

# Compass Device API Guide Program

## Outline

Compass guide program is a guide application for eGov Device API, using the mobile device API framework to be used as a tool and a reference when developing hybrid applications. It supports the inquiry of Compass related functions of mobile smart devices through JavaScript-based Compass DeviceAPI.

Also, it is comprised of a feature to send and inquire Compass information within the Device, in conjunction with eGovFramework based web server application.

### Feature

In order to guide Compass features, this Guide Program provides **Compass information inquiry, save Compass information, Compass information list, Delete list** features.

For effective inquiry of changes to Compass information, the information will be displayed in the form of changing compass shape in addition to the notification window at the top. The compass shape rotates in a direction that corresponds to the changes to the Device's Compass information.

### Assumptions

Category	Description
Local Device Environments	eGovFramework Runtime Environment 3.5, Android SDKAPI 22(version 5.0 Lollipop)
Server-side Developmental Environment	Runtime Environment for eGov Standard Framework 3.5
Works in sync with Mash up Open API	N/A
Test Device	Galaxy S2
Test Platform	Android 2.3
Libraries Added	N/A

### Restriction

Category	Description
----------	-------------

Supported d A rotating image in shape of a compass for visualization of Compass information is provided. However, devices and er, screen may appear cropped when viewed horizontally. Therefore, it is advisable to change settings platforms to prevent auto conversion in horizontal view mode when running API Guide Program.

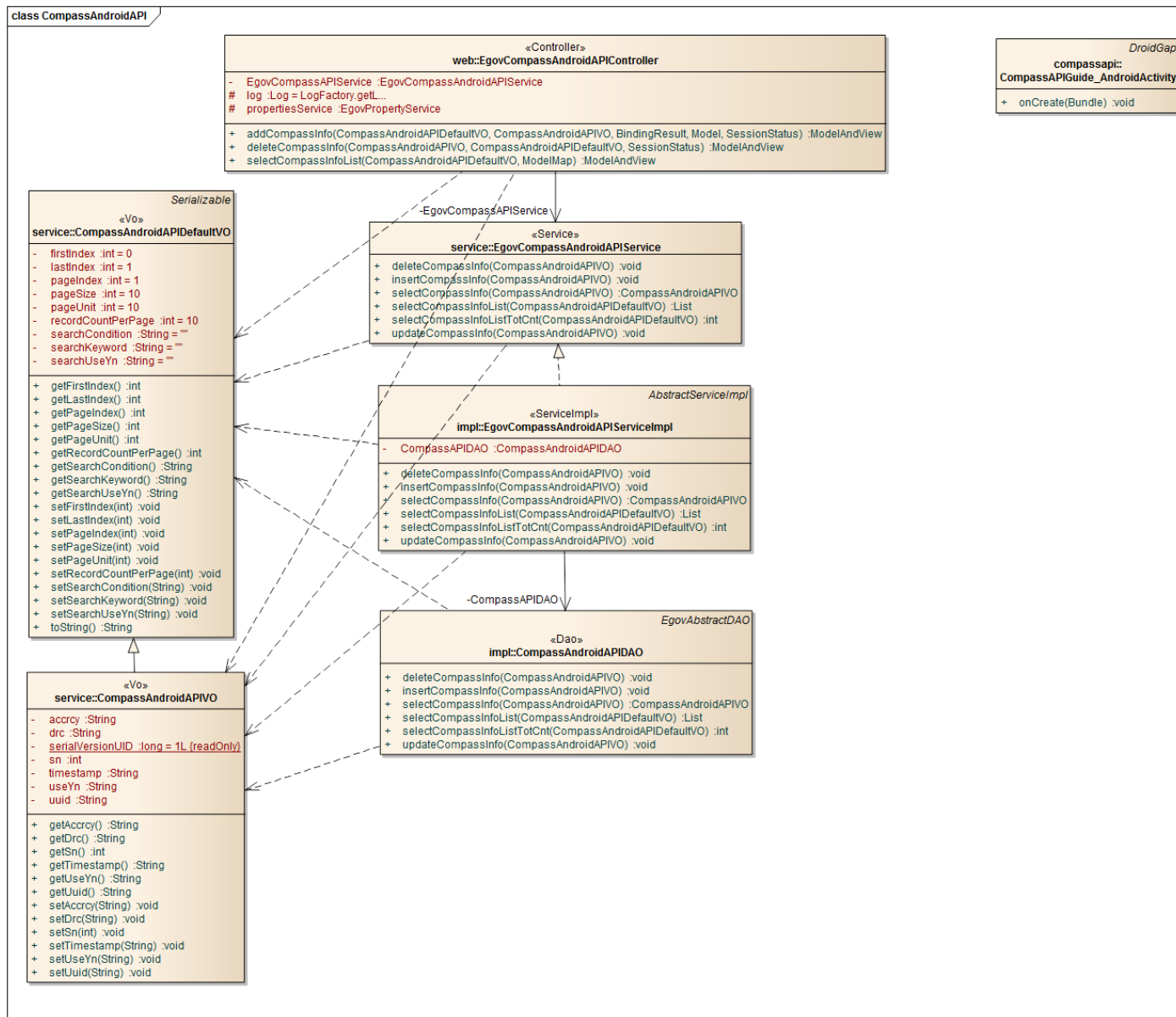
Using cross When using certain outside domains or its subdomains on PhoneGap, add such domains on <access o domain rigin="" /> at Res/xml/config.xml.

