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HIGH RESOLUTION 3D MODELLING OF CULTURAL HERITAGE

Artur Krukowski, Intracom S. A. Telecom Solutions, Greece

Emmanouela Vogiatzaki, Research for Science, Art and Technology (RFSAT) Ltd, UK

Abstract. The article presents an ongoing work performed in the research project SCAN4RECO concerning multimodal and multispectral scanning of Cultural Heritage (CH) assets for their digitization and conservation via spatiotemporal reconstruction and 3D printing, funded by the European Commission under Horizon 2020 program. We present here the project, as well as research and development research results achieved to date. A combination of visual and penetrating scanning technologies, including infrared, Raman and X-rays produce layered 3D models of an object, allowing for detection and quantification of e.g. underlying layers/images. Subsequent 3D post processing focuses on simulating expected degradation over time under known environmental conditions. However, in this article we focus on the modelling of object geometry using primarily photogrammetric methods to achieve very high object resolution using consumer types of devices, thus making such an approach attractive to professions and hobbyists alike.

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