EST over coaps

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IETF 101 - ACE Working Group

EST over coaps

Enrollment over Secure Transport (EST) [RFC7030]
uses HTTP and TLS

This draft proposes CoAP and DTLS
to support constrained devices

Application areas:

- Secure bootstrapping devices
- Distribution of identity (certificates) and keying material

Major progress

- Removed all BRSKI extensions to EST
  - moved to draft-richardson-anima-ace-constrained-voucher-03
  - such as:
    - request-voucher
    - voucherstatus
    - CBOR serialization of voucher

- Michael produced diagram to show relations between bootstrapping drafts as function of deployment environment
  - https://trac.ietf.org/trac/int/wiki/EnrollmentRoadmap

Many thanks to Benjamin, Jim, and Hannes for ietf-0 comments

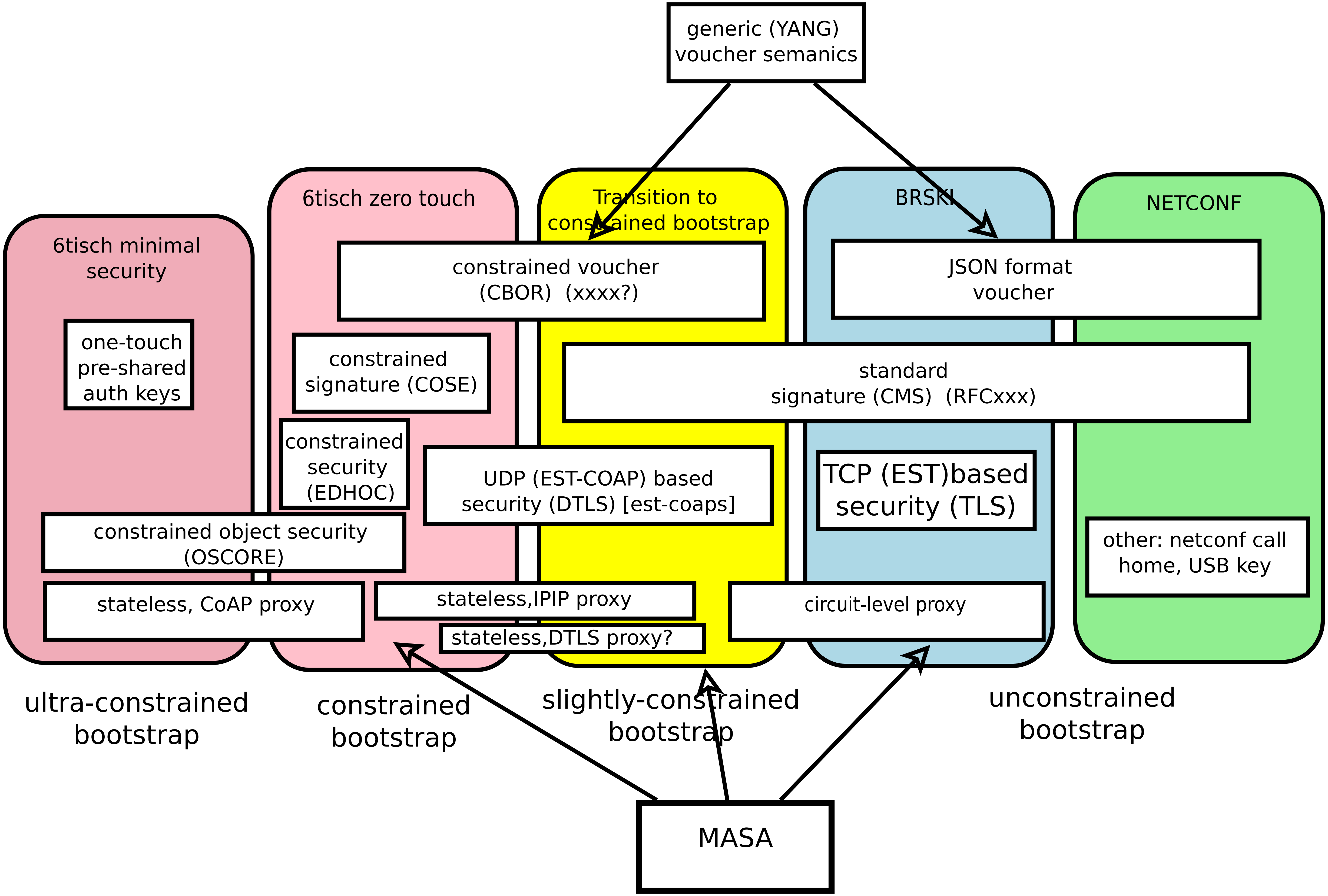
Current issues

- Proxying section to be clarified, role of RA
- DTLS 1.2 vs DTLS 1.3 forward compatibility
- Long wait (draft-hartke-core-pending-02)
- Server key generation only COSE ?
- Use MAY and MUST for
- long names .well-known/est/ArbitraryLabel/est-name
- short names: .well-known/est/est-short-name

TODO

- Operational parameter values
- Server side key generation using simple multipart encoding
- Explain trust relations for http/coap proxying

BRSKI modes



generic (YANG) voucher semanics

6tisch minimal security

6tisch zero touch

Transition to constrained bootstrap

BRSKI

NETCONF

constrained voucher (CBOR) (xxxx?)

