

IPv6 over 802.11ah
draft-delcarpio-6lo-wlanah-00

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IETF 93

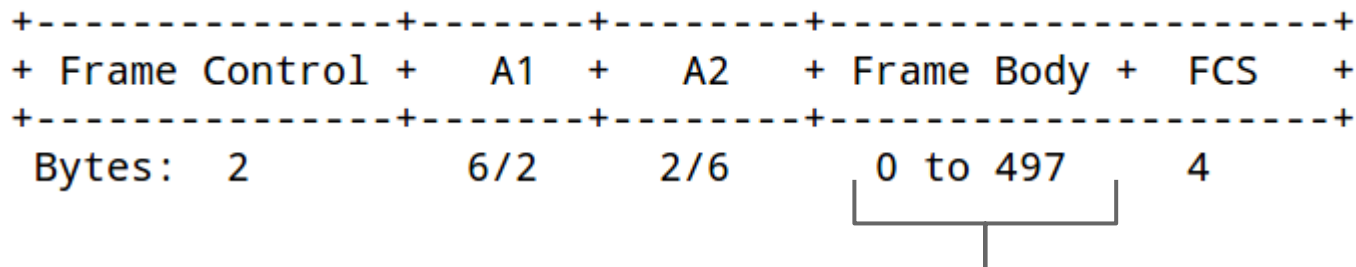
802.11ah

- Bandwidth of 802.11ah primary channel is 2Mhz, with OFDM symbol length of $40\mu\text{s}$ which is ten-times longer than in 802.11ac.
- Thus, air-time of radio transmissions is longer than in other 802.11 amendments however the range of the system is extended
- Long transmissions
 - reduce the number of packets that can be served in a given amount of time
 - increase the delay experienced at higher layers especially if packets are retransmitted

802.11ah

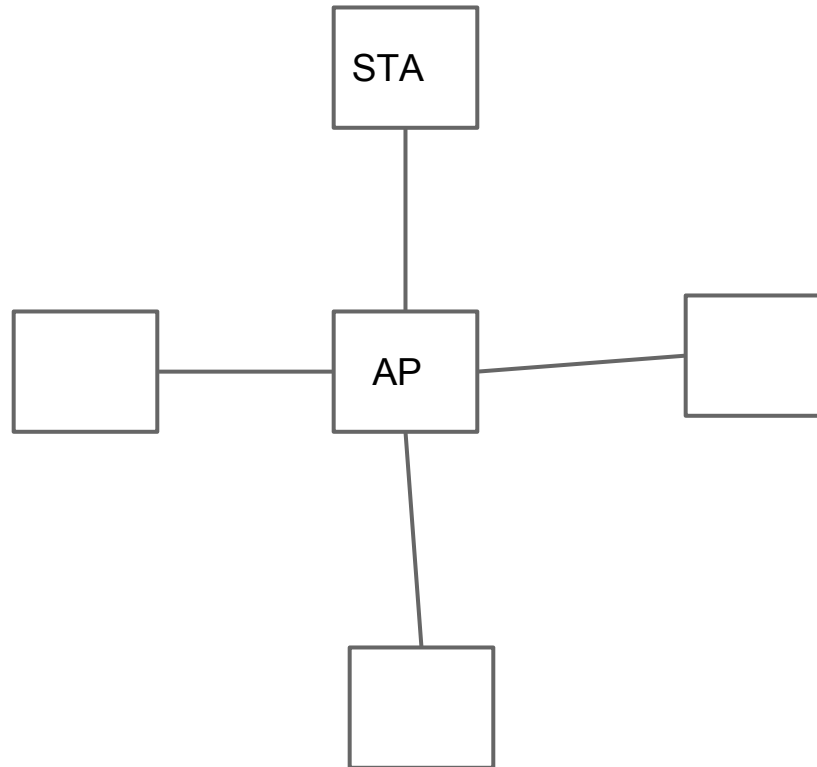
- Reduction of MAC header overhead has been considered important in the standard, for example:
 - Protocol Version 1 of MAC (short) formats has been introduced
 - Short beacon frames (system information) has been introduced
 - MAC header compression has been introduced

MAC frame PV1 of 802.11ah



(Example with Single-MSDU)

802.11ah



- Star Topology is defined in 802.11ah
- No Mesh Topology is defined in 802.11ah. The mesh topology is considered other non-related standard 802.11s

Why 6LoWPAN in 802.11ah?

