iWRAP 6.1 *Bluetooth*® Software

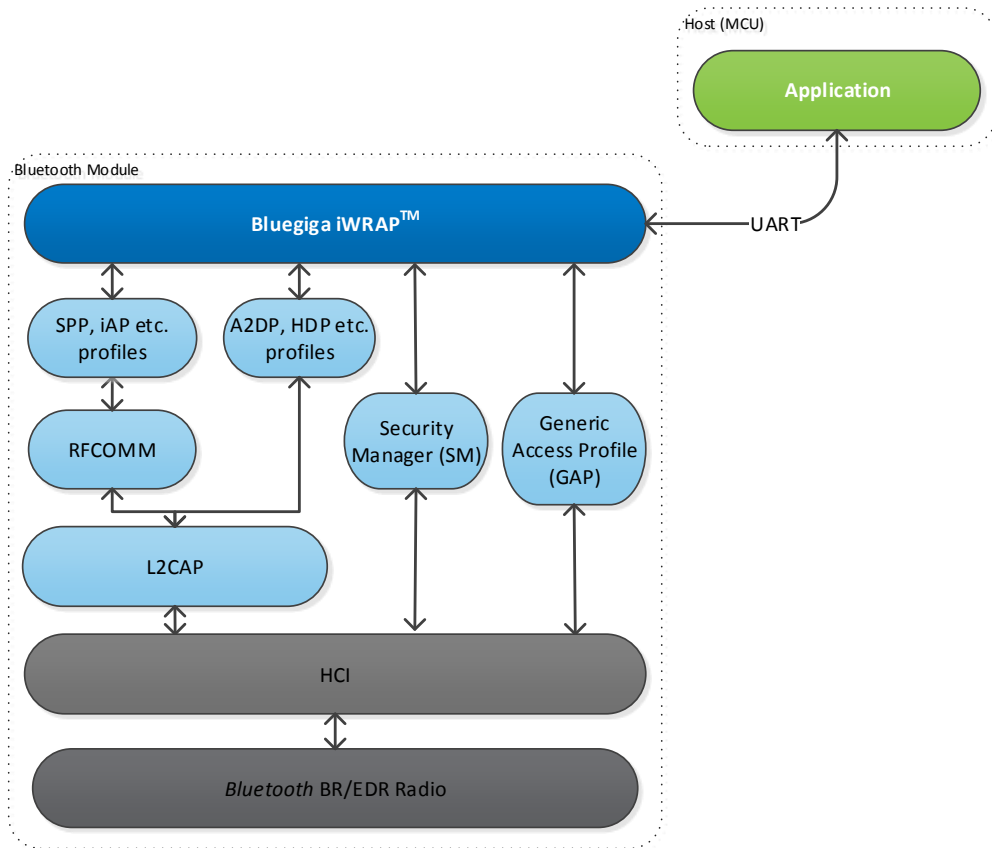May 2015

SILICON LABS

Topics

- iWRAP Bluetooth Stack

- New features in iWRAP 6.1

- BGScript for iWRAP

- iWRAP Feature Matrix

iWRAP Bluetooth Stack

Host (MCU)

