University of Moratuwa

Parental Controller for Android
Software Requirements Specification
For Parentdroid
Version 2.1

Revision History

Date	Version	Description	Author
03/01/2012	1.1	Modify the Initial Document	H.M.G.C. Karunarathne
14/01/2012	1.2	Develop the Architecture of the system	H.M.G.C.Karunarathne
15/01/2012	1.3	Develop the Dynamic interaction between functionalities	H.M.G.C.Karunarathne
31/01/2012	1.5	Generated MMS and send, Forward pictures/Capture snapshot of screen	H.M.G.C.Karunarathne
14/02/2012	1.6	Modify for mid evaluation	H.M.G.C.Karunarathne
28/02/2012	1.7	Generate Call Notification Report	H.M.G.C.Karunarathne
13/03/2012	2.0	Get the Phone Location	H.M.G.C.Karunarathne
28/03/2012	2.1	Finalize Documents	H.M.G.C.Karunarathne

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Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this SRS documentation describes the major functionalities and non-functional requirements of the Parental Controller for Android app. It has two major modules as Parentdroid and Childroid. This SRS is mainly focus on Parentdroid application. The limitations and constrains of system building. This document will be the guide line for the project development process.

1.2 Scope

Parental Controller for Android is an administrative application which will help to parents to keep tack on their children. This is a software application which is running on Android OS. It has major two components as Parentdroid and Childroid as describe above. Parent can have the notification of under control Childroid and can able to get relevant data according to parent's interest.

Parent can specify the permission application which can be access by Childroid. And also get the notification about current activities those are occurring. Get the location of Childroid and keep reminders on their below hood.

Additionally, integrated intelligent agent will be notifying about the suspect behavior of Childroid.

Other main application that is Childroid will be affected by this documentation mentioned application.

This documentation will be updating about issues that are pop out and changes that are applied to those issues.

1.3 Definitions, Acronyms, and Abbreviations

Parentdroid – The application which is control by an adult person. Administrator of the system

Childroid – person who is under control

SRS – Software Requirement Specification

GUI - Graphical user interface

1.4 References

- RUP examples :
  http://www.ts.mah.se/RUP/RationalUnifiedProcess/process/modguide/md_srs.htm

- RUP SRS template

- Parental Controller for Android – Feasibility Report

- Parental Controller for Android – Project Vision Report

- Parental Controller for Android – Project Schedule

- Parental Controller for Android – Project Development Case

1.5 Overview

Also this document we will discuss about these aspects of the project: product perspective product functions, user characteristics, constraints, assumptions and dependencies and requirements subsets under second topic. Also in topic three, it will be describe about the usability, performance and reliability etc like non-functional requirements.

2. Overall Description

- product perspective

  There are two Android software applications which are running on Android base device. These apps are build top on the Android API provide by developers.
  These apps are get the functionalities which are provide by Android libraries and perform.

  Parentdroid has the administrative privilege and it can give/remove permission of Childroid.
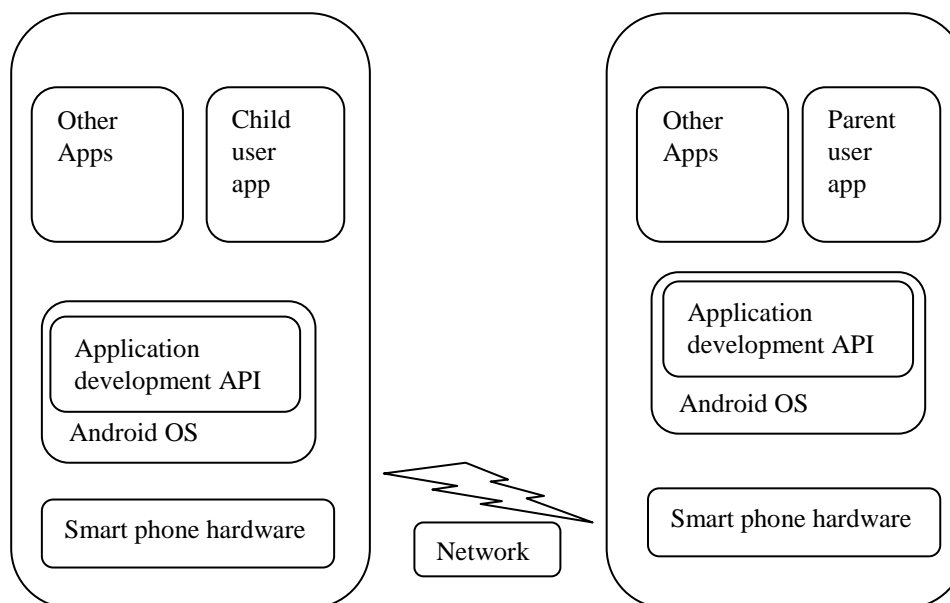
- product functions

  - Can request for phone location by a SMS of parent device.
  - Remote start/stop microphone recording with keyword in SMS and forward the audio file by email.
  - Access to contacts list in child device.
  - Disable/Enable applications list with keyword in SMS.
  - Keep reminders about child

