

Abstract Details

Title: Managing Water Network using Geodatabase Concept

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Abstract: The purpose and the goal of the paper are to introduce a framework based on Geographical information systems (GIS) to integrate geographic information of urban areas taking Khartoum State as an example. One of the main characteristics of such a framework is to support the information integration and data exchange between facilities using the base maps to solve the problem of distributing water networks. Entities in the Khartoum State (KS) infrastructure link information sources and lead to integration and exchange of associated information. The Methodology used is to study the existing urban systems specially water network using Geodatabase concept which are analyzed by observing and comparing the related earlier work using different criteria. The Geodatabase of the system was defined, designed and build ArcGIS software. An object oriented geo-database was created using GIS Software ,then the information was gathered from Water, Sewage, Transportation Corporations in Khartoum States. The tools and software used are the Style Studio 2009 XML. Enterprise Suite Editor for driving KS Infrastructure geo-database and KS Digital Base map was obtained from Khartoum State Surveying Corporation for Khartoum city center. Visual Basic for Application (VBA) was used to develop the Search Engine program. The main result obtained by the research is the development of a framework based on Geodatabase concept for the integration of geographic information of Khartoum State infrastructure network facilities. The geo-database of Khartoum State base map and facilities networks were completed by creating Multitask object oriented geo-database using ArCatalog. A search engine code was written and tested ninety presents successful. The integration of information was available to exchange information between different Corporations to solve any problem that may damage the network facilities and to help managing and adding any new services on the site. The paper recommends the Building of multi-user unified geo-database connected to a wide area network to service the concerned enterprise.

Keywords: GIS; Geo-database, Water Network ,ArcGIS , KS ,GML.