IEEE P802.11
Wireless LANs

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| CID 1240 Proposed Resolution |
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Abstract

This submission contains a proposed resolution to CID 1240 from the REVmd LB 232, assigned to Stephen McCann.

R0 – initial version. CIDs ready for TGmd review: 1240

**For review by TG:**

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| --- | --- | --- | --- | --- | --- | --- |
| 1240 | 138.05 | 5 | 2 |  | There are several references to IEEE 802.21-2008 in the draft, which I understand has now been superceeded by IEEE 802.21-2017. However, some of the IEEE 802.21 functionality has been re-arranged into separate IEEE 802.21 documents, so this update may need some further investigation. This is important for some of the IEEE 802.11 interworking functionality (see GAS protocol). | Update all references (~10) to "IEEE 802.21-2008" to "IEEE 802.21-2017" and check that each new references is relevant to the clause where the old reference currently is. |

Discussion:

The original IEEE 802.21 standard IEEE Std 802.21™-2008 “Part 21: Media Independent Handover Services” was re-arranged and enhanced by the IEEE 802.21 working group in 2016 into:

* IEEE 802.21-2017 “Part 21: Media Independent Services Framework”
* IEEE 802.21.1-2017 “Part 21.1: Media Independent Services”

superceeding IEEE Std 802.21™-2008.

Many of the exisiting references to IEEE 802.21 within IEEE 802.11-2016 reference the original IEEE 802.21-2008 and these requires updating. However, it is not just a simple case of substituting IEEE 802.21-2008 for IEEE 802.21-2017 as it has to be determined in each case, whether 802.21 or 802.21.1 is the correct choice. In addition, the original IEEE 802.21 term Media Independent Handover (MIH) was changed to Media Independent Service (MIS) and several occurances of this require updating.

Proposed Resolution:

Revised.

(Draft P802.11REVmd\_D1.0.pdf) Page 138, Line 5:

Change “IEEE Std 802.21™-2008, IEEE Standard for Local and Metropolitan Area Networks: Media Independent Handover Services.” to

“IEEE 802.21™-2017 “Part 21: Media Independent Services Framework

 IEEE 802.21.1™-2017 “Part 21.1: Media Independent Services”

Page 253, Line 1:

Change “An example of how the MSGCF interfaces to these higher layer entities, is provided by the media independent handover (MIH) interface, as defined in IEEE Std 802.21-2008.” to

“An example of how the MSGCF interfaces to these higher layer entities, is provided by the media independent

service (MIS) interface, as defined in IEEE Std 802.21-2017.”

Page 542, Line 45:

Note: The text refers to a Query format in IEEE 802.21-2008, which doesn’t appear to exist within either of the IEEE 802.21-2017 documents. Therefore, I recommend changing to the reference to ANQP, which is defined within IEEE 802.11-2016.

Change the text in the Description column of the table from:

“Query string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 1, then Query

is formatted as defined in IEEE Std 802.21-2008.”

To

“Query string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 0, then Query

is formatted according to the Query List ANQP-element (see 9.4.5.2)”

Page 544, Line 15:

See note above regarding Query format in IEEE 802.21-2008.

Change the text in the Description column of the table from:

“Query Response string formatted using protocol

identified in AdvertisementProtocolID.

E.g., if the AdvertisementProtocolID value is 1, then Query is

formatted as defined in IEEE Std 802.21-2008.”

To

“Query Response string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 0, then Query

is formatted according to the Query List ANQP-element (see 9.4.5.2)”

Page 545, Line 36:

See note above regarding Query format in IEEE 802.21-2008.

Change the text in the Description column of the table from:

“Query string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 1, then Query

is formatted as defined in IEEE Std 802.21-2008.”

To

“Query string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 0, then Query

is formatted according to the Query List ANQP-element (see 9.4.5.2)”

Page 546, Line 50

See note above regarding Query format in IEEE 802.21-2008.

Change the text in the Description column of the table from:

“Query Response string formatted using protocol

identified in AdvertisementProtocolID.

E.g., if the AdvertisementProtocolID value is 1, then Query is

formatted as defined in IEEE Std 802.21-2008.”

To

“Query Response string formatted using protocol identified

in AdvertisementProtocolID. E.g., if the

AdvertisementProtocolID value is 0, then Query

is formatted according to the Query List ANQP-element (see 9.4.5.2)”

Page 687, Line 6

Change the text in the Description column of Table 6-5 from:

“This network supports the IEEE 802.21 MIH Command Service and

Event Service.”

To

“This network supports the IEEE 802.21 MIS Command Service and

Event Service.”

