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Re:	Comment on P802.16g/D3
Abstract	This contribution proposes amendment to accounting management.
Purpose	Adoption
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Amendment to Accounting Management in Section 14.2.2.2

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1. Introduction

In Section 14.2.2.2, service primitives are defined for accounting management. However, it does not follow service primitive template, which is defined in Section 14.1. Thus, we modify Section 14.2.2.2 based on the service primitive template.

In addition, we add several attributes for M-ACM-REQ and M-ACM-RSP primitives. Firstly, Accounting Session Identifier and Accounting Multi-Session Identifier are added because service flow identifier is not globally unique any more in current IEEE 802.16e standard and thus, cannot be used for unique identification of a session. When we previously proposed service primitives for accounting in Session #38 (IEEE C802.16g-05/029r3), Service Flow Identifier could be used for session identification of accounting information since it was globally unique. But since Service Flow Identifier is now locally unique only, we add Accounting Session Identifier and Accounting Multi-session Identifier for the identification of accounting session. Accounting session identifier is allocated by a BS and is valid during a cell residence time served by a BS and accounting multi-session identifier is valid for the whole duration of service session. MS user name is added for user identification since the current MS MAC Address only identifies the used terminal. BS Identifier and Accounting Terminal Cause are informative attributes and also added to attribute list. Event-Timestamp can be used for time-based accounting and thus, included in the attribute list. Accounting Interim Interval is added in order to provide information for interim interval if interim accounting is used, where Interim accounting provides a snapshot of usage during a user's session and useful in the event of device reboot or network failure.

2. Proposed Text Changes

[Modify section 14.2.2.2.1.2 as follows]

14.2.2.2.1.2 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
MS User Name
Accounting Session Identifier
Accounting Multi-Session Identifier
BS Identifier
Accounting Termination Cause
Event-Timestamp

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
MS User Name
Network Access Identifier (NAI) with string type such as username@realm which will identify MS user
Accounting Session Identifier
The identifier of accounting session which is assigned by BS and valid during a cell residence time
Accounting Multi-Session Identifier
The identifier used to link Accounting Session Identifier together, which is changed when an MS moves between BSs and is valid for the whole duration of service session
BS Identifier
The identifier of base station
Accounting Termination Cause
Identifies the reason of session termination
Event-timestamp
Records the time that an event occurred, in seconds since January 1, 1970 00:00 UTC
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 and contains accounting information that is relevant to the initiation of the 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 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 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 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).

[Modify section 14.2.2.2.2.2 as follows]

14.2.2.2.2.2 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
MS User Name
Accounting Session Identifier
Accounting Multi-Session Identifier
BS Identifier
Accounting Termination Cause
Event-Timestamp
Accounting Interim Interval
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
MS User Name
Network Access Identifier (NAI) with string type such as username@realm which will identify MS user
Accounting Session Identifier
The identifier of accounting session which is assigned by BS and valid during a cell residence time
Accounting Multi-Session Identifier
The identifier used to link Accounting Session Identifier together, which is changed when an MS moves between BSs and is valid for the whole duration of service session
BS Identifier
The identifier of base station
Accounting Termination Cause
Identifies the reason of session termination
Event-timestamp
Records the time that an event occurred, in seconds since January 1, 1970 00:00 UTC
Accounting Interim Interval
Interim interval of accounting information, in seconds
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 and contains accounting information that is relevant to the initiation of the 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 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 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 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).