draft-ietf-lpwan-schc-compound-ack-01

Juan Carlos Zúñiga (Sigfox), Carles Gómez, Sergio Aguilar (UPC),
Laurent Toutain (IMT-Atlantique),
Sandra Céspedes, Diego Wistuba (U Chile)

Draft history

- SCHC Compound ACK message definition and examples added to draft-ietf-schc-over-Sigfox rev 06
- WG decision to make compound ACK mechanism generic for all LPWAN technologies on a standalone draft
- Implementation of SCHC Compound ACK tested over Sigfox
- draft-ietf-lpwan-schc-compound-ack-00 posted in July'21, and revised in Oct'21
- WG Last Call held in October-November 2021

Backup slides

- SCHC Compound ACK Definition
- Message format
- Message sequence examples

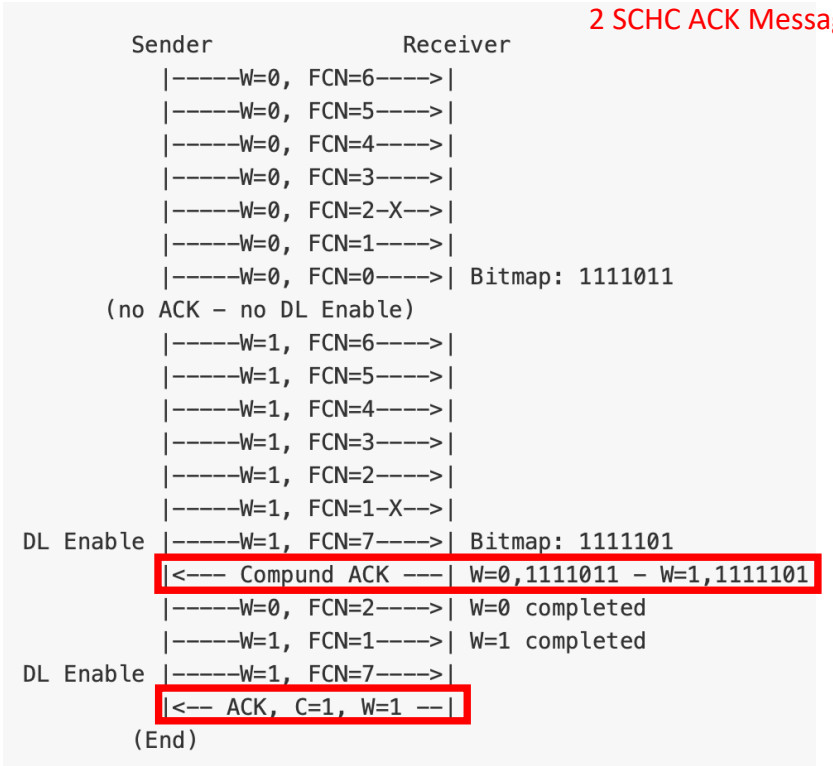
SCHC Compound ACK – Definition

- The SCHC Compound ACK:
  - Only reports windows with fragment losses
  - Includes W field for each bitmap
  - May not fit all bitmaps of all windows for a SCHC packet
  - Has variable size
  - Is compatible with the SCHC Receiver Abort and ACK Failure message formats (RFC8724)

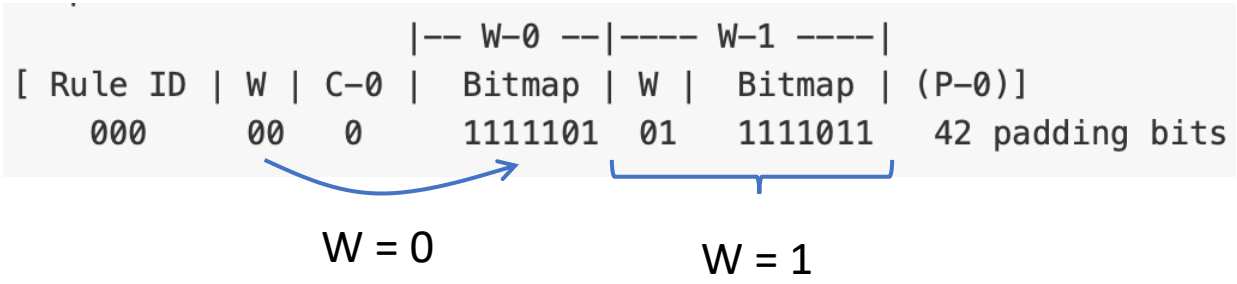
- ACK messages reduction when using SCHC Compound ACK:
  - SCHC Compound ACK messages = Regular SCHC ACKs – (# of windows – 1)

