



# A FAIRYTALE OF THE HISTORY, PRESENCE AND FUTURE OF FAIR

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GO FAIR wird gefördert durch



# DATEN GEWINNEN AN BEDEUTUNG (~2005)



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



Comment | [OPEN](#) | Published: 15 March 2016

## The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, Jan-Willem Boiten, Luiz Bonino da Silva Santos, Philip E. Bourne, Jildau Bouwman, Anthony J. Brookes, Tim Clark, Mercè Crosas, Ingrid Dillo, Olivier Dumon, Scott Edmunds, Chris T. Evelo, Richard Finkers, Alejandra Gonzalez-Beltran, Alasdair J.G. Gray, Paul Groth, Carole Goble, Jeffrey S. Grethe, Jaap Heringa, Peter A.C 't Hoen, Rob Hooft, Tobias Kuhn, Ruben Kok, Joost Kok, Scott J. Lusher, Maryann E. Martone, Albert Mons, Abel L. Packer, Bengt Persson, Philippe Rocca-Serra, Marco Roos, Rene van Schaik, Susanna-Assunta Sansone, Erik Schultes, Thierry Sengstag, Ted Slater, George Strawn, Morris A. Swertz, Mark Thompson, Johan van der Lei, Erik van Mulligen, Jan Velterop, Andra Waagmeester, Peter Wittenburg, Katherine Wolstencroft, Jun Zhao & Barend Mons - [Show fewer authors](#)

*Scientific Data* **3**, Article number: 160018 (2016) | [Download Citation](#)

