

Enhanced EH Format (Section 15.2.2.2)

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Discuss and approve the proposed text changes into IEEE802.16m/D3 document

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Introduction (1/2)

- The MAC PDU and extended header format in 16m (P802.16m/D2) is shown in Figure 1 and Figure 2 respectively
 - The EH format is variable in nature
 - The receiver can not decrypt the MAC PDU payload until it has parsed all the extended header
- In 16e, the extended sub header format contained the 'EH Length' which facilitated decryption of payload without parsing the extended sub headers

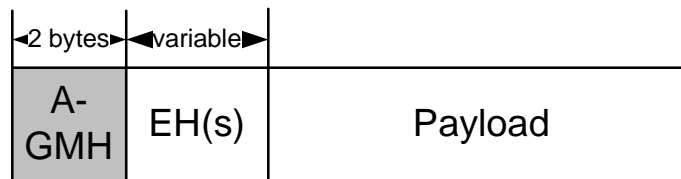


Figure 1: MAC PDU format

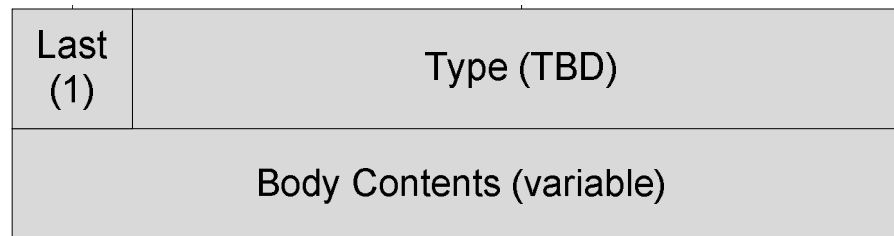


Figure 2: EH format



Introduction (2/2)

- FPEH/FEH issue
 - FPEH/FEH format is different from other EH format
 - Last & Type field are not defined
 - Extended header (FPEH/FEH) is present even when EH bit is '0' in AGMH

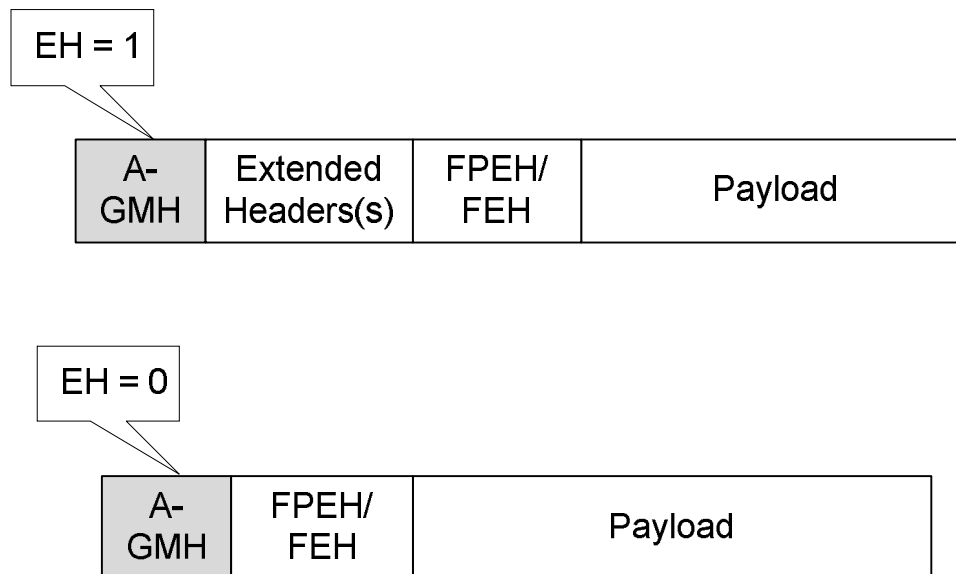


Figure 3: EH indication and FPEH/FEH presence

Proposed Extended Header Format (1/2)

