
European Spallation Source ERIC Policy for Scientific Data

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1 GENERAL PRINCIPLES

The scientific research data collected at European Spallation Source ERIC ("ESS") are not allowed to be accessed, exploited, or distributed unless permitted by this Policy.

Acceptance of this Policy is a condition for the award of beam time and associated use of ESS resources and services as well as access to scientific research data held at the ESS.

1.1 Coverage

1.1.1 This scientific Data Policy ("Policy") covers the collection, access, use, disposal and storage of scientific research data collected from experiments conducted at ESS instruments under all user access modes except industrial proprietary access.

1.1.2 This Policy should be read in conjunction with the Policy for Scientific Evaluation and User Access [ESS-3634847] and the Policy for User Scientific Publications [ESS-3634848].

1.2 Revisions

1.2.1 Revisions to this Policy may occur for any reason or at any time, subject to the approval of the European Spallation Source ERIC Council ("Council").

1.2.2 Revisions to this Policy by the Director General of ESS may occur with immediate effect and shall be retroactively approved by the Council at the next Council meeting.

1.2.3 Once the Policy is revised, ESS shall make reasonable efforts to notify affected parties.

1.2.4 ESS should, as a guiding principle, refrain from implementing retroactive revisions to this Policy. If ESS determines such changes are necessary, ESS will endeavor to limit their effects on impacted parties. Moreover, ESS will diligently inform these parties and afford them a reasonable period to adapt.

1.2.5 Unless retroactive changes are in effect (see 1.2.4), data resulting from a proposal shall be subject to the version of this Policy in force at the time of proposal acceptance. All other data shall adhere to the version of this Policy in effect at the time of their initial registration in the ESS system.

1.3 Who is Responsible for this Policy?

1.3.1 ESS Management has overall responsibility for this Policy.

1.3.2 ESS Management has delegated practical implementation to the ESS Data Management and Software Centre (DMSC).

1.4 Infringements

1.4.1 Deliberate infringements of this Policy may result in denial of access to scientific research data covered by this Policy and/or to ESS instruments and services.

1.5 Legal Protection

1.5.1 All data will be subject to applicable EU data protection laws, including Swedish or Danish laws as applicable.

1.5.2 ESS ensures that data solely generated by ESS systems comply with the General Data Protection Regulation (GDPR).

1.5.3 The PT shall ensure that data and information provided by them are GDPR compliant.

1.6 FAIR Data

1.6.1 ESS will provide services to allow scientific research data and the metadata catalogue to follow the principles of FAIR data stewardship.

1.6.2 The PT shall provide adequate metadata information on the sample and the experiment in order to support FAIR data stewardship.

1.6.3 The PT shall endeavour to include auxiliary data to augment the experimental data.

1.7 Open Access to Data

1.7.1 Access to the metadata catalogue will be subject to acceptance to the terms of this Policy.

1.7.2 ESS will release open data under the CC BY 4.0 license.

1.7.3 Access to scientific research data is restricted to the PT during the embargo period. Thereafter, the scientific research data will become openly accessible and searchable through the ESS metadata catalogue.

1.7.4 The embargo period begins at the end of the experiment for a duration of 3 years.

1.7.5 Basic proposal information (PT, sample composition, proposal abstract, proposal title) will become publicly accessible once the experiment is scheduled.

1.7.6 The PI can request an extension of the embargo period of up to three years, by submitting a written request to the ESS Director of Science. This request shall specify the reasons for

the extension. The Chair of the Science Advisory Committee and the Director of Science will decide whether the embargo period extension will be allowed. Their decision is final.

1.7.7 Data can always be made openly accessible earlier on request of the PI.

1.7.8 The PI has the option to curate and share instrument notebooks, electronic notebooks, and other notes made through the ESS metadata catalogue.

1.7.9 The PI has the right to create and distribute copies of the scientific research data at any time.

1.8 Digital Object Identifiers

1.8.1 ESS will create a Digital Object Identifier (DOI) for each proposal. The DOI will link datasets and information created as a result of the proposal.

1.8.2 ESS will ensure that a DOI can be created for a select set of datasets by members of the PT.

1.8.3 Where scientific research data are included in a publication, said publication shall cite a DOI representing the data included in that publication.

1.9 Custodianship

1.9.1 ESS will act as the custodian of scientific research data.

1.9.2 ESS cannot be made liable in case of unavailability or loss of data or software.

1.9.3 ESS support staff (e.g. instrument scientists, computing staff) have access to all data (raw data, metadata, processed data, auxiliary data, and results) curated by the facility in order to provide support to users. The facility reserves the right to use data still under embargo to improve facility processes and performance.

