



09 June 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:

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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** [7min]
 - Agenda bashing
 - Approval minutes from last meeting
 - Addressing todo's from last time
 - Available: RFC 8137 and RFC 8180

- **6P finalization (Xavi, Qin)** [20min]
 - News on draft-ietf-6tisch-6top-protocol-05 [Qin]
 - Review 6P [Jonathan, presented by Tengfei]

- **PlugTest** [25min]
 - admin update [Miguel]
 - test description [Maria Rita]
 - overview tools [Remy]
 - next steps [Thomas]

- **AOB** [3min]

Last interim to-do's

- Xavi and Qin to review SF0
- Diego to start a thread on time out computation between SF0 and 6P. Whether ASN of the time out should be indicated in the packet.
- Xavi and Qin to post 6p-05 addressing Charlie's comments
- Jonathan to review 6P after Charlie's comments are addressed



RFC 8137

Internet Engineering Task Force (IETF)
Request for Comments: 8137
Category: Informational
ISSN: 2070-1721

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May 2017

IEEE 802.15.4 Information Element for the IETF

Abstract

IEEE Std 802.15.4 defines Information Elements (IEs) that can be used to extend 802.15.4 in an interoperable manner. The IEEE 802.15 Assigned Numbers Authority (ANA) manages the registry of the Information Elements. This document formulates a request for ANA to allocate a number from that registry for the IETF and describes how the IE is formatted to provide subtypes.



RFC 8180

Internet Engineering Task Force (IETF)
Request for Comments: 8180
BCP: 210
Category: Best Current Practice
ISSN: 2070-1721

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Minimal IPv6 over the TSCH Mode of IEEE 802.15.4e (6TiSCH) Configuration

Abstract

This document describes a minimal mode of operation for an IPv6 over the TSCH mode of IEEE 802.15.4e (6TiSCH) network. This minimal mode of operation specifies the baseline set of protocols that need to be supported and the recommended configurations and modes of operation sufficient to enable a 6TiSCH functional network. 6TiSCH provides IPv6 connectivity over a Time-Slotted Channel Hopping (TSCH) mesh composed of IEEE Std 802.15.4 TSCH links. This minimal mode uses a collection of protocols with the respective configurations, including the IPv6 Low-Power Wireless Personal Area Network (6LoWPAN) framework, enabling interoperable IPv6 connectivity over IEEE Std 802.15.4 TSCH. This minimal configuration provides the necessary bandwidth for network and security bootstrapping and defines the proper link between the IETF protocols that interface to IEEE Std 802.15.4 TSCH. This minimal mode of operation should be implemented by all 6TiSCH-compliant devices.

6P finalization (Xavi, Qin)

6P latest update

- Clarified Metadata meaning:
- Metadata: Same usage as for the 6P ADD command, see Section 4.3.1. Its format is the same as that in 6P ADD command, but content could be different.
- Offset in List command:
- Offset: The Offset of the first scheduled cell that is requested. The mechanism assumes cells are ordered according to a rule defined in the SF. The rule **MUST** always order the cells in the same way.

6p Comments

->Section 4.1: "If no dedicated cells are scheduled between nodes A and B, shared cells MAY be used. -> Is there another option? if not, shouldn't say MUST?"

[Qin] There may be another option. i.e. do nothing if no dedicate cells

[JM] Do nothing is always an option. If a 6p transaction is going to happen, either on a dedicated cell or a shared cell.

->Section 4.3.2:

" All cells in the CellList MUST already be scheduled between the two nodes and must match the CellOptions field. If node A puts cells in its CellList that are not already scheduled between the two nodes and match the CellOptions field, node B replies with a RESET return code"

Section 4.3.3:

"Upon receiving the request, node B's SF verifies that all the cells in the Relocation CellList are indeed scheduled with node A, and are associate the options specified in the CellOptions field. If that check fails, node B MUST send a 6P Response to node A with return code CELLLIST_ERR."

Both errors give a different response but it looks to me that they have the same source -mismatch in their schedule-. Is it ok?

[Qin] should change error code in 4.3.2 to CELLLIST_ERR.