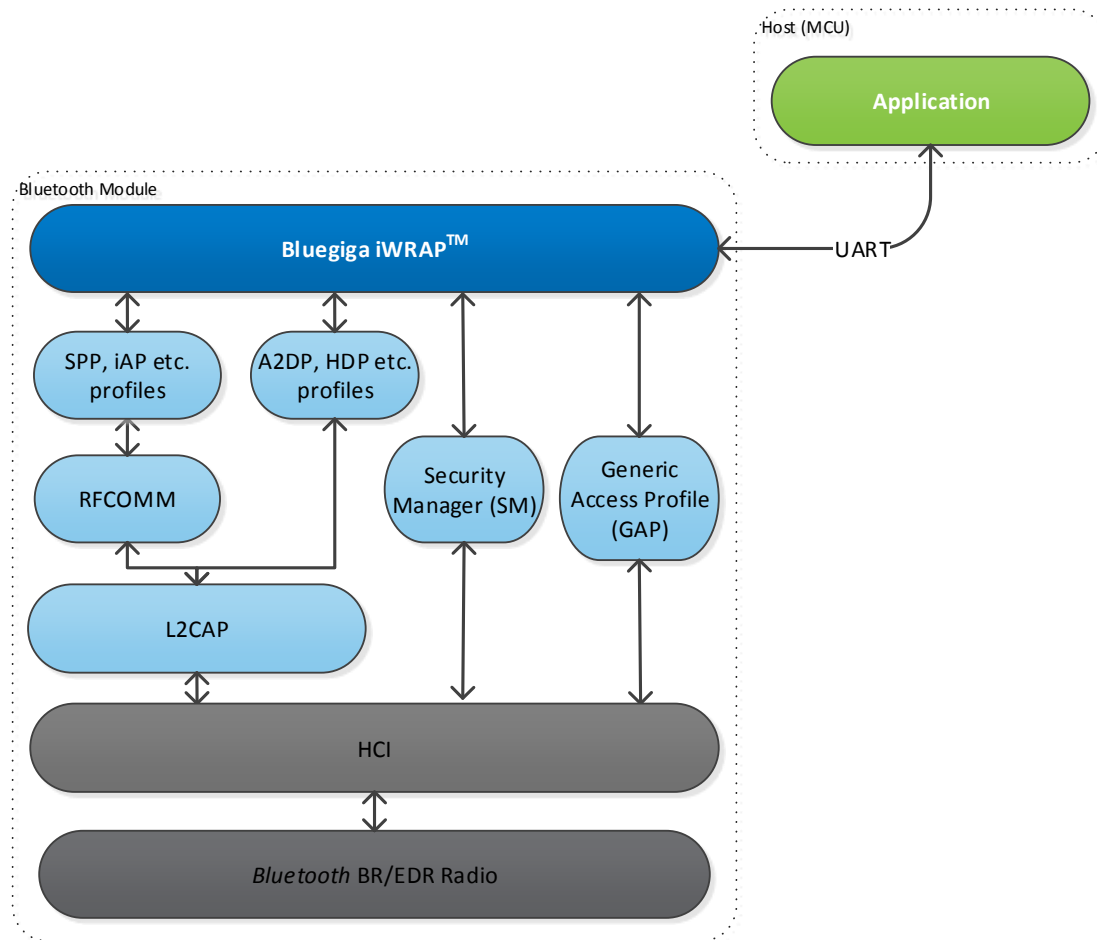**Application**

UART

Bluetooth Module

Bluegiga iWRAP™

SPP, iAP etc. profiles

A2DP, HDP etc. profiles

RFCOMM

Security Manager (SM)

Generic Access Profile (GAP)

L2CAP

HCI

Bluetooth BR/EDR Radio

APPLICATIONS

- Cable replacement
- Smart phone accessories
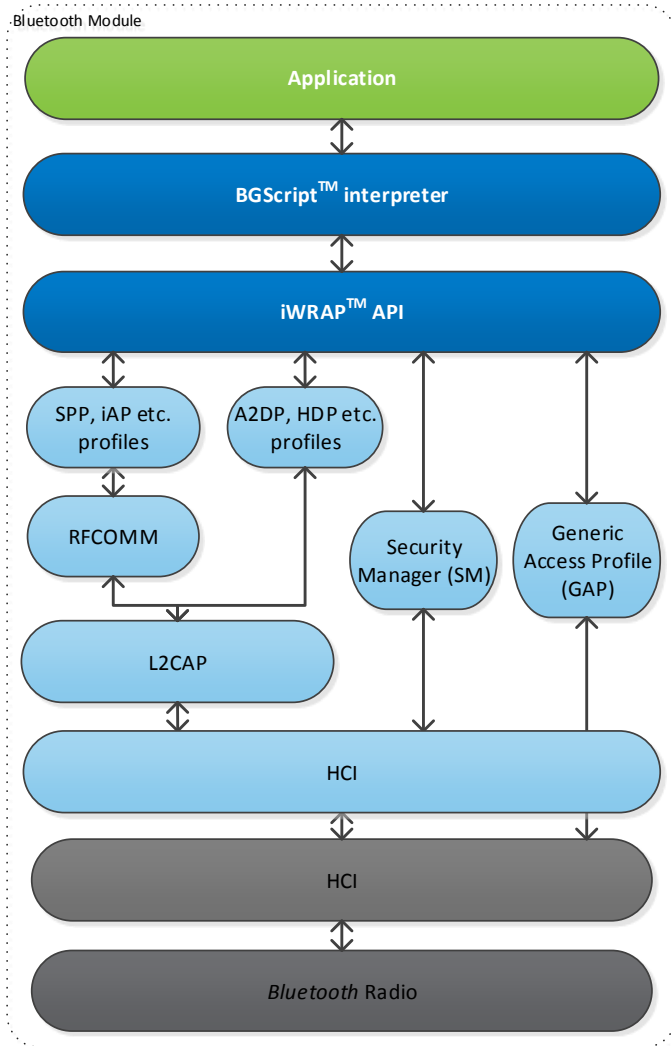- Stereo and hands-free audio
- HID

