

Personal Health Train

<https://vimeo.com/143245835>



Personal Health Train - English

3 years ago

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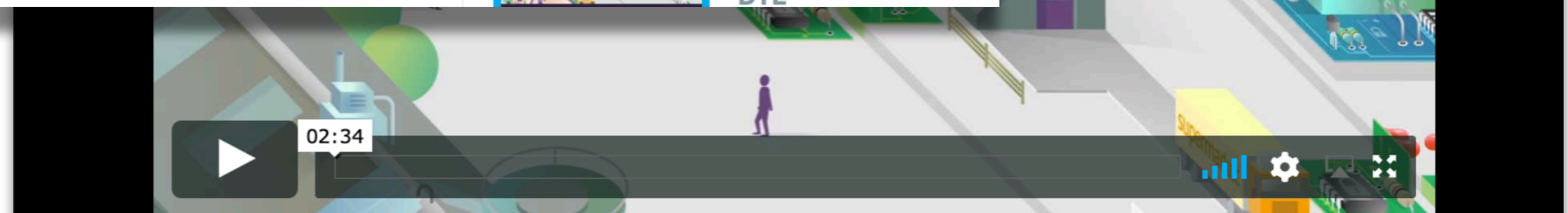
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Personal Health T...

DTL



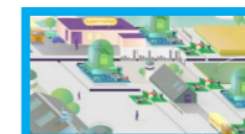
Farm Data Train

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Farm Data Train

DTL

Cloud Storage Services for Synchronization and Sharing (CS3)

Open, FAIR &  FAIR

Erik Schultes, PhD

International Science Coordinator

GO FAIR International Support and Coordination Office

erik.schultes@go-fair.org

go-fair.org

Consiglio Nazionale delle Ricerche, Rome

<http://www.cs3community.org>

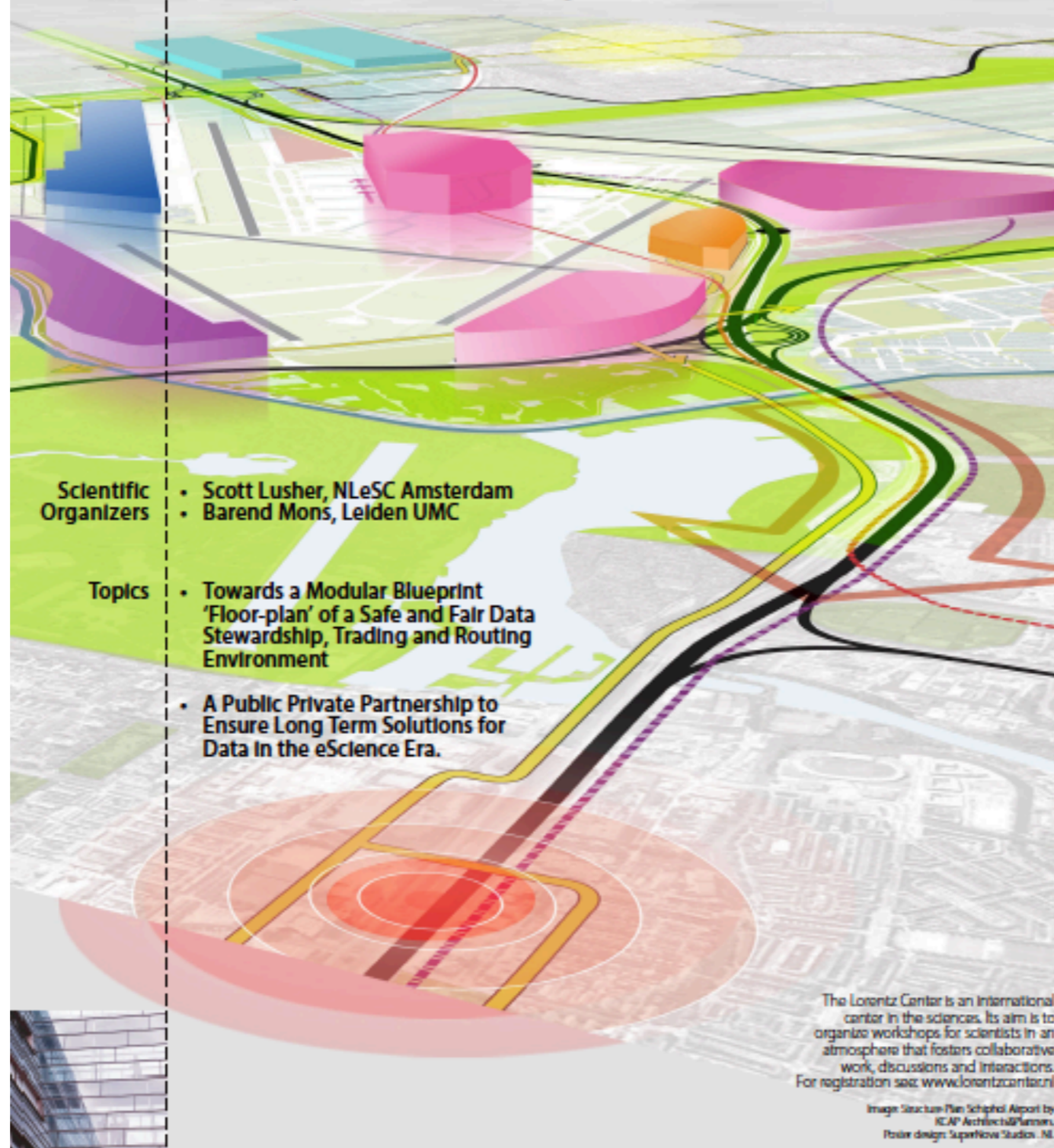
January 29, 2019

2014

Lorentz
center

Jointly Designing a Data FAIRPORT

Workshop: 13 - 16 January 2014, Leiden, the Netherlands



Scientific Organizers

- Scott Lusher, NLeSC Amsterdam
- Barend Mons, Leiden UMC

Topics

- Towards a Modular Blueprint 'Floor-plan' of a Safe and Fair Data Stewardship, Trading and Routing Environment
- A Public Private Partnership to Ensure Long Term Solutions for Data in the eScience Era.

The Lorentz Center is an international center in the sciences. Its aim is to organize workshops for scientists in an atmosphere that fosters collaborative work, discussions and interactions. For registration see: www.lorentzcenter.nl

Image Structure Plan Schiphol Airport by ICAP ArchitectuurPlannen. Poster design: SuperNova Studios, NL



Lorentz
center

www.lorentzcenter.nl

2016

What is FAIR ?

**“Data and services that are
findable,
accessible,
interoperable,
re-usable
both for machines and for people.”**

The FAIR Guiding Principles for scientific data management and stewardship,
Scientific Data (2016), <https://www.nature.com/articles/sdata201618>

2016

FAIR is for machines

**Data and services that are
findable,
accessible,
interoperable,
re-usable
for machines** *(and sometimes, in rare
circumstances, maybe even for people).*

FAIR Principles

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

Findable:

F1 (meta)data are assigned a globally unique and persistent identifier;

F2 data are described with rich metadata;

F3 metadata clearly and explicitly include the identifier of the data it describes;

F4 (meta)data are registered or indexed in a searchable resource;

Interoperable:

I1 (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2 (meta)data use vocabularies that follow FAIR principles;

I3 (meta)data include qualified references to other (meta)data;

Accessible:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol;

A1.1 the protocol is open, free, and universally implementable;

A1.2 the protocol allows for an authentication and authorization procedure, where necessary;

A2 metadata are accessible, even when the data are no longer available;

Reusable:

R1 meta(data) are richly described with a plurality of accurate and relevant attributes;

R1.1 (meta)data are released with a clear and accessible data usage license;

R1.2 (meta)data are associated with detailed provenance;

R1.3 (meta)data meet domain-relevant community standards;

14 Core FAIR Metrics

Findable:

F1 (meta)data are assigned a globally **unique** and **persistent** identifier; **FM-F1A** **FM-F1B**

F2 data are described with **rich metadata**; **FM-F2**

F3 metadata clearly and explicitly include the **identifier of the data** it describes; **FM-F3**

F4 (meta)data are registered or **indexed** in a searchable resource; **FM-F4**

Interoperable:

I1 (meta)data use a formal, accessible, shared, and broadly applicable **language for knowledge representation**. **FM-I1**

I2 (meta)data use **vocabularies that follow FAIR principles**; **FM-I2**

I3 (meta)data include **qualified references** to other (meta)data; **FM-I3**

Accessible:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol;

A1.1 the protocol is **open, free, and universally implementable**; **FM-A1.1**

A1.2 the protocol allows for an **authentication and authorization** procedure, where necessary; **FM-A1.2**

A2 metadata are accessible, **even when the data are no longer available**; **FM-A2**

Reusable:

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R1.2 (meta)data are associated with **detailed provenance**; **FM-R1.2**

R1.3 (meta)data meet domain-relevant **community standards**; **FM-R1.3**

Sci. Data 5:180118 doi: 10.1038/sdata.2018.118 (2018)

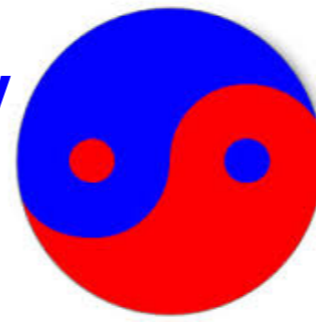
<http://fairmetrics.org>

<https://github.com/FAIRMetrics/Metrics/blob/master/ALL.pdf>

FAIR Principles

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

Technology



Domain-relevant content

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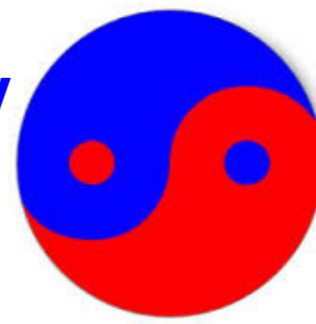
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FAIR Principles

