USE OF AIRBORNE LASER SCANNING (ALS) FOR 3D MODELLING IN DENSE URBAN AREAS (OLD ISLAMIC PART OF FATIMID CAIRO - EGYPT)

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ABSTRACT

Cairo is one of the largest heritage cities in the world. It is a multi-cultural city where various cultural groups live. The Ministry of Culture in Egypt works towards protecting the multicultural life in the city by ensuring a healthy socio-cultural environment. However, the reality is very complex. As a matter of fact there is not enough spatial information in terms of maps on the social geography of the city. Whatever information is available is not up-to-date. Virtual studies or documentations are very poor.

This paper tries, first, to review these upgrading or rehabilitation events for old Cairo from many different planning perspective and its input; and second, to explain why Laser scanning technology should be chosen for collecting up-to-date laser data (Digital Elevation Model - DEM) for the purpose of upgrading the old Islamic part of Cairo. The paper tries also to explain the steps that were followed in carrying out a pilot project “Laser scanning for the old Cairo”.

The data obtained through laser scanning were used to indicate ways and means towards enhancing the multicultural and traditional life style without any negative impact. The paper also identifies benefits as well as the problems encountered in the project.

KEY WORDS: Airborne Laser Scanning (ALS), DSM, DEM, 3D Modeling, Mapping, Old City Upgrading or Rehabilitation, 3D Visualization.