14 April 2017 Webex

IPv6 over the TSCH mode of IEEE 802.15.4

Chairs:
 Pascal Thubert
 Thomas Watteyne
Etherpad for minutes:
 http://etherpad.tools.ietf.org:9000/p/6tisch?useMonospaceFont=true

Note Well

This summary is only meant to point you in the right direction, and doesn't have all the nuances. The IETF's IPR Policy is set forth in BCP 79; please read it carefully.

The brief summary:

- By participating with the IETF, you agree to follow IETF processes.
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- You understand that meetings might be recorded, broadcast, and publicly archived.

For further information, talk to a chair, ask an Area Director, or review the following:

- BCP 9 (on the Internet Standards Process)
- BCP 25 (on the Working Group processes)
- BCP 78 (on the IETF Trust)
- BCP 79 (on Intellectual Property Rights in the IETF)

Reminder:

Minutes are taken *
This meeting is recorded **
Presence is logged ***

*   Scribe; please contribute online to the minutes at:
http://etherpad.tools.ietf.org:9000/p/6tisch?useMonospaceFont=true
**   Recordings and Minutes are public and may be subject to discovery in the event of litigation.
*** From the Webex login

Agenda

- Administrivia   [2min]
  - Agenda bashing
  - Approval minutes from last meeting
- Status of drafts (chairs)   [15min]
  - Adoption of Michael's drafts on security – co authors?
  - Terminology draft
  - 6TiSCH for detnet
  - 6P and SF0 – launching last calls?
- 6P finalization (Thomas, Qin)   [10min]
- Update on security (Michael/Malisa)   [10min]
- Research Liaison Task Force (Thomas)   [15min]
- AOB   [3min]

Plugtests

- Discussion between Thomas, Xavi, Carsten

- Idea: joint 6TiSCH+CoAP?+6lo? plugtest at IETF99 Prague

- Tentative dates: Friday 14 July afternoon, Saturday 15 July all days

- We are discussing with ETSI

- We are discussin with CoRE/6lo about possible co-located events

- Scope for 6TiSCH? Minimal, 6P, SF0, minimal-security? Something else?

- We might be able to use the F-interop testing platform

Draft status

Michael's drafts on security

- draft-richardson-6tisch-join-enhanced-beacon-01

  IEEE802.15.4 Informational Element encapsulation of 6tisch Join Information

- draft-richardson-6tisch-minimal-rekey-01

  Minimal Security rekeying mechanism for 6TiSCH

Terminology

- Complete?

6TiSCH for DetNet

- Complete? Missing items?

- is there a need for a doc beyond retrofit in Archie?

- If so, Adopt?

- Goal: Leave as is or Publish one day?

6P and SF0

- Launch last call?

Update on 6P

Charlie's review of
draft-ietf-6tisch-6top-protocol-04

I think the document has issues, some technical, mostly editorial. They can be easily fixed but some decisions have to be made. All of my comments can be found in the attached output of 'rfcdiff'. The editorial suggestions I mostly incorporated into a revised version of the file, which is also visible in the output of 'rfcdiff'. If this is unclear, please let me know. I think that there should be a new section for "Terminology", and various TSCH, 6TiSCH, and 6top terms explained in that section for convenience.

Here are some of my technical comments about the document. Some of my questions might arise from my own misunderstandings, in which case perhaps a few more sentences or cross-references could be inserted for explanations.

- ERR_EOL is defined as an error, but it is used as a flag for protocol signaling

- Why is any negotiation needed for node A to delete cells?

- If a negotiation is needed, then isn't NumCells needed somewhere in the message format?

- In Figure 13, If you have a Candidate CellList, don't you also need "NumCandCells"?

- GEN and SeqNum play similar roles. The protocol could be cleaner if their roles were combined. Plus you would have more bits, making rollover far less frequent.

- Some of the suggestions for SF specification seem impractical.

- Not clear why LIST and COUNT are needed except possibly for reboot or operating system errors.

- Not clear how to abort the CONFIRMATION step of a 3-step transaction.

- In Figure 14, is NumCells needed for the RELOCATE Response?

Technical comments about draft-ietf-6tisch-6top-protocol-04

April 14, 2017 interim teleconference

Charles Perkins

Futurewei

Technical comments, page 1

ERR_EOL is defined as an error, but it is used as a flag for protocol signaling

Why is any negotiation needed for node A to delete cells?

