T2TRG: Thing-to-Thing Research Group

IETF 98
March 27, 2017, Chicago, IL, USA

Chairs: Carsten Bormann & Ari Keränen

Note Well

- You may be recorded

- The IPR guidelines of the IETF apply:
  see **http://irtf.org/ipr** for details.

Administrivia (I)

- Pink Sheet

- Note-Takers

- Off-site (Jabber, Hangout?)

  - **xmpp:t2trg@jabber.ietf.org?join**

- Mailing List: **t2trg@irtf.org** — subscribe at: **https://www.ietf.org/mailman/listinfo/t2trg**

- Repo: **https://github.com/t2trg/2017-ietf98**

Agenda

T2TRG scope & goals

- Open research issues in turning a true "Internet of Things" into reality

  - Internet where low-resource nodes ("things", "constrained nodes") can communicate among themselves and with the wider Internet

- Focus on issues with opportunities for IETF standardization

  - Start at the IP adaptation layer

  - End at the application layer with architectures and APIs for communicating and making data and management functions, including security

Done so far

- Chartered in December 2015. Multiple meetings before official chartering co-located with IETF meetings and with W3C Web of Things (WoT) group

- 2016: RG meetings at Nice and Lisbon co-located with W3C WoT, at San Jose co-located with IAB IoT**SI** WS, at Buenos Aires and Berlin with the IETF meetings; participated in Dublin IAB IoT**SU** WS; RIOT summit in Berlin; Implementers' meeting in Ludwigsburg (Stuttgart); joint meeting with ICNRG in Seoul

- 2017: work meeting in Amsterdam and joint meeting with OCF

- Three RG deliverable documents in progress on REST and security; multiple new documents on REST interaction

- Outreach (e.g., organizations like OCF and Bluetooth SIG)

Where are we going

- Work on RG deliverables and outreach continues

- Future meetings co-located with good research venues (2017)

- Meetings co-located with open source activity

  - RIOT summit in Berlin (July)

  - Eclipse IoT meeting (October)

- Benchmark/reference scenarios

  - Initial discussion in various drafts and slides

  - More elaborate documentation (planned) by end of 2017

Next meetings

- 2017 planning ongoing
  - W3C Web of Things Düsseldorf likely before Prague
  - Joint meeting with OCF in Krakow in September???
  - Something co-located to RIOT and ACM ICN W39
  - Joint meeting with OCF in Singapore before IETF
  - More academia?

Cooperating between ICNRG and T2TRG

- ICNRG has been working on IoT topics from an ICN perspective ("IoT over ICN") for a while

- T2TRG has been discovering issues in IP based IoT protocols (e.g., on naming of endpoints and security) where ICN mechanisms or thinking could be useful

- Workshop: several ICN IoT projects were presented and concepts of endpoints, naming, semantics, security and IP Internet interworking were discussed

- Joint activity seemed useful and collaboration between the two groups will continue e.g., with cross review of documents ➔ space on IETF98 ICNRG agenda

Amsterdam Work Meeting

- Manufacturer Usage Descriptions (MUD): describing what things are (supposed to be) doing

  - Integration to whole IoT security stack?

- End points and end-to-end security

Joint meeting with OCF

- Information sharing and alignment

  - Object security

  - REST at T2TRG and OCF

  - Connectivity, terminology, …

- Continuing collaboration

  - OCF data model review: http://www.oneiota.org/

  - Discovery guidance: Resource Directory & multicast

  - CoAP over BLE

  - More coordination on document reviews (WGLC notifications to OCF etc.)