

## Beyond data FAIRification: converting New AGLAE data into digital heritage objects

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On April 15th 2019, Notre-Dame de Paris was burning. The glass-stained windows have fortunately been preserved but were polluted by lead. These colorful iconic objects are deposited now and some of them will be studied in 2022 at the New AGLAE facility. Once restored, the precious artifacts will go back to the cathedral for centuries, hardly accessible for further physic-chemical analysis.

Integrating and sharing scientific data within the frameworks, norms and processes of Open Science should be considered as the alpha and the omega of any study of Cultural Heritage entity. As a matter of fact, if the property of a Cultural Heritage object is not always institutional, its cultural and spiritual dimension is intrinsically universal and belongs to anyone. According to the UNESCO World Heritage Convention dating from 1972 and now signed by 194 states, it is the duty [of France] of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural heritage.

So, how should we consider the IBA data acquired on such specific targets? Are they part of the cultural heritage object which will then be digitally augmented? Are they part of a digital twin of the piece of art?

Hence, the mission of the New AGLAE team is to preserve and transfer the IBA data sets acquired on precious objects made of stones, glass, ceramics, metals, etc. and dating from Paleolithic to 21st c. to future generations as a piece of digital cultural heritage, starting by making the data respect the FAIR principles (Findable, Accessible, Interoperable, Reusable). The FAIR process is optimized along the IBA data life cycle, from the application for New AGLAE beam time to the perennial storage of data sets and the publication of data, through their processing and current storage.

Following this logic and also in order to improve the various uses of IBA data within the communities built around the New AGLAE, IBA for Cultural Heritage and more widely Heritage Science, the Euphrosyne project was conceived. Euphrosyne is not only Aglae's sister in mythology, but it is also the name of the digital platform that is being developed with the Digital Workshop of the French Ministry of Culture to make the New AGLAE data FAIR.

Euphrosyne first version was deployed in March 2022 and enables New AGLAE users first to prepare their experimental run which is an essential step for high quality measurements and the FAIRification of the future dataset. The digital tool also permits to safely reach their data. The team is now working on the next version of Euphrosyne, which should present more functions such as giving remote access to some New AGLAE processing software. Finally, the digital tool should enable interrogating, accessing and sharing IBA data respecting the FAIR principles.

The issues, methodology and challenges will be presented as well as the progress status of the Euphrosyne platform and a potential demonstration of the digital platform.

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