License N/A

## Description

Compass Device API Guide Program is comprised of features that inquire the Device's Compass information and sends/inquires the information from the inquiry to the web server application.

### Class Diagram



## Device Application

### Source

Type	Title	Remark
Activity	kr.go.egovframework.hyb.compassapi.CompassAPIGuide_An droidActivity	CompassAPI Guide Program Activity Class
CSS	assets/www/css/egovframework/mbl/hyb/CompassAPI.css	CompassAPI Guide Program Core Cascading St yle Sheets
IMAGE	assets/www/images/egovframework/mbl/hyb/	CompassAPI Guide Program main Image folder
JS	assets/www/js/egovframework/mbl/hyb/CompassAPI.js	CompassAPI Guide Program main JavaScript
JS	assets/www/js/egovframework/mbl/hyb/messages_ko.js	JavaScript for Validate Message Processing
RES	assets/www/res/	CompassAPI Guide Program main Resource fol der
XML	AndroidManiFest.xml	Configuration XML for Android
HTML	assets/www/CompassAPI.html	CompassAPI main page
HTML	assets/www/intro.html	CompassAPI Intro page
HTML	assets/www/license.html	CompassAPI License page
HTML	assets/www/overview.html	CompassAPI feature description page

### APIs Used

compass.watchHeading

- Loads the heading information of the device

```
navigator.compass.getCurrentHeading(compassSuccess, compassError, compassOptions);  
function onSuccess(heading) {  
    alert('Heading: ' + heading.magneticHeading);  
};  
  
function onError(error) {  
    alert('CompassError: ' + error.code);  
};  
  
navigator.compass.getCurrentHeading(onSuccess, onError);  
    compassOption
```

Option	Description	Remark
frequency	Frequency of inquiry for compass information	

frequency Refers to the change required for initialization of the callback function

Server Application

**Source**

Type	Title	Remark
Controller	egovframework.hyb.add.cps.web.EgovCompassAndroidAPIController.java	CompassAPI Guide Program Controller Class
Service	egovframework.hyb.add.cps.service.EgovCompassAndroidAPIService.java	CompassAPI Guide Program Service Class
ServiceImpl	egovframework.hyb.add.cps.service.impl.EgovCompassAndroidAPIServiceImpl.java	CompassAPI Guide Program ServiceImpl Class
VO	egovframework.hyb.add.cps.service.CompassAndroidAPIDefaultVO.java	CompassAPI Guide Program VO Class
VO	egovframework.hyb.add.cps.service.CompassAndroidAPIFileVO.java	CompassAPI Guide Program VO Class
VO	egovframework.hyb.add.cps.service.CompassAndroidAPIVO.java	CompassAPI Guide Program VO Class
VO	egovframework.hyb.add.cps.service.CompassAndroidAPIXMLVO.java	CompassAPI Guide Program XML related VO Class
DAO	egovframework.hyb.add.cps.service.impl.CompassAndroidAPIDAO.java	CompassAPI Guide Program Dao Class
Util	egovframework.hyb.add.cps.service.impl.EgovCompassAndroidFileMngUtil.java	CompassAPI Guide Program Util Class
QUERY XML	resources/egovframework/sqlmap/hyb/add/cps/EgovCompassAndroidAPIGuide_XXX_mysql.xml	CompassAPI Guide Program QUERY XML
Idgen XML	resources/egovframework/spring/com/context-idgen.xml	CompassAPI Guide Program ID generation Idgen XML

