FAIR-IMPACT
Expanding FAIR Solutions across EOSC

Interoperability challenges in Europe

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CHORUS FORUM: MAKING FAIR'S INTEROPERABILITY AND REUSABILITY DATA GOALS POSSIBLE
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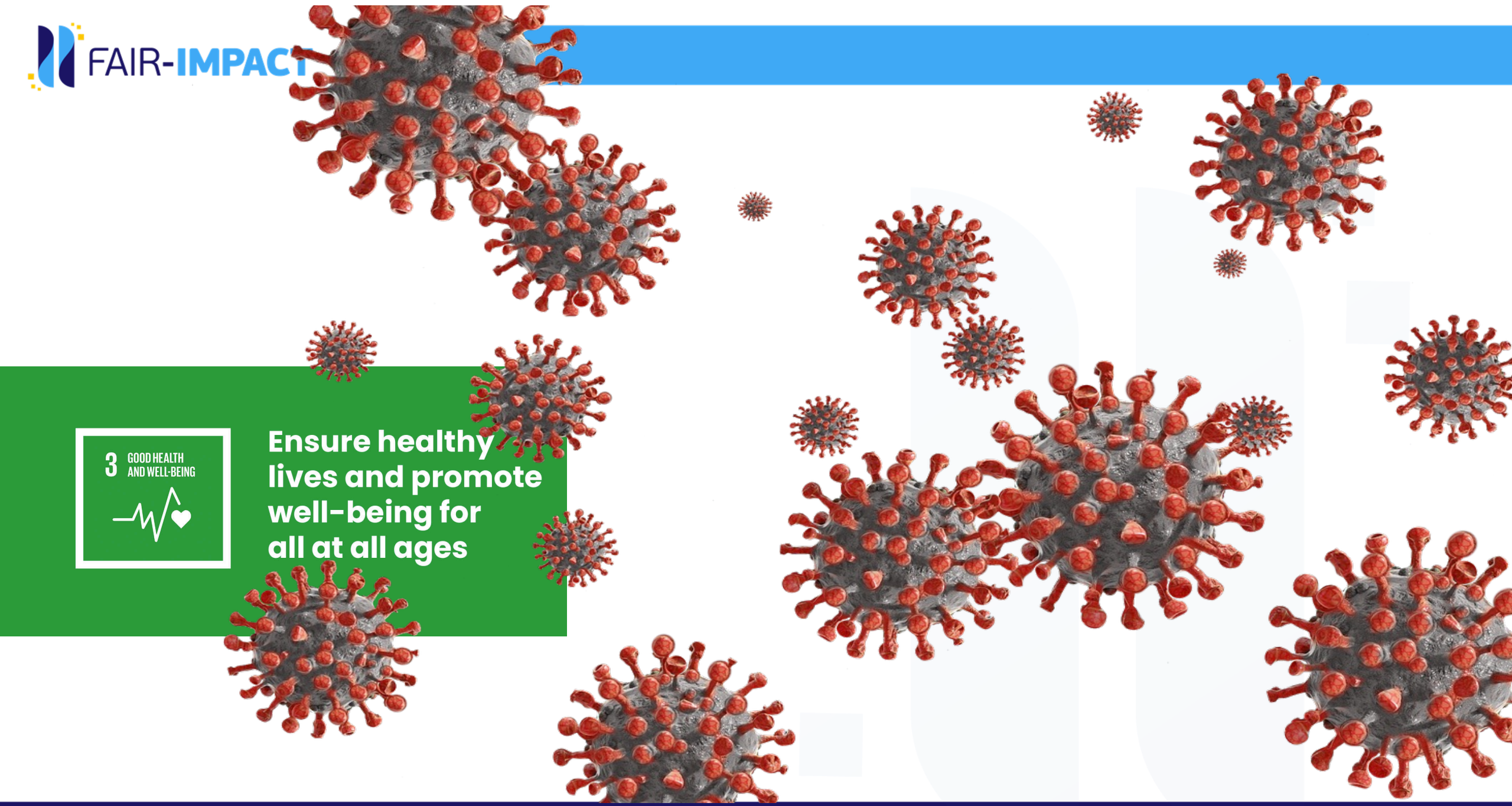
FAIR-IMPACT