Page 1169, Line 63

Change “MIH Information Service is a service defined in IEEE Std 802.21-2008 to support information

retrieval from an information repository”

to

“MIS Information Service is a service defined in IEEE Std 802.21-2017 to support information

retrieval from an information repository.”

Page 1170, Line 8

Change 2 occurances of MIH in the Name column of Table 9-230 from “MIH” to “MIS”

Page 1170, Line 23

Change “MIH Command and Event Services capability discovery is a mechanism defined in IEEE Std 802.21

(see IEEE Std 802.21-2008) to support discovering capabilities of command service and event

service entities in a STA or an external network.”

to

“MIS Command and Event Services capability discovery is a mechanism defined in IEEE Std 802.21

(see IEEE Std 802.21-2017) to support discovering capabilities of command service and event

service entities in a STA or an external network.”

Page 2212, line 44

Update clause 11.23.4 as follows:

**11.23.4 Interworking procedures: IEEE 802.21 MIS support**

IEEE Std 802.21-2017, the “MIS framework standard” enables the optimization of services when performed between heterogeneous IEEE 802 networks. IEEE 802.21.1-2017, the “MIS standard” defines a handover service, which is used in conjunction with IEEE 802.21-2017.

STAs with dot11InterworkingServiceActivated equal to true and dot11GasAdvertisementId equal to MIS Information Service (see Table 9-230 (Advertisement protocol ID definitions)) shall support the transmission and reception of IEEE 802.21 MIIS queries for STAs in all states. STAs with

dot11InterworkingServiceActivated equal to true and dot11GasAdvertisementId equal to MIS Command and Event Services Capability Discovery (see Table 9-230 (Advertisement protocol ID definitions)) shall provide support for IEEE 802.21 MICS/MIES capability discovery for non-AP STAs in all states.

Additionally, support for IEEE 802.21 MIIS query and IEEE 802.21 MICS/MIES capability discovery to non-AP STA’s in the associated state is provided by the STA forwarding IP datagrams destined for the MIS point of service to the IEEE 802.21 MIIS server.

A non-AP STA discovers support for these services by receiving Beacon or Probe Response frames with an Advertisement Protocol element having Advertisement Protocol ID(s) for MIS Information Service and/or IEEE 802.21 MICS/MIES capability discovery.

A non-AP STA forms an IEEE 802.21 information service query by creating its query request according to the procedures defined in IEEE Std 802.21-2017 and formatting that request into an IEEE 802.21 MIS protocol frame as defined in 8.4 of IEEE Std 802.21-2017. The non-AP STA, using the procedures in 11.23.3.2 (GAS Protocol), posts the query to an IEEE 802.21 information service server by transmitting the MIS formatted frame in the Query Request field of a GAS Initial Request frame. The Advertisement Protocol ID field in the GAS Initial Request frame is set to the value of IEEE 802.21 MIS Information Service (Table 9-230 (Advertisement protocol ID definitions)).

Non-AP STAs in the unauthenticated or unassociated or associated states can use GAS procedures to

discover MIS Command and Event Services Capability as specified in Table 9-230 (Advertisement protocol ID definitions).

A non-AP STA forms an IEEE 802.21 MIS Command and Event Service discovery request by

encapsulating an MIS\_Capability\_Discover request (see IEEE Std 802.21-2017) into an MIS protocol

frame as defined in 8.4 of IEEE Std 802.21-2017. The non-AP STA, using the procedures in 11.23.3.2 (GAS Protocol), posts the discovery request to the network by transmitting the MIS formatted frame in the Query Request field of a GAS Initial Request frame. The Advertisement Protocol ID field in the GAS Initial Request frame is set to the value of MIS Command and Event Services Capability Discovery (Table 9-230 (Advertisement protocol ID definitions)). The method by which the AP relays the discovery request to the network is defined in IEEE Std 802.21-2017 and is outside the scope of this standard.

A non-AP STA retrieves the IEEE 802.21 MIS Command and Event Service discovery response according to the procedures in 11.23.3.2 (GAS Protocol). The discovery response is an MIS protocol frame as defined in 8.4 of IEEE Std 802.21-2017.

Page 194, Line 26

Change “MIH media-independent handover” to “MIS media-independent services”

Other “MIH” Changes

There are many occurances of the term “MIH” that require changing to “MIS”. These are specifically in the following clauses:

* Keywords (Page 3)
* 6.4.7.5.3 (Page 686), also changing “MIH\_CS\_ES\_Support” to “MIS\_CS\_ES\_Support”
* B.4.20 (Page 3369, 3370)
* C.3 (Page 3903), also changing some lower case occurances, e,g, “mihIsSupport” and “mihCsEsSupport”
* R.2.2 (Page 4186)