos
	Data discoverability	H22	Discoverability	I am able to improve data discoverability. I am able to ensure interoperability of research results	I can make my dataset interoperable through implementing standards and practices in my discipline. I am able to take advantage of different services that improve data discoverability (PID agencies, aggregators, citation indexes, repositories etc.). I know and can apply Semantic Web standards	- Fill out a quiz about interoperability standards where you identify examples of good practices from a closed list of possible actions. - Prepare a list of examples of different services improving discoverability of data in the context of your discipline.		http://data.europa.eu/esco/skill/03ff0d53-573a-47a0-a0ad-1995815a4339	