

# 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<sup>1</sup>
- ▶ ~~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?

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<sup>1</sup>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<sup>2</sup>

~ 512 Byte MTU<sup>3</sup>: Block-wise up to szx=5

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<sup>2</sup>May or may not be practical.

<sup>3</sup>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
```

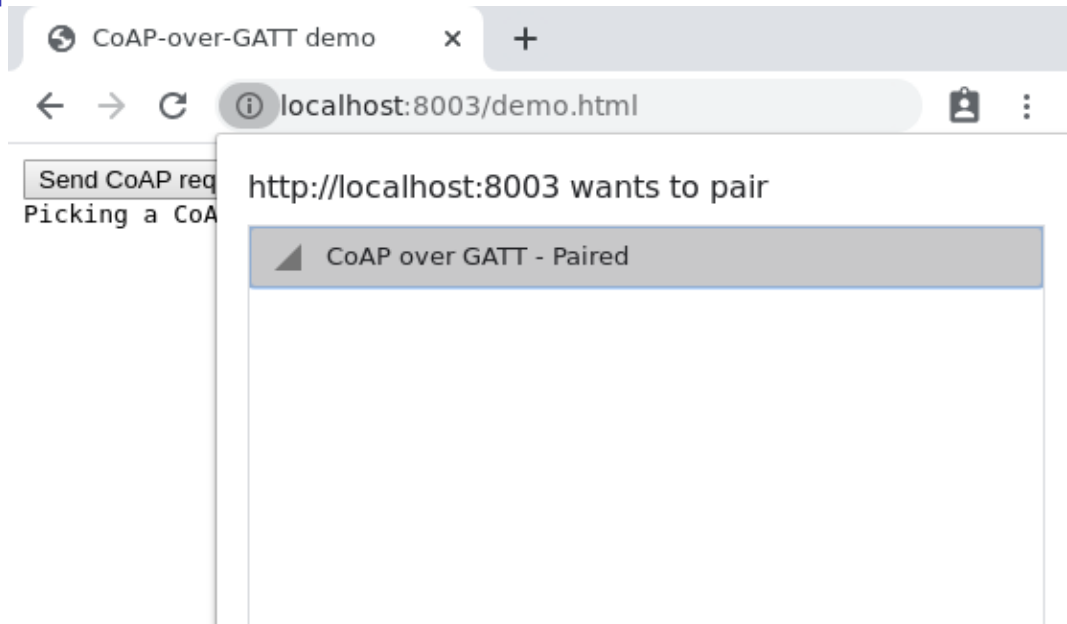
where

```
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



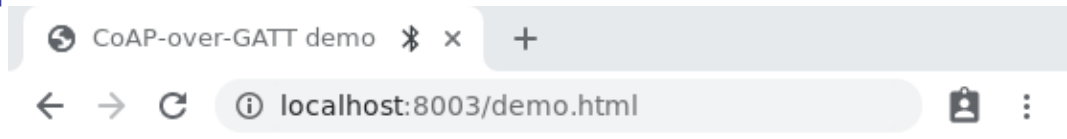
The image shows a browser window with the following elements:

- Tab:** CoAP-over-GATT demo
- Address Bar:** localhost:8003/demo.html
- Page Content:**
  - Text: http://localhost:8003 wants to pair
  - Notification: CoAP over GATT - Paired

On the left side of the browser window, there is a vertical sidebar with the following text:

- Send CoAP req
- Picking a CoA

## Implementations



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<sup>4</sup>

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