

T2TRG: Thing-to-Thing Research Group

IETF 101

March 22, 2018, London

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/2018-ietf101>**

Agenda

Time	Who	Subject	Docs
15:50	Chairs	Intro, RG Status	draft-irtf-t2trg-iot-secons draft-irtf-t2trg-rest-iot-00
16:00	Michael Koster / Chairs	Report from WISHI and Hackathon	
16:20	Jan Jongboom, ARM	Deep learning on microcontrollers	
16:50	Soumya Kanti Datta, EURECOM	Semantic Interoperability Testing - Current Trends and Future Outlook	
17:15	Michał Król, UCL	Secure Computations in Decentralized Environments	
17:40	Chairs	Meeting Planning, Wrapup	OCF/W3C-WoT

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

Recent activities

- Work on IoT/Semantic Hypermedia Interoperability (WISHI)
- Finalizing “State-of-the-Art and Challenges for the IoT Security” draft
- NDSS Workshop on Decentralized IoT Security and Standards (DISS)
- Side meeting on network coexistence at IETF 101
- Joint WebEx session with OCF on security and ACE

NDSS DISS

- Network and Distributed System Security Symposium (NDSS) is a premier security conference
- Workshop on Decentralized IoT Security and Standards (DISS, 2018-02-18) combined:
 - Non-centralized approaches to IoT security
 - Standardization of IoT security
- 12 papers, from a security analysis of current IETF work to much more speculative ideas (yes, with blockchain)
- Later in this meeting: Updated version of one of the talks, “Secure Computations in Decentralized Environments”

Next meetings

- OCF-W3C WoT joint meeting in Prague tomorrow
- Regular WISHI calls (~ monthly)
- WebEx meetings with OCF
- F2F with OCF?
- Montreal IETF 102
 - More WISHI? Distributed discovery? TBD

RG Doc Status

- “State-of-the-Art and Challenges for the IoT Security” in IRSG review
- Thorough reviews in particular from Jim & Stephen (thank you!); lots of list discussion
- “RESTful Design for IoT”
 - New hypermedia design guidance PR
 - PATCH & FETCH guidance TBD

Network co-existence

- Side meeting Monday, ca. 30 attendees ([draft-feeney-t2trg-inter-network-01](#))
- Main ideas
 - diverse, administratively unrelated networks experience radio interference
 - recent research results suggest that protocol-level interactions lead to episodes of severe performance degradation
- Discussion
 - performance evaluation: hackathon, tests, simulation...set expectations
 - touches many IETF protocols
 - IETF/IEEE border: MAC has to do most of the work, but limited by independence between networks
 - various possibility of active / explicit coordination at high level (synchronization, database as for whitespace spectrum)

Meeting planning

OCF-T2TRG-W3C WoT meeting topics

- Status update of IETF/OCF coordination action items
- WISHI activities report
- Representation format of forms for IoT devices
- Model interoperability: WoT Thing Descriptions with OCF and IPSO models
- Push Models for Device data (pub/sub, non-traditional responses, ...)
- Links, Bindings, Interfaces, and Resource Representations
- "Base" CoAP (New Response Codes, RD alignment)
- ACE discussion continuation (multipoint security, etc.)
- Reference implementations and test case (CoAP, CoAP TCP, CBOR, ...)

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