Vision and Scope Documentation

Urban Environments Monitoring

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V1.1

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Change Log/History

Date	Version	Description
17/05/2014	V0.1	Created skeleton of requirement specification
19/05/2014	V0.2	Added Vision
20/05/2014	V0.3	Added Scope
21/05/2014	V0.4	Added Use Case Figure
22/05/2014	V0.5	Added Limitations/Exclusions
23/05/2014	V1.0	Final Document Formatting

1. Vision

To design and implement a smart parking system which will actively monitor parking bays for availability. The system will be accessed by users using their smart phones to locate an available parking. The system will take the hassle out of finding an available parking.

The project will improve upon existing smart parking systems, like that of OR Tambo's occupancy testing or even the universities counting system in their engineering parking garage, to create a smart parking system of the future.

This is a research based project and will focus on providing a proof of concept.

2. Scope

The proposed system will allow a **user** to connect to the parking lot's data service and view a dynamic map of the parking lot in which available parking spaces are indicated by means of a mobile application.

The **user's** effect on the system would be to

- Activate a parking bay sensor by parking at a spot.
- Deactivate a parking bay sensor by vacating a parking spot.

The system will allow an **administrator** to

- View the audit log.
- Reset the state of parking bays as either taken or available.
- Assign new parking bays to the system.
- Remove existing parking bays from the system.
- Link sensor identifiers to specific parking bays.
- Add Security Officials.
- Remove Security Officials.

The system will allow a **security official** to

- View a map of the parking lot with the locations of parked vehicles.

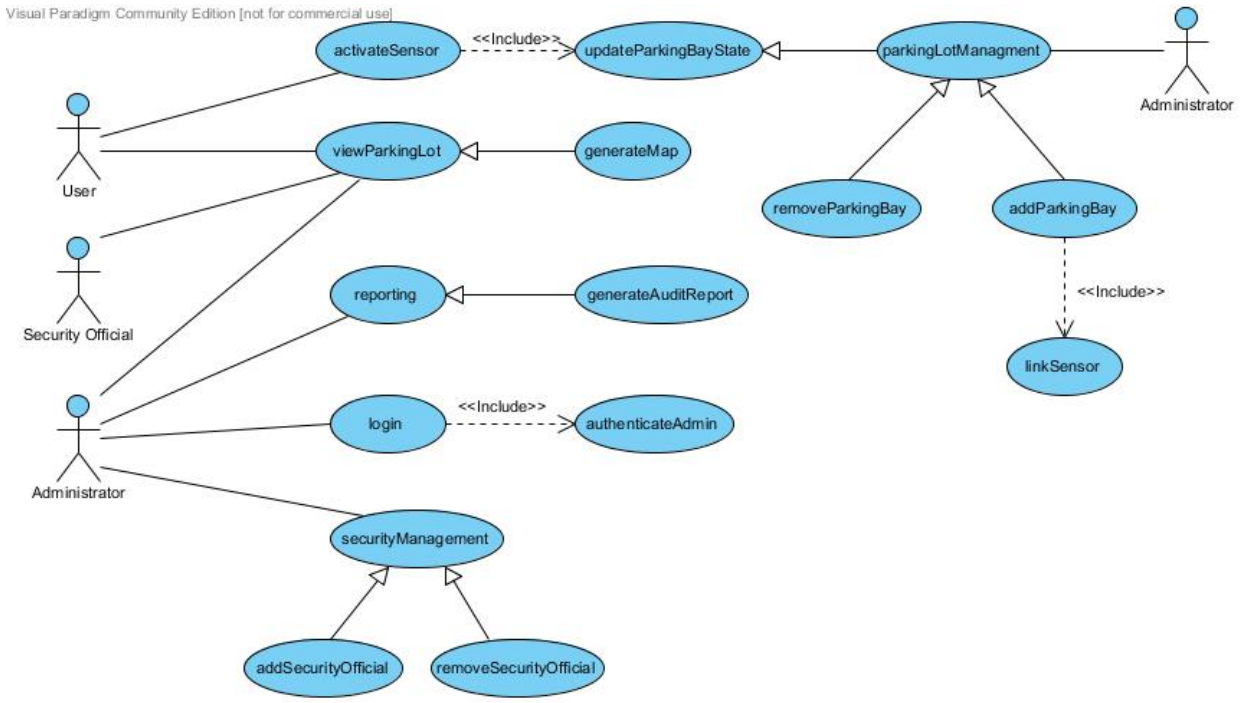

Figure 1

3. Limitations/Exclusions

The initial design of the system will not provide guided navigation to an assigned parking space but rather show a map of the parking lot with available spaces indicated. This design will also be created to function exclusively to a single parking lot as a proof of concept and will not allow for other parking lot layouts.

4. Glossary

Android - is an operating system based on the Linux kernel with a user interface based on direct manipulation, designed primarily for touchscreen mobile devices such as smartphones and tablet computers.

CSV - comma-separated values file stores tabular data (numbers and text) in plain-text form.

Proximity Sensor - is a sensor able to detect the presence of nearby objects without any physical contact, in this instance using infrared radiation.

Microcontroller - a small computer on a single integrated circuit containing a processor core, memory, and programmable input/output peripherals.