Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Proposal for Adding Bs ClassifierRule Related Object Attributes Definitions**	
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Re:	Contribution to IEEE 802.16i	
Abstract	This contribution proposed to add ClassifierRule related object attributes.	
Purpose	Adoption	
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Proposal for Adding Bs Classifier Related Object Attributes Definitions

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Introduction

This contribution is to add Bs Classifier related object attributes which include Classifier object attributes for fixed and mobile network.

Proposed Text

15.1.2.3.x IOC BsClassifierRule_F
15.1.2.3.x.1 Definition
This IOC represents a BsClassifierRule_F object . It is derived from WmanManagedFunction.
15.1.2.3.x.2 Attributes

Attributes of `BsClassifierRule_F`

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanManagedFunction	+inherited	Minherited	Minherited	Minherited
BsClassifierRule_FId	-	+	M	M	M
BsClassifierRulePriority	-	+	M	M	O
BsClassifierRuleIpTosLow	-	+	M	M	O
BsClassifierRuleIpTosHigh	-	+	M	M	O
BsClassifierRuleIpTosMask	-	+	M	M	O
BsClassifierRuleIpProtocol	-	+	M	M	O
BsClassifierRuleIpSourceAddr	-	+	M	M	O
BsClassifierRuleIpSourceMask	-	+	M	M	O
BsClassifierRuleIpDestAddr	-	+	M	M	O
BsClassifierRuleIpDestMask	-	+	M	M	O
BsClassifierRuleSourcePortStart	-	+	M	M	O
BsClassifierRuleSourcePortEnd	-	+	M	M	O
BsClassifierRuleDestPortStart	-	+	M	M	O
BsClassifierRuleDestPortEnd	-	+	M	M	O
BsClassifierRuleDestMacAddr	-	+	M	M	O
BsClassifierRuleDestMacMask	-	+	M	M	O
BsClassifierRuleSourceMacAddr	-	+	M	M	O
BsClassifierRuleSourceMacMask	-	+	M	M	O
BsClassifierRuleEnetProtocolType	-	+	M	M	O
BsClassifierRuleEnetProtocol	-	+	M	M	O
BsClassifierRuleUserPriLow	-	+	M	M	O
BsClassifierRuleUserPriHigh	-	+	M	M	O
BsClassifierRuleVlanId	-	+	M	M	O
BsClassifierRuleState	-	+	M	M	O
BsClassifierRulePhsSize	-	+	M	M	O
BsClassifierRulePhsMask	-	+	M	M	O
BsClassifierRulePhsVerify	-	+	M	M	O
BsClassifierRuleIpv6FlowLabel	-	+	M	M	O

15.1.2.3.x IOC BsClassifierRule_M

15.1.2.3.x.1 Definition

This IOC represents a BsClassifierRule_M object . It is derived from WmanManagedFunction.

15.1.2.3.x.2 Attributes

Attributes of `BsClassifierRule_M`

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanManagedFunction	+inherited	Minherited	Minherited	Minherited
BsClassifierRule_MId	-	+	M	M	M
BsClassifierContextId	-	+	M	M	O
BsClassifierActionRule	-	+	M	M	O
BsClassifierShortFormatContextId	-	+	M	M	O

Appending following description into section 15.1.2.6.1 Definition and legal values:

Attribute Name	Definition	Legal Values
BsClassifierRule_FId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsClassifierRulePriority	The value specifies the priority for the Classifier, which is used for determining the order of the Classifier. A higher value indicates higher priority. Classifiers may have priorities in the range 0..255.	0..255
BsClassifierRuleIpTosLow	The low value of a range of TOS byte values. If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleIpTosHigh	The 8-bit high value of a range of TOS byte values. If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleIpTosMask	The value of this object specifies the matching parameter for the IP type of service/DSCP [IETF RFC 2474] byte mask. An IP packet with IP type of service (ToS) byte value ip-tos matches this parameter if tos-low less than or equal (ip-tos AND tos-mask) less than or equal tos-high.	
BsClassifierRuleIpProtocol	This object indicates the value of the IP Protocol field required for IP packets to match this rule. If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleIpSourceAddr	This object specifies the value of the IP Source Address required for packets to match this rule. An IP packet matches the rule when the packet ip source address bitwise ANDed with the BsClassifierRuleIpSourceMask value equals the BsClassifierRuleIpSourceAddr value. If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	

BsClassifierRuleIpSourceMask	This object specifies which bits of a packet's IP Source Address that are compared to match this rule. An IP packet matches the rule when the packet source address bitwise ANDed with the BsClassifierRuleIpSourceMask value equals the BsClassifierRuleIpSourceAddr value.If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleIpDestAddr	This object specifies the value of the IP Destination Address required for packets to match this rule. An IP packet matches the rule when the packet IP destination address bitwise ANDed with the BsClassifierRuleIpDestMask value equals the BsClassifierRuleIpDestAddr value. If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleIpDestMask	This object specifies which bits of a packet's IP Destination Address that are compared to match this rule. An IP packet matches the rule when the packet destination address bitwise ANDed with the BsClassifierRuleIpDestMask value equals the BsClassifierRuleIpDestAddr value. If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleSourcePortStart	This object specifies the low end inclusive range of TCP/UDP source port numbers to which a packet is compared.This object is irrelevant for non-TCP/UDP IP packets.If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleSourcePortEnd	This object specifies the high end inclusive range of TCP/UDP source port numbers to which a packet is compared. This object is irrelevant for non-TCP/UDP IP packets. If the referenced parameter is not present in a classifier, this object reports the value of 65535.	
BsClassifierRuleDestPortStart	This object specifies the low end inclusive range of TCP/UDP destination port numbers to which a packet is compared. If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleDestPortEnd	This object specifies the high end inclusive range of TCP/UDP destination port numbers to which a packet is compared. If the referenced parameter is not present in a classifier, this object reports the value of 65535.	
BsClassifierRuleDestMacAddr	An Ethernet packet matches an entry when its destination MAC address bitwise ANDed with BsClassifierRuleDestMacMask equals the value of BsClassifierRuleDestMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	