SUSTAINABLE DEVELOPMENT GOALS

FAIR-IMPACT



3 GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages

FAIR-IMPACT

- Findable
- Accessible

- Interoperable
- Reusable

FAIR data in European repositories

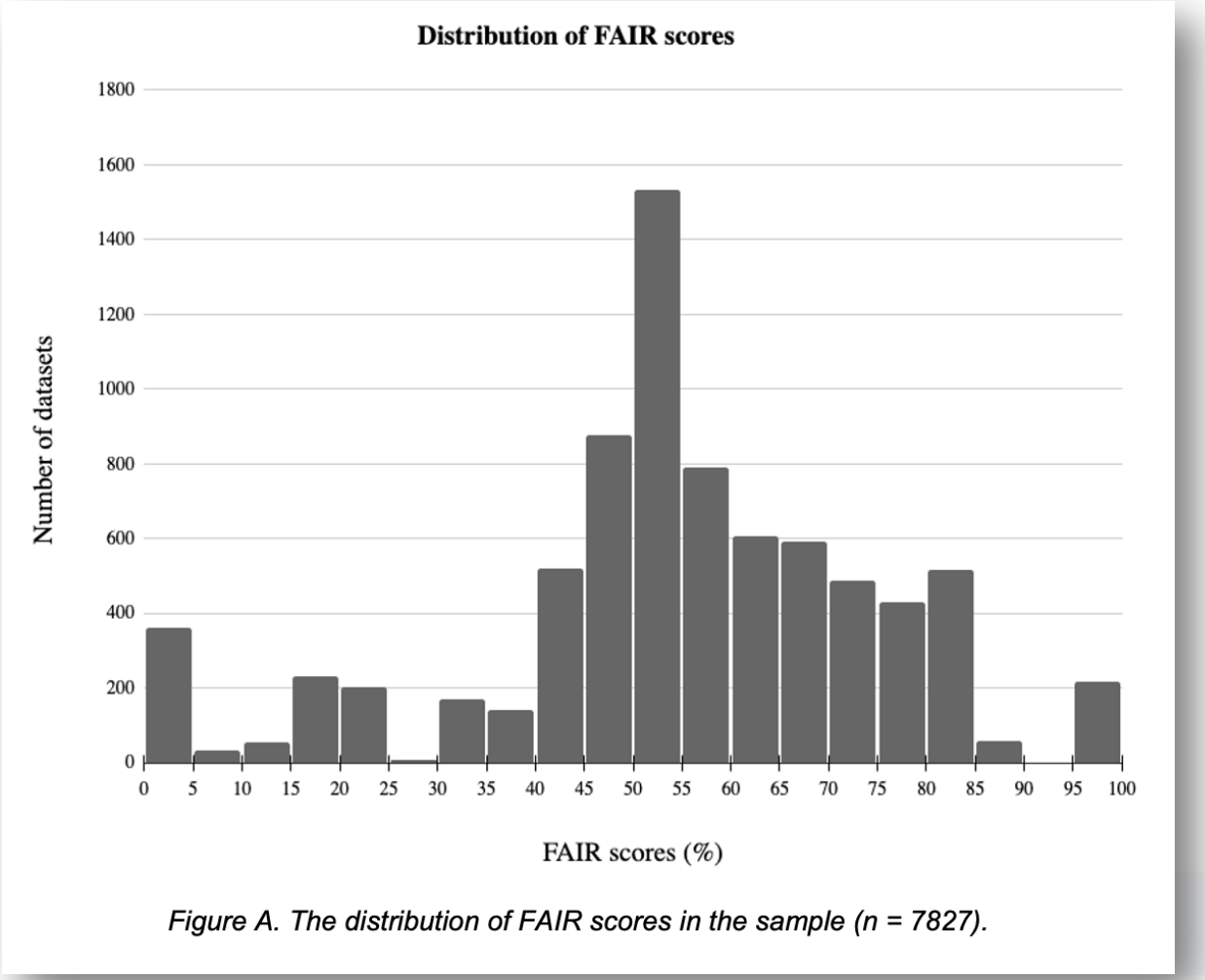
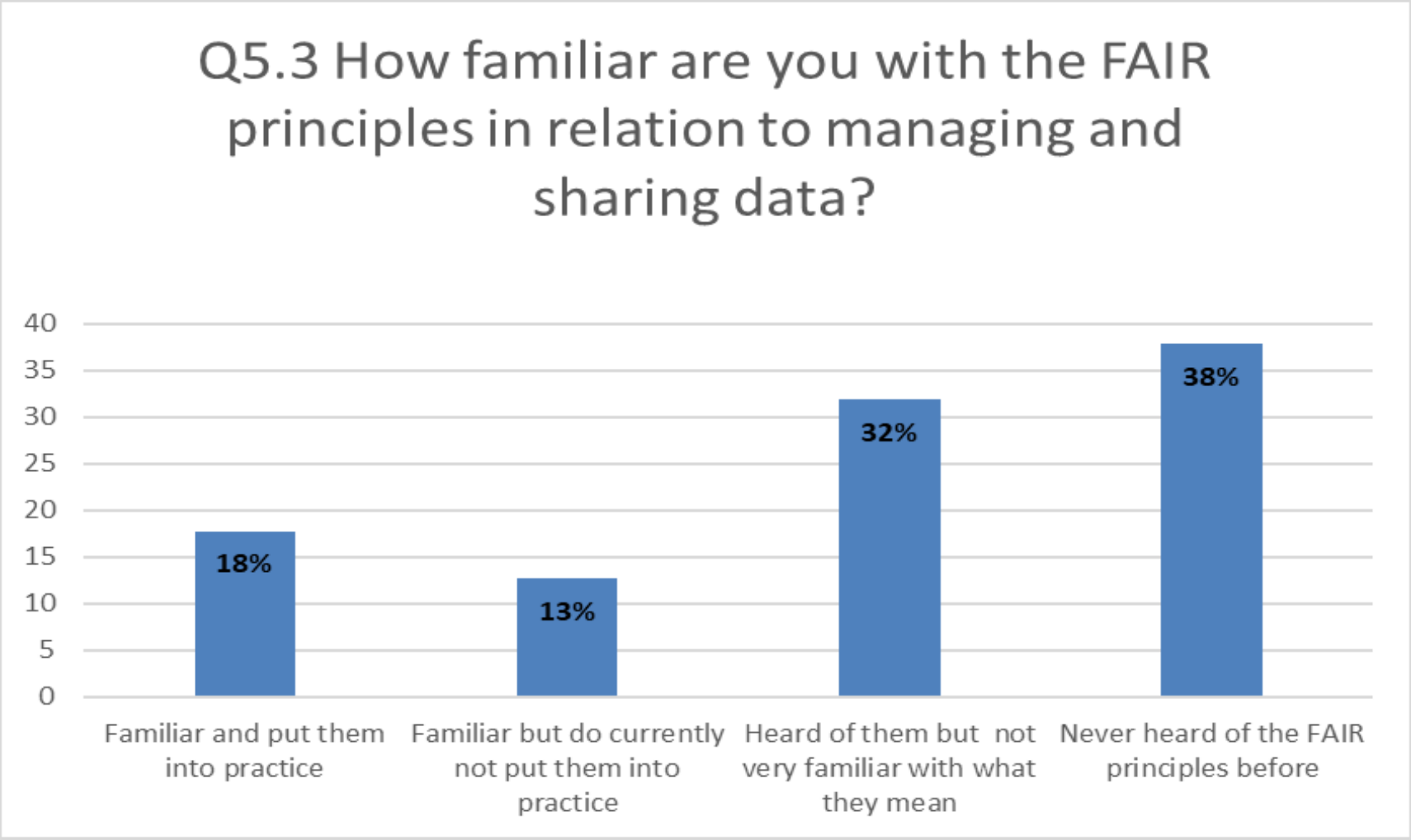


