http://www.egovframe.go.kr/wiki/doku.php?id=egovframework:hyb3.5:guide:%EB%94%94%EB%B0%94%EC%9D%B4%EC%8A%A4_api_%EA%B0%80%EC%9D%B4%EB%93%9C_%ED%94%84%EB%A1%9C%EA%B7%B8%EB%9E%A8_%EC%9D%B4%EB%9E%80

Background

The runtime environment for eGovFramework Mobile Device API is intended to help the developers of mobile hybrid application call the functions unique to the mobile devices. This guide program has been developed in line with such intent, to distribute the standardized developmental environment for mobile hybrid applications on the basis of eGovFramework.

Purpose

The purpose of this guideline is to, by providing the developers with API practices that fit the skillfulness of the developers and the runtime environment, provide the introduction to installation and utilization of eGovFramework Mobile Device API for improved quality of the application developed and standardize the mobile application development process.

- Intended to develop the application practices that best represent the concerned mobile device APIs for use by the developers.
- Intended to develop the application practices for the linkage between Mobile Device API and eGovFramework server to better understand the server module interworking.
- Intended to provide the server module interworking that features the general logic, representing some of the most typical server interworking functions that Mobile Device APIs provide.
- Intended to provide the developers with NPKI API template example programs and eGovFramework Interface API template when implementing eGovFramework service.

Guideline

eGovFramework Web Compatibility Guideline

1) Legal Ground: Ministry of Public Administration and Security Notification #2010-40

2) Purpose: To set forth terms and conditions that the public institution should abide by, for improved accessibility to the mobile eGovFramework service.

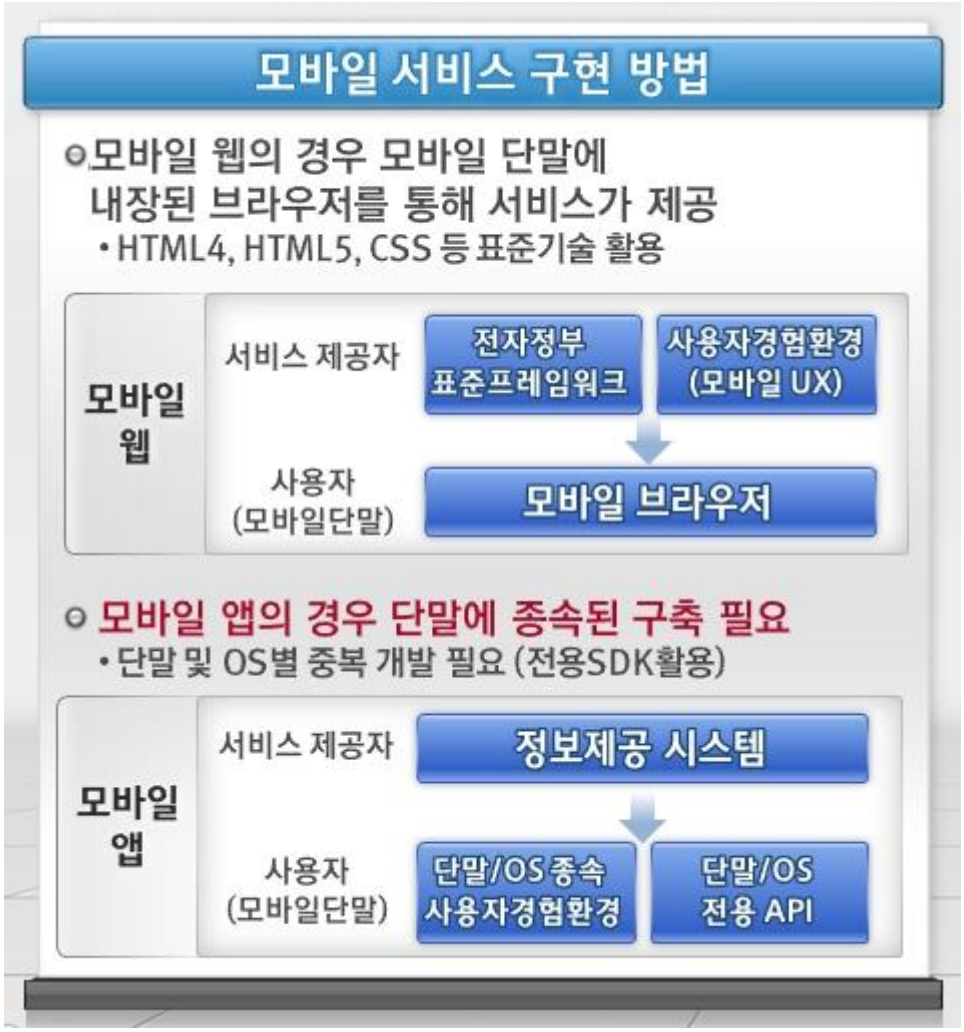
3) Major Updates:

