LPWAN WG

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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

17:00	Opening, agenda bashing (Chairs) • Note-Well, Scribes, Agenda Bashing, Approval minutes from last meeting • Review todo • Status of drafts	10mn
17:10	LPWAN Overview - WGLC status and updates	5mn
17:15	Fragmentation comments (Carles)	10mn
17:25	Update on SCHC fragmentation (Ana)	30mn
17:55	AOB	QS

Last meeting Action items

- ~~Chairs to send IPR statement request on Mailing List (all participants answered)~~
- ~~Laurent to split the FSM into two FSM (both for sender and receiver) and add to draft~~
- ~~Ana to change names of ACK/No ACK to shorter names~~
- ~~Arun to publish the change of the additional column for field length~~
- ~~Publish the version by next Tuesday (October 17th)~~
- ~~Chairs to wait for final IPR statements and continue with publishing LPWAN Overview document~~
  - Shepherd write-up
- The ML should discuss the Time Scale draft

LPWAN Overview

Editor: Stephen Farrell
(many contributors)

WGLC status and updates

- Stephen pushed out the new rev now
- Then chairs to shoot in the pub-req

LPWAN SCHC Fragmentation

Authors:
Ana Minaburo <ana@ackl.io>
Laurent Toutain <laurent.toutain@imt-atlantique.fr>
Carles Gomez <carlesgo@entel.upc.edu>

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=4

```
----> downlink
<---- uplink
```

```
      Sender                 Receiver
        |<-- trigger UL ------|
        |-----W=0, FCN=3----->|
        |-----W=0, FCN=2----->|
        |-----W=0, FCN=1----->|
        |-----W=0, FCN=0----->|
lost    |<--X--ACK, W=1-------|no bitmap
 (*)    |-----W=0, FCN=0----->|
```

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

Proposed solution

- Allowing the receiver to retransmit an ACK
- A timer is needed at the receiver

Thanks!

Comments?

Authors:
Ana Minaburo <ana@ackl.io>
Laurent Toutain <laurent.toutain@imt-atlantique.fr>
Carles Gomez <carlesgo@entel.upc.edu>

Fragmentation FSM
draft-ietf-lpwan-ipv6-static-context-hc-07

Authors:
Laurent Toutain <Laurent.Toutain@imt-atlantique.fr>
Ana Minaburo <ana@ackl.io>