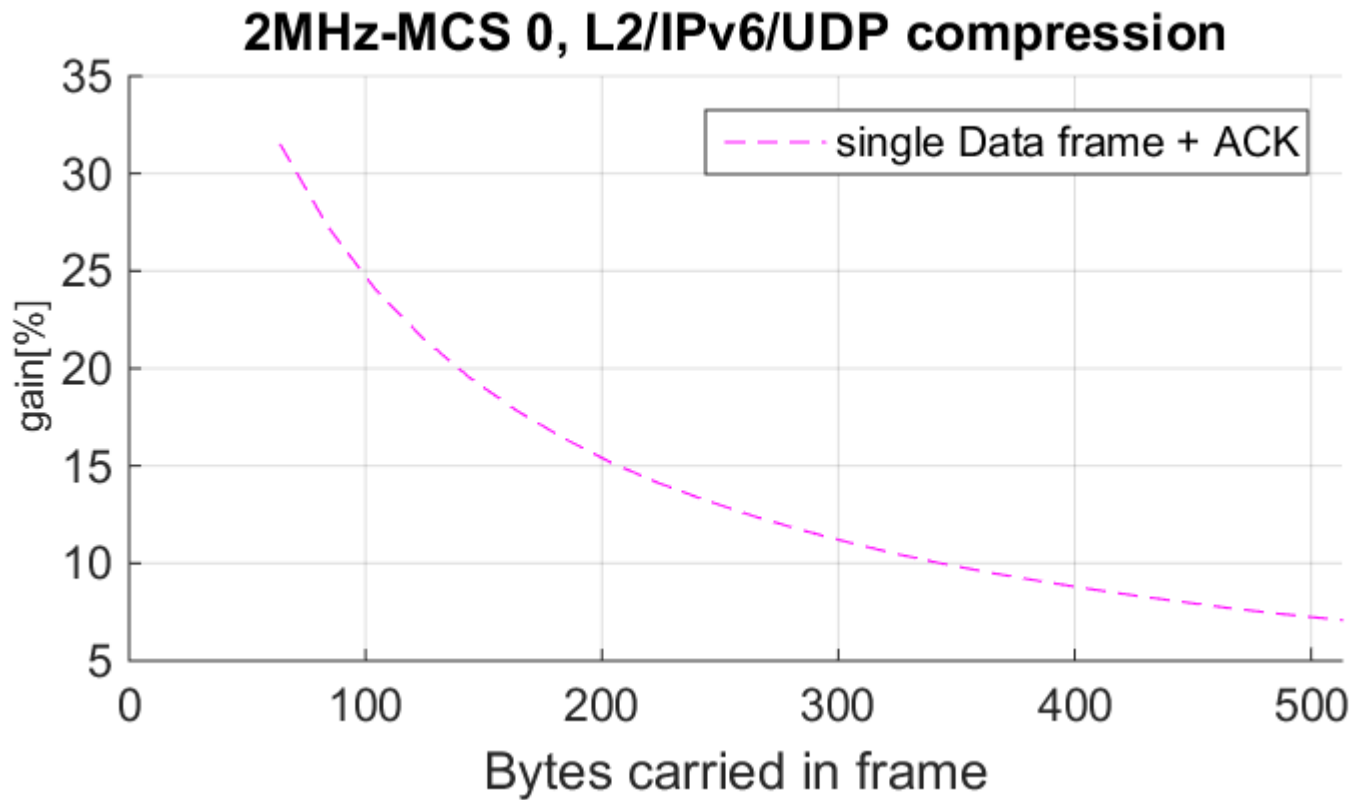
IPv6 base header is 40 bytes long, an IPv6/UDP stack has minimum 48 bytes of header