# FAIR DATA PRINCIPLES

- Findable
- Accessible
- Interoperable
- Reusable



Machine actionable

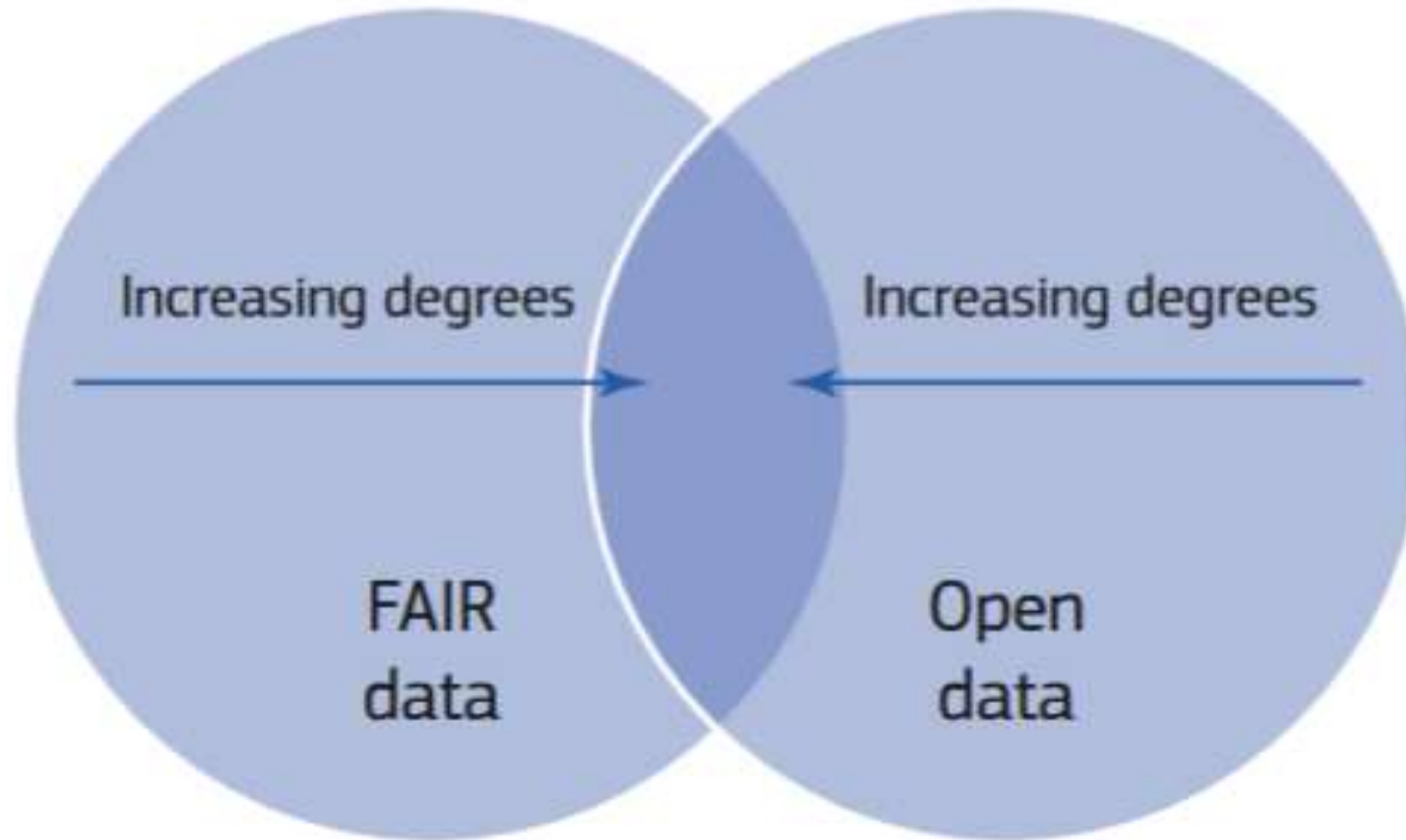
- **History**
  - FAIR Data
  
- **Presence**
  - FAIR Implementierungsnetzwerke
  - FAIR Minimale Standards
  
- **Future**



# HISTORY: DER WEG ZU FAIR DATA

- **2007:** OECD's Principles and Guidelines for Access to Research Data from Public Funding
- **2010:** EC's High Level Expert Group Report *Riding the Wave*
- **2012:** DAITF workshop at ICRI Conference in Copenhagen  
*L. Lannom's four SAIR layers: "Searching, Accessing, Interpreting and Reusing,"*
- **2013:** Research Data Alliance start inspired by SAIR
- **2013:** G8 Science Ministers Report  
*Open Scientific research data should be easily discoverable, accessible, intelligible, useable, and wherever possible interoperable to specific quality standards".*
- **2014:** Workshop at the Lorentz Centre Leiden (-> FORCE11, Nature)  
*FAIR principles ... enabling Findability, Accessibility, Interoperability and Reusability*

# FAIR VS OPEN



- History
  - FAIR Data
  
- Presence
  - FAIR Implementierungsnetzwerke
  - FAIR Minimale Standards
  
- Future



# GO FAIR: a bottom-up international approach

for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services



# VODAN - Virus Outbreak Data Network



- SARS CoV-2 Virus Daten verfügbar machen
- Ziele:
  - ✓ SARS CoV-2 Virus Daten “FAIRifizieren”
  - ✓ FAIR Data Points

# DSCC - Data Stewardship Competence Centers



- Vernetzung bestehender Datenkompetenzzentren
- Ziele:
  - ✓ Koordinierung, Bewusstseinsbildung, Erfahrungsaustausch für FAIR data stewardship
  - ✓ Abstimmung und gemeinsames Anbieten von Lern- und Trainingsangeboten
- Kontakt für Deutschland:
  - ✓ Monika Linne, [linne@ub.uni-koeln.de](mailto:linne@ub.uni-koeln.de)
  - ✓ Patrick Helling, [patrick.helling@uni-koeln.de](mailto:patrick.helling@uni-koeln.de)



