CariCOOS Android Mobile Application Requirements Specification

Version 1.0

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Alexander J Padin
Mobile Developer
Webmaster: Adolfo Gonzalez

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detail description of the CariCOOS Android Mobile Application. It will explain the purpose and features of the application, interfaces of the application, what the application will do, constrains under which it must operate and how the application will react to the users. This document is intended for both the user and the developer of the application.

1.2 Scope

This software will be a mobile application for anyone who would like to know more information about the waves, winds and currents of Puerto Rico. This application will be designed to view all the CariCOOS buoys in Puerto Rico and all its data. By creating the Android application the user will not have to browse the Internet, enter the webpage and deal with browser and viewing limitations, making it easier to understand and read the information.

This application will facilitate the information between developers, CariCOOS and the users.

1.3 Time of Development

This application will be in development starting as soon as the application is approved (December 2013). This software will require approximately 4 months maximum to develop and approximately half month to test it completely and upload it to the app store.

2. General Description

2.2 Product Functions

- The application will be able to parse and read a Json and a text file.
- This application will be able to display the Google map, read the Json file saved in the app and show all the buoys with their respective information.
- This application will be able to create a popup window that shows detail information about the corresponding buoy.
- This application will be able to filter the buoy by the user choices.
- This application will be able to change the type/layer of the map.

2.3 User Characteristics

- The user is expected to have background knowledge about waves, winds and currents parameters.
- The user is expected to be able to use buttons, drop-down menus and similar tools.

2.4 General Constraints

- The application shall use Java as the programming language.
- The application shall run in Android 4.x platform.

- All maps shall use Google maps v2.

2.5 Assumptions and Dependencies

- The user is expected to have an Android device.
- The user is expected to have Internet connection for fetching the data.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

- The application shall permit complete map navigation and buoy item selection using the touch combination.
- The software shall provide an about popup to explain more information about the application.

3.1.2 Hardware Interfaces

- The application shall run only in an Androir phone/tablet.

3.1.3 Software Interfaces

- The application shall use the Google Maps API to display the map, buoys and change the map type.

3.1.4 Communications Interfaces

- The software shall communicate with the server and fetch the correct information about the current buoy data and display it to the user.

3.2 Functional Requirements

3.2.1 Parse/read a Json file

Requirements Name	Parse/read a Json file
Introduction	In this requirement we will be parsing a Json file with all the information about the buoys to later display it in the Google map.
Trigger	The user runs the application.
Precondition (Input)	The user must have internet access to fetch the Json file.
Basic Path (Processing)	1. The user runs the application. 2. The application fetches the Json file in the server. 3. The Json is loaded into the application. 4. The Google map is created.
Post condition (Outputs)	The information is saved on the buoys.
Exception Paths	The user may not have internet and the information may not be loaded correctly.

3.2.2 Display Google Map and buoys

Requirements Name	Display Google Map and buoys
Introduction	In this requirement we will be displaying the Google map with all de different buoys located in Puerto Rico.

Trigger	The user fetches the Json file in the server.
Precondition (Input)	The user must parse/read the Json file.
Basic Path (Processing)	1. The application loads the Json file into the app. 2. The application sets up the Google Map. 3. The application creates all buoy markers.
Post condition (Outputs)	The Google Map is created and displayed.
Exception Paths	The user may not have internet and the information may not be loaded correctly.

3.2.3 Buoy popup window

Requirements Name	Buoy popup window
Introduction	In this requirement we will be providing detailed information on each buoy about waves, winds and currents values.
Trigger	The user clicks a buoy for more information.
Precondition (Input)	The application must have loaded the Google Map and the buoys data correctly.
Basic Path (Processing)	1. The application loads the Google Map. 2. The user clicks on a buoy to see more information about the selected buoy. 3. The application shows a popup window with detailed information of the buoy.
Post condition (Outputs)	The application shows up detailed information about the buoy.
Exception Paths	The user may not have internet and the information may not be loaded correctly.