Figure A. The distribution of FAIR scores in the sample (n = 7827).

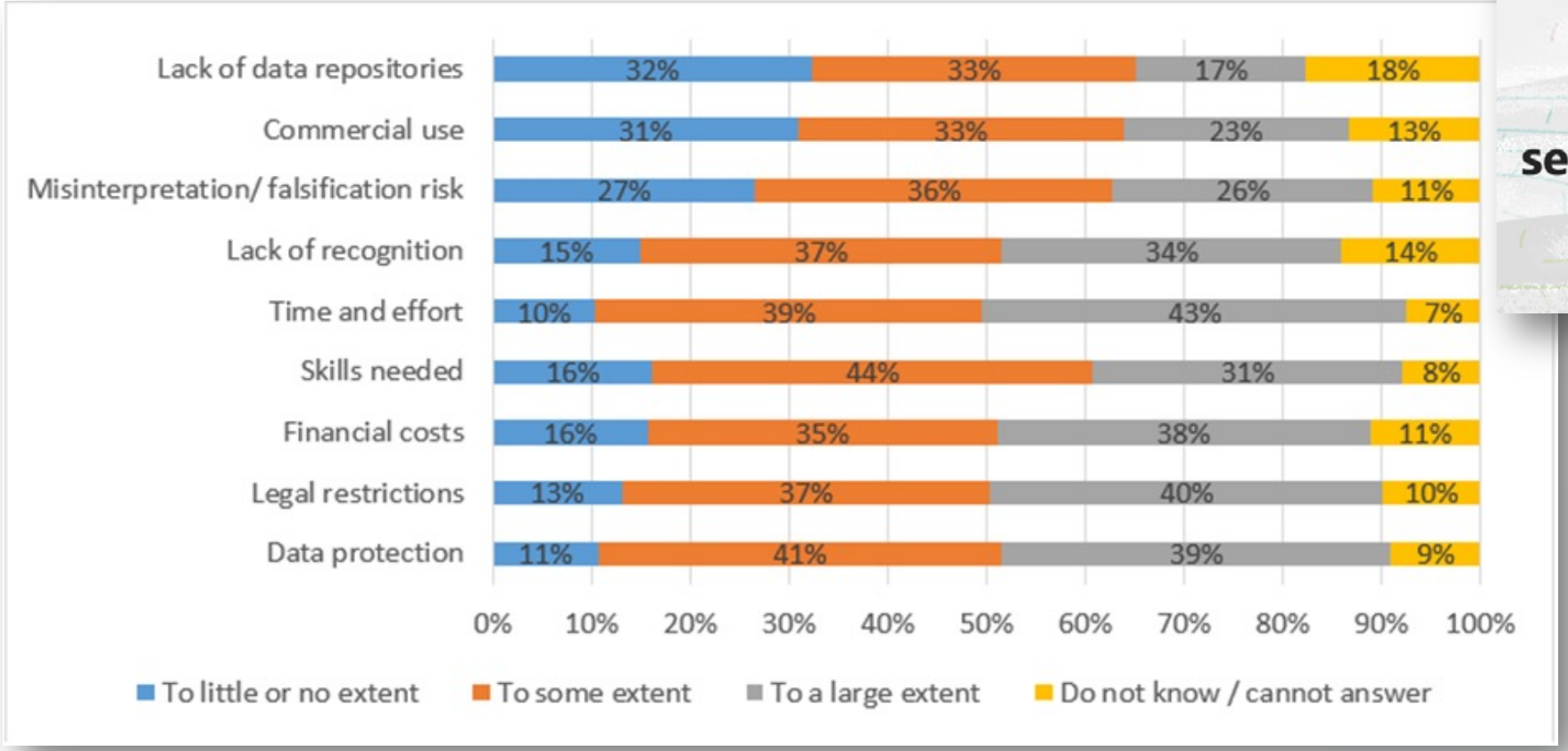
F-UJI Automated FAIR Data Assessment Tool

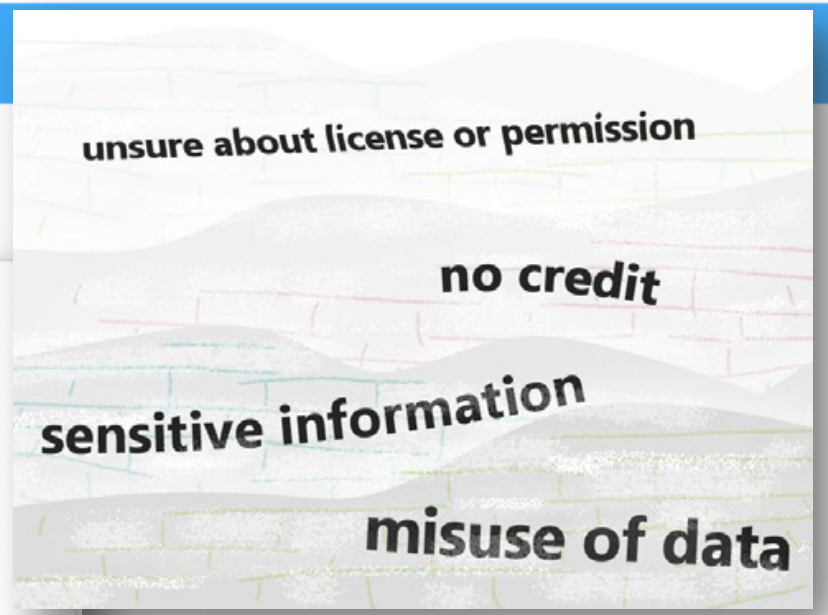
https://www.fairsfair.eu/f-uji-automated-fair-data-assessment-tool

