

ICFA Panel on the Data Lifecycle

v4, 20231020

Mission

The mission of the panel is to enhance global coordination on all aspects of the data lifecycle including acquisition, processing, distribution, storage, access, analysis, simulation, preservation, management, software, workflows, computing and networking in particle physics, with a focus on open science and FAIR practices.

In order to achieve this, the panel will

- address all aspects of the data lifecycle, encompassing the efforts and expertise from previous panels, and relating to and building on activities of other relevant bodies and committees;
- encourage global cooperation on the above topics in particle physics and with neighbouring fields;
- discuss strategic questions and recommend to the community future directions;
- encourage engagement with and profit from industry expertise in data management solutions, in artificial intelligence, and in systems competence;
- develop ideas and strategies for the workforce development and for professional recognition mechanisms within the topical areas of the panel.

Mandate

Address the data lifecycle within a structured and integrated systems approach in HEP

- Formulate recommendations on organisation, technology, standards, outreach, education for past/current/future experiments.
- Connect regional and local activities in the field and encourage international cooperation, aiming at stimulating active participation from the global HEP community.
- Raise awareness of open science and the FAIR principles applied to data, software and workflows, and stimulate relevant developments.
- Assess the openness and FAIRness of the field.
- Encourage transfer of knowledge
- Support the ongoing projects and collaborations started within the “Data Preservation in High Energy Physics” collaboration (DPHEP) and the “Standing Committee on Interregional Connectivity” (SCIC).

Improve the awareness for the importance of the data lifecycle in HEP

- Work out and communicate the motivation of FAIR (findability, accessibility, interoperability, and reusability) principles and open science and encourage its dissemination.
- Organise workshops, formulate recommendations and cookbooks, issue global reports
- Contribute to the training and education on open science issues in all world regions, employing in particular the facilities of the large laboratories in the field.
- Help in sharing expertise and existing solutions; catalyse new common projects; promote collaboration.

Encourage and foster connections to other fields of science, to industry and to open science initiatives in order to profit from their expertise and competence in the following fields:

- Big and distributed data management.
- Data management systems.
- Artificial intelligence.
- Open science processes.
- Data preservation systems.
- Reach out to neighbouring fields such as astro(particle) physics, hadron physics, and accelerator science, but also to the communities of photon and neutron science and others with large data volumes and related data challenges (genomic, public health, smart city, ...)

Help in organising practical support and act as point of contact for practical issues in the field of data, software, workflows and computing

- Support the ongoing projects and co-operations started within DPHEP in order to maintain data sets that (can) still produce science, keep track on parked data sets

Improve recognition of the nature and value of work on the data lifecycle in researchers' CVs and support their career development

Practical implementation

- The new panel will replace the DPHEP and SCIC panels, adding additional facets to their mandates.
- The work of the panel shall start with an ICFA statement on the importance of the topics to be addressed.
- Sub-panels can be installed that represent individual parts of the large field to be covered by the panel.
- The panel shall involve the leading persons of relevant existing activities such as DPHEP, SCIC, HSF, HEPData, CERN Open Data, and others.
- Decision process:
 - o ICFA discussion at ICFA Summer Meeting in Melbourne, 16 July 2023.
 - o Proto-panel discussions on mandate and implementation during July – November 2023.
 - o Decision on installation of new panel during ICFA Seminar 28 Nov – 1 Dec at DESY, Hamburg.