

ICOS ERIC Ethical Guidelines



ICOS

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Integrated
Carbon
Observation
System

Summary

ICOS Ethical Guidelines document was initiated by the ICOS Ethical Advisory Board, which wished to have guidelines for their possible advice for ICOS. Furthermore, ICOS RI is a growing community with people from diverse countries, cultural backgrounds, and host universities. Shared and joint values facilitate cooperation.

The Ethical Guidelines contain five topics: Person and their relationships, working together, Personal data and ICOS data, ICOS's role and responsibilities in society, Environment, Communicating ICOS data and science. To avoid repeating existing work, European and global guidelines, agreements and codes of conduct as well as ICOS's own guidelines have been always referred to at the end of each chapter. In May 2022, the previous version of the guidelines was discussed in GA, which advised HO to facilitate feedback and dialogue possibility within the community. This was done during June – October 2022. This version 3.0 is based on the feedback and discussions.

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1. Introduction

The mission of ICOS is *“to produce standardised, high-precision and long-term observations and facilitate research to understand the carbon cycle and to provide necessary information on greenhouse gases. We promote technological developments and demonstrations related to greenhouse gases by linking research, education and innovation. With our high-precision data, we aim to support policy- and decision-making to combat climate change and its impacts.”*

As a consequence of this mission, ICOS Research Infrastructure (ICOS RI) needs to consider also ethical aspects related to its activities. These relate to the management of the RI, cooperation within the RI, the realisation of technological applications for and with industry, the communication of results and the transfer of products to different stakeholders, the science-policy interface, as well as the science conducted by using ICOS data. The ICOS Ethical Guidelines define the commonly shared values of the ICOS community.

Ethics matters, because research and technological results are only as good as the principles and values used to develop them. Additionally, ethics matters because it influences personal and collective conduct and thereby shapes relationships and their outcomes. Finally, ethics matters because organisations and their employees have a societal responsibility. Science, and research infrastructures, have a societal impact at least on the economy, public policies and services, health, environment, and quality of life. So, science and ethics are strongly connected.

The ethically appropriate operation of ICOS RI relies on the values and actions of the people in the ICOS community. These Ethical Guidelines help to build a fair, respectful, and inclusive working environment, which is critical in addition to the well-being of the people, also for the quality of the results the RI can achieve. The guideline helps to safeguard the reputation and authority of ICOS RI and to promote the RI as a service for the scientists and the rest of society.

The structure of the document is built around five topics: Person and their relationships, Personal data and ICOS data, ICOS's role and responsibilities in society, Environment as well as Communicating ICOS data and science. Before addressing the topics, the next chapter describes the scope, i.e. whom these guidelines are addressed to.

2. The scope of the guidelines

While the national and EU laws govern and provide the limits for legal behaviour in each country and each ICOS participating institution, grey areas remain where a certain behaviour, while not strictly illegal, is still not appropriate when considered from the ethical point of view. Many of the ICOS host institutions may have their own guidelines, and it is the duty of an employee to follow the employer's guidelines in the first instance. However, as not all institutions have this type of instructions yet, and the ICOS community is both diverse and continuously growing, ICOS wants to provide a set of common values for guiding the community toward appropriate behaviour within ICOS.

ICOS RI ethical guidelines are addressed to the people within the ICOS community. The members of the community have several roles, sometimes overlapping ones (as defined in ICOS Strategy):

- The ICOS personnel employed at the host institutions of the National Networks and Central Facilities, and at ICOS ERIC, who are involved in ICOS activities and in producing the ICOS output are called 'operators'.
- Scientists using ICOS data, publishing papers, and communicating their findings are called 'users'.
- People, organisations, or groups that benefit from the impact of ICOS are called 'stakeholders'.

It can be seen, that the same person may have several overlapping roles, depending on the tasks. Particularly the 'operators' and 'users' overlap often in practice.

Regardless of the role of the person, ICOS ethical guidelines are to be followed in all ICOS activities: including but not limited to attending or organising meetings, conferences, working at an ICOS station, or processing ICOS data to be published in ICOS Carbon Portal.

