

Application of GIS-Based Construction Engineering: An Electronic Document Management System

Authors : Mansour N. Jadid

Abstract : This paper describes the implementation of a GIS to provide decision support for successfully monitoring the movements and storage of materials, hence ensuring that finished products travel from the point of origin to the destination construction site through the supply-chain management (SCM) system. This system ensures the efficient operation of suppliers, manufacturers, and distributors by determining the shortest path from the point of origin to the final destination to reduce construction costs, minimize time, and enhance productivity. These systems are essential to the construction industry because they reduce costs and save time, thereby improve productivity and effectiveness. This study describes a typical supply-chain model and a geographical information system (GIS)-based SCM that focuses on implementing an electronic document management system, which maps the application framework to integrate geodetic support with the supply-chain system. This process provides guidance for locating the nearest suppliers to fill the information needs of project members in different locations. Moreover, this study illustrates the use of a GIS-based SCM as a collaborative tool in innovative methods for implementing Web mapping services, as well as aspects of their integration by generating an interactive GIS for the construction industry platform.

Keywords : construction, coordinate, engineering, GIS, management, map

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