6p Comments

->Section 4.3.5:

if the SF manages several slotframes, when retrieving the LIST, how to differentiate them, since they appear as a tuple (slotOffset,channelOffset). My question is if it is worthy to make the differentiation when receiving all the cells. Or this will be handled by the SF? IMO an example will be good.

[Qin] SF0 uses Metadata to express slotframe ID and SF0 will handle this. For example, SF0 can define in this way: if specific slotframe ID in Metadata, then the Cells in the CellList of Response belong the specific slotframe; if setting some value like FF in Metadata to say all of slotframes, then the CellList of Response will include all of cells scheduled between the two neighbors. But, this should be defined and explained in SF0 draft.

->Figures: 17, -6P COUNT Response and Confirmation-

19, -6P LIST Response and Confirmation-

21, -6P CLEAR Response and Confirmation-

Will these transaction have a confirmation message? it seems to me they are a 2-step transactions, always.

[Qin]: accepted.

-> Sequence Number: will it increase +1 despite the failure of the previous transaction?

[Qin]: yes.

[JM]: perfect.

PlugTest



1ST F-INTEROP 6TISCH INTEROPERABILITY EVENT UPDATE

- 🌐 1st F-Interop 6TiSCH Interop event - Basics
- 🌐 Logistic information

- 🌐 Scope – To test interoperability of 6TiSCH implementations based on:
 - **draft-ietf-6tisch-minimal** specification
 - **draft-ietf-6tisch-6top-protocol**
 - **secure joining**
- 🌐 When – **14 (afternoon)-15 July 2017**
- 🌐 Where - At **IETF#99** (Prague) (Hotel Hilton – Karlin I)

Website is launched:

- <http://www.etsi.org/news-events/events/1197-6tisch-interop-prague-2017?highlight=YToxOntpOjA7czo2Oill2dGlzY2giO30=>

