

C.S. Lin, P.C. Tuan, C. Pei. *Zigbee-based wireless homecare system implementation. Gerontechnology 2008; 7(2):156.* There were 2.26 million elderly people in Taiwan in 2006. 77% of elderly people had one or more chronic diseases. The most prevalent disease was hypertension, followed by arthritis, cardiac disease and diabetes mellitus¹. 74% population of the elderly people prefer to live their home together with their children. Only 26% would like to live alone or go to long term care institution or nursing home. Over the past decade, Taiwan government has made a lot of efforts to promote the policy of Aging-in-Place and active aging and also has being provided the subsidies to community care and home care services. According to our survey, most of the community care units have bought blood pressure and blood glucose sensors to measure and record these vital data manually for the elderly. It was not only inconvenient but also needed a lot of manpower to do this job. Based on this reason, the purpose of the study is to integrate the ZigBee wireless communication, measurement and monitoring technology to design a homecare system. **Methods** This study tends to implement a ZigBee-based wireless homecare system and the system architecture is shown in Figure 1. The proposed homecare system has the following functions: (i) Trend analysis: The trend graph based on collected blood pressure, blood glucose data can be shown in the user interface on a scheduled or user defined basis. (ii) Alerts reports and simple messaging services: We use rule-based system to generate warning and alerts to the elderly and send the simple message to the preset persons. The informed persons can call back at once to understand what happened and take the necessary actions. **Results and discussion** We use Unified Modelling Language (UML) to describe the functions of the homecare system. The Use Case diagram and Activity diagram are shown in Figure 2 and Figure 3 respectively. The system has followed these diagrams to be implemented successfully. Therefore, it will be one of the best choices to monitor health status of the elderly at home.

References

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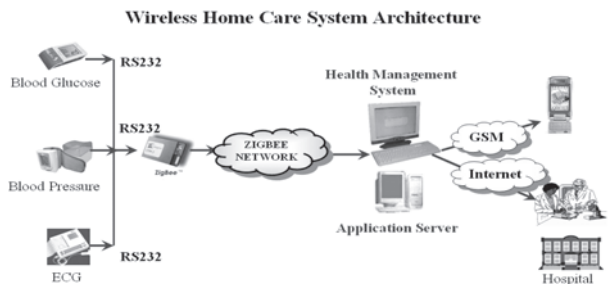


Figure 1 Wireless homecare system architecture

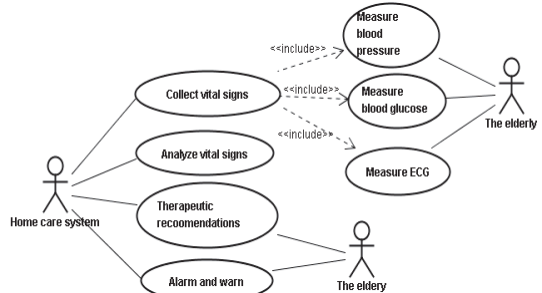


Figure 2 The Use Case diagram of home care system

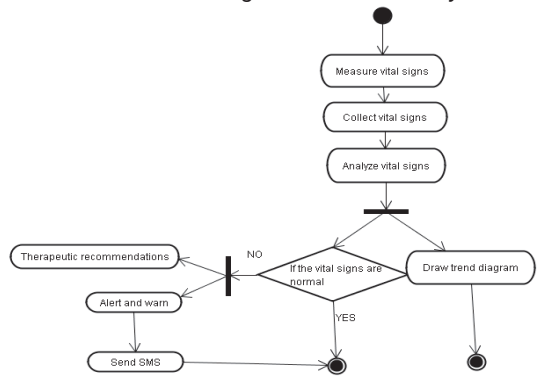


Figure 3 The Activity diagram of home care system