3. Five topics

3.1 Person and their relationships, working together

Values: Honesty, Integrity, Respect, Competence, Cooperation, Inclusivity, Equality

ICOS RI aims at having a respectful and responsible working environment, in which good behaviour towards others, equality and inclusivity are essential requisites. Such a working environment assures a trustful environment to operate, develop and manage the complex operation of ICOS.

Everybody in the ICOS community is responsible for establishing a responsible working environment. This can be reached by acting honestly, with integrity and respect, giving value to others, while carrying out their tasks and duties.

ICOS encourages a working culture where competence and talent are enhanced, and good cooperation as well as sharing information, are highly valued. In the ICOS community, we appreciate behaviour that takes into account the consequences of one's actions and decisions.

People within the ICOS community also work responsibly by putting their expertise and skills at the service of the ICOS community to reach common goals. It is important to maintain a high level of technical and scientific competency in carrying out the tasks.

Any behaviour against the values above, such as discrimination (due to ethnicity, religion, gender etc), harassment, bullying, or retaliation is not tolerated.

For more information:

ICOS ERIC Employment Policy: <https://fileshare.icos-cp.eu/s/5RTGcKdR2if7paX>

ICOS ERIC Code of Conduct: <https://fileshare.icos-cp.eu/s/LdQJk9C4PmTnN>

ICOS Management Plan: <https://www.icos-cp.eu/sites/default/files/2022-11/ICOS%20RI%20Management%20Plan.pdf>

ICOS ERIC Gender Equality Plan: <https://www.icos-cp.eu/sites/default/files/2022-08/ICOS%20Gender%20Equality%20Plan%202022.pdf>

For more general references, see Appendix at the end of the document.

3.2. Personal data and ICOS data

In ICOS RI, data ethics concern the responsible use of personal data and the ICOS data.

3.2.1 Personal data

Values: Responsible treatment, Protection

ICOS treats personal data responsibly, following the EU GDPR regulation when collecting or processing personal data. We aim at appropriate protection of personal and institutional data, in order to avoid any misuse of personal data or other unclear purposes of personal data use.

For more detailed information on ICOS practices and policies, please refer to the following documents:

ICOS Privacy Policy: <https://www.icos-cp.eu/privacy>

ICOS GDPR Handbook: <https://fileshare.icos-cp.eu/s/r5AaFapg9bnbY39>

EU GDPR regulation: <https://eur-lex.europa.eu/eli/reg/2016/679/oj>

3.2.2 ICOS Data and data life cycle

Values: High Quality, Precise, Standardised, Reliable, FAIR

ICOS community provides data of high importance and sensibility for enabling research to understand the greenhouse gas (GHG) budgets and perturbations. Good data management practices nurtures trust within the scientific community and between science and society, both of which are necessary for scientific advance and application of scientifically gained knowledge in political decision processes.

Any form of fraud, such as the fabrication or falsification of data or records, or any form of misleading analysis by ignoring low data quality, is an unacceptable act that undermines the reputation and credibility of the ICOS community.

ICOS Data Policy defines “ICOS Data” as: quantitative or qualitative attributes of variables or sets of variables that have been gathered by using ICOS RI recommended sensors at validated ICOS stations in an ICOS ERIC member or observer country. The ICOS Handbook 2022 further defines that the measurements are standardised due to protocols mutually agreed upon by Thematic Centres and Monitoring Station Assemblies.

ICOS Data and data management follow the FAIR (Findable, Accessible, Interoperable, Reusable) principles. The FAIR principles allow the user to have sufficient tools to understand the meaning of the data before and after downloading them from ICOS Carbon Portal. ICOS data is open, easily-accessible and accompanied by detailed metadata.

ICOS Data is licensed with Creative Commons Attribution 4.0 International (CC BY 4.0) format, giving users extensive rights to use, redistribute and derive products from the data, under the condition that the data ownership is passed along and that proper attribution to the data provider is given. The user agrees to the license when downloading the data.

