ABSTRACT

With the rapid development of GIS, lots of independent GIS software and data have emerged, so that providing a way for the interoperability among various GIS becomes an urgent demand. Since the Internet has grown web into a new platform for distributed applications, this then provides a technological support to realize GIS interoperability. Traditional Distributed Object Technology, such as CORBA, DCOM and EJB etc., allows distributed objects to invoke with one another. They are relatively more mature technologies that provide some advanced services, like security, transaction management and so on. In a homogeneous LAN, They have advantages on effectiveness and efficiency. However, since Internet is a tremendous distributed heterogeneous network, it's too difficult to deploy a CORBA- or DCOM- or EJB-based large-scale network application. It may be a nightmare for IT engineers to do so. Furthermore, almost all solutions based on above technologies depend on the implementation of some single provider. Nowadays, though there are some protocol-transformation bridges realizing the interoperability among kinds of distributed object technology, whether this kind of interoperability can be extended into those high-level services, like security, transaction etc. and all the special optimizations made by different provider may be lost. The birth of web service provides the ability of crossing platform, architecture and language, the most important advantage of web service is the multi-platform, multi-architecture and multi-program-language interoperability on Web. Therefore, it is a good path for realizing GIS interoperability.

Open GIS Consortium (OGC) is one of several standard organizations in the field of spatial Information. Over recent ten years, it has made great efforts in seeking a way to effectively integrate the GIS, distributed processing technology, object oriented technology, database design and real-time information processing method, and realizing the interoperability on distributed heterogeneous platform. The emergence of the web service technology overcame the limits of traditional distributed object technology, and furnished a new chance for GIS interoperability over the Internet.