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

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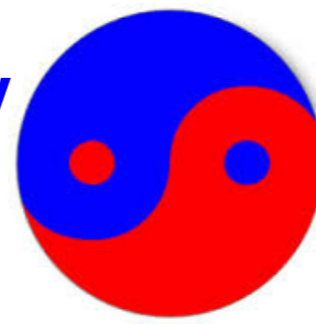
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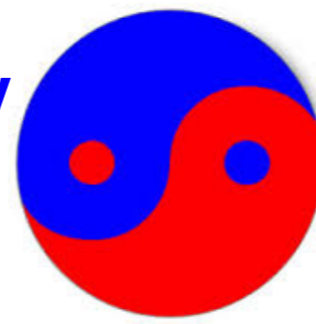
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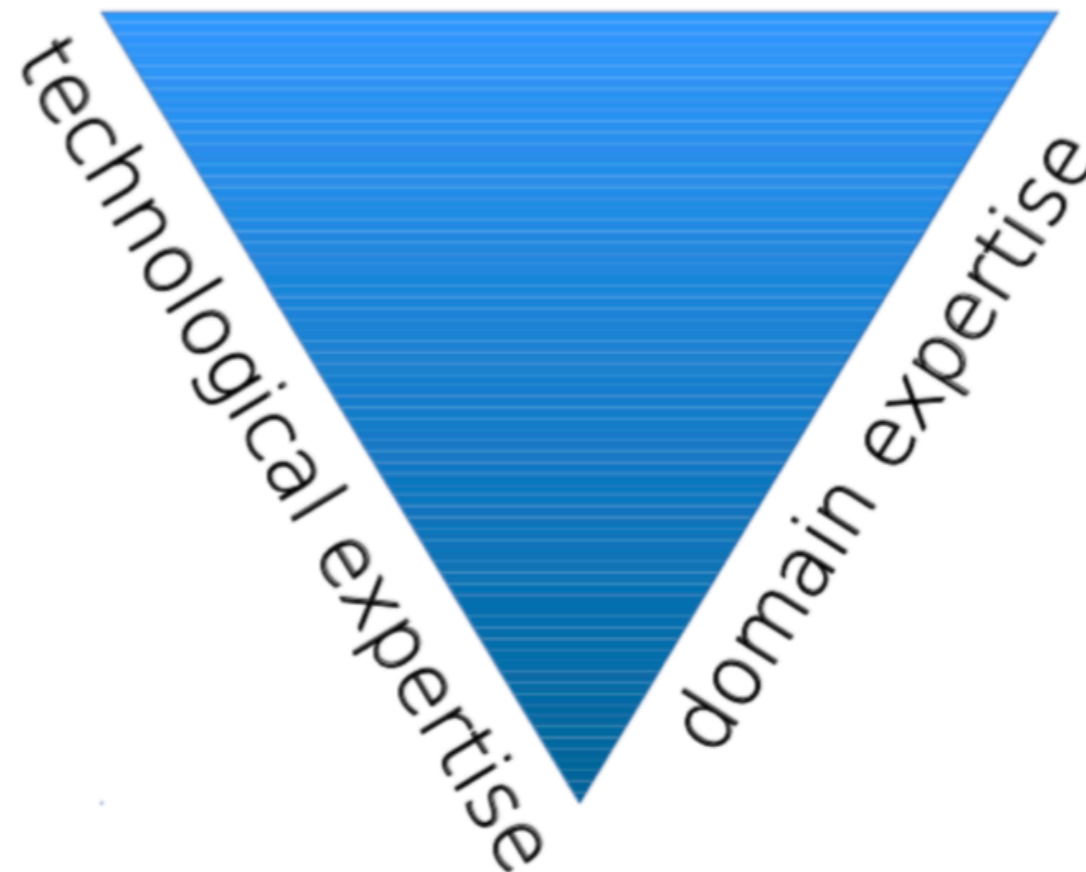
GO FAIR



Domain-relevant content

Know-how?

machine learning
expertise

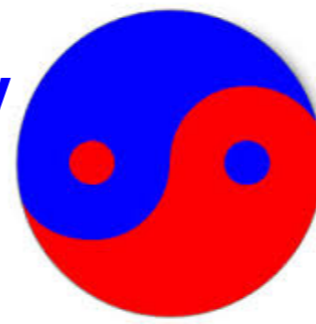


Davide Salomoni

FAIR Principles

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

Technology



Domain-relevant content

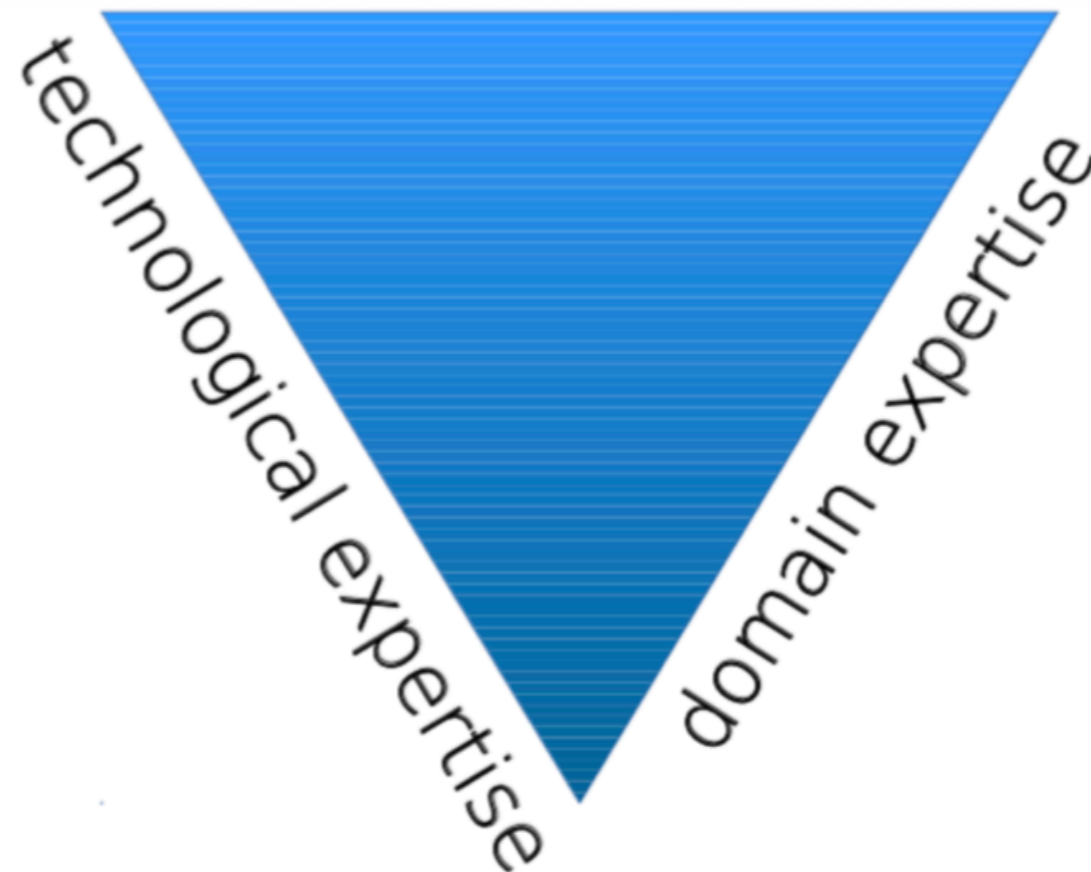


Know-how?

» ...for **decoupling scientific domain knowledge** from **IT domain knowledge** experts and let each of them focus on their area.

- Essentially now, dedicating too much time to IT “technical” duties ends your career as a domain scientist.

Isabel Campos Plasencia



Davide Salomoni

What FAIR is not ...

Cloudy, increasingly FAIR; revisiting the FAIR Data guiding principles for the European Open Science Cloud DOI: 10.3233/ISU-170824

FAIR is **not** a standard

FAIR is **not** equal to 'Open' or 'Free'

