CoAP over GATT

draft-amsuess-core-coap-over-gatt

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What?

Exchange CoAP over GATT

GATT: Generic Attribute Profile of Bluetooth Low Energy
Why?

All the same reasons as for CoAP-over-WS

- Extend CoAP, especially OSCORE, to applications with limited APIs
  - “Smart” phone apps, browsers\(^1\)
- Too lazy to implement IPSP
- But with IPSP I’ll have to have a full IP stack
- Explain non-CoAP GATT values to CoAP devices through SCHC?  

\(^1\)Not generally approved; future versions on future protocols (WebRTC data channel?)
How?

Request: Write Method || Options || [0xff || Payload]

Response: Read Code || Options || [0xff || Payload]

No message type / MID: Reliability handled by BLE

No Token: Multiplexing handled by descriptors\textsuperscript{2}

\sim 512\ Byte\ MTU\textsuperscript{3}: Block-wise up to szx=5

\textsuperscript{2}May or may not be practical.

\textsuperscript{3}May be lower per device, to be investigated.
URI questions

coap+bluetooth://00-11-22-33-44-55-66-77-88-99/.well-known/core
coap+bluetooth://0x2000a140/.well-known/core
coap+bluetooth://[]%0x2000a140/.well-known/core

coap://device.example.com/.well-known/core

where
device.example.com. IN BLUETOOTH 00-11-..-99

coap://00-11-..-99.blue.arpa/.well-known/core

... but basically this means continuing on protocol-negotiation
Implementations

http://localhost:8003 wants to pair

CoAP over GATT - Paired
Implementations

CoAP-over-GATT demo

localhost:8003/demo.html

Send CoAP request

Picking a CoAP server...
Connecting to GATT Server...
Getting Service...
Getting Characteristic...
Sending request for .well-known/core...
Reading response...
Got response: </board>
Sending second request
   01 b5 62 6f 61 72 64
Waiting for response...
Response is 45 ff 6e 72 66 35 32 38 34 30 64 6f 6e 67 6c 65
Textual content: nrf52840dongle
Roadmap

- Gather implementation experience
- Keep draft in sync
- WG feedback
- Experimental “This is how a few people do it” document
- If aiming for standards track, not before GATT is accessible from Mozilla browsers

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4https://github.com/mozilla/standards-positions/issues/95