CoAP Transport Indication

ietf-core-transport-indication-06

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Goals

1. Enablement of transport discovery
2. No Aliasing
3. Optimization (no cost per request)
4. Proxy usability
5. Proxy announcement

- Give way forward after `coap://` and `coap+tcp` diverged

Recent changes worth discussing

- Scope of has-proxy relation
- A lot about SVCB

Open question: Scope of `has-proxy`

"only through link relations"

- URIs regarded as opaque
- Relations are explicit
- Allows to exclude indvidiual resources from transport indication
- Uses RFC 6690 `rel=hosts` which is not very clear
- Hard to keep track of what works where

vs.

"Applies per Origin"

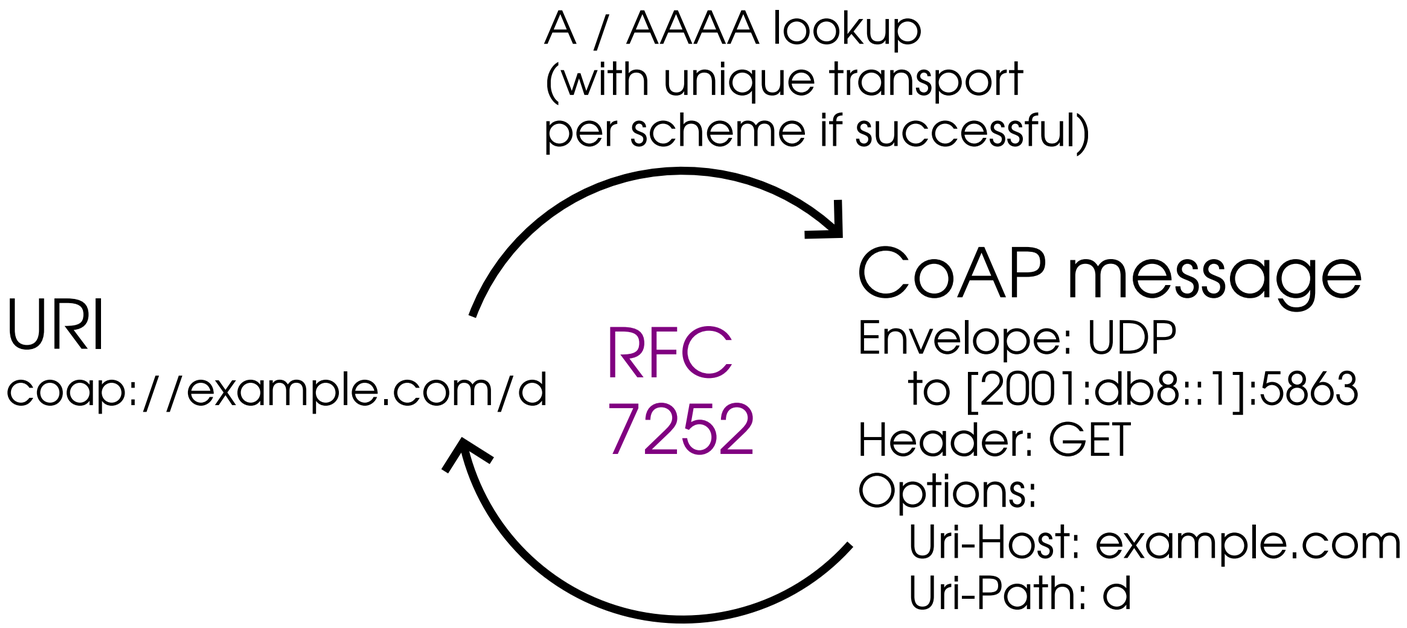
- HTTP's mechanism
- Simple
- Way shorter wording in terminology section

