FAIRsharing.org

a FAIR-enabling service

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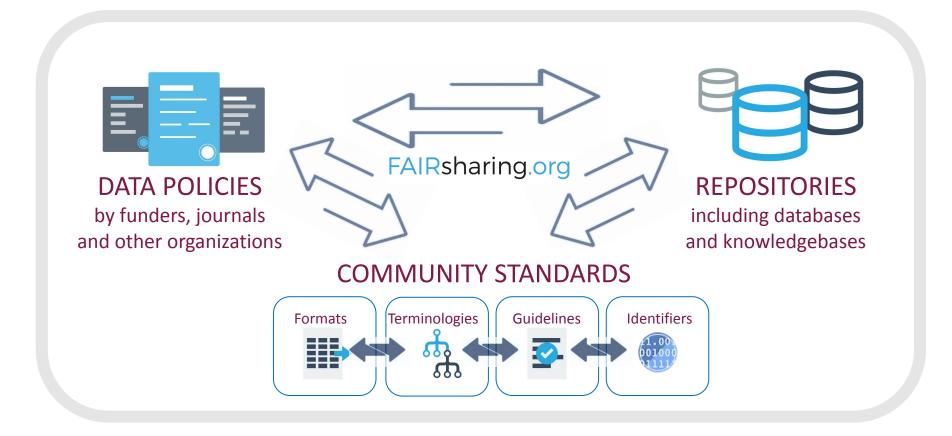
doi 10.25504/FAIRsharing.2abjs5

European Commission   wellcome

A global resource for all disciplines

FAIRsharing.org

DATA POLICIES
by funders, journals
and other organizations

FAIRsharing.org

REPOSITORIES
including databases
and knowledgebases

COMMUNITY STANDARDS

Formats — Terminologies — Guidelines — Identifiers
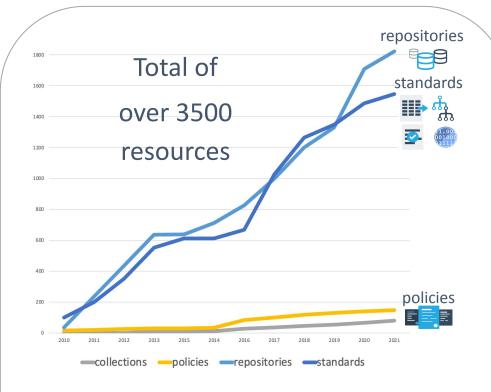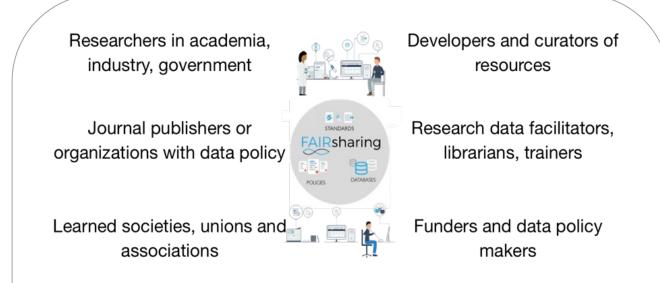
An informative and educational resource of three *curated* and *interlinked* registries of standards, repositories and policies; three key elements of the FAIR ecosystem
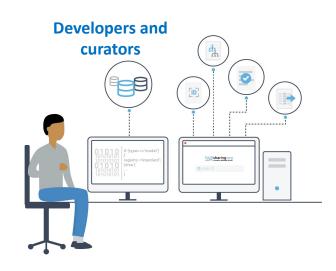
Promoting repositories, standards, policies

Total of over 3500 resources

repositories

standards

policies

collections · policies · repositories · standards

Fosters a culture change where the use of these resources for FAIRer data is pervasive and seamless

Researchers in academia, industry, government

Developers and curators of resources

Journal publishers or organizations with data policy

Research data facilitators, librarians, trainers

Learned societies, unions and associations

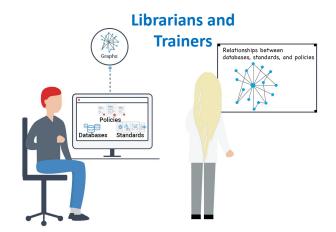Funders and data policy makers

Guides *consumers* to *discover*, *select* and *use* these resources with confidence

