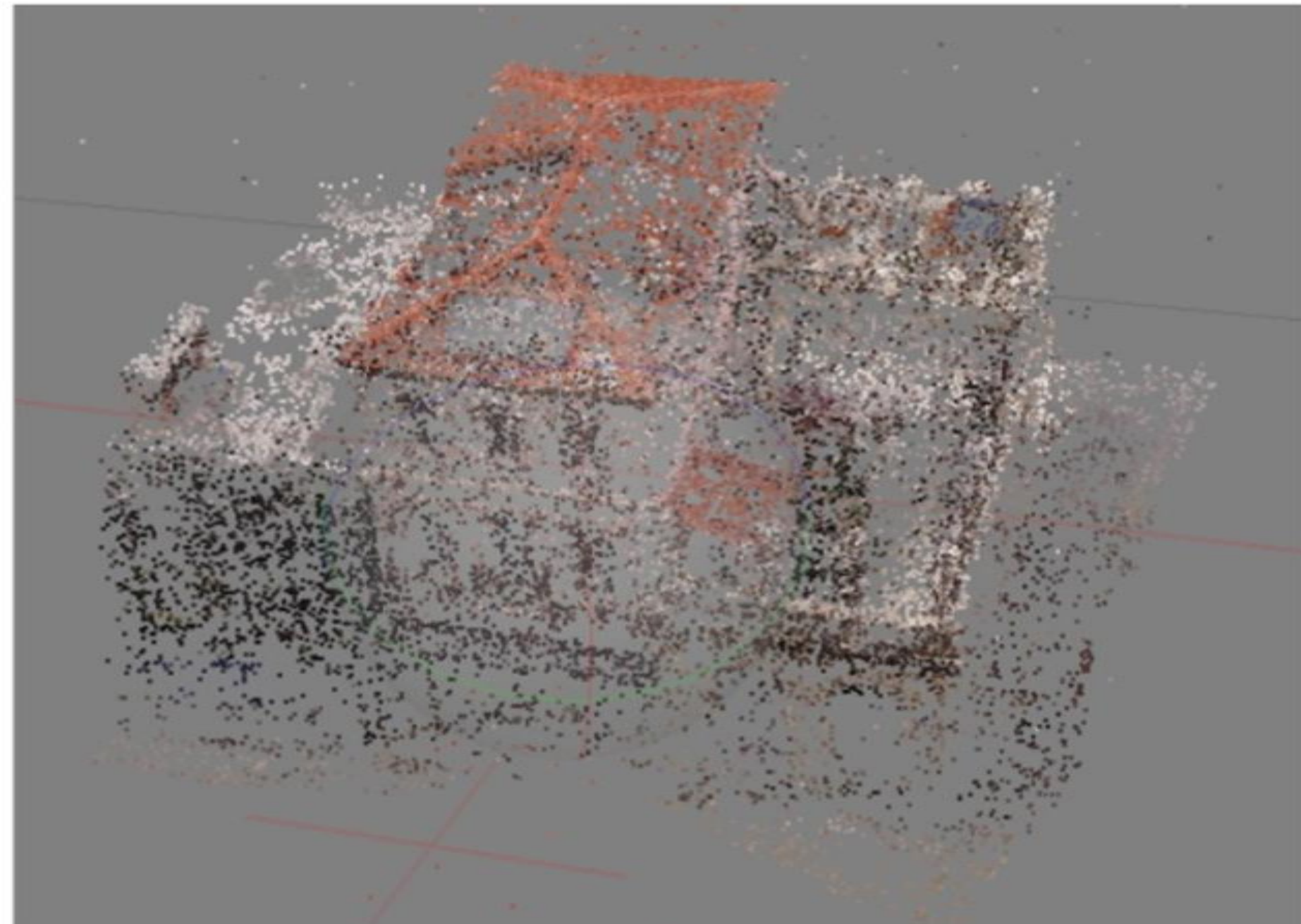# Combining an Indoor positioning system (IPS) with Structure from Motion (SfM) techniques in cultural heritage

