

## Architecture of a GPS-based road management system

### ABSTRACT

Malfunctioning traffic lights, potholes and roads in bad condition are only a few of the innumerable common thoroughfare problems that occasionally contribute to accidents. People tend to ignore reporting those issues as the channels for making a complaint is inconvenient. Accuracy of complaints is also at doubt as it tends to be general eg. Pothole at Ampang Road, in front of a police station. This paper presents the architecture of a Global Positioning System (GPS) based approach for reporting thoroughfare problems via Global System for Mobile Communications (GSM) for road maintenance management environment. To increase accuracy and efficiency, GPS can be used as it enables the tracking and tracing of the three figures of a GPS receiver's coordinates namely longitude, latitude and altitude. Data like location, date and time will be optimized by mapping the site of where the thoroughfare problem exists in a map, with the intention that the relevant authorities could identify the spot and have the problems resolved responsively. The proposed system will serve as a handier and convenient alternative means for road users to send complaints to the relevant authorities, in addition to the existing channels, so that these issues could be addressed in a timely manner.

**Keyword:** Global Positioning System (GPS); Global system for mobile communications (GSM); Road maintenance; Road management; Thoroughfare