If a negotiation is needed, then isn't NumCells needed somewhere in the message format?

In Figure 13, If you have a Candidate CellList, don't you also need "NumCandCells"?

GEN and SeqNum play similar roles. The protocol could be cleaner if their roles were combined. Plus you would have more bits, making rollover far less frequent.

Technical comments, page 2

Some of the suggestions for SF specification seem impractical.

"MUST specify the behavior of a node when it boots."

Do we really need a registry of application domains?

Not clear why LIST and COUNT are needed except possibly for reboot or operating system errors.

Not clear how to abort the CONFIRMATION step of a 3-step transaction.

In Figure 14, is NumCells needed for the RELOCATE Response?

Update on security
Design team meetings

Typically present:
Michael Richardson, Tero Kivinen, Pascal Thubert,
Thomas Watteyne, Mališa Vučinić, Göran Selander,
Toerless Eckert, Peter van der Stok

Research Liaison Task Force

Research Liaison idea

- idea
  - Issue requests for simulation, implementation
  - Gather feedback/performance results
- Discussion
  - Is "research" the right term?
  - How to liaise with the community? Wiki? I-D?
  - Propose to have one person in charge of:
    - Issuing calls
    - Coordinating results to WG
    - Maintain list of ongoing work (papers, groups, etc)

The 6TiSCH simulator

Thomas Watteyne

Kazushi Muraoka

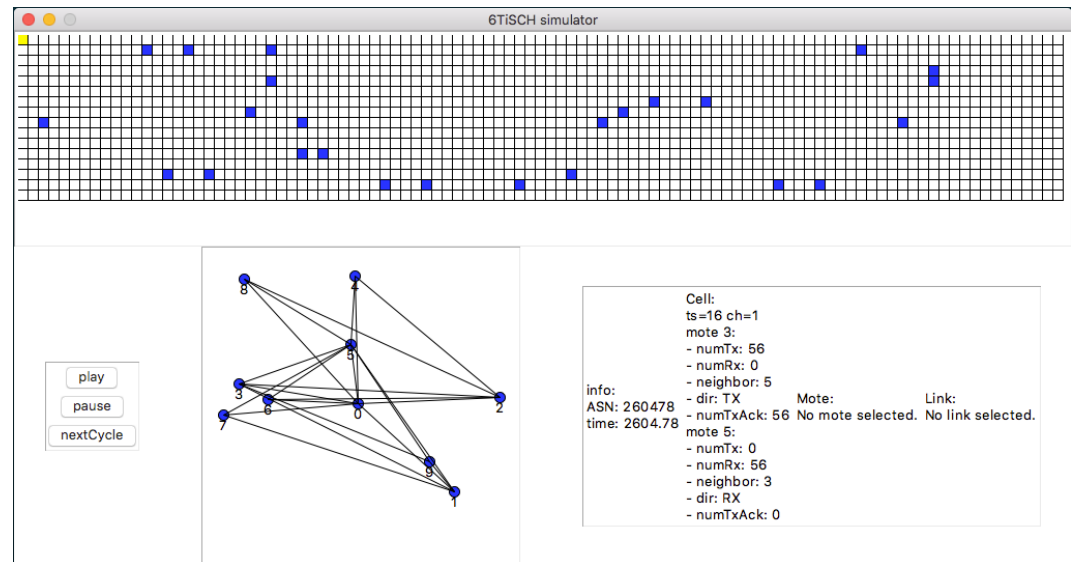Nicola Accettura

Xavier Vilajosana

Mališa Vučinić

Motivation

Predict the performance of a 6TiSCH network

Feedback to protocol designers

Research tool

What is it?

Discrete-event simulator

  Time proceeds in TSCH slots

Written in Python

TSCH	✓
minimal schedule	✓
RPL with source routing	✓
6top[1]	✓
on-the-fly[2] scheduling	✓
join process[3]	✓

