

LPWAN WG

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Reminder:

Minutes are taken *

This meeting might be recorded **

Presence is logged ***

* Please contribute to the minutes at: <https://codimd.ietf.org/notes-ietf-interim-2021-lpwan-07-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

[15min]

- o Note-Well, Scribes, Agenda Bashing
- o WG Status, IETF 111 query

[16:20] SCHC Architecture
new version

[20min]

[16:40] Data Model for SCHC
[15min]

Yang Doctors feedback

[16:55] AOB

[QS]

WG Status

Date ◆ Milestone

Feb 2022 Produce a Standards Track document for SCHC over NB-IoT
[draft-ietf-lpwan-schc-over-nbiot](#)

Oct 2021 Produce a Standards Track document for SCHC over SigFox
[draft-ietf-lpwan-schc-over-sigfox](#)

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

Document advancement

Active Internet-Drafts (4 hits)					
draft-ietf-lpwan-coap-static-context-hc-19	2021-03-08	RFC Ed Queue : RFC-EDITOR for 53 days	Éric Vyncke ✉		
LPWAN Static Context Header Compression (SCHC) for CoAP	34 pages	Submitted to IESG for Publication: Proposed Standard Reviews: genart, iotdir, opsdir, secdir, tsvar	Pascal Thubert ✉		
draft-ietf-lpwan-schc-over-nbiot-04	2021-01-19	I-D Exists	Éric Vyncke ✉		
SCHC over NB-IoT	22 pages	WG Document Feb 2022			
draft-ietf-lpwan-schc-over-sigfox-05	2021-02-22	I-D Exists	Éric Vyncke ✉		
SCHC over Sigfox LPWAN	23 pages	WG Document Oct 2021			
draft-ietf-lpwan-schc-yang-data-model-04	2021-02-02	I-D Exists	Éric Vyncke ✉		
Data Model for Static Context Header Compression (SCHC)	42 pages	WG Document Reviews: yangdoctors			
RFCs (3 hits)					
RFC 8376 (was draft-ietf-lpwan-overview)	2018-05	Informational RFC	Suresh Krishnan ✉		
Low-Power Wide Area Network (LPWAN) Overview	43 pages		Alexander Pelov ✉		
RFC 8724 (was draft-ietf-lpwan-ipv6-static-context-hc)	2020-04	Proposed Standard RFC	Suresh Krishnan ✉		
SCHC: Generic Framework for Static Context Header Compression and Fragmentation	71 pages		Pascal Thubert ✉		
RFC 9011 (was draft-ietf-lpwan-schc-over-lorawan)	2021-04	Proposed Standard RFC	1	Éric Vyncke ✉	
Static Context Header Compression and Fragmentation (SCHC) over LoRaWAN	26 pages	New	Dominique Barthel ✉		
Document	↕ Date	↕ Status	↕ IPR	↕ AD / Shepherd	↕
Related Internet-Drafts (2 hits)					
draft-barthel-lpwan-oam-schc-02	2020-11-02	I-D Exists			
OAM for LPWAN using Static Context Header Compression (SCHC)	14 pages	Expires soon			
draft-pelov-lpwan-architecture-02	2021-04-29	I-D Exists			
LPWAN Static Context Header Compression (SCHC) Architecture	10 pages	New			

Interim, May 4th, 2021

Action items

- RFC 9011 published
 - Congrats to the authors !!!!
- draft-ietf-lpwan-coap-static-context-hc
 - Soon too!!!
- Nothing much else

IETF 111

- Meetings will be middle of the CEST night
 - Or past that
- We have interims
 - 5 interims
 - Scheduled between now and then
- Should we ask for an official meeting?

interim-2021-lpwan-08	Tue 2021-05-18
interim-2021-lpwan-09	Tue 2021-06-01
interim-2021-lpwan-10	Tue 2021-06-15
interim-2021-lpwan-11	Tue 2021-06-29
interim-2021-lpwan-12	Tue 2021-07-13

draft-pelov-lpwan-architecture

Alexnader Pelov

Pascal Thubert

Ana Minaburo

Interim, May 4th, 2021

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LPWAN Technologies and Profiles

