Sensor Web Enablement for Debris Flow Monitoring System in Taiwan

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The debris flow is a tremendous threat to humans' living environment and safety. The landforms and geologic structure in Taiwan are peculiar, terrains and geology are fractured and unstable. Washout and rainstorms which result in debris flows and landslides in mountain areas occur frequently during the typhoon seasons. To protect inhabitant's life and properties, scholars and government agencies continuously search for the cause of debris flow and try to build a preventive and warning system for natural hazards. The government in Taiwan had set up 17 debris flow monitoring stations and 3 debris flow monitoring vehicles since 2002. Using those stations, a monitoring network has been established such that the real time monitoring data can be collected and the energy variation during the debris flows can be analyzed accordingly. The monitoring network also has helped to build an alert mechanism. In order to integrate the observation resources, we use OGC-SWE framework to develop a debris flow information platform. In 2009, we had finished SOS (Sensor Observation Service) of OGC-SWE. In 2010, we will continue to develop SAS (Sensor Alert Service) and SPS (Sensor Planning Service). The purpose of debris flow information platform is to build an environment to integrate many kinds of observation resources from different organizations (such as governments, disaster prevention organizations…etc) in Taiwan, and to enhance the efficiency of decision making in disaster mitigation via the debris flow information platform.