LPWAN WG

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Webex

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Reminder:

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

* Scribe; please contribute online to the minutes at: https://etherpad.tools.ietf.org/p/lpwan
** Recordings and Minutes are public and may be subject to discovery in the event of litigation.
*** From the Webex login

Agenda bashing

17:05	Opening, agenda bashing (Chairs) • Note-Well, Scribes, Agenda Bashing, Approval minutes from last meeting • Review todo • Status of drafts	10mn
17:15	Preparation for IETF 100	30mn
17:45	Fragmentation comments (Carles)	10mn
17:55	AOB	5mn

Last meeting Action items

- ~~LPWAN Overview~~
  - ~~Shepherd write-up~~
- ~~Time scale draft submitted to CoRE~~

IETF 100 Preparation

The Chairs

IETF 100

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*    [09:30] Administrivia                                          [20min]
     o    Note-Well, Scribes, Agenda Bashing
     o    Status of drafts (WGLC / forthcoming WGLC)

*    [09:50] draft-ietf-lpwan-overview                              [10min]
     o    LPWAN Overview - Doc status and updates

*    [10:00] draft-ietf-lpwan-ipv6-static-context-hc
     o    Update on IPv6 compression                                [10min]
     o    Update on SCHC fragmentation                              [20min]

*    [10:30] draft-ietf-lpwan-coap-static-context-hc                [10min]

*    [10:40] draft-barthel-icmpv6-schc                              [10min]

*    [10:50] draft-petrov-lpwan-ipv6-schc-over-lorawan              [15min]

*    [11:05] draft-zuniga-lpwan-schc-over-sigfox                    [15min]

*    [11:20] ETSI LTN and LPWAN-CSS                                 [30min]
*    [11:50] AOB                                                    [10min]
```

Fragmentation Discussion Group

- Tuesday
  - 14:30->17:00
- Hullet Room

LPWAN SCHC Fragmentation

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Problem

- Downlink fragmentation and ACK Always
  - In some technologies, an uplink message is required prior to the transmission of X downlink messages
    - E.g. X=1

```
----> Uplink
<---- Downlink
```

If ACK lost, neither the next fragments (if any) nor the "ACK request" can be sent

```
Device                    Network
  |----- trigger  ----->|
  |<----W=0, FCN=0------|
  |-----ACK, W=0------->|
  |<----W=1, FCN=0------|
  |-----ACK, W=1---X--->|lost
  |... transm stalled ..|ACK request cannot be sent!
```

Proposed solution (I)

- The fragment receiver MAY support timer-based ACK retransmission
- A fragment receiver transmits an ACK. Then:
  - It initializes and starts the ACK Retry timer
    - Except for an ACK sent in response to the last frag of the packet confirming the last window has been correctly received
  - If a frag of the next window or a missing frag from current window arrives before timer expiration
    - Timer is stopped
  - If the timer expires
    - The ACK is resent and the timer is reinitialized and restarted

Proposed solution (II)

- Fragment sender
  - Transmits the last fragment
  - Initializes its ACK Always timer to a long value
    - "Long value": e.g. several times the ACK Retry timer
  - If ACK received before timer expiration
    - Sender proceeds normally (e.g. resend any lost fragments)
  - If timer expires and no ACK received
    - Sender assumes its last fragment (and the whole last window) had been successfully received, and last ACK has been lost (most likely)
    - Otherwise, up to several ACK retries performed (unlikely that all fail)

Thanks!

Comments?

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AOB ?