

GSM-Based Notification System for Electronic Pigeon Hole

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Abstract. This paper presents the design and development of Electronic pigeon hole integrated with GSM network to send a notification of any upcoming loaded. The electronic pigeon hole is able to send notification message via short message service (SMS) to the designated user if any new letter is placed in it. The innovation of the electronic pigeon hole could give immediate response for any urgent request for busy people. The system was developed by integrating a detection circuit to acknowledge the existing of new post items with the GSM modem to transmit SMS to specific user. It is found that the developed system is able to provide immediate notifications to intended users for further action.

Keywords: GSM Notification System, Microcontroller, Short Message Services, Pigeon Hole.

1 Introduction

The wireless technology revolution is increasing rapidly in routine applications. It is regarded as one of the solutions to ease the communication either among people or between people and devices. This technology also enables the information imparts and communication process done in short time interval anywhere and anytime. One of the applications offered by wireless technology is GSM/GPRS which is commonly used in mobile phone. GSM system offers SMS that is being utilized to send a short, simple text message. By utilizing SMS technology to transmit notification for acknowledgement of upcoming loading through SMS, the PH-e is proposed.

In general, each staff in most big organization has his/her own pigeon hole to receive any important letter or memo related to the official duty. In the case of Universiti Tun Hussein Onn Malaysia, each academic staff has been allocated a pigeon hole for any letters or memos from within or inter faculty. Unfortunately, the current conventional pigeon hole system is unable to inform the staff on any urgent letter and this lead to significant delay in responding the letter. The main weakness of the current system is that staffs need to check their respective pigeon hole everyday

but due to the routine commitment or unforeseen circumstances the pigeon hole cannot be possibly checked everyday.

In order to overcome this problem, the Electronic Pigeon hole is introduced as an innovation from conventional pigeon hole to notify user through SMS. Figure 1 shows the block diagram of the PH-e system.

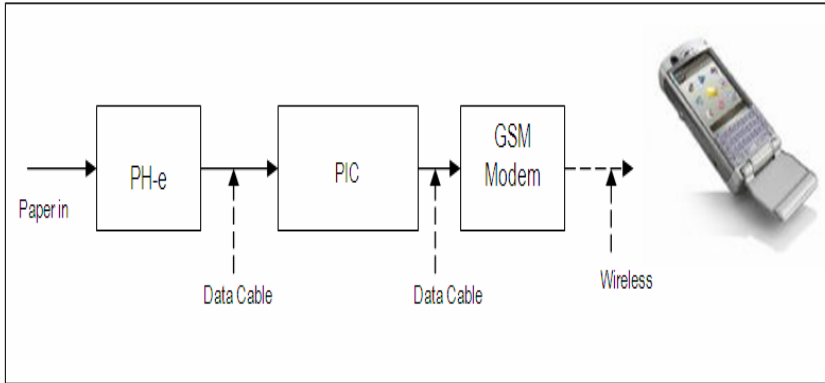


Fig. 1. Block diagram of PH-e

2 Related Work

This section discussed in brief what is Mobile Computing and Wireless Communications, survey on the application of SMS-based notification system in various areas.

2.1 Mobile Computing and Mobile Communication

Wireless networking has experienced an active growth during last few years and it has great influence to human life. Existing mobile communications make information delivery much easier and effective than before and now driving data traffic roughly increased double every two years [1].

Mobile computing yet has limitation and its own problems. The inherent limitations of mobile computing reduce CPU performance, small secondary storage, heightened battery consumption sensitivity and unreliable low-bandwidth communication [7]. Other issues should be considered about mobile computing are about security and miss function, weak terminal and network [2][8].

Most networks were designed for stationary users. Each user of stationary network has fixed address which used to transfer information to them. Instead of with user movement, addressing becomes a problem. But for some network such as cellular networks still keep the same address for mobile users in information transfer even though the users have movement [9].

Although the mobile computing and communication have their own problems, but they still be the main choice and seems like to be a trend for most social hierarchy, because by using these technologies, people can impart and receive information anywhere and anytime.