

# UPDATE OF THE ARCHITECTURE FOR THE IMPLEMENTATION OF THE FUSION FAIR DATA FRAMEWORK

M. Plociennik

Institute of Bioorganic Chemistry Polish Academy of Sciences, Poznan Supercomputing and Networking Center  
Poznan, Poland

Email: [marcinp@man.poznan.pl](mailto:marcinp@man.poznan.pl)

B. Bosak  
IBCh PAS, PSNC  
Poznan, Poland

R. Palma  
IBCh PAS, PSNC,  
Poznan, Poland

M. Owsiak  
IBCh PAS, PSNC  
Poznan, Poland

S. de Witt  
UKAEA  
Culham, UK

G. Gibbons  
UKAEA  
Culham, UK

N. Cummings  
UKAEA  
Culham, UK

S. Konstantopoulos  
NCSR  
Athens, Greece

I. Klampanos  
NCSR  
Athens, Greece

A. Ikonopoulou  
NCSR  
Athens, Greece

P. Strand  
Chalmers,  
Gothenburg, Sweden

D. Coster  
MIPP  
Garching, Germany

F. Imbeaux  
CEA  
Cadarache, France

J. Decker  
EPFL  
Lausanne, Switzerland

Y. Martin  
EPFL  
Lausanne, Switzerland

O. Sauter  
EPFL  
Lausanne, Switzerland

## Abstract

Currently, largely for historical reasons, almost all fusion experiments are using their own tools to manage and store measured and processed data as well as their own ontology. Thus, very similar functionalities (data storage, data access, data model documentation, cataloguing and browsing of metadata) are often provided differently depending on experiment. The overall objective of the Fair4Fusion project is to demonstrate the impact of making experimental data from fusion devices more easily findable and accessible. The main focus towards achieving this goal is to improve FAIRness of the fusion data to make scientific analysis interoperable across multiple fusion experiments. Fair4Fusion (F4F) is proposing a blueprint report that aims for a long term architecture for Fusion Open Data Framework implementation.

The proposed solution assumes the use of the ITER Integrated Modelling & Analysis Suite (IMAS) Data Dictionary as a standard ontology for making data and metadata interoperable across the various EU experiments. The resulting architecture of the system consists of 3 main building blocks, namely Metadata Ingests, Central Fair4Fusion Services related to metadata and Search and Access Services as part of user facing.

The paper presents an update on the blueprint developed in the last months. Besides updated technical architecture including the diagrams for important flows of operations, the analysis and license recommendations have been added. The recommendation, following the example of other major European projects, and EU guidelines, and after consulting with legal experts of labs involved in F4F is to use CC-BY-NC-SA license. The Blueprint is summarized with the roadmap of the implementation as well as technical and non-technical recommendations to implement FAIR and/or open data platform for fusion community.

