



Comparison of modern measurement methods used in documentation of archeological sites

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Considering destructive nature of archaeological excavation appropriate documentation of archaeological sites is very important. The paper presents results of study which aimed to compare three different modern measuring methods used to document archaeological objects directly in the field. First method of measurements was close-range photogrammetry using non-metric cameras. This method is already widely used in archaeology. The second device used was FARO Freestyle 3D scanner. The manufacturer claims that this is unique, top-quality, high-precision, handheld scanner that allows to create colored high-definition point clouds of every type of surface. Thanks to its small size and weight the scanner allows to measure and scan in tight and hard-to-reach areas. The third measurement tool was FARO Focus M70 laser scanner which can be used both indoors and outdoors to collect precise data about objects within a radius of up to 70 meters. These attributes make it ideal for measurements in limited spaces. This mobile device allows for fast, simple and accurate measurements of small construction sites, facades, complex structures, industrial installations, accidents and crimes scenes. Integrated HDR camera provides complex documentation in the best quality.

The research was carried out on two archaeological sites in South Jordan: the Roman fort in Dajaniya and the ancient city of Tuwaneh. The documentation of these sites was the main objective of BARI - Buildings ARchaeology Inventory project conducted in cooperation with archaeologists from the Institute of Archeology of the Jagiellonian University in Cracow. The tests described in this paper pertain to three objects: characteristic hole in the fort wall and one of trenches in Dajanya and thermae remains in Tuwaneh. The aim of the research was pointing out advantages and disadvantages of each method regarding to economics, accuracy, ease of use of equipment, time of data acquisition and post-processing, hardware and software costs.