IETF Hackathon: Software Updates for IoT (SUIT)
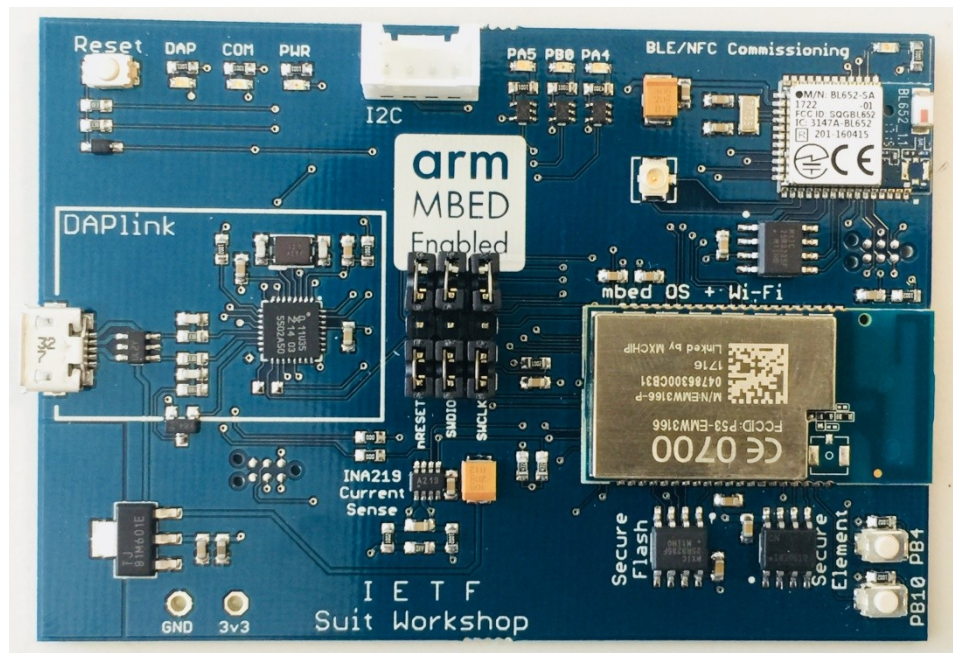
- IETF 102
- 14-15 July, 2018
- Montreal

Hackathon Plan
Software Updates for IoT

- Generate a manifest
- Encode it in CBOR
- Sign it with COSE
- Verify it on a SUIT prototyping board.

The Group

Team:

- Hannes Tschofenig
- Jaime Jiménez
- Felipe Espinoza
- Alexandra Ibarra
- Thomas Fossatti
- Bill Silverajan
- David Waltermire
- Laurence Lundblade

🔴 1st time IETF

🟢 1st time SUIT Hackathon

What got done

1. Set up development environment for use with new board on multiple OSs. Mbed OS was used as an IoT operating system.

2. Generate the manifest

3. Encode it

4. Sign it

5. Verify it on the device

Detailed write-up available at https://git.io/fNYC6

What was learned?

- **Development environments**:
  - Making setup for 1st time users easier would be good. A preconfigured environment would be good.
  - We need to use IDEs for debugging (e.g., Keil uVision 5) ⊡ example project or software packs
- **Hardware**:
  - New development board worked
  - Unfortunately, we bricked 3 boards (potential issue on Macs).
- **Coding**:
  - Getting to a small codesize for the bootloader will be difficult with CBOR and COSE.
  - Parsing of CBOR encoded manifest is not straightforward. (Most likely a TinyCBOR API issue.)
- **Spec**:
  - Manifest could use map instead of array for simpler parsing. (Depends on how we anticipate the parsing to happen.)

The SUIT
project
was well
received

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What is next?

- Focus on running code:
  - Update reference implementations based on the evolving manifest format.
  - Release further COSE libraries (with other licenses)
  - Make use of development board for advanced features (encryption, multiple images, etc.)
- More involvement from the working group. Less talk – more code.