

## Call Details

Reference No.	<b>CFP-FSD-AWP25-AC-03</b>	PMU contact	Denis Kalupin
Due Date	<b>31/01/2025</b>	Department	Fusion Science Department
		Status	<b>Draft</b>

# Call for Offers for hosting Long-Term Data Storage Facility for EUROfusion

## Description:

This call aims to procure, install, and operate a **Long-Term Data Storage Facility (LTDSF)** dedicated to supporting EUROfusion researchers. The LTDSF will serve as a central repository for storing and exchanging large-scale data, with a minimum operational lifespan of ten years.

## Background and Motivation

Currently, there is no centralized solution for EUROfusion researchers to save simulation data long-term. Data associated with published research is often required to be stored for at least ten years, and while partial solutions exist (e.g., the JET catalogue system, SOLPS-MDSPLUS database), there is a pressing need for a community-wide, comprehensive storage facility. This facility should ensure:

### 1. Simulation Storage Needs

The need for robust storage for simulation data, identified as urgent by the Gateway Working Group, is critical. As simulation data grows exponentially and reflects significant computational effort, EUROfusion requires a secure, long-term storage solution:

- The storage must be accessible for at least 10 years, with potential for expansion to accommodate increasing data needs.

### 2. AI Training Requirements

Artificial Intelligence (AI) and Machine Learning (ML) applications are essential in fusion research, necessitating access to extensive datasets and rapid data retrieval:

- High-speed connectivity is required between the storage facility and the HPC Gateway to ensure efficient data transfer.

### 3. Backup of JET Data

JET experimental data, dating back to 1983, and ASDEX Upgrade data, from 1991, require a new, secure backup approach:

- An EU-based, distributed 2PB backup copy will be maintained, while ensuring researchers

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have long-term access to simulation outputs.

Using the IMAS format is recommended. Building upon existing infrastructure, such as SimDB catalogue, is encouraged.

### **Proposed Minimal Technical Specifications**

- Immediate Data Access: **High-speed storage capacity of 1PB.**
- Long-Term Archival Storage: **10PB for cost-effective, long-term storage.**
- Data Transfer Link: **Fast connection to CINECA HPC (Pitagora) in Bologna.**
- Bandwidth (sustained): **40 GB/s**
- External Network (bandwidth): **20 GB/s with a back-up at similar speed**

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Proposals are expected against following active call positions

**CFP-FSD-AWP25-AC-03- HW**

**Hardware**

**Description**

**Applicants must provide:**

- **Experience:** A record of hosting and managing storage systems, including current reliability measures and system availability statistics.
- **System Characteristics:** Detailed specifications on the proposed systems to meet EUROfusion's requirements, including procurement details.
- **Financial Proposal:** A detailed cost proposal, structured according to the provided template.

**In addition, proposal must foresee:**

- A minimum **10-year data preservation** period.
- User **control over data access rights**
- **Compliance with FAIR principles**, including Persistent Identifiers (PIDs) for data traceability.
- External collaborator access to the facility for researchers partnering with EUROfusion.

**Internal financial rules applicable for this position are:**

**Eq./OGS 40% standard**

*Equipment/Other Goods&Services standard*

**PM 50% standard**

*Personnel standard*

**Attachments:**

The Call includes following attachments available for download at the EUROfusion Information Management System:

**TEMPLATE Technical Proposal.docx**

**TEMPLATE LTDSF Financial offer.xlsx**

**Personal Data Protection Policy.docx**