# IMPLEMENTIERUNGSNETZWERKE

- Active
- Preparatory
- Interested

GO CHANGE	GO BUILD	GO TRAIN
	Ambassadors	
	ASTRON	
	BiodiFAIRse	
	Biodiversities	
	C2CAMP	
	CBS (Economics)	
Chemistry		
CO-OPERAS		
	Discovery	
Data Stewardship Competence Centers		
EcoSoc		
	FAIR Microbiome	
	FAIR StRePo	
	Food Systems	
	FAIR Funders	
	GAIA Data	
	GeRDI	
	GO INTER	
	GO NANOFAB	
IN-Africa		
	INOSIE (IN for Open Science in Industrial Research)	
	Marine Data Centres	
	Materials Cloud	
	Metabolomics	
	NOMAD	
	Personal Health Train	
Rare Diseases		
	Real World Observations in Health	
		Season Schools
		Training Curriculum
		Training Frameworks
	Vaccine IS	
	VODAN (Virus Outbreak Data Network)	

# WARUM IN IMPLEMENTIERUNGSNETZWERKEN ENGAGIEREN ?

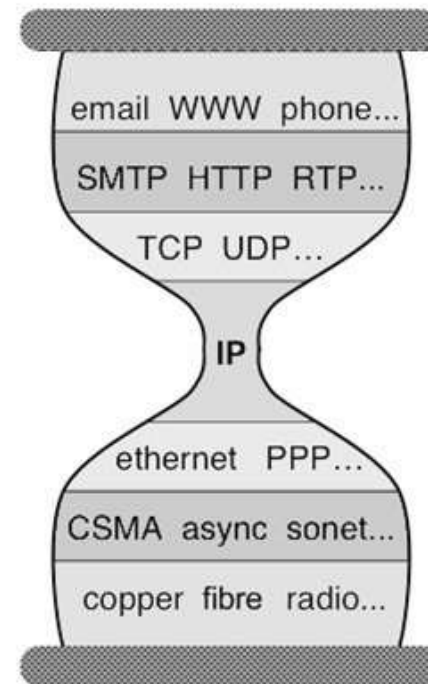
- Mitwirkung an der Implementierung der FAIR Prinzipien
- Möglichkeit zur Mitgestaltung am Internet of FAIR Data and Services
- Vermeidung weiterer Fragmentierung
- Ausbildungspfade, Kulturwandel, Technische Standards



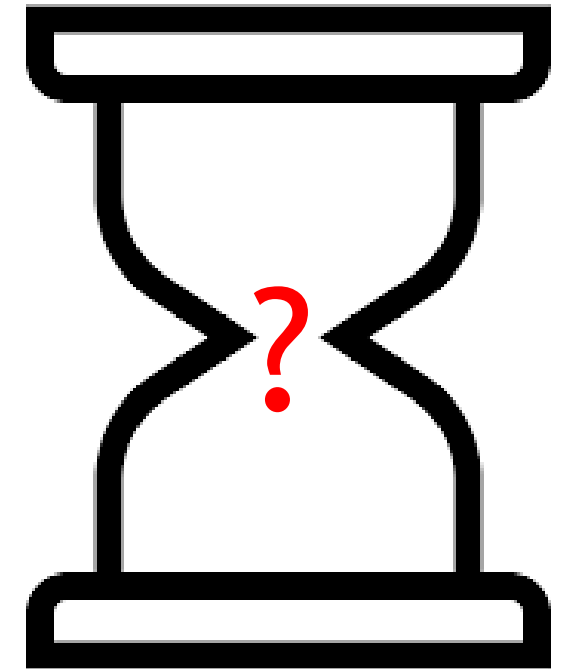
- History
  - FAIR Data
  
- Presence
  - FAIR Implementierungsnetzwerke
  - FAIR Minimale Standards
  
- Future

# HOURGLAS: Definition minimaler Standards

- Große Vielfalt von Implementierungen von Daten, Tools, Services
- Minimal notwendige Protokolle & Standards