FEATURES

- A fully featured Bluetooth 3.0 Stack
- Implements 13 different Bluetooth profiles for data and audio
  - SPP, iAP, OPP, FTP, HID, DUN and HDP
  - A2DP, AVRCP v.1.5, HFP v.1.6, HSP, PBAP and MAP
- Up to 7 simultanous connections and data throughput up to 550kbps
- Apple MFI complaint with iAP1 and iAP2 protocols
- Integrated SBC, mSBC, aptX®, aptX® low latency and AAC audio codecs
- Easy-to-Use ASCII based API over UART
- Field upgradable over UART

● Bluetooth 3.0 ● Integrated profiles ● Easy to use API

New Features in iWRAP6.1

- **Audio tone support**
  - Audio tones (files) can be stored in the Bluetooth module's flash memory
  - Playback support for stored files

- **Audio tone mixing**
  - Audio tones can be mixed with A2DP or HFP audio output

- **Enhanced reconnection logic**
  - End user configurable Bluetooth reconnection logic

- **Simultanous AVRCP controller and target profiles**
  - Improved user experience with latest smart phones

- **I^2C API**
  - Software APIs added for the I^2C interface

- **BGScript™ support**
  - Script applications embedded into the Bluetooth module

BGScript™ for iWRAP

Bluetooth Module

- Application
- BGScript™ interpreter
- iWRAP™ API
- SPP, iAP etc. profiles
- A2DP, HDP etc. profiles
- RFCOMM
- Security Manager (SM)
- Generic Access Profile (GAP)
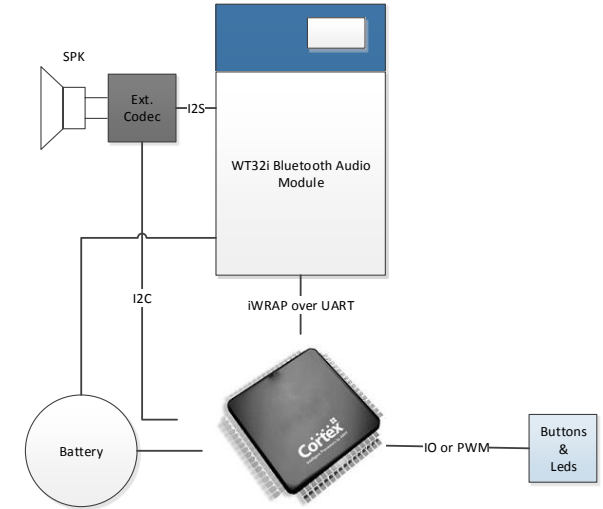- L2CAP
- HCI
- HCI
- *Bluetooth* Radio

- BGScript is an easy-to-use scripting language

- Enables application programming into the Bluetooth module

- Eliminates the need for an external host (MCU)

- Provides APIs to manage both the Bluetooth stack and I/Os

- Currently supports only the WT32i Bluetooth Audio module www.bluegiga.com/wt32i

