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# The Integration of Grid-enabled Internet GIServices and Geographic Semantic Web Technologies

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## Abstract

This paper presents a new framework for Grid-enabled GIService web portals to facilitate the building of high-level intelligent Internet GIServices. The five-tier architecture suggested here can support advanced semantic search and query functions for distributed GIServices by combining Grid computing, Semantic Web, and software agent technologies. The design of the web portal user interface with software agents can help end users combine and integrate computing power with geospatial data and services. Geospatial ontologies are incorporated into the framework by using geographic web ontology language (G-OWL). Intelligent software agent (GeoAgent) techniques are used to automate the procedures for searching, retrieving and processing geospatial data. The proposed Internet GIService architecture will provide a blue print for the establishment of Grid-enabled Internet GIServices and will help the GIS community to identify potential technical challenges to implement intelligent Internet GIServices.

## Keywords

grid computing, semantic Web, internet GIServices, software agents

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