Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
Title	Amendment to Accounting Management Attributes in Section 14.2.2
Date Submitted	2006-09-26
Source(s)	Jee Hyeon Na, ETRI, E-mail: jhna@etri.re.kr Yun Won Chung, PhD, Soongsil University, E-mail: ywchung@ssu.ac.kr Jaesun Cha, ETRI, E-mail: jscha@etri.re.kr Mi-Young Yoon, ETRI, E-mail: myyun@etri.re.kr Sang Ho Lee, PhD, ETRI, E-mail: leesh@etri.re.kr Ronald Mao, Huawei Technologies Co.,Ltd.
Re:	Comment on P802.16g/D4
Abstract	This contribution proposes amendment to accounting management.
Purpose	Adoption
Notice	This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.
Patent Policy and Procedures	The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures <http://ieee802.org/16/ipr/patents/policy.html>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <mailto:chair@wirelessman.org> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site <http://ieee802.org/16/ipr/patents/notices>.

Amendment to Accounting Management Attributes, Section 14.2.2.2

Jee Hyeon Na, Yun Won Chung**, Jaesun Cha*, Mi-Young Yoon*Sang Ho Lee*, and Ronald Mao****

** ETRI, ** SoongSil University, *** Huawei*

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~~ Tthe 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.