1 - http://tools.ietf.org/html/draft-wang-6tisch-6top-sublayer

2 - http://tools.ietf.org/html/draft-dujovne-6tisch-on-the-fly

3 - generic

Metrics

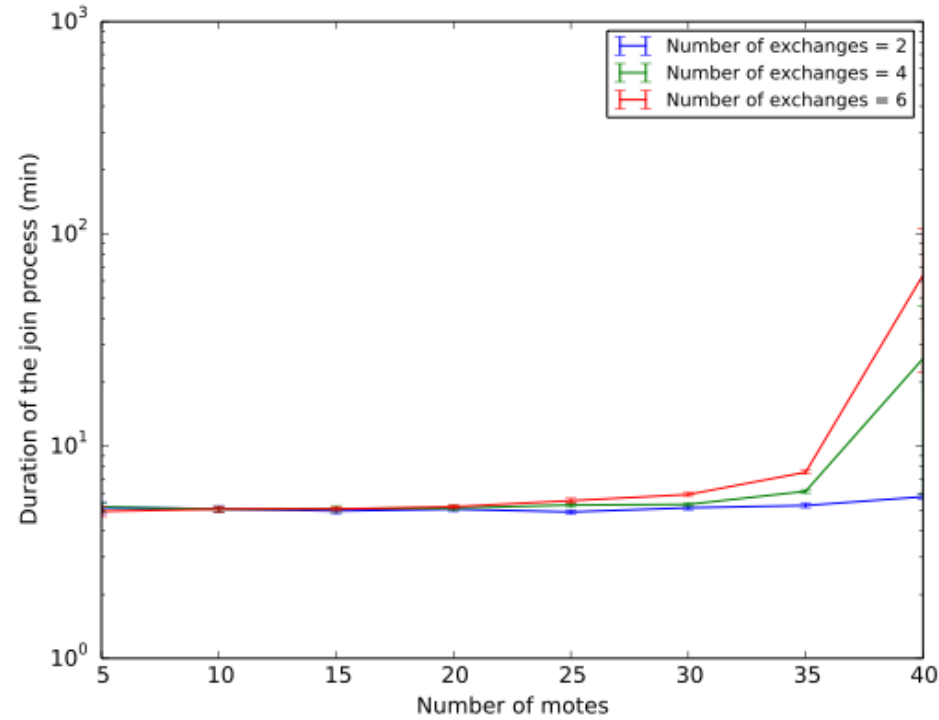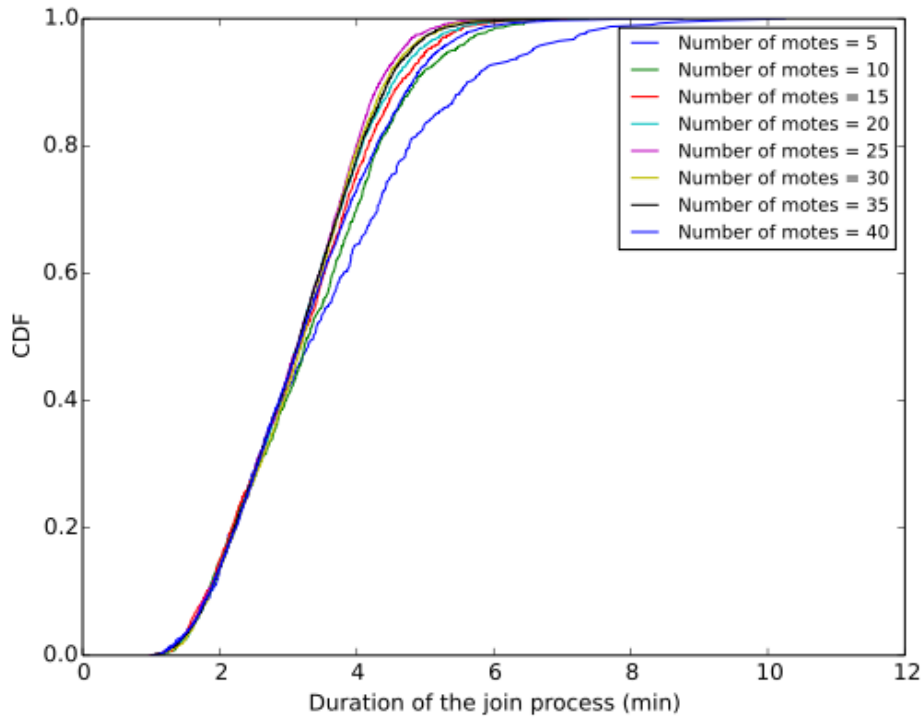Energy consumption

Performance of Slotted-Aloha cell

Reliability

Latency

Duration of the join process, time until first beacon

and many more…

early results on join process

slotframe length = 11 (slots)
beacon period = 10 (s)

AOB ?

Thank you!