



Abu Dhabi Basemap Update Using the LiDAR Mobile Mapping Technology

Omar Alshaiba (1), M. Amparo Núñez-Andrés (2), and Nieves Lantada (2)

(1) Abu Dhabi Municipal System, (2) Department of Civil and Environmental Engineering, Universitat Politècnica de Catalunya

Mobile LiDAR system provides a new technology which can be used to update geospatial information by direct and rapid data collection. This technology is faster than the traditional survey ways and has lower cost. Abu Dhabi Municipal System aims to update its geospatial system frequently as the government entities have invested heavily in GIS technology and geospatial data to meet the repaid growth in the infrastructure and construction projects in recent years.

The Emirate of Abu Dhabi has witnessed a huge growth in infrastructure and construction projects in recent years. Therefore, it is necessary to develop and update its basemap system frequently to meet their own organizational needs. Currently, the traditional ways are used to update basemap system such as human surveyors, GPS receivers and controller (GPS assigned computer). Then the surveyed data are downloaded, edited and reviewed manually before it is merged to the basemap system.

Traditional surveying ways may not be applicable in some conditions such as; bad weather, difficult topographic area and boundary area.

This paper presents a proposed methodology which uses the Mobile LiDAR system to update basemap in Abu Dhabi by using daily transactions services. It aims to use and integrate the mobile LiDAR technology into the municipality's daily workflow such that it becomes the new standard cost efficiency operating procedure for updating the base-map in Abu Dhabi Municipal System. On another note, the paper will demonstrate the results of the innovated workflow for the base-map update using the mobile LiDAR point cloud and few processing algorithms.