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SPACE-BASED DRM BY LOCATION-BASED EMERGENCY SHELTER AWARENESS AND TRAINING (LESAT)

Abstract

Natural disasters can reverse years of hard-gained economic developments within a matter of few seconds and therefore it is crucial for a community to be prepared for them. Under this context in the wake of a disaster it is of prime importance that the affected are able to reach their nearest emergency evacuation shelter safely, quickly and efficiently. However, due to widespread communication blackouts and panic after a disaster there is often a delay in deciding when and where to evacuate and this delay can often mean the difference between life and death. Our proposal 'LESAT' is a smartphone application that uses space-based location data (e.g. GPS) and additional space-based geographic data (e.g. land elevation, water levels, radar imagery) in order to provide personalized training to each individual so that they are better aware of the potential risks of disaster(s) at their current habitat and also the location of the nearest emergency evacuation shelter. LESAT has 3 training modes. In the passive 'Sit 'n' See' mode, as the user passes through the proximity of a nearby evacuation shelter, using GPS, a pop-up message showing the picture of the shelter and the address is displayed. The user may choose not to respond to this notification. However, when the user eventually closes the notification, he/she would notice the location of the shelter even if only for a split second. When this exercise is carried out multiple times over several months, the user is trained to be aware of the location of the shelter using his/her memory. In the active "Play 'n' Go" mode the emergency evacuation shelters are made into GPS markers of popular GPS games which the user needs to physically reach to get special in-game incentives (e.g. Pokemon Gyms of Pokemon Go), thereby training the user on how to access these shelters. Additional real-life uncertainties can also be incorporated in this mode involving geographic space data – for example based on the elevation levels, certain routes may be shown as inundated/blocked. The user is so then forced to undergo training in navigating accordingly. "Disaster mode" is a hidden mode which is automatically activated once a disaster occurs and it provides integrated information regarding latest time-stamped disaster risk-levels (e.g. inundation water-levels, storm surges, radar images for torrential rain) from satellite data. A model implementation of this application in Philippines involving incentives for each of the diverse stakeholders involved is also discussed.