SCHC over LoRaWAN draft 02

Authors:
Nicolas sornin <nsornin@semtech.com>
Ivaylo Petrov <ivaylo@ackl.io>
LoRaWAN 3 device classes

Class A

uplink

Class B

Class A Downlink opportunities

periodic classB RX slots

Class C

Class A Downlink opportunities

continuous classC RX slot

TX
RX1
RX2
RXB
TX
RXB
RX1
RX2
RXB
RXC
RXC
RX1
RXC
RX2
RXC

uplink

LPWAN@IETF102

SCHC over LoRaWAN
Document status

- LoRaWAN architecture & mapping to SCHC components
  - Uplink & downlink Fragmentation
    - With Different parameters for class A/B/C
## Uplink frag

<table>
<thead>
<tr>
<th>RuleID</th>
<th>DTag</th>
<th>W</th>
<th>FCN</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>3bits</td>
<td>1bit</td>
<td>1bit</td>
<td>3bits</td>
<td>X bytes</td>
</tr>
</tbody>
</table>

1 byte

## Downlink frag

<table>
<thead>
<tr>
<th>RuleID</th>
<th>DTag</th>
<th>W</th>
<th>FCN</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>3bits</td>
<td>1bit</td>
<td>1bit</td>
<td>1bits</td>
<td>X bytes + 2bits</td>
</tr>
</tbody>
</table>

6bits
Seeking feedback

• Current draft encodes RuleID on 3 bits
  – This leaves 7 RuleIDs for header compression

Is that enough?
  – Typical COAP requests works with 3 rules
    • Unconfirmed POST, conf POST, conf GET
  – We need to learn more about real use-cases
To be done

• Security model
• Describe specificities of 3 device classes class A, B & C regarding IPv6 applications
• Provide detailed frame exchange examples
our feedback on SCHC

Like:

- the overall simplicity
- the fragmentation scheme

Desired addition:

- Implicit introduction & conclusion rule: *would allow using SCHC even for non-SCHC simple legacy devices*
- A way for device to send rule(s) to SCHC gateway: *out-of-band gateway rule provisioning is going to be complicated*
Draft adoption

We are asking the workgroup to adopt the draft