SPARTA

RIOT-FP DEMO

Feb. 28th 2020, Brussels

Emmanuel Baccelli
Inria

SECURE IoT SOFTWARE UPDATES

xda-developers.com

- What Internet-age software has taught us:
  - you can’t secure what you can’t update!
  - software updates are an attack* vector!

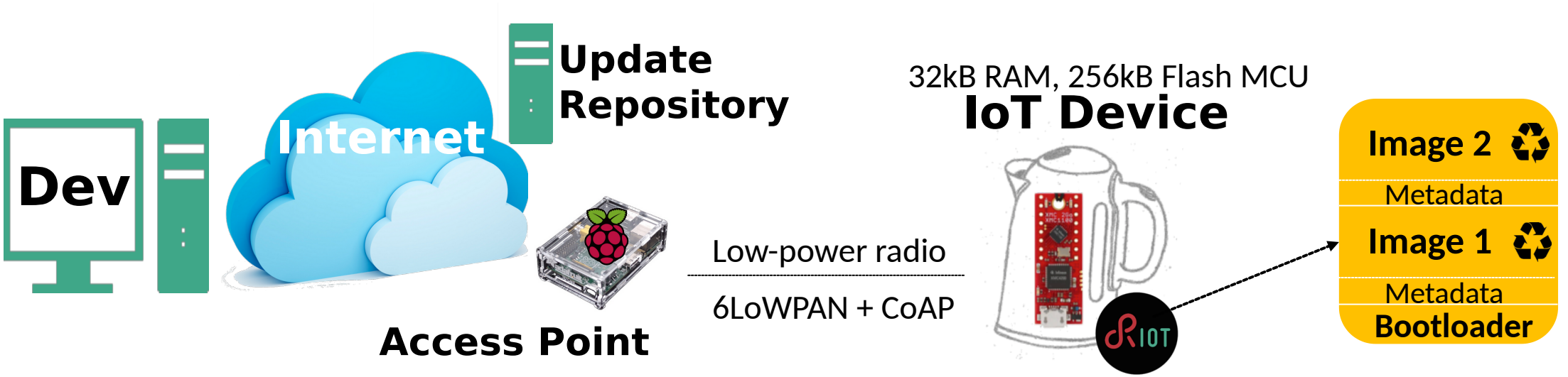
⇒ Enabling (legitimate) software updates is crucial & difficult

⇒ Even more challenging on microcontroller-based IoT devices

* www.wired.com/story/ccleaner-malware-supply-chain-software-security

RIOT-FP SECURE SOFTWARE UPDATE PROTOTYPE

- We contribute to SUIT secure software update standardization at IETF (work-in-progress)
  - Architecture, metadata & crypto to guarantee authenticity & integrity of software updates
  - (see our work published in IEEE ACCESS*)