JSON format voucher

one-touch pre-shared auth keys

constrained signature (COSE)

standard signature (CMS) (RFCxxx)

constrained security (EDHOC)

UDP (EST-COAP) based security (DTLS) [est-coaps]

TCP (EST)based security (TLS)

other: netconf call home, USB key

constrained object security (OSCORE)

stateless, CoAP proxy

stateless,IPIP proxy

stateless,DTLS proxy?

circuit-level proxy

ultra-constrained bootstrap

constrained bootstrap

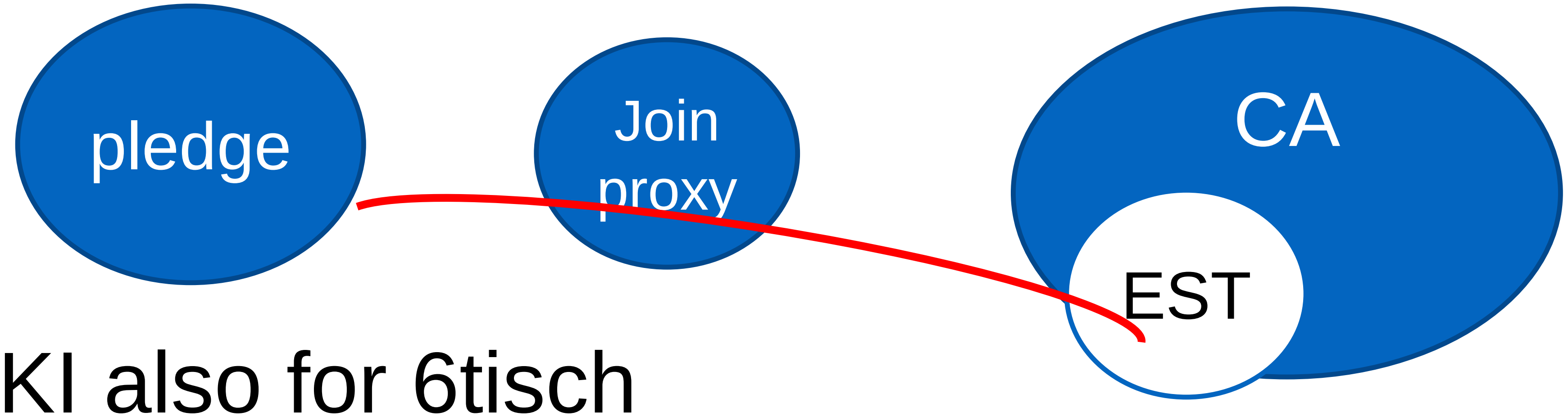
slightly-constrained bootstrap

unconstrained bootstrap

MASA

REMINDER

Application areas

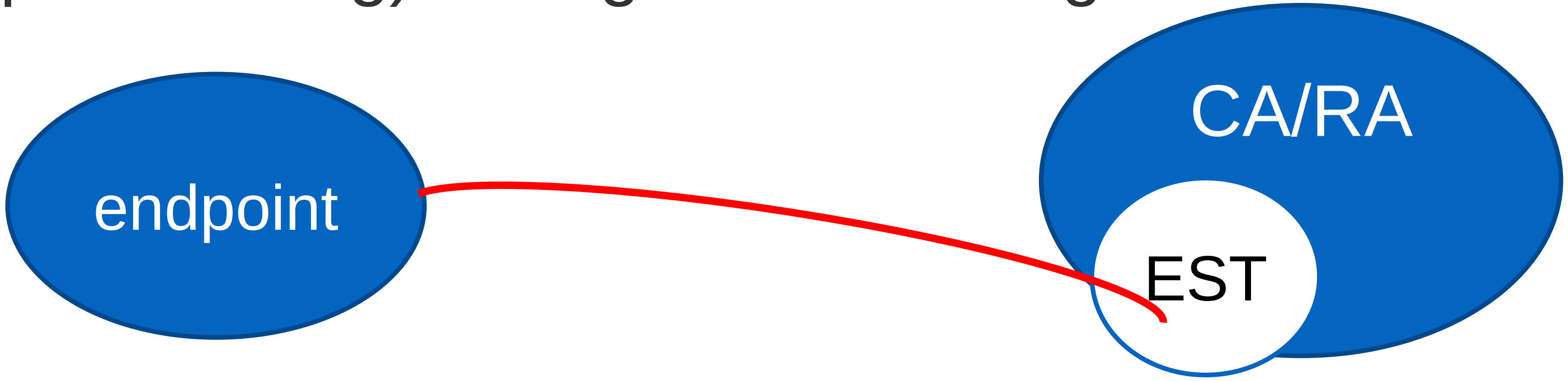


BRSKI also for 6tisch

Pledge and EST server exchange Certificates and Vouchers

BRSKI [anima]: Bootstrapping Remote Secure Key Infrastructures

Authenticated/authorized endpoint cert enrollment (and optionally key provisioning) through a CA or Registration Authority.


endpoint
CA/RA
EST