Panagiotis Parthenios, PhD[1]; Anna Karagianni[1];
Aggeliki Christaki[1]; Sofia Mavroudi[1]; Marilena Mochianaki[1]; Evangelos Nitadorakis[1]; Giannis Rousogiannakis[1]
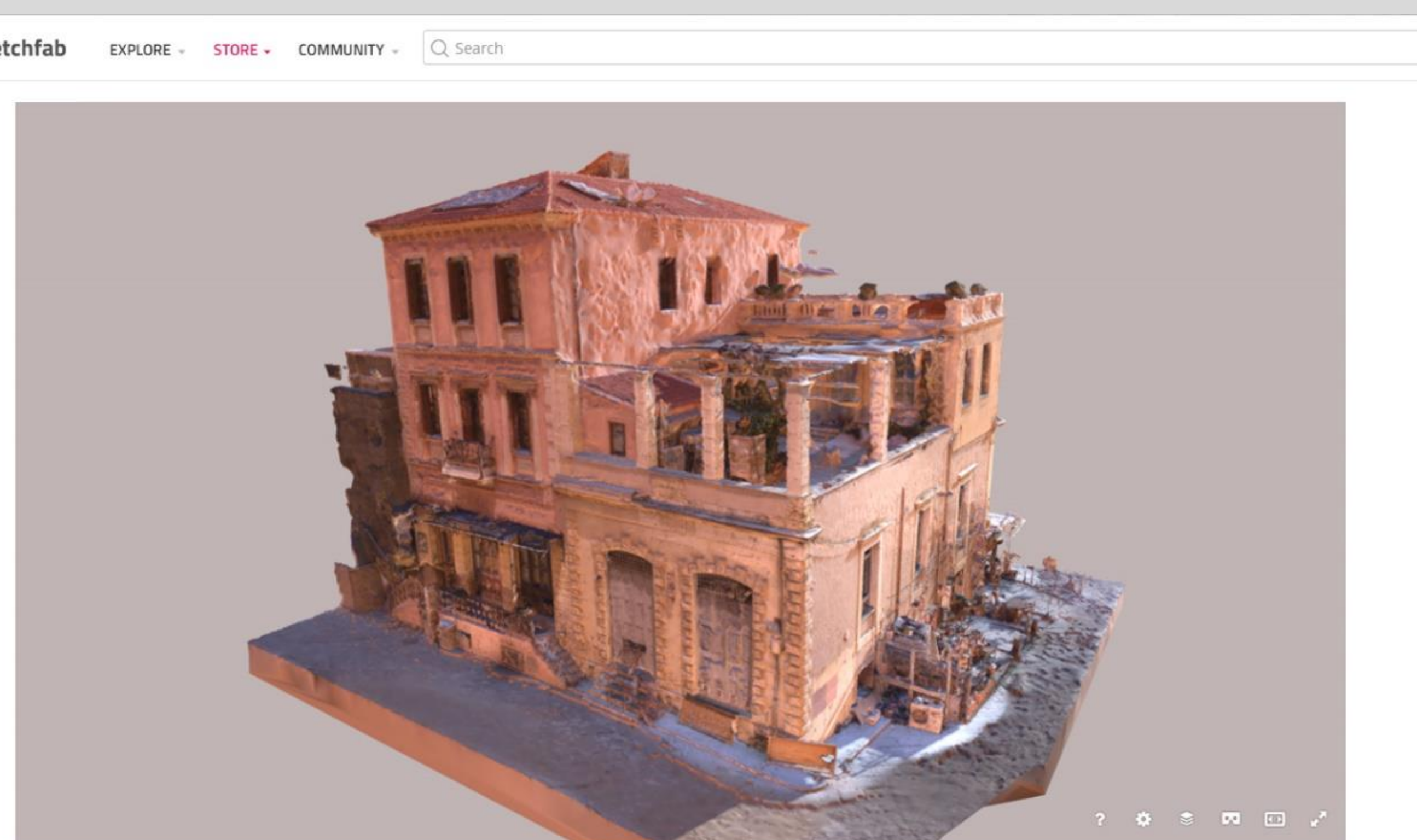[1]Technical University of Crete

