LPWAN WG

WG Chairs:
Alexander Pelov <a@ackl.io>
Pascal Thubert <pthubert@cisco.com>

AD: Eric Vyncke
<evyncke@cisco.com>

Interim, June 16th, 2020

Webex

Note Well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- **By participating in the IETF, you agree to follow IETF processes and policies.**
- **If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.**
- **As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.**
- **Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.**
- **As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (https://www.ietf.org/contact/ombudsteam/) if you have questions or concerns about this.**

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

BCP 9 (Internet Standards Process)

BCP 25 (Working Group processes)

BCP 25 (Anti-Harassment Procedures)

BCP 54 (Code of Conduct)

BCP 78 (Copyright)

BCP 79 (Patents, Participation)

https://www.ietf.org/privacy-policy/ (Privacy Policy)

Reminder:

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

* Please contribute to the minutes at: https://etherpad.ietf.org:9009/p/notes-ietf-interim-2020-lpwan-10-lpwan
** Recordings and Minutes are public and may be subject to discovery in the event of litigation.
*** From the Webex login

Agenda bashing

[16:05] Administrivia [5min]
- Note-Well, Scribes, Agenda Bashing
- WG Status, IETF 108

[16:10] SCHC over LoRaWAN [40min]
[16:50] SCHC over PPP [10min]
[xx:xx] AOB [QS]

WG Status

Milestones

Date	Milestone
Jul 2021	Produce a Standards Track document to enable operations, administration and maintenance (OAM) to the LPWAN device, including support for delayed or proxied liveness verification (Ping)
Feb 2021	Produce a Standards Track document to define the generic data models to formalize the compression and fragmentation contexts for LPWANs
Dec 2020	Produce Standard Track documents to apply SCHC IPv6/UDP over the baseline technologies
May 2020	Perform SCHC Maintenance, including enabling SCHC mechanisms for Upper layer Protocols

Documents advancement

Document	Date	Status	IPR	AD / Shepherd
Active Internet-Drafts (5 hits)				
draft-ietf-lpwan-coap-static-context-hc-14 **LPWAN Static Context Header Compression (SCHC) for CoAP**	2020-05-26 30 pages	IESG Evaluation::AD Followup for 96 days Submitted to IESG for Publication: Proposed Standard Reviews: genart, iotdir, opsdir, secdir, tsvart		Éric Vyncke Pascal Thubert
draft-ietf-lpwan-schc-over-lorawan-07 **Static Context Header Compression (SCHC) over LoRaWAN**	2020-04-17 25 pages	I-D Exists In WG Last Call	1	Éric Vyncke Dominique Barthel
draft-ietf-lpwan-schc-over-nbiot-02 **SCHC over NB-IoT**	2020-05-17 23 pages	I-D Exists WG Document		Éric Vyncke
draft-ietf-lpwan-schc-over-sigfox-02 **SCHC over Sigfox LPWAN**	2020-05-16 13 pages	I-D Exists WG Document		Éric Vyncke
draft-ietf-lpwan-schc-yang-data-model-02 **Data Model for Static Context Header Compression (SCHC)**	2020-02-28 34 pages	I-D Exists WG Document		Éric Vyncke
RFCs (2 hits)				
RFC 8376 *(was draft-ietf-lpwan-overview)* **Low-Power Wide Area Network (LPWAN) Overview**	2018-05 43 pages	Informational RFC		Suresh Krishnan Alexander Pelov
RFC 8724 *(was draft-ietf-lpwan-ipv6-static-context-hc)* **SCHC: Generic Framework for Static Context Header Compression and Fragmentation**	2020-04 71 pages	Proposed Standard RFC		Suresh Krishnan Pascal Thubert

Document	Date	Status	IPR	AD / Shepherd
Related Internet-Drafts (3 hits)				
draft-barthel-lpwan-oam-schc-01 **OAM for LPWAN using Static Context Header Compression (SCHC)**	2020-03-09 14 pages	I-D Exists		
draft-thubert-lpwan-command-reg-01 **Command and Control Registry for SCHC**	2020-03-25 4 pages	I-D Exists		
draft-thubert-lpwan-schc-over-ppp-01 **SCHC over PPP**	2020-06-04 8 pages New	I-D Exists		

draft-ietf-lpwan-schc-over-lorawan

Editors:

Ivaylo Petrov (ivaylo@ackl.io)

Olivier Gimenez (ogimenez@semtech.com)