**Related Tables**

Title	Table	Remark
compass	COMPASS Manage	Compass information

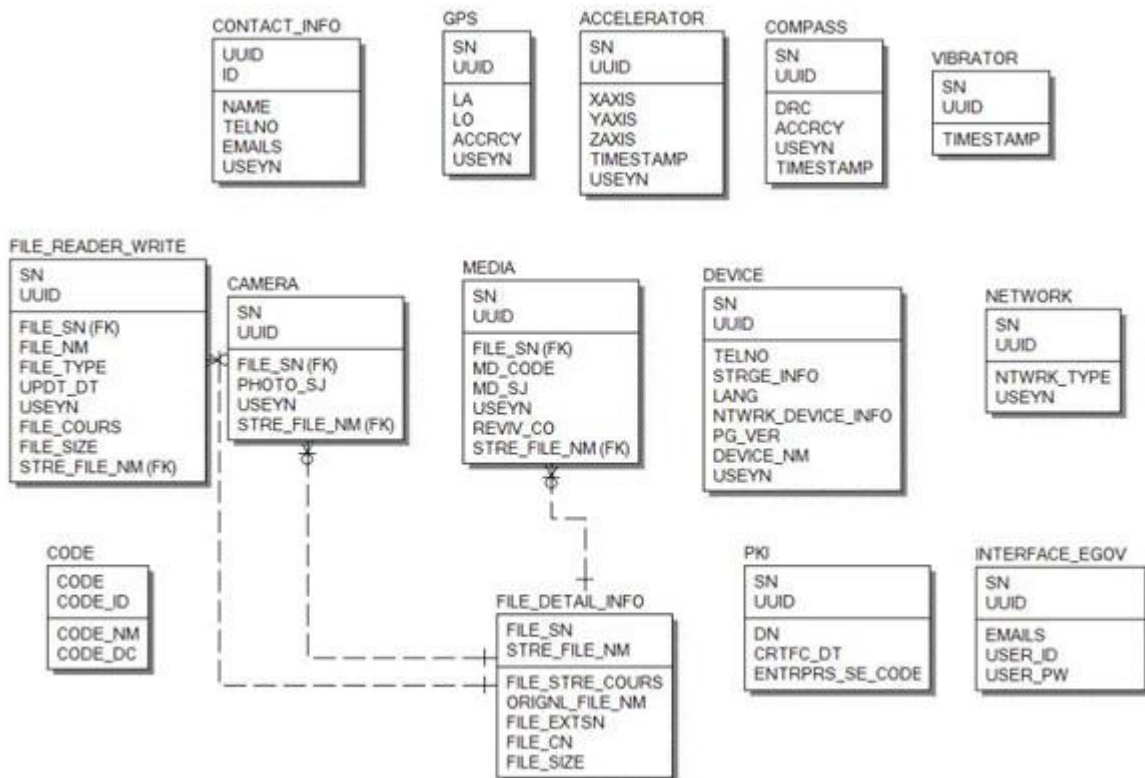
**Table Definition**

- Compass

No.	Column ID	Title of Column	Type	Length	NULL
1	SN	Serial No.	NUMERIC	6	NotNull

2	UUID	UUID	VARCHAR	50	NotNull
3	DRC	Direction	VARCHAR	40	Null
4	ACCRCY	Accuracy	VARCHAR	10	Null
5	USEYN	Activation	CHAR	1	Null
6	TIMESTAMP	timestamp	VARCHAR	20	Null

### ERD



## Properties

Necessary sections and settings for using Compass related features of mobile device, provided by Compass Device API Guide Program, are as follows.

Device Application

res/xml/config.xml

```
<!-- PhoneGap Plugin for eGov Interface Device API Class -->
<pluginname="EgovInterfacePlugin" value="kr.go.egovframework.hyb.plugin.EgovInterfacePlugin"/
>
```

### res/values/serverinfo.xml

```
<!-- Server Directory for eGov Interface Device API Class -->
<?xmlversion="1.0"encoding="utf-8"?>
<resources>
    <stringname="SERVER_URL">http://192.168.100.222:8080/DeviceAPIGuideTotal_Web
_V1.7.1</string>
</resources>
```

### AndroidManifest.xml

```
<uses-permissionandroid:name="android.permission.ACCESS_FINE_LOCATION"/>
Server Application
```

### context-properties.xml

- Upload directory

```
<entrykey="fileStorePath"value="File_Save_Path"/>
resource/egovframework/sqlmap/sql-map-config_[DB_NAME].xml
```

```
<sqlMapresource="egovframework/sqlmap/hyb/add/acl/EgovCompassAndroidAPIGuide_SQL_[DB
NAME].xml"/>
```

## Functions

Compass Device API Guide Program comprises **Compass Information Update , Storage of Compass Information out of Server, Compass Information List Update and Compass Information Removal.**

Updates compass information

### Business Logic

Device API calls the present Compass information on the monitor, causing the figure to rotate, following the Compass direction.

### Code

Updates real-time accelerator information via JavaScript Code using Device API Compass function.

```
function fn_egov_update_heading(h)
{
    drc = h.magneticHeading;
    accrcy = h.headingAccuracy;
    timestamp= h.timestamp;

    // receives new angle value
    newHeading = Math.round(drc);

    $("#compassMain").trigger("newHeading", newHeading);

    var html = "Azimuth : " + drc + "<BR />";
```

```

$("#infoDetail").html(html);
if(CompassInsertCheck)
{
    CompassInsertCheck = false;
}
console.log("DeviceAPIGuide fn_egov_update_heading Success");
}

function fn_egov_get_compass()
{
    if (CompasswatchID === null)
    {

        //alert("Compass start");
        //toast("Compass start");
        CompassInsertCheck = true;
        var options = { frequency: 1 };
        CompasswatchID = navigator.compass.watchHeading(fn_egov_update_heading,
                                                         function(e)
                                                         {
                                                             console.log("DeviceAPIGuide
fn_egov_get_compass fail");
                                                         },
                                                         options);
    }
    else
    {

        compassEvent();

        navigator.compass.clearWatch(CompasswatchID);
        CompasswatchID = null;
        fn_egov_update_heading({ drc : "Off"});
        //navigator.notification.alert("Compass stop");
        //toast("Compass stop");
    }
}

```

## **Related Screen and Implementation Manual**

### **Compass information inquiry window**



Save Compass information

#### **Business Logic**

Sends the Compass information from the inquiry to the server and saves it in a list form.

