Chapter 4.8
Calling Police Using SMS

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ABSTRACT

In this chapter, a method is proposed to contact the Police with mobile phones and via SMS (Short Message Service). In this method, when a person wants to contact the Police, he must only press a special key on his mobile phone for a short time to launch a special program. This program sends current location of the person using GPS system and sends it periodically with other useful information such as name, home and work address of that person automatically to the Police Station using SMS. In this method, there is no need to talk and a person can contact the Police easily and tell them the place which crime has occurred. In addition, there is no busy line problem. This method has low cost and can be run on many mobile phones This method is implemented using JavaME (Java Platform Micro Edition) programming language and tested on a Nokia N71 mobile phone by using an 'Evermore BT-R700' GPS receiver.

INTRODUCTION

One of the consequences of urbanization is the rise of crime due to some abnormalities and traumas within the community. The governments and people have always thought of a solution to take care of these problems and lower the crime rates. But it is a necessity to confront criminals and to secure people's safety.

One of the important factors during the commitment of crimes, especially offenses such as theft, kidnapping and bank robberies, is for one to contact the Police Station and inform them about the crimes in the shortest possible time. For this purpose, different methods have been taken. For instance, in order to prevent the theft of important objects and documents, sirens have been installed on the doors in addition to other devices, which automatically call the Police Station. Moreover,

special systems are installed at the telecommunications office to enable Police to trace the location of phone calls. So, if the attacked person cannot speak due to the existing circumstances, he can contact the Police Station, and the policemen can trace the call and locate the victim and go to his location to rescue him.

However, the criminals have also thought of measures to foil these procedures. For instance, they can find the location of the installed protective devices and dismantle them, therefore making it impossible for the Police Station to be informed of the committed crime. Additionally, they disconnect the phone lines, so the victim could not contact the Police.

Nowadays, one of the common devices used by people is the mobile phone. The majority of people always carry their mobile phones. Hence, usage of mobile phones to call the Police Station is appropriate. But its usage also leads to a number of problems. For instance, if the lines are engaged, one cannot call the Police.

One of the initial services provided by the mobile phones is the Short Message Service (SMS). SMS makes it possible to exchange short messages between the mobile phones. SMS has been defined based on GSM. According to GSM03.40 standard, the maximum message should constitute 160 characters and based on the data encoding process in line with the adopted standards, it is saved in 140 bytes (GSM, 2000). These messages can be a combination of numbers and letters or in non-text and binary form.

The exchange of SMS takes place indirectly via a component named SMSC (Short Message Service Center). A number of the SMS advantages are as follows:

- Communication is possible when the network is busy,
- The possibility of exchanging SMS concurrent with the phone call,
- The possibility of sending SMS in the offline mode.

Also one can receive a report from the center about the state of SMS delivery or to determine the validity duration of the SMS (Nokia, 2001).

Regard to the mentioned features of the SMS, one can use this system to contact the police. For this purpose, the following method has been proposed:

In this method, for contacting the Police, one should press a specific key in his mobile phone for a few seconds in order to activate a special program. This program locates the person with the help of GPS (Global Positioning System) and sends other appropriate information such as the individual's name, his place of residence, his workplace and his home number (which have been previously saved in his mobile phone) via SMS in certain continuous intervals to the Police Station. The details of our method have been completely elaborated in the third section.

Usage of other systems including the MMS (Multimedia Messaging Service) is not recommended because these systems have not been activated in numerous countries and not all the mobile phones support these advanced services. On the other hand, the SMS fulfills our needs here and the advanced features of MMS are not useful here. What's more, these services are more expensive than SMS and using them can distorts the network in crises, because the total number of the exchange messages would be huge and the load imposed on the network by MMS is more than the load imposed on the network by the SMS. MMS services may distort the network and/or dismantle it. Also MMS availability is less than SMS and SMS is more reliable in different conditions.

In this method, there is no need to talk and by just pressing a key, all the necessary information including the address of the crime scene is sent to the Police Station. Moreover, the user of SMS will not face problems, such as busy lines, due to the special features of the SMS. On the other hand, if the individual is kidnapped, the person location is sent periodically by SMS, so the Police can locate

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