

## **Architecture Document: Android Bots Software Architecture Document**

This document provides an overview of the system, using different architectural views to represent aspects of the system. The scope of this document is the complete design description of the system Android Bots. This document contains different views for the architecture representation, Use-Case view, class diagram in the logical view, activity diagram in the process view, all of which use UML 2.0 standards.

The first thing illustrated is use case diagram which has 4 main user interfaces which provide user to set current location and setup new setting of profiles, battery and alarm of the device.

### Logical View

This view includes a class diagram which shows the android application life cycle. Each graphical user interface is an Android activity and therefore each interface has a separate class and implements other classes for the functionality. A main (MainActivity) class is designed for communicating between user interface classes, it has its own attributes to do their activity.

### Process View

This view includes 4 activity diagram which are based on the 4 use cases mentioned before. The Locator process shows a user to getting the current cell tower id and save it as a preferred location. It uses separate processes for getting cell id and updating UI to ensure system reliability. The profile process describes a UI to add new profile rule to the system. Then it adds that rule to the service for performing at the right location and time.

The battery process describes a UI for user adding battery management rule. The Alarm process displays a UI to add new alarm rule to the system. Then it adds that rule to the service for performing at the right location and time.

### Implementation View

This view describes libraries of android to build application framework and other libraries to get cell ID and system states of the device. The libraries include Common Android Library (for android application compulsory methods which provide by these common libraries), Android Location Manager Library (this is used to identify the cell tower id of the current location from the device), Android System Library (used the battery management process as it is essential to get system state such as Bluetooth on/off, Wi-Fi on/off and other system performances). Generic codes are used for application functionalities which are to be designed in the generic codes. This includes XML files such as layout files, string files, color files, dimension files etc.

### Size, Performance and Quality

All these components adhere to international android standards. Meaning the Architecture design always try to reduce system consumption so that it can achieve maximum perform with limited hardware in the device.