#### **Code**

```
function fn_registCompassInfo() {  
    useYn = "Y";  
  
    var url = "/cps/xml/addCompassInfo.do";  
    var accept_type = "json";  
    var params = {uuid : device.uuid,
```



```

        drc: drc + ",
        accrcy: accrcy + ",
        timestamp: timestamp + ",
        useYn: useYn};

// send the data
egovHyb.post(url, accept_type, params, function(jsondata) {
    var data = JSON.parse(jsondata);

    if(data.useYn == "OK"){
        //fn_goCompassInfoListXml();
    }else{
        $("#alert_dialog").click( function() {
            jAlert('Error occured while sending data.', 'Transmission
Error', 'c');
        });
    }

});

console.log("DeviceAPIGuide fn_registCompassInfo request Completed");
}

```

#### Related Screen and Implementation Manual

Function	URL	Controller	method	Display (HTML)
Send Compass information to server govCompassAndroidAPIController	/cps/xml/addCompassInfo.do	addCompassInf	CompassAP	
	oXml	I.html		

Click on "Save" to send the information data to the server.

Save Compass information: to send the Compass information to server, click on the "Save" button at the bottom.

Compass information list: moves to **Compass information list** window.

Compass information list

#### Business Logic

Prints the saved Compass information list in a list form.

#### Code

```

function fn_goCompassInfoListXml()
{
    if(!fn_egov_network_check(false)){
        return;
    }
    var url = "/cps/xml/compassInfoList.do";
    var accept_type = "xml";

```

```

// get the data from server
window.plugins.EgovInterface.get(url,accept_type, null, function(xmldata) {
    var list_html = "";

    $(xmldata).find("compassInfoList").each(function(){
    var uuid = $(this).find("uuid").text();
    var x = $(this).find("drc").text();
    var y = $(this).find("accrcy").text();
    var t = $(this).find("timestamp").text();

        list_html += "<li><h3>UUID : " + uuid + "</h3>";
        list_html += "<p><strong>drc : " + x + "</strong></p>";
        list_html += "<p><strong>accrcy : " + y + "</strong></p>";
        list_html += "<p>timestamp : " + t + "</p></li>";
    });

    var theList = $('#theList');
    theList.html(list_html);
    $.mobile.changePage("#compassInfoList", {reverse: true});
    theList.listview("refresh");

});
}

```

#### Related Screen and Implementation Manual

Function	URL	Controller	method	Display (HTML)
Compass information list inquiry	/cps/xml/compassInfoList.do	EgovCompassAndroidAPIController	selectCompassInfoXMLList	CompassAPI.html

#### Compass information list window



To inquire the Compass information list saved in server, click on the "Acceleration information list."

Save Compass information: to send the Compass information to server, click on the "Save" button at the bottom.

Compass information list: moves to **Compass information list** window.

Compass information inquiry: moves to **Compass information inquiry** window.

Delete Compass information: to reset the Compass information list, click on the "Delete Compass information inquiry" button.

Delete Compass information

#### **Business Logic**

Resets the Compass information list saved on server.

## Code

```
function fn_deleteCompassInfoList() {
    var url = "/cps/xml/withdrawal.do";
    var accept_type = "json";
    // send the data
    egovHyb.post(url, accept_type, null, function(jsondata) {
        var data = JSON.parse(jsondata);

        if(data.useYn == "OK"){
            $.mobile.changePage($("#compassMain"), {reverse: true});
        }else{
            $("#alert_dialog").click( function() {
                jAlert('Error encountered while deleting data.', 'Deletion
error', 'c');
            });
        }

    });

    console.log("DeviceAPIGuide fn_deleteCompassInfoList request Completed");
}
}
```

## Related Screen and Implementation Manual

Function	URL	Controller	method	Display (HTML)
Resetting Compass information list	/cps/xml/withdrawal.do	EgovCompassAndroidAPIControl	withdrawalXml	CompassAPI.html

To reset the Compass information list saved in server, click on the "Delete Compass information."

Save Compass information: to send the Compass information to server, click on the "Save" button at the bottom.

Compass information list: moves to **Compass information list** window.

Compass information inquiry: moves to **Compass information inquiry** window.

