Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Changes in 802.16e Working Document for Clarification of QoS Control**
Date Submitted	**2003-07-13**
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Re:	This is a response to a Call for Comments IEEE 802.16e-03/14 on IEEE 802.16e-03/07r2
Abstract	The document contains suggestions on changes in IEEE 802.16e-03/07r2 that would help clarification of QoS support functions in 802.16e
Purpose	The document is submitted for review by Handoff/Sleep-mode Ad Hoc Group and/or by 802.16 Working Group members
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Changes in 802.16e Working Document for Clarification of QoS Control

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This document describes changes suggested for 802.16e Working Document IEEE 802.16e-03/07r2 to clarify QoS support in mobile environment.

The following are main issues:

1. Service Flow is considered as a global object associated with certain service for which MSS is authorized
2. QoS model described in the standard (AuthorizedQoSParamSet, ActiveQoSParamSet etc.) made applicable to mobile environment also.
3. AuthorizedQoSParamSet does not change when MSS passes from one BS to another while AdmittedQoSParamSet parameters may change dependently on amount of resources available at different BSs
4. Sets of QoS parameters are represented by Service Classes names. It is assumed that there is a limited number of possible Service Classes that may be used as parameters sets. The Service Classes become known to all BSs and all MSSs in the network through upper layer provisioning.

[In 1.3.1.1.4]

In mobile environment certain Service Flows are provisioned for each MSS. QoS parameters are provisioned by the operator for each flow and identified by certain Service Class name. Set of Service Classes should be provisioned through upper layers (e.g. network management) at each BS and each MSS.

For each SU certain AuthorizedQoSParamSet shall be provisioned identified by the corresponding Service Class name. In the process of initial Network Entry as well as in the processes of Association and Handover, MSS requests from the target BS certain level of QoS per Service Flow in the terms of Service Class which represents AuthorizedQoSParamSet. BS responds with name of Service Class available for the Service Flow. This Service Class will become AdmittedQoSParamSet in the case of successful Network Entry/HO.

Network Service is defined as a service provided to the MSS by the network through a single MAC connection with particular connectivity and MAC parameters (including QoS properties). Connectivity properties are defined by specification of MSS network address in its Home Network. QoS properties are those of Service Flow associated with the network service, as specified in 6.2.14.

MSS Service Context is defined as a ~~specifies the~~ set of network services authorized for a given MSS. It is specified by an MSS Service Context Descriptor composed of the following elements:

Table 0b3—MSS Service Context Descriptor

[In Table 0b3]

48-bit universal MAC address, as specified in 6.2.1.~~48-bit unique identifier used by MSS on initial network. This ID does not change while MSS passes from one BS to another.~~ During HO it is used to refer to specific connectivity (addressing) and properties of MAC connections (including QoS properties)

[In Table 0b3 add after the 1st line]

Address of MSS at Home Network	IP address of MSS at its Home Network. This address does not change while MSS travels from one BS to another

[Change Table 0b4]

Field	Meaning
Service Flow ID	As specified in 6.2.14.2. Service Flow ID has global meaning: it does not change in the process of handover.
MAC Connection parameters	Connection parameters as specified in the section 6.1.1.1.2
Service Class Name	Specifies AuthorizedQoSParamSet which is defined globally (while AdmittedQoSParamSet is defined each time in the process of HO)

Connection parameters as specified in section 6.1.1.1.2; MAC address should be the address of MSS; CRC request should be "On"

[Change in 1.3.1.2.2]

Network re-entry in target BS, where the MSS re-enters the network using a fast network entry procedure. After network re-entry, service flows ~~connection~~ belonging to the MSS are re-associated ~~re-established~~ with newly established connections. QoS parameters of service flows (AdmittedQoSParamSet) may be different from AuthorizedQoSParamSet , based on the availability of resources in the target BS.

[Change in 6.2.2.3.6]

Service Level Prediction - This value indicates the level of service the MSS can expect from this BS. The following encodings apply:

0 = No service possible for this MSS.

1 = Some service is available for one or several Service Flow authorized for the MSS~~.~~
2 = For each authorized Service Flow a MAC connection can be established with QoS specified by the AuthorizedQoSParamSet ~~at ASA server (for the MSS identified by the 48-bit MAC address) is available.~~

Service Level prediction may be accompanied by a number of Service Flow Encodings as specified in 11.4.8 with the following parameters only:
- Service Flow Identifier
- Service Class Name
Service class name may refer either to AuthorizedQoSParamSet (then Service Level Prediction should be encoded as '2') or to a subset of it (then Service Level Prediction should be encoded as '1')

[Add under 6.2.14.4]

c) In mobile environment pre-provisioned Service classes shall be used by an operator to identify a set of QoS parameters, which are assigned to certain Service Flows by provisioning. When MSS passes from one BS to another, it negotiates with new BS desired level of QoS in the terms of Service Classes.

[Change Table C5, line 10]

Required OoS Quality of Service level	8-bit	~~— Unsolicited Grant Service (UGS)~~ ~~— Real-time Polling Service (rtPS)~~ ~~— Non-real-time Polling Service (nrtPS)~~ ~~— Best Effort Service (BE)~~ Name of Service Class representing AuthorizedQoSParamSet	