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

13:00: Intro, RG status

13:10: Intro to breakout #1
13:15: Breakout #1

13:50: Intro to breakout #2
13:55: Roll call of breakout #1 results

14:05: Breakout #2
14:40: Meeting planning
14:50: Roll call of breakout #2 results

15:00: Beverage Break
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 IoTSi WS, at Buenos Aires and Berlin with the IETF meetings; participated in Dublin IAB IoTSu 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
Amsterdam Work Meeting

• Info sharing: W3C WoT TD, IETF MUD, ...

• 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

• Materials: https://github.com/t2trg/2017-03-ocf
Joint meeting with OCF

- Information sharing and alignment
  - OCF & IETF status & direction
  - Object security
  - REST at T2TRG and OCF
  - Connectivity, terminology, …
- Barriers of communication (and how to reduce them)

https://github.com/t2trg/2017-03-ocf
Continuing collaboration with OCF

- OCF data model review: http://www.oneiota.org/
- Discovery guidance: Resource Directory & multicast
- CoAP over Bluetooth Low Energy
- More coordination on document reviews (WGLC notifications to OCF etc.)
Discovery sessions

• Not reporting old work but discussing new work

• What are research questions that should guide us?
  • Most pressing ones

• Two rounds of four break-outs (~35 min) each
  • Four corners of the room
  • Facilitator in each; need also note takers
Topics (session #1)

• Matthias: “What needs to be done to make systems interoperate that employ different kinds of data models in their components”

• Ralph: “What are the problems that need to be solved before I can reasonably transfer authority to access a bunch of IoT devices to a new owner when I sell my house”

• Elliot: What if Alice is evil and Bob doesn't get a chance to scream?

• Mohit: Converging network on-boarding with application layer setup? How can I use application credentials to join the network or v.v. Can we reduce TCO in the process?
Breakout #1
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Topics (session #2)

• Dirk: **Edge** computing issues

• Erik: “What would it mean to configure some remote certificates on a device which then sits in a drawer for **2 years** and will then be expected to be deployed for 10 years, when the lifetime of that certificate is 1 year?”

• Dave: **Early** discovery: DHCP, Multicast, Anycast, ND, … What is the preferred tool (for any particular space) and why? (Does it have the properties we need)

• Allison: What problems are we running into by running **different** kinds of systems on the same networks? What could be done to increase coexistence?
Breakout #2
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?