- Mobile applications replaced by mobile web applications to be compatible with varied mobile devices.
- Technology standard guidelines for mobile web development.
    1. Provision of equal-quality services in three or more web browsers.
    2. Obedience to ISO standard now mandatory.

4) eGovFramework Mobile Service:

- Development of mobile web applications recommended to meet the demands of the various mobile devices.

5) Major Differences:



Accessibility Guideline for Mobile Application

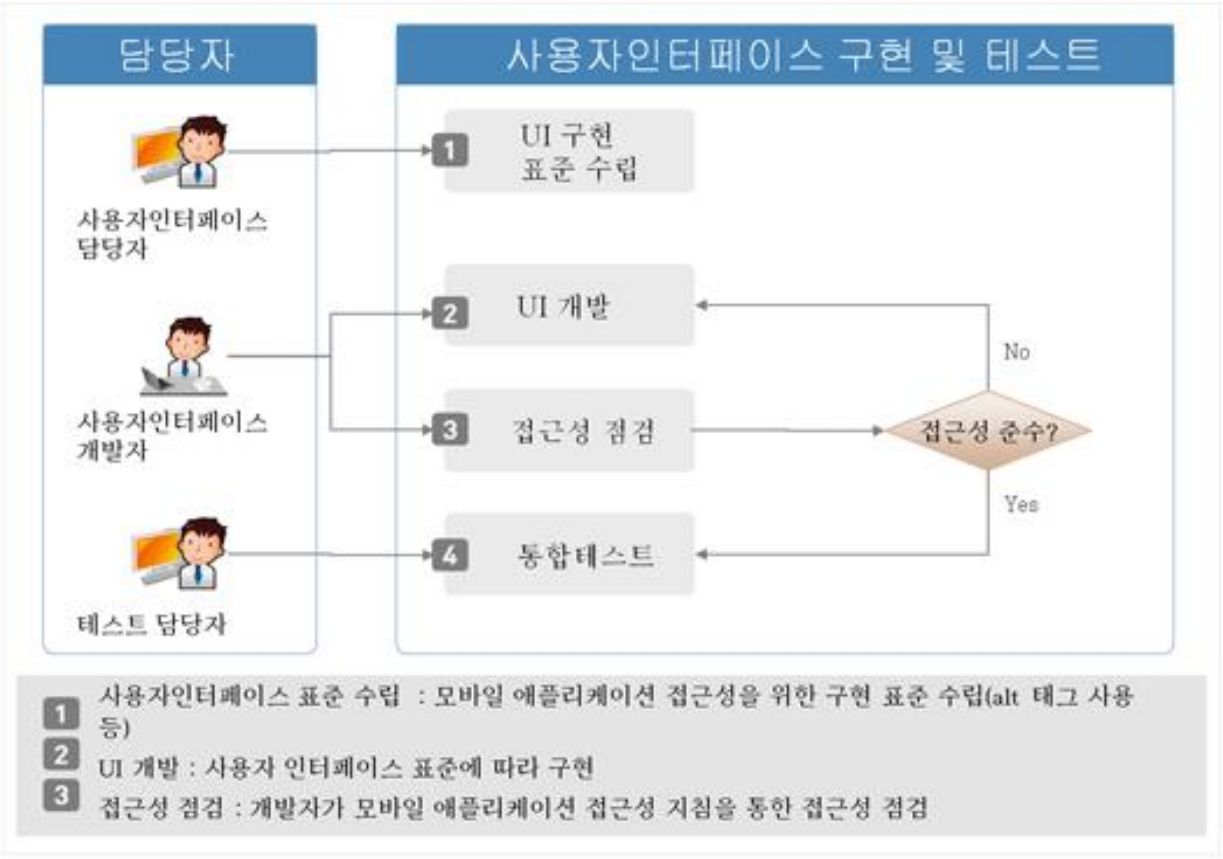
1) Legal Ground: Ministry of Public Administration and Security # 2011-38

