



fRamework for safE, opEn, collaboratiVe And inclUsive digitisAtion and management of cultural heritagE

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DELIVERABLE 2.5:

Contextualisation Enabler

Work Package 2

LEAD BENEFICIARY:

LINKS Foundation (LINKS)

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Document Sheet

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Publishable summary

The REEVALUATE Contextualisation Enabler addresses a fundamental challenge in cultural heritage digitisation: ensuring that digital representations of artefacts retain their historical, cultural, and semantic integrity. Without proper contextualisation, digitised objects risk losing their meaning, leading to misinterpretations or misuse by researchers, institutions, and the public.

This document presents Release no. 2 of the Contextualisation Enabler, developed within Work Package 2 (T2.3 and T2.4) of the REEVALUATE project. The enabler enriches digital artefacts with accurate contextual metadata through a dual approach combining AI-driven automation with human expertise.

The AI-driven component operates across three input modalities — image, text, and audio — through dedicated submodules. The image enabler leverages similarity-based retrieval and a SwinV2 transformer backbone to suggest metadata for newly digitised artefacts, achieving Accuracy@3 scores above 50% for most metadata fields on the MET benchmark dataset. The text enabler implements a sequential multi-agent LLM pipeline with Design-by-Contract (DbC) and SHACL validation constraints to transform free-text descriptions into structured knowledge graph triples compliant with the CACAO ontology; qualitative evaluation with domain experts confirmed its utility as an assisted annotation tool, while exposing the need for a dedicated CH-domain benchmark, which has been constructed as part of this release. The audio enabler employs an Audio Spectrogram Transformer (AST) fine-tuned on the MusicNet dataset, achieving 90.48% F1 for instrument classification and supporting similarity-based metadata transfer for unseen recordings.

The human-driven component integrates two complementary mechanisms. An RLHF-based reranking agent leverages curator feedback as a semantic reward signal to iteratively refine metadata suggestions through a Vision-Language Model (VLM). A Human-Driven Contextualisation Enabler (HDCE) allows curators to launch targeted public campaigns, collecting and validating contributions from domain experts, citizens, and other stakeholders, which are then integrated into the REEVALUATE knowledge graph.

Annex 1

Logo	Full Name	Country
	CENTRE FOR RESEARCH & TECHNOLOGY HELLAS	CERTH
	FRAUNHOFER INSTITUTE FOR OPEN COMMUNICATION SYSTEMS FOKUS	FOKUS
	FROMSCRATCH DESIGN STUDIO BV	FS
	FONDAZIONE LINKS - LEADING INNOVATION & KNOWLEDGE FOR SOCIETY	LINKS
	FFP FILM- & FERNSEHPRODUKTION GMBH	FFP
	NUROGAMES GMBH	NURO
	GVAM GUIAS INTERACTIVAS SL	GVAM
	STIFTUNG PREUSSISCHER KULTURBESITZ	SPK
	HYPERTECH	HYP
	OLYMPIAKO MOUSEIO	OLYMPIC
	ARTHUR'S LEGAL BV	ARTHUR
	KATHOLIEKE UNIVERSITEIT LEUVEN	KU Leuven
	AG CULTURELE INSTELLINGEN ANTWERPEN/ ERFGOED	MoMU
	EUROPEAN FASHION HERITAGE ASSOCIATION	EFHA
	3D RESEARCH SRL	3DR
	FONDAZIONE AQUILEIA	AQUILEIA