Independent and non-profit Research and Development Institute, founded by Nokia and focused on the generation of new concepts, products and solutions for areas related to mobile technologies and the internet.

**INdT Areas:**

- Product Creation
- OSS & UI
- Apps & Services
- Manufacturing & HW Technology
Agenda

• Intro to BLE technology
• LE profiles supported by BlueZ
• Broadcaster & Observer
• Current support status
• Work in progress
• Demos
Bluetooth Low Energy

- Specified in Bluetooth 4.0
- Low power consumption
- Coin-cell battery devices
- Fast connection establishment
- Short range
Market

- Consumer electronics and PC
- Fitness and Wellness
- Medical
- Mobile phones
- Sensors and Automation
BLE System

- Generic Attribute Profile
- Attribute Protocol
- L2CAP
- Host Controller Interface
- Link Layer
- Physical Layer
Generic Attribute Profile

- Database of attributes
- Characteristics: groups of attributes
  - Declaration
  - Value
  - Configuration
- Services: sets of characteristics
- GATT API
Proximity Profile

- Reporter / Monitor
- When reporter distances from monitor an alert is emitted
- D-Bus API to set the alert level
- Link loss is supported ATM, path loss still to be implemented
Find Me Profile

- Locator / Target
- Emit an alert on the remote device upon a command (user interaction)
- D-Bus API to set the alert level
- Notification for apps (Target)
Time Profile

- Synchronizes the current local time
- Timezone and DST information
- No API needed
Health Thermometer Profile

• Thermometer / Collector
• Temperature measurements at periodic intervals
• D-Bus API to configure the interval and to register an agent to receive the measurements
HID over GATT Profile

- LE Human Interface Devices
- HID encapsulated into ATT
- No API is needed
Broadcasting and Observer

- Undirected connectionless data transfer
- Broadcaster
- Observer
- Use-cases
  - Sensors
  - Info advertisement
BLE support status

• Device discovery
  – LE-only
  – Interleaved
• Connection management
• Security Manager Protocol
  – Just works
  – Passkey entry
• BLE support enabled by default in kernel 3.5, improved in 3.6
BLE support status

- Generic Attribute API
- Profiles support
  - Proximity
  - Find Me
  - Time
  - Health Thermometer
  - HID over GATT
  - Scan Parameters
  - Heart Rate
  - Cycling Speed and Cadence
Work in progress

- GATT API improvements
- Broadcaster and Observer APIs
- Profiles
  - Alert Notification
  - Phone alert status
INFO + CONTACT

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