- user characteristics

  The major target Parentdroid

  - User should have basic skills of using Android based device.
  - User should have knowledge about accessing to e-mail
  - User should be able to understand standard documentations
  - User should be responsible about confidential data

- constraints

  - The availability of smart phones will limit the use of application.
  - Threat on attacking to the Childroid is a major issue
  - Users have to obey the guidelines given by the application.
  - Childroid will be disable after rebooting child's device
  - The mobile internet coverage/ GPRS coverage will be limited the communication between two applications
  - Time constrain of available time have to complete the project (Time is not sufficient to finished the project. Because of project scope is more than available time)
  - There are issues with testing the application with virtual device (Emulator). Some real functionality can't able to test.
  - Unable to sent message between two emulators
  - Unable to send emails directly via Emulator.

- assumptions and dependencies

  - Assume users have smart phones with following facilities: Android OS, GPS and Internet Connectivity.
  - Assume that the GPS and Internet services are reliable.
  - Assume user can understand the work flow of the system and understand the training materials
  - Assume use has knowledge about using electronic mails.

3. Specific Requirements

3.1 Functionality

3.1.1 Generate and send message via mobile service provider

System shall generate the message with including application process defined data and sent to other mobile device via mobile service provider.

Rationale: Generated message will send useful data to Childroid as it can reachable to data. This would avoid application secretly installed on child device and get personal data.

Ref: http://developer.android.com/reference/packages.html

3.1.2 Access to Database

Removed (see risk report)

3.1.3 Communicate though Internet

System shall communicate though Childroid with reliable, secured manner.

Rationale: Parentdroid should be able to communicate with Childroid with secretly without the exploited to child

3.2 Usability

3.2.1 Training Time for normal user

- Training time to use the application with the help of documentations or tool tips should be less than or between 3 to 6 hours to become an expert of using parental controller.

3.2.2 Graphical user interface

- GUI must be using the standard key features which use for default application on Android.
- GUI should use simple table base user interface to operate the features and add/drop features.

3.2.3 Error Handling

- System should have the capability of errors handling.
- System should be check for the validity of the data.
- System should be informed with recovery guide details when some error occurs.
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3.2.4 Help Documentation
- Documentations should be mainly included with system picture guide.
- Documentations should be understandable by normal user.

3.3 Reliability

3.3.1 Network

- App should be use encrypted messages to communicate through the network
  Rationale: to ensure the trustworthiness of the communication between two systems.

3.3.2 Availability

- Availability of the system

  System must be available 90% of the device working time.
  System should be response to request as soon as device starts up.

- Availability of the network

  Network should be available 100% to perform an action between two devices.

3.3.3 Communication

- Communication between two devices should have 90% correctness.

3.4 Performance

3.4.1 Keep History

- Application shall be remove data after predetermined time period.
  Rationale: to get use of optimize usage and avoid drawback of keeping out of date data

3.5 Supportability

3.5.1 Android API

- Android software development API (http://developer.android.com/reference/packages.html) and Help can be found in the user mailing lists Android forum. http://developer.android.com/resources/community-groups.html
- Use java high level programming language to implement the system. That will enhance the work out put though the system developing and further maintainability of the system

3.5.2 Android OS backward capability

- Android have the capability of running older version application with newer version Android operating systems.

3.5.3   Good Coding Practice

- Use Object Oriented Concept in developing system
- User Design Patterns for enhance reusability and expandability
- Use good naming conversion to develop system

3.5.4   Development Process Documents

- The RUP templates are used for better documentation purpose

3.5.5   User Help Documents

- These documents will give the capability of avoiding system corruption by bad using

3.5.6   User Suggestions

- User suggestions will be help to debug the errors in system
- Enhance features
- Improve security issues

3.6 Design Constraints

- Unavailability of internet and GPS connections.
- Make sure the security though entrusts internet connection.
- Use GPS to get the phone location.
- Time limitation for the development process of the project
- Childroid has a threat on killing the application execution by another process.
- Ambiguity of getting system privileges
- Security issues with accessing to system level functionalities

3.7 On-line User Documentation and Help System Requirements

- Online documentation for the user by describing major functionalities and there are usages

- Online help to report bugs on current system and user suggestions to improving the product

- Training materials to have quick understand about the system

3.8 Interfaces

3.8.1   User Interfaces

There are few user interfaces to parent to use the functionalities of the system.

- Quick info user interface – user can request for real time data request about Childroid

▪ Child location interface – show the current location and other info about Childroid

3.8.2 Hardware Interfaces

The system must integrate with Android device to avoid unwanted behaviors when the device is switched off and on.

3.8.3 Software Interfaces

▪ Software application must be interfaced with Android OS.

3.8.4 Communications Interfaces

▪ GPRS connectivity with a mobile service provider
▪ Internet connectivity
▪ Mail server communication (with K9 mail)
▪ Location with Google Map API

3.9 Licensing Requirements

▪ Android: http://source.android.com/source/licenses.html

4. Supporting Information

Not applicable