Nervousnet Mobile API's

How-To build an Android Native Axon App

- **Overview**

  This document specifies a How-To step-by-step guide of integrating the nervousnet Mobile Library into your Android Project to use the Mobile API's.

  A Nervousnet Axon Android application is any Android App that uses the nervousnet Mobile API's to access sensor and other related data from Nervousnet Mobile application.

- **Prerequisites**

  Since nervousnet Mobile APIs is based on the Android Services and Android Interface Definition Language (AIDL) it would be good to read and understand how it works at:

  https://developer.android.com/guide/components/services.html

  https://developer.android.com/guide/components/aidl.html

  For using the nervousnet mobile API's requires calling a remote interface defined with AIDL

  https://developer.android.com/guide/components/aidl.html#Calling

- **Tools**

    - Android Studio

- **JavaDoc**

    https://github.com/nervousnet/nervousnet-android/tree/master/Documents/Technical/Android/APIs
    - Click on index.html to launch the API documentation in your browser.
    - NervousnetRemote Interface lists all API's that can be used by External Apps.

- **Source Code**

  1) Nervousnet Project

     https://github.com/nervousnet/nervousnet-android
  2) **Nervousnet Library Project (nervousnetLIB)**

     https://github.com/nervousnet/nervousnet-android/tree/master/MobileClients/Android/nervousnetLIB

3) Sample Extension Project (LightMeter, Accelerometer & Noisemeter)

(Inside GitHub project -> Mobile Clients -> Android -> Sample Extensions -> *)

https://github.com/nervousnet/nervousnet-android/tree/master/MobileClients/Android/SampleExtensions/Lightmeter
https://github.com/nervousnet/nervousnet-android/tree/master/MobileClients/Android/SampleExtensions/Accelerometer
https://github.com/nervousnet/nervousnet-android/tree/master/MobileClients/Android/SampleExtensions/Noisemeter

• Steps

1) Include the *nervousnetLIB* project as a library project of your Android project.

   In Android Studio,:

   - build.gradle (Project) add:

     ```
     repositories {
         jcenter()
     }
     ```

   - build.gradle (Module) add:

     ```
     dependencies {
         compile 'ch.ethz.coss.nervousnet:nervousnetLIB:0.7.35'
     }
     ```

   **The latest version of the nervousnetLIB can be found at:

   http://jcenter.bintray.com/ch/ethz/coss/nervousnet/nervousnetLIB/

   https://bintray.com/ppulikal/maven/nervousnetLIB/

2) In the manifest file of your Android project define the Nervousnet Permissions:

   ```
   <uses-permission android:name="ch.ethz.coss.nervousnet.hub.BIND_PERM" />
   ```

3) In your main activity implement

   ```
   Interface NervousnetServiceConnectionListener  and its methods

   public void onServiceConnected();

   public void onServiceDisconnected();

   public void onServiceConnectionFailed(ErrorReading errorReading);
   ```

4) To connect to the Nervousnet Service

   ```
   nervousnetServiceController = new NervousnetServiceController(YOURACTIVITY.this, this);
   nervousnetServiceController.connect();
   ```

5) Once the service is connected a callback is received inside the method

onServiceConnected()

6) To disconnect from the nervousnet Service call:

nervousnetServiceController.disconnect();

7) Once your app is connected to the Nervousnet Service you can use the methods to request for sensor data:
- *SensorReading getLatestReading(long sensorType);*
- *void getReading(long sensorType, RemoteCallback cb);*
- *void getReadings(long sensorType, long startTime, long endTime, RemoteCallback cb);*

NOTE: Please look into the Sample Axons Project for Lightmeter to understand a sample implementation

• Google Play Store Links:

1) Nervousnet Mobile App

https://play.google.com/store/apps/details?id=ch.ethz.coss.nervousnet.hub

2) **Nervousnet – Sample Native Axon App List**

LightMeter: https://play.google.com/store/apps/details?id=ch.ethz.coss.nervousnet.extensions.lightmeter

NoiseMeter: https://play.google.com/store/apps/details?id=ch.ethz.coss.nervousnet.extensions.noisemeter

Accelometer: https://play.google.com/store/apps/details?id=ch.ethz.coss.nervousnet.extensions.