Eulalie: a documentary system for the collaborative preservation of electroacoustic music based on the Doremus ontology

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Eulalie is an operational, open-source, and free information system dedicated to electroacoustic music for documenting works in order to preserve them, based on the Doremus ontology [1]. It is designed for institutions looking for an archival solution, musicologists, and artists who want to play this repertoire. The project was born in the context of Art Zoyd Studios [2], a French creation center dedicated to electroacoustic music since 1999. One of its missions is to preserve the repertoire of the 20 th and 21 st century pieces involving electronics, despite the technological obsolescence of the original equipment for which they have been produced (Lemouton *et al.* 2018). Eulalie is part of an approach to the preservation of electroacoustic music where the accessibility of all the elements necessary to rebuild or reinterpret works promotes their replayability and, therefore, their sustainability (Bachimont 2017, Bardiot 2021, Bardiot *et al.* 2022). To this end, it is crucial to give these works more visibility, locate them, and describe all their components and iterations precisely. This is why we propose an open and interoperable documentary system that combines modeling, description, and publication of data relating to works. From the user's point of view, this documentary system should answer questions such as: What is the last played version of such composition? Where are these elements (recordings, scores, devices, etc.) kept? To what extent are they accessible? What were the variations of instrumentarium in a given piece over time?

Eulalie is partly based on an ontology specifically dedicated to music, the Doremus ontology (Choffé and Leresche 2016, Lisena *etal.* 2018), which aims to model the descriptive information of music-related content (Jacquemin 2022). This ontology, based on FRBRoo (Le Boeuf 2013, Riva 2013) seemed to meet our needs partially. However, with two major drawbacks: very rich and complex, it does not consider the specificities of electroacoustic music. Moreover, it has not been implemented in a conventional database management system. Our approach is, therefore, to rely on the data structure proposed by Doremus to build a conceptual model of data compatible but simpler and lighter. This model can then be implemented in a standard database management system to make it easily accessible to the general public and to document content. However, the DB structure is still compatible with the original ontology, and thus allows for subsequent mapping into an RDF triplestore that ensure accessibility to the content.

In this perspective, we have chosen a free and online database service, Heurist [3] (in combination with Nakala – the French HSS research data repository – to host the documents), which offers remote access to a MySQL engine and provides a fairly simple interface to manipulate and manage the database. The logic of the model for electroacoustic music being the same as that of Doremus, we find in its structuring three founding concepts: the composition which, together with a Composer allows to situate the creative process; the Version that concretizes the musical piece and links it to catalog content (title, composition date, etc.) and musicological content (instrumentation); the Grouping, which allows apprehending a musical piece outside of its physical characteristics, and in particular to approach it individually as a whole, or on the contrary to consider it as an element integrated into a larger coherent whole (show, album). From this initial triple arise the different manifestations, whether material (scores, recordings) or immaterial (performances).

After briefly presenting the project's objectives and the ontology, we will propose a demo of the database [4]. The principles of interoperability and Open Data have guided the different choices made throughout the project. Thus, it is not only possible to make the content of the Art Zoyd Studios information database interact with other resources on music, but the system itself, Eulalie, can be used by other institutions facing problems similar to those of Art Zoyd Studios.

Notes

1. https://www.doremus.org/
2. https://artzoydstudios.com/
3. https://heuristnetwork.org/
4. https://heurist.huma-num.fr/h6-alpha/?db=ArtZoyd_Archives

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