

# EAP-NOOB : Nimble Out-of-Band Authentication for EAP

EMU @ IETF 109  
20 November 2020

Tuomas Aura, Aalto University  
Mohit Sethi, Ericsson  
various other contributors

# EAP-NOOB overview

- EAP is a generic authentication framework with many methods, **but currently no OOB authentication method**
- EAP-NOOB is a solution for this

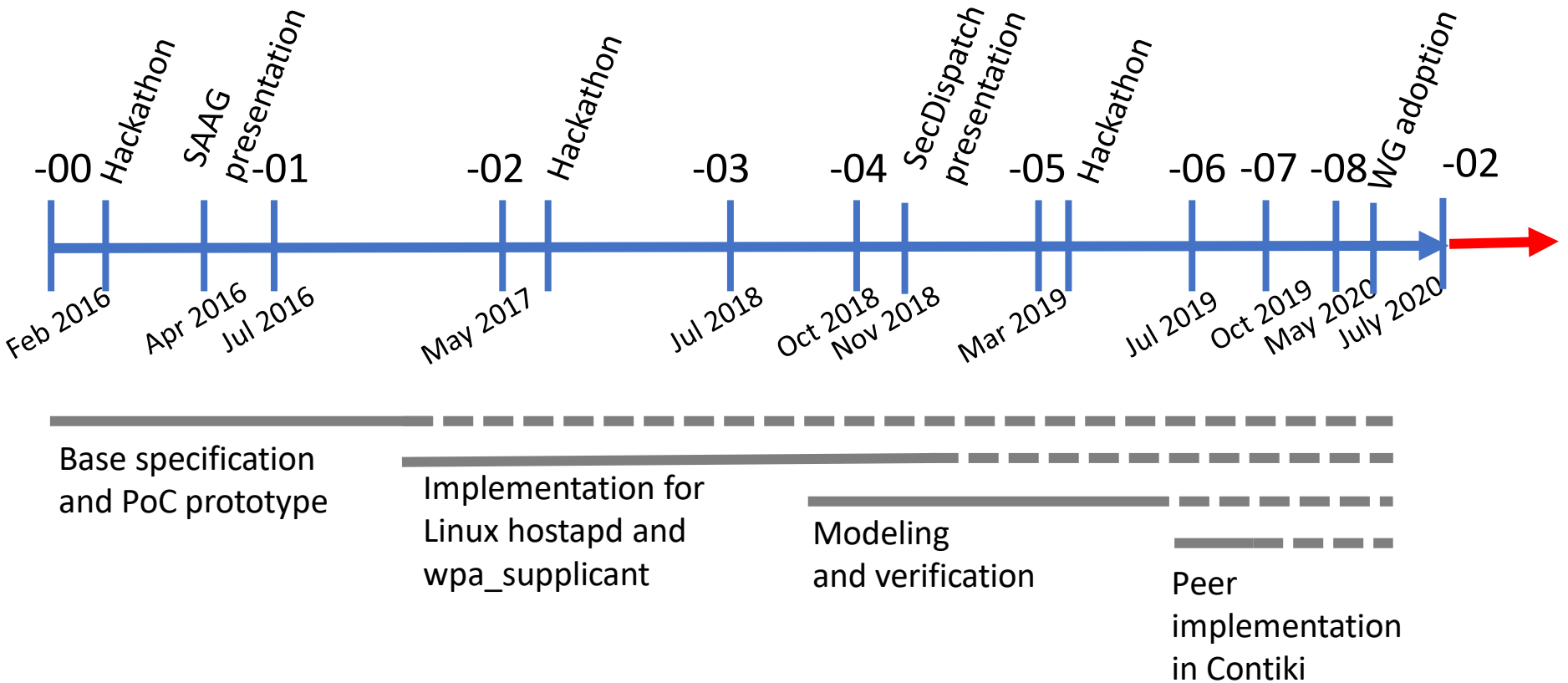
# EAP-NOOB overview

EAP method for bootstrapping smart devices out-of-the-box without professional administration

- **User-assisted out-of-band (OOB) authentication**
  - E.g. scanning a dynamic QR code, dynamic NDEF tag
- **Registration of authenticated devices to AAA**
  - Create persistent association between AAA and device and authorize network connectivity at the same time
- **Fast reauthentication** of previously registered devices without further user interaction

# EAP-NOOB timeline

[draft-ietf-emu-eap-noob](https://datatracker.ietf.org/draft-ietf-emu-eap-noob)



# EAP-NOOB status summary

- draft-ietf-emu-eap-noob-02 is ready
- Implementations:
  - wpa\_supplicant and hostapd  
<https://github.com/tuomaura/eap-noob>
  - Contiki  
<https://github.com/eduingles/coap-eap-noob>
  - wpa\_supplicant and hostapd  
<https://github.com/Vogeltak/hostap>
- Formal models in mCRL2 (protocol and DoS-resistance) and ProVerif (authentication)

# Updates since IETF 108

- New Deployments –
  - **Analog devices** worked on an internal PoC and opened two issues on github implementation:  
<https://github.com/Vogeltak/hostap/issues>
  - Pull requests fixing minor implementation issues with reconnect exchange:  
<https://github.com/Vogeltak/hostap/pulls>
- Several other private email conversations about deployments

# CBOR vs JSON

- CBOR is a major change at this late stage given deployments starting to creep up
- While direct JSON-to-CBOR mapping is possible, for real gains a complete re-specification is needed
- EAP-EDHOC (<https://tools.ietf.org/html/draft-ingles-eap-edhoc-01>) perhaps more suitable for extremely constrained devices and EDHOC is already built with CBOR
- CBOR can be defined in future versions of EAP-NOOB

# Next steps

- Early reviews from IoT and Security directorate completed
- IANA is **okay** with the current requests
- Ready for **WG last call?**