That IEEE P802.11
Wireless LANs

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|  Modification to the Amendment Text of adaptive ANQP element provisioning in the beacon |
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Abstract

The submission provides modifications to the normative text for ANQP element provisioning in the beacon. When an AP experiences a high volume of similar GAS requests it may add the most requested ANQP information elements in the beacon, such way reducing the overhead related to the GAS requests and responses. A station needs to inform the AP about the capability of reading ANQP information elements from the beacon as response to a ANQP GAS query.

**8.3.3.2 Beacon frame format**

|  |  |  |
| --- | --- | --- |
| ***Order*** | ***Information*** | ***Notes***  |
| *ANQP* | *ANA* |  *One or multiple ANQP information elements are provided if many GAS requests are received for the specific ANQP IE and dot11InterworkingServiceActivated is true and dot11AdaptiveANQPBeaconElement is true* |
|  |  |  |

**8.4.2 Information elements**

**8.4.2.1 General**

*Instructions to Editor: Append the Clause 8.4.2.1 with the following text:*

**Table 8-54ai—Element IDs**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Element***  | ***Element ID***  | ***Length of indicated******element (in octets)***  | ***Extensible*** |
| *ANQP* | *ANA* | *0-255* | *yes* |
|  |  |  |  |

**8.4.2.121 ANQP element**

The ANQP information element includes one ANQP element values for which IDs are specified in Table 8-184ai01—ANQP-element definitions,

The for mat of the ANQP information element is presented in Figure 8-401

|  |  |  |  |
| --- | --- | --- | --- |
| Element ID | Length | ANQP Info ID | Value |

Octets 1 1 1 Variable

Figure 8-401, ANQP Information Element

The Element ID has one octet length and specifies the corresponding value of the ANQP information element specified in Table 8-54ai.

The Length field is one octet length specifies the length of Value field in octets

The ANQP Info ID specifies the Info ID from Table 8-184ai01 for the ANQP element

The Value field has a variable lengths and contains the value associated with the ANQP Info ID

*Instructions to Editor: Append the Clause 8.4.4 with the following text:*

**8.4.4 Access Network Query Protocol (ANQP) elements**

**Table 8-184ai01—ANQP-element definitions**

|  |  |  |
| --- | --- | --- |
| **ANQP- element name** | **InfoID**  | **ANQP element (subclause)** |
| Neighbor Report  | 272  | 8.4.4.18 |
| Query with Beacon ANQP | ANA | 8.4.4.22 |
|  |  |  |
| Reserved  | 273– 56796  | n/a |
| Vendor Specific  | 56797  | 8.4.4.7 |

***Insert the following new text to the new Clause* 8.4.4.19**

**8.4.4.22 Query with Beacon ANQP-element**

The Query with Beacon ANQP-element provides to the requested STA the information that the requesting STA could extract the ANQP elements from the beacon frame if they are provided in the beacon. In response to a query that contains a Query with Beacon element the ANQP-element may be returned in response to Query List ANQP-element using the procedures in 10.24.3.2.xx).

The format of the Query with Beacon ANQP-element is provided in Figure 8-ai01.

|  |  |
| --- | --- |
| Info ID | Length |

Octets 2 2

Figure 8-ai01—Query with Beacon ANQP field format

The Info ID is a 2-octet field whose value is drawn from Table 8-184ai01 corresponding to the Query with Beacon ANQP-element.

The Length is a 2-octet field whose value is set to 0.

10.24.3.2 ANQP Procedures

10.24.3.2.1 General

**Table 10-10—ANQP usage**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ANQP-element name  | ANQP-element(subclause) | ANQP elementtype | AP | Non-APSTA | STA |
| … |  |  |  |  |  |
| Neighbor Report | 8.4.4.18 | S |  T | R | - |
| Query with Beacon ANQP | 8.4.4.22 | Q  | R | T | T,R |
|   |  |  |  |  |  |
| **Symbols**Q element is an ANQP queryS element is an ANQP responseT ANQP-element may be transmitted by MAC entityR ANQP-element may be received by MAC entity— ANQP-element is neither transmitted nor received by MAC entity |  |  |  |  |  |
|  |

***Insert the following new text to the new Clause* 10.24.3.2.11**

10.24.3.2.xx Query with Beacon ANQP procedure

The Query with Beacon ANQP-element is used by a requesting STA when performs an ANQP Query to indicate to the receiving STA that is able to decode and extract the ANQP information elements from the beacon frames in addition to the GAS response frames.

In the response to a Query with Beacon ANQP, the responding STA could select one of the following choices:

* Respond with a GAS response frame as specified in the actual standard (12.24.3.2 ANQP Procedures)
* Respond with a GAS response frame as specified in the actual standard (12.24.3.2 ANQP Procedures) but with limited response that contains only the ANQP elements that are not provided in the beacon frame; the GAS response uses an indication that this is partial response
* Respond with a GAS response frame that indicates that all the requested ANQP elements are provided in beacon, and optionally specify the duration till next TBTT.
* Do not respond to the GAS request with a GAS response frame, and broadcast the ANQP information elements in the beacon if the time to the beacon TBTT is relatively short and all the requested ANQP elements are provided in the beacon

The AP decision when to add or remove a specific ANQP information element from beacon is implementation specific.

A STA that is unable to decode the beacon after sending a GAS Request with Query with Beacon ANQP, may retrasnmit its GAS Request without the Query with Beacon ANQP element. When an STA receives a GAS Request without Query with Beacon ANQP it responds with a GAS Response that contains all availble ANQP information elements requested as specified in 12.24.3.2 ANQP Procedures

**Motion-1:** To authorize the Editor to incorporate the text changes proposed in contribution 11-13-0038-00-00ai to the draft TGai Specification Document.

Yes: \_\_\_\_\_\_\_\_\_\_\_\_;  No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;  Abstain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[Result of Motion]