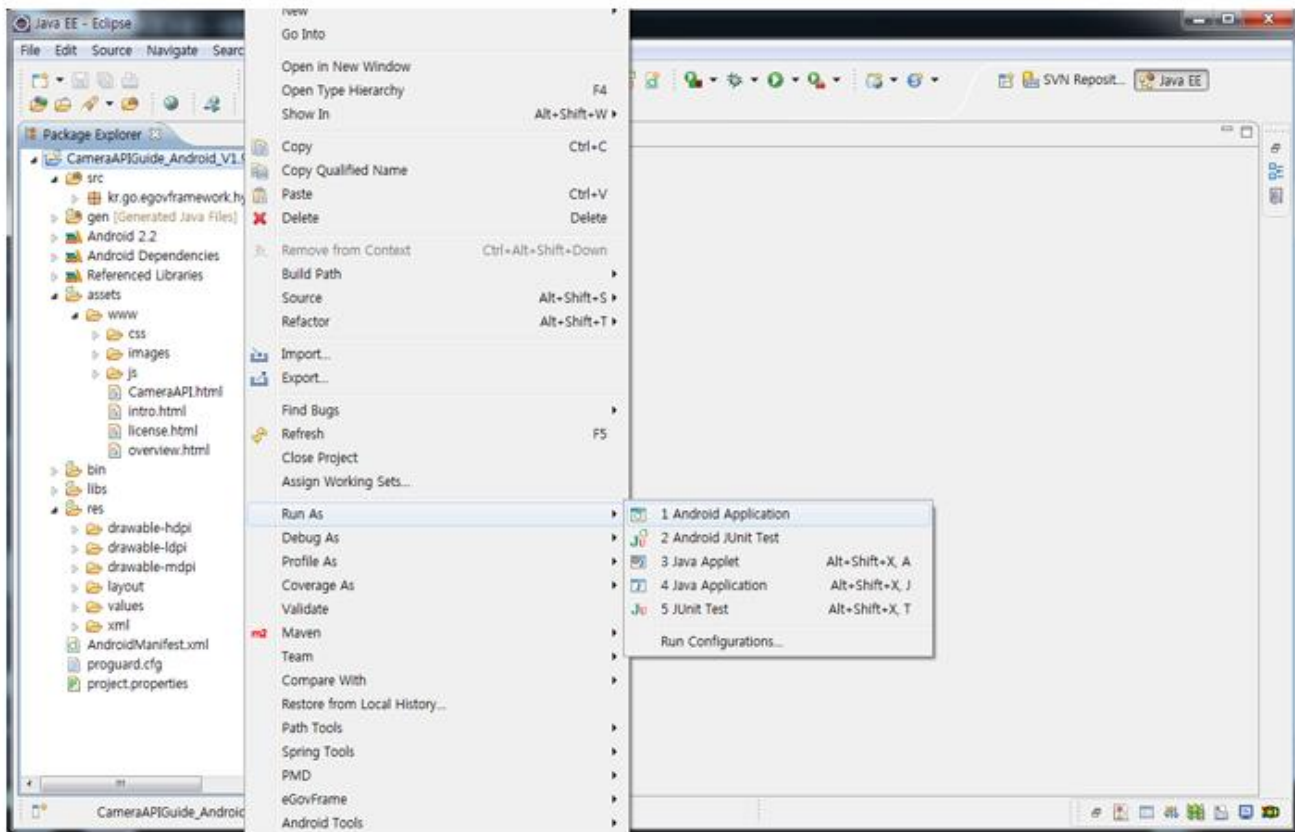
Delete Compass information: to reset the Compass information list, click on the "Delete Compass information inquiry" button.