The ICOS data life cycle involves several stages from the measurements on the hundreds of stations, to storing the raw data and various quality controlling processes, to the production of data sets, and to the safe storage and open availability at the ICOS Carbon Portal.

ICOS ERIC acknowledges persons and organizations that have originally generated data or processed different levels of data. To attach data ownership, ICOS uses Persistent Identifiers (PIDs) and DataCite Digital Object Identifiers (DOIs) for datasets and collections.

ICOS is aware that malevolent use or misuse of our data is possible. The ICOS Data Policy and ICOS Data License describe the processes to prevent it, as well as consequent processes in case ICOS RI notices any misuse.

More details about the ICOS data and our procedures are in the following documents:

ICOS Data Policy: <https://fileshare.icos-cp.eu/s/iQyQFDEbpnfBfHg>

ICOS Data Licence: <https://www.icos-cp.eu/data-services/about-data-portal/data-license>

ICOS Data Life Cycle: <https://doi.org/10.18160/D2JV-KB6B>

ICOS Management Plan: <https://www.icos-cp.eu/sites/default/files/2022-11/ICOS%20RI%20Management%20Plan.pdf>

Other relevant reference material is on page 8 at the end of this document

3.3 ICOS's role and responsibilities in society

Values: Responsibility, Impartiality, Public Good

The ICOS community produces data and creates knowledge that has value for scientific studies, societal decision-makers. ICOS ERIC is positioned as an independent body in the global climate decision-making process. Further, ICOS provides educational materials and events for the general public. ICOS data can also be relevant for a number of other stakeholders, for example, for NGO's and industrial and commercial undertakings.

ICOS's role in society is defined in the ICOS Statutes, the ICOS Strategy, and the ICOS Handbook.

ICOS wants to guard its reputation, its integrity within the eyes of the community, and its societal trust. ICOS data or scientific advice are not tied to economic interests, political pressures, or popular views.

ICOS ERIC periodically facilitates research initiatives around the ICOS data. In these efforts, ICOS RI follows the European Code of Conduct for Research Integrity.

The range of interests around ICOS may expose individuals or institutions to conflicts of interest. The 'ICOS RI Internal Rule on Conflicts of Interest' defines the term as follows: *A conflict of interest may arise when a natural person or a legal entity is involved in multiple interests such as financial, scientific, emotional, or other aspect, or a natural person has a secondary occupation, which may affect his/her motivation.*

ICOS ERIC analyses financial, scientific, and political situations that could expose its managing bodies, and individuals to conflicts of interest because of their other duties or roles. The *Internal Rule on Conflicts of Interest in ICOS RI* describes in the ICOS policies and processes more in detail.

More detailed information about ICOS's cooperation with other organisations, conflicts of interest or research integrity:

Internal Rule on Conflicts of Interest in ICOS RI: <https://fileshare.icos-cp.eu/s/X5F4mFC4D5TSNNM>

Cooperation Rules for making agreements between the ICOS RI and entities outside the ICOS RI: <https://fileshare.icos-cp.eu/s/CL5rRe4gEXDTrWQ>

The European Code of Conduct for Research Integrity: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf

More detailed information about ICOS's role in society:

ICOS Statutes: https://www.icos-cp.eu/sites/default/files/2022-01/ICOS%20ERIC%20Statutes_updated3June2021_0.pdf

ICOS Handbook: https://www.icos-cp.eu/sites/default/files/2022-03/ICOS_Handbook_2022_web.pdf

ICOS Strategy: <https://www.icos-cp.eu/sites/default/files/cmis/ICOS%20Strategy.pdf>

Other relevant reference material is at the end of this document.

3.4 Environment

Values: Sustainability, Protection, Low Impact

Protection of the Earth system in the core of ICOS mission. This implies having sustainable strategies, technologies, and practices in place to reduce the carbon footprint of ICOS RI, and to protect biodiversity and geodiversity as much as possible.

ICOS RI fosters the development and adoption of energy-saving practices, renewable energy use, and sustainable practices for material use, for example, for its data life cycle, measurement stations, and research infrastructure management.

For more information about the sustainability, please refer to the Appendix at the end.

