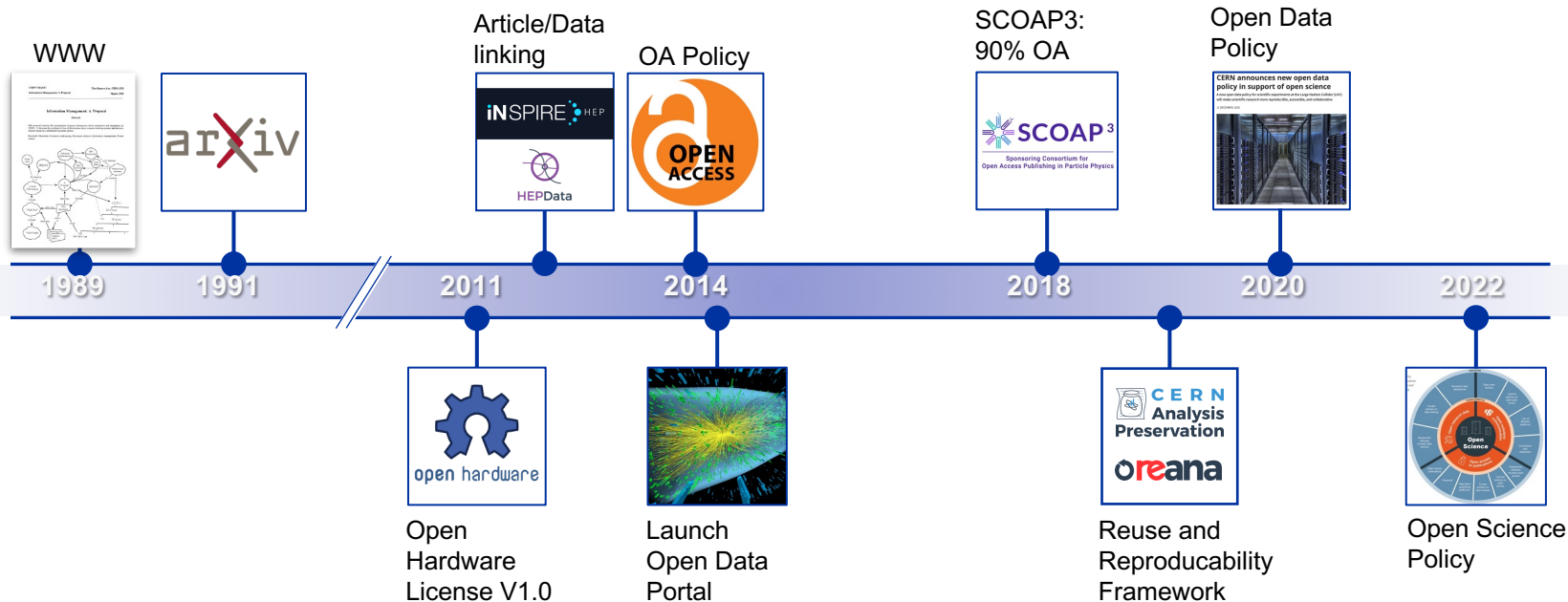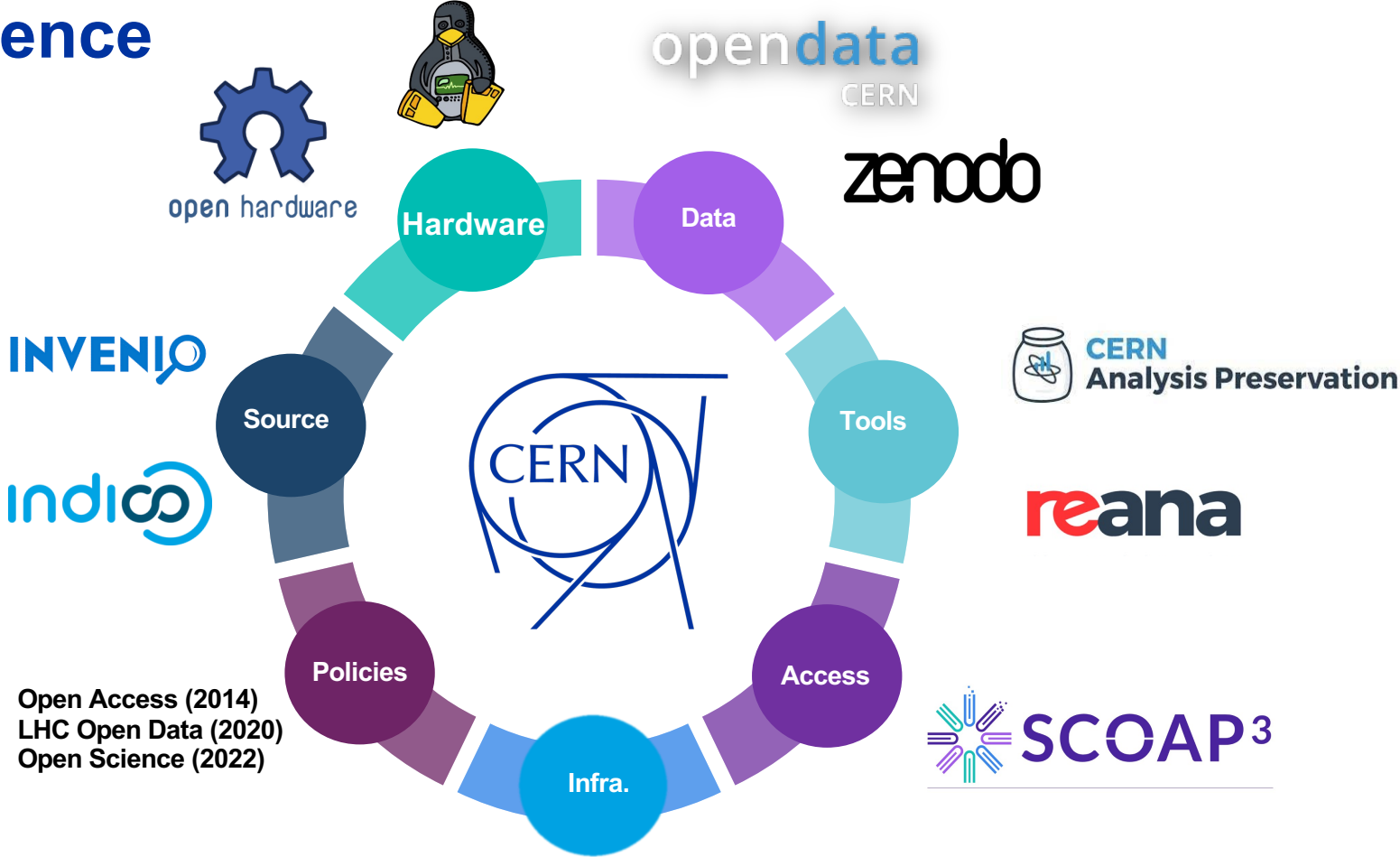# International collaboration and Open Science for EOSC
– a CERN perspective

