

УДК 811.111:004.925.84

Lesyukova V., Velitchenko M., Bazyleva I.

Inception Project

Belarusian National Technical University
Minsk, Belarus

In the 21st century, people are used to face with 3D technologies in different spheres. However, this is not the limit of virtual reality development.

The project called Inception is going to improve 3D laser survey, data reception and processing. The slogan is “Forever. For everybody. From everywhere”.

The word *Inception* means ‘beginning, emergence’. This is connected to the project’s historical value. Scientists and IT-specialists want to create 3D models of European cultural heritage like buildings, artefacts and other sites. All the models will be placed on platform called Heritage Building Information Model (HBIM) (‘forever’) [1].

Because of developing visualization and analysis technologies for 3D modelling, the platform will be accessible for engineers, scientists and common people on every hardware (‘for everybody’).

New software and technologies will be tested at different cultural heritage sites. In the future, the technology will be applicable across Europe (‘from everywhere’).

The main aim of the project is to replace the models into augmented reality, which will become accessible for every device.

The project was created in University of Ferrara, Italy and has quickly found sponsorship. It has full support from Stakeholder Panel that represents interests of UNESCO, different public institutions. NGOs in field of culture.

Inception has three main objectives:

1) To make historical heritage understandable for everybody by collaborations across variable sectors, disciplines and tools. Accessing, Understanding, and Strengthening European identity through its rich cultural heritage. In the nearest future AR and VR will be easily read on mobile devices. European cultural identity will be opened for scientific and common-users research. It may help to make our history more popular and open education and business opportunities.

2) To optimize and develop cost-effective hardware and software for rapid capturing and processing of data. Nowadays 3D technologies are still not enough portable, affordable and perfect. In the aim of project is to make this processes more automated: smart handling of nonconventional characteristics, location and geometries.

3) To create an open-standard Semantic Web platform for easy sharing, accessing and work with digital models. It includes making high quality and interoperable 3D models made of results from 3D survey; implementation of new APLs (Application Programming Interfaces) without compromising quality and functionality. So the project establishes 3D digital model-based documentation of cultural heritage that will be disseminated online as well as through on-site and off-site demonstrations by educational, cultural and governmental institutions, which are directly engaged in the inception Stakeholder Panel [2].

The project has been developing for 4 years. The project consists of eight inter-dependent work packages (WP). They are numerated and work with different sides of Inception:

WP1 – Data about user requirements on cultural heritage knowledge.

WP2 – 3D data acquisition and hardware enhancement. Second package has information about technology development/capturing and acquisition.

WP3 – BIM semantic modelling and software applications for Heritage usability.

WP4 – INCEPTION platform for sharing Heritage BIM models.

WP5 – Includes use cases and demonstrations.

WP6 – Works with deployment of 3D models in user applications.

WP7 – Education, knowledge dissemination and exploitation.

WP8 – Project and scientific management.

Inception has an ambition to strongly support the development of a pan-European approach to data usage; to popularize and promote European culture and values; to make their research available for common users and specialists; to improve 3D technologies so that augmented reality will be accessible on each device [3].

References:

1. Watch in 360°: Florence's Institute of the Innocents [Electronic resource]. – Mode of access: <https://www.euronews.com/2019/03/04/watch-in-360-florence-s-institute-of-the-innocents>. – Date of access: 16.03.2019.
2. 3D modelling will document Europe's cultural heritage [Electronic resource]. – Mode of access: <https://www.euronews.com/2019/03/04/3d-maps-will-document-europe-s-cultural-heritage>. – Date of access: 10.03.2019.
3. Inclusive Cultural Heritage in Europe through 3D semantic modelling [Electronic resource]. – Mode of access: <https://www.Inception-project.eu>. – Date of access: 14.03.2019.