IEEE P802.11
Wireless LANs

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| CC28 AOA definition CIDs |
| Date: 2018-11-05 |
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|  |  |  |  |  |

Abstract

This document proposes resolutions to CC28 CIDs related to the AOA fields. All changes are in reference to D0.41

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 479 | 37.00 | 9.4.2.252 | Azimuth AOA is currently only measured in earth coordinates, i.e., w.r.t. geographical north. Also Elevation AOA requires knowledge of absolute reference, e.g. horizon. Not all devices may have precise knowledge thereof, which holds especially for mobile STAs. | Allow alternative angular reference. Details TBD. |
| 480 | 37.00 | 9.4.2.252 | The AOA Azimuth subfield is not defined for non-AP STA | Please define |
| 481 | 37.00 | 9.4.2.252 | The AOA Elevation subfield is not defined for non-AP STA | Please define |

Proposed Resolution: **Revised**

**Discussion:**

To enable non-AP STA, or an AP STA to use angles that are not in earth coordinate, we will add a field to the AOA definition that will define wheterh earth coordiantes or self coordiantes are used.

***TGaz Editor: Modify the table in P33L18 as follows***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B10 | B11 B20 | B21 B27 | B28 B34 | B35 B45 | B46 | B47 |
|  | AOA Azimuth | AOA Elevation | AOA Azimuth Accuracy | AOA Elevation Accuracy | Best AWV ID | AOA Reference | Reserved |
| bits: | 11 | 10 | 7 | 7 | 11 | 1 | 1 |

***TGaz Editor Modify the text P33L21-24***

The AOA Azimuth subfield contains the Angle of Arrival (AOA) azimuth result in degree/4 resolution. This subfield is an unsigned two’s complement number taking values between 0 and 1439. When the AOA Reference subfield is set to 1, the AOA Azimuth subfield is in earth coordinates (i.e. direction 0 is north). When the AOA Reference subfield is set to 0, the AOA Azimuth subfield is in coordinates relative to the device.

The AOA Elevation subfield contains the AOA elevation result in degree/4 resolution. This subfield is a signed two’s complement number taking values between -360 and 360.

When the AOA Reference subfield is set to 1, the AOA Elevation subfield is in earth coordinates (i.e. elevation 0 is horizon). When the AOA Reference subfield is set to 0, the AOA Elevation is in coordinates relative to the device.

***TGaz Editor: Modify table 4 in P34L24 as follows:***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element ID | Element Length | Element ID Extension | Number of AOD Feedbacks  | AOD Reference | AOD Feedback 1 |  | AOD Feedback N | Reserved |
| Octets: | 1 | 1 | 1 | 1 |  |  | Variable |  |  |

***TGaz Editor: Modify table 5 in P34L27 as follows***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B0 B10 | B11 B17 | B18 B27 | B28 B34 |
|  | AOD Azimuth | AOD Azimuth Accuracy | AOD Elevation | AOD Elevation Accuracy |
| Bits: | 11 | 7 | 10 | 7 |

***TGaz Editor: Modify the text in P35L3-7 as follows:***

The AOD Azimuth subfield contains the Angle of Departure (AOD) azimuth result in degree/4 resolution. This subfield is an unsigned two’s complement number taking values between 0 and 1439. When the AOD Reference field is set to 1, the AOD Azimuth is in earth coordinates (i.e. direction 0 is north). When the AOD Reference subfield is set to 0, the AOD Azimuth subfield is in coordinates relative to the device.

The AOD Elevation subfield contains the AOD elevation result in degree/4 resolution. This subfield is a signed two’s complement number taking values between -360 and 360.

When the AOD Reference field is set to 1, the AOD is in earth coordinates (i.e. elevation 0 is horizon). When the AOD Reference subfield is set to 0, the AOD Elevation subfield is in coordinates relative to the device.

**References:**