5dMeteora: Information System for Multi-Level Documentation of Religious Sites and Historic Complexes

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SUMMARY

This paper presents the work conducted in the context of the ongoing research project “Information System for Multi-Level Documentation of Religious Sites and Historic Complexes: METEORA” (http://meteora.topo.auth.gr/). The aim of this project is the creation of a web-based platform for the organization, management, visualization and dissemination of the products of the multi-level documentation of the UNESCO site of Meteora, Greece, with emphasis on two inaccessible huge rocks in the Meteora site: the rock of St. Modestos, known as Modi, and the Alyssos rock. The platform, named 5dMeteora, integrates a 3D viewer based on the 3DHOP (3D Heritage Online Platform) framework, personalized information access and interactive tools for virtual navigation, immersion, data retrieval and presentation. Both spatial data (high-resolution textured 3D models generated through combination of photogrammetric and surveying techniques) and non-spatial data (textual information, images and videos) related to historical, religious, cultural, architectural and geopolitical aspects of the two rocks of interest and the other monuments of the Meteora archaeological site are integrated in the platform. The content as well as the interactive services of the 5dMeteora platform are differentiated based on the scientific specialty and the field of interest of its users, serving their different requirements, based on properly structured scenarios of use, i.e., (i) tourists / simple (unauthorized) users; (ii) geospatial engineers; (iii) archaeologists / architects / conservators; (iv) historians / philologists / theologians / priests; (v) educators; (vi) business entrepreneurs; and (vi) CH authorities. The 5dMeteora platform integrates an administrator interface for creating, updating and maintaining the functionalities of 3DHOP and customizing information based on the scientific specialty and field of interest of the users, offering automation in authoring, managing, uploading and updating 2D and 3D content and creating clickable points of interest on top of the surfaces of 3D models.

The purpose of this paper is twofold: (i) it presents various types of data (spatial and non-spatial

data) integrated in the 5DMeteora platform, giving details on the photogrammetric workflow followed for the generation of the 3D models of the complex study area, and (ii) it presents the 5dMeteora platform along with the administration interface for uploading, managing and updating its content, with emphasis on the different scenarios of use depending on the user specialty or field of interest. Inspite of the fact that the case study is part of the Meteora archaeological site, the 5dMeteora platform along with its administrator interface may be extended, so that they adapt to different cultural heritage sites, while the proposed 3D modelling workflow may be tailored to other historical complexes of large extent and difficult topography.