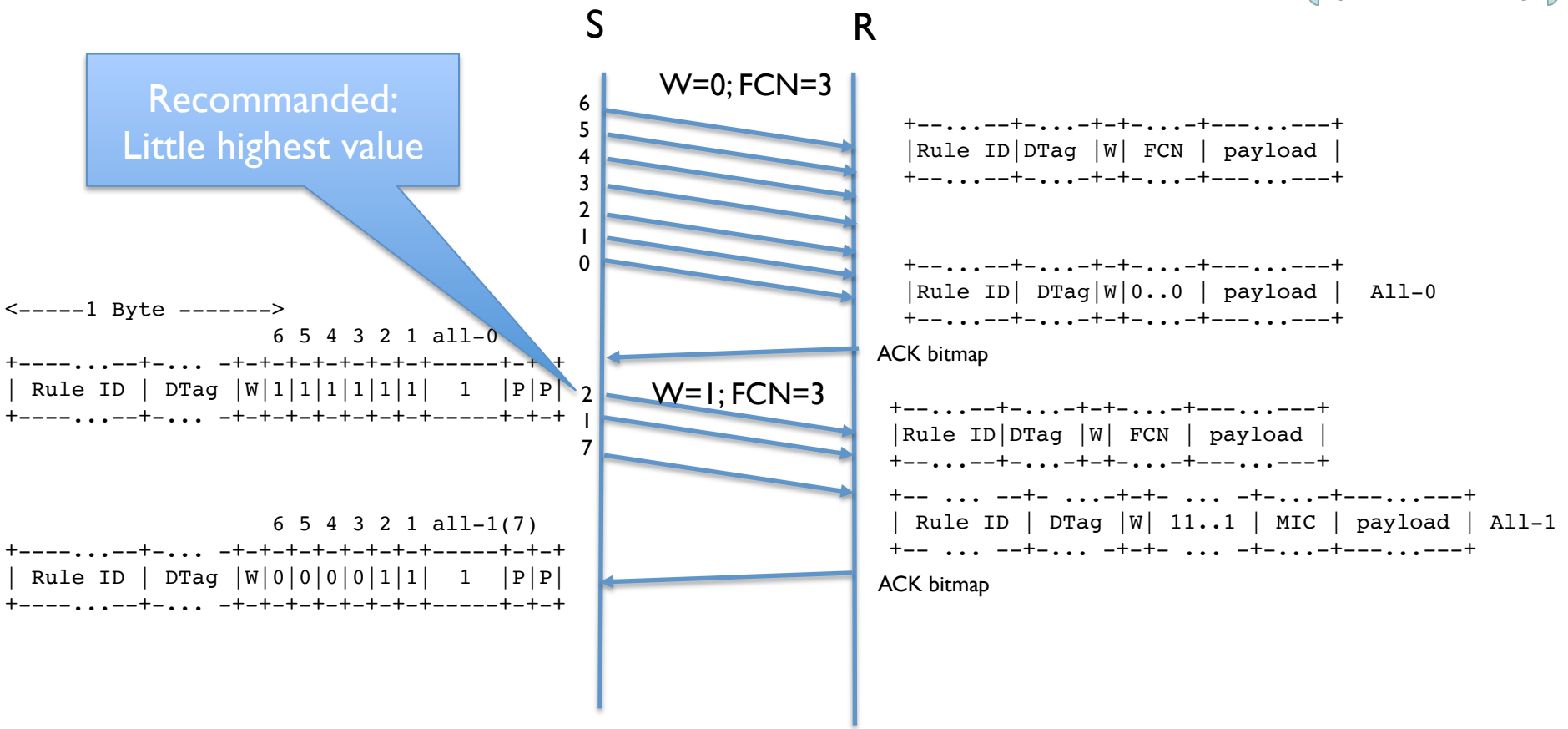
Updates:

- Add the State Machines and their description
- Clean the rest of the text for fragmentation
- New Fragmentation Formats Packets : All-0 and All-1
- Add: New Bitmap format and Abort