- Discusses RFC 8376, the LPWAN technologies
- Points on appendix D of RFC 8724
- RFC 9011 as an example

The Static Context Header Compression

- Discusses RFC 8724, SCHC
- C/D , parser
- ruleID
- F/R

SCHC Endpoints

DEVICE / NGW model

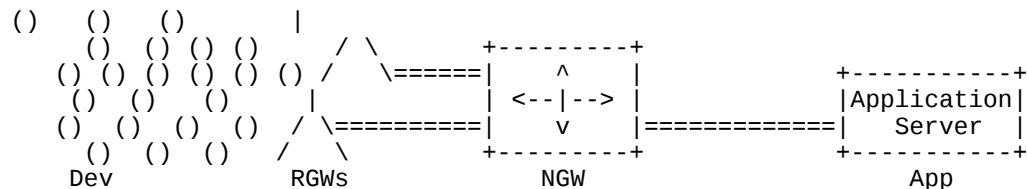


Figure 1: Typical LPWAN Network Architecture

vs. Peer to Peer

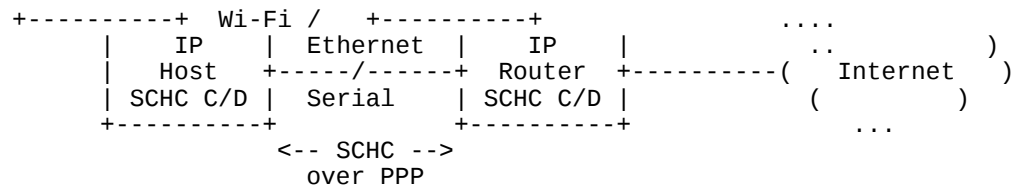
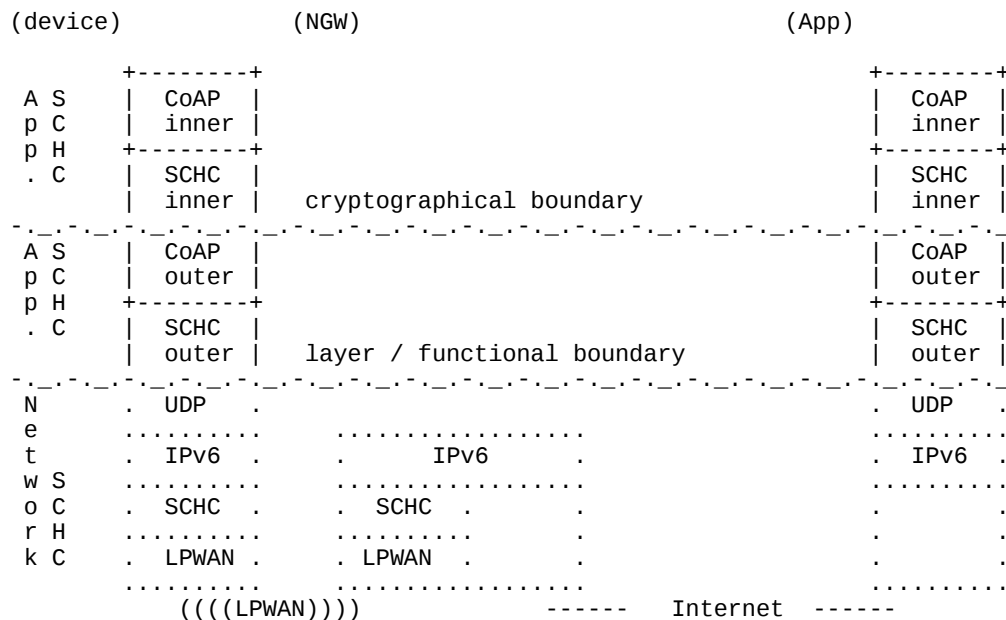


Figure 2: PPP-based SCHC Deployment

SCHC Instances

- Different endpoints, different nodes



SCHC Data Model

- Same rules deployed on both side

```
(-----)
( Rules )
(-----)
. read
.
+-----+
<===| R & D |<===
===>| C & F |===>
+-----+
```

```
(-----)
( Rules )
(-----)
. read
.
+-----+
<===| C & F |<===
===>| R & D |===>
+-----+
```

- Allows deployment / configuration through NETCONF, RESTCONF, and CORECONF

```
create
(-----) read +=====+ *
( rules )<----->|Rule |<--|----->
(-----) update |Manager| NETCONF, RESTCONF or CORECONF
. read delete +=====+ request
.
+-----+
<===| R & D |<===
===>| C & F |===>
+-----+
```

Security Considerations

- Need to protect the rule distribution
- What else?