Helps *producers* to make their resources more *visible*, more widely *adopted* and *cited*
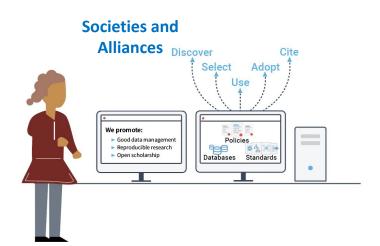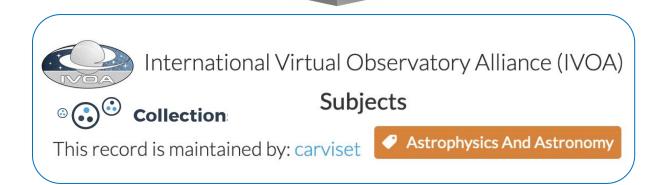
Organisations: collections provide tailored views

Many groups and projects have created

Collections

These are are branded pages that group

selected **standards** (and/or repositories)

relevant to their community and/or

developed by them

EXAMPLES

International Virtual Observatory Alliance (IVOA)

Collection Subjects

This record is maintained by: carviset — Astrophysics And Astronomy
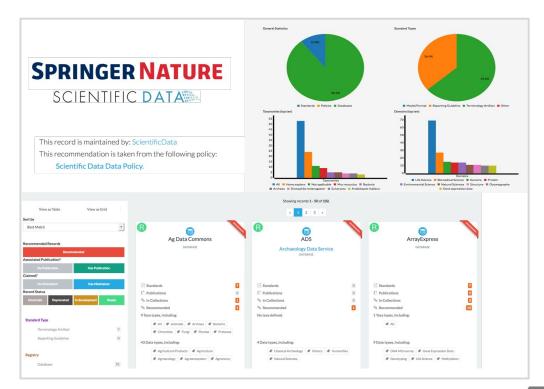
URL: fairsharing.org/collection/IVOA

cdisc CDISC

Subjects

Collection

This record is maintained by: awhite — Biomedical Science — Preclinical Studies

URL: fairsharing.org/collection/CDISC

Publishing industry: policies registration and dashboards

Scholarly publishers use FAIRsharing to:

- **list** standards and repositories they recommend in their data policy,

- **discover** new resources and **monitor** their evolution to **refine** or **update** their policies

EXAMPLES

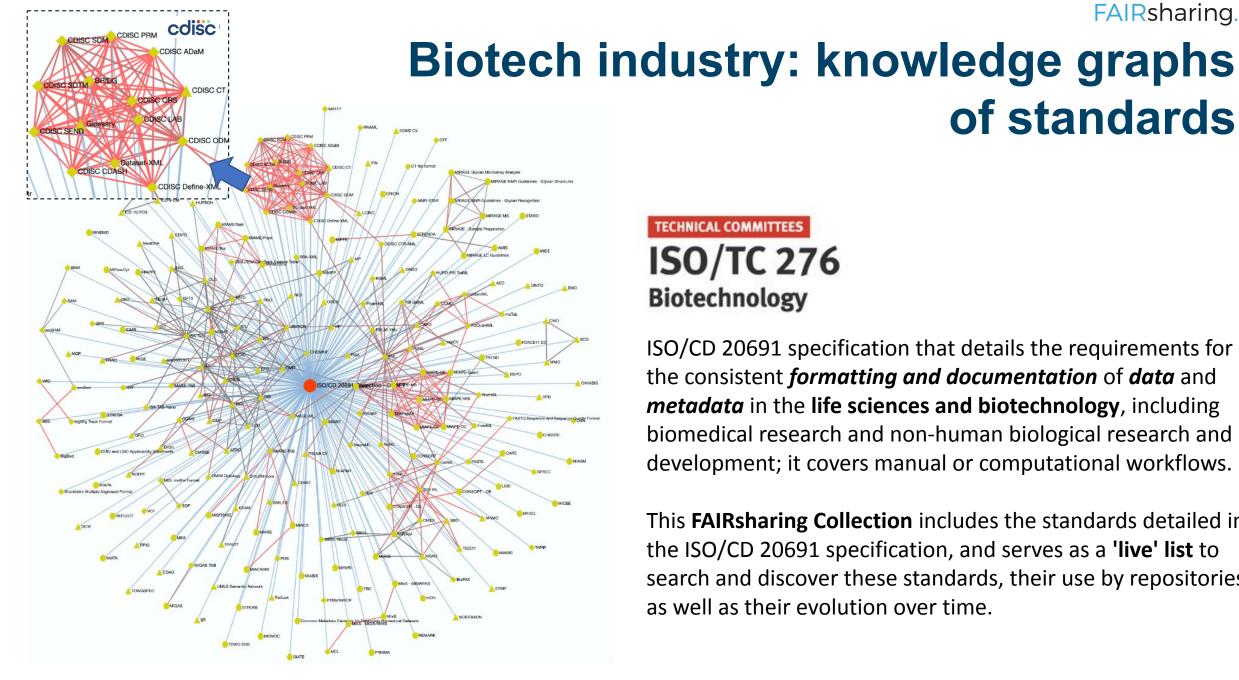# Biotech industry: knowledge graphs of standards