2) Purpose: To set forth terms and conditions that the public institution should abide by, for improved accessibility to the mobile eGovFramework service.

3) Major Updates:

- Established the user interface based upon the mobile application accessibility guideline and performed evaluation of the accessibility of the user interface over and over again for improved accessibility.

4) Developmental Procedure to abide by mobile application accessibility



Composition

Separate guidance programs are provided for each Device API and Sample Template Program for both iOS and Android Platforms.

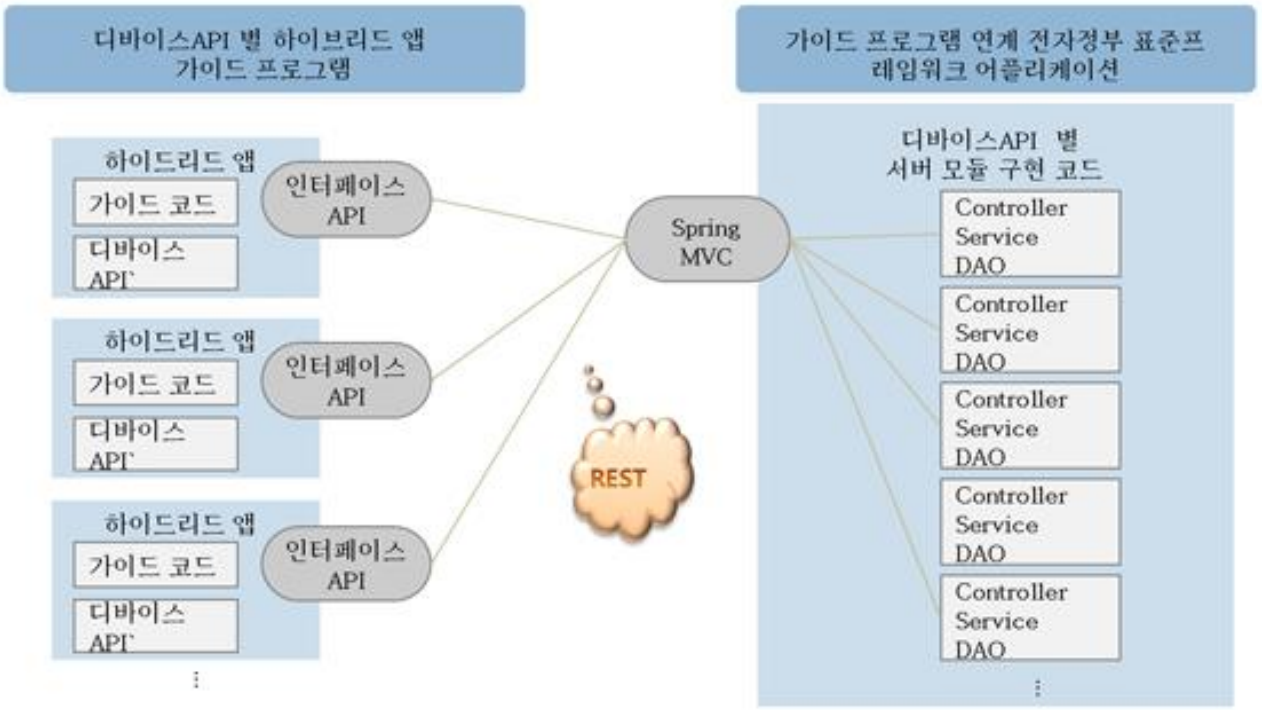
* Device API Guide Program Categories:

Device API	**Implementation Outline**
SampleTemplate	A total of 10 Device APIs provided by PhoneGap are implemented in the form of hybrid application in provision of samples.
Contact	Contact breakdown where the contact information are retrievable. Backing the contact information up in the server is feasible as well.
GPS	Interworking with GPS service indicates the coordinate and current location, real time.
Accelerator	Refers to the acceleration information of the devices to indicate.
Camera	Shoots, uploads and thumbnail-retrieves the photos.

Vibrator	Also provides alarm notification that works by way of time configuration.
Compass	Uses the device orientation information to have the map adapt to the current orientation, real time.
Media	Breaks down and controls the media file in the server by working the buttons Play, Stop, Fast Forw ard and Rewind.
File	Captures the image in the video to store and refer to the device and upload / download the captured image to the server.
Device	Updates the device metadata to provide the user with the grid-type information.
Network	Inquires the device network information to visualize.
NPKI	Activates mobile NPKI authentication and keeps the log information to the server.
Interface	Signs the users in and allows the signed user to log-in using the credentials.

Architecture for Guide Program for Mobile Device API

- Guide Program for Mobile Device API provides the developers with the mobile application object or method for each mobile device API.
- This makes the developmental process of hybrid application much easier, by way of modulation.
- Keep in mind that interworking with the server is the key to develop the mobile device API for public services, due to high traffic.
- Also available in the additional interface API by interworking with the conventional Legacy System to stay compatible with Json, Media Files, XMLs, etc.
- Mobile Device API 2.5 Guide Program Structures



iOS Hybrid Application Project Structure

- Architectural Patterns

Title	Description
CordovaLib.xcodeproj	PhoneGap Sub-projects
Framework	SystemConfiguration.framework (Framework for System Area Access(, CFNetwork.framework (Framework for Network Area Access), MobileCoreService.framework (Framework for Device Core Area Access)
www	index.html, *.css, *.js, etc. Main Page index.html and CSS files for designs. Composition of PhoneGap and JavaScript js.
Design	Background icons are available in Icons. Splash files are availalbe in Splash.
Plugins	Inherits Plug-in, Plug-in information added to config.XML, and CDVPlugin classes

- Open Source Software

Title	Description
Reachability	Open source. No license required. Checks and notifies 3G, Wi-Fi and disconnected status of the device.
ASIHTTPRequest	Supports BSD License and GET/POST/PUT/DELETE. Supports HTTP, HTTPS communications, Upload / Download, Progress Bar (%), Sync / Async communicaton, Notification upon commencement / failure in communication.
PhoneGap	Accessible to the device in the mobile web.

- Architecturral implementation strategy.

Title	Description
CordovaLib.xcodeproj	Generate a project using PhoneGap Command Line Interface.
Framework	Add SystemConfiguration framework, CFNetwork framework and MobileCoreService framework in the project configuration.
www	Main Page index.html for UIWebView, CSSs for designs, and JSs for both PhoneGap and JavaScript are available.
Design	Icon.png, Icon@2x.png and Icon-72.png, representing wallpaper icons are available in Icons. Splash images of Default.png and Default@2x.png are available in Splash.
Plugins	Inherit the CDVPlugin Class Plugs-in and add them when you intend to add plugs-in. Also add the element(s) <feature> in config.xml for plugs-in added.