- The extended header format is shown in figure 5 below
 - All extended headers are of same format consisting of a type field followed by type specific fields
 - ‘Last’ bit is removed
 - The first extended header is preceded by 1 byte ‘EH Length’ field which gives the sum of length of all extended headers
 - The presence/absence of EH is indicated by ‘EH’ field in AGMH

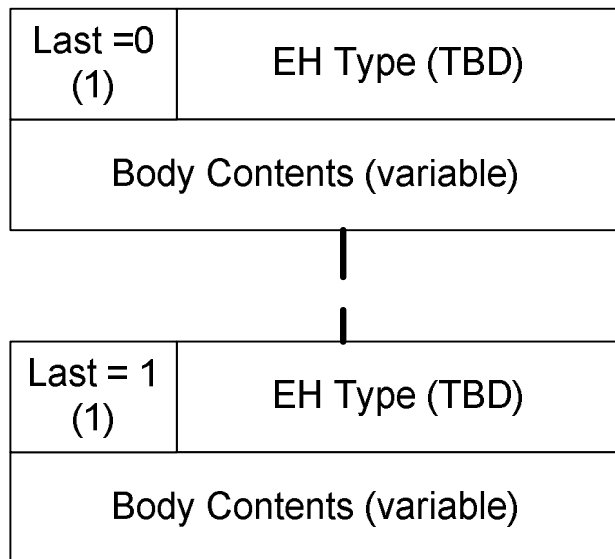


Figure 4: Existing EH Format

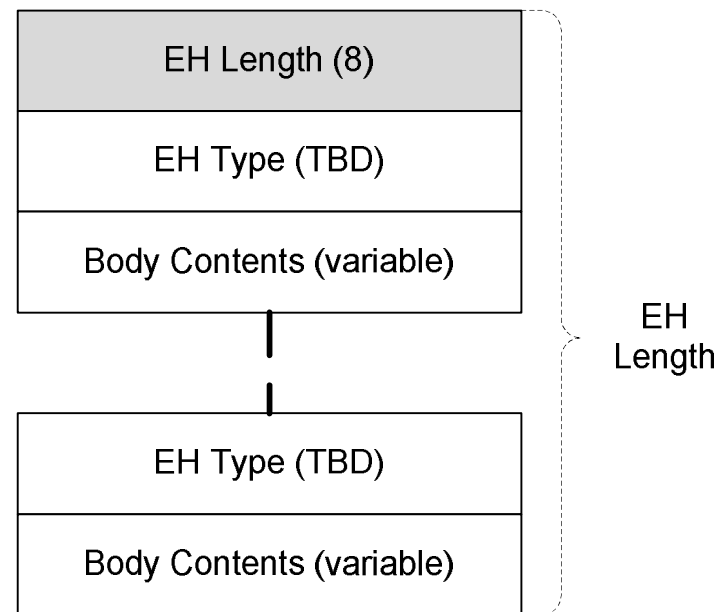


Figure 5: Proposed EH format



Proposed Extended Header Format (2/2)