3.5 Communicating ICOS data and science

Values: Integrity, Engagement, User-friendliness, Effectiveness

ICOS RI considers communication and dialogue strategic tools to reach its goals. ICOS uses communications in order to provide information and knowledge to decision-makers, to create and strengthen relationships with its stakeholders, and to increase their knowledge about ICOS RI, the ICOS data, and climate science in general. Communication is also a tool to engage the ICOS community, which is key to reach the common goals of the RI.

Integrity means that ICOS way of communicating is honest, transparent, and trustworthy. Communications is fact-based and delivered in a timely manner. Moreover, ICOS provides reliable information, while acknowledging that science does not produce absolute truths.

Engagement implies that ICOS online and offline activities provide impactful, easy-to-understand information, encouraging and seeking dialogue with the audiences.

User-friendliness means that ICOS considers the information needs of the target audiences and seeks to respond to these in a way that adds value for the audiences. ICOS aims at clarity in its messages to avoid misunderstandings and minimize misuse of data and information. ICOS uses language adapted to the target audience and takes usability into account in its online channels.

Effectiveness translates into selecting channels and adapting messages according to the target audiences. ICOS uses also resources efficiently, for example, repurposing content and aligning activities across platforms.

For more detailed information about ICOS practises, please refer to:

ICOS Statutes: https://www.icos-cp.eu/sites/default/files/2022-01/ICOS%20ERIC%20Statutes_updated3June2021_0.pdf

ICOS Handbook: https://www.icos-cp.eu/sites/default/files/2022-03/ICOS_Handbook_2022_web.pdf

ICOS Strategy: <https://www.icos-cp.eu/sites/default/files/cmis/ICOS%20Strategy.pdf>

For general references, please see Appendix on page 8.

4. In conclusion

Ethical guidelines are not a sanctioning document, but failing to comply with the guidelines is considered as a failure to comply with the requirements for participating in the ICOS community. ICOS Head Office takes action to ensure that the ICOS ethical guidelines are adequately known within the ICOS community and to assess the ethical issues affecting the research infrastructure.

The processes and actions to encourage and ensure appropriate behaviour and actions are described in more detail in the ICOS Management Plan and in the annual Work Plans of the RI.

APPENDIX: Reference documents

This section contains documents, reports, articles that can be useful to deepen themes addressed in these ethical guidelines and that have been considered for developing them.

1. ENVRIplus Ethical Guidelines for Research Infrastructures:
https://www.envriplus.eu/wp-content/uploads/2019/05/D13.3_Ethical-guidelines-for-RIs.pdf
2. Ethics in research – Guidelines (ENVRIplus):
https://www.envriplus.eu/wp-content/uploads/2019/06/Ethical-Guidelines-for-RIs_13.4.pdf
3. Data Ethics Principles:
<https://dataethics.eu/data-ethics-principles/>
4. Data Ethics Framework:
<https://www.gov.uk/government/publications/data-ethics-framework>
5. An Ethics of Science Communication (review by Kristian H. Nielsen):
<https://medium.com/scicomm-book-reviews/an-ethics-of-science-communication-759dc05ee67d>
6. Singapore Statement on Research Integrity:
<https://wcrif.org/guidance/singapore-statement>
7. Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations:
<https://wcrif.org/documents/354-montreal-statement-english/file>
8. The European Code of Conduct for Research Integrity:
https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf
9. The European Charter for Researchers:
<https://euraxess.ec.europa.eu/jobs/charter/european-charter>
10. Declaration on Science and the Use of Scientific Knowledge:
<https://unesdoc.unesco.org/ark:/48223/pf0000116994>
11. Ethics and the Responsibility of Science:
<https://www.unesco.org/en/articles/science-ethics-and-responsibility-focus-world-science-forum>
12. Advisory Note: Science Communication (2010/2016), by International Science Council:
<https://council.science/publications/science-communication-20102016/>
13. Freedom, Responsibility and Universality of Science (2014), by International Science Council:
<https://council.science/publications/freedom-responsibility-and-universality-of-science-2014/>