Android Hybrid Application Project Structure

Resource	Location	Description
AndroidManifest.xml	/AndroidManifest.xml	Descriptor files for Android application that define receptors used in activities, contents providers, services and applications. User authority levels are also configurable here.
Activity.java	src/Package Name/*Activity.java	The very basis of building blocks for Android Application. Provides the user interface in a page and proceed with the user input.
R.java	gen/Package Name/R.java	A Java File that administers Android resources. Defines the reference values for resources. Auto-generated by Android SDK. Modification not allowed.
HTML/JS/CSS/Image	assets/www/	An hybrid application comprises display elements and business logics.
Phonegap-x.x.jar	lib/	A library intended for communication between the Android platform and Native, using PhoneGap Framework being the device API.
Android.jar	Android-sdk/platforms/android-version/	A library file associated with Android Platform API. File name varies by the version of Android platform.

Icon.png	res/drawable-dpi/	The icon seen by the user in the platform when the application is installed.
Main.xml	res/layout/main.xml	Android Platform UI defined in XML.
Strings.xml	res/values/strings.xml	XML that administers strings that Android platform uses. Also used to support multi-language services.
config.xml	res/xml/plugins.xml	A definition file for plugs-in registered in PhoneGap Framework. Contains PhoneGap device APIs in the form of plug-in.

- Main Class (Activity)

Contrary to the typical implementation, PhoneGap Class (DroidGap) is inherited for a PhoneGap project for the main class. You can proceed with rendering by injecting the web resources (such as HTML, CSS and JavaScript) into Webview, by calling onCreate and loadUrl implemented by Webkit inherited, in implementation of hybrid applications in PhoneGap. Unless otherwise configured, PhoneGap offers Rich Client Method and is intended to call, before all, Index.html in the concerned project.

```
package kr.go.egovframework.hyb.example;

import org.apache.cordova.*;

import android.os.Bundle;

/**
 * @Class Name : example_AndroidActivity.java
 * @Description : example_AndroidActivity Class
 * @Modification Information
 * @
 * @   Modified on          Modified by                  Modifications
 * @ ---------      ---------      -------------------------------
 * @
 *
 *    Copyright (C) by MOPAS All right reserved.
 */
public class Example_AndroidActivity extends DroidGap
{
      @Override
      public void onCreate(Bundle savedInstanceState)
      {
            super.onCreate(savedInstanceState);
            // Clear cache if you want
            super.clearCache();
            //super.appView.getSettings().setCacheMode(WebSettings.LOAD_NO_CACHE);
            super.loadUrl("file:///android_asset/www/index.html");
      }
}
```

- index.html

The maor application logics are impleented using PhoneGap API and JavaScript.

```
<!DOCTYPE html>
<html LANG="ko">
<!--
   /**
   * @Class Name : index.html
   * @Description : Standard Coding Index for the Guide Program
   * @Modification Information
   *
   *    Modified on            Modified by                    Modifications
   *    -------       --------       --------------------------
   *
   *
   *
   * Copyright (C) 2009 by MOPAS    All right reserved.
   */
  -->
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-
scalable=no" />
<title>example API Guide</title>

<!-- Phonegap.js import -->
<script type="text/javascript" charset="utf-8" src="js/egovframework/mbl/cmm/cordova.js"></script>

<!-- eGovFrame Common import -->
<link rel="stylesheet" href="css/egovframework/mbl/cmm/jquery.mobile-1.3.2.css" />
<link rel="stylesheet" href="css/egovframework/mbl/cmm/theme-1.1.1.css" />
<link rel="stylesheet" href="css/egovframework/mbl/cmm/EgovMobile-1.3.2.css" />

<script type="text/javascript" src="js/egovframework/mbl/cmm/jquery-1.9.1.min.js"></script>
<script>
                $(document).on("pageinit", function(){
                                        $.mobile.defaultPageTransition = 'none';
                                        });
</script>
<script type="text/javascript" src="js/egovframework/mbl/cmm/jquery.mobile-
1.3.2.min.js"></script>
<script type="text/javascript" src="js/egovframework/mbl/cmm/modernizr-2.0.4.js"></script>
<script type="text/javascript" src="js/egovframework/mbl/cmm/EgovMobile-1.3.2.js"></script>
<script type="text/javascript" src="js/egovframework/mbl/cmm/EgovHybrid.js"></script>

<script type="text/javascript" src="js/egovframework/mbl/cmm/jquery.validate.min.js"></script>
<script type="text/javascript" src="js/egovframework/mbl/cmm/json2.js"></script>

            <!-- iScroll.js import -->
<script type="text/javascript" src="js/iscroll/iscroll.js"></script>

<script type="text/javascript" charset="utf-8">
```

```
	</script>

</head>

<body>

	<div id="intro" data-role="page">
		Device API Guide Android 1.9
	</div>

</body>
</html>
```