Interim meeting, June 16th, 2020

Upcoming changes in draft-008 (Presented 19/05/20)

- Add uplink All-1 example with last tile
- Fixed IID example
- Use RFC8376 terminology
- List all bitmap possibilities in SCHC ACK example
- Add payload to downlink All-1
- Fixed some nits

Upcoming changes in draft-008 (Presented 16/06/20)

- Changed “fragmentation session” to “fragmentation datagram”
- Uplink retransmission timer SHALL be set by the application
- Explicitly state:
  - Other frag. param. can be used in addition to defined param. in profile
  - Additional delay to comply with regulation is not mandatory
  - Why all-1 and SCHC Sender-Abort can be distinguished
  - Why All-0 and SCHC ACK REQ can be distinguished in uplink fragmentation

Upcoming changes in draft-008

- Rephrase regulation compliance
- Add heartbeat
- Update retransmission timer for Class A, B, C

Downlink retransmission timer - Context

Context:

- LoRaWAN class A devices opens a reception window only after a transmission, for few seconds.
- LoRaWAN class B devices opens a reception window after a transmission + regular windows every [2;128] seconds (depending on configuration)
- LoRaWAN class C devices are always in reception mode if not transmitting.

For class B & C we can have a retransmission timer “set depending on the application requirements”; but regarding the class A we cannot as the SCHC gateway will never know when the device will open a reception window.

Downlink retransmission timer – Class A proposition

1. Use retransmission timer as defined in RFC8724
2. Create an heartbeat: the device must regularly send empty uplink on port FPortCommandControl:
    1. Helps when SCHC gateway need to initiate a communication
    2. Helps when SCHC gateways need so send SCHC ACK REQ following retransmission timer run out

Q: Can we write « send uplink on port FPortCommandControl, it can be empty » ?

Add randomness in timings ?

« If a device sends the ack as soon as possible without any forced gap, then the NGW is constrained to reply immediately or loose the slot. If the NGW has used its full duty cycle it loses that opportunity. When the load on the NGW grows, we end in retransmission timer for all devices and congestion collapse”

Q: Should we add randomness in heartbeat, SCHC ACK, SCHC ACK REQ (retransmission timer) timings ?

Thank you for your attention

14

draft-thubert-lpwan-schc-over-ppp

Editor:

Pascal Thubert (Cisco)