*Data are often Open but **not** FAIR*

*Data could be **Closed** yet perfectly FAIR*

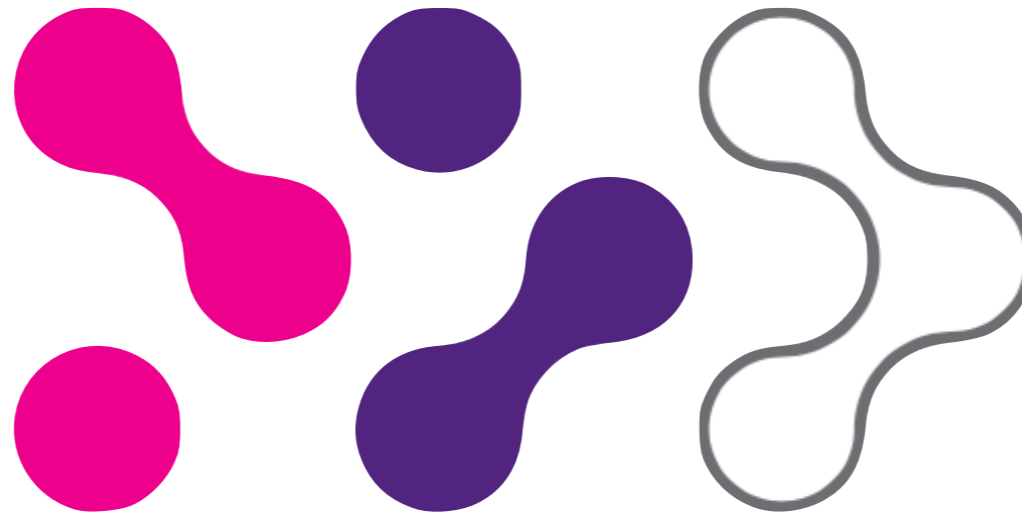
2016



EOSC



DTL



FAIRdICT

Project

2016

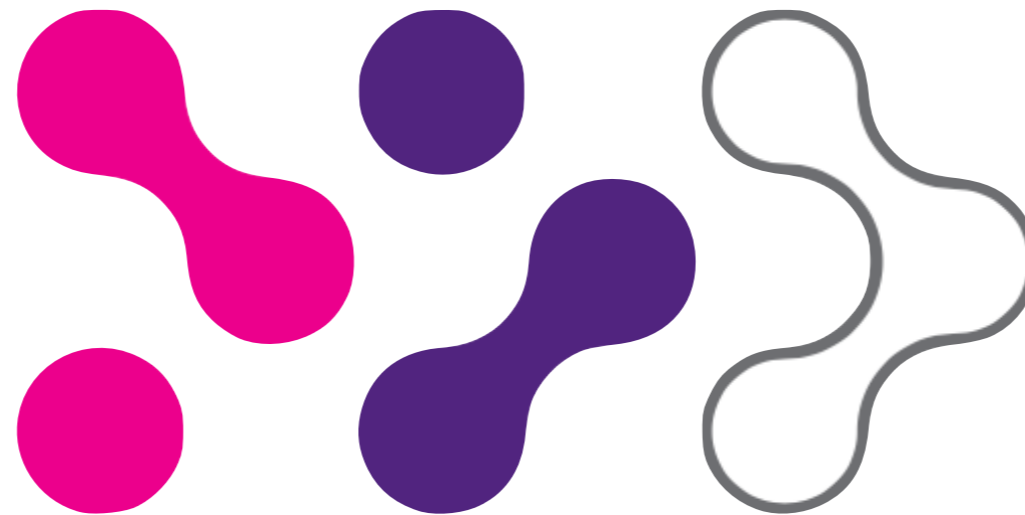


*FAIR
Principles*

EOSC



DTL



FAIRdICT
Project

2016

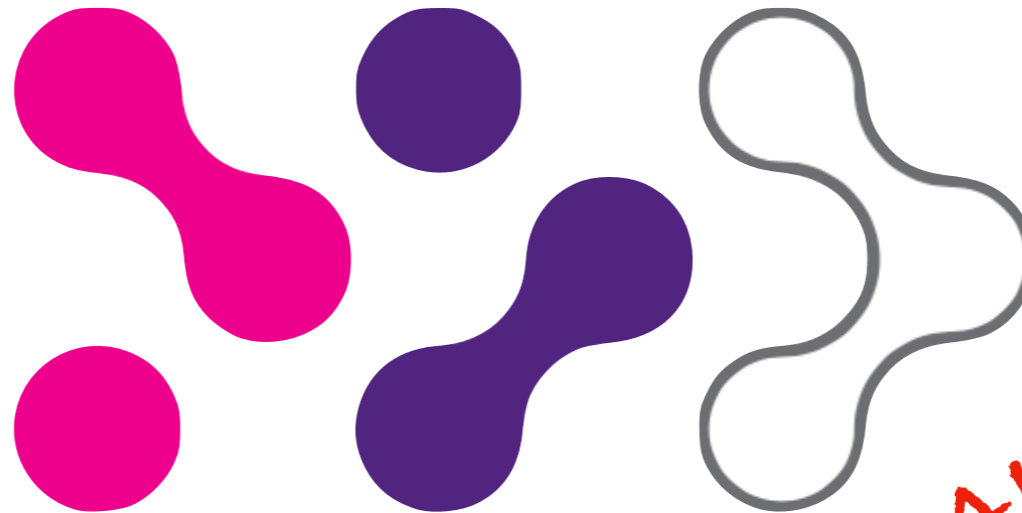


*FAIR
Principles*

EOSC



DTL



FAIRdICT

Project

*FAIR
reference
implementations*

2016

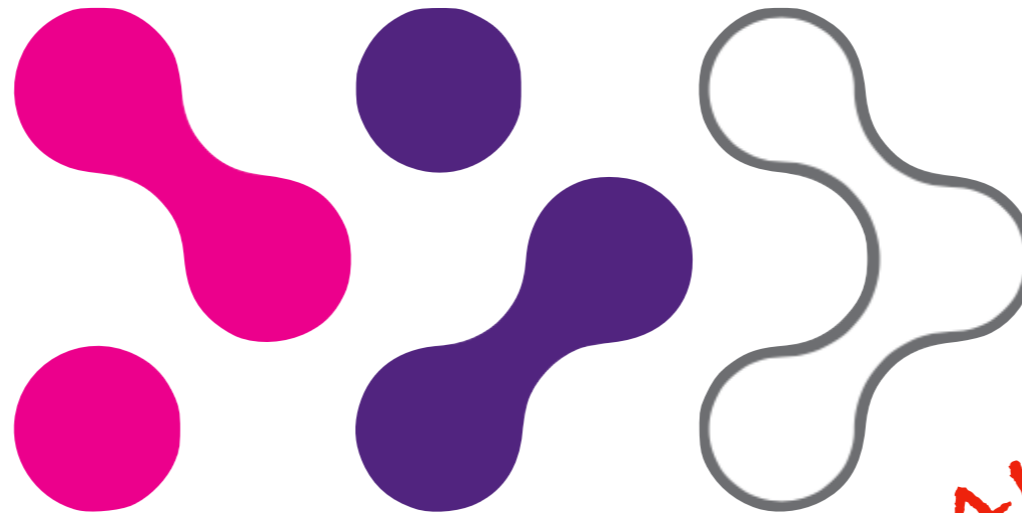


*FAIR
Principles*

EOSC



DTL

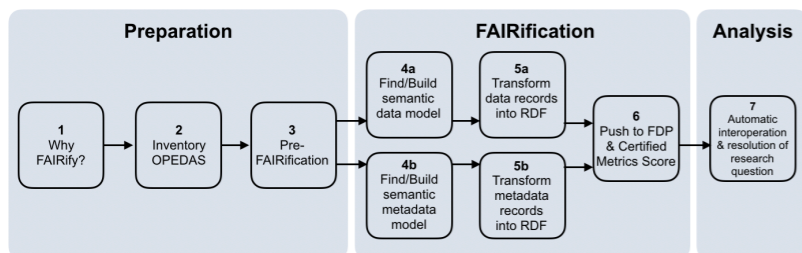


FAIRdICT

Project

FAIRIFIER

Canonical 7-step FAIRification Pipeline

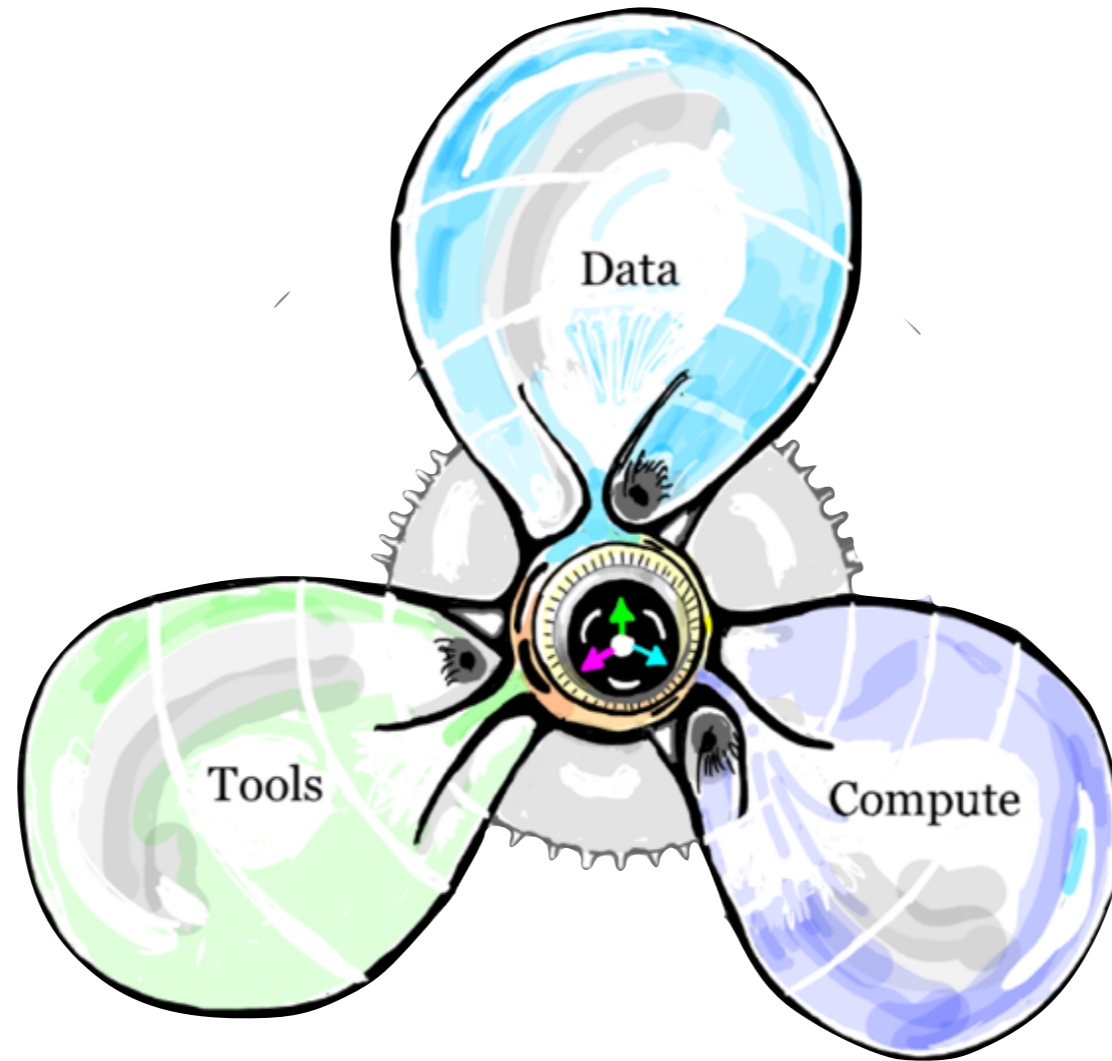


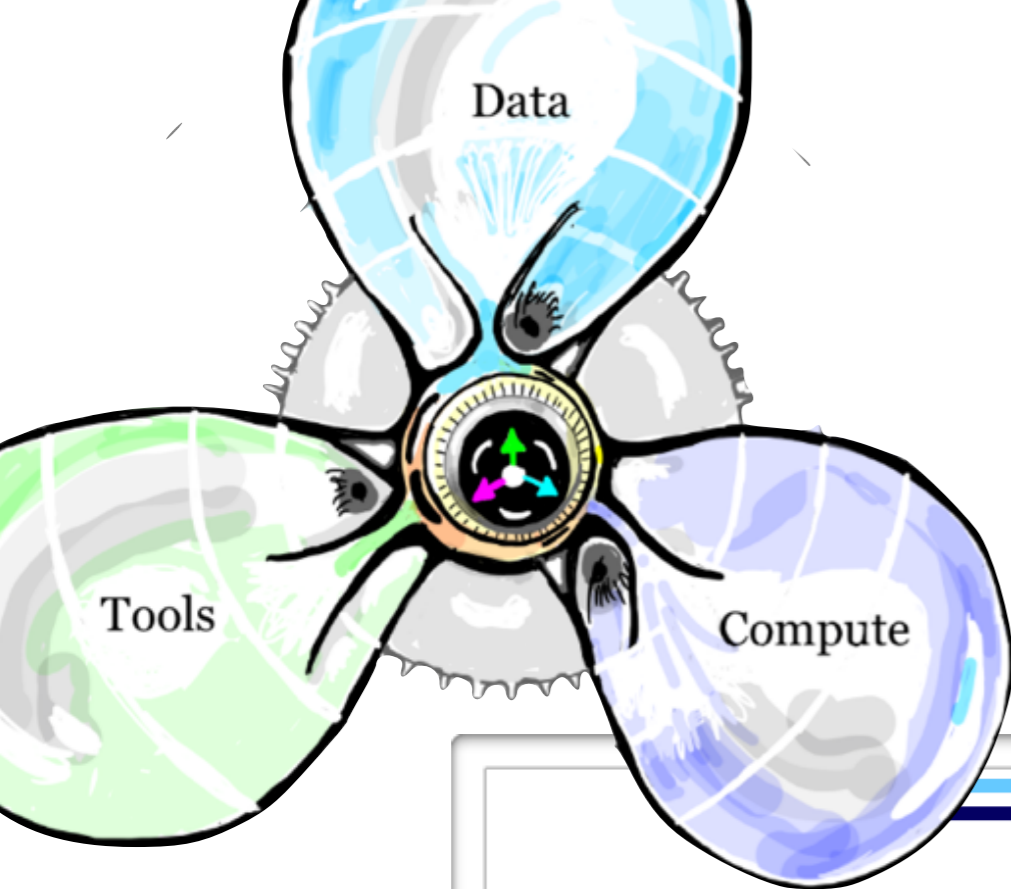
*FAIR
reference
implementations*

DATA PACKAGING

GAVIN KENNEDY

Internet of FAIR Data & Services



