

Title	Abstract	Contents
Introduction to data management and data policy for RI managers	The introduction will present the key concepts relevant to managing data and data policy within RIs, including definitions of data, the role of metadata, and operational considerations, as well as a conceptual framework for managers.	What is data for your RI (datasets, software, protocols, etc.); the role of metadata for your RI; managing non-data research resources; use cases and hands-on exercises
Data management plans: its main parts and usefulness for RI and researchers of the RI	Developing a reliable and specific Data Management Plan is a core business of each Research Infrastructure. Dedicated Data Management Plans for Research Infrastructures ensure that the Research Infrastructures' data will be adequately described and made available to a broader public. This enables a more thorough perspective for re-use of data and the formulation of innovative data-centric research questions. During this part of the module, the main parts of a Data Management Plan will be discussed and its importance for researchers of the Research Infrastructure will be highlighted.	<ul style="list-style-type: none"> - sketch overview of the importance of Data Management Plans for Research Infrastructures - provide detailed overview of the main parts of Data Management Plans - elaborate on the relevance of the different elements of the Data Management Plans for Research Infrastructures - understand the differences and similarities of Data Management templates from various funding bodies and its implications for scientific end users of the Research Infrastructure

<p>Data management plans: setting up DMP templates for your RI</p>	<p>Translating Research Data Management Policies into best practise recommendation for data management plans is a crucial part of the practical implementation of Data Management Plans. During this part of the module, we provide and analyse best practises recommendation for the creation of Data Management Plans compliant with concrete use cases of specific technology domains in e.g. the Life Sciences. For an harmonisation of the heterogeneous description of various data types and its metadata, we introduce the Data Stewardship Wizard as versatile templating mechanism for various domains.</p>	<ul style="list-style-type: none"> - introduce the Data Stewardship Wizard as templating infrastructure for a broad variety of data types from various Research Infrastructures - apply the use of the Data Stewardship Wizard to create various tempaltes for Data Management Plans dedicated to different Research Infrastructures
<p>Data management plans: Bring your own facility and propose a template</p>	<p>In this part of the module, we aim to bring the theoretical knowledge on data management policies, data management plans and its diversity into practise. Based on real-world use cases from the participants' facilities, the participants applies the acquired knowledge and translates it into a draft template of a specific Data Management plan for the participants' research infrastructure. The resulting draft template of the data mangement plan will be reviewed by the research data management expert trainers and adequate feedback will be provided.</p>	<ul style="list-style-type: none"> - develop a draft template of a Data Management plan specific to the participants' research infrastructure as an interactive and home work task - provide expert feedback to the participant by advanced trainers in research data management

<p>FAIR principles and their application</p>	<p>In this part of the module, we aim at explaining students what the FAIR principles are, so that they have a better understanding of them at a general level. Once this is achieved, we aim at empowering them to be able to adapt and extend these principles to the specific characteristics of their research infrastructure, so that they can determine how findability, accessibility, interoperability and reuse can be applied to their RI context. By the end of this part of the module, students will be able to setup the guidelines for FAIRness in their Research Infrastructure, and plan the development and/or integration of the protocols, techniques and tools required to achieve such FAIRness.</p>	<ol style="list-style-type: none"> 1. Introduction to FAIR principles, including recipes that help you to make and keep data Findable, Accessible, Interoperable and Reusable 2. Making the data of your RI Findable. Theory and hands-on <ol style="list-style-type: none"> 2.1 Data catalogues and metadata practices 2.2 Deciding on the data catalogues and metadata items that you should use (hands-on) 3. Making the data of your RI Accessible. Theory and hands-on <ol style="list-style-type: none"> 3.1 Data formats and access types 3.2 Deciding on the data formats and access types that you should use (hands-on) 4. Making the data of your RI Interoperable. Theory and hands-on <ol style="list-style-type: none"> 4.1 Ontologies and other semantic artefacts 4.2 - Deciding on the semantic artefacts to use and how to govern them (hands-on) 5. Making the data of your RI reusable (and citeable). Theory and hands-on <ol style="list-style-type: none"> 5.1 Usage examples to facilitate reusability 5.2 Citation 5.3 Deciding on the reusability and citation guidelines that you should use (hands-on) 6. BYOF (Bring your own facility): propose a FAIR infrastructure for your RI
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<p>Operational oversight of data management and policy in an RI</p>	<p>The module will cover various aspects of operational oversight of data within RIs, including aspects of data management and data policy development.</p>	<p>Conceptual framework for policy development (based on ENVRI-FAIR); Data governance policies and principles (processes, people, tools); Preservation policies; Data quality assurance policies; Data security and privacy policies; Use cases and hands-on exercises ; "Making the data of your RI reusable (and citeable). Theory and hands-on</p> <ul style="list-style-type: none">- Citation- Deciding..." ; BYOF (Bring your own facility): propose a FAIR infrastructure for your RI
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Outcomes

- understand the key issues and concepts around the management of data and data policy within an operational RI

- understand the importance of dedicated data management plans for increased data quality of the Research Infrastructures main assets

- support compliance with Research Infrastrucure's data management policies

- contribute to knowledge exchange with regard to data management by Research Infrastructure's gateway function

- being able to focus on the essential cornerstones of research data management plans for increased quality of service provisioning

- understand, catalogue and manage different types of data (understood in a broad sense: datasets, software, workflows, etc.) and how they are represented by templating mechanisms for Data Management Plans

- understand the different requirements for data and metadata descriptions related to different data types of various Research Infrastructures

- develop an individual and personalised template for a data management plan for the participants' research infrastructure

- ensure improved quality of the draft template by expert level feedback after assessment of the provided data management plan template

I will know which are the FAIR principles, in general

I will be able to determine, for each FAIR principle, how it relates to the datasets generated in my institution.`

I will be able to describe how the FAIR principles should be applied to these datasets.

"You will learn how to identify and develop relevant data management policies for your research infrastructure, for the whole data lifecycle"; "You will learn how to define appropriate workflows, roles, and responsibilities among your RI staff for data management"; "You will learn how to understand, catalogue and manage different types of data (understood in a broad sense: datasets, software, workflows, etc.) that are handled and generated in your RI and by your RI users"; "You will learn how to setup the data management plan policies and ensure that your RI staff and researchers develop data management plans according to these policies"; "You will learn about the importance of data security and how to spot potential gaps within your RI; "You will learn what is needed to make data and metadata accessible for the long-term (preservation)"; "You will be instructed on best practices in quality assurance for data"; "Data sharing and access (open data vs closed data) and restrictions/control, in an Open Science context"; "You will learn which are the certification mechanisms that are available for data management in different RIs/scientific communities, and be able to determine whether you need them for your RI "