



Application of Photogrammetry in Documenting Cultural and Historical Heritage – the Example of Fortica Fortress on the Island of Pag

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Abstract

In recent years, there has been an increasing demand for the documentation of cultural and historical heritage. Documenting cultural-historical artifacts and buildings is a multidimensional process which depends on the purpose of the record and the features of the object recorded. Nowadays, the application of modern data collection methods (close range photogrammetry, laser scanning) allows a wide range of objects (from tiny pieces of pottery to large archaeological site) to be protected, preserved and valorized. The development of information technology and digital photogrammetry has enabled the production of high-resolution 3D models and virtual spaces (virtual museums). This has contributed to the popularization of cultural heritage and the rapid flow of information to interested users. In this paper, Fortica Fortress on the Island of Pag is documented using close-range photogrammetry (CRP). In the process of data collection, an unmanned aircraft Phantom 4, DSLR camera Nikon 5300 and GNSS receiver Stonex S10 were used. A high-resolution digital surface model (DSM), digital orthophoto (DOP) and 3D model of Fortica Fortress were produced. Finally, a virtual video walk through Fortica Fortress was created for promotional and tourist purposes, using visualization techniques in Lumion software.

Keywords: close-range photogrammetry, Fortica Fortress, cultural-historical heritage