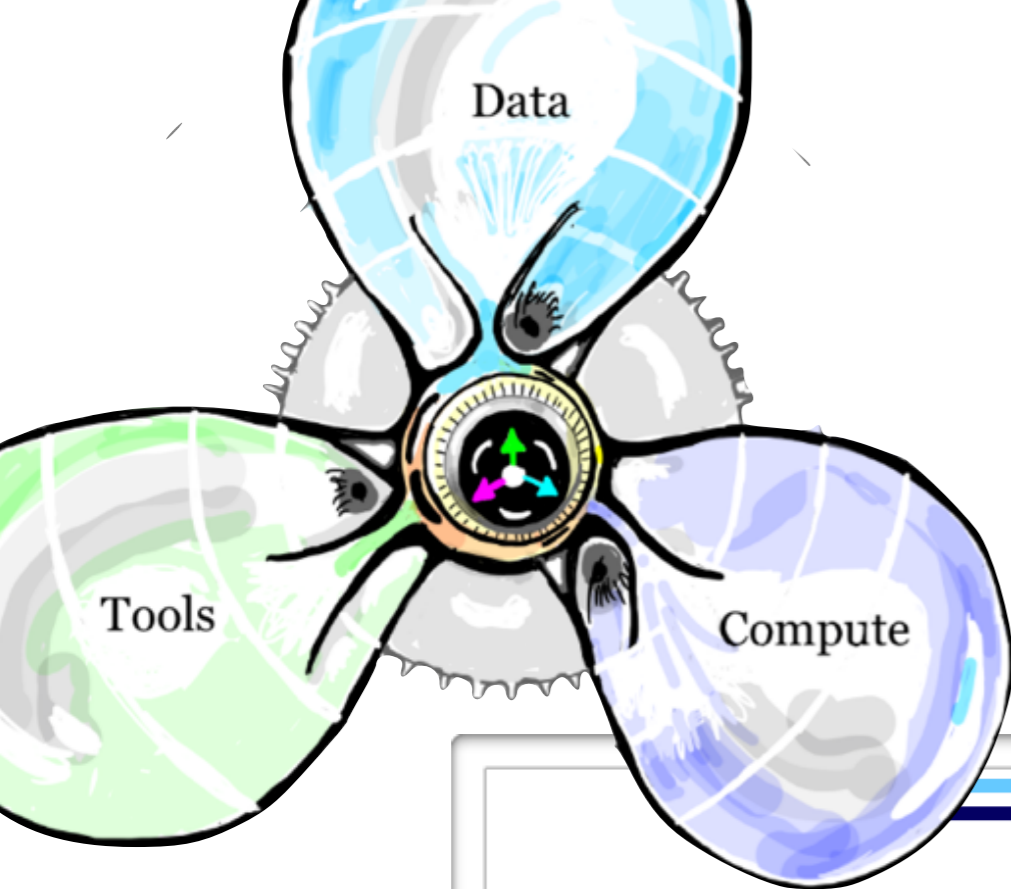


But, in practice, how does it work?



- The naïve assumption:
- I *have*:
 - A data set I want to analyze
 - Some algorithms I want to apply to this data
 - Some software that can use these algorithms
 - Some computing resources that can run this software
 - Some space where I can store my output
- I *assemble everything together* and off I am.

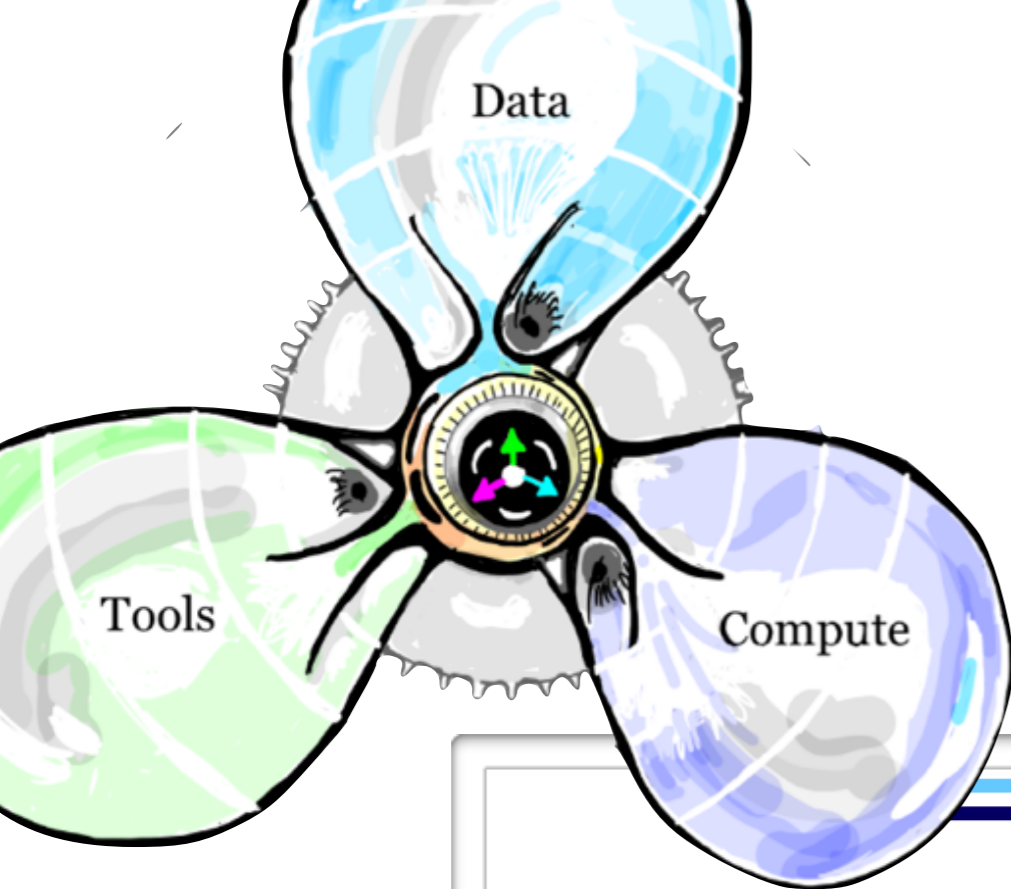




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Automatic

2017

***FAIR
Principles***



***FAIR
Implementations***

2017

***FAIR
Principles***



***FAIR
Implementations***

GO FAIR International Support and Coordination Office



Leiden



Hamburg



Paris

GO FAIR Modus

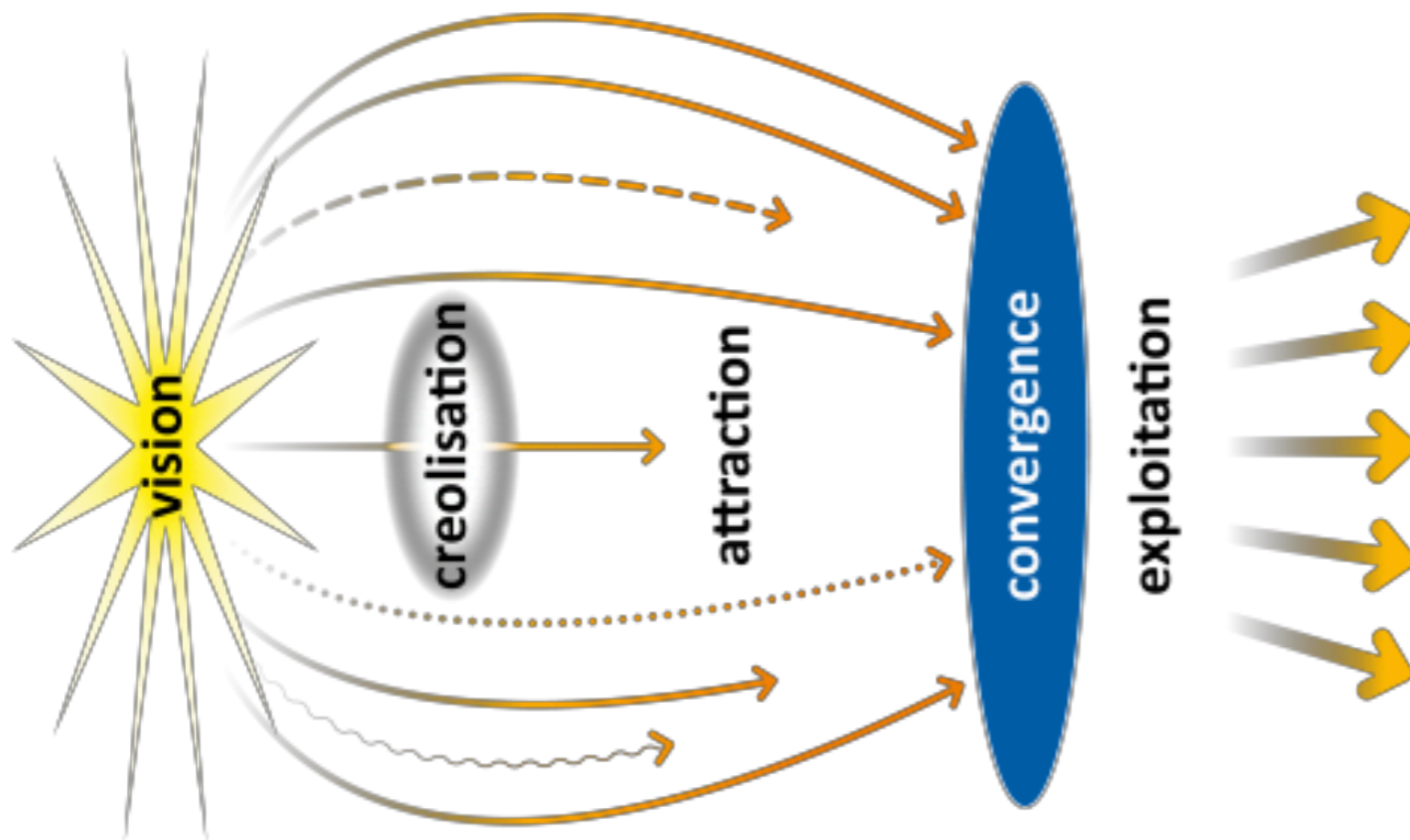
Common Patterns in Revolutionary Infrastructures and Data