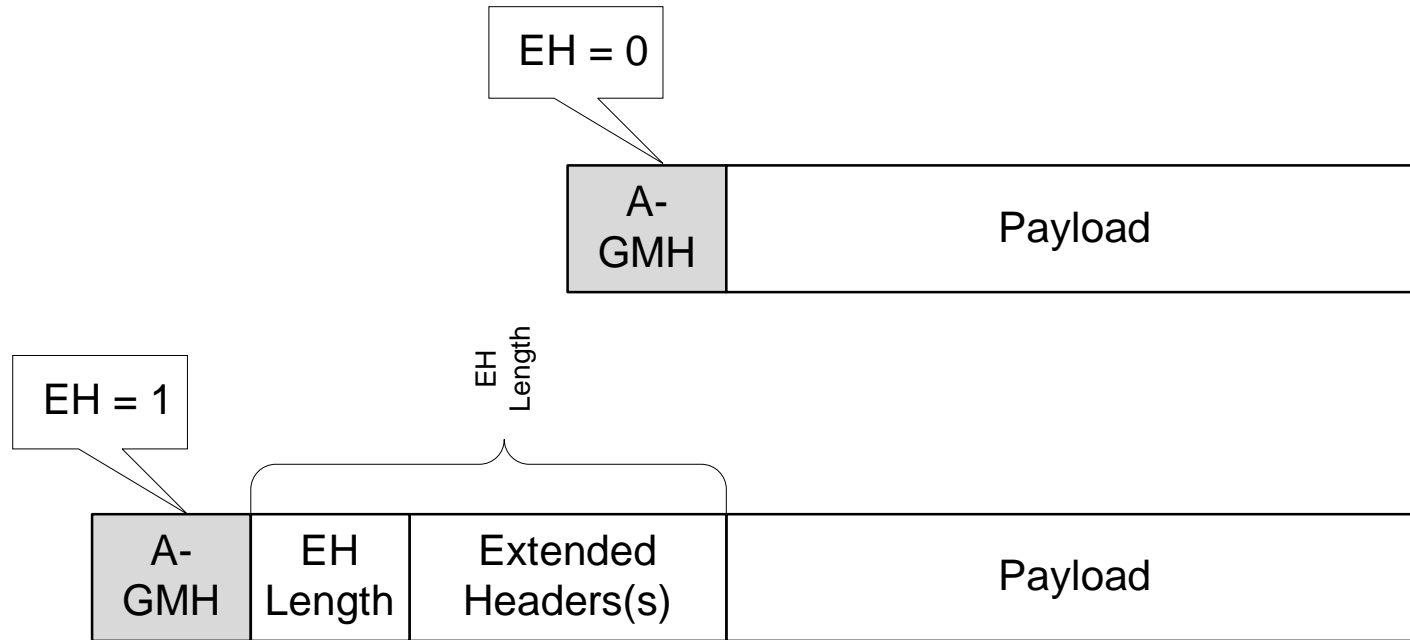


Figure 6: Proposed EH format illustration



Proposed FPEH Format

- FPEH is defined as Fragmentation & Packing sub header (FPSH)
 - Fields of FPSH are same as FPEH
 - FPSH is appended before the first SDU/SDU fragment in the transport connection payload (see figure 7)

