

# BlueNRG-1 BLE SOC

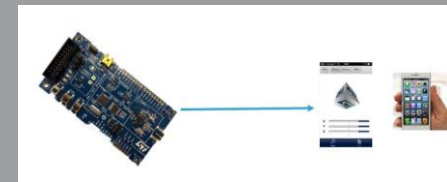
BlueNRG-1 and associated development (& promotion) package presentation



BLE concept demystification

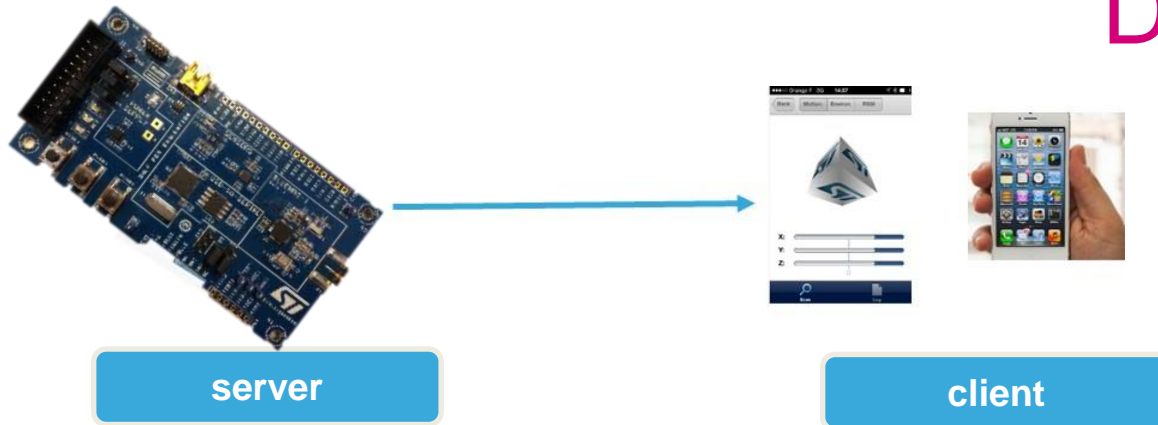


Enable BLE link over BlueNRG-1



# BLE Concepts

## Definitions



- **2 entities in a BLE communication**

1. **The server** : exposing data (temperature, position, raw data, **what you want !**)
2. **The client** : connecting to server and looking for data

- **A BLE application is based on an application profile**

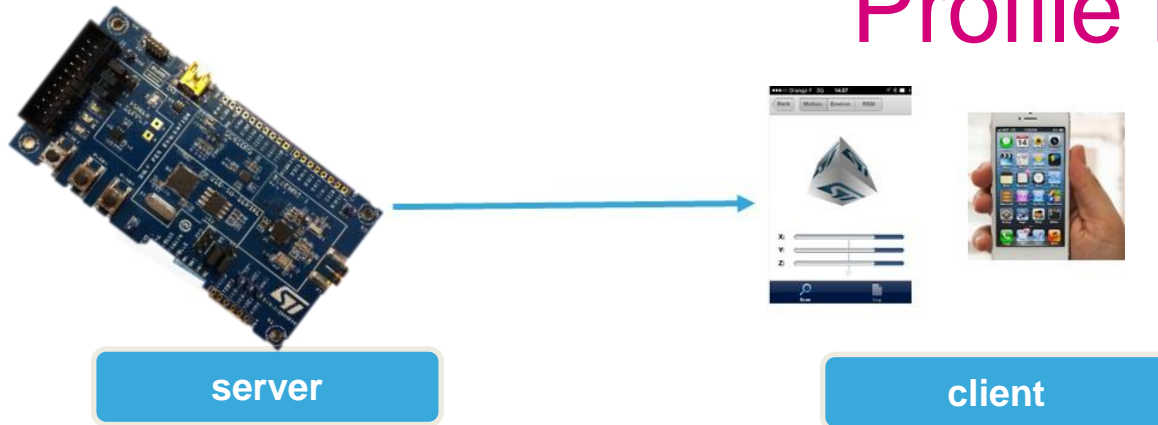
- standard : glucose meter, Heart Rate Monitor, Find me
- Proprietary : sensor profile, chat profile , **my custom profile !**