Interim meeting, June 16th, 2020

What's new

Published 01 on June 4th

Clarifies: No Fragmentation

Adding a SCHC Profile => Need LPWAN WG review => Adoption here

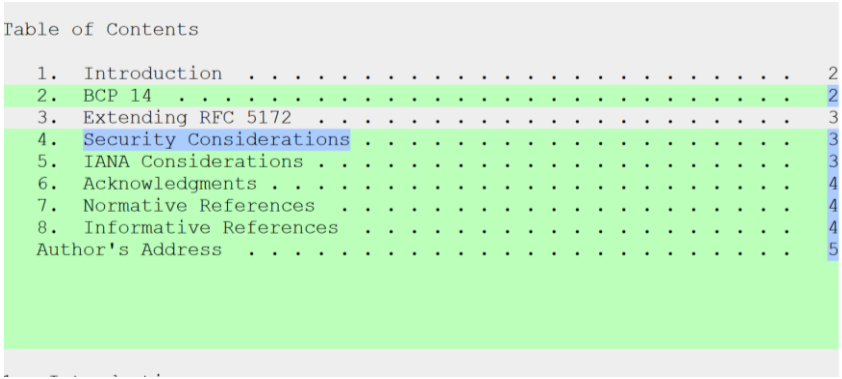

Table of Contents

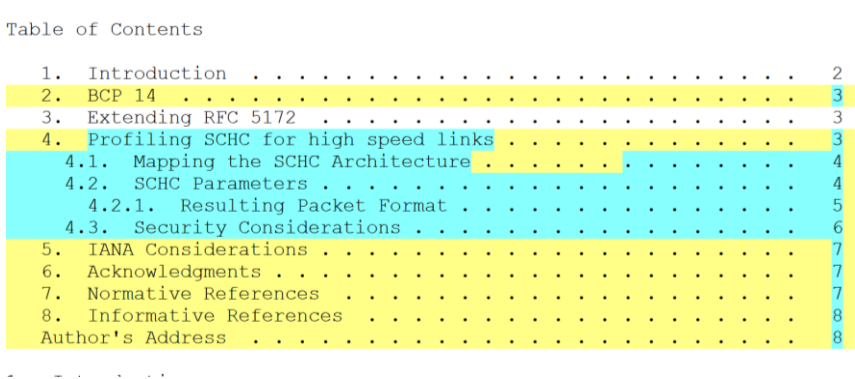

Table of Contents

Packet Format

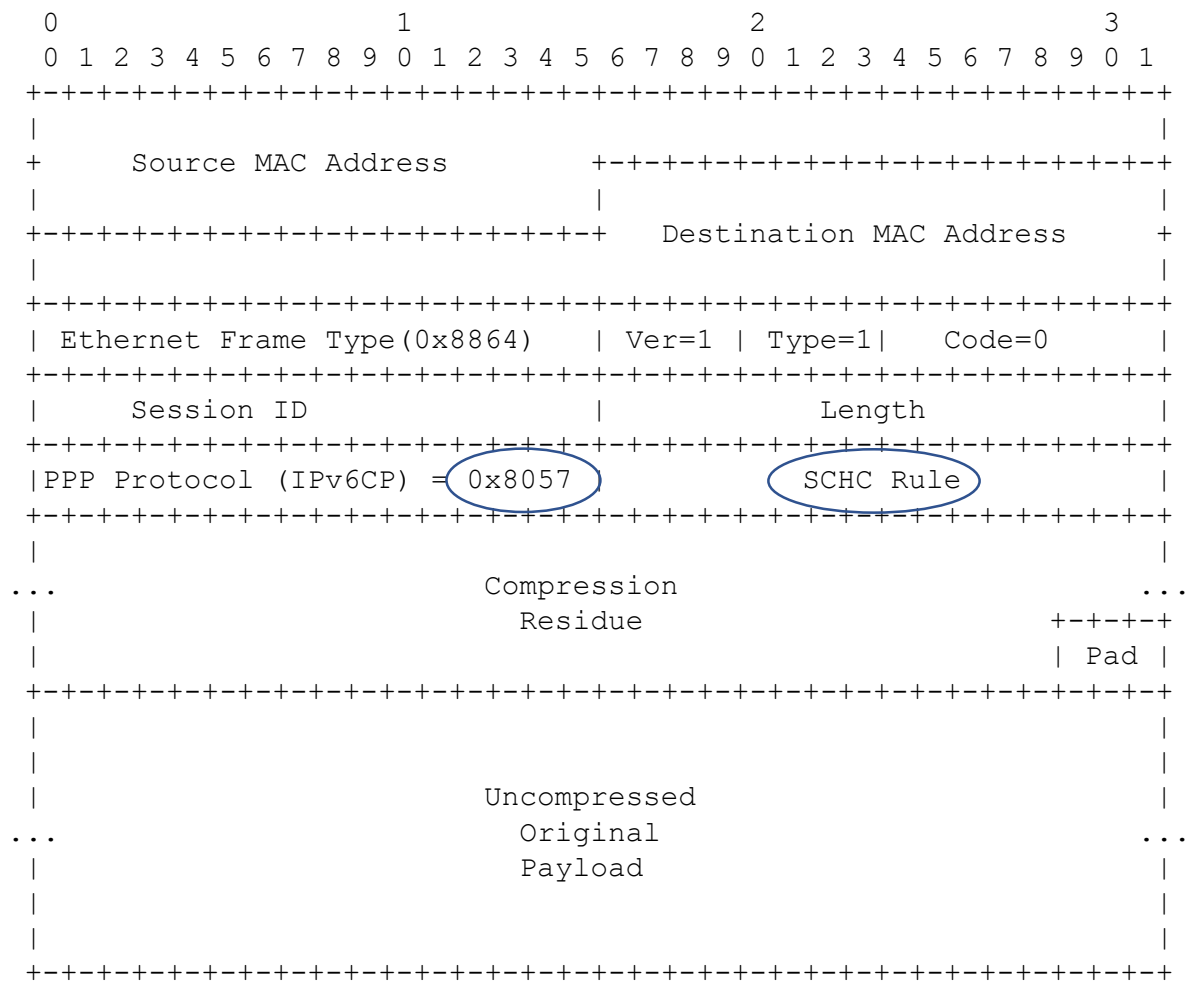

Figure 5: SCHC over PPP over Ethernet Format

Proposed Plan

1) Adoption at LPWAN
2) LPWAN WGLC
3) Move to INT Area
4) INT Area WGLC

Works?

AOB ?