Bridging Archival Metadata Standards for Digital Preservation and Interoperability: A Project Report

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Abstract
This report presents results from the project *"Systemic Digital Preservation of Archival Records in the Government of the State of Espírito Santo"*, which aims to develop a Systemic Digital Preservation (SDP) model for archival records managed in the E-Docs system. The project focuses on constructing a metadata crosswalk among key standards for records management, preservation, and access, with Dublin Core as the central reference. The goal is to support semantic interoperability and enable process automation in digital preservation. Preliminary results include a validated metadata correlation table, with potential applications in interoperability and digital preservation within electronic government environments.

Keywords
Metadata crosswalk, digital preservation, interoperability, public administration, archival record

1. Introduction

Interoperability among distinct metadata standards remains a key challenge in digital preservation and document management within Brazilian public administration. This report presents the construction of a metadata crosswalk among representative standards for document management, digital preservation, and information dissemination, as part of the project *"Systemic Digital Preservation of Archival Records in the Government of the State of Espírito Santo"*. The project aims to develop a Systemic Digital Preservation (SDP) model applicable to digital archival records, including the definition of essential metadata and the preparation of a Digital Preservation Plan

(DPP). The adopted methodology leverages Dublin Core as the central reference to promote semantic interoperability and support emerging technologies, including artificial intelligence.

2. Methodology

The adopted methodology involved selecting recognized standards for document management, digital preservation, and archival description (such as **Dublin Core, e-Arq Brasil[1], PREMIS, Nobrade[2], IPAM, EAD, and ISAD(G)**), based on specialized literature and international guidelines. Following this selection, metadata elements were extracted and organized into a detailed spreadsheet, maintaining the original terminology of each standard.

Dublin Core was chosen as the central reference standard due to its widespread international adoption and structural simplicity, which facilitates semantic and technical alignment across the selected standards. The resulting metadata crosswalk was consolidated into a structured comparative table, clearly highlighting the identified functional and semantic correspondences.

3. Preliminary Results and Final Considerations

The stages of selecting standards, extracting and organizing metadata, and drafting the preliminary metadata crosswalk—with consolidated correspondences among descriptive, administrative, and provenance fields—have been completed. The project is currently in the phase of refining correspondences and preparing complementary documentation. The developed methodology has proven to be replicable, promoting interoperability and integration across archival systems and digital repositories. The adoption of Dublin Core as a comparative base has proven effective for conceptual alignment and for identifying gaps among the analyzed standards, particularly regarding specific aspects of archival description.

Next steps include external validation with experts, incorporation of feedback, publication of the material in an open-access repository, and evaluation of the model in real-world digital preservation and interoperability scenarios. The project aims to provide the DCMI community with a structured and well-founded approach for mapping metadata standards for the management, preservation, and access of digital archival records.

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[1]e-Arq Brasil is the Brazilian standard for electronic records management, issued by the National Archives of Brazil, providing requirements for metadata, classification, and preservation of digital archival records.

[2]Nobrade (Nobrade is the Brazilian standard for archival description, based on international models such as ISAD(G), and used to guide the creation of descriptive metadata for archival records in Brazil.