Peter Wittenburg, Max Planck Computing and Data Facility

George Strawn, US National Academy of Sciences

February 2018

https://www.rd-alliance.org/sites/default/files/Common_Patterns_in_Revolutionising_Infrastructures-final.pdf



GO FAIR Modus

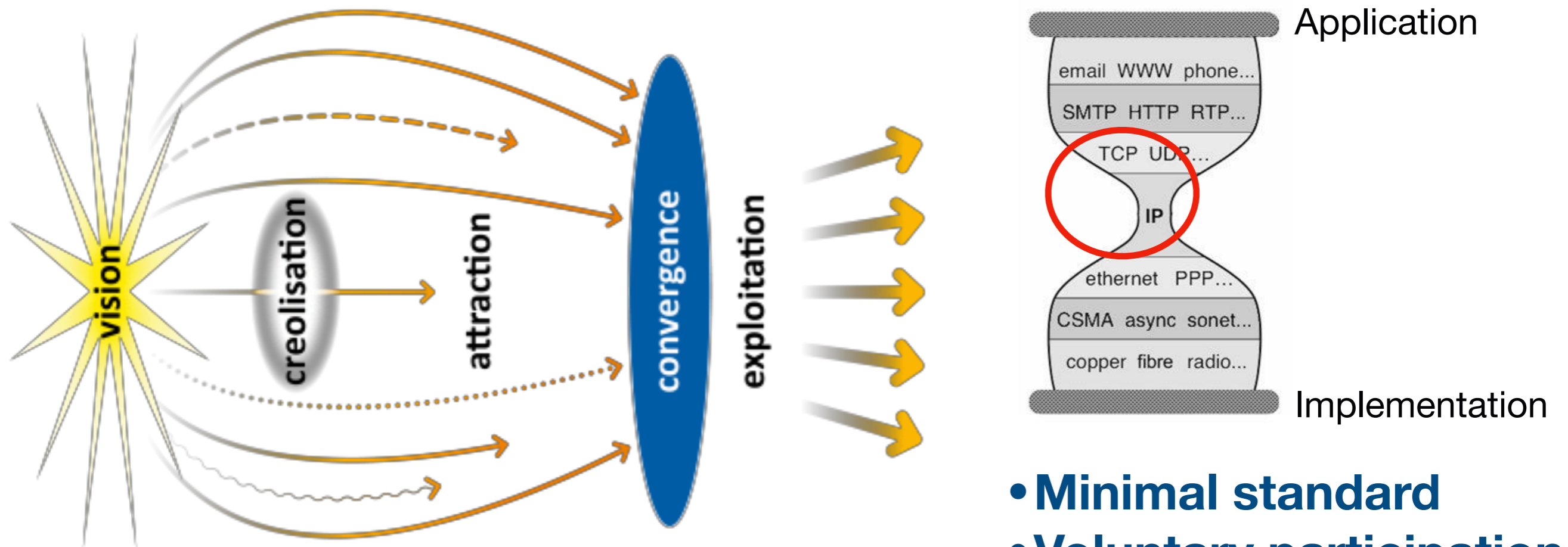
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- **Minimal standard**
- **Voluntary participation**
- **Critical mass of users**

GO FAIR Modus

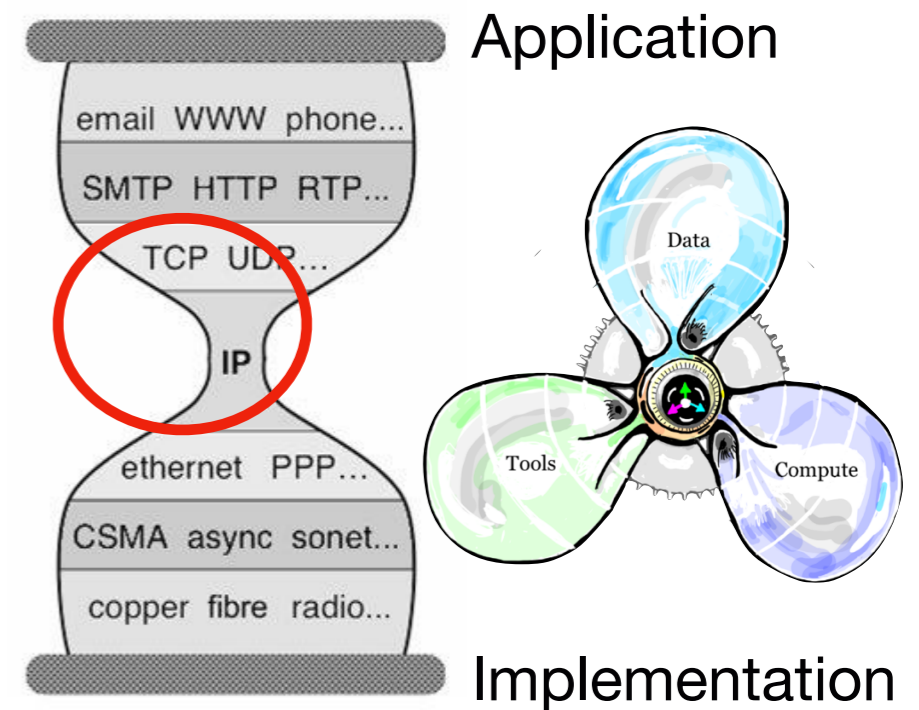
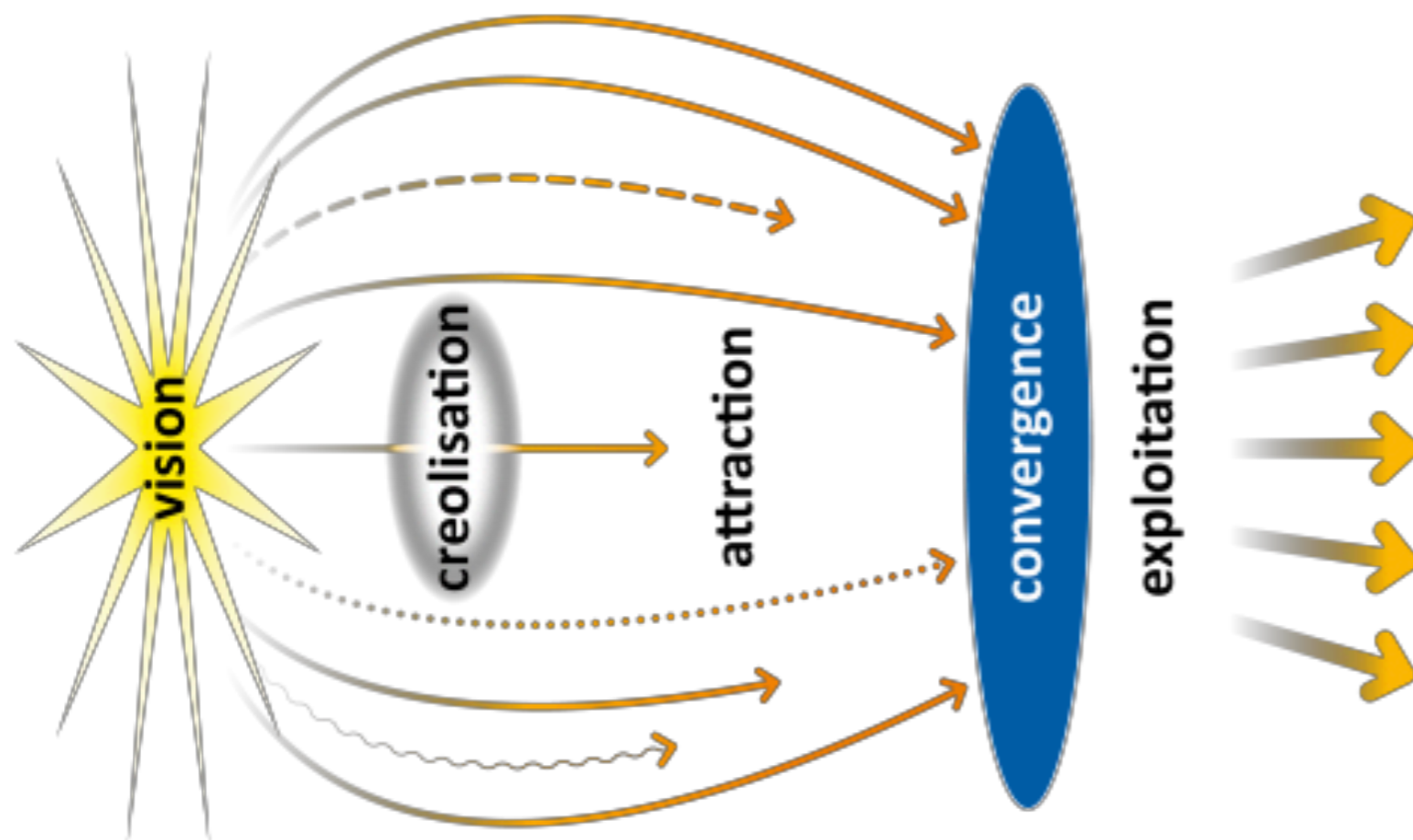
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- **Minimal standard**
- **Voluntary participation**
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Programme Highlights

- Attention to collaborative add-on services moving to production grade
- Data science on EFSS now a real thing
- Links up to policy and governance around open science / EOSC finally beginning to form (new track!)

(thought: is EFSS emerging as the waist of the hourglass for data?)



Consiglio Nazionale
delle Ricerche

Creolization

Attractors

Convergence

IFDS

- LUMC
- UMC Utrecht
- UMCG
- WUR
- Maastricht University
- BioSemantics Group
- UCSD
- BioCom
- NDS
- ANDS
- NIH
- FAIRdICT
- DTL
- LERU
- CGIAR
- DANS
- RDA
- Metrics Group
- F1000
- Force 11
- Nerdalize
- ODEX
- Lorentz Center
- Personal Health Train
- ReproNIM
- EOSC
- EUDAT
- OpenAIRE
- FOSTER
- CODATA
- EDISON
- BioSB
- HRB
- ZonMW
- Elsevier
- Springer-Nature

GO CHANGE

GO TRAIN

GO BUILD



FAIR Funding
GO FAIR Brazil

CO-OPERAS

FAIR Funders

Neubias

Training Frameworks
Training Curriculum
Seasons Schools

AGU Enabling FAIR Data
System Terre
Sea Data Net

FAIR Pointer

Discovery IN
GERDI
OPEDAS
C2CAMP
Personal Health Train

Annotation

ASTRON

Metrology

Chemistry

Nano Research

NOMAD

FAIR Journalism (Fake News Monitoring)
Reproducibility and quality assurance of research data

Metabolomics

Vaccine IS

Rare disease

BiodiFAIRse

Agriculture & Food Systems

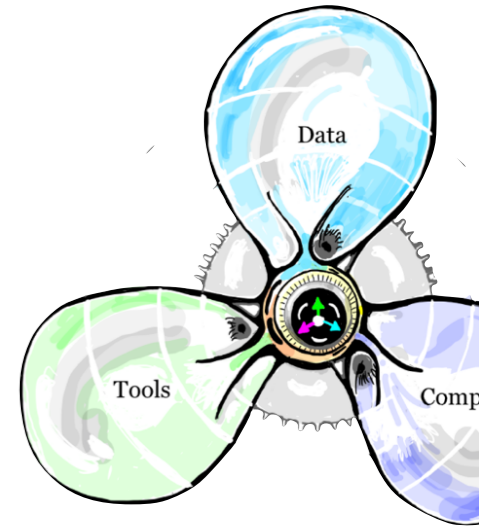
INOSIE

EcoSoc

PhenoMeNal

CBS (Economics)

Sustainability Research



2017

Q1

Q2

Q3

Q4

2019





QUESTIONS

RESPONSES

19

Section 1 of 14



Implementation Network (IN) Profile

We ask each IN Coordinator to complete this survey as a way for GO FAIR to begin profiling the FAIR-related resources found among more than 30 INs.