- Manifest.xml

Being a configuration file for mobile application, Manifest.xml defines in-app settings, functions and authorities required.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
	package="kr.go.egovframework.hyb.example"
	android:versionCode="1"
	android:versionName="1.0" >

		<supports-screens
			android:largeScreens="true"
			android:normalScreens="true"
			android:smallScreens="true"
			android:resizeable="true"
			android:anyDensity="true"
			/>

		<uses-permission android:name="android.permission.CAMERA" />
		<uses-permission android:name="android.permission.VIBRATE" />
		<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"
/>
		<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
		<uses-permission
android:name="android.permission.ACCESS_LOCATION_EXTRA_COMMANDS" />
		<uses-permission android:name="android.permission.READ_PHONE_STATE" />
		<uses-permission android:name="android.permission.INTERNET" />
		<uses-permission android:name="android.permission.RECEIVE_SMS" />
		<uses-permission android:name="android.permission.RECORD_AUDIO" />
		<uses-permission android:name="android.permission.MODIFY_AUDIO_SETTINGS" />
		<uses-permission android:name="android.permission.READ_CONTACTS" />
		<uses-permission android:name="android.permission.WRITE_CONTACTS" />
		<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"
/>
		<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
```

```
        <uses-permission android:name="android.permission.GET_ACCOUNTS" />
        <uses-permission android:name="android.permission.BROADCAST_STICKY" />

        <uses-permission android:name="android.permission.READ_PHONE_STATE" />

        <uses-feature android:name="android.hardware.camera" />
        <uses-feature android:name="android.hardware.camera.autofocus" />

        <application android:icon="@drawable/ic_launcher" android:label="@string/app_name"
android:debuggable="true">
                <activity android:name=".Example_AndroidActivity"
                                android:label="@string/app_name"
android:configChanges="orientation|keyboardHidden">
                        <intent-filter>
                                <action android:name="android.intent.action.MAIN" />

                                <category
android:name="android.intent.category.LAUNCHER" />
                        </intent-filter>
                </activity>
                <activity android:name="com.phonegap.DroidGap"
android:label="@string/app_name"
                  android:configChanges="orientation|keyboardHidden">
                        <intent-filter>
                        </intent-filter>
                </activity>
</application>

<uses-sdk android:minSdkVersion="8" />
</manifest>
```

- config.xml

The tag <plugin> contains eGovFramework Device APIs and can be used to register the customized plug-in.

```
<widget xmlns     = "http://www.w3.org/ns/widgets"
        id        = "io.cordova.helloCordova"
        version   = "2.0.0">
<name>Hello Cordova</name>

<description>
        A sample Apache Cordova application that responds to the deviceready event.
</description>

<author href="http://cordova.io" email="dev@cordova.apache.org">
        Apache Cordova Team
</author>

<access origin="*"/>
```

```
<!-- <content src="http://mysite.com/myapp.html" /> for external pages -->
<content src="index.html" />

<preference name="loglevel" value="DEBUG" />
<!--
<preference name="splashscreen" value="resourceName" />
<preference name="backgroundColor" value="0xFFF" />
<preference name="loadUrlTimeoutValue" value="20000" />
<preference name="InAppBrowserStorageEnabled" value="true" />
<preference name="disallowOverscroll" value="true" />
      -->

