

# FAIR Data Stewardship Training

For NordForsk / Nordic e-Infrastructure Collaboration (NeIC)

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**Disclosure Status:** Confidential

## Table of Contents

<b>Introduction</b>	<b>2</b>
<b>Overview of training approach</b>	<b>2</b>
<b>Outline planning</b>	<b>3</b>
<b>Module 1 - Introduction to FAIR</b>	<b>4</b>
<b>Module 2 - Data Stewardship &amp; FAIR in detail</b>	<b>5</b>
<b>Module 3 - FAIR tools and infrastructure</b>	<b>6</b>
<b>Module 4 - Technical aspects of FAIR and linked data</b>	<b>7</b>



## Introduction

This document will describe the approach to the NordForsk / NeIC FAIR data stewardship training that will be held from the 26th of October to the 30th of November as a fully online event.

## Overview of training approach

The FAIR Data Stewardship training will cover the following modules:

	Module	Sessions	Contents
1	Introduction to FAIR	4 x 1.5 hrs	This module is an introduction to all main aspects of FAIR.
2	FAIR in detail & Data Stewardship	4 x 1.5 hrs	This module explores all aspects of FAIR in detail, including semantic interoperability, and how to manage the data stewardship process. It contains several hands-on and/or home assignments to practice basic semantic modeling and working with the data stewardship wizard.
3	FAIR tools and infrastructure	4 x 1.5 hrs	This module focuses on the FAIR tooling. Three tools/applications are highlighted in particular: FAIR Evaluator, FAIRifier and FAIR Data Point. For these tools demos and home assignments are available.
Interim evaluation and Q&A			
4	Technical aspects of FAIR and linked data	6 x 1.5 hrs	This module is, in my view, more aimed at people who will get directly involved in realising FAIR data. This module would be given by Mark Wilkinson/FAIR Data Systems.
Closing Session			

The training will be held fully online. The live sessions will be hosted using Zoom webinar where the course host will manage the course proceedings and handling the Q&A while the presenter will focus on delivering the content. Two sessions will be devoted to reflection, Q&A and looking forward.

All training materials will be available in the training environment as well as recordings of the sessions which will be available for a month after the end of the course. For certain modules exercises will be available. Also course attendees will be able to ask questions to the trainers or each other.



## Outline planning

Session will take place over a period of 6 weeks, from Monday the 26th of October to Monday the 30th of October. Sessions take place on Monday and Thursday mornings.

Day	Date	time	Content
			<b>MODULE 1 - INTRODUCTION TO FAIR</b>
Monday	26/10/2020	09:00-10:30	Module 1.1 - Introduction to FAIR and GO FAIR
		11:00-12:30	Module 1.2 - Introduction to FAIR Data Stewardship
Thursday	29/10/2020	09:00-10:30	Module 1.3 - FAIR Data Stewardship: processes, roles and tools
		11:00-12:30	Module 1.4 - FAIR data into practice
			<b>MODULE 2 - FAIR IN DETAIL &amp; DATA STEWARDSHIP</b>
Monday	2/11/2020	09:00-10:30	Module 2.1 - Interoperability: understanding semantics
		11:00-12:30	Module 2.2 - Interoperability: ontology engineering
Thursday	5/11/2020	09:00-10:30	Module 2.3 - The FAIR principles: in depth
		11:00-12:30	Module 2.4 - Data stewardship planning in detail
			<b>MODULE 3 - FAIR TOOLS AND INFRASTRUCTURE</b>
Monday	9/11/2020	09:00-10:30	Module 3.1 - FAIRification process and FAIR ecosystem
		11:00-12:30	Module 3.2 - FAIR Data Point
Thursday	12/11/2020	09:00-10:30	Module 3.3 - FAIR Evaluation and FAIR Evaluator
		11:00-12:30	Module 3.4 - Other Tools and providers
Monday	16/11/2020	09:00-10:30	<b>Interim Q&amp;A SESSION</b>
			<b>MODULE 4 - TECHNICAL ASPECTS OF FAIR AND LINKED DATA</b>
Thursday	19/11/2020	09:00-10:30	Module 4.1 - FAIR Data - I
		11:00-12:30	Module 4.1 - FAIR Data - II
Monday	23/11/2020	09:00-10:30	Module 4.2 - Contemporary web data publishing paradigms - I
		11:00-12:30	Module 4.2 - Contemporary web data publishing paradigms - II
Thursday	26/11/2020	09:00-10:30	Module 4.3 - SKOS and SPARQL - I
		11:00-12:30	Module 4.3 - SKOS and SPARQL - II
Monday	30/11/2020	09:00-10:30	<b>FINAL SESSION</b>



