感測物聯網數據分析於防救災應用

IoT Sensor Data Analysis for Disaster Reduction Application

主管單位：國家災害防救科技中心

| 張子瑩 [1] | 蘇文瑞 [1] | 蔣佳峰 [1] |
| Chang, Tzu-yin | Su, Wen-Ray | Chiang, Chia-Feng |

周恆毅 [1]　　　　陳俊元 [1]
Chou, Hen-I　　　Chen, Jyun-Yuan

[1] 國家災害防救科技中心

摘要

本計畫主要進行災情感測監控及分析模組開發，運用水利署與縣市政府合作布建之淹水感測器，鄰近雨量站降雨量、CCTV 影像、以及地形地勢資訊，發展一套淹水災情感測監控模組，並結合行動化裝置即時推播功能，以利防災人員可即時監看淹水災情。另本年度持續對 2019 年分析淹水感測器與社群資料的比對，分析結果社群資料仍主要集中在人口密集區，因此在都市區有較詳細的災點資料，但在非人口稠密區，淹水災情仍仰賴淹水感測器的資訊回傳，才得以即時獲得災情資訊。另本年度針對現地 P-alert 地震儀，進行邊緣運算的數學模型建立，以推估地震發生當下是否會發送地震速報告警之建議，有助後端設備的動態擴充應用。

關鍵詞：災情、感測器、地震、邊緣運算

Abstract

The goal of project is the development of module which is with the function of monitoring flood intelligence and real time information pushed to mobile device for related staffs to monitor the flooding information. The sensors of reading flood height from water level gauges which are setup by the cooperation between Water Resources Agency and local governments, near-real time precipitation, CCTV images, and topography information around the water level gauges are adopted as the resources for the new module development. The comparison work of the flood information from water level gauges and social media will be conducted continually. The current discover is that the densely populated region is with good performance by using social media. However, for the sparsely populated area, the acquirement of flood intelligence still rely on water level gauges. Furthermore, this project will also intend to build the mathematic model of edge computing for using the in situ P-alert seismographs. And the system will give a probability of PWS issued evaluation report. It will be helpful for extending the dynamic application of central device.

Keywords：Disaster, IoT, Earthquake, Edge Computing