SCHC Packet: 14 tiles
Window size: 7 tiles
2 SCHC ACK Messages

Example



SCHC Compound ACK – Message Format

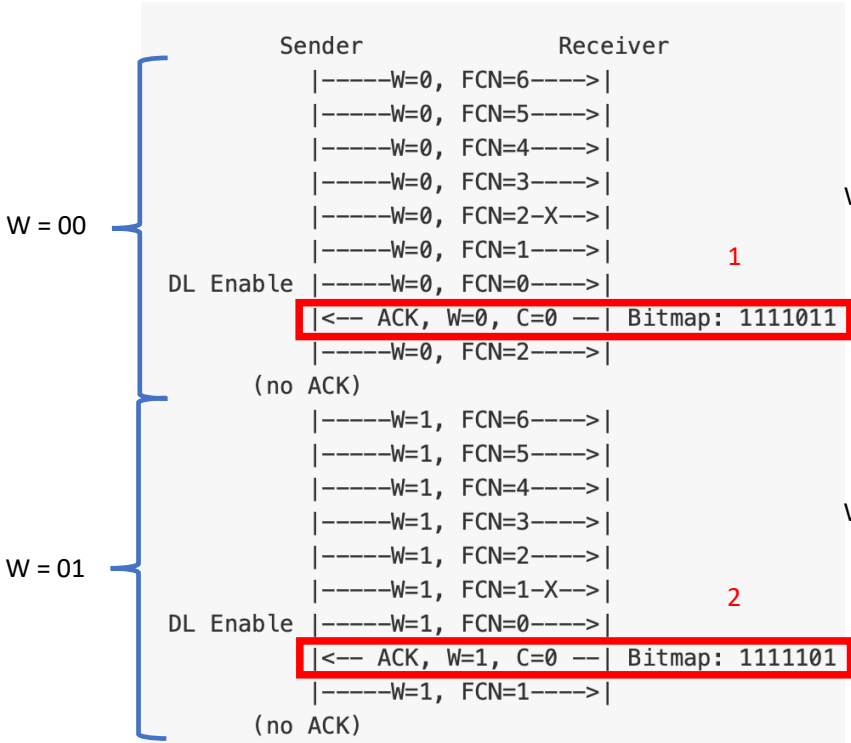


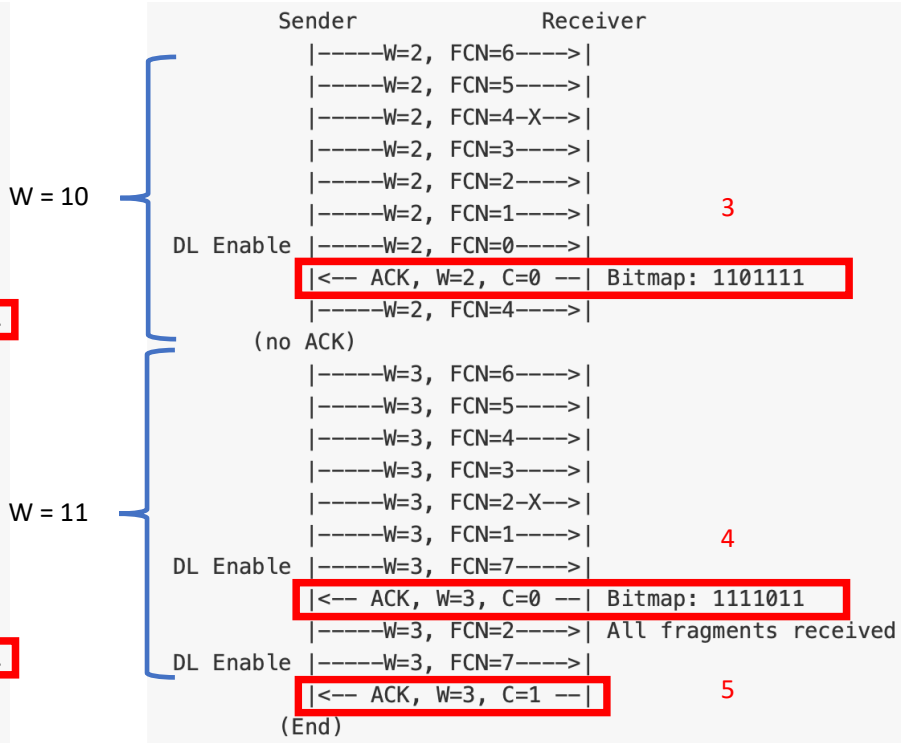
SCHC Packet: 14 tiles
Window size: 7 tiles