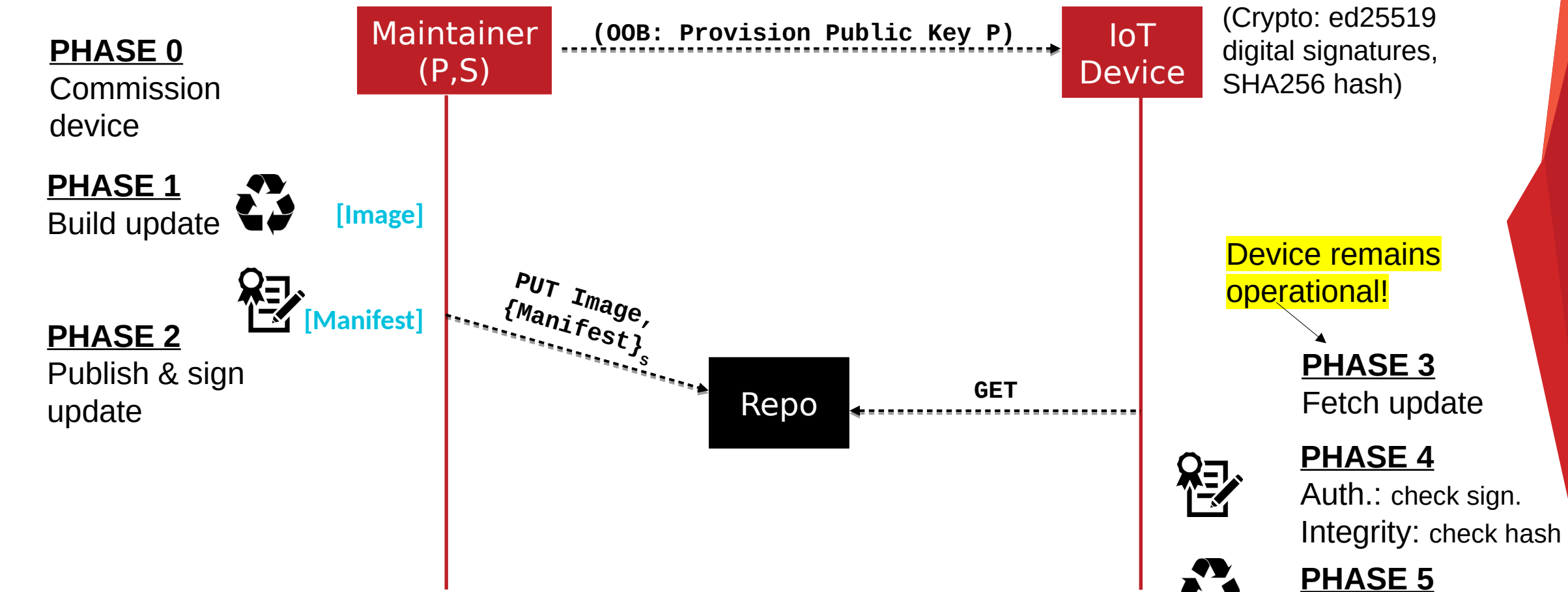


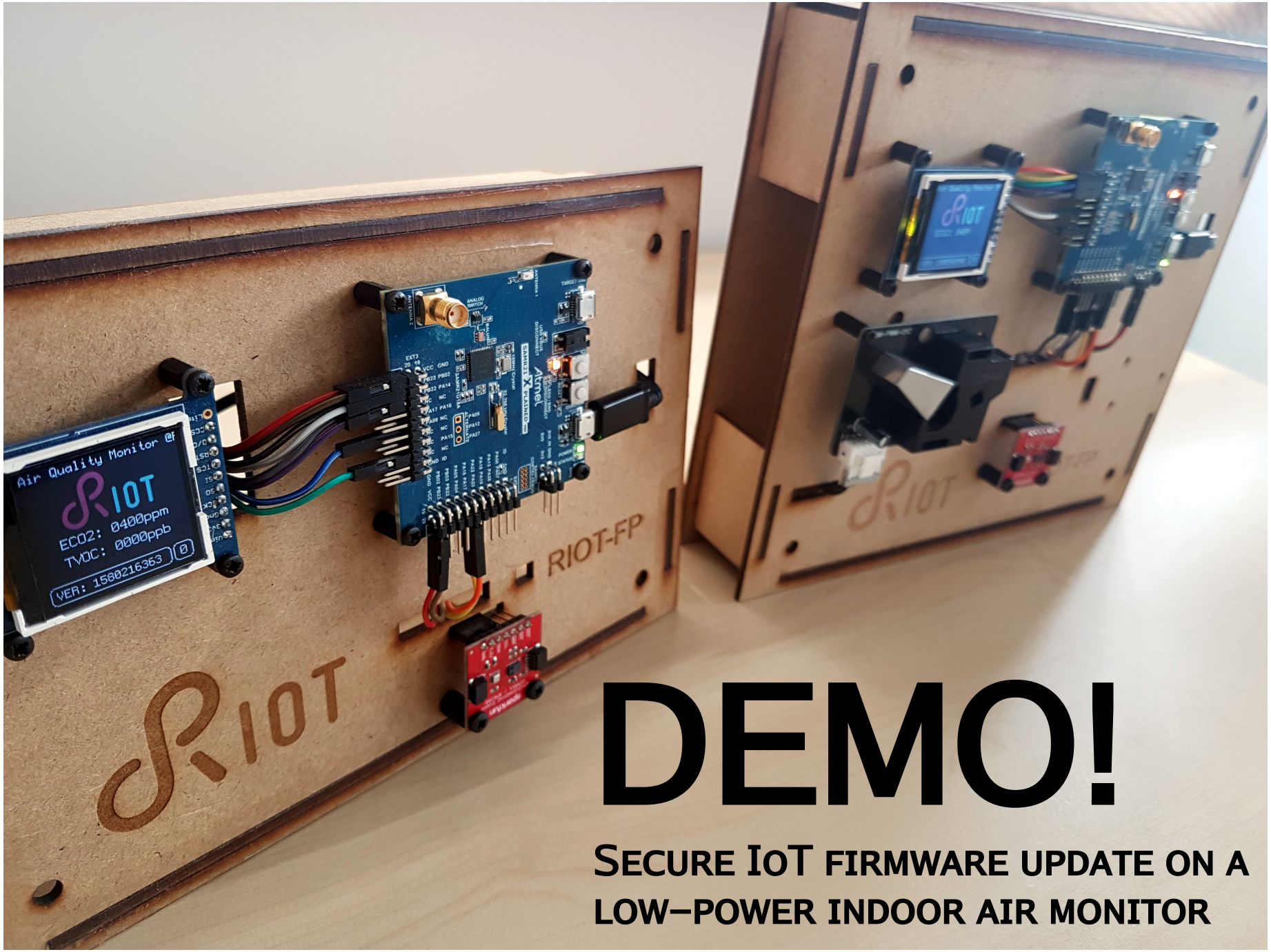
Software update security end-to-end

SUIT prototype on RIOT

* K. Zandberg et al. "*Secure Firmware Updates for Constrained IoT Devices using Open Standards: A Reality Check*," IEEE Access, 2019.

DEMO! SUIT WORKFLOW ON RIOT





DEMO!

SECURE IOT FIRMWARE UPDATE ON A LOW-POWER INDOOR AIR MONITOR

THANKS!

More on **RIOT** at github.com/RIOT-OS/RIOT
More on **RIOT-fp** at future-proof-iot.github.io/