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Re:	Comment on P802.16g/D4
Abstract	This contribution proposes amendment to accounting management.
Purpose	Adoption
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Amendment to Accounting Management Attributes, Section 14.2.2.2

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1. Introduction

In IEEE P802.16g/D3, ACM-REQ/RSP service primitives, are defined to be used in both direction, i.e., from NCMS to BS and from BS to NCMS. In July meeting of IEEE 802.16g, however, it was agreed that ACM-REQ should be sent from NCMS to BS and ACM-RSP should be sent from BS to NCMS for the reply to ACM-REQ. Instead, ACM-IND should be sent from BS to NCMS and ACM-ACK should be sent from NCMS to BS for the reply to ACM-IND. In order to accommodate these changes, we correct attributes in ACM-REQ/RSP primitives and Fig. 474, and redefine attributes for ACM-IND/ACK primitives in this contribution.

2. Proposed Text Changes

[Modify section 14.2.2.1 as follows]

Fig. 474 should be changed as follows:

1. The title of the Fig. 474 should be changed from “Fig. 474 —C-SFM-REQ(Create) and C-SFM-RSP(Create) primitives flow, 802.16 entity initiated” to “Fig. 474—Accounting primitive initiated by a NCMS” .
2. The direction of M-ACM-REQ service primitive should be from NCMS to BS and the direction of M-ACM-RSP should be from BS to NCMS.

[Modify section 14.2.2.2.1 to 14.2.2.4 as follows]

14.2.2.2.1 M-ACM-REQ

Function:

~~This primitive is issued by a BS to inform the NCMS of accounting event for MS Network Entry after Registration request/response (REG-REQ/RSP) or Deregistration command (DREG-CMD) of an MS. Also, it is issued by a BS to inform the NCMS of accounting event for connection after DSA, DSC or DSD procedure. On the other hand, this primitive can be issued by the NCMS depending on the policy of service provider.~~

Semantics of the service primitive:

The parameters of the primitives are as follows:

M-ACM-REQ

(

Message_id,
 Operation_type: Action,
 Action_type: null,
 Object_ID: ~~BS_ID~~ or NCMS,
 Attribute_List :
 MS MAC Address
 Service Flow Identifier
 Accounting Record Type
 Accounting Record Number
 Accounting Input Octets
 Accounting Output Octets
 Accounting Input Packets
 Accounting Output Packets
 Service Flow Information

)

MS MAC Address

48-bit MAC address, which will identify MS

Service Flow identifier

32-bit service flow identifier, which will identify service flows of an MS

Accounting Record Type

The type of accounting record being sent and EVENT_RECORD, START_RECORD, INTERIM_RECORD, and STOP_RECORD are currently defined. An Event Record is used to indicate that a one-time event has occurred (meaning that the start and end of the event are simultaneous). A Start Record is used to initiate an accounting session for a given service flow and contains accounting information that is relevant to the initiation of the service flow and its accounting session. An Interim Record contains cumulative accounting information for an existing accounting session. A Stop Record is sent to terminate an accounting session and contains cumulative accounting information relevant to the existing session.

Accounting Record Number

Identifies accounting record within one session

Accounting Input Octets

~~The number of octets received from the MS during the accounting session (This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Output Octets

~~The number of octets sent to the MS during the accounting session (This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Input Packets

~~The number of packets received from the MS during the accounting session (This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Output Packets

~~The number of packets sent to the MS during the session (This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Service Flow Information

~~Required QoS information of a service flow include traffic characteristics and a scheduling type such as service class name, QoS parameter set type, maximum sustained traffic rate, maximum traffic burst, minimum reserved traffic rate, minimum tolerable traffic rate, service flow scheduling type, tolerate jitter, and maximum latency This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

When generated:

~~This primitive is generated at a BS when an MS enters a network or terminates to access a network, or when an~~

~~MS starts or stops dynamic services. Also, this~~ primitive can be generated at the NCMS to request accounting event from a BS.

Effect of receipt:

~~If this primitive is generated by the a BS, it is assumed that the NCMS will use the received information for accounting purposes. If T~~ this primitive is generated by the NCMS, the BS shall gather accounting information and return the information using the M-ACM-RSP primitive.

14.2.2.2.2 M-ACM-RSP

Function:

This primitive is issued by ~~either the NCMS or~~ a BS to respond to M-ACM-REQ.

Semantics of the service primitive:

The parameters of the primitives are as follows:

M-ACM-RSP

```
(
    Message_id,
    Operation_type: Action,
    Action_type: null,
    Object_ID: BS_ID or NCMS,
    Attribute_List :
        MS MAC Address
        Service Flow Identifier
        Result code
        Accounting Record Type
        Accounting Record Number
        Accounting Input Octets
        Accounting Output Octets
        Accounting Input Packets
        Accounting Output Packets
        Service Flow Information
)
```

MS MAC Address

48-bit MAC address, which will identify MS

Service Flow identifier

32-bit service flow, identifier which will identify service flows of an MS

Result Code

The result of M-ACM-REQ

Accounting Record Type

The type of accounting record being sent and EVENT_RECORD, START_RECORD, INTERIM_RECORD, and STOP_RECORD are currently defined. An Event Record is used to indicate that a one-time event has occurred (meaning that the start and end of the event are simultaneous). A Start Record is used to initiate an accounting session for a given service flow and contains accounting information that is relevant to the initiation of the service flow and its accounting session. An Interim Record contains cumulative accounting information for an existing accounting session. A Stop Record is sent to terminate an accounting session and contains cumulative accounting information relevant to the existing session.