1.9.4 Members of the PT shall be able to obtain an electronic copy of the scientific research data they collected.

1.9.5 ESS will ensure scientific research data are archived for a minimum period of 10 years after the embargo period. Metadata will be stored for the lifetime of ESS.

1.9.6 If ESS decides to stop acting as a custodian of some scientific research data after 10 years after the embargo period, ESS will inform the PIs concerned in a timely manner allowing them to make a copy of the scientific research data that were generated by their experiment(s), provided ESS is aware of the e-mail address of the PI.

2 RAW DATA AND ASSOCIATED METADATA

- 2.1 Raw data and associated metadata will be read-only for the duration of their life time.
- 2.2 Raw data and associated metadata will be stored in a documented format.
- 2.3 ESS will curate a means to read the raw data and associated metadata.
- 2.4 ESS will generate a persistent data identifier for each raw dataset.

3 PROCESSED DATA AND ASSOCIATED METADATA

- 3.1 Processed data generated by ESS-maintained systems shall be curated in documented formats.
- 3.2 ESS will generate a persistent data identifier for each processed dataset generated by ESS-maintained systems.
- 3.3 ESS does not guarantee readability for user-generated processed data in the case the processed data is stored in a format not supported by ESS.
- 3.4 Users must include appropriate metadata describing the provenance of the processing carried out.
- 3.5 The metadata for processed data should be interpretable across domains and communities.

4 AUXILIARY DATA

- 4.1 ESS does not guarantee the readability of auxiliary data and can keep the information in the original format.

5 RESULTS

- 5.1 The intellectual property rights for results derived from the analysis of the scientific research data shall be determined by the contractual obligations of the PT subject to the European Spallation Source ERIC Intellectual Property Rights and Inventions Policy [ESS-0036412].
- 5.2 ESS will provide curation of results on a best effort basis and act as custodian of curated results.
- 5.3 The PI decides who will have access to results stemming from analysis of scientific research data during the embargo period. The person(s) who created the results will always have access to these results.
- 5.4 The person(s) who created results derived from the analysis of scientific research data after the embargo period decide who will have access to these results.

1 GLOSSARY

Term	Definition
Auxiliary Data	Data that provides contextual information regarding the experiment, such as information about the sample, images, provenance and preparation, data processing scripts and processing environment information such as software tools and versions used.
CC BY 4.0 license	Creative Commons Attribution 4.0 International (https://creativecommons.org/licenses/by/4.0/)
DOI	Digital Object Identifier, which is a special type of persistent identifiers that makes the dataset findable, and hence citeable, through a web address. For more information see https://doi.org .
Embargo Period	The period during which the proposal team (PT) have exclusive access to the data.
FAIR Data	Data which meets the principles of findability, accessibility, interoperability and reusability. The acronym and principles were defined in a March 2016 paper in the journal Scientific Data by a consortium of scientists and organizations ¹ .
Instrument(s)	Any and all instruments, including beamline instruments, used at ESS during the execution of experiments.
Metadata	Information related to a dataset that characterises and identifies that dataset. This includes, but is not limited to, a reference to the proposal number, a data set identifier, reference to the Policy governing the data, time, duration and location of the data collection and sample name as well as aggregate information about the raw data, like total number of counts, minimum, maximum or average values for other parameters.
Metadata Catalogue	The metadata index of scientific research held by ESS.
Principal Investigator (PI)	Main proposer identified on the experiment proposal.
Processed Data	Data obtained by processing raw data.
Proposal Number	Unique identifier representing each experiment performed at ESS.
Proposal Team (PT)	Everyone designated by the PI with the right of access by way of notification on the original experimental proposal or via written communication to the Scientific Coordination and User Office (SCUO).
Raw Data	Data collected from an experiment conducted at a neutron beam instrument at ESS, including, but not limited to, neutron event data, neutron images, sample environment information, the setup and parameters of the instrument.
Scientific Research Data	Raw data, metadata, processed data and auxiliary data.
User Access Modes	User Access Modes are defined in Policy for Scientific Evaluation and User Access [ESS-3634847].

DOCUMENT REVISION HISTORY

Revision	Reason for and description of change	Author	Date
1	First issue	Florian Weissbach	2020-05-12
2	Updated in accordance with PaNOSC FAIR Research Data Policy framework [DOI: 10.5281/zenodo.3862701]	Thomas Holm Rod	2022-10-06

¹ Wilkinson, Mark D.; Dumontier, Michel; Aalbersberg, IJsbrand Jan; Appleton, Gabrielle; et al. (15 March 2016). "The FAIR Guiding Principles for scientific data management and stewardship". Scientific Data. 3: 160018. Bibcode:2016NatSD...360018W. doi:10.1038/sdata.2016.18. OCLC 961158301. PMC 4792175. PMID 26978244.