Packed CBOR: Table set up by reference

`amsuess-cbor-packed-by-reference-02`

Christian Amsüss

2024-03-22
CBOR at IETF 119 in Brisbane

Background

- Table setup provided by `ietf-cbor-packed`:
  - ▶ Inline
  - ▶ From context (e. g. media type)
  - ▶ (intentionally not exhaustive)

- Planned use with `ietf-core-coral`: Single format combines
  - ▶ `.well-known/core` style discovery
  - ▶ pubsub topics
  - ▶ group communication
  - ▶ . . .

What we have: Extensibility in the media type

All identifiers are examples; CoRAL serialization is arbitrary in this slide

ct	⋯	core.s	⋯	6(90)	undef.	⋯

```
cri'/sensor/1' 6(-2)        / title= /     "Temperature sensor"
              simple(0) / ct= /            [112, 0]
              6(23)        / if="core.s" /
```

Original table setup of application/example+cbor defines shared
items up to 6(90)

What we have: Extensibility in the media type

Intoducing new rel="hardwaredescription"

ct	· · ·	core.s	· · ·	6(90)	· · ·	rel=hwdescr	undef.	· · ·

```
cri'/sensor/1' 6(-2)      / title= /     "Temperature sensor"
              simple(0)  / ct= /               [112, 0]
              6(23)      / if="core.s" /
              6(100)     / rel="hardwaredescription" /
                 cri'https://example.com/s/pt100'
```

More recent table setup `application/example+cbor` defines new terms beyond 6(90)

Limitations of extensibility

- Linear

- Central

New extensibility: URIs
Decentralization

last-c-p	responsible-c-c	ct	⋯	core.s	⋯	6(90)	undef.	⋯

```
TBD114([2, cri'https://ns.example.com/calib', [
cri'/sensor/1' 6(-3)        / title= /     "Temperature sensor"
                simple(2) / ct= /          [112, 0]
                6(24)     / if="core.s" /
                simple(0) / latest-calibration-protocol /
                    cri'/callog/1/1'
                simple(1)/ responsible-calibration-contact /
                    cri'mailto:kalibrierhoernchen@example.com'
]])
```

Caveats of `bormann-t2trg-deref-id` apply; use URNs if you prefer.

New extensibility: URIs in the dictionary
Non-linear exapnsion

| ⋯ | ⋯ | ct | ⋯ | core.s | ⋯ | 6(90) | https://⋯/calib | undef. | ⋯ |

```
TBD114([2, 6(-90) / cri'https://ns.example.com/calib' /, [
cri'/sensor/1' 6(-3)       / title= /     "Temperature sensor"
             simple(2) / ct= /           [112, 0]
             6(24)      / if="core.s" /
             simple(0) / latest-calibration-protocol /
               cri'/callog/1/1'
             simple(1)/ responsible-calibration-contact /
               cri'mailto:kalibrierhoernchen@example.com'
]])
```

Register once, extend at your own pace.

Next steps

- Implement

- Evaluate in CoRAL

- Is this interesting for the WG?