

# **EMPOWERING THE ARCHIVIST: Progress report on “Applying Intelligent Agents to Digital Preservation Research Programme”**

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Abstract: Digital Preservation focuses on the protection and future accessibility of almost any kind of cultural heritage object. It’s a collective endeavor, involving many actors that address digital obsolescence through two strategies: progressive migration of object formats or through emulation tools.

Our research centers on migration processes by means of a multi-agent system.

An Agent is defined as a computer system or component, capable of autonomous actions to fulfill its designed objectives. A set of agents working collaboratively are defined as a multi-agent system, in which case the agents interact with each other and with the environment in a permanent communication to cooperate.

The GAML model (GAMA Modelling Language) aims to simulate an archival entity to share information and find solutions to a limited list of digital preservation issues. These “archiver agents” can be individual or referring to a group (multi-agent) that manage the digital objects.

To aid the archivist on digital preservation duties, as an additional tool at his disposal, an agent-based model could be implemented. For instance, after training by an expert archivist the agents will identify and assess obsolescence risks providing recommendations about the best preservation solutions to apply.

The benefits for the archivist are immense. For instance, that time constraints are less of a burden and so the archivist can concentrate on value added tasks and not menial and repetitive ones or acknowledgement that the content is 100% safe and secure without labor intensive tasks, are a few examples.

## **About the Authors:**

**Teófilo Redondo** (BArts -1985, MArts - 1986; Universidad Complutense de Madrid - UCM) is Chief Customer Officer (CCO) at LIBNOVA, with a special focus on Artificial Intelligence evolutions. Prior to this he had developed a career in various areas of Information Technology: Senior Consultant – ICT at Ayming España, Innovation Projects Portfolio Coordinator at Zed Worldwide, Technology Architect at Universidad Internacional de La Rioja (UNIR), and a large career at IBM covering several areas like Cloud Computing and Big Data Architectures, Enterprise Solutions Architect and as SOA Architect. He started in the IBM Research Division (IBM Scientific Center in Madrid) with several projects on Machine Translation, during which he produced a number of articles on this subject. He was Visiting Scholar at Stanford University (1987).

He is affiliated with SEPLN (Sociedad Española para el Procesamiento del Lenguaje Natural) since almost the beginning.

***Paul Severn*** is at present in charge of innovation and marketing at LIBNOVA, a tech-frontline Digital Preservation Company safeguarding heritage and preserving it for the future. Our continuous research programmes mean that we can offer highly advanced solutions for the International Digital Preservation needs, especially tailored for the G.L.A.M.'s (Galleries, Libraries, Archives and Museums). Previous to this project, he was in charge of a digital marketing company specialized in taking small to medium-sized businesses to the international markets.”