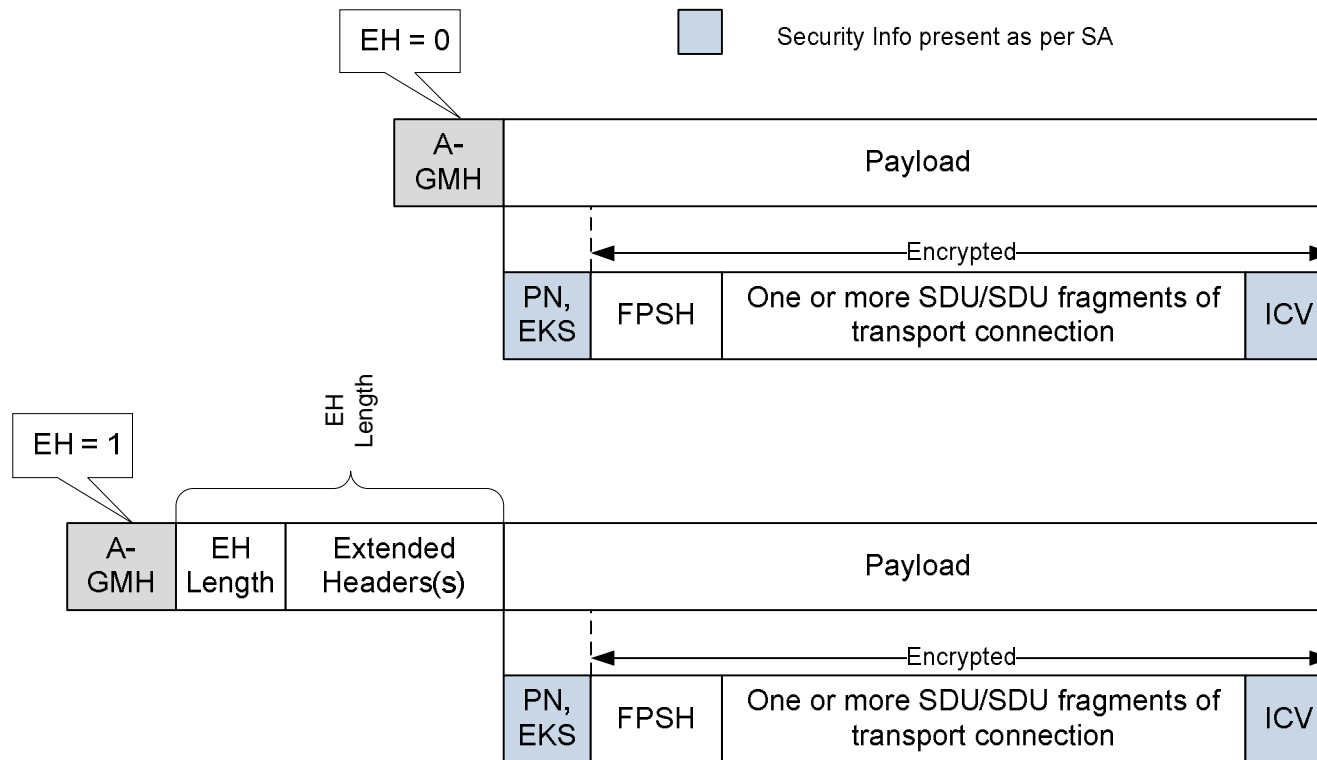


Figure 7: FPSH and EH illustration



Proposed FEH Format

- FEH is defined as Fragmentation sub header (FSH)
 - FSH is appended before the control message or control message fragment in the control connection payload
 - Fields of FSH are same as FEH except the 'EC' bit
 - EC bit is removed from FSH
 - Flow ID is used to distinguish between the unencrypted and encrypted control message on the control connection
 - Only one control connection exists