Recent changes worth discussing

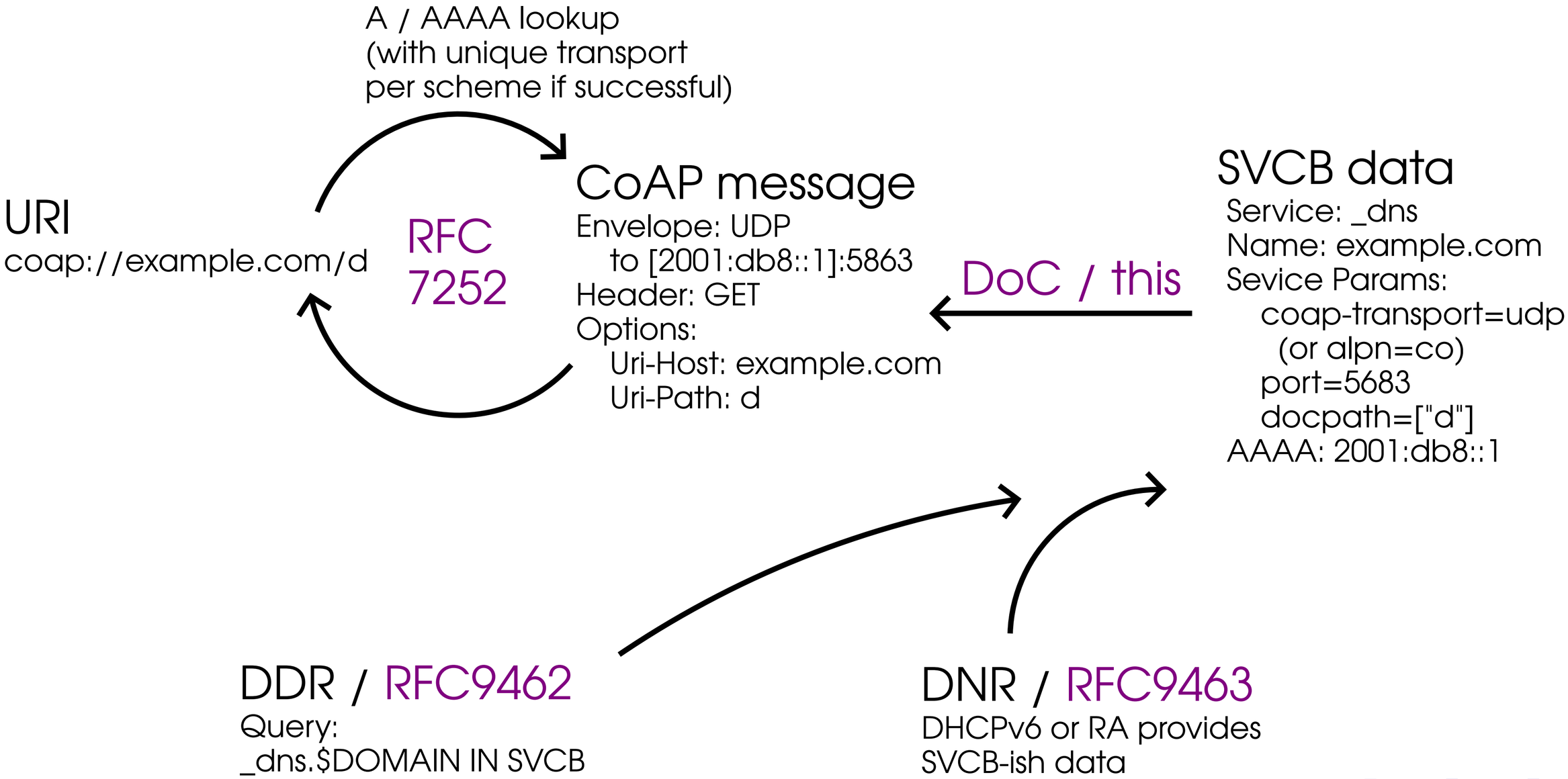
- Scope of has-proxy relation
- A lot about SVCB