Dr Sünje Dallmeier-Tiessen (with contributions by many other colleagues)
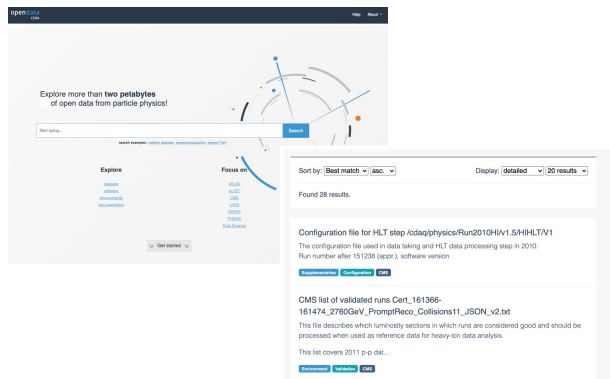
CERN – on the path to universal Open Science

WWW

1989

arXiv

1991

Article/Data linking

iNSPIRE HEP

HEPData

2011

Open Hardware License V1.0

OA Policy

OPEN ACCESS

2014

Launch Open Data Portal

SCOAP3: 90% OA

SCOAP³
Sponsoring Consortium for Open Access Publishing in Particle Physics

2018

Reuse and Reproducability Framework

CERN Analysis Preservation

oreana

Open Data Policy

CERN announces new open data policy in support of open science

2020

2022

Open Science Policy

Open Science at CERN

Hardware

Data

Source

Tools

Policies

Access

Infra.