## Compiling, debugging, distributing

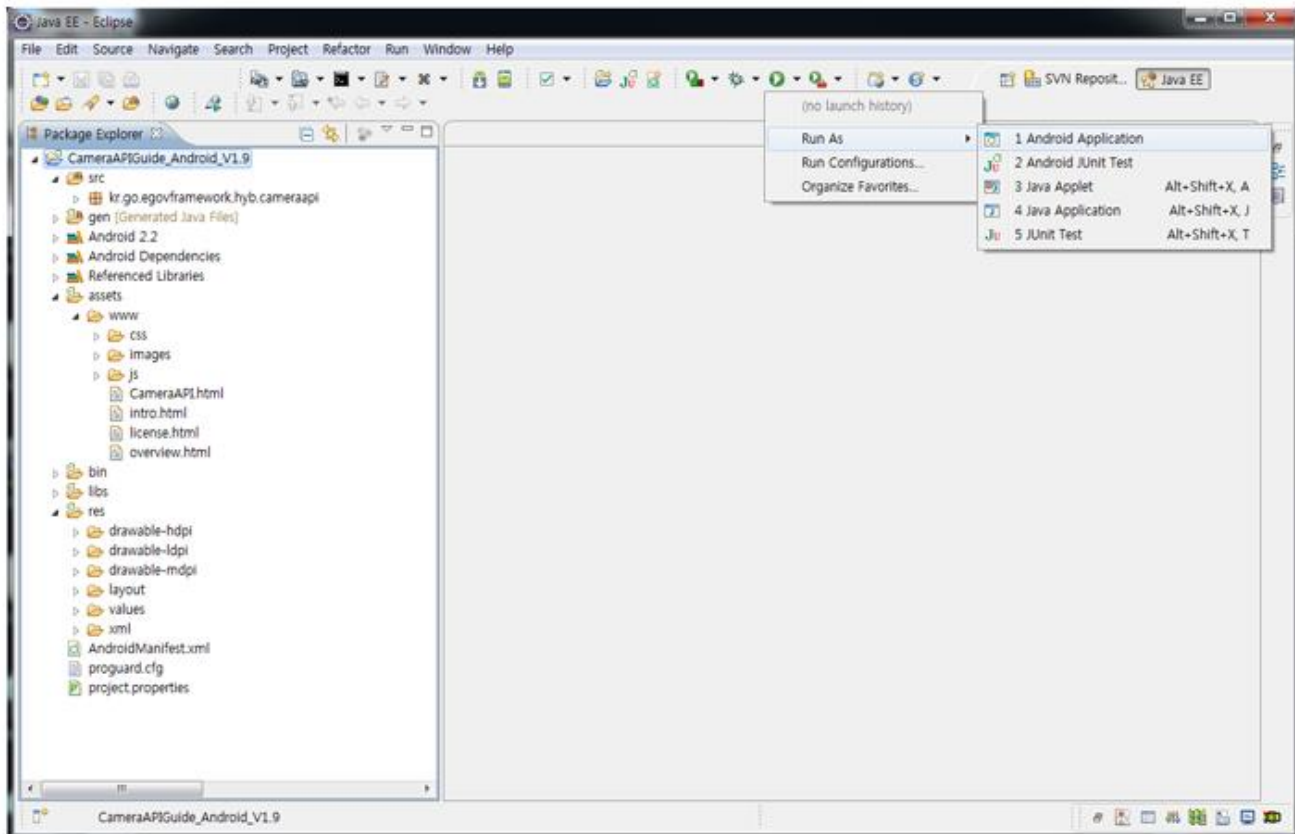
### Compiling

#### How to compile CompassAPI Device Application

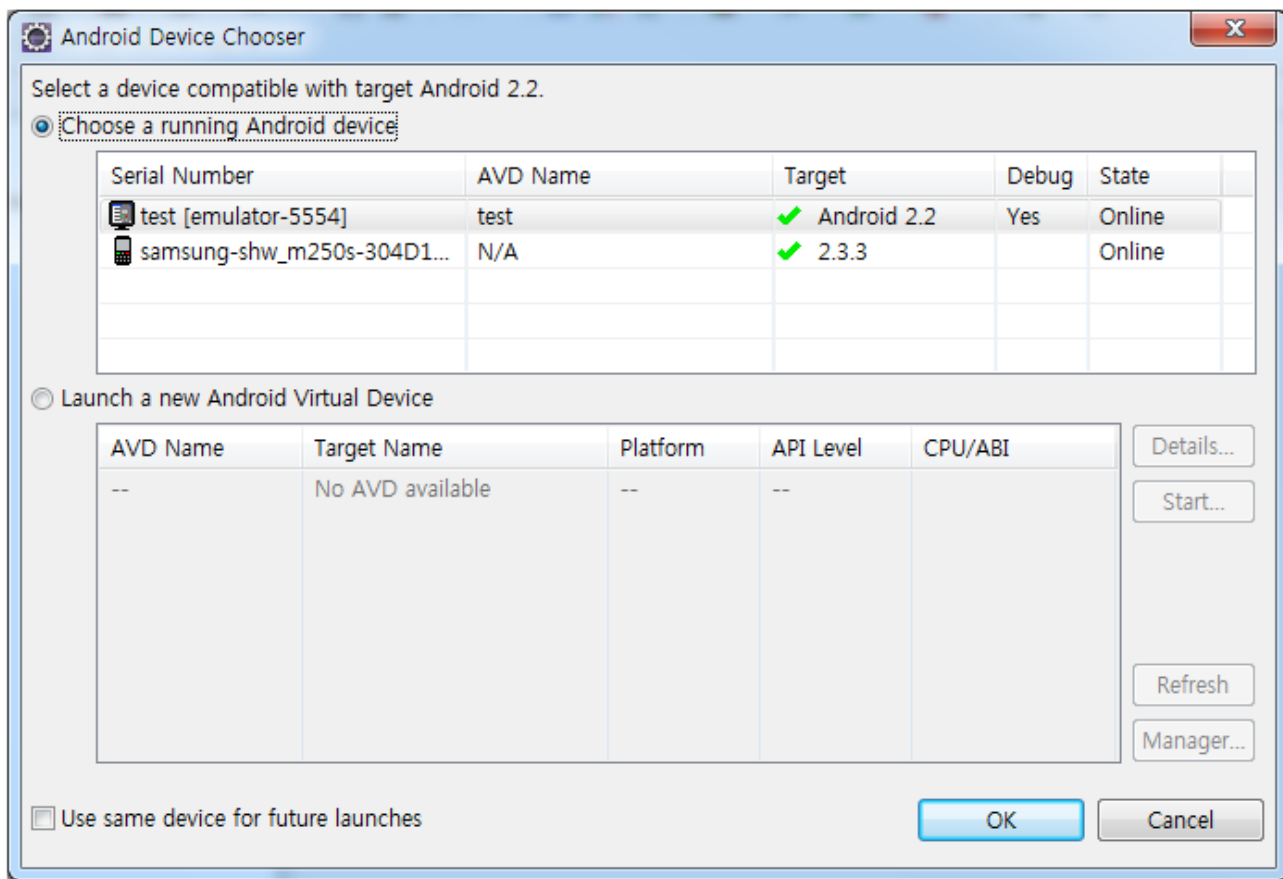
- Choose project > Right-click > Run As > Android Application