...without moving away from “transports are proxies” as a guiding principle

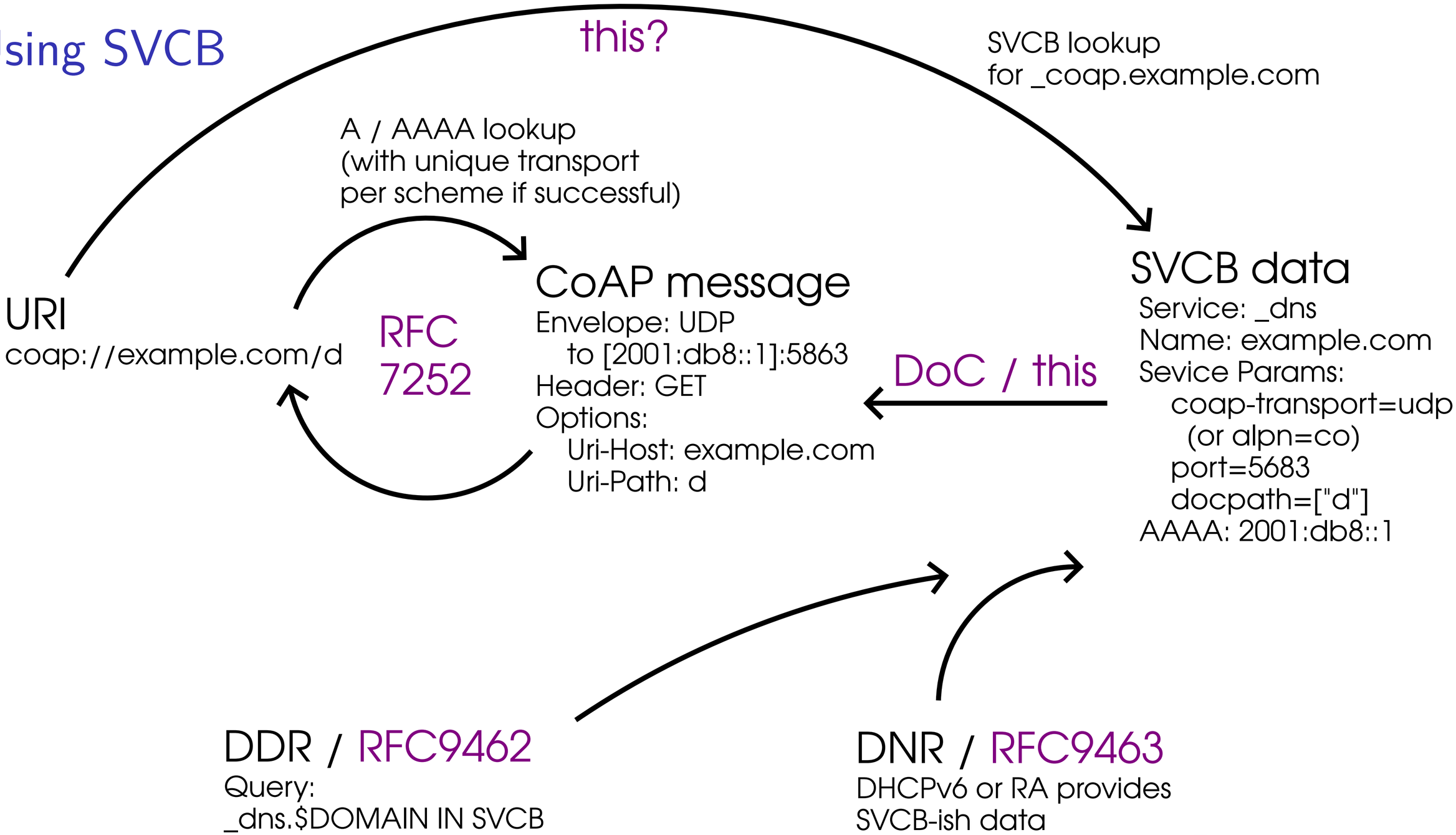
Rough URI equivalents



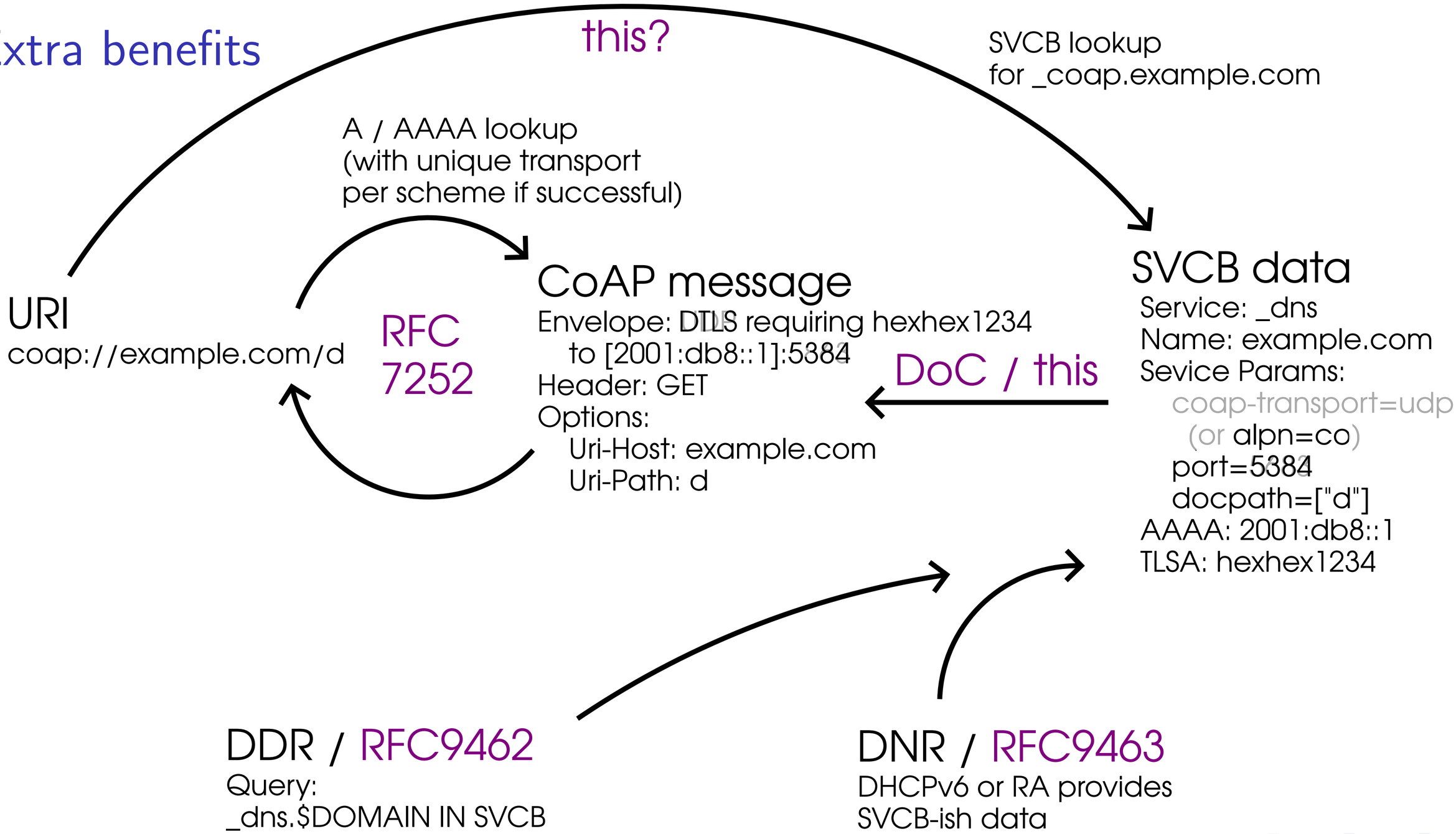
DNS discovery requirements



Using SVCB


this?
SVCB lookup
for _coap.example.com
A / AAAA lookup
(with unique transport
per scheme if successful)
URI
coap://example.com/d
RFC
7252
CoAP message
Envelope: UDP
to [2001:db8::1]:5863
Header: GET
Options:
Uri-Host: example.com
Uri-Path: d
DoC / this
SVCB data
Service: _dns
Name: example.com
Sevice Params:
coap-transport=udp
(or alpn=co)
port=5683
docpath=["d"]
AAAA: 2001:db8::1
DDR / RFC9462
Query:
_dns.$DOMAIN IN SVCB
DNR / RFC9463
DHCPv6 or RA provides
SVCB-ish data

Extra benefits



SVCB records for name resolutions

- Not retroactively activated.
- Applications can opt in.

Questions:

- Is the above too cautious?
- `_coap SVCB` or `COAP` RR?
- Extra `_coaps SVCB`?

Next steps

- Who would review this?
- Follow SVCB-parameters literals[1]?
- Who would implement enough of this to interop test?[2]

[1] Necessary if we want the next IP based CoAP transport to work without a new scheme, or are we happy if that can't use literals

[2] Document is probably useful as theoretical background for new transports on its own, but I doubt that's all we want.