BsClassifierRuleDestMacMask	An Ethernet packet matches an entry when its destination MAC address bitwise ANDed with BsClassifierRuleDestMacMask equals the value of BsClassifierRuleDestMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRuleSourceMacAddr	An Ethernet packet matches this entry when its source MAC address bitwise ANDed with BsClassifierRuleSourceMacMask equals the value of BsClassifierRuleSourceMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRuleSourceMacMask	An Ethernet packet matches an entry when its source MAC address bitwise ANDed with BsClassifierRuleSourceMacMask equals the value of BsClassifierRuleSourceMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRuleEnetProtocolType	This object indicates the format of the layer 3 protocol id in the Ethernet packet. A value of none(0) means that the rule does not use the layer 3 protocol type as a matching criteria. A value of ethertype(1) means that the rule applies only to frames which contains an EtherType value. Ethertype values are contained in packets using the Dec-Intel-Xerox (DIX) encapsulation or the RFC1042 Sub-Network Access Protocol (SNAP) encapsulation formats. A value of dsap(2) means that the rule applies only to frames using the IEEE802.3 encapsulation format with a Destination Service Access Point (DSAP) other than 0xAA(which is reserved for SNAP). If the Ethernet frame contains an 802.1P/Q Tag header (i.e. EtherType 0x8100), this object applies to the embedded EtherType field within the 802.1P/Q header. If the referenced parameter is not present in a classifier, this object reports the value of 0.	none(0), ethertype(1), dsap(2)

BsClassifierRuleEnetProtocol	If BsClassifierRuleEnetProtocolType is none(0),this object is ignored when considering whether a packet matches the current rule. If BsClassifierRuleEnetProtocolType is ethertype(1), this object gives the 16-bit value of the EtherType that the packet must match in order to match the rule. If BsClassifierRuleEnetProtocolType is dsap(2), the lower 8 bits of this object's value must match the DSAP byte of the packet in order to match the rule. If the Ethernet frame contains an 802.1P/Q Tag header (i.e. EtherType 0x8100), this object applies to the embedded EtherType field within the 802.1P/Q header. If the referenced parameter is not present in the classifier, the value of this object is reported as 0.	
BsClassifierRuleUserPriLow	This object applies only to Ethernet frames using the 802.1P/Q tag header (indicated with EtherType 0x8100). Such frames include a 16-bit Tag that contains a 3 bit Priority field and a 12 bit VLAN number. Tagged Ethernet packets must have a 3-bit Priority field within the range of BsClassifierRuleUserPriLow and BsClassifierRuleUserPriHigh in order to match this rule. If the referenced parameter is not present in the classifier, the value of this object is reported as 0.	
BsClassifierRuleUserPriHigh	This object applies only to Ethernet frames using the 802.1P/Q tag header (indicated with EtherType 0x8100). Such frames include a 16-bit Tag that contains a 3 bit Priority field and a 12 bit VLAN number. Tagged Ethernet packets must have a 3-bit Priority field within the range of BsClassifierRuleUserPriLow and BsClassifierRuleUserPriHigh in order to match this rule. If the referenced parameter is not present in the classifier, the value of this object is reported as 7.	
BsClassifierRuleVlanId	This object applies only to Ethernet frames using the 802.1P/Q tag header. If this object's value is nonzero, tagged packets must have a VLAN Identifier that matches the value in order to match the rule. Only the least significant 12 bits of this object's value are valid. If the referenced parameter is not present in the classifier, the value of this object is reported as 0.	
BsClassifierRuleState	This object indicates whether or not the classifier is enabled to classify packets to a Service Flow. If the referenced parameter is not present in the classifier, the value of this object is reported as active(1).	active(1), inactive(2)

BsClassifierRulePhsSize	This object is used to configure the PHS rule for this classifier. The value of this field - PHSS is the total number of bytes in the header to be suppressed and then restored in a service flow that uses PHS. If the value of this field is 0 bytes then PHS is disabled for this classifier. If flag phsMask in BsClassifierRuleBitMap is set to 0 and flag phsSize in BsClassifierRuleBitMap is set to 0, then BS can still create PHS rules using its own custom mask (i.e. the rule is not configured by NMS).	
BsClassifierRulePhsMask	This object is used to configure the PHS rule for this classifer. It is encoded as follows: bit 0: 0 = don't suppress the 1st byte of the suppression field 1 = suppress first byte of the suppression field bit 1: 0 = don't suppress the 2nd byte of the suppression field 1 = suppress second byte of the suppression field bit x: 0 = don't suppress the (x+1) byte of the suppression field 1 = suppress (x+