Open Access (2014)
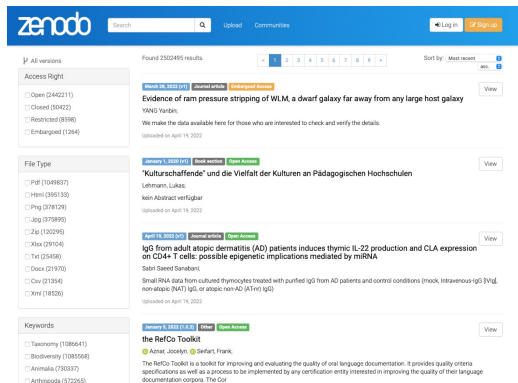LHC Open Data (2020)
Open Science (2022)

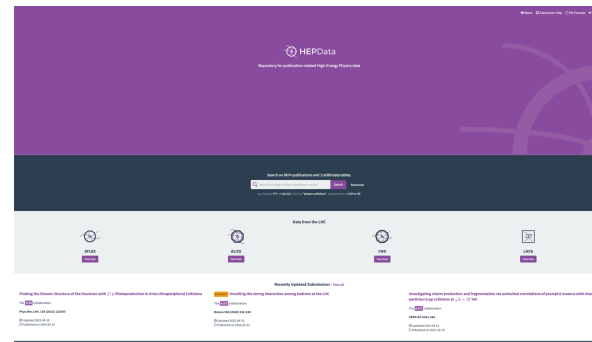# CERN and its international partners created a suite of tools for sharing research data

o CERN Open Data Portal allows HEP experiments to share their data (collisions, simulations, related software, etc.)

o Already contains > 2PB of data

o Zenodo is a multi-disciplinary open research repository commissioned by the EC through OpenAIRE

o Hosts 80% of the world's software DOIs

o HEPData is the primary repository for tables and datasets related to ca. 10'000 publications

o Operated by Durham University in collaboration with CERN
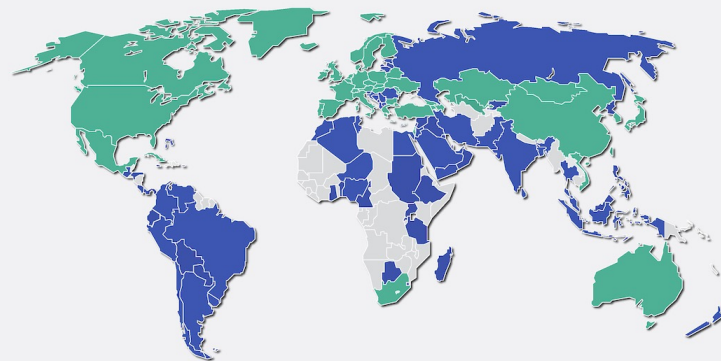
Global OA Partnership
SCOAP3

- Sponsoring Consortium for Open Access Publishing in Particle Physics

- Global collaboration launched in 2014

- Over 3,000 institutions from 44 countries (and growing)

- 11 leading journal publishers in the discipline

- 49,378 articles published OA

- Enabled APC-free publishing for authors from 120+ countries

GLOBAL PARTNERS

Countries participating in the SCOAP[3] collaboration

Other countries with at least one SCOAP[3] author

A global consortium with participatory governance operated by CERN

Universities

Libraries and Library Consortia

Intergovernmental Organizations

Research Institutions

Funding Agencies

CERN

Host organization

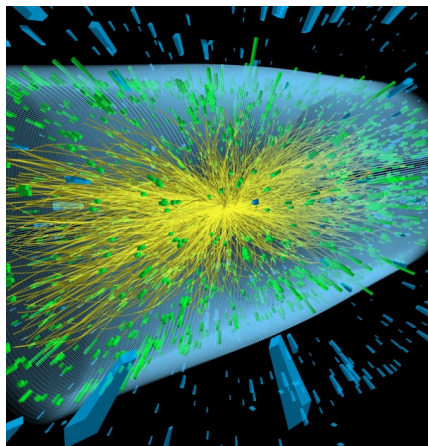# Policy framework for Open Science at CERN

CERN Open Access Policy (2014)

- All CERN research articles published OA (CC-BY)
- Central fund available
- Different routes (SCOAP³, Read & Publish, APC payment)

LHC Open Data Policy (2020)

