Browsing System for Borehole Data and Geological Map using FOSS4G

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After the 2011 off the Pacific coast of Tohoku Earthquake, disaster mitigation is a growing concern among the public. In particular, subsurface geological condition in urban areas is one of the biggest public concerns. However, most of existing geological Web services provide insufficient data for assessing subsurface geological condition. In order to improve public understanding of subsurface geological condition, a browsing system for geological data were developed focusing on intelligibleness and user-friendliness based on Free Open Source Software for Geoinformatics / Geospatial. The system shows high-reliable borehole data and a geological map accessible to the public on the Web using the Leaflet JavaScript library. The borehole data are mainly provided in XML/PDF format, which are compliant with the specifications of borehole data by Japan Construction Information Center Foundation (JACIC). These were obtained by the drill surveys conducted in the northern part of the Chiba Prefecture by the Geological Survey of Japan (GSJ). The geological map was provided in a tile set of PNG images. The map was generated by computer drawing from a three-dimensional geological model, which was constructed based on borehole data and geospatial data such as Digital Elevation Models (DEMs). Future works are to implement functions of searching database for borehole data, generating geological cross section, and visualizing geological model in three- dimensions.