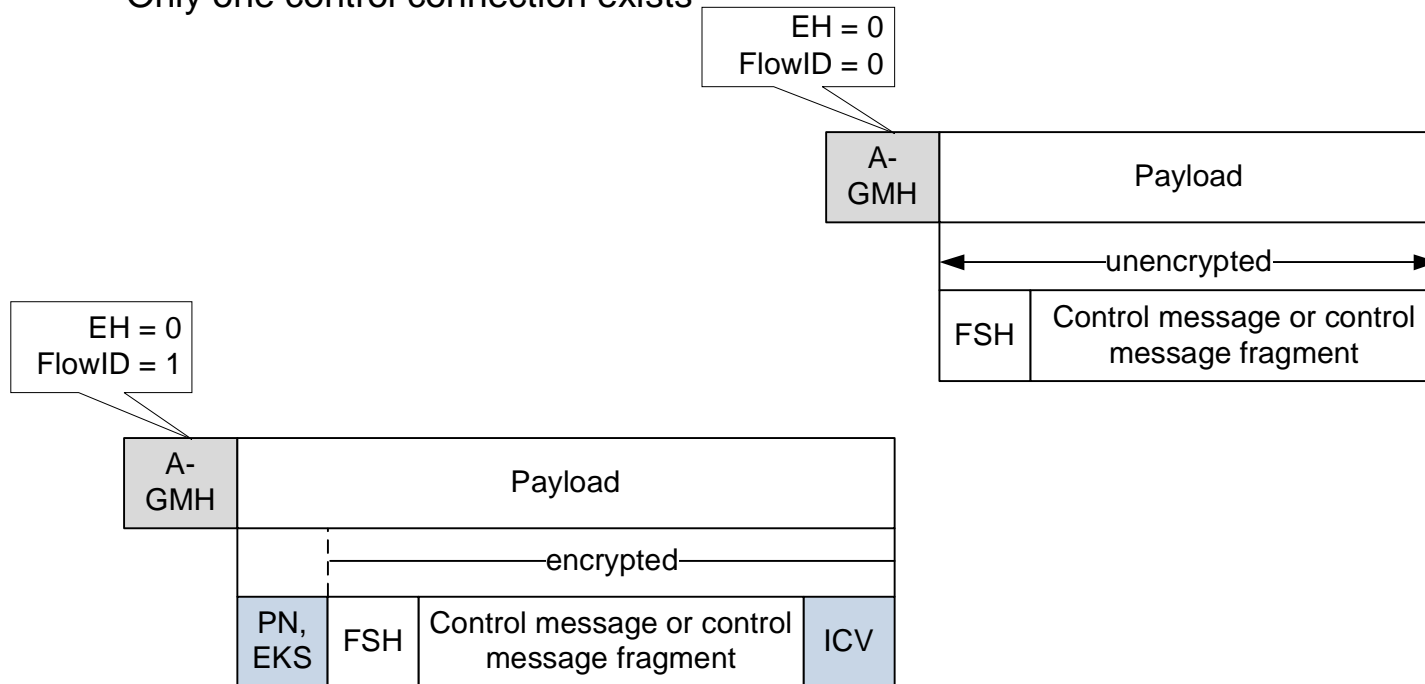


Figure 8: FSH and FlowID illustration



Multiplexing Illustration

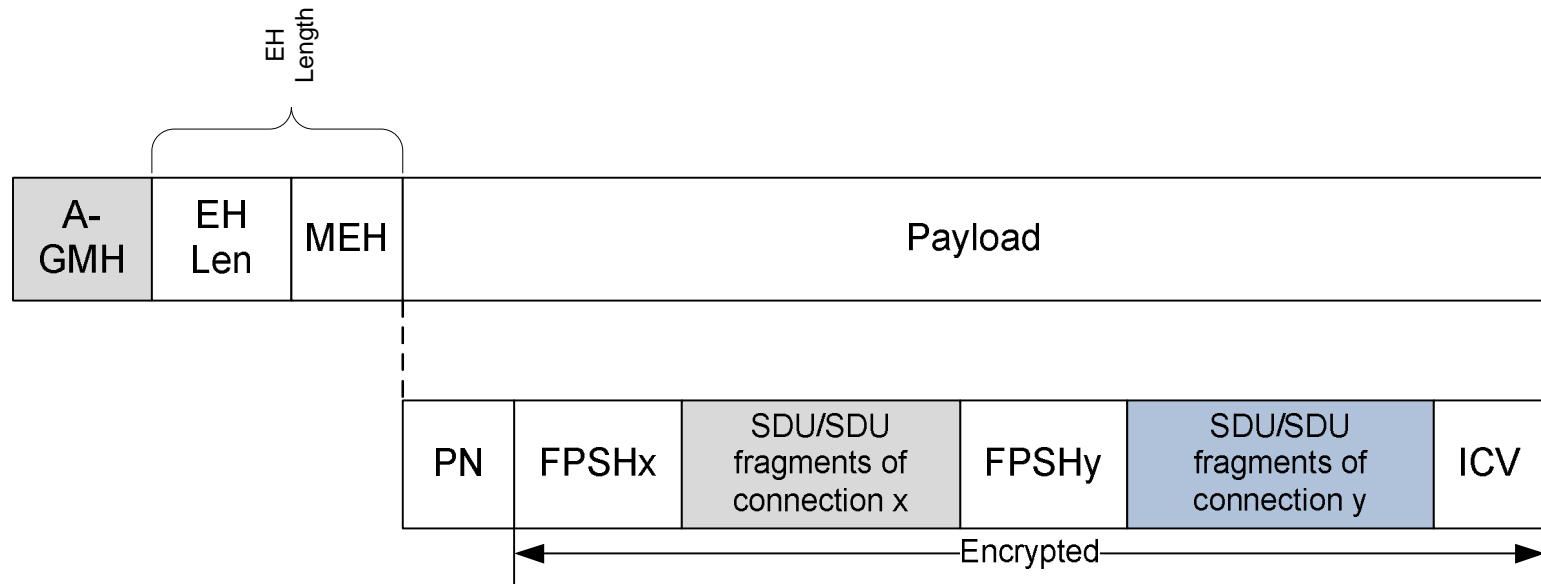


Figure 9: Illustration of multiplexing

