ABSTRACTS FOR POSTER PRESENTATIONS

Fall Detection System Using Global System for Mobile Communication

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Background: In this modern and fast-moving world, elderly's safety and security have become an important issue. According to the World Population Prospects of the United Nations 2015, there is 12.3 per cent population aged 60 and above globally and it is the fastest growing population at a rate of 3.26 per cent per year. In order to reduce the worries about the elderly living alone at home, Elderly Monitoring System is required for continuous monitoring. "Fall" is one of the critical incidents for the elderly living alone as it causes serious injuries. A fall detection system using global system for mobile communication can help to reduce the time of unaware of their next of kin. **Objective:** The objective of this project is to develop a system that can automatically detect fall of the elderly and send an alert message with location information through Short Message Service (SMS) to their next of kin. **Methods:** The proposed system consists of an accelerometer sensor, Global Positioning System (GPS), Global System for Mobiles (GSM) and Wi-Fi module. Accelerometer sensor is used to detect fall. If fall is detected, the system sends an alert message to the next of kin via SMS with the location information which can be obtained by using a GPS module. Apart from this, the emergency messages also uploaded to a dedicated online database to be monitored by next of kin through a web application. This system also equipped with a panic emergency button. The elderly can

manually activate the system by pressing the emergency button. **Results:** An emergency message is sent through SMS with location information when the accelerometer detected fall or the emergency button is pressed. Besides, an alert message is also sent to the online database. **Conclusion:** This elderly monitoring system can help the elderly live independently and put their family's mind at ease as when an emergency fall is detected it will be notified and location of elderly can be tracked through the Google Map application.