SAndroidE: Sensors for Android Embedded
(handling external sensors and actuators with BLE as they were embedded within the ANDROID device)

Structure

SAndroidE framework is composed by:

• **a library** to be used in Android programming to access external devices and treat them as they were embedded (notification, timestamped, and so on, same mechanisms)

• **an APP** for identification, configuration and naming of external devices (e.g. sensors and actuators), each supported by means of an XML file related to the firmware

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- External devices must have a **communication link supported by ANDROID** (now Bluetooth Low Energy -BLE- supported only)

- External devices must be **programmed with a known or described firmware** (FW) in order to be supported by the framework. The framework supports a list of devices and, in the case of programmable devices, the **APP allows the node programming** (USB OTG required) with a known FW furnished by the framework. Guidelines to develop FW naturally supported by SAndroidE will be soon available.

- External devices are treated as a container of items, each one representing a sensor or an actuator. We **support: Android Sensors** (e.g. accelerometers, temperature sensors,…), **Buttons, Vibrators, Generic Sensors and Generic Actuators** (value, buffer, structure, not still supported).

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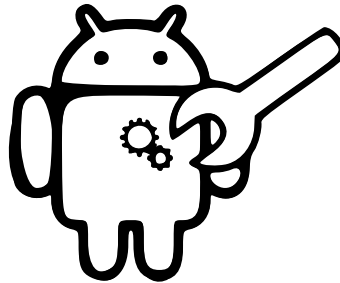## (handling external sensors and actuators with BLE as they were embedded within the ANDROID device)
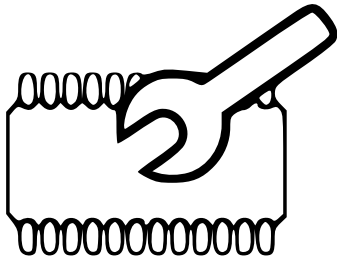
HW&FW Developers	SW Developers	Users
Let the Developers easily share their work with SW Developers by only describing through a defined Descriptor their creations	Let the Developers easily handle in their projects external resources without worrying about the communication level or the HW composition	Let the users download Applications based on SandroidE framework and acquire HWs and FWs already developed for easily setting up a sensors/actuators system without a PC

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What is now (free download):

• **a prototype of the library** to be used in Android programming supporting two dev kits (STEVAL-IDB002V1 BLUENRG-DK from STM and CC2541 Mini Development kit from TI)

• **a prototype of the APP** for identification and naming of external devices (accelerometers, buttons and alarm for the Keyfob; accelerometers, thermometer for the BlueNRG). The same APP allows dev.kit programming ("BLEEMBEDDED flasher") by mobile (USB OTG required) with a known firmware -developed by the producers of the dev.kits.

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What will be available within May 2016 (free download):

• **a library for Beacon devices** (normal Beacon with ID only and Beacon with sensing information) with XML files for Gimball and Estimote

• **an APP** for identification, naming and configuration of Beacon devices, each supported by means of an XML file related to the firmware

What will be available within August 2016:

• support of **Arduino** and **Raspberry** based devices
• guidelines for firmware and XML file development
• Full specification, open source full code available

Join us and help SAndroidE growing!!

SAndroidE: Home Automation

(handling external sensors and actuators with BLE as they were embedded within the ANDROID device)