3.2.4 Buoy filter

Requirements Name	Buoy filter
Introduction	In this requirement we will be providing a filter for the buoys displayed on the Google Map.
Trigger	The user clicks on the filter button in the menu bar.
Precondition (Input)	The application must have loaded all the buoys correctly.
Basic Path (Processing)	1. The user clicks on the filter button in the menu bar. 2. The user selects the buoy platform to be displayed on the map. 3. The user press the filter button to filter the buoys based on the selections.
Post condition (Outputs)	The Google Map shows only the buoys marked on the filter selection.
Exception Paths	The user may not have internet and the information may not be loaded correctly.

3.2.5 Google map type/layer

Requirements Name	Google map type/layer
Introduction	In this requirement we will be providing a button to select from various layers to be displayed into the map.

Trigger	The user clicks on the layer button.
Precondition (Input)	The application must had the Google Map loaded before choosing the type of map.
Basic Path (Processing)	1. The user clicks on the type of map button. 2. The Google map updates the type/layer of map.
Post condition (Outputs)	The Google map displayed the layer chosen.
Exception Paths	The user may not have internet and the information may not be loaded correctly.

3.3 Non-Functional Requirements

3.3.1 Performance

- The application shall no longer take more than 15 seconds to display the Google Map with all the buoy markers; if it overpasses those seconds the system shall stop the load and display the results obtain until that moment.

3.3.2 Reliability

- The system shall fulfill with the provisions collected by CariCOOS.

3.3.3 Availability

- The software shall be written in the programing language Java and it will operate on the Android operating system.

3.3.5 Maintainability

- The application shall require a regular maintenance in which the developer will be checking the system functionality and developing more tools for the future application.

3.3.6 Portability

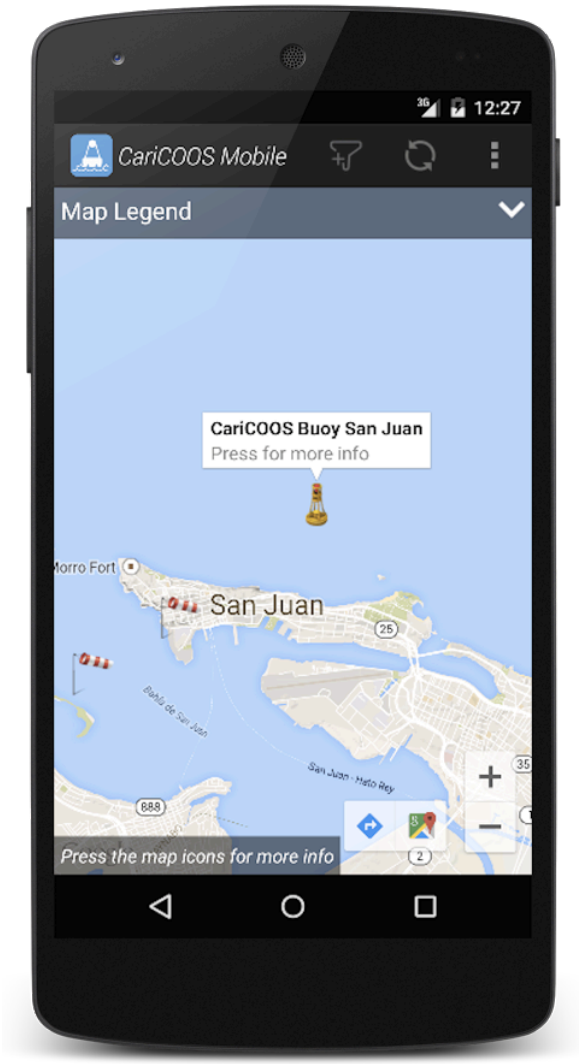
- The application shall be running in a mobile device.

