BPM: Bluetooth Parking Manager

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ABSTRACT

The goal of our parking lot gate opening system is providing seamless authentication without additional user effort and additional device. We propose to use Bluetooth technology as a communication channel with smartphone as a control device. Given that most smartphones have embedded Bluetooth module, and most users bring their device in everyday life, especially when driving, the combination of Bluetooth with smartphone is a strong candidate for our solution. We will also use different sensors to verify location of the user to eliminate possibilities of granting access to unauthorized users.

Keywords

Android, Arduino, Bluetooth

1. INTRODUCTION

Nowadays, it is not so hard to see residential areas with private parking lots with gates system. Not only residential areas, but many companies offer gated parking lots to their employees as well. Although the gated parking lot provides more security and guaranteed parking spaces, there are few problems to both users and the parking service providers. The most cumbersome task users have to do is physically swiping the access card to the reader for opening the gate. As a result, it creates extra user actions such as finding the access card, opening the window, and finally swiping the access card to the reader within short range. From the service providerąś perspective, it is inconvenient to issue a new access card for each new client, and hard to retrieve or revoke expired access cards.