LPWAN WG

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

AD: Eric Vyncke
<evyncke@cisco.com>
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)
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-08-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] Data Model for SCHC [15min]
  Yang Doctors feedback

[16:35] AOB [ QS ]
## WG Status

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
</tr>
</thead>
</table>
| Feb 2022  | Produce a Standards Track document for SCHC over NBIOT  
           | [draft-ietf-lpwan-schc-over-nbiot](https://datatracker.ietf.org/doc/html/draft-ietf-lpwan-schc-over-nbiot)                               |
| Oct 2021  | Produce a Standards Track document for 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)**

<table>
<thead>
<tr>
<th>Draft ID</th>
<th>Date</th>
<th>Title</th>
<th>Status</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>draft-ietf-lpwan-coap-static-context-hc-19</td>
<td>2021-03-08</td>
<td>LPWAN Static Context Header Compression (SCHC) for CoAP</td>
<td>Ready for adoption</td>
<td>Éric Vyncke</td>
</tr>
<tr>
<td></td>
<td>34 pages</td>
<td>RFC Ed Queue : RFC-EDITOR for 53 days Submitted to IESG for Publication: Proposed Standard Reviews: genart, iotdir, opsdir, secdir, tsvart</td>
<td></td>
<td>Pascal Thubert</td>
</tr>
<tr>
<td>draft-ietf-lpwan-schc-over-nbiot-04</td>
<td>2021-01-19</td>
<td>SCHC over NB-IoT</td>
<td>I-D Exists</td>
<td>Éric Vyncke</td>
</tr>
<tr>
<td></td>
<td>22 pages</td>
<td>WG Document</td>
<td>Feb 2022</td>
<td></td>
</tr>
<tr>
<td>draft-ietf-lpwan-schc-over-sigfox-05</td>
<td>2021-02-22</td>
<td>SCHC over Sigfox LPWAN</td>
<td>I-D Exists</td>
<td>Éric Vyncke</td>
</tr>
<tr>
<td></td>
<td>23 pages</td>
<td>WG Document</td>
<td></td>
<td></td>
</tr>
<tr>
<td>draft-ietf-lpwan-schc-yang-data-model-04</td>
<td>2021-02-02</td>
<td>Data Model for Static Context Header Compression (SCHC)</td>
<td>I-D Exists</td>
<td>Éric Vyncke</td>
</tr>
<tr>
<td></td>
<td>42 pages</td>
<td>WG Document</td>
<td>Reviews: yangdoctors</td>
<td></td>
</tr>
</tbody>
</table>

**RFCs (3 hits)**

<table>
<thead>
<tr>
<th>RFC ID</th>
<th>Date</th>
<th>Title</th>
<th>Status</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC 8376 (was draft-ietf-lpwan-overview)</td>
<td>2018-05</td>
<td>Low-Power Wide Area Network (LPWAN) Overview</td>
<td>Informational RFC</td>
<td>Suresh Krishnan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Alexander Pelov</td>
</tr>
<tr>
<td>RFC 8724 (was draft-ietf-lpwan-ipv6-static-context-hc)</td>
<td>2020-04</td>
<td>SCHC: Generic Framework for Static Context Header Compression and Fragmentation</td>
<td>Proposed Standard RFC</td>
<td>Suresh Krishnan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pascal Thubert</td>
</tr>
<tr>
<td>RFC 9011 (was draft-ietf-lpwan-schc-over-lorawan)</td>
<td>2021-04</td>
<td>Static Context Header Compression and Fragmentation (SCHC) over LoRaWAN</td>
<td>Proposed Standard RFC</td>
<td>Dominique Barthel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Related Internet-Drafts (2 hits)**

<table>
<thead>
<tr>
<th>Draft ID</th>
<th>Date</th>
<th>Title</th>
<th>Status</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>draft-barthel-lpwan-oam-schc-02</td>
<td>2020-11-02</td>
<td>OAM for LPWAN using Static Context Header Compression (SCHC)</td>
<td>I-D Exists</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14 pages</td>
<td></td>
<td>Expires soon</td>
<td></td>
</tr>
<tr>
<td>draft-pelov-lpwan-architecture-02</td>
<td>2021-04-29</td>
<td>LPWAN Static Context Header Compression (SCHC) Architecture</td>
<td>I-D Exists</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 pages</td>
<td></td>
<td>New</td>
<td></td>
</tr>
</tbody>
</table>
Action items

• SCHC architecture / framework adopted
  – Thanks Eric for handling the rough consensus!
  – Published as draft-ietf-lpwan-architecture-00
• draft-ietf-lpwan-coap-static-context-hc: not far
  – current_queue => coap-static-context-hc
• Nothing much else
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?

LPWAN-ing

IETF 111

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021-05-18</td>
<td>Tue 2021-06-29</td>
</tr>
<tr>
<td>2021-07-13</td>
<td>Tue 2021-06-15</td>
</tr>
<tr>
<td>2021-07-13</td>
<td>Tue 2021-06-01</td>
</tr>
</tbody>
</table>
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

```javascript
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 in mandatory for AA and equal 1, any size for AoE,
• No Window for NoAck

• ????
grouping fragmentation-content {
    description "This grouping defines the fragmentation parameters for all the modes (No Ack, Ack Always and Ack on Error) specified in RFC 8724.";

    leaf direction {
        type schc:direction-indicator-type;
        mandatory true;
        description "should be up or down, bi directionnal is forbiden.";
    }
    leaf dtagsize {
        type uint8;
        description "size in bit of the DTag field";
    }
}

leaf wsize {
    when "not(derived-from(../fragmentation-mode, 'fragmentation-mode-no-ack'))";
    type uint8;
    description "size in bit of the window field";
}

leaf fcnsize {
    type uint8;
    mandatory true;
    description "size in bit of the FCN field";
}
AOB ?