The survey contains 14 questions, and will take 30-45 minutes to complete. The entire form can be downloaded here as a PDF: <http://bit.ly/2BvxAH8>.

This survey serves two functions:

- (1) Curatory inventory of FAIR-related resources of the IN (this will enable GO FAIR to better search for and to exploit synergies maximising re-use of FAIR solutions).
- (2) A first step in helping INs to frame their own consortia and objectives in the context of the GO FAIR community.

Many of the questions below relate directly to the FAIR Principles (<https://www.go-fair.org/fair-principles/>) and are noted as such in the question. We hope this helps to guide the IN Coordinator to better understand the question.

1. Name of the Implementation Network *

Short answer text

2. IN Coordinator name *

Short answer text



SUBJECT	PREDICATE	OBJECT
name of IN (UPRI)	has-coordinator	ORCID
name of IN (UPRI)	has-participant	ORCID
name of IN (UPRI)	has-member-organisation	VIVO / CrossRef
name of IN (UPRI)	uses-repository	CTS?
name of IN (UPRI)	uses-registry-service	PW ?
name of IN (UPRI)	provides-registry-service	
name of IN (UPRI)	uses-data-format	format-PID
name of IN (UPRI)	provides-data-format	format-PID
name of IN (UPRI)	provides-access-protocol	format-PID
name of IN (UPRI)	uses-access-protocol	protocol-PID
name of IN (UPRI)	has-persistence-policy	policy
name of IN (UPRI)	is found by	Search engine
name of IN (UPRI)	uses-term-system	Term System-PID
name of IN (UPRI)	provides-term-system	Term System-PID
name of IN (UPRI)	uses-license	MR-license ID
name of IN (UPRI)	uses-metadata-format	format-PID
name of IN (UPRI)	provides-meta-data-format	Format-PID
name of IN (UPRI)	provides-training-material	Resource-ID
name of IN (UPRI)	uses-uses-training-material	Resource-ID
name of IN (UPRI)	provides-DS-tools	Resource-ID
name of IN (UPRI)	uses-DS-tools	Resource-ID
name of IN (UPRI)	uses-workspace-tool	Resource-ID
name of IN (UPRI)	Provides-workspace-tool	Resource-ID

FAIR Principles

F1
F1
F2
F2
A1
A1
F1 / A2
F4
I
I
R1.1
R1.2
R1.2

FAIR IN Profile Matrix

January 15-16, Leiden



IN Profile Matrix

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

100% \$ % .0 .00 123 Helvetica 10 B I A

FAIR Implementation Matrix

On the OSF <https://osf.io/n7uwp/>

Red indicates waist of hourglass

Blue is an Implementation Choice

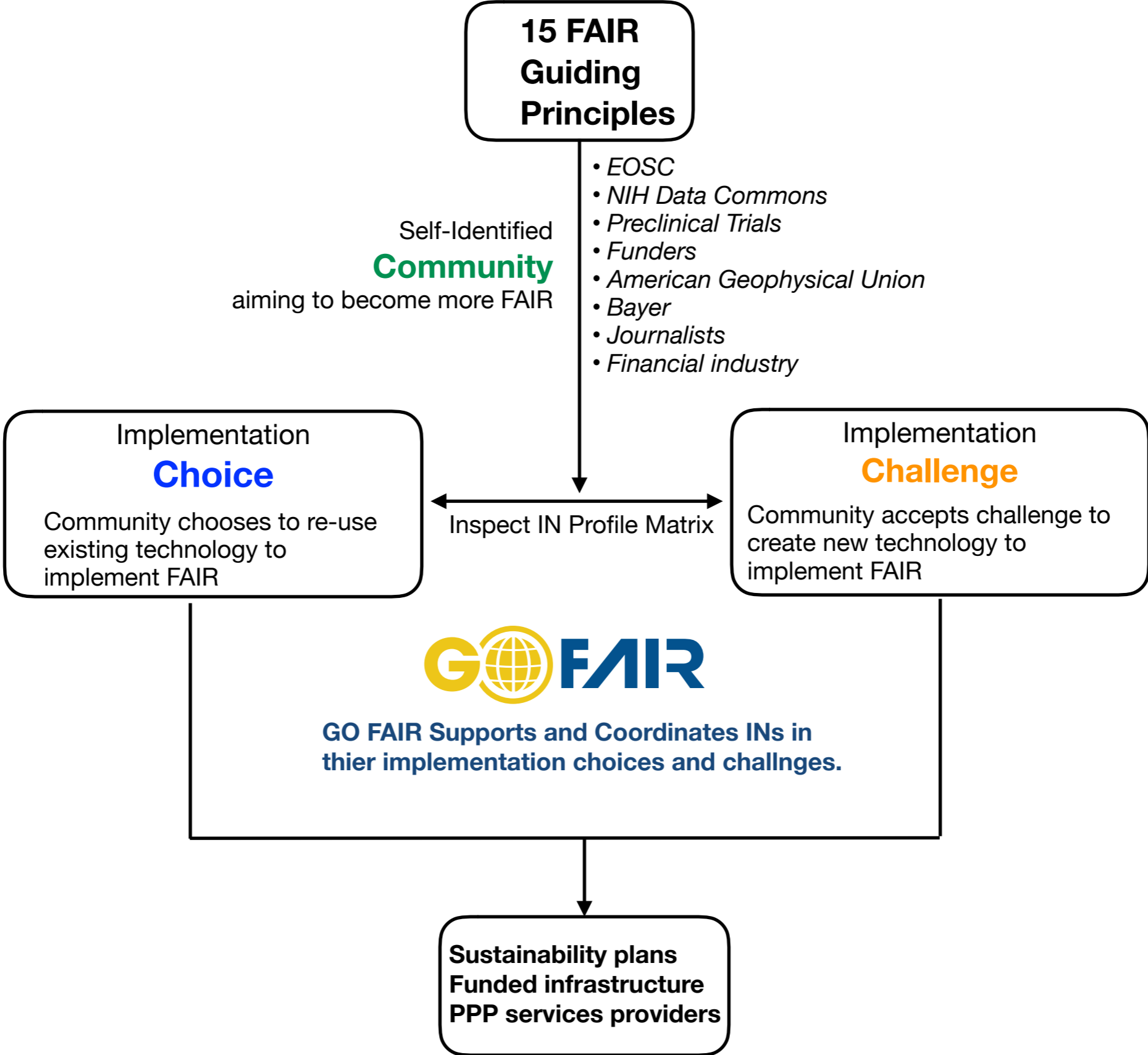
Orange is Implementation Challenge

Green highlight indicates a service provided by the IN or spin-off

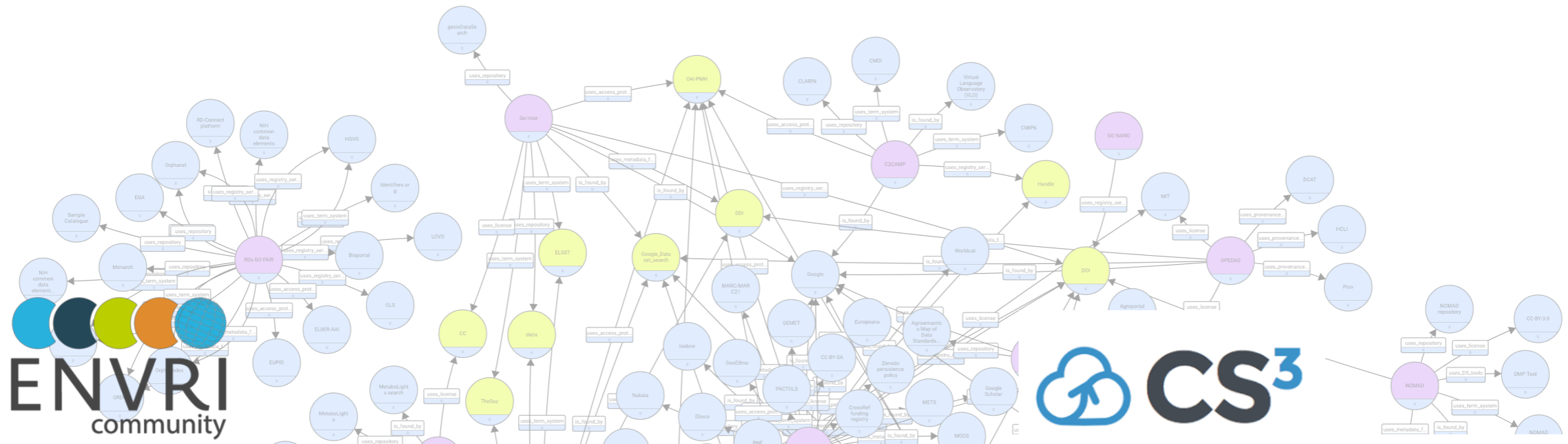
Blank cell is not relevant for IN

FAIR Principle	Services	Component	Most used	C2CAMP	OPEDAS	PHT	Rare-Diseases	GERD
	central to all	DOIP	DOIP	DOIP	DOIP	DOIP	DOIP	
	central to all	Metadata format	RDF		RDF	RDF	RDF	
	central to all	Metadata access protocol			LDP/FDP	LDP/FDP	LDP/FDP	
	central to all	Metadata core elements	TBD on M4M		TBD on M4M	TBD on M4M	TBD on M4M	
	Technology	Data Format			RDF for interop.	RDF for interop.	RDF for interop.	
	Technology	Data Access Protocols (MR/A)			LDP/FDP	PHT-standard	PHT-standard	
	Technology	Computer-actionable license description language			RDF	RDF	RDF	
	Tooling	Repository (Data/Metadata)		DONA	IFDS Data Station	IFDS Data Station	ERN?	GERD
	Tooling(Repository)	https://www.dataone.org						
	Tooling	Registry Service		DONA	IFDS Station Registry	IFDS Station Registry	ERN?	
	tooling	Metadata forms/creators			CEDAR/CASTOR			
	Tooling	Search capability		DOIP	IFDS Station Registry	IFDS Station Registry	IFDS Station Registry	
	Policy	Persistence Policy			TBD	TBD	TBD	
	Technology	Computer-actionable policy description language			RDF	RDF	RDF	
	Tooling	License protocols			TBD	TBD	TBD	
	Tooling	Training Materials			Training-IN	Training-IN	EJP	
	Tooling	DS/DM tooling			DS-Wizard IN	DS-Wizard IN	DS-Wizard IN	
	Tooling	Workspace/labnote tooling			TBD	TBD	TBD	
	Tooling	(distributed) analytics workflows						
	Tooling	visualization applications				TBD	TBD	