- **A profile is a basic collection of data exposed by the device**

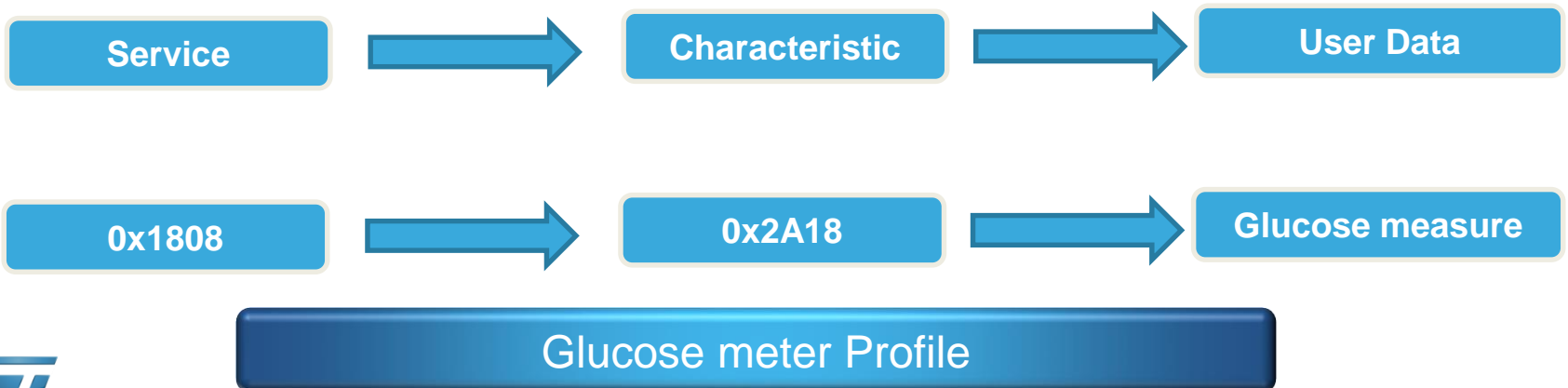
- service : **a basic UUID** (0x1808 = Glucose meter Service )
- characteristic : **basic UUID** and associated **data exposed** (MEMS,ect...)

# BLE Concepts

## Profile Definition



- **A profile is a basic collection of data exposed by the device**
  - service : **a basic UUID** (0x1808 = Glucose meter Service )
  - characteristic : **basic UUID** and associated data you are willing to expose (MEMS)

