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Thing-to-Thing proposed Research Group + W3C IG WoT

Thing-to-Thing pRG (T2TRG) + W3C IG WoT joint meeting

Yokohama, JP, 2015-10-31..-11-01

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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>**
 - **https://plus.google.com/hangouts/_/_____**
- Mailing List: **t2trg@irtf.org** — subscribe at:
<https://www.ietf.org/mailman/listinfo/t2trg>
- Repo: **<https://github.com/t2trg/2015-ietf94>**

Thing-to-Thing Research Group (T2TRG)

- Investigate open research issues in:
 - turning a true “Internet of Things” into reality,
 - an Internet where low-resource nodes (“Things”, “Constrained Nodes”) can communicate among themselves and with the wider Internet, in order to partake in permissionless innovation.
- Focus: issues that touch opportunities for standardization in the IETF
 - start at the adaptation layer connecting devices to IP, and
 - end at the application layer with architectures and APIs for communicating and making data and management functions (including security functions) available.

W3C IG WoT

- W3C: The people who make the Web work
- IG: Interest Group
- WoT: Web of Things
- Introduction in a couple of minutes

Why a Research Group now?

- First wave of IoT standards completed by the IETF
- IoT Consortia now forming to build infrastructure and industry agreements around those
- New requirements for research:
based on actual usage of the standards now available

Areas of Interest

(to be discussed in formal chartering)

- Understanding and managing the motivation for single-purpose silos and gateways; facilitating a move towards small pieces loosely joined (hence “thing-to-thing”); scaling the number of applications in a single network
- Deployment considerations; scaling considerations; cost of ownership
- Management and Operation of Things
- Lifecycle aspects (including, but not limited to, security considerations)
- Cooperation with W3C, e.g. on data formats and semantics

Areas of Interest (more explorative)

- Operating Things that have multiple masters/ stakeholders (including understanding role definitions of devices, owners, operators etc.)
- Exploring the duality of state- and event-based approaches
- Aspects of distribution (cf. “fog computing”); reliability and scalability considerations
- Containerization and other forms of mobile code

Other objectives

- Definition of “Benchmark” or Reference Environments:
 - to enable regular plugfests, and
 - as a basis for repeatable, comparable research.
- Description of practical, real world, cross domain applications of connected Things
- Taxonomy, technology survey and best practice documents
- Fostering collaboration with industry fora and other organizations on networking of things

Relationship to IETF WGs

- These objectives will be achieved making use of a close involvement between the IETF community and the T2TRG.
- For the IETF, some RG documents may simplify the generation of (or even serve as) use case documents or other informational references.
- Close contact will be maintained with the IETF's IoT-related WGs and its IoT directorate.

Relationship to IAB

- IAB workshops can be very successful in breaking ground
- 2011: Smart Object Workshop (Prague). [RFC 6574](#)
 - Also seminal for [RFC 7228](#)
- 2012: Smart Object Security (Paris). [RFC 7397](#)
 - Not an official IAB workshop
- Expect good cooperation with further IAB activities

Name, organization

- “Thing-to-Thing” is a homage to “end-to-end” RG
 - Not excluding device-to-cloud models
- Open membership
 - emulate DTNRG or ICNRG as a model

This meeting

- Work together with W3C IG WoT:
 - (A) “REST as we know it” → “Beyond REST”
 - (B) Security and Lifecycle aspects in constrained nodes
- Focus on **common discussion**
- Do some RG administrative things at the end

Busy IETF weekend

- Sat/Sun: **Hackathon** (Room 315)
- Other RG meetings, RAIM
- Sun afternoon: IETF tutorials (16:00 CBOR), ...

Agenda

Sat

- 09:00–14:20 Overview, Talks
- 14:20–18:00 Breakouts (A/B)

Hackathon invasions

Insert dinner here

Sun

- 09:00–09:30 Wrapup Breakouts
- 09:30–10:20 More Talks
- 10:20–12:00 Breakouts, reconfigured (i/ii)
- 13:00–16:00 Wrapup, outlook, planning

Wed

- 10:30–11:30 Summary meeting (+ consortia)