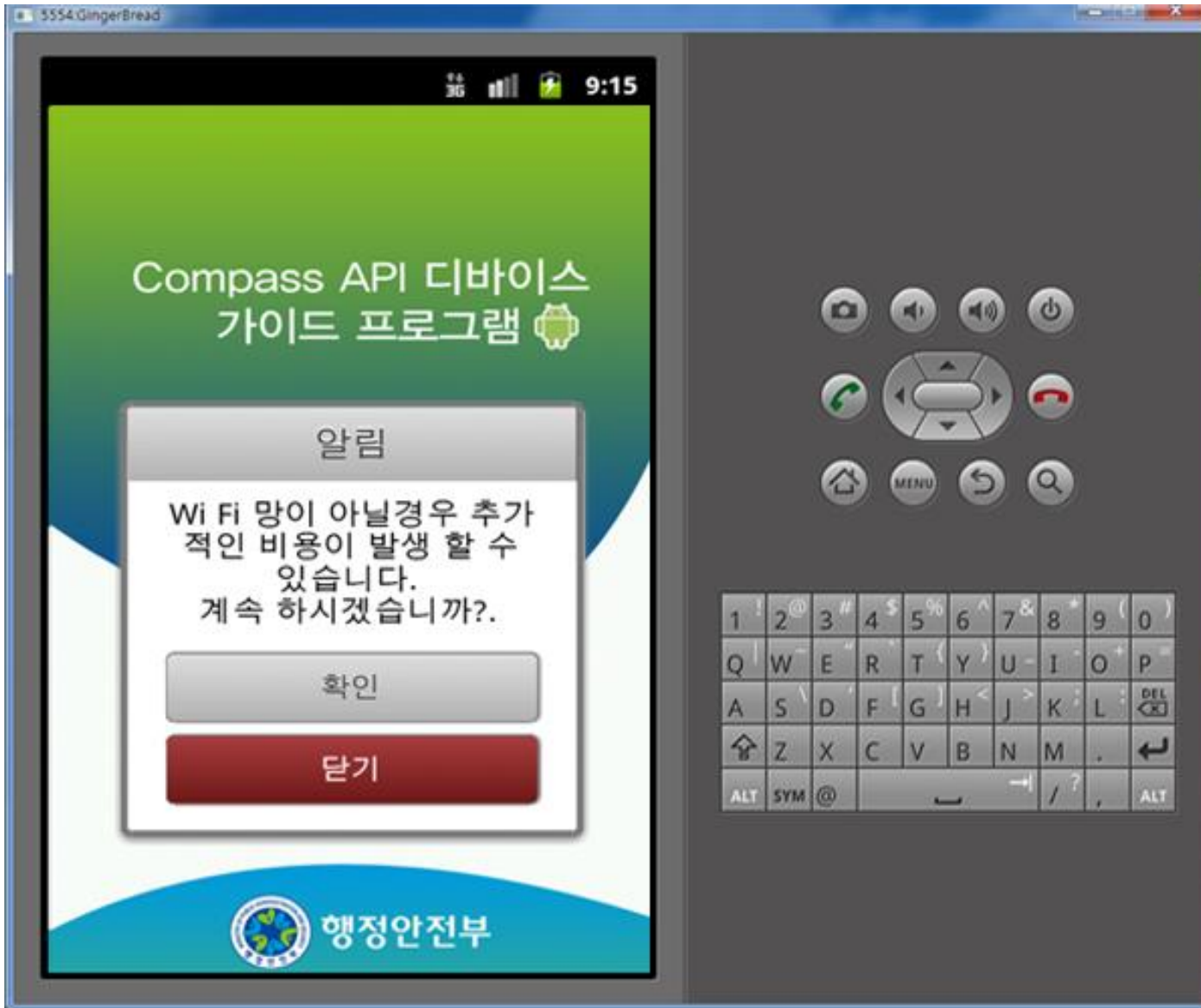
- Top menu > Run As > Android Application



- Select target to run > emulator, Device(debug mode)



- Program display on the emulator



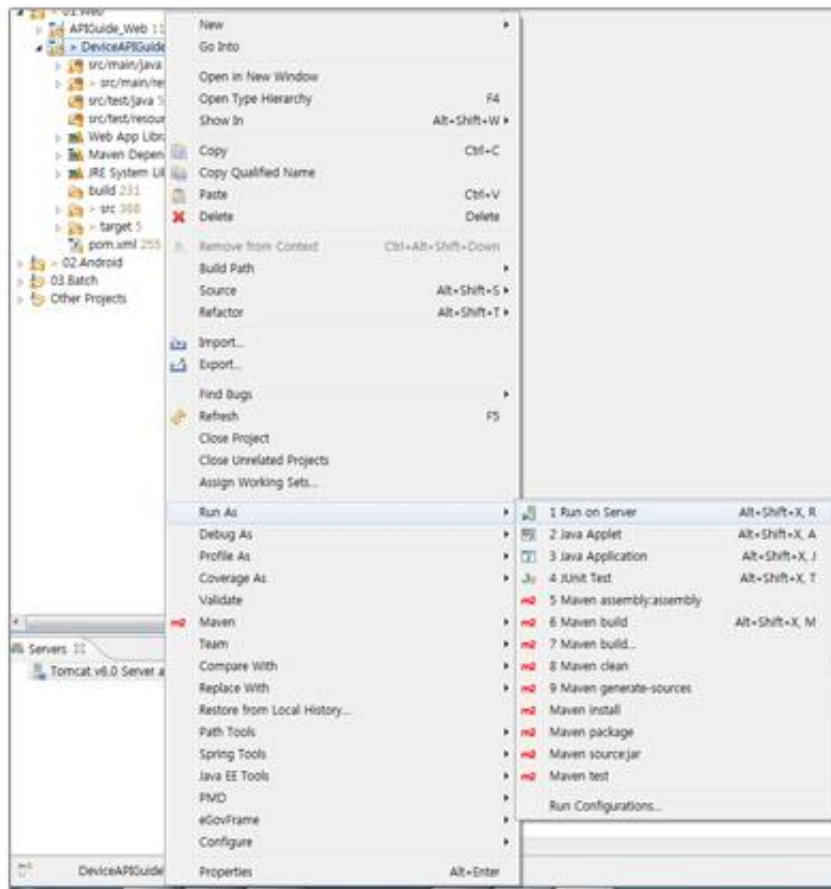
- Program display on the device





#### **How to compile DeviceInfoAPI Server Applicaton**

- Right-click on the project and click on Run As>Run On Server in order to run the DeviceInfoAPI server-side Guide Program.



