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Source(s)	Gedon Rosner, Yigal Eliaspur, Jose Puthenkulam, Prakash Iyer, Joey Chou. Intel Corp. Vladimir Yanover Alvarion Ltd. 21 A Habarzel St. Ramat - Hahayal Tel - Aviv 69710 P.O. Box 13139, Tel-Aviv 61131, Israel	mailto: gedon.rosner@intel.com mailto: yigal.eliaspur@intel.com Voice: +972-54-7884877 mailto:vladimir.yanover@alvarion.com Voice:+972-36457834 Fax: +972-36456222
Re:		
Abstract	This contribution defines Mobile Management Signaling for low power, limited resources 16e devices.	
Purpose	Adopt changes	
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Mobile Management Signaling

Gedon Rosner, Yigal Eliaspur, Jose Puthenkulam, Prakash Iyer, Joey Chou (Intel Corp.)
Vladimir Yanover (Alvarion Ltd.)

Motivation

To define general purpose, simple and light MAC Management Signaling for mobile, low power, [802.16e subscriber device](#) ~~or with~~ limited resources ~~16e device~~.

Details

The proposal is to define 4 new MAC management messages that will enable the BS to Query and Set Information Elements (IEs) on the MSS. [The IE that can be set or queried are limited to those that are defined in the specified table A1.](#)

QRY_IE-REQ – sent by the BS to the MSS on its Primary Management connection to request data over one or more information elements.

QRY_IE-RSP – sent by the MSS in response to QRY_IE-REQ containing the results of the information elements sent in the corresponding QRY_IE-REQ.

SET_IE-REQ – sent by the BS on an MSS Primary Management connection to configure one or more information elements.

Sent by the MSS to the BS on its Primary connection to notify or alert the BS of an event or error condition.

SET_IE-RSP – sent by the MSS in response to SET_IE-REQ indicating success or failure of configuring the settings included in the information elements sent in the corresponding SET_IE-REQ.

Changes summary

[\[Insert the following section as 14.5.13.2:\]](#)

[14.5.13.2 Management Signaling Method](#)

[\[Insert the following subsection in 14.5.13.2:\]](#)

[14.5.13.2.1 Management Signalling Messages](#)

[The following messages may be used to query and set the information elements \(IE\) on the MS by the BS. These messages shall only be used to query or set IEs that are indicated in the table A1. The table A1 explicitly indicates the type of operation that can be performed on a particular IE.](#)

[\[Add the following entries as additions to the end of Table 14:\]](#)

Type	Message name	Message description	Connection
xx	QRY IE REQ	Query IE request	primary management
xx	QRY IE RSP	Query IE response	primary management
xx	SET IE REQ	Set IE request	primary management
xx	SET IE RSP	Set IE response	primary management

[\[Insert the following table A1 in section 14.5.13.2.1:\]](#)

[Table A1— Information Elements for Query/Set operations](#)

<u>Information Element (IE) Name</u>	<u>Description</u>	<u>Type of Operation = One of (Query Only, Set Only, Query and Set)</u>
<u>tbd</u>	<u>tbd</u>	

[Insert the following subsections as they are numbered to the end of 14.5.13.2.1:]

[Add the following to sections to the end of 6.3.2.3:]

~~6.3.2.3.xx~~ 14.5.13.2.1.1 Query IE Request message (QRY_IE_REQ)

BS uses the QRY_IE_REQ message to query information on the MSS *by* describing by one or more IEs.

The QRY_IE_REQ message is sent from the BS to the MSS on the MSS's primary management connection.

Table ~~xxx~~xxx— Query IE Request (QRY_IE_REQ) message format

Syntax	Size	Notes
QRY_IE_REQ_Message_Format() {		
Management message type = xxx	8 bits	
Transaction id	8 bits	
Response timeout	8 bits	In units of 5 frames
TLV Encoded Information	variable	
}		

Parameters shall be as follows:

Transaction id

A unique sequential identifier of the transaction set by the initiator.

Response timeout

In units of 5 frames (by which the sender expects to receive a corresponding QRY_IE_RSP message)

The QRY_IE_REQ shall include the following parameters encoded as TLV Tuples:

HMAC Tuple (see 11.12)

The HMAC Tuple shall be the last attribute in the message.