- BGScript SDK is free-of-charge www.bluegiga.com/iwrap

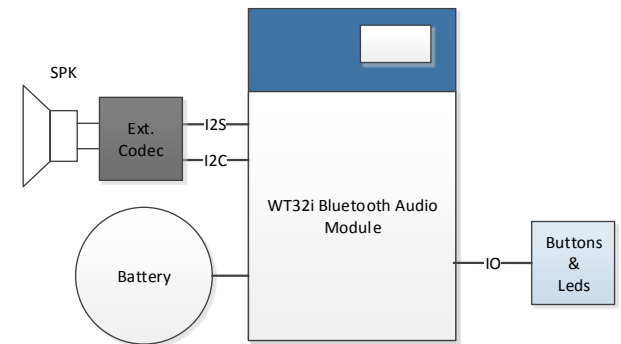# iWRAP + BGScript = Easy Development and Lower BoM
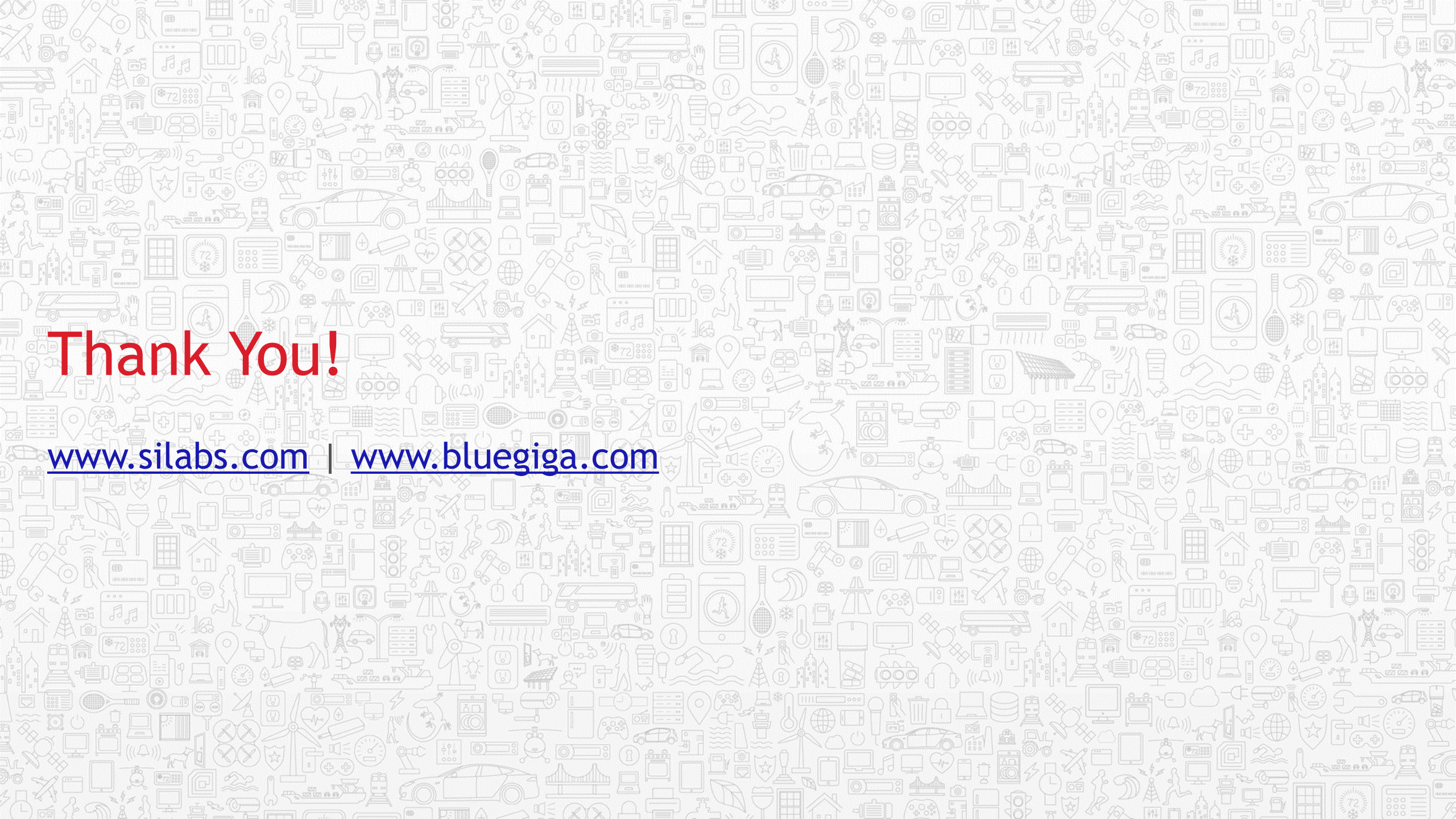
The conventional approach

- External MCU need for application
- Adds cost and PCB size requirements
- Separate SDK needed for the MCU

The Silicon Labs approach

- No host MCU needed
- Peripherals connected directly to the Bluetooth module
- BGScript application embedded in the Bluetooth module

Thank You!

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