Missing Topics / Content?

- Any coauthors to work on this?
- Do we want/need applicability statements in this document?
- Anything else needs to be on the document?
- E.g., Applicability
 - In Smart Building, smart grid?
 - e.g., Goose (?) protocol. Very chatty, long name strings.
 - Would love to SCHC-compress it.

Next steps

- Adoption call
- Like Now ?

draft-ietf-lpwan-schc-yang-data-model-04

Laurent Toutain (laurent.toutain@imt-atlantique.fr)

Ana Minaburo (ana@ackl.io)

YANG doctor review

- Many thanks to Carl Moberg
 - Very good remarks to make a better document
- Presentation: `pyang -m yang`
- IETF compatibility: `pyang --ietf`
- New model version on github:
 - <https://github.com/lp-wan/datamodel/blob/master/ietf-schc%402021-04-23.yang>

Changes

- Module name: ietf-schc
- Version: 1.1
- *As is right now, the YANG module assumes that all implementations support all FID types defined to be derived from field-id-base-type. It includes fields related IPv6, COAP/OSCORE, and ICMPv6 all in the same module.*
- *Is there a possibility that some implementations won't implement all three of those protocol groups? If so, it might be worth considering making FID type groups either optional using YANG 'feature' statements or break them out into separate modules to be advertised separately.*
- Hierarchical FID
 - A type for each protocol IPv6, UDP, CoAP, ICMPv6
 - A sub-type for sub-fields

Field-id

```
identity field-id-base-type {  
    description "Field ID base type for all fields";  
}  
  
identity field-id-ipv6-base-type {  
    base field-id-base-type;  
    description "Field IP base type for IPv6 headers described in RFC 8200";  
}  
  
identity fid-ipv6-version {  
    base field-id-ipv6-base-type;  
    description "IPv6 version field from RFC8200";  
}  
  
identity fid-ipv6-trafficclass {  
    base field-id-ipv6-base-type;  
    description "IPv6 Traffic Class field from RFC8200";  
}  
  
identity fid-ipv6-trafficclass-ds {  
    base fid-ipv6-trafficclass;  
    description "IPv6 Traffic Class field from RFC8200,  
    DiffServ field from RFC3168";  
}  
  
identity fid-ipv6-trafficclass-ecn {  
    base fid-ipv6-trafficclass;  
    description "IPv6 Traffic Class field from RFC8200,  
    ECN field from RFC3168";  
}
```

Relation between fields

- *“does the authors think it important (and possible) to work towards a more stringent validation of "meaningful" configuration by capturing the relationships between fields like in this example?”*
 - *The current YANG permits a field-identifier 'fid-ipv6-version' combined with a field-length 'fl-token-length' in a rule entry, which I understand to be nonsensical.*
- TV is mandatory for MO equal, MSB and match-mapping
- Window size is mandatory for AA and equal 1, any size for AoE,
- No Window for NoAck
- ????

```

750     grouping fragmentation-content {
751         description "This grouping defines the fragmentation parameters for
752         all the modes (No Ack, Ack Always and Ack on Error) specified in
753         RFC 8724.";
754
755         leaf direction {
756             type schc:direction-indicator-type;
757             mandatory true;
758             description "should be up or down, bi directionnal is forbidden.";
759         }
760         leaf dtag-size {
761             type uint8;
762             description "size in bit of the DTag field";
763
764         }
765         leaf wsize {
766             when "not(dereived-from(../fragmentation-mode, 'fragmentation-mode-no-ack'))";
767             type uint8;
768             description "size in bit of the window field";
769         }
770         leaf fcns-size {
771             type uint8;
772             mandatory true;
773             description "size in bit of the FCN field";
774         }

```

?????

Syntax

AOB ?