World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:10, No:01, 2016

Multi-Source Data Fusion for Urban Comprehensive Management

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Abstract : In city governance, various data are involved, including city component data, demographic data, housing data and all kinds of business data. These data reflects different aspects of people, events and activities. Data generated from various systems are different in form and data source are different because they may come from different sectors. In order to reflect one or several facets of an event or rule, data from multiple sources need fusion together. Data from different sources using different ways of collection raised several issues which need to be resolved. Problem of data fusion include data update and synchronization, data exchange and sharing, file parsing and entry, duplicate data and its comparison, resource catalogue construction. Governments adopt statistical analysis, time series analysis, extrapolation, monitoring analysis, value mining, scenario prediction in order to achieve pattern discovery, law verification, root cause analysis and public opinion monitoring. The result of Multi-source data fusion is to form a uniform central database, which includes people data, location data, object data, and institution data, business data and space data. We need to use meta data to be referred to and read when application needs to access, manipulate and display the data. A uniform meta data management ensures effectiveness and consistency of data in the process of data exchange, data modeling, data cleansing, data loading, data storing, data analysis, data search and data delivery.

Keywords : multi-source data fusion, urban comprehensive management, information fusion, government data
Conference Title : ICKDDM 2016 : International Conference on Knowledge Discovery and Data Mining
Conference Location : London, United Kingdom
Conference Dates : January 18-19, 2016