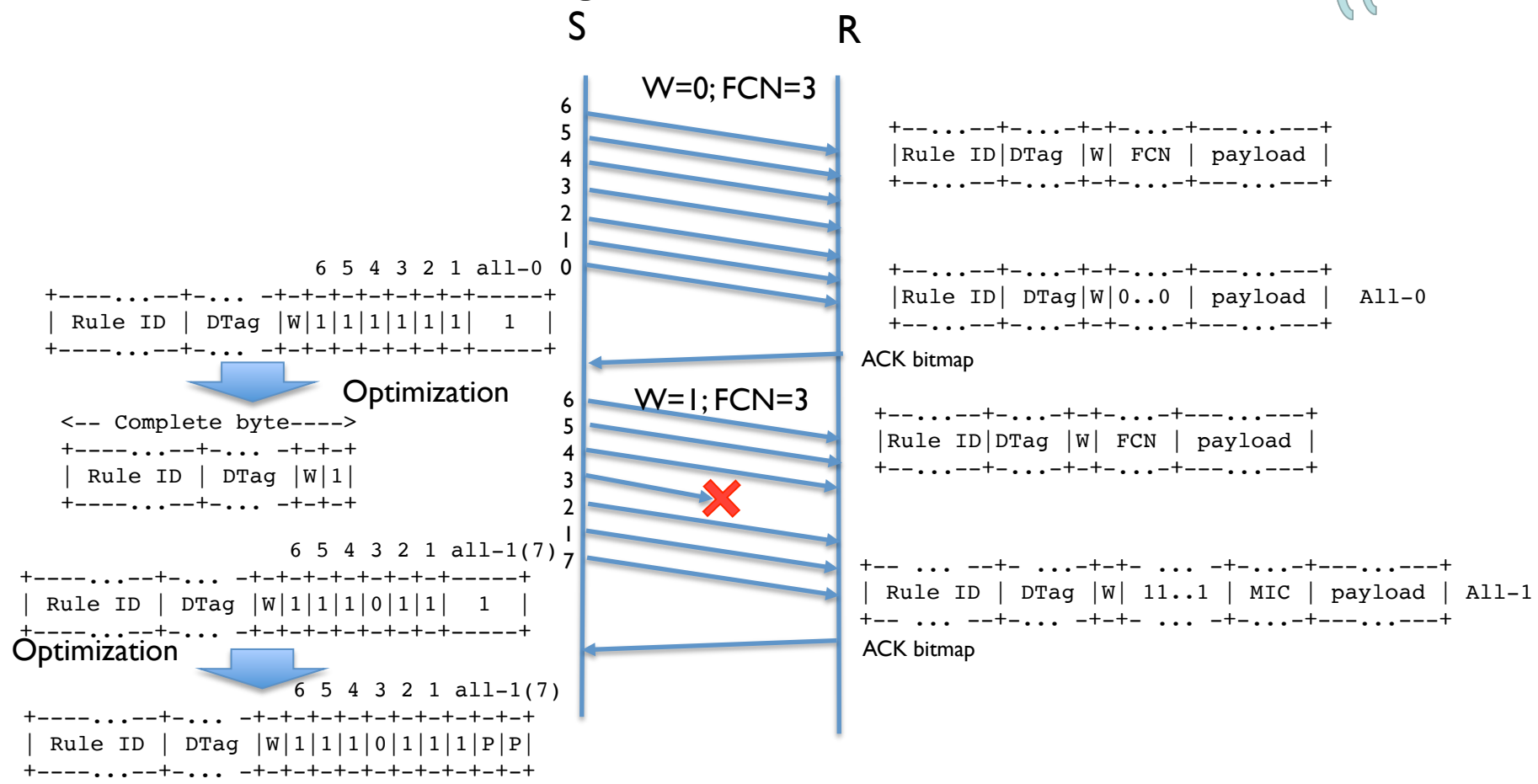
Fragmentation Formats Packets

- No last-one packets
- ACK format
- All-0 used to know last fragment in window
- All-1 used to know last fragment
- All-0 empty to request ACK
- All-1 empty to request ACK
- All-1 abort
- ACK abort

