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 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.