- General information about the event

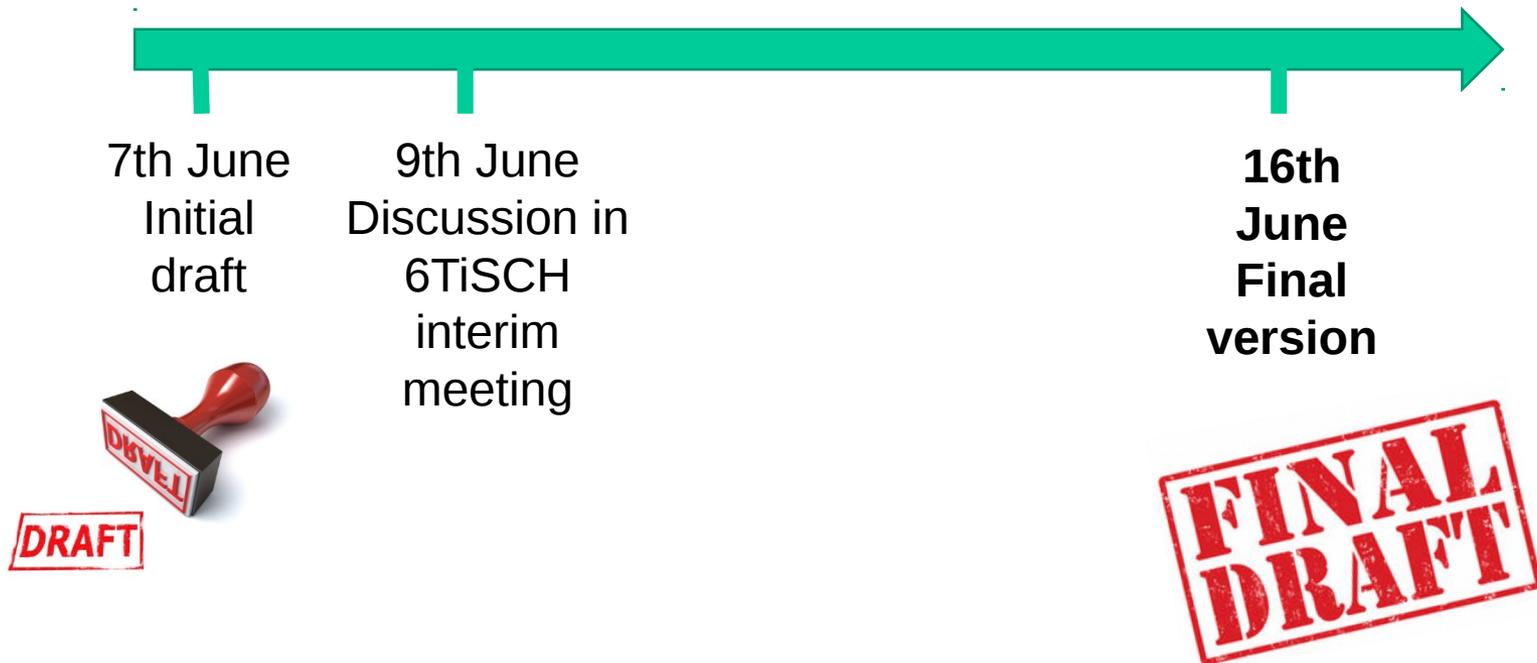
- Registration link

<http://portal.etsi.org/webapp/plugtests/Register.asp?EventID=244>

Registration to the event:

- will close 30th June 2017

Timeline of Test Description



6TiSCH Tests

SYNCH

TD_6TiSCH_SYN_01

Ref: IEEE802.15.4e

- Synchronisation between DR and 6N

SECURITY

TD_6TiSCH_SEC_01
TD_6TiSCH_SEC_02

Ref: RFC8180

- Authentication
- Data encryption

FORMAT

TD_6TiSCH_FORMAT_01

...

TD_6TiSCH_FORMAT_06

Ref: RFC8180

- EB format
- Timing template
- Channel hopping
- Retransmission time
- Minimal schedule
- Slotframe length

6P

TD_6TiSCH_6P_01

...

TD_6TiSCH_6P_05

Ref: draft-ietf-tisch-6top_protocol-05

- COUNT cell
- ADD cell
- CLEAR cell
- Concurrent transaction
- timeout

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

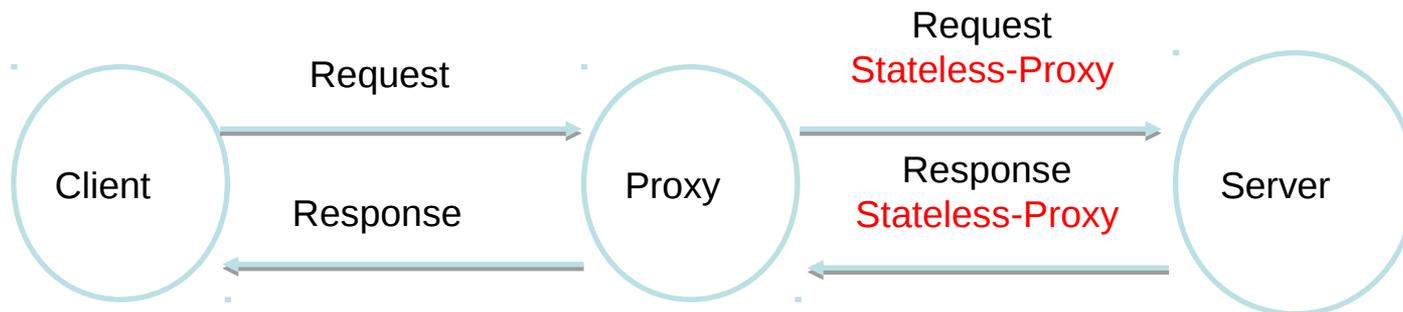
Stateless-Proxy Option

- New CoAP option carrying state between Proxy and Server

No.	C	U	N	R	Name	Format	Length
TBD	x		x		Stateless-Proxy	opaque	1-255

C=Critical, U=Unsafe, N=NoCacheKey, R=Repeatable

Figure 2: Stateless-Proxy CoAP Option



- Can a new CoAP option be standardized within a 6tisch draft?

AOB ?



Thank you!