EKA Estonian Academy of Arts

Department of Cultural Heritage and Conservation

The EKA is looking for partners for a proposal aimed at creating high-quality digital content (resources) of cultural heritage (CH) with combining improved traditional and innovative methods and implementing these into the conservation workflow.

The emphasis of digitisation is on various 3D technologies which enable to tell stories about the past with adding various layers of information and to create new content for museums and researchers. Although a number of CH objects are already digitised in 3D, they usually lack additional information and metadata to make it searchable, accessible and usable for the public and researchers. One of the main aims of the proposed project is to create enriched digital data and propose a unified system for metadata and additional information for 3D models of culturally significant objects - masterpieces.

The need for high-quality digital heritage is especially apparent in the light of recent events, when GLAM (Galleries, Libraries, Archives, Museums) and other institutions dealing with CH were closed because of the SARS-COV2 pandemic. As a vital asset for preserving the culture, languages, historical memory and the possibility to continue high level research the CH should be accessible to all and at all time.

Main interests are:

- to improve with 3D documentation methodology;
- to create practical workflow to generate interest for a better and more complete CH documentation:
- engage other industries (gaming, movie, tourism) to provide authentic and verified data according to industry standards;
- establish the IIIF based 3D annotation standard;
- generate new (3D) content with enriched metadata for users;
- re-use and repurposing of CH 3D Data: during the documentation of the artefacts 3D models can be created which can be used by the animation, gaming and movie industry;
- generate new exhibitions to demonstrate the new content as well as technological innovation;
- research the issues and provide solutions: possibility to unify technical operability solutions of different sectors, provide suggestions, guidelines and access for heritage 3D models.

Detail view: 3D wireframe model of the altar retable by Bernt Notke (1483), the Church of the Holy Spirit, Tallinn, Estonia (see more: https://skfb.ly/6RP8M) .

Imaging technological research allows researchers to find and visualize the general construction details of the altar that are invisible to the human eye.

Our department has ability and knowledge about heritage conservation, documentation and survey measurement, including:

Research Methods and Presentation of Results:
- CH Documentation
- High-resolution Photographing
- 3D Documentation with Laserscanner
- Photogrammetric Measurement
- 3D Modelling
- Digital Mapping of the object

Imaging Technological Research:
- Ultraviolet Examination
- Infrared Examination
- X-Ray Examination

Instrumental Analyses:
- Instrumental analyses allow to define / specify the materials that were used for making the retable and to distinguish them from later additions.
- Portative XRF (X-Ray Fluorescence) – Mapping of Elements
- Microscopic Instrumental Analyses (SEM-EDS; ATR-FT-IR)

Research of the masterpieces, on-going Ackermann project (www.ackermann.ee)

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