FAIRsharing.org

TECHNICAL COMMITTEES
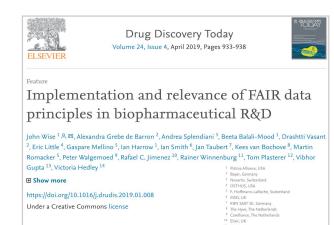
ISO/TC 276
Biotechnology

ISO/CD 20691 specification that details the requirements for the consistent *formatting and documentation* of *data* and *metadata* in the **life sciences and biotechnology**, including biomedical research and non-human biological research and development; it covers manual or computational workflows.

This **FAIRsharing Collection** includes the standards detailed in the ISO/CD 20691 specification, and serves as a **'live' list** to search and discover these standards, their use by repositories, as well as their evolution over time.

https://fairsharing.org/collection/ISOCD20691CollectionDRAFT   … 232 standards

Life Sciences R&D companies: semantic and syntactic standards

- Pistoia Alliance is a not-for-profit organisation of over 100 Life Science R&D companies, including major pharmas and service providers
  - Working on pre-competitive projects on best practices and technology challenges, including data FAIRness

- FAIRsharing and the **Pistoia Alliance's FAIR Implementation WG** are working to create Collections of companies' profiles, with respect to the **standards** they use

- The **FAIRsharing "Pistoia Alliance Collections"** will help with comparing and discussing standards practices within industry

Services: curated content to power FAIR-enabling other tools and services

A growing number of **services** for:
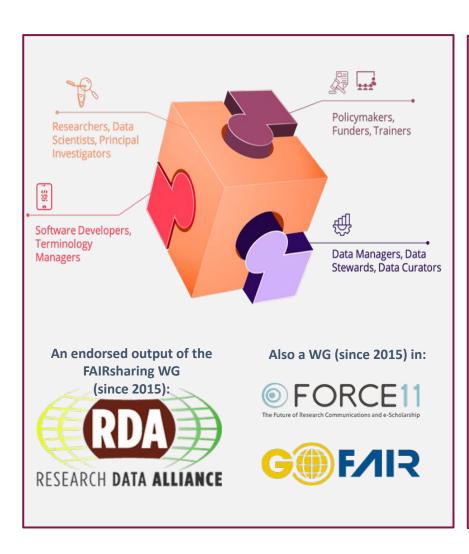
- data management plans

- data stewardship

- metadata aggregation

- FAIR assessment

access FAIRsharing, via its API, and use it as

look-up and **select** service for (metadata and

information on) standards and repositories

EXAMPLES

DSW
ds-wizard.org

OpenAIRE
openaire.eu

FAIRshake
fairshake.cloud

DMP ONLINE
dmponline.dcc.ac.uk

FAIR Evaluation Services
w3id.org/AmIFAIR

Users, adopters, communities and working groups

FAIRsharing.org

FAIRcookbook

FAIRplus | elixir

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iD https://w3id.org/faircookbook

imi | innovative medicines initiative

European Federation of Pharmaceutical Industries and Associations
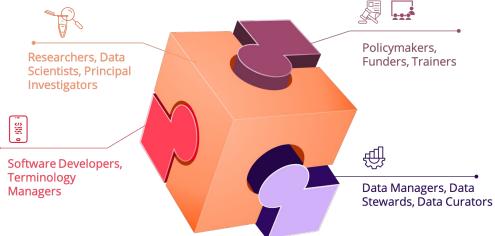
efpia

FAIR Cookbook:
turning knowledge into recipes

What is it?