Number of Photographs used: 100

UAV model : drone DJI Matrice 100

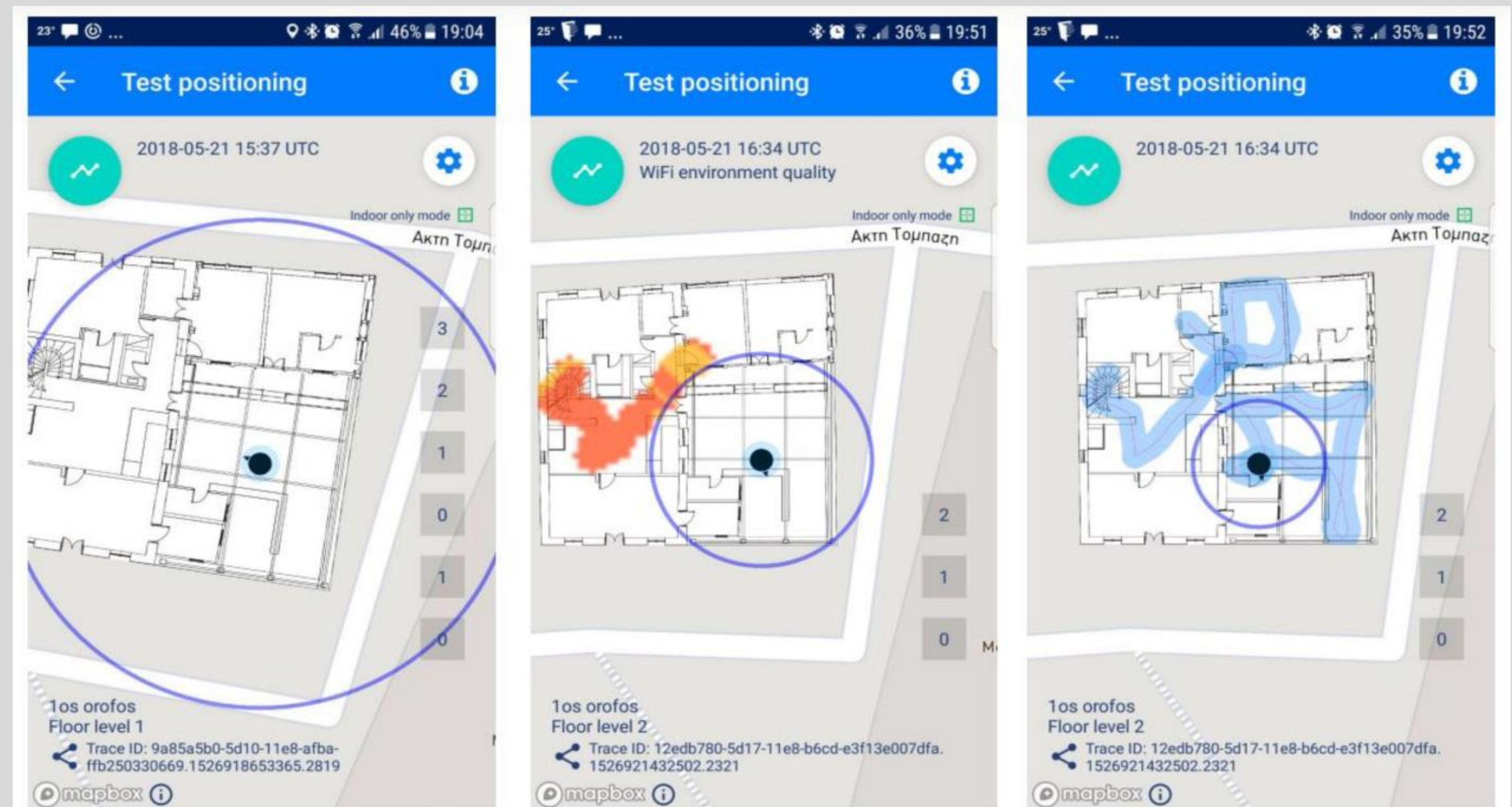SfM software used: Agisoft Photoscan

Processing time: 160 minutes

TUC_Arch. project

nitadorakis

Βήμα 3 : "Build Mesh"