## Module 1 - Introduction to FAIR

**Modules:** 4 x 1.5 hours

**Contents:** General introduction into FAIR and data stewardship

**Aim:** Provide a common basis of understanding of FAIR

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### Module 1.1 - Introduction to FAIR and GO FAIR

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Introduction to FAIR
- The evolution of FAIR and GO FAIR
- The internet of FAIR Data & Services
- Data Stewardship as a new profession
- The cost and benefits of FAIR: use cases

### Module 1.2 - Introduction to FAIR Data Stewardship

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- FAIR Data Stewardship the old way
- Data management versus data stewardship
- A systematic approach to data stewardship
- Practical examples and implementations

### Module 1.3 - FAIR Data Stewardship: processes, roles and tools

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- The 7 canonical steps of FAIRification
- The FAIR ecosystem
- Data Stewardship roles
- FAIR service providers and tools

### Module 1.4 - FAIR data in practice

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Three-point FAIRification Framework
- Metadata for machines, FAIR Implementation profiles
- Implementation examples
- Look back & conclusions for module 1



## Module 2 - Data Stewardship & FAIR in detail

**Modules:** 4 x 1.5 hours

**Contents:** Detailed FAIR principles, semantic interoperability and data stewardship planning

**Aim:** Provide insight in what is required to implement and manage a FAIR data strategy

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### Module 2.1 - Interoperability: understanding semantics

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Interoperability through time
- What is semantic interoperability?
- How can semantics improve the current data situation?
- Types of ontologies
- Spectrum of knowledge representation approaches

### Module 2.2 - Interoperability: ontology engineering

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Ontology adequacy
- Types and individuals
- Principle of identity
- Roles and phases
- Formal and material relations

### Module 2.3 - The FAIR principles: in depth

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Metadata
- Data / digital resources
- Supporting elements
- FAIR Principles, one by one

### Module 2.4 - Data stewardship planning in detail

*Duration:* 1.5 hours, including discussion and demo

*Topics:*

- Data Stewardship and Data Management
- Data Management / Stewardship Plans in relation to the FAIR principles
- Data Stewardship Wizard



## Module 3 - FAIR tools and infrastructure

**Modules:** 4 x 1.5 hours

**Contents:** Detailed FAIR principles, semantic interoperability, FAIR tools and infrastructure

**Aim:** Provide insight how to become FAIR and what resources are available to achieve this

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### Module 3.1 - FAIRification process and FAIR ecosystem

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- FAIRification process and its steps
- Overview of key tools and components

### Module 3.2 - Tools: FAIR Data Point

*Duration:* 1.5 hours, including discussion and Q&A

*Topics:*

- Detailed overview of FDP
- Example: VODAN FDP
- Demonstration of the VODAN FDP
- Hands on working with FDP

### Module 3.3 - FAIR Evaluation and FAIR Evaluator

*Duration:* 2 hours

*Topics:*

- The philosophy of FAIR testing
- FAIR Maturity indicators
- FAIR Evaluator
- Hands-on execution of tests and evaluations

### Module 3.4 - Other tools and providers

*Duration:* 1.5 hours, including Q&A and hands on assignments

*Topics:*

- FAIR Data Search Engine
- FAIR Annotator
- FAIR Providers
- FAIR providers



## Module 4 - Technical aspects of FAIR and linked data

**Modules:** 6 x 1.5 hours (in 3 hour sessions)

**Contents:** Implementing FAIR: RDF, data publishing, linked data, SKOS and SPARQL

**Aim:** Understand the technical aspects that enable a FAIR data infrastructure

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### Module 4.1 - FAIR Data

*Duration:* 2 x 1.5 hours

*Topics:*

- FAIR Data modelling
- Ontology Lookups
- Globally unique and persistent identifiers
- RDF Mapping Languages
- Hands-on data transformation

### Module 4.2 - Contemporary data publishing paradigms on the Web

*Duration:* 2 x 1.5 hours

*Topics:*

- REST on the Web
- The W3C's Linked Data Platform (LDP)
- Using 'curl' to publish FAIR data
- Hands-on exploration of an LDP server
- Introduction to Metadata modelling
- How metadata relates to the FAIR Principles
- Metadata modelling paradigms

### Module 4.3 - SKOS and SPARQL

*Duration:* 2 x 1.5 hours

*Topics:*

- Creating machine-readable descriptors
- Publishing SKOS Concept Schemes
- Querying Linked Data using SPARQL
- Hands-on publishing and querying metadata