6LoWPAN can reduce the overhead of IPv6 headers (also UDP) at networking layer

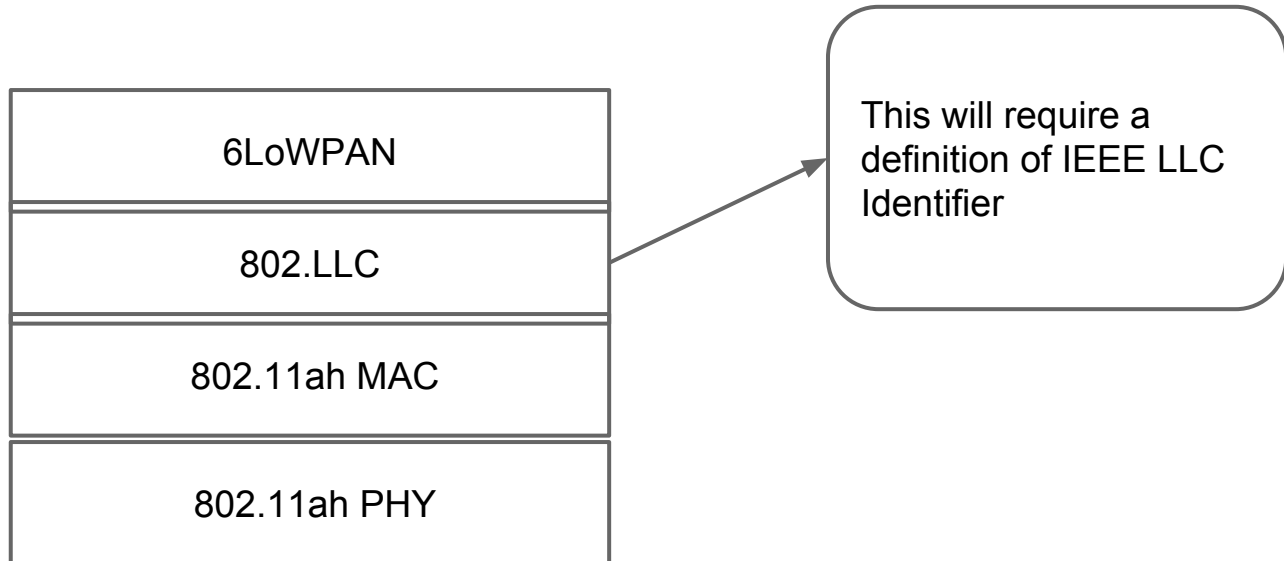
IPv6/UDP headers could be reduced from 48 bytes to 3 bytes

Reduction of header overhead improves overall BSS capacity by reducing air-time of each data frame in the BSS

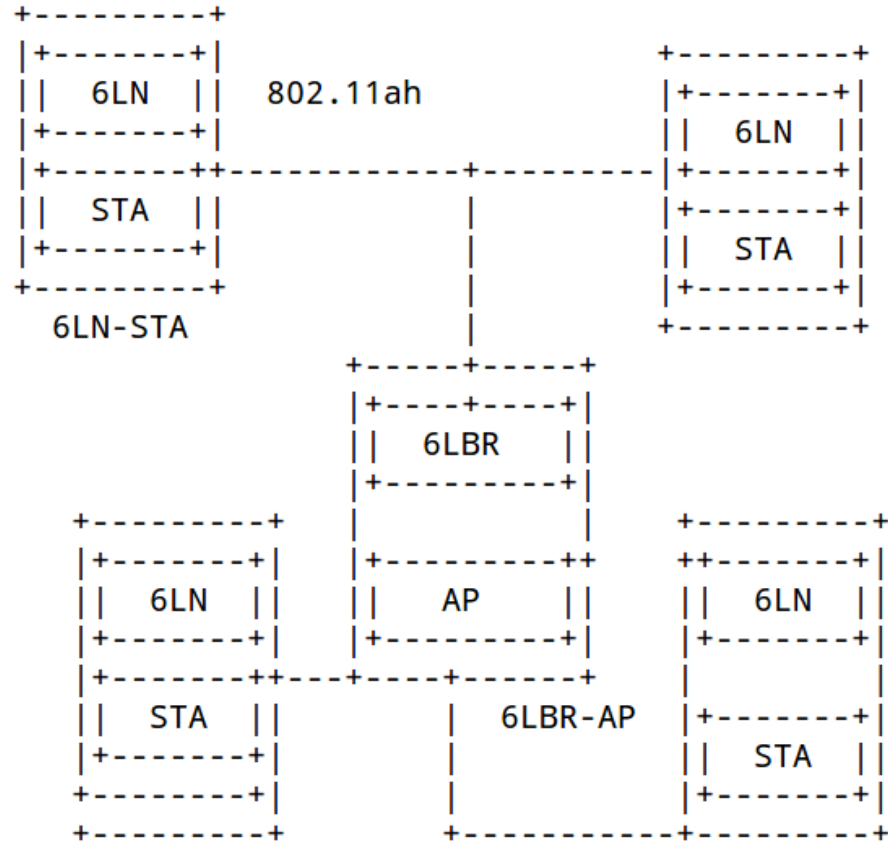
Example of benefits of compression



Identifier will be required for LLC



Network Topology



To be addressed

- Some of our concerns in study:

1) At the end of section 6, this text was written

" For non-link-local addresses a 64-bit IID MAY be formed by utilizing the 48-bit MAC device address. Random IID can be generated for 6LN using alternative methods such as [I-D.ietf-6man-default-iids]."
Is this sufficient?

2) How to use 6CO option along with Router advertisements for compression context?

3) Section 8

We would appreciate your comments and suggestion on this draft.

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Thanks!