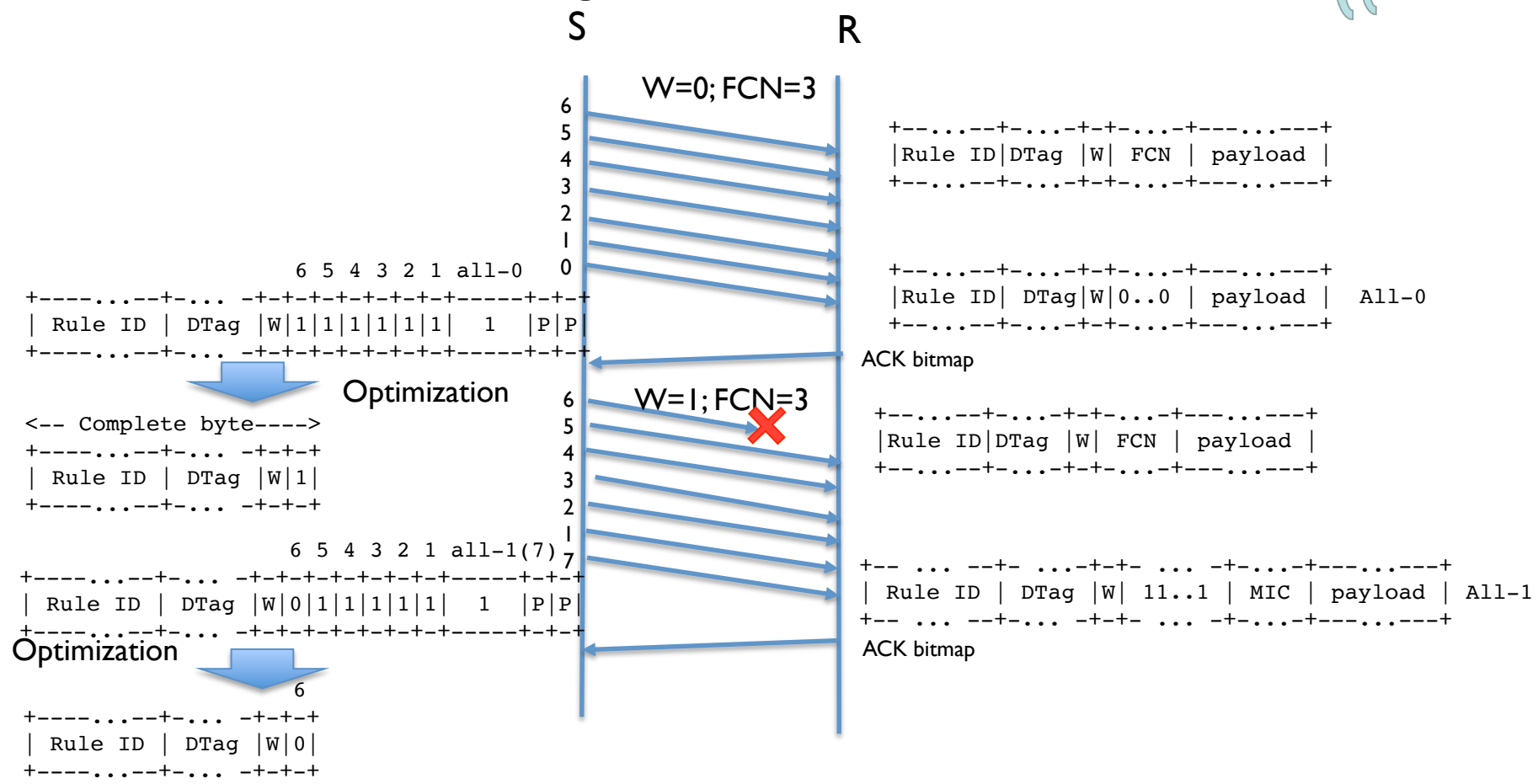
Fragmentation Formats



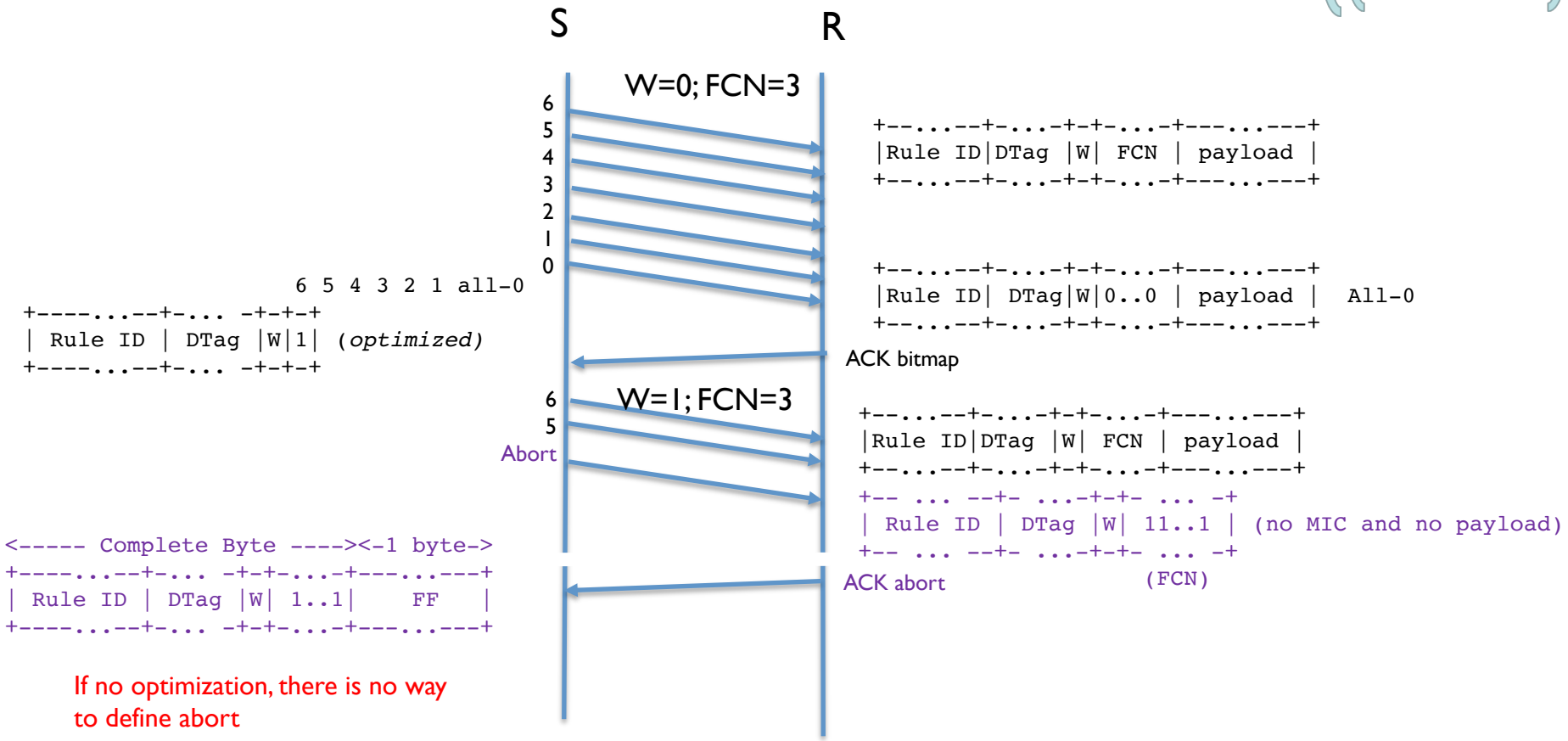
