Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Global Service Flows Definitions**
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Re:	Response to IEEE 802.16e-03/58 (Call for Contributions on IEEE 802.16e/07r5)
Abstract	Proposal of transmission media neutral, global Service Flow definitions.
Purpose	Stimulate discussion on a more flexible definition and mechanism for facilitating multimedia Service Flow migration/hand-over between foreign networks.
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Global Service Flows Definitions
Phillip Barber & Ken Stanwood

Remedy 1:
[Add new subsection to P80216-REVd_D2, 6.4.13.4 Service classes, page 211:]

6.4.13.4.1 Global Service Flows
Mobile networks require common definitions of Service Class Names and associated AuthorizedQoSParamSets in order to facilitate operation across a distributed topology. Global Service Class Names shall be supported to enable operation in this context.

In operation, Global Service Class Names are employed as a baseline convention for communicating Authorized- or AdmittedQoSParamSet. In practice, Global Service Class Names are intended to be accompanied by extending or modifying 11.4.9 TLV QoS Param Set defining parameters, as needed, to provide a complete and expedited method for transferring Authorized- or AdmittedQoSParamSet information.

Table *nnn*—Global Service Flow Class Name Parameters

Name	Size	Value
Uplink/Downlink indicator	1 Byte	U or D; U=uplink; D=downlink
Maximum sustained traffic rate	1 Byte	Extensible look-up table TBD (value 255 indicates TLV to follow)
Maximum traffic burst	1 Byte	Extensible look-up table TBD (value 255 indicates TLV to follow)
Minimum reserved traffic rate	1 Byte	Extensible look-up table TBD (value 255 indicates TLV to follow)
Maximum latency	1 Byte	Extensible look-up table TBD (value 255 indicates TLV to follow)
Fixed-length versus variable-length SDU indicator	1 Byte	V or F; V=variable length; F=fixed length

Global Service Class Name—A rules based, composite name parsed in six parts, elements reference extensible look-up tables:

> U or D; Uplink/Downlink indicator (U=uplink; D=downlink)
> 1 Byte, Extensible look-up table TBD (value 255 indicates TLV to follow); Maximum sustained traffic rate
> 1 Byte, Extensible look-up table TBD (value 255 indicates TLV to follow); Maximum traffic burst
> 1 Byte, Extensible look-up table TBD (value 255 indicates TLV to follow); Minimum reserved traffic rate
> 1 Byte, Extensible look-up table TBD (value 255 indicates TLV to follow); Maximum latency

V or F; SDU Indicator (V=variable length; F=fixed length)

Note: Byte placeholders have to be expressed values; cannot be omitted

Uplink/Downlink indicator—this parameter identifies the defined service flow direction from the originating entity

Maximum sustained traffic rate—this parameter defines the peak information rate of the service. The rate is expressed in bits per second and pertains to the service data units (SDUs) at the input to the system. Explicitly, this parameter does not include transport, protocol, or network overhead such as MAC headers or CRCs, or non-payload session maintenance overhead like SIP, MGCP, H.323 administration, etc…. This parameter does not limit the instantaneous rate of the service since this is governed by the physical attributes of the ingress port. However, at the destination network interface in the uplink direction, the service shall be policed to conform to this parameter, on the average, over time. On the network in the downlink direction, it may be assumed that the service was already policed at the ingress to the network. If this parameter is set to zero, then there is no explicitly mandated maximum rate. This field specifies only a bound, not a guarantee that the rate is available. The algorithm for policing to this parameter is left to vendor differentiation and is outside the scope of the standard.

Maximum traffic burst—this parameter defines the maximum burst size that must be accommodated for the service. Since the physical speed of ingress/egress ports, any air interface, and the backhaul will in general be greater than the maximum sustained traffic rate parameter for a service, this parameter describes the maximum continuous burst the system should accommodate for the service assuming the service is not currently using any of its available resources. Max traffic burst set to zero shall mean no Maximum traffic burst reservation requirement.

Minimum reserved traffic rate—this parameter specifies the minimum rate, in bits per second, reserved for this Service Flow. The BS should be able to satisfy bandwidth requests for a Service Flow up to its Minimum Reserved Traffic Rate. If less bandwidth than its Minimum Reserved Traffic Rate is requested for a Service Flow, the BS may reallocate the excess reserved bandwidth for other purposes. The aggregate Minimum Reserved Traffic Rate of all Service Flow may exceed the amount of available bandwidth. The value of this parameter is calculated excluding all protocol, transport, and network overhead. Minimum reserved traffic set to zero shall mean no Minimum reserved traffic rate requirement.

Maximum latency—the value of this parameter specifies the maximum latency between the reception of a packet into the network gateway or boundary network interface and the forwarding of the packet to its destination interface. If defined, this parameter represents a service commitment (or admission criteria) and shall be guaranteed. A network does not have to meet this service commitment for Service Flows that exceed their DL Minimum reserved traffic rate. A value of zero for Maximum latency shall be interpreted as infinite tolerance—timing insensitive traffic.

SDU indicator—the value of this parameter specifies whether the SDUs on the Service Flow are fixed-length or variable-length.