FAIR awareness among European researchers



Barriers





Science, Digital; Simons, Natasha; Goodey, Greg; Hardeman, Megan; Clare, Connie; Gonzales, Sara; et al. (2021): The State of Open Data 2021. Digital Science. Report. https://doi.org/10.6084/m9.figshare.17061347.v1

Web of FAIR Data and Services for Science in Europe

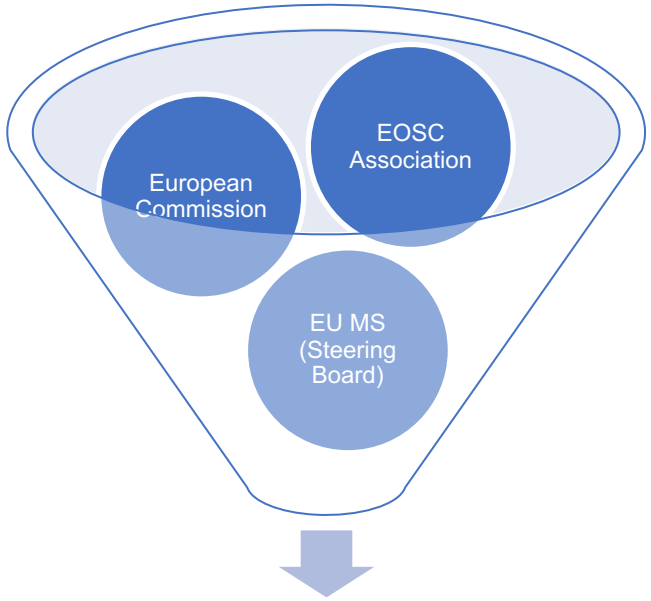
- EOSC will be a multi-disciplinary environment where researchers can publish, find and re-use data, tools and services, enabling them to better conduct their work.
- EOSC builds on existing infrastructure and services supported by the EC, Member States and research communities.

EUROPEAN OPEN SCIENCE CLOUD

https://eosc.eu/

EOSC will improve the situation for researchers in many ways, namely:

- Seamless access to content and services via common AAI,
- **Access to data from various sources which is FAIR and ideally open,**
- Access to services for storage, computation, analysis, preservation and more,
- **Adoption of standards so data and services can be combined**,
- Helpdesk, training and support to improve use of EOSC.



Tripartite Governance

- Implementation of EOSC
  - PID policy and implementation
  - Researcher engagement and adoption
  - Rules of Participation (RoP) compliance monitoring
- Metadata and data quality
  - FAIR metrics and data quality
  - Semantic interoperability
- Research careers and curricula
  - Data stewardship curricula and career paths
  - Research careers, recognition and credit
  - Upskilling countries to engage in EOSC
- Technical challenges on EOSC
  - AAI Architecture
  - Infrastructures for quality research software
  - Technical interoperability of data and services
- Sustaining EOSC
  - Financial Sustainability
  - Long-term data preservation

