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The Dynamic WMS Web Client Development with AJAX

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In the era of the globalization, the GIS technology together with Internet
Technology seems to be indispensable in many aspects, for example, disaster
management and decision support systems. To integrate with other powerful
technologies, however, high performance and user friendly tools are required.
Realizing this need, Geo-Informatics and Space Technology Development, has been
developing a Web Map Engine based necessity on the Asynchronous JavaScript and XML
(AJAX), so-called GISTDA WMS AJAX Engine. This paper has described techniques of
the utilization of AJAX technology and its architecture. The connection of web map
server and web map client has been established using the library module sets
including MapScript, MapControl, MapTOC, and Utility class library. Based on these
modules, GISTDA WMS AJAX Engine can generate self legends, support ?on the fly?
projection, show layer zoom by preloading, and display layer styles. Result showed
that the AJAX technology played an important role when requesting and responding to
satellite imageries and other related spatial data. It can be summarized that, this
engine can significantly improve the performance of WMS web client.

The system developed here integrates AJAX technology into the browser based dynamic
WMS web client in order to establish the WMS scripts and class modules which can
work with WMS from different providers. The results of this case can increase
efficiency indifferent aspects as follows:
- Able to connect web map servers developed by various vendors, request self-
capabilities of service by generating parameters, and create a map.
- Automatically request legend graphics of each layer, create table of
content to manage visibility of layers.
- Support asynchronous preloading image map and other components for better
visualization and performance.
- Support ?on the fly? map projection for client side.
- Support a developer to simply integrate the system future with web
applications as a set of separate objects that interact to each others.
- Able to change the user interface by skin set such as frame border, toolbar
button, font format and etc.

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