Fragmentation Formats



Fragmentation Formats

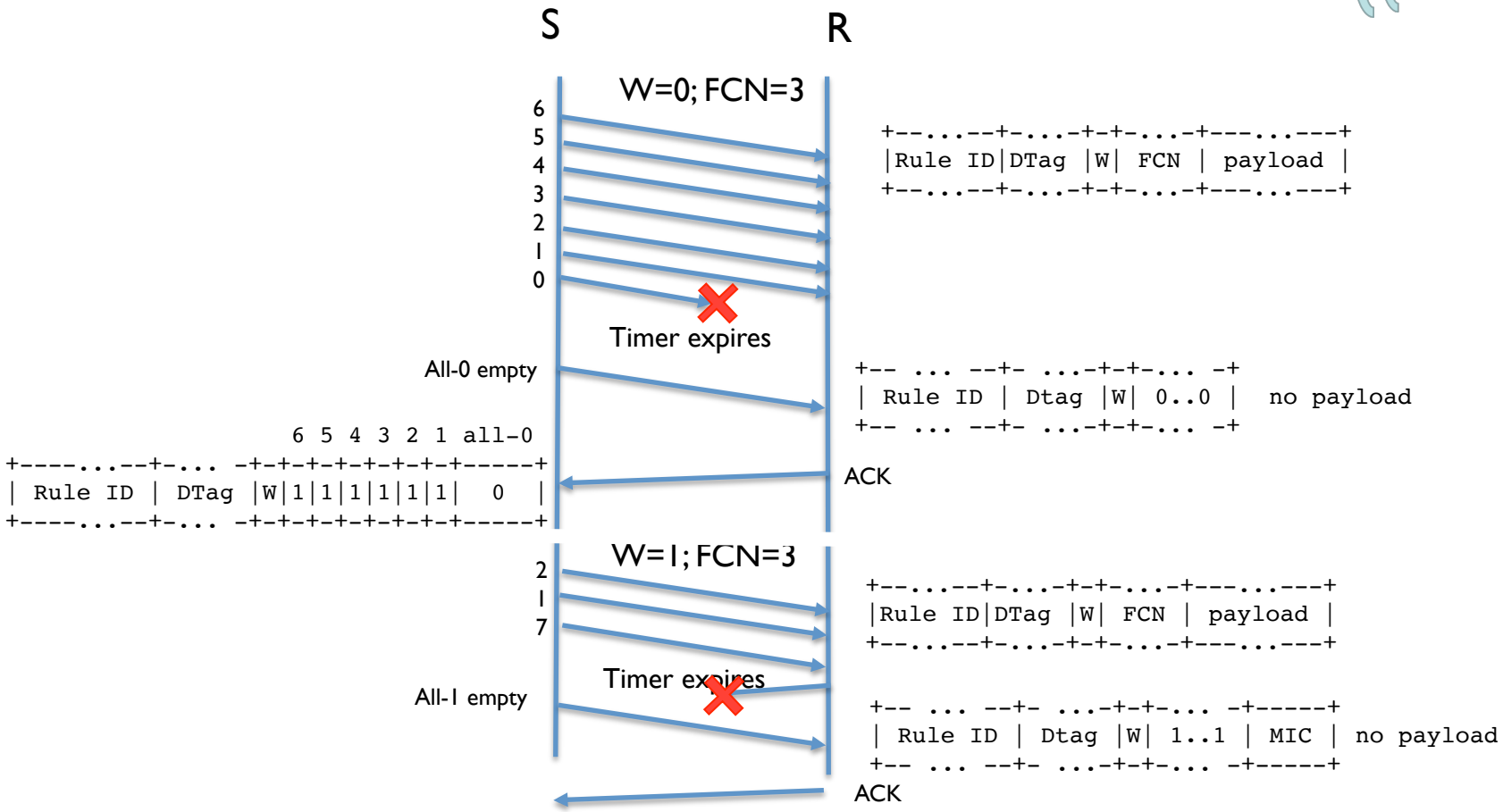


Fragmentation Formats



