

# Security consideration for the IoT

IETF96

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# Contents in old draft-garcia-core-security-06

- Thing lifecycle
- Architectural considerations
- State of the art
- Challenges
  - Constraints
  - Bootstrapping
  - Operation
- Security profiles

# Proposed way forward

- Thing lifecycle
- Architectural considerations <- Update
- State of the art <- Update
- Challenges
  - Constraints
  - Bootstrapping → refer to bootstrapping draft
  - Operation
  - New challenges (see next slides)
- (new) Solutions → bootstrapping solutions in bootstrapping draft
- Security profiles

# Specific research topics to be added (1)

- Topics from:  
<https://mailarchive.ietf.org/arch/msg/ace/Bgc3Mq3vxvOLi19fVR0ckbLOkuw>
  - Firmware updates
  - Transparency and attestation of communications
  - Avoid device fingerprinting
  - Authorization handover (vendor)
  - Penetration testing

# Specific research topics to be added (2)

- Further topics from <https://github.com/t2trg/2015-ietf94/blob/master/t2trg-b.mkd>
  - Handing over device ownership
  - *Lawful access*
  - Forensic readiness
  - Regulations and compliance
  - Cross-domain operation
  - ...
- Others
  - Long term security

# Proposed way forward

- Thing lifecycle
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    - Bootstrapping → refer to bootstrapping draft
    - Operation
    - New challenges (see next slides)
  - (new) Solutions → except bootstrapping solutions, those will be in bootstrapping draft
  - Security profiles
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- ```
graph LR; A[Architectural considerations] --- B[State of the art]; B --- C[ ]; C --> D[Sandeep]; C --> E[Oscar]; F[New challenges] --> G[Mohit]; H["(new) Solutions"] --> I[Oliver]
```
- Sandeep
  - Oscar
  - Mohit
  - Oliver

Q&A

# Security considerations for the IoT

- starting from draft-garcia-core-security-06
- main contributors identified: Sandeep Kumar, Mohit Sethi, Jayaraghavendran K, Oliver Pfaff
- problems and guidelines (no completeness)
- cover lifecycle, ownership, stakeholders
- address recent IESG comments
- useful as a reference for security considerations sections in IETF standards



## A Survey of Security Bootstrapping Approaches

- starting from draft-he-6lo-analysis-iot-sbootstrapping-00
- main contributors identified: Mohit Sethi, Carsten Bormann, Yizhou Li, Robert Cragie
- application security vs. network security
- per-solution characteristics
- Grouping of solutions? Identifiable categories?