IEEE P802.11
Wireless LANs

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| Channel mapping from 5 and 6 GHz to LC IF |
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Abstract

This contribution proposes revised working text for the channel mapping in 32.3.4 in D3.0. It has been prepared to assist the resolution of CIDs 32 and 38 in doc. 11-22-0949-01.

Rev.0: initial text for discussion

Rev.1: new text after discussion, adding also the graph from doc. 11-22-1088r1

Rev 2: added text requiring AP to send operating class, band, etc.

 The current description of the mapping in D2.1 was found confusing. Things to be done:

1. Reverse the order (map from RF to LC IF) and not the other way around. This makes understanding easier.
2. Describe clearly what happens to each 20 MHz sub-channel in 40 MHz channels in the 5 GHz band
3. Clarify how the mapping goes from 5G+6G to LC IF channel numbers.

Proposed new text in 32.3.4 Channel numbering

The set of valid operating channel numbers for LC IF signals mapped to the 5 GHz band is defined as follows:

* The 20 MHz channels {36, 40, 44, 48, 52, 56, 60, 64} in the 5 GHz band shall be mapped to the 20 MHz LC IF channels {1, 5, 9, 13, 17, 21, 25, 29} respectively;
* if PrimaryChannelLowerBehavior in the behavioural Limits Set of Operating Class 27 in Table E-4 applies, then the 40 MHz channels {36, 44, 52, 60} are using the 20 MHz channel sets {[36 40], [44 48], [52 56], [60 62]} in the 5 GHz band (where the lower index in each set is the primary channel), which shall be mapped so that the primary channel is mapped to the 40 MHz LC IF channels {1, 9, 17, 25}, respectively,
* if PrimaryChannelUpperBehavior in the behavioural Limits Set of Operating Class 27 in Table E-4 applies, then the 40 MHz channels {40, 48, 56, 64} are using the 20 MHz channel sets {[36 40], [44 48], [52 56], [60 62]} in the 5 GHz band (where the upper index in each set is the primary channel), which shall be mapped so that the primary channel is mapped to the 40 MHz LC IF channels {5, 13, 21, 29}, respectively;
* the 80 MHz channels {42, 58} in the 5 GHz band shall be mapped to the center frequencies of the 80 MHz LC IF channels {7, 23};
* the 160 MHz channel {50} in the 5 GHz band shall be mapped to the center frequency of the 160 MHz LC IF channel {15}.

The mapping between the LC channels and RF channels in the 6 GHz band shall follow the rules below:

* The 20 MHz channels {1, 5, 9, 13, 17, 21, 25, 29} in the 6 GHz band shall be mapped to the center frequencies of 20 MHz LC IF channels {33, 37, 41, 45, 49, 53, 57, 61};
* the 40 MHz channels {3, 11, 19, 27} in the 6 GHz band shall be mapped to the center frequencies of 40 MHz LC IF channels {35, 43, 51, 59}, respectively;
* the 80 MHz channel {7, 23} in the 6 GHz band shall be mapped to the center frequencies of 80 MHz LC IF channels {39, 55};
* the 160 MHz channel {15} in the 6 GHz band shall be mapped to the center frequencies of the LC IF channel {47}.

The above rules are shown in Figure 32-3 (Channel mapping from LC IF to 5 GHz and 6 GHz RF).

An LC AP shall communicate the operating class, band (5 GHz or 6 GHz), channel width, and channel number.



**Figure 32-3—Channel mapping from LC IF to 5 GHz and 6 GHz RF**