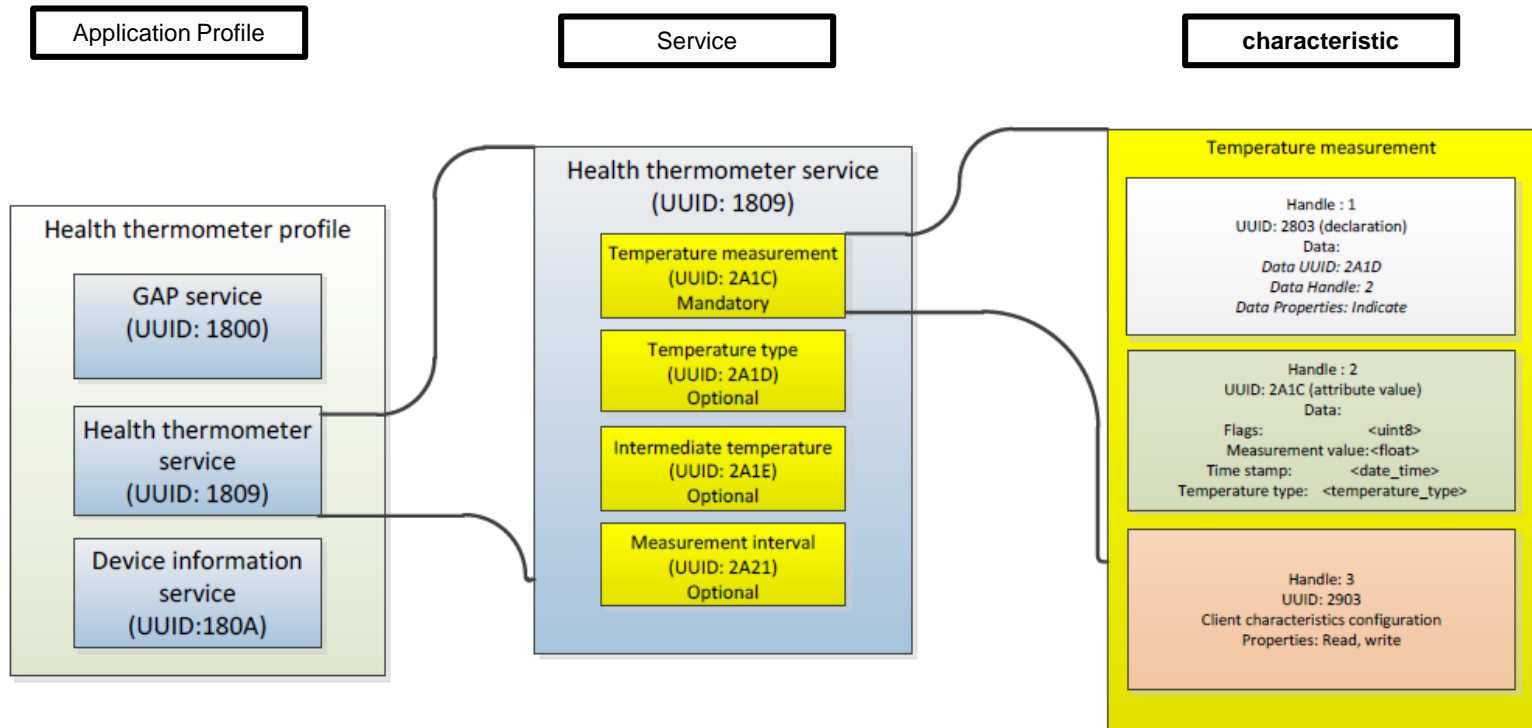


# BLE Concepts

## Profile Definition



server



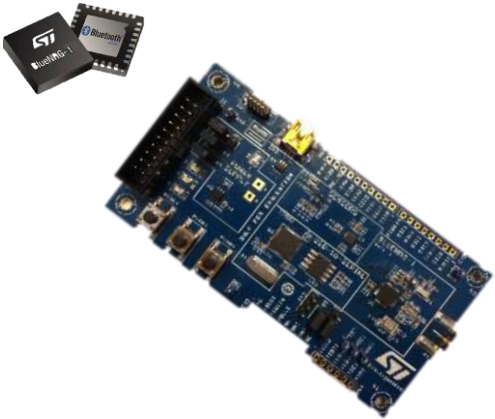
- Standard services & characteristics specification & UUID assignment available:
  - <https://developer.bluetooth.org/gatt/services/Pages/ServicesHome.aspx>
  - <https://developer.bluetooth.org/gatt/characteristics/Pages/CharacteristicsHome.aspx>



# BLE Concepts

## Attribut Table

**Sensor demo Application Profile**  
service = Sensor Service  
characteristic = Sensor characterisic



server



client

BlueNRG-1  
Attribut Table

# BLE Concepts

## Attribut Table

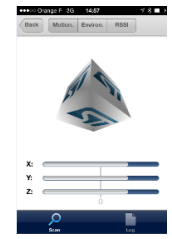


server

BlueNRG-1  
Attribut table

1 The sensor proprietary profile at initialisation will add in BlueNRG-1RAM an entry (attribut table) to expose application data (MEMS)

@1	@2	@3
Sensor Service UUID	Sensor Char UUID	MEMS Data



client

3 Application MEMS update will update the attribut table with the new characteristic value

		MEMS Data

2 As soon as connected client will be able to access (write/read) to attribute table thanks to BLE specification