COMMITTEE ON DATA
CODATA
INTERNATIONAL SCIENCE COUNCIL

Connecting data and people

What are the major challenges and opportunities of data for science in the 21st century?

The major global scientific and human challenges of the 21st century can only be tackled through cross-domain research that seeks to answer complex scientific questions through machine-assisted analysis at scale. **For science to address global challenges effectively, high-quality, reliable, transparent data is essential.**

The rapid development and adoption of data science and AI present epochal opportunities and challenges for science. It is essential that the deployment of these technologies serves humanity, and follows the scientific principles of transparency and reproducibility. Data policy in conformance with the values and principles of Open Science, and the FAIR and CARE principles sets a crucial framework to guide activities of various institutions to achieve these objectives.

CODATA's vision is of a world in which science is empowered to address universal challenges through the **transparent, trustworthy and equitable use of data and information.**

CODATA's mission is to **connect data and people to advance science and improve our world**.

As the Committee on Data of the International Science Council (ISC), CODATA helps realise ISC's vision of advancing science as a global public good.

What are CODATA's priorities?

Priority ❶ Making data work for cross-domain grand challenges: CODATA is leading a ground-breaking initiative, called WorldFAIR+, to provide practical guidance and technical recommendations to ensure that the data needed for interdisciplinary research is FAIR.

- The primary focus of this activity is to implement, refine and extend the Cross-Domain Interoperability Framework (CDIF) through collaborations with research groups and data infrastructures in all scientific disciplines.
- The impact of this work will be to empower interdisciplinary research for grand challenge issues, by improving science systems' capacity to combine data and metadata across domains, and ensuring that ISC's science missions for sustainability are supported by good data practices.

Priority ❷ Promoting data policy: CODATA encourages the adoption of principles, policies and practices for FAIR data and trustworthy, equitable and transparent science.

- CODATA's work to address this priority is led by the International Data Policy Committee and its ambitious Action Plan.
- The impact of this work will be to support the effectiveness and ethical dimensions of global science by advancing open and FAIR data policies, and by ensuring that data policy is an integral part of science policy.

Priority ❸ Putting data science and AI in service of science: CODATA develops good practices and guidelines for the science of data, particularly to enable transparency and reproducibility in the use of computational methods in a world adapting to the challenges and opportunities of transformative technologies.

- This priority is delivered through CODATA's Task Groups, the CODATA Connect Early Career collaboration and a new initiative with ISC to build capacity and good practice for the use of data and AI for science.
- The impact of this work will be to accelerate scientific discovery, through the responsible adoption of new technologies, while maintaining rigour and reproducibility in the data intensive science of the 21st century.

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Why join CODATA?

By joining CODATA, a National Member makes an invaluable contribution to enable CODATA to execute and expand its ambitious and critical mission, and supports international cooperation.

CODATA is a resource through which its members can articulate and advance their data priorities, engage with a global network of expertise and identify opportunities for collaboration.

Benefits of CODATA membership include:

- Participation in CODATA's high-impact, international priority initiatives.
- Immediate insight into and benefit from CODATA's thought leadership.
- Influence over CODATA strategic initiatives and agenda-setting.
- Participation in CODATA governance.
- Opportunities to collaborate with other CODATA members.
- Facilitation of member-led activities and projects.
- Knowledge sharing of cutting edge data issues with the CODATA expert community.
- Coordination from the CODATA secretariat to achieve members' priorities.

CODATA achieves a considerable return on investment for members by leveraging voluntary effort and collaboration, as well as identifying opportunities to enhance impact through third party funding.

CODATA at a glance:

- CODATA pursues long-term thematic priorities to respond to the challenges and opportunities of data in science for the 21st century:
  - Making data work for cross-domain grand challenges (WorldFAIR+)
  - Promoting data policy
  - Putting data science and AI in service of science
- CODATA mobilises a network of expertise and acts as a thought leader.
- CODATA is a resource that enables collaboration with international and intergovernmental science organisations.
- CODATA provides its members with cutting edge expertise in data policy and practice, bringing substantial benefits and return on investment for its members.

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