Community Implementation Choices and Challenges



Convergence on Convergence



ENVRI-FAIR KICK OFF MEETING

Hotel International Prague, Czech republic

January 14-16, 2019

Register at www.envri.eu

ENVRI-FAIR KICKOFF MEETING January 14 @ 1:00 pm - January 16 @ 3:00 pm

Site Report Survey Summary

CS3 Conference
Rome, January 28-30 2019

Conclusion

**In 2019 we enter a time of Convergence
on a global data infrastructure.**

GO  **FAIR**

SCIENTIFIC DATA

OPEN

Comment: A design framework and exemplar metrics for FAIRness

Mark D. Wilkinson¹, Susanna-Assunta Sansone², Erik Schultes³, Peter Doorn⁴, Luiz Olavo Bonino da Silva Santos^{5,6} & Michel Dumontier⁷

Received: 28 November 2017

Accepted: 9 May 2018

Published: 26 June 2018

The FAIR Principles¹ (<https://doi.org/10.25504/FAIRsharing.WWI10U>) provide guidelines for the publication of digital resources such as datasets, code, workflows, and research objects, in a manner that makes them Findable, Accessible, Interoperable, and Reusable (FAIR). The Principles have rapidly been adopted by publishers, funders, and pan-disciplinary infrastructure programmes and societies. The Principles are aspirational, in that they do not strictly define how to achieve a state of "FAIRness", but rather they describe a continuum of features, attributes, and behaviors that will move a digital resource closer to that goal. This ambiguity has led to a wide range of interpretations of FAIRness, with some resources even claiming to already "be FAIR"! The increasing number of such statements, the emergence of subjective and self-assessments of FAIRness^{2,3}, and the need of data and service providers, journals, funding agencies, and regulatory bodies to qualitatively or quantitatively evaluate such claims, led us to self-assemble and establish a FAIR Metrics group (<http://fairmetrics.org>) to pursue the goal of defining ways to measure FAIRness.

As co-authors of the FAIR Principles and its associated manuscript, founding this small focus group was a natural and timely step for us, and we foresee group membership expanding and broadening according to the needs and enthusiasm of the various stakeholder communities. Nevertheless, in this first

SCIENTIFIC DATA

OPEN

Comment: A design framework and exemplar metrics for FAIRness

Mark D. Wilkinson¹, Susanna-Assunta Sansone², Erik Schultes³, Peter Doorn⁴, Luiz Olavo Bonino da Silva Santos^{5,6} & Michel Dumontier⁷

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FAIR Metrics

www.nature.com/scientificdata

SCIENTIFIC DATA

110110
0111101
11011110
011101101

OPEN

Community defined
Objective
Quantifiable
Reproducible
Automatic (scalable)
Certifiable

Mark D. Wilkinson¹, Susanna-Assunta Sansone², Erik Schultes³, Peter Doom⁴,
Luiz Otávio Bonino da Silva Santos^{5,6} & Michel Dumontier⁷

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14 Core FAIR Metrics

Findable:

F1 (meta)data are assigned a globally **unique** and **persistent** identifier; **FM-F1A** **FM-F1B**

F2 data are described with **rich metadata**; **FM-F2**

F3 metadata clearly and explicitly include the **identifier of the data** it describes; **FM-F3**

F4 (meta)data are registered or **indexed** in a searchable resource; **FM-F4**

Interoperable:

I1 (meta)data use a formal, accessible, shared, and broadly applicable **language for knowledge representation**. **FM-I1**

I2 (meta)data use **vocabularies that follow FAIR principles**; **FM-I2**

I3 (meta)data include **qualified references** to other (meta)data; **FM-I3**

Accessible:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol;

A1.1 the protocol is **open, free, and universally implementable**; **FM-A1.1**

A1.2 the protocol allows for an **authentication and authorization** procedure, where necessary; **FM-A1.2**

A2 metadata are accessible, **even when the data are no longer available**; **FM-A2**

Reusable:

R1 meta(data) are richly described with a plurality of accurate and relevant attributes;

R1.1 (meta)data are released with a clear and **accessible data usage license**; **FM-R1.1**

R1.2 (meta)data are associated with **detailed provenance**; **FM-R1.2**

R1.3 (meta)data meet domain-relevant **community standards**; **FM-R1.3**

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

<http://fairmetrics.org>

<https://github.com/FAIRMetrics/Metrics/blob/master/ALL.pdf>

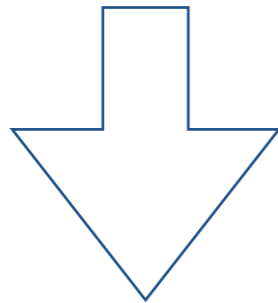
The FAIR Metrics Template

<i>FIELD</i>	<i>DESCRIPTION</i>
Metric Identifier	FM-F1B: https://purl.org/fair-metrics/FM_F1B
Metric Name	Identifier persistence
To which principle does it apply?	F1
What is being measured?	Whether there is a policy that describes what the provider will do in the event an identifier scheme becomes deprecated.
Why should we measure it?	The change to an identifier scheme will have widespread implications for resource lookup, linking, and data sharing. Providers of digital resources must ensure that they have a policy to manage changes in their identifier scheme, with a specific emphasis on maintaining/redirecting previously generated identifiers.
What must be provided?	A URL that resolves to a document containing the relevant policy.
How do we measure it?	Use an HTTP GET on URL provided.
What is a valid result?	Present (a 200,202,203 or 206 HTTP response after resolving all and any prior redirects. e.g. 301 -> 302 -> 200 OK.) or Absent (any other HTTP code)
For which digital resource(s) is this relevant?	All
Comments	<p>A first version of this metric would focus on just checking a URL that resolves to a document. We can't verify that document.</p> <p>A second version would indicate how to structure the data policy document with a particular section (similar to how the CC license document is structured in PDF)</p>

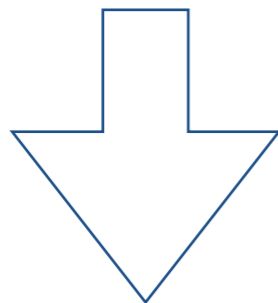
FAIR Metrics Upgrades

Example: FM-F1B, Identifier Persistence

v1.0 **checks** for HTTP 200 return



v2.0 **validates** a standard RDF persistence policy

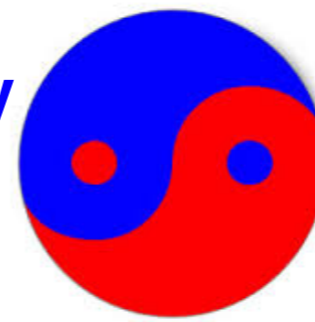


v3.0 **scores** multiple parameters of persistence policy

FAIR Principles

Sci. Data 3:160018 doi: 10.1038/sdata.2016.18 (2016)

Technology



Domain-relevant content

Findable:

F1 (meta)data are assigned a globally unique and persistent identifier;

F2 data are described with rich metadata;

F3 metadata clearly and explicitly include the identifier of the data it describes;

F4 (meta)data are registered or indexed in a searchable resource;

Interoperable:

I1 (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2 (meta)data use vocabularies that follow FAIR principles;

I3 (meta)data include qualified references to other (meta)data;

Accessible:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol;

A1.1 the protocol is open, free, and universally implementable;

A1.2 the protocol allows for an authentication and authorization procedure, where necessary;

A2 metadata are accessible, even when the data are no longer available;

Reusable:

R1 meta(data) are richly described with a plurality of accurate and relevant attributes;

R1.1 (meta)data are released with a clear and accessible data usage license;

R1.2 (meta)data are associated with detailed provenance;

R1.3 (meta)data meet domain-relevant community standards;

The “15th” FAIR Metric



Networkmeeting ZonMw

FAIR data and a new approach for data management

September 21 2018
Den Haag

Nicoline Smit Project Manager at Netherland Heart Institute
Mira van der Naald Department of Cardiology, UMC Utrecht

<https://preclinicaltrials.eu>



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Join

to create a user account

Preclinicaltrials aims to provide a comprehensive listing of preclinical animal study protocols.

Preferably registered at inception in order to **increase transparency**, help **avoid duplication**, and **reduce the risk of reporting bias** by enabling comparison of the completed study with what was planned in the protocol.

Registration of your study requires you to create an account that is

- Anonymous
- Free of charge
- Has an optional embargo period

This register is web-based, open to all types of animal studies and freely accessible and searchable to all with a preclinicaltrials.eu account.

The **registration form** is designed by experts on preclinical animal studies and preclinical evidence synthesis.

Please **join** us and create an user account, this will provide access to the database and enables you to register your preclinical trial.

Contact us at info@preclinicaltrials.eu.

PRECLINICALTRIALS.EU

Section 1. General information

1. * Title of the study

Enter the full title of the study

2. Acronym/short title

Enter optional acronym/short title for the study

3. * Contact details

Give the name of the main administrative contact for the study

Name

Role

What is the role the main contact in the study (e.g. executive researcher, research group supervisor)?