Internet

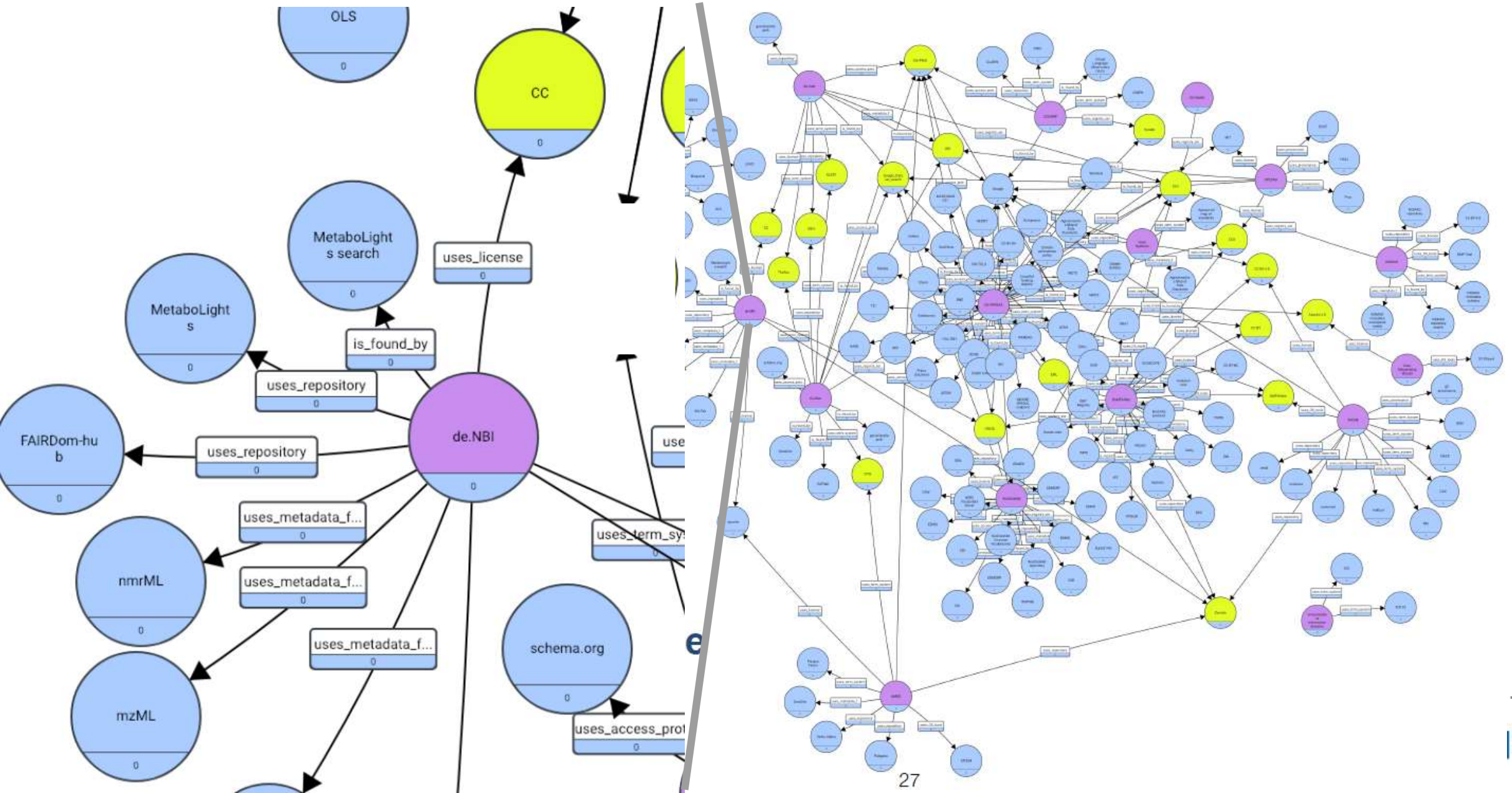


Internet of FAIR  
Data and Services

# FAIR DATA IMPLEMENTIERUNGSMATRIX

FAIR Prinzip „Findable“		Implementierungsnetzwerke				
Services	Digital Object	Most used	C2CAMP	OPEDAS	PHT (infra)	Rare-Diseases
central to all	DOIP	DOIP/HANDLES	DOIP	DOIP	DOIP	DOIP
central to all	Metadata format	RDF/JSON/XML	many primary (databse, XML)	RDF	RDF/JSON/XML	RDF, XML, JSON-LD
central to all	Metadata access protocol	OAI-PMH	many use OAI-PMH	LDP/FDP	REST/SOAP	LDP/FDP, OAI-PMH, RESTful
central to all	Metadata core elements	Dublin core	not applicable	TBD on M4M	TBD on M4M	TBD on M4M; DC, etc

# IMPLEMENTIERUNGSOPTIONEN UND HERAUSFORDERUNGEN



# FAIR IN DER NFDI UND EOSC

## 3. Research Data Management Strategy

### 3.2 → Implementation of the

Please describe the technical plan to implement the FAIR plan to build the tech-stack in such a technical implementation me

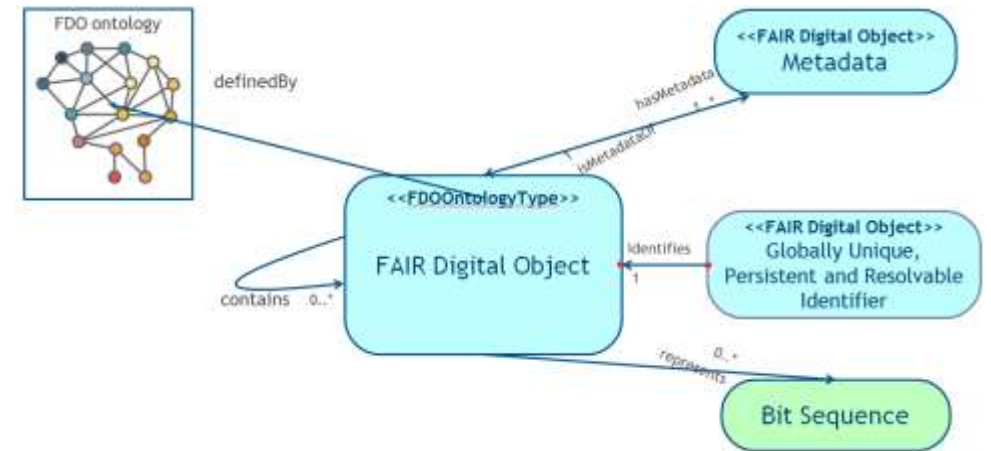


EUROPEAN  
COMMISSION

Starting from	Committed resources (non-exhaustive)	Action	Milestones
2018, Q1	FAIR data Expert Group (E03464), in consultation with stakeholders	Prepare a FAIR data Action Plan	Q3 2018: FAIR data Action Plan published
2018, Q3	<ul style="list-style-type: none"> <li>• DG RTD</li> <li>• RDA Europe 4.0</li> <li>• INFRAEOSC-05-2018-2019 (b)</li> </ul>	Define a European framework for FAIR research data	Q2 2019: European framework for FAIR research data agreed
2019, Q1	<ul style="list-style-type: none"> <li>• FREYA project</li> <li>• RDA Europe 4.0</li> </ul>	Define a Persistent Unique Identifier policy for FAIR data	Q4 2019: FAIR persistent unique identifier policy defined
2019, Q1	INFRAEOSC-05-2018-2019 (c)	Develop a FAIR data accreditation /certification scheme for repositories	Q4 2019: FAIR certification scheme available.



## ■ Modell für FAIR Digital Objects



## ■ FAIR Assessment Frameworks