https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

https://eosc.eu/

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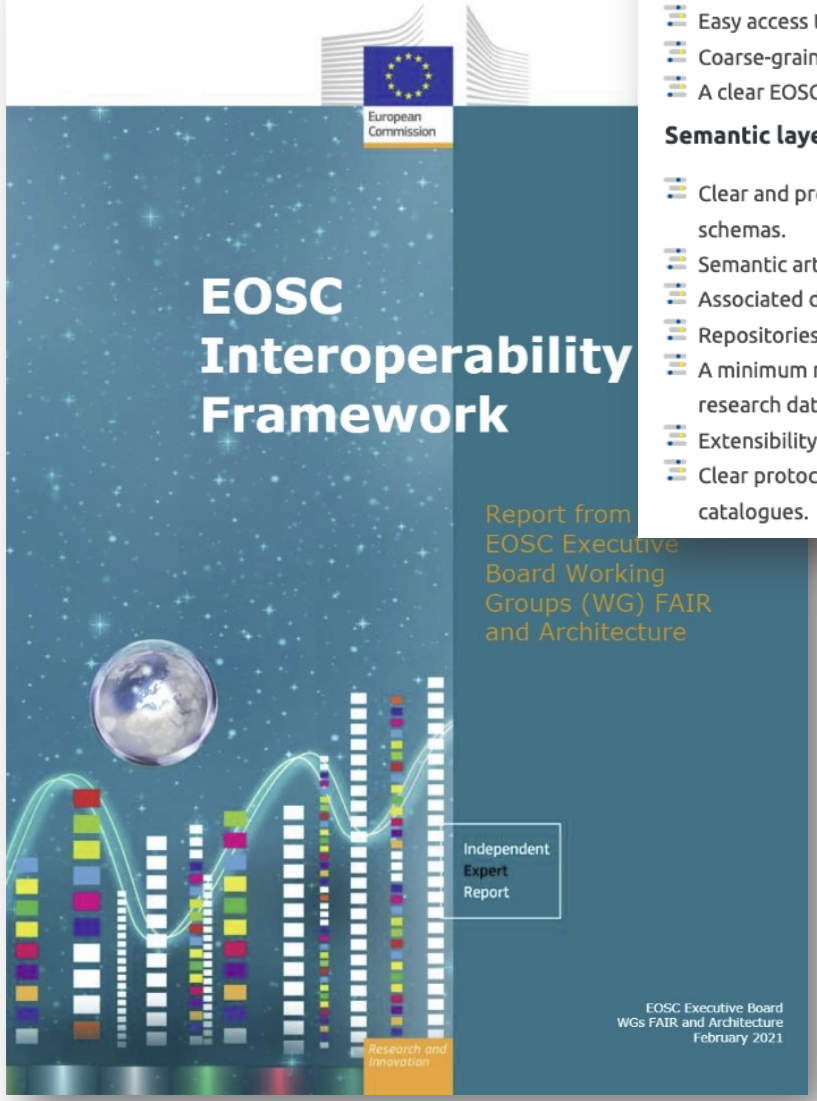

Technical layer

- Open Specifications for EOSC Services.
- A common security and privacy framework (including Authorisation and Authentication Infrastructure).
- Easy-to-understand Service-Level Agreements for all EOSC resource providers.
- Easy access to data sources available in different formats.
- Coarse-grained and fine-grained dataset (and other research object) search tools.
- A clear EOSC PID policy.

Semantic layer

- Clear and precise, publicly-available definitions for all concepts, metadata and data schemas.
- Semantic artefacts preferably with open licenses.
- Associated documentation for semantic artefacts.
- Repositories of semantic artefacts, rules with a clear governance framework.
- A minimum metadata model (and crosswalks) to ease discovery over existing federated research data and metadata.
- Extensibility options to allow for disciplinary metadata.
- Clear protocols and building blocks for the federation/harvesting of semantic artefacts catalogues.

https://op.europa.eu/en/publication-detail/-/publication/d787ea54-6a87-11eb-aeb5-01aa75ed71a1/language-en/format-PDF/source-190308283

Organisational layer

- Interoperability-focused rules of participation recommendations.
- Usage recommendations of standardised data formats and/or vocabularies, and with their corresponding metadata.
- A clear management of permanent organisation names and functions.

Legal layer

- Standardised human and machine-readable licenses, with a centralised source of knowledge and support on copyright and licenses.
- Permissive licenses for metadata (and preferably for data, whenever possible). And CC0 preferred over CC BY 4.0.
- Identification of different parts of a dataset with different licenses.
- Clearly marked instances of expired or inexistent copyright, as well as for orphan data.
- A clear list of EOSC-recommended licenses and their compatibility with Member States' recommended licenses.
- Tracking of license evolution over time for datasets.
- Harmonised policy and guidance to dealing with cases where patent filing or trade secrets may be compromised by disclosure.
- GDPR-compliance for personal data.
- Additional restrictions on access and use of data only applied in cases of applicable legislation or legitimate reasons.
- Harmonised terms of use across repositories
- Alignment between Member States national legislations and EOSC.

