

Scanning for Syria Project among the winners of 2020 European Heritage Awards / Europa Nostra Awards

We are pleased to announce that the project Scanning for Syria (SfS) has been awarded a European Heritage Award / Europa Nostra Award in the category Research.

For the last nine years the Syrian civil war has caused sorrow and destruction. Besides displacing millions and killing thousands, it has badly impacted the rich cultural heritage the region is known for. Many archaeological artifacts have been destroyed or looted.

In order to counter (part of) this loss, SfS was initiated by academics from Leiden University and Delft University of Technology under the auspices of Leiden Delft Erasmus Centre for Global Heritage and Development. With a NWO- KIEM Creatieve Industrie grant, the project embarked on the use of 3D scanning and printing technology to make high quality reproductions of 12th century BC clay tablets. The cuneiform tablets excavated by Leiden archaeologists at the Tell Sabi Abyad fort in Northern Syria and once part of the collections of the Raqqa Museum have vanished in the fog of the Syrian civil war. The team worked from silicone rubber moulds of the tablets cast before the war. Having a lifespan of roughly thirty years, the moulds proved not be a durable solution, hence the need for scans.

In collaboration with the Catholic University of Louvain and Heidelberg University, the LDE researchers explored several imaging technologies to find the best solution to capture the precious texts hidden within the concavities of the moulds. In the end, the X-ray micro-CT scanner housed at TU Delft laboratory of Geoscience and Engineering turned out to offer a good compromise between time-efficiency, accuracy and text recovery. The SfS team has been able to accurately generate digital reconstructions of the original clay tablets from the scanned 3D raw data of the silicon moulds. Furthermore, the Heidelberg team dramatically decreased the time for decipherment of a tablet by automatically computing high quality images clearly showing the cuneiform characters, which would have taken an assyriologist several hours to manually craft a matching drawing (fig. 1)!

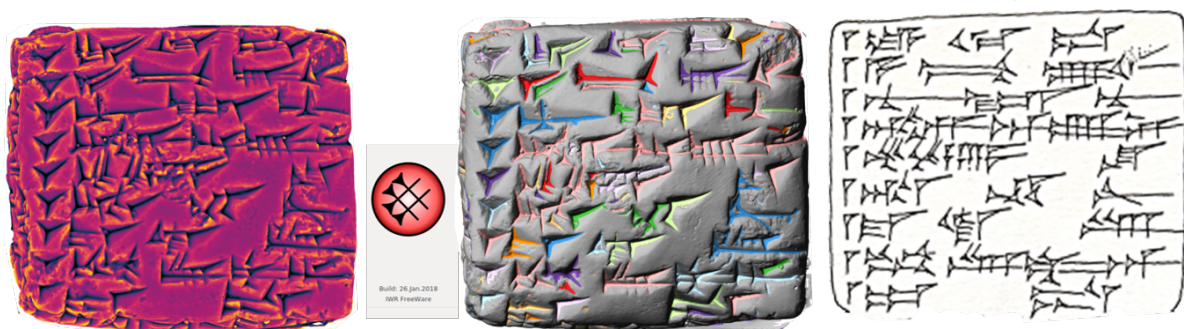


Figure 1. Automated reconstruction of cuneiform (Raqqa Museum tablet T98-34). Left: digital reconstruction from the scan. Centre: semi-automatic decipherment by Heidelberg University's open source software GIGAMESH. The match between GIGAMESH and the original hand-drawn transcription made by Assyriologist Dr. Frans Wiggermann (right) almost reaches 100 % (images Hubert Mara, Scanning for Syria Project).

The digital models have made a clear impact as they have become accessible to both scholar and non-scholar communities worldwide, allowing for the partial reconstruction of archives in Syria and the rediscovery of texts which have vanished. The tablets record the anxieties of local administrators living in the Assyrian fortress at Tell Sabi Abyad.

From the digital models, physical replicas were also produced (fig. 2). The 3D-prints may serve as teaching material in Assyriology classes. Museum visitors can manipulate them for a better appreciation of the ingenuity of Assyrian cuneiform writing.



Figure 2. Colored high-resolution prints of Assyrian cuneiform texts from the site of Tell Sabi Abyad, northern Syria (image: National Museum of Antiquities, Netherlands, Scanning for Syria Project).

The fact that SfS has received this prestigious European Heritage award / Europa Nostra Award in the research category is without doubt a fantastic recognition for the hard works and dedications from all team members involved, including students, the capabilities of interdisciplinary research and the possibilities it brings for further developments in the cultural heritage field. As quoted by the jury, “the method is replicable and can also be applied to other, small size objects and thus offers new methods of digitally analysing and documenting small heritage artefacts – even objects that are incorporated or sealed into other material”. The consortium is hopeful that the achievement made in this project would lead to funding for new scholarship.

The SfS team members dr. ir. Dominique Ngan-Tillard, dr. ir. Jouke Verlinden, dr. Karsten Lambers, dr. Lucas Petit, and Prof. dr. Jan Kolen dedicate the award to the memory of dr. Olivier Nieuwenhuys who initiated the project.