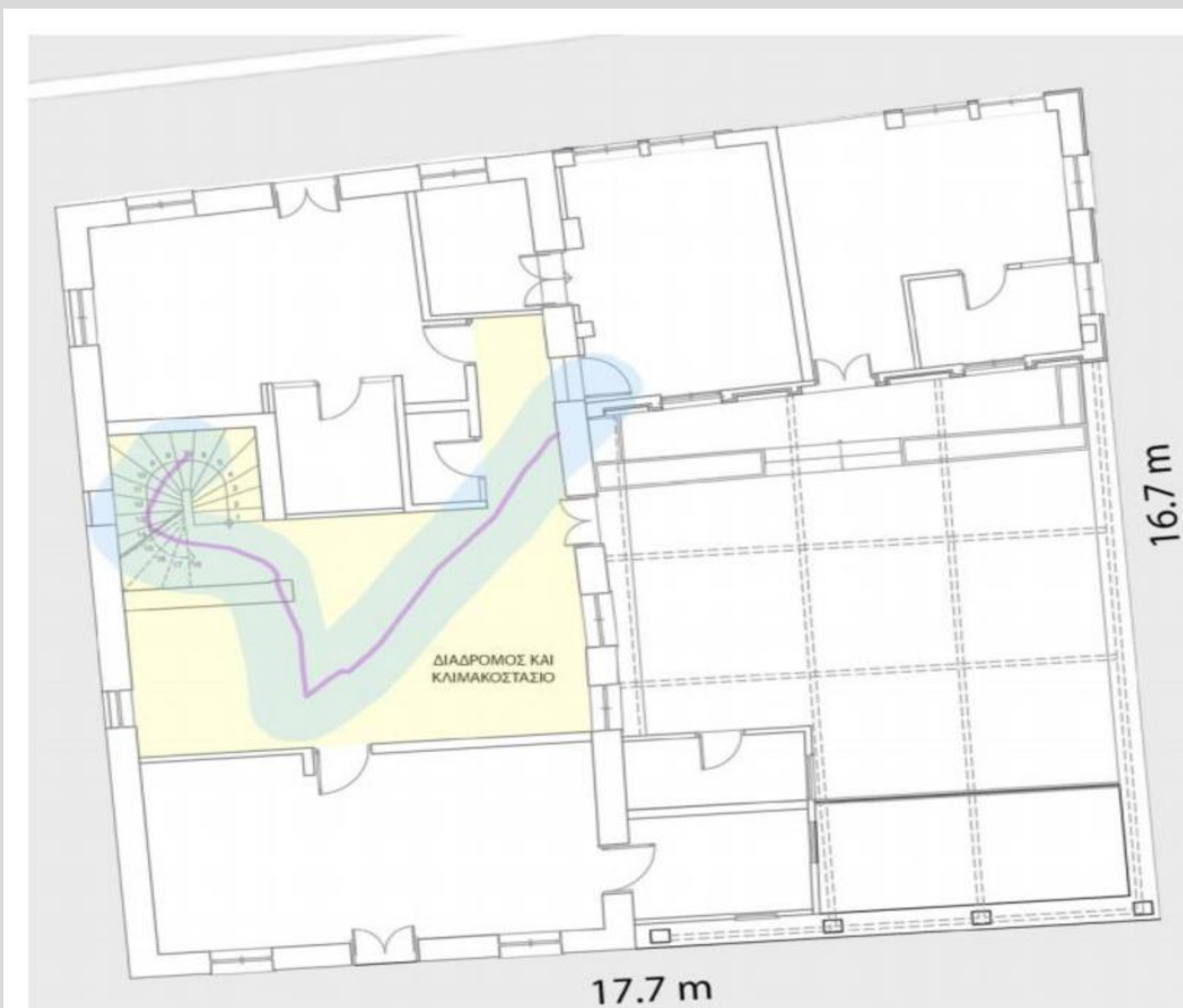Interactive Indoor Navigation App for Museum Visitors
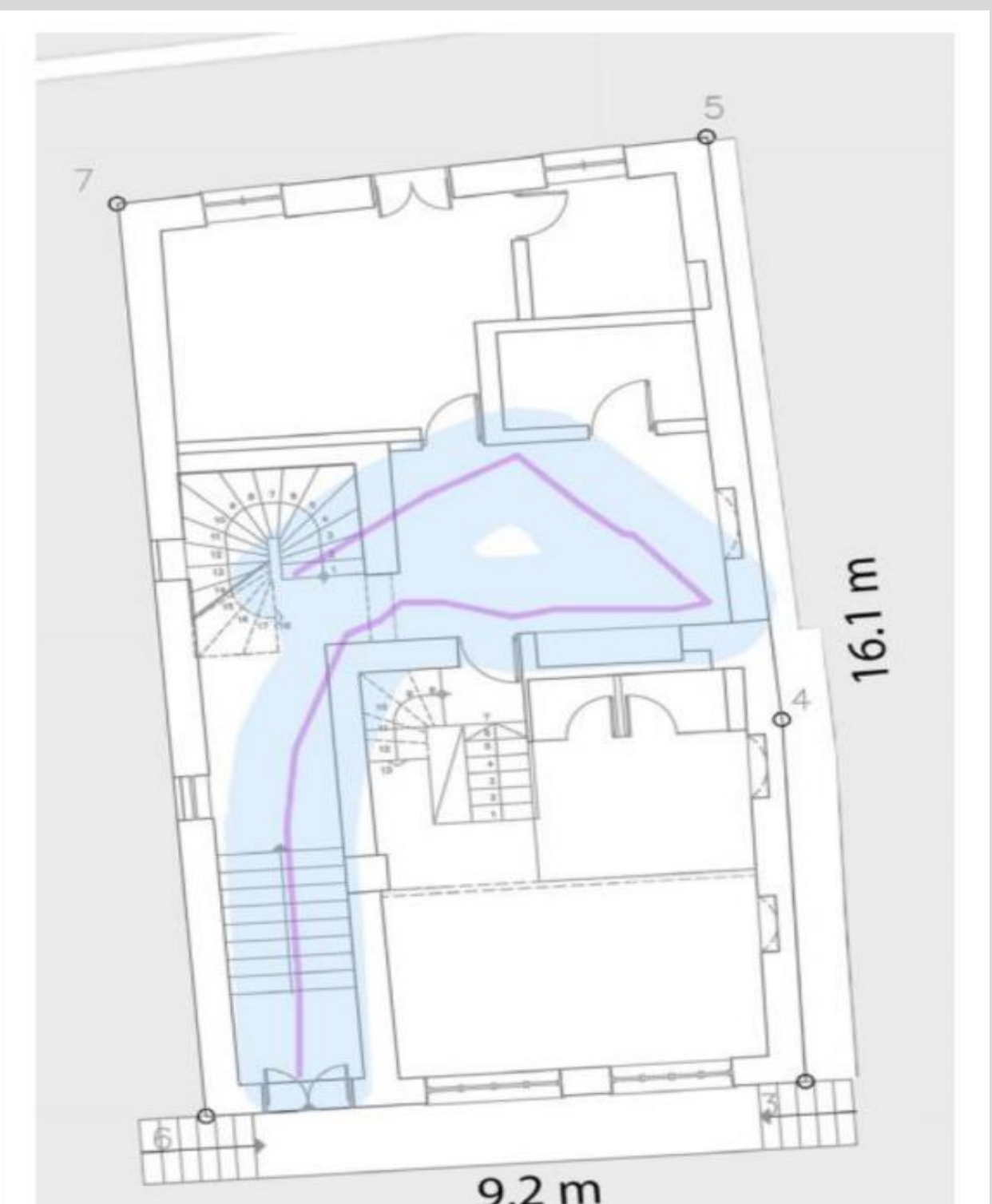

Abstract

This poster describes research conducted at the Digital Media Lab, Technical University of Crete. The use of an Indoor Positioning System (IPS) is being tested on a monument in Crete, Greece, in combination with a 3D Point Cloud produced with Structure from Motion Techniques. The goal is to examine whether 2D data produced by IPS can be enhanced with 3D data from SfM in order to provide an enriched experience of navigation and personalized services customized to each user's needs. Moreover valuable insights for improving the architectural configuration of the monument's interior can be extracted by documenting the exact position of each user in space in real time. Software used are Indoor Atlas for IPS and Capturing Reality for SfM.

_Δημιουργία ψηφιακού χάρτη στον διάδρομο και στο κλιμακοστάσιο, εικόνα 39

_Δημιουργία ψηφιακού χάρτη στο ισόγειο, εικόνα 40

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