

The Development of an Open Source Ubiquitous Geographic Information Management and Service Environment

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This paper will present the result of a study on developing open source ubiquitous geographic information management and service (GIMS) in GRID environment. Geographic Information System (GIS) has expanded its development from the original elitism domain to present applications in various fields of spatial information providing. The development of Google Earth, Google Map, Umap and other cyberspace spatial information services have provided the general public basic spatial information inquiries and analysis functions. However they are lack of providing the basic mechanism for geographic information database management and functions for service, such as overlay analysis between thematic maps. The kernel of this study is using a service-oriented architecture (SOA) to integrate open source GIS, X-window service software and network remote control shell scripts embedded in a PHP program for the implementation of the ubiquitous GIMS. The results of this study show that a ubiquitous GIMS has been built successfully and provides X-window user interface for operation geographic information management and service in the internet. The future of this study will continue on performance measurement and provide the ubiquitous GIMS solution in Virtual Private Network (VPN) environment. Meanwhile, the results of this study is furthermore being expanded by GRID computing concepts and use Globus Toolkits and Storage Resource Broker (SRB) for computing power and distributed GIS database resource management. This research introduces the development of Smart Geographic Information Management and Service.