- When ACK-on-Error mode is used for UL fragmentation, SCHC Compound ACKs MUST be used the in the downlink responses
- W + Bitmap groups MUST be ordered from the smallest window number to the largest

Example – SCHC Packet 28 tiles – Normal SCHC ACK

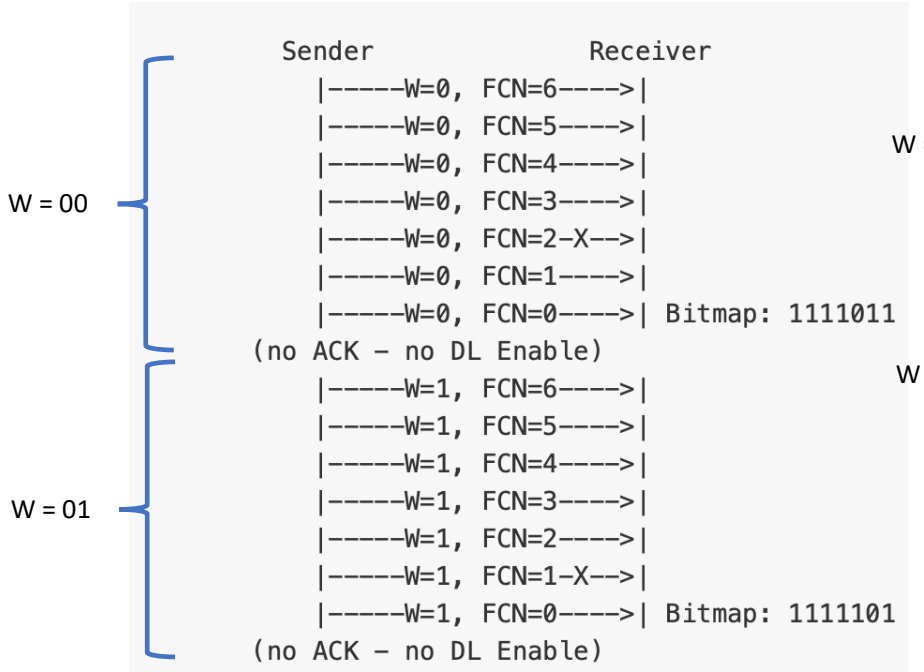
5 SCHC ACK Messages

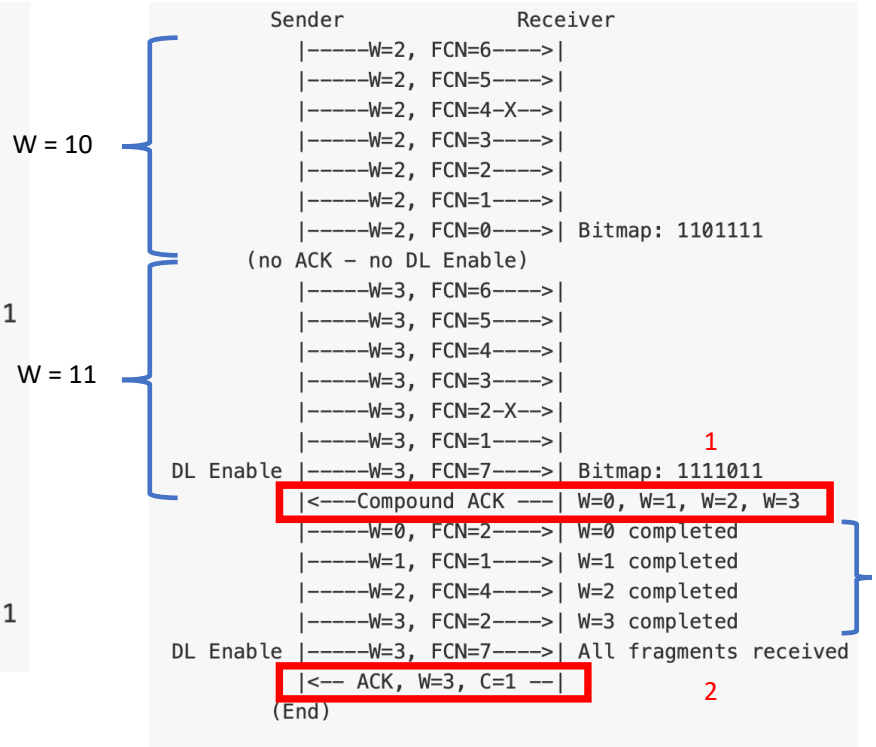




Example – SCHC Packet 28 tiles – Compound ACK

2 SCHC ACK Messages





Thanks!