<feature name="App">
<param name="android-package" value="org.apache.cordova.App"/>
</feature>
<feature name="Geolocation">
<param name="android-package" value="org.apache.cordova.GeoBroker"/>
</feature>
<feature name="Device">
<param name="android-package" value="org.apache.cordova.Device"/>
</feature>
<feature name="Accelerometer">
<param name="android-package" value="org.apache.cordova.AccelListener"/>
</feature>
<feature name="Compass">
<param name="android-package" value="org.apache.cordova.CompassListener"/>
</feature>
<feature name="Media">
<param name="android-package" value="org.apache.cordova.AudioHandler"/>
</feature>
<feature name="Camera">
<param name="android-package" value="org.apache.cordova.CameraLauncher"/>
</feature>
<feature name="Contacts">
<param name="android-package" value="org.apache.cordova.ContactManager"/>
</feature>
<feature name="File">
<param name="android-package" value="org.apache.cordova.FileUtils"/>
</feature>
<feature name="NetworkStatus">
<param name="android-package" value="org.apache.cordova.NetworkManager"/>
</feature>
<feature name="Notification">
<param name="android-package" value="org.apache.cordova.Notification"/>
</feature>
<feature name="Storage">
<param name="android-package" value="org.apache.cordova.Storage"/>
</feature>
<feature name="FileTransfer">
<param name="android-package" value="org.apache.cordova.FileTransfer"/>
</feature>
<feature name="Capture">
<param name="android-package" value="org.apache.cordova.Capture"/>
</feature>
```

```
<feature name="Battery">
<param name="android-package" value="org.apache.cordova.BatteryListener"/>
</feature>
<feature name="SplashScreen">
<param name="android-package" value="org.apache.cordova.SplashScreen"/>
</feature>
<feature name="Echo">
<param name="android-package" value="org.apache.cordova.Echo"/>
</feature>
<feature name="Globalization">
<param name="android-package" value="org.apache.cordova.Globalization"/>
</feature>
<feature name="InAppBrowser">
<param name="android-package" value="org.apache.cordova.InAppBrowser"/>
</feature>
<!-- Deprecated plugins element. Remove in 3.0 -->
<plugins>
            <plugin name="App" value="org.apache.cordova.App"/>
            <plugin name="Geolocation" value="org.apache.cordova.GeoBroker"/>
            <plugin name="Device" value="org.apache.cordova.Device"/>
            <plugin name="Accelerometer" value="org.apache.cordova.AccelListener"/>
            <plugin name="Compass" value="org.apache.cordova.CompassListener"/>
            <plugin name="Media" value="org.apache.cordova.AudioHandler"/>
            <plugin name="Camera" value="org.apache.cordova.CameraLauncher"/>
            <plugin name="Contacts" value="org.apache.cordova.ContactManager"/>
            <plugin name="File" value="org.apache.cordova.FileUtils"/>
            <plugin name="NetworkStatus" value="org.apache.cordova.NetworkManager"/>
            <plugin name="Notification" value="org.apache.cordova.Notification"/>
            <plugin name="Storage" value="org.apache.cordova.Storage"/>
            <plugin name="Temperature" value="org.apache.cordova.TempListener"/>
            <plugin name="FileTransfer" value="org.apache.cordova.FileTransfer"/>
            <plugin name="Capture" value="org.apache.cordova.Capture"/>
            <plugin name="Battery" value="org.apache.cordova.BatteryListener"/>
            <plugin name="SplashScreen" value="org.apache.cordova.SplashScreen"/>
            <plugin name="EgovInterfacePlugin"
value="kr.go.egovframework.hyb.plugin.EgovInterfacePlugin" />
                        <plugin name="StorageInfoPlugin"
value="kr.go.egovframework.hyb.plugin.EgovStorageInfo" />
                        <plugin name="DeviceNumberPlugin"
value="kr.go.egovframework.hyb.plugin.EgovDeviceNumber" />
</plugins>
</widget>
```