Accounting Record Number

Identifies accounting record within one session

Accounting Input Octets

The number of octets received from the MS during the accounting session ~~(This parameter is only included in the M-ACM-RSP primitive from BS to NCMS).~~

Accounting Output Octets

The number of octets sent to the MS during the accounting session ~~(This parameter is only included in the M-ACM-RSP primitive from BS to NCMS).~~

Accounting Input Packets

The number of packets received from the MS during the accounting session ~~(This parameter is only included in the M-ACM-RSP primitive from BS to NCMS).~~

Accounting Output Packets

The number of packets sent to the MS during the session ~~(This parameter is only included in the M-ACM-RSP primitive from BS to NCMS).~~

Service Flow Information

Required QoS information of a service flow include traffic characteristics and a scheduling type such as service class name, QoS parameter set type, maximum sustained traffic rate, maximum traffic burst, minimum reserved traffic rate, minimum tolerable traffic rate, service flow scheduling type, tolerate jitter, and maximum latency ~~This parameter is only included in the M-ACM-RSP primitive from BS to NCMS).~~

When generated:

This primitive shall be generated by the BS in response to an M-ACM-REQ primitive. ~~It is assumed that the NCMS will generate this primitive in response to an M-ACM-REQ.~~

Effect of receipt:

~~When the BS receives the primitive, it is a simple acknowledgement. When T~~the NCMS receives the primitive, it contains the requested information and it is assumed that the NCMS will use this information for accounting purposes.

14.2.2.2.3 M-ACM-IND

Function:

This primitive is issued by a BS to inform the NCMS of accounting event for MS Network Entry after Registration request/response (REG-REQ/RSP) or Deregistration command (DREG-CMD) of an MS. ~~Also, it is issued by a BS to inform the NCMS of accounting event for connection after DSA, DSC or DSD procedure.~~

Semantics of the service primitive:

The parameters of the primitives are as follows:

M-ACM-IND

```
(
    Message_id,
    Operation_type: Action,
    Action_type: null,
    Object_ID: BS_ID or NCMS,
    Attribute_List :
        MS MAC Address
        Service Flow Identifier
```

Accounting Record Type
 Accounting Record Number
 Accounting Input Octets
 Accounting Output Octets
 Accounting Input Packets
 Accounting Output Packets
 Service Flow Information

)

MS MAC Address

48-bit MAC address, which will identify MS

Service Flow identifier

32-bit service flow identifier, which will identify service flows of an MS

Accounting Record Type

The type of accounting record being sent and EVENT_RECORD, START_RECORD, INTERIM_RECORD, and STOP_RECORD are currently defined. An Event Record is used to indicate that a one-time event has occurred (meaning that the start and end of the event are simultaneous). A Start Record is used to initiate an accounting session for a given service flow and contains accounting information that is relevant to the initiation of the service flow and its accounting session. An Interim Record contains cumulative accounting information for an existing accounting session. A Stop Record is sent to terminate an accounting session and contains cumulative accounting information relevant to the existing session.

Accounting Record Number

Identifies accounting record within one session

Accounting Input Octets

The number of octets received from the MS during the accounting session ~~(This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Output Octets

The number of octets sent to the MS during the accounting session ~~(This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Input Packets

The number of packets received from the MS during the accounting session ~~(This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Accounting Output Packets

The number of packets sent to the MS during the session ~~(This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).~~

Service Flow Information

Required QoS information of a service flow include traffic characteristics and a scheduling type such as service class name, QoS parameter set type, maximum sustained traffic rate, maximum traffic burst, minimum reserved traffic rate, minimum tolerable traffic rate, service flow scheduling type, tolerate jitter, and maximum latency This parameter is only included in the M-ACM-REQ primitive from BS to NCMS).

When generated:

This primitive is generated at a BS when an MS enters a network or terminates to access a network, or when an MS starts or stops dynamic services.

Effect of receipt:

It is assumed that the NCMS will use the received information for accounting purposes.

14.2.2.2.4 M-ACM-ACK

Function:

This primitive is issued by the NCMS to respond to M-ACM-IND.

Semantics of the service primitive:

The parameters of the primitives are as follows:

M-ACM-ACK

```
(
    Message_id,
    Operation_type: Action,
    Action_type: null,
    Object_ID: BS_ID or NCMS,
    Attribute_List :
        MS MAC Address
        Service Flow Identifier
        Result Code
        Accounting Record Type
        Accounting Record Number
        Accounting Input Octets
        Accounting Output Octets
        Accounting Input Packets
        Accounting Output Packets
        Service Flow Information
)
```

The meaning of the parameters is the same as in M-ACM-IND.

When generated:

It is assumed that the NCMS will generate this primitive in response to an M-ACM-IND.

Effect of receipt:

When the BS receives the primitive, it is a simple acknowledgement.