Email address

Provide the email address of the main contact

4. * Study centre details

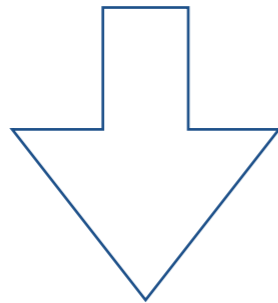
The “15th” FAIR Metric

Metric Identifier	FM-CT1 (FAIR Metric Clinical Trail 1)
Metric Name	Project registration
To which principle does it apply?	R1.2 (meta)data are associated with detailed provenance
What is being measured?	The existence of clinical trail registration
Why should we measure it?	Registration is important for Increased transparency and reduced risk of bias and help avoid duplication.
What must be provided?	A URL to the completed preclinical trial registration document
How do we measure it?	Use HTTP GET on URL provided.
What is a valid result?	HTTP 200 (now); Validted RDF file (later)
For which digital resource(s) is this relevant?	preclinicaltrials.eu

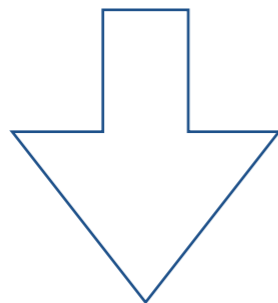
FAIR Metrics Upgrades

Example: FM-CT1, Existence of project registration

v1.0 **checks** for HTTP 200 return



v2.0 **validates** a standard RDF project registrations form



v3.0 **scores** multiple parameters of project registration form

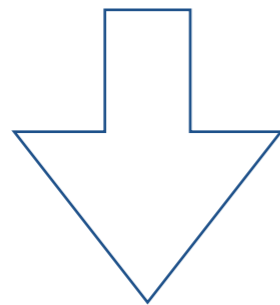
FAIR Metrics Upgrades

Example: FM-CT1, Existence of project registration

v1.0 **checks** for HTTP 200 return



v2.0 **validates** a standard RDF project registrations form



v3.0 **scores** multiple parameters of project registration form

FAIR Metrics Upgrades

Example: FM-CT1, Existence of project registration

v1.0 **checks** for HTTP 200 return



v2.0 **validates** a standard RDF project registrations form

v3.0 **scores** mu

The screenshot shows a mobile browser interface for the website PRECLINICALTRIALS.EU. The address bar at the top displays the URL and navigation icons. The main content area is titled 'PRECLINICALTRIALS.EU' and contains a form section titled 'SECTION 1: GENERAL INFORMATION'. The form includes three numbered sections: '1. Title of the study*' with a text input field; '2. Acronym/short title' with a text input field; and '3. Contact Details' which includes sub-fields for 'Name*', 'Role*', and 'Email address*', each with its own text input field.



The FAIR Data Stewardship Moment

Smart Data Management Plans for FAIR Open Science
For Serious Researchers and Data Stewards

- Community relevant standards
- FAIR metrics
- Machine actionable metadata



DS Wizard + Metrics Hackathon, July 2-4



Data Stewardship Wizard

common ELIXIR (Common ELIXIR Knowledge Model, 1.0.0)

Save

KM Editor

KM Packages

DS Planner

Data design and planning

Answered: 54/54



Metric	Measure	
Findability	0.33	
Accessibility	0.25	
Interoperability	0.63	
Reusability	0.86	
Good DMP Practice	0.40	
Openness	0.00	



(1) Metadata for Machines Workshops brings domain specialists together with metadata experts, tools and resources to reuse or define novel metadata definitions, templates, and FAIR metrics.

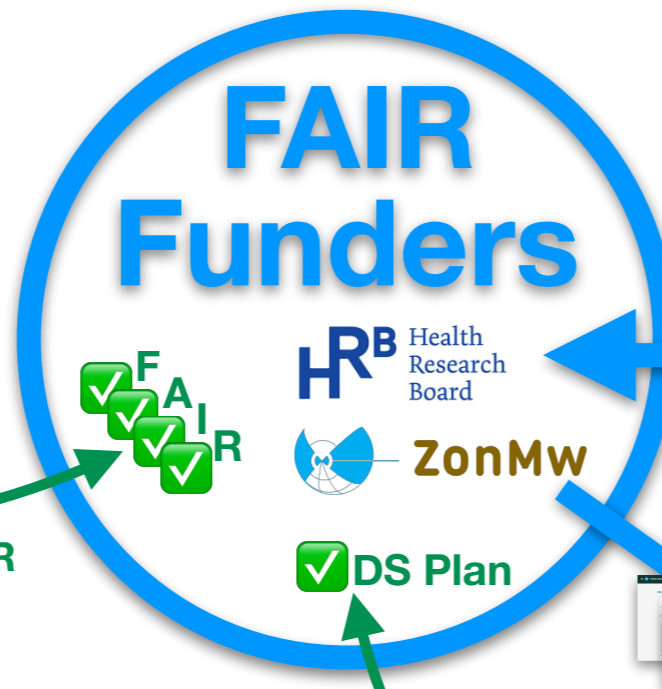


(7) Trusted 3rd-party FAIR metrics evaluations services (Purple Polar Bear) validate the FAIRness of the research data and metadata, sending certificates directly to funder (green check boxes). FAIR metrics are defined by the community (steps 1 & 2) with certification schemas held by GO FAIR Foundation.



Purple Polar Bear

Funders receive FAIR metric evaluation certificates.



(3) Funders compose new calls with metadata requirements by reusing the community defined metadata templates



(2) Community-defined machine-actionable metadata templates and FAIR Metrics are made available for reuse in FAIR resource repositories (e.g. CEDAR) and registered in FAIR reference repositories (e.g. FAIRsharing.org). These repositories inform 3rd-party FAIR metrics evaluation services about community-relevant FAIR standards (step 7).

Funders receive approval of FAIR DS Plan from research institution data stewards.



(4) Prompted automatically by CEDAR forms embedded in the DS Wizard, researchers and data stewards apply for funding and create machine-actionable DS plans, supplying the required community-defined, FAIR metadata. The Funder receives assurance from local data stewards attesting to the quality of the FAIR DS Plan (green check box).

(6) Machine-actionable data and metadata are deposited in FAIR repositories running automated FAIR metrics evaluations.



(5) Funded researchers and data stewards execute the project, collect FAIR data (using FAIR tooling, e.g., Castor EDC).



Community Implementation Choices & Challenges toward increased FAIRness

<https://docs.google.com/a/go-fair.org/document/d/1z9dICUkJ8SqqKJqcsmGNASL7txbLD4goFNQ02be5QI8/mobilebasic>

FAIR Metric F1A

1. The community should choose what are preferred (or required) identifier registration services, for its own purposes.
2. The community should define how to reference in a machine-readable manner, the preferred (or required) identifier registration services.

FAIR Metric F1B

3. The community should define minimal persistence policy requirements for its chosen identifier registration services.
4. The identifier registration services should define, or preferably, re-use existing machine-readable templates for persistence policy documents.

FAIR Metric F2

5. The community should define a minimal set of required metadata elements to optimize machine Findability for its own purposes.
6. The community should define, or preferably, re-use existing machine-readable templates for Findability-related metadata.

FAIR Metric F3

7. The community should define or preferably, re-use a machine-readable metadata model that explicitly links metadata to data.

FAIR Metric F4

8. The community should choose what are preferred (or required) search engines for its own purposes.
9. The community should define how to reference in a machine-readable manner, the preferred (or required) search engines.

FAIR Metric A1.1

10. The community should choose what are preferred (or required) communication protocols for its own purposes.
11. The community should define how to reference in a machine-readable manner, the preferred (or required) communication protocols.

FAIR Metric A1.2

12. The community should choose what are preferred (or required) protocols when restricting access to data.
13. The community should define how to reference in a machine-readable manner, the preferred (or required) communication protocols.

FAIR Metric A2

14. The community should define what are preferred (or required) longevity plan (persistence policy) for metadata?
15. The community should define, or preferably, re-use existing machine-readable templates for metadata-related persistence policy documents.

Community Implementation Choices & Challenges toward increased FAIRness

<https://docs.google.com/a/go-fair.org/document/d/1z9dICUkJ8SqqKJqcsmGNASL7txbLD4goFNQ02be5QI8/mobilebasic>

FAIR Metric F1A

1. The community should choose what are preferred (or required) identifier registration services, for its own purposes.
2. The community should define how to reference in a machine-readable manner, the preferred (or required) identifier registration services.

FAIR Metric F1B

3. The community should define minimal **persistence policy requirements** for its chosen identifier registration services.
4. The identifier registration services should define, or preferably, re-use existing machine-readable **templates for persistence policy documents**.

FAIR Metric F2

5. The community should define a minimal set of required metadata elements to optimize machine Findability for its own purposes.
6. The community should define, or preferably, re-use existing machine-readable templates for Findability-related metadata.

FAIR Metric F3

7. The community should define or preferably, re-use a machine-readable metadata model that explicitly links metadata to data.

FAIR Metric F4

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9. The community should define how to reference in a machine-readable manner, the preferred (or required) search engines.

FAIR Metric A1.1

10. The community should choose what are preferred (or required) communication protocols for for its own purposes.
11. The community should define how to reference in a machine-readable manner, the preferred (or required) communication protocols.

FAIR Metric A1.2

12. The community should choose what are preferred (or required) protocols when restricting access to data.
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FAIR Metric A2

14. The community should define what are preferred (or required) longevity plan (persistence policy) for metadata?
15. The community should define, or preferably, re-use existing machine-readable templates for metadata-related persistence policy documents.

FAIR Metric I1

16. The community should choose what is its preferred (or required) language for knowledge representation.
17. The community should define how to reference in a machine-readable manner, the preferred (or required) language for knowledge representation.

FAIR Metric I2

18. The community should choose what is its preferred (or required) units of measure, vocabularies, ontologies, and conceptual mappings.
19. The community should define how to reference in a machine-readable manner, the preferred (or required) units of measure, vocabularies, ontologies, and conceptual mappings.

FAIR Metric I3

20. The community should define what is its preferred (or required) formal LinkSet.
21. The community should define how to reference in a machine-readable manner, the preferred (or required) formal LinkSet.

FAIR Metric R1.1

22. The community should choose or define what is its preferred (or required) usage license or licensing requirements.
23. The community should define, or preferably, re-use existing machine-readable templates for licenses.
24. The community should define how to reference in a machine-readable manner, the preferred (or required) usage license.

FAIR Metric R1.2

25. The community should define what is its preferred (or required) provenance metadata descriptions.
26. The community should define, or preferably, the re-use existing machine-readable templates for provenance metadata descriptions.
27. The community should define how to reference in a machine-readable manner, the preferred (or required) provenance metadata descriptions.

FAIR Metric R1.3

28. The community should define what is its preferred (or required) certification criteria for data & metadata. [Comments here about what the process is...where is authority derived from]
29. The community should define a machine-actionable validation and certification system for data & metadata compliance.

FAIR Metric I1

16. The community should choose what is its preferred (or required) language for knowledge representation.
17. The community should define how to reference in a machine-readable manner, the preferred (or required) language for knowledge representation.

FAIR Metric I2

18. The community should choose what is its preferred (or required) units of measure, vocabularies, ontologies, and conceptual mappings.
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24. The community should define how to reference in a machine-readable manner, the preferred (or required) usage license.

FAIR Metric R1.2

25. The community should define what is its preferred (or required) **provenance metadata descriptions**.
26. The community should define, or preferably, the **re-use existing machine-readable templates** for provenance metadata descriptions.
27. The community should define how to reference in a machine-readable manner, the preferred (or required) provenance metadata descriptions.

FAIR Metric R1.3

28. The community should define what is its preferred (or required) certification criteria for data & metadata. [Comments here about what the process is...where is authority derived from]
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