FAIR-IMPACT in a nutshell

Expanding FAIR Solutions across Europe

Call HORIZON-INFRA-2021-EOSC-01-05

Enabling discovery and interoperability of federated research objects across scientific communities

Expanding FAIR solutions in Europe

Partly following up on FAIRsFAIR

EU funded project

Coordination and Support Action

10 million euro

36 months, starting 1 June 2022

28 partners and affiliate entities

From 10 EU member states: NL, FI, FR, DK, IT, DE, ES, NO, BE, RO

and the UK

Twitter: fairimpact_eu
Linkedin page: https://www.linkedin.com/company/fair-impact-eu-project/

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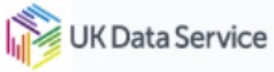
The consortium



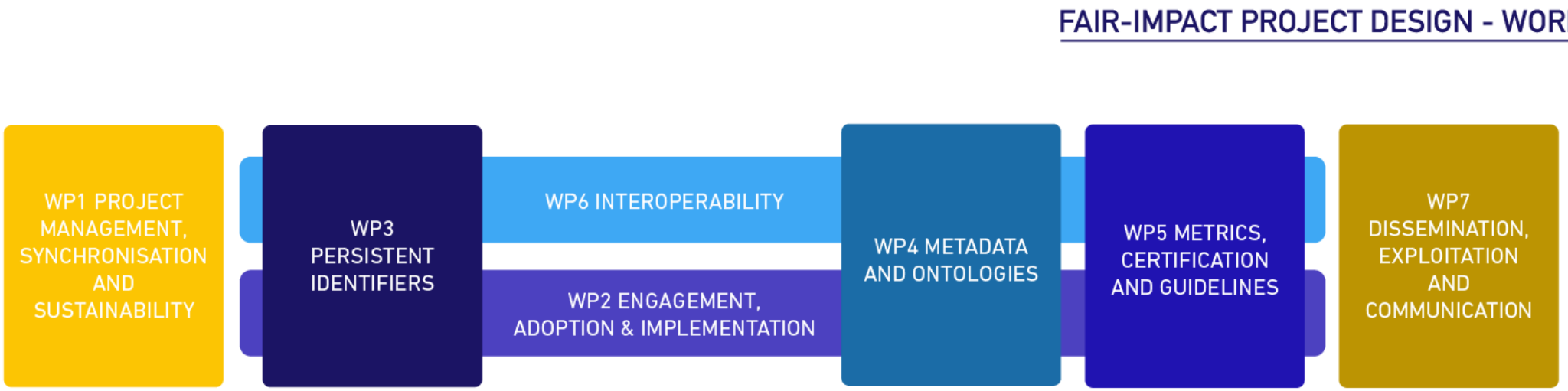
FAIR-IMPACT overall objective

WHAT:
to realise a FAIR EOSC by supporting the implementation of FAIR-enabling practices across scientific communities and research outputs at a European, national, and institutional level;

HOW:

- identifying current and emerging components for enabling FAIR (practices, policies, tools & technical specifications);
- translating viable solutions, guidelines and frameworks that have been developed for one domain or research output and supporting their application in others;
- taking the next step in implementation by defining the support, governance, and coordination mechanisms required to ensure the continuous function of FAIR-enabling practices in the EOSC.

FAIR-IMPACT Work Packages



FAIR-IMPACT outcomes

Table 1.1: WP objectives matched against the overall expected outcomes

Outcome 1: Improved FAIRness of data and other research outputs by coordinating the implementation of frameworks and the alignment of FAIR data practices.
Objectives WP3: Persistent identifiers • coordination mechanism for EOSC PID service providers; • meeting end user needs in the development of the EOSC PID landscape and solutions; • alignment of PID infrastructures with EOSC policy and architecture; • support instruments for facilitating uptake.
Objectives WP4: Metadata and ontologies • broader and more harmonised use of semantic artefacts in EOSC; • guidelines to collect and curate research software metadata; • a framework for metadata crosswalks and mappings between semantic artefacts; • use of semantic artefacts within data repositories for better data search and indexing.
Objectives WP5: Metrics, certification and guidelines • FAIR digital object assessment (metrics and tools) across disciplines; • FAIR principles for research software (metrics and practical tests); • FAIRness of semantic artefacts; • Support for the network of FAIR-enabling trustworthy repositories, registries and discovery portals.
Objectives WP6: Interoperability • semantic and technical interoperability mechanisms across domains; • legal and organisational interoperability across domains; • foster alignments with global and non-scientific large data infrastructures to promote FAIR for interoperability.

Main takeaways

FAIR is not yet a given for researchers and we should not forget that the cultural and support challenges are at least as big as the technical ones;

RPOs, repositories, funders and publishers need to provide support to enable researchers to share FAIR data;

Interoperability is a global challenge that asks for global collaboration.

RDA
RESEARCH DATA ALLIANCE

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Thanks for listening!

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