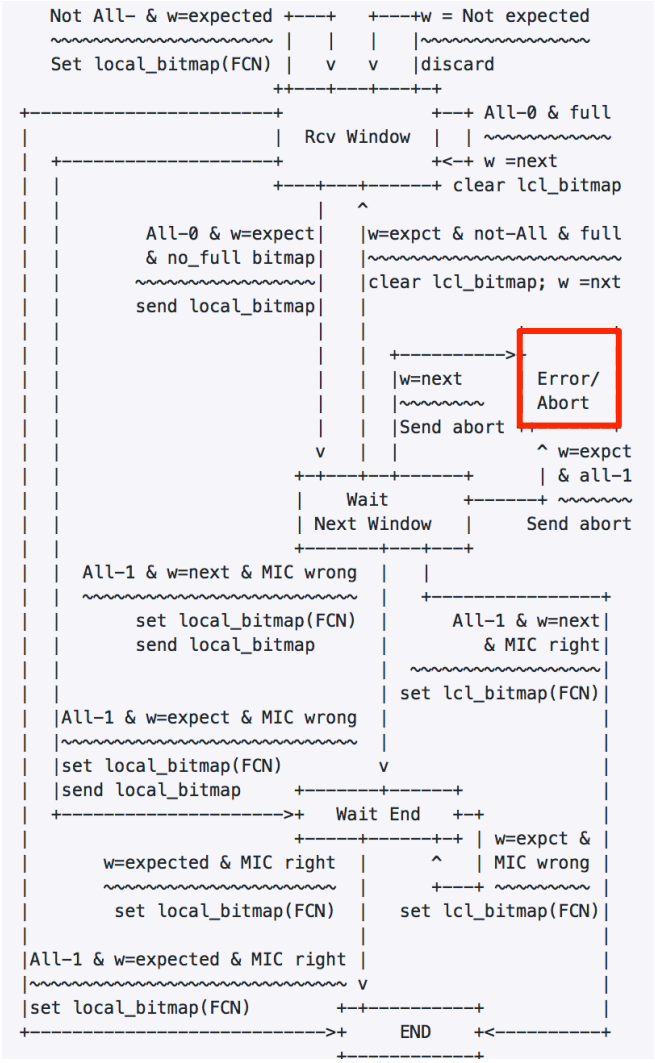
If no optimization, there is no way to define abort