The base station will serialize all the QRY_IE-REQ messages sent to the MSS, waiting until the MSS has responded, or a timeout has occurred before querying the MSS again, or with more information. The BS may replay a message to override previously sent messages before the timeout has occurred. In this case the MSS will not respond to the previous request instead will process the newly received message.

~~6.3.2.3.xx~~ 14.5.13.2.1.2 Query IE Response message (QRY_IE_RSP)

The QRY_IE_RSP message is sent by the MSS in response to QRY_IE-REQ containing the results of the information elements sent in the corresponding QRY_IE-REQ.

The QRY_IE_RSP message is sent from the MSS to the BS on the MSS's primary management CID.

Table xxx— Query IE Response (QRY_IE_RSP) message format

Syntax	Size	Notes
QRY_IE_RSP_Message_Format() {		
Management message type = xxx	8 bits	
Transaction id	8 bits	

RSP Status	8 bits	Allowed values are: 0 – success 1 – Error Response timeout too short 2 – Error TLV
TLV Encoded Information	variable	
}		

Parameters shall be as follows:

Transaction id

A unique sequential identifier of the transaction set by the initiator.

RSP Status

Error encoding of the response status. Allowed values are:

- 0 – success
- 1 – Error Response timeout too short
- 2 – Error TLV

The QRY_IE_RSP shall include the following parameters encoded as TLV Tuples:

HMAC Tuple (see 11.12)

The HMAC Tuple shall be the last attribute in the message.

~~6.3.2.3.xx~~ **14.5.13.2.1.3 Set IE Request message (SET_IE_REQ)**

BS uses the SET_IE_REQ message to set information on the MSS describing by one or more IEs.

MSS uses the SET_IE_REQ message to notify or alert the BS of an event or error condition.

The SET_IE_REQ message is sent from the BS to the MSS or from the MSS to the BS on the MSS’s primary management CID.

Table xxx— Set IE Request (SET_IE_REQ) message format

Syntax	Size	Notes
SET_IE_REQ_Message_Format() {		
Management message type = xxx	8 bits	
Transaction id	8 bits	
Response timeout	8 bits	Number of frames x 5 by which the sender expects to receive a corresponding SET_IE_RSP message with either a success or error RSP Status. If this value is set to 0, the sender does not require a response and the receiver will not issue one.
TLV Encoded Information	variable	
}		

Parameters shall be as follows:

Transaction id

A unique sequential identifier of the transaction set by the initiator.

Response timeout

Number of frames x 5 by which the sender expects to receive a corresponding SET_IE_RSP message with either a success or error RSP Status. If this value is set to 0, the sender does not require a response and the receiver will not issue one.

The SET_IE_REQ shall include the following parameters encoded as TLV Tuples:

HMAC Tuple (see 11.12)

The HMAC Tuple shall be the last attribute in the message.

6.3.2.3.xx14.5.13.2.1.4 Set IE Response message (SET_IE_RSP)

The SET_IE_RSP message is sent by the MSS in response to SET_IE-REQ containing the results of the operation in the corresponding QRY_IE-REQ.

The SET_IE_RSP message is sent from the MSS to the BS on the MSS's primary management CID.

Table xxx— SET IE Response (SET_IE_RSP) message format

Syntax	Size	Notes
SET_IE_RSP_Message_Format() {		
Management message type = xxx	8 bits	
Transaction ID	16 bits	
RSP Status	8 bits	Allowed values are: 0 – success 1 – Error Response timeout too short 2 – TLV set Operation Error
TLV Encoded Information	variable	
}		

Parameters shall be as follows:

Transaction id

A unique sequential identifier of the transaction set by the initiator.

RSP Status

Error encoding of the response status. Allowed values are:

- 0 – success
- 1 – Error Response timeout too short
- 2 –TLV set operation Error

The SET_IE_RSP shall include the following parameters encoded as TLV Tuples:

HMAC Tuple (see 11.12)

The HMAC Tuple shall be the last attribute in the message.

The base station will serialize all the SET_IE-REQ messages sent to the MSS, waiting until the MSS has responded, or a timeout has occurred before configuring the MSS again, or with additional settings. In case a timeout has occurred