- 4 LHC collaborations will release all level 3 data (+ level 1 and 2)
- Gradual release will start ~5 years after collection
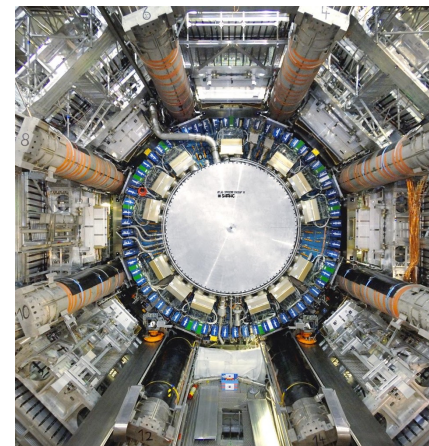- Other experiments to follow

CERN Open Science Policy (2022)

- Open… ○ Access ○ Hardware
  ○ Data ○ Software
- Reusability & reproducibility
- Research Assessment
- Education & Outreach
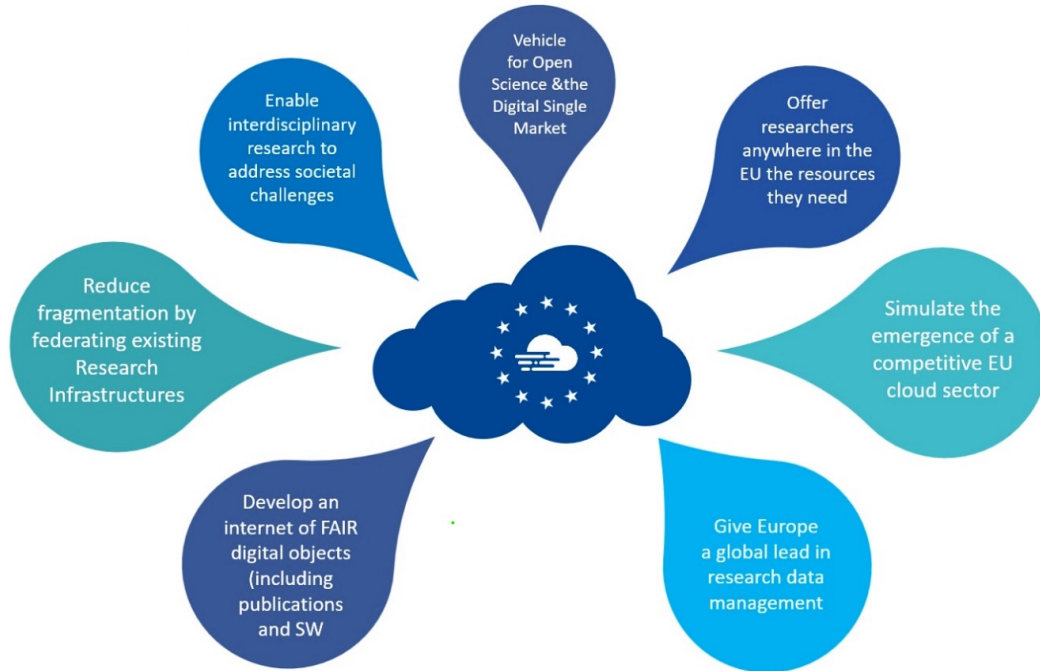

Funder Open Science Policies

- Funding agencies supporting experimental collaborations have specific open data requirements
- CERN will establish central support office for compliance

CERN Open Science Policy

- **Captures current practice and states progressive vision across multiple Open Science domains:**

  - Open Access to Publications
  - Open Research Data
  - Open Software
  - Open Hardware

  - Research Integrity, Reuse & Reproducibility
  - Infrastructure for Open Science
  - Research Assessment & Evaluation
  - Education, Training & Outreach
  - Citizen Science

- **Policy to be regularly updated to reflect changes in landscape, practices, funder requirements & community demands**

- **Currently finalizing a detailed implementation plan for all topics. Developed and governed by the community.**

- **More information: https://openscience.cern**

CERN contributions to the European Open Science Cloud

- **Open, collaborative culture** - promote collaborative development and open sharing on a global scale

- **Best practice sharing** of global and sustainable Open Access/Science models

- **Research repositories and services**– continue to support Zenodo as a trusted repository open to the world. Support Invenio and many more FAIR oriented services!

- **Governance model** - share the experience of more than a decade of operating a global data and OA infrastructure

- **FAIR** - implement FAIR data principles in the particle physics domain

- **Benchmark sharing** for reproducibility and reusability research use cases

Thank you!

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