- When the build is successfully completed, a message reading 'Server Startup in xxx ms' will display on the console window on the Eclipse.

```

2012-09-14 09:15:49,759 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.serv
2012-09-14 09:15:49,767 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.serv
2012-09-14 09:15:49,768 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Creating instance of bean 'org.springframework.web.servlet.view.DefaultRe
2012-09-14 09:15:49,771 DEBUG [org.springframework.web.servlet.DispatcherServlet] Finished creating instance of bean 'org.springframework.web.servlet.view.
2012-09-14 09:15:49,771 DEBUG [org.springframework.web.servlet.DispatcherServlet] Unable to locate RequestToViewNameTranslator with name 'viewNameTranslator': using default
2012-09-14 09:15:49,771 DEBUG [org.springframework.beans.factory.support.DefaultListableBeanFactory] Returning cached instance of singleton bean 'org.springframework.web.serv
2012-09-14 09:15:49,772 DEBUG [org.springframework.web.servlet.DispatcherServlet] Published WebApplicationContext of servlet 'action' as ServletContext attribute with name (
2012-09-14 09:15:49,772 INFO [org.springframework.web.servlet.DispatcherServlet] FrameworkServlet 'action': initialization completed in 1373 ms
2012-09-14 09:15:49,772 DEBUG [org.springframework.web.servlet.DispatcherServlet] Servlet 'action' configured successfully
2012. 9. 14 오전 9:15:49 org.apache.coyote.http11.Http11Protocol start
[정보] Starting Coyote HTTP/1.1 on http-80
2012. 9. 14 오전 9:15:49 org.apache.jk.common.ChannelSocket init
[정보] JK: ajp13 listening on /0.0.0.0:8009
2012. 9. 14 오전 9:15:49 org.apache.jk.server.JKMain start
[정보] JK running ID=0 time=0/30 config=null
2012. 9. 14 오전 9:15:49 org.apache.catalina.startup.Catalina start
[정보] Server startup in 7209 ms

```

### Debugging

Use console.log in order to check the details on any errors on the device application, and to conduct debugging. Debug codes in console.log are available in JavaScript syntaxes that you can use in both Eclipse and Xcode.

The following is an example of how to write console.log.

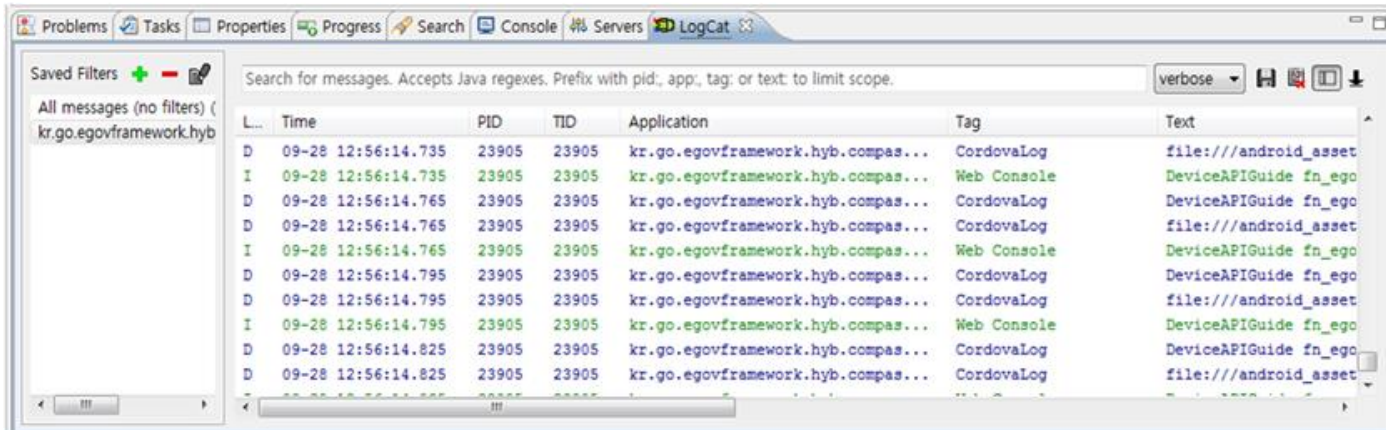
```

function fn_egov_network_check(doCheck)
{
    console.log('DeviceAPIGuide fn_egov_network_check');
    var networkState = navigator.network.connection.type;

```

...  
}

When the debugging code is executed, check out the following console message appears:



Deviceinfo device API Guide Program will output the following console information for debugging.

#### Debug code

#### Debug information

DeviceAPIGuide fn\_registCompassInfo request Completed

Update of Device Compass information to server successful

DeviceAPIGuide fn\_deleteCompassInfoList request Completed

Compass information reset within server successful

DeviceAPIGuide fn\_egov\_update\_heading success

Information update on related functions (after the inquiry of Device Compass information) successful

DeviceAPIGuide fn\_egov\_get\_compass fail

Inquiry of Device Compass information failed

Distribution

Download Compass Device API Guide: [Click](#)

## References

- UX/UI library : jQuery Mobile [Click](#)
- Phonegap 4.3.0 : [Click](#)