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Crowdsourcing oriented Ontology Applies in Instant Debris-flow Disaster Information Platform in Web and Smart Phone Application

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In recent years, extreme climates events increase the frequency of typhoon and rainstorm, and this induces more natural disasters in Taiwan, such as flood and landsides. Thus, disaster reduction has become a dispensable issue in present government policy. However, most of people cannot obtain the latest disaster information, thus causing second disaster, on these reasons above, this study attempts to build an interface which provides instant disaster information. The proposal of study aims at establishing an instant information platform for debris flow disaster both on website and smart phone application, which combines crowdsourcing concepts and official open data through sending SMS, email notifications, disaster map and news to people. In addition, both website and smart phone application will not only automatically deliver official warning information, but also sending other disaster information uploaded by other people. However, the quality of crowdsourcing-based information is difficult to control, hence, this study utilizes three types validation method: one is instant rainfall information, another is potential region of debris flow disaster from ontology analysis, and the other is people mutual validation to maintain information quality. To sum up, this study has successfully established an instant information platform for debris flow disaster on website and smart phone application, and this provides the latest official and uploaded disaster information to reach disaster reduction, even for disaster prevention in the future.

Keywords: Crowdsourcing-based Information, Disaster Ontology, Debris-flow Disaster