4. Analyst Models

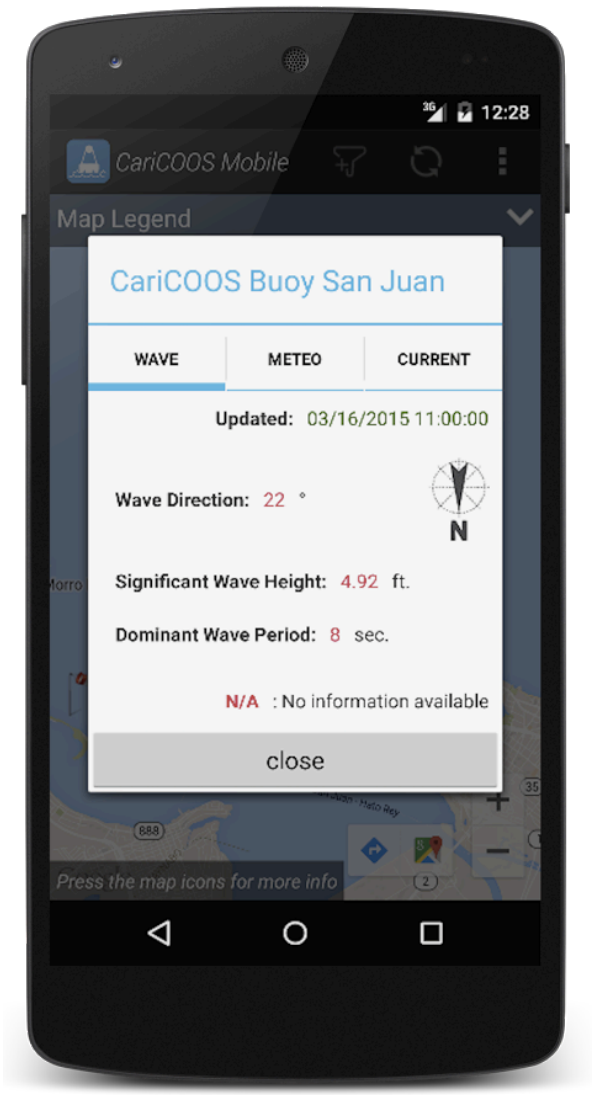
4.1 User Interface

4.1.1 Start-up (Parsing Json file)

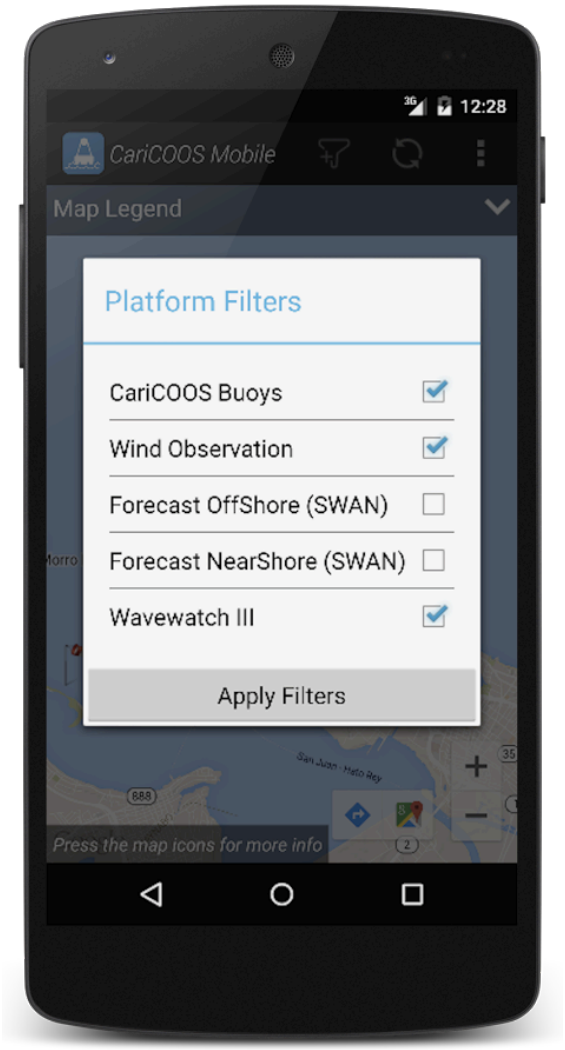
4.1.2 Display Google Map with buoys and selection



4.1.4 Buoy popup window



4.1.5 Buoy filter



4.1.6 Google Map type/layer