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WebGIS-based Geoinformation Sharing System for East and Southeast Asia

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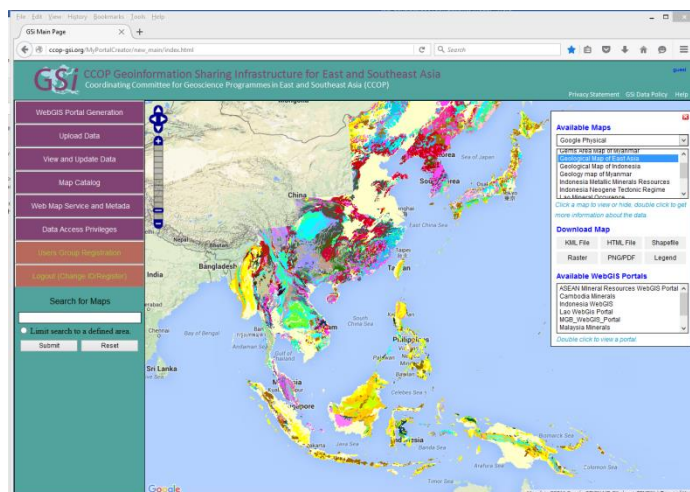
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Natural disasters don't respect national borders sweeping through several countries in east and southeast Asia more often than any region in the world. Highly accessible and available geoscience information from the countries in the region is very important for natural disaster mitigation. Geographic Information System (GIS) is the most efficient tool for storing, managing, processing and sharing geographically referenced information. However, the cost of procuring and maintaining proprietary GIS software is very prohibitive, especially for some countries in east and southeast Asia. Furthermore, conventional GIS is not very efficient for sharing geoscience information from multiple countries. This paper presents a GIS-based spatial information sharing system for the region, using the internet as the platform and Free and Open Source Software (FOSS) and Open Geospatial Consortium (OGC)[1] standards as the backbone for geoscience information management, processing and sharing. In this system, the GIS software and database are setup in a central server. Spatial information processing and sharing are implemented through the formulation of web services Web Map Service (WMS) [2] and Web Processing Service (WPS) in the server. Clients process, render and share geoscience data by sending request to these web services. OpenLayers JavaScript library [3] is mainly used for the rendition of spatial contents online.

One of the most important problems in sharing geoscience information from different countries is the differences of the data policies among the participating countries. Some countries are hesitant to completely share their data and just limit data usage to viewing online, while others are more liberal and

allow full data access including download. Because of this, the developed system includes an important component to control data access privileges for each user. Data owners could decide the users' data access privileges which are view (read), write (edit) and download, and all possible combinations of the three. Users' group could also be created to classify users with the same data access privileges. Figure 1 shows the main page of the developed WebGIS-based geoinformation sharing system for east and southeast Asia.

Figure 1: The main page of the WebGIS-based sharing system



References:

- [1] OGC (2015) Making Location Count. OGC Standards and Supporting Documents. Available online at <http://www.opengeospatial.org/standards> (Access: 20th November 2015).
- [2] OGC (2015) Making Location Count. Web Map Service. Available online at <http://www.opengeospatial.org/standards/wms> (Access: 20th November 2015).
- [3] OpenLayers (2015) OpenLayers: Free Maps for the Web. Available online at <http://openlayers.org/two/> (Access: 15st January 2015).