Fragmentation Formats



ACK_on_error

Receiver



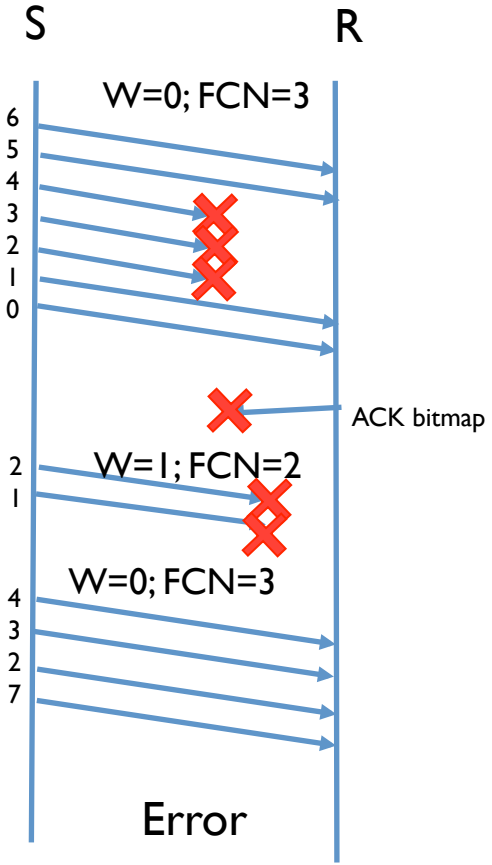
Support Multiple Window Sizes

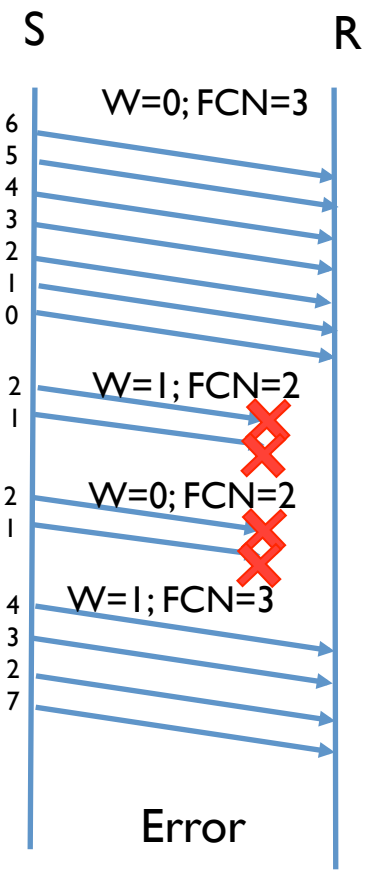
LPWAN

For Discussion

- "For Window mode operation, implementers may opt to support a single window size or multiple window sizes. The latter, when feasible, may provide performance optimizations. For example, a large window size may be used for packets that need to be carried by a large number of fragments. However, when the number of fragments required to carry an packet is low, a smaller window size, and thus a shorter bitmap, may be sufficient to provide feedback on all fragments. If multiple window sizes are supported, the Rule ID may be used to signal the window size in use for a specific packet transmission."
- To use for ACK_always

Multiple Window Sizes ACK_on_error





Missing

- Finish the description of Abort and the on optimization of bitmap
- Review the examples to put this new features
- Missing the padding in the format packets as well as in the text

Thanks

AOB ?