An online, 'live' resource for the **life sciences**

A collection of **recipes** that cover the operation steps of FAIR data management

Who is it for?

Researchers, Data Scientists, Principal Investigators

Software Developers, Terminology Managers

Policymakers, Funders, Trainers

Data Managers, Data Stewards, Data Curators

Who developed it?

Researchers and **data managers** professionals in the life sciences, from academia and industry

Including ELIXIR members

https://fairplus.github.io/the-fair-cookbook

FAIR Cookbook: creators and contributors

+50 life sciences professionals, researchers and data managers
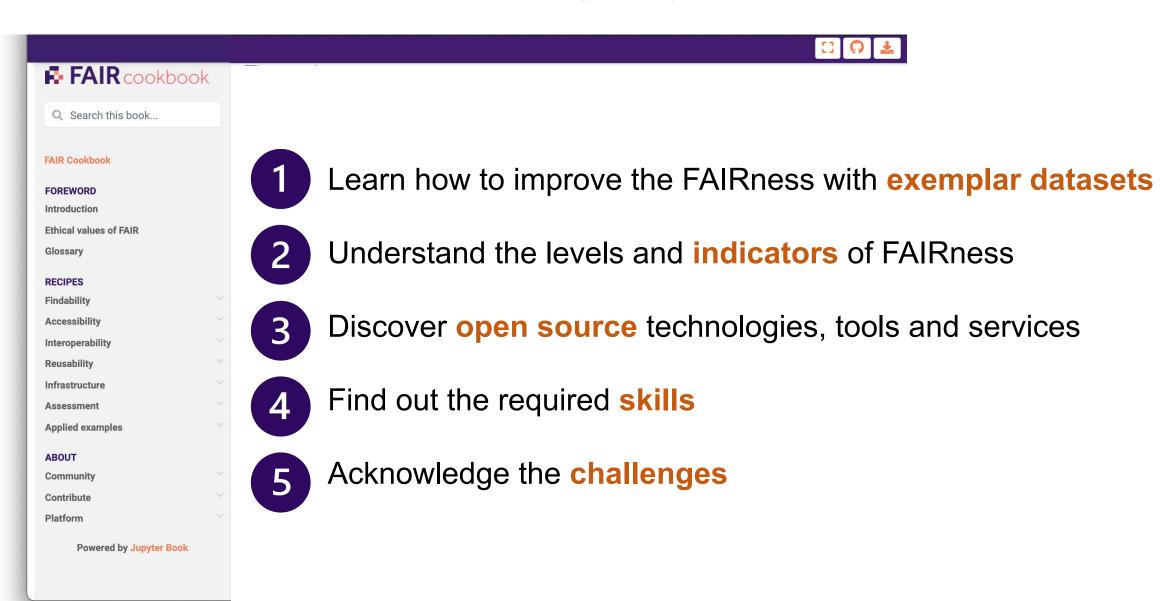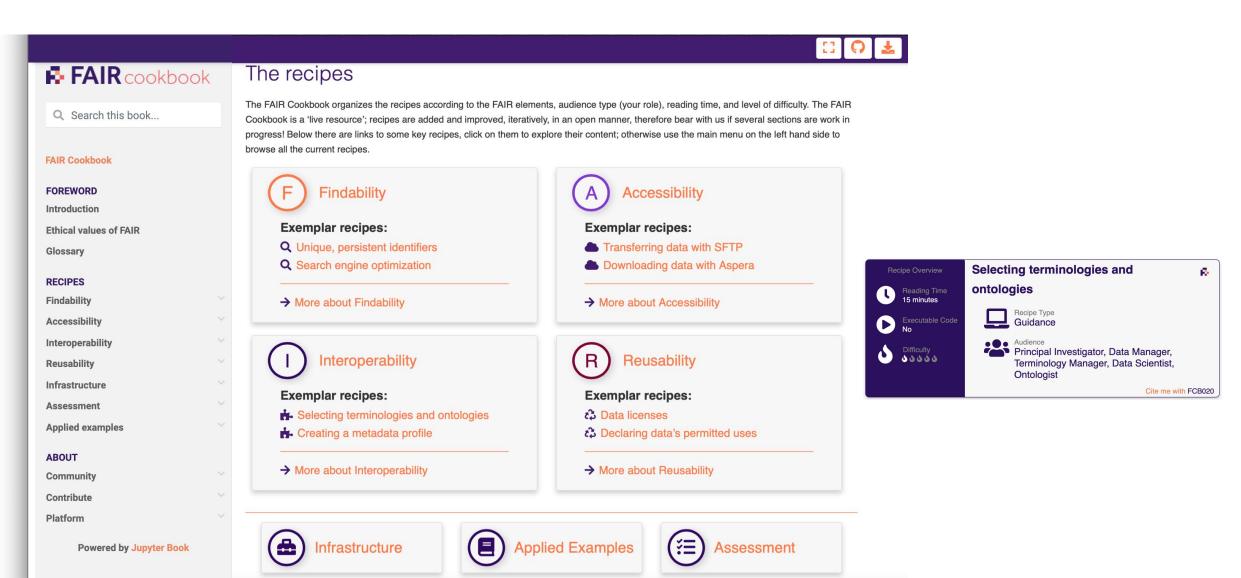
FAIR Cookbook: learning objectives

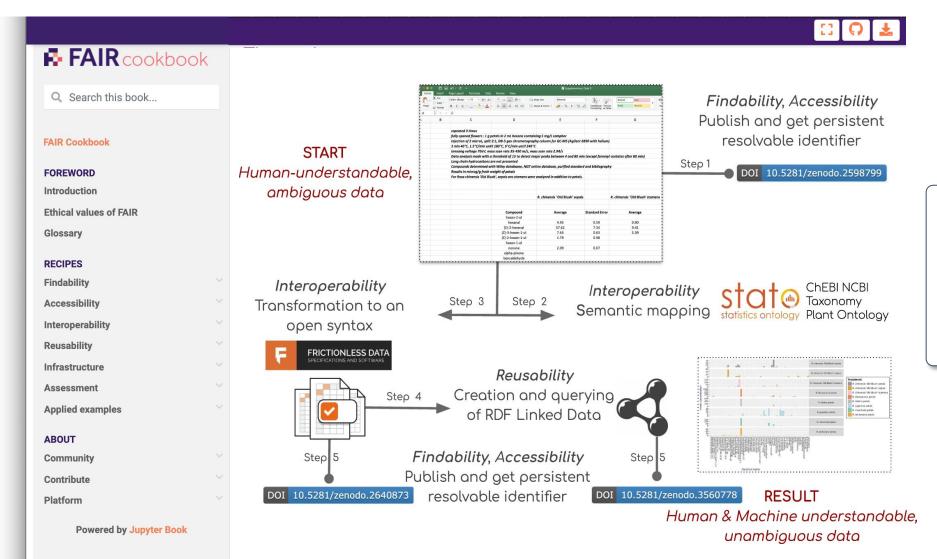**1** Learn how to improve the FAIRness with **exemplar datasets**

2 Understand the levels and **indicators** of FAIRness

3 Discover **open source** technologies, tools and services

4 Find out the required **skills**

5 Acknowledge the **challenges**

Recipes that cover all aspects of FAIRness

The recipes

The FAIR Cookbook organizes the recipes according to the FAIR elements, audience type (your role), reading time, and level of difficulty. The FAIR Cookbook is a 'live resource'; recipes are added and improved, iteratively, in an open manner, therefore bear with us if several sections are work in progress! Below there are links to some key recipes, click on them to explore their content; otherwise use the main menu on the left hand side to browse all the current recipes.

F Findability

Exemplar recipes:
- Unique, persistent identifiers
- Search engine optimization

→ More about Findability

A Accessibility

Exemplar recipes:
- Transferring data with SFTP
- Downloading data with Aspera

→ More about Accessibility

I Interoperability

Exemplar recipes:
- Selecting terminologies and ontologies
- Creating a metadata profile

→ More about Interoperability

R Reusability

Exemplar recipes:
- Data licenses
- Declaring data's permitted uses

→ More about Reusability

Infrastructure   Applied Examples   Assessment

Recipe Overview — **Selecting terminologies and ontologies**

Reading Time 15 minutes

Executable Code No

Difficulty

Recipe Type Guidance

Audience Principal Investigator, Data Manager, Terminology Manager, Data Scientist, Ontologist

Cite me with FCB020

Sidebar (left navigation)

Applied examples: these are key!
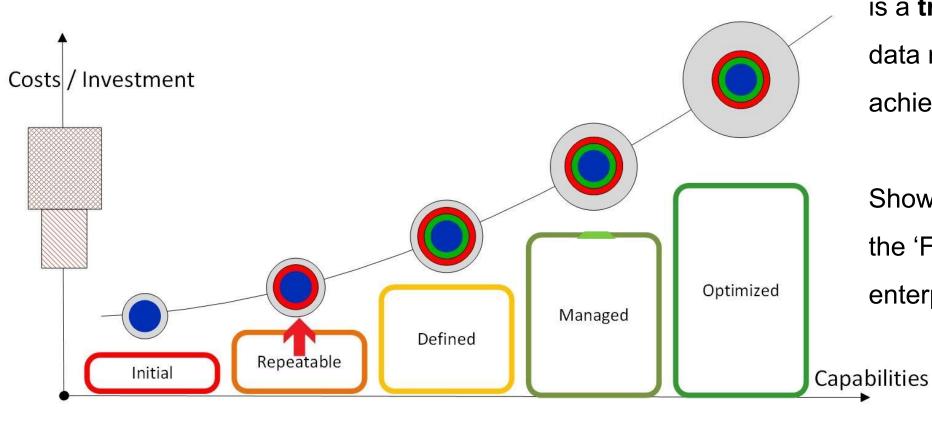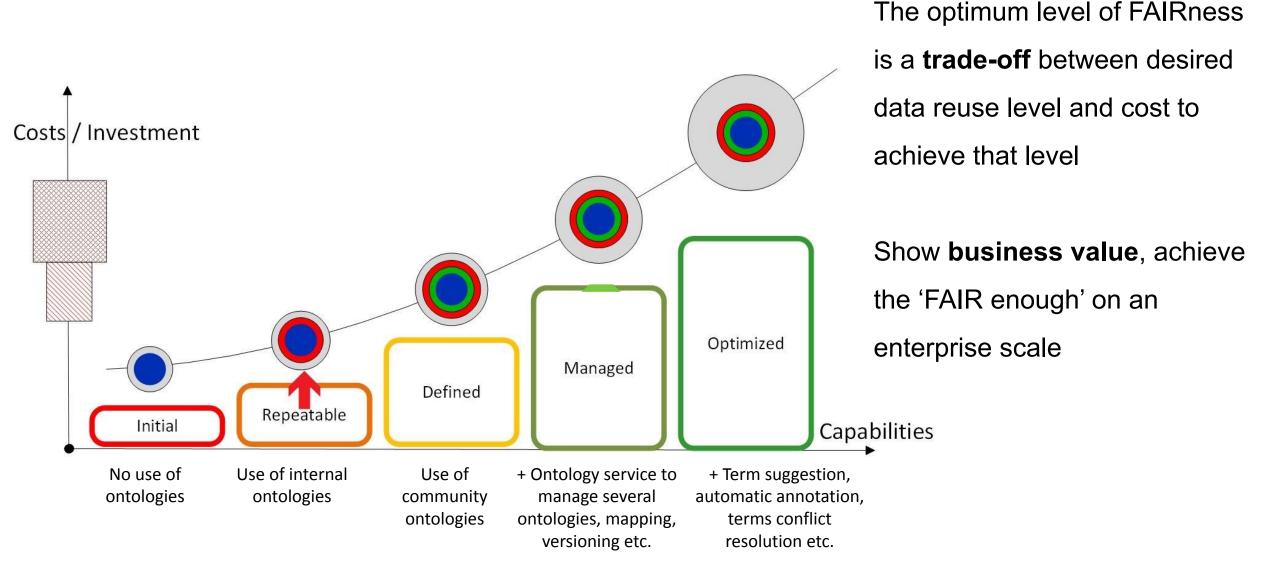
The capability maturity model

The optimum level of FAIRness is a **trade-off** between desired data reuse level and cost to achieve that level

Show **business value**, achieve the 'FAIR enough' on an enterprise scale

The capability maturity model - the ontology example

Costs / Investment

Capabilities

Initial	Repeatable	Defined	Managed	Optimized
No use of ontologies	Use of internal ontologies	Use of community ontologies	+ Ontology service to manage several ontologies, mapping, versioning etc.	+ Term suggestion, automatic annotation, terms conflict resolution etc.

The optimum level of FAIRness is a **trade-off** between desired data reuse level and cost to achieve that level

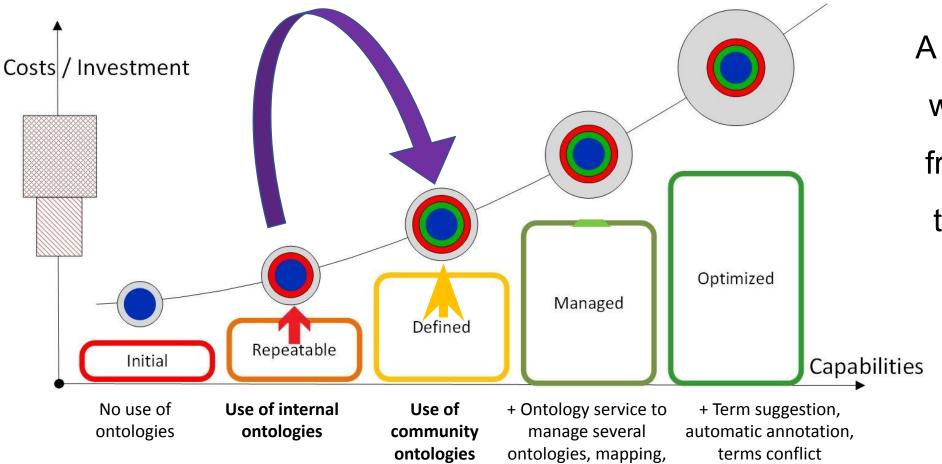Show **business value**, achieve the 'FAIR enough' on an enterprise scale

The capability maturity model - the ontology example

FAIRcookbook

How to build application ontology

A dedicated recipe will help to move from **Repeatable** to **Defined** level

Costs / Investment

Initial

Repeatable

Defined

Managed

Optimized

Capabilities

No use of ontologies

Use of internal ontologies

Use of community ontologies

+ Ontology service to manage several ontologies, mapping, versioning etc.

+ Term suggestion, automatic annotation, terms conflict resolution etc.

Included in the next version =>

IMI2 project guidelines for open access to publications and research data

IMI reference: IMI2/OUT/2018-07040

adopt it

Start using the FAIR Cookbook

Help us to help you, this is a user-oriented resource

Contribute according to your needs

Create and review, or signpost gaps and needs

leverage it

Recommend it in your guidance and training material

Join a network of FAIR experts

Share and broaden your expertise, joining our journey

use it

join it

Benefit from the power of the FAIR community

Become a recognised expert, enlarge your network

A live ever-growing resource: become part of a community of FAIR experts!

1 **Identify a chapter and a topic**

Findability Accessibility Interoperability Reusability

Infrastructure Applied examples Assessment

2 **Choose a way of contributing and see our guidelines**

Google Docs

HackMD

Git

Get recipe template

Markdown cheat sheet

Tips and tricks

3 **Submit an outline**

You can discuss it with the **Editorial Board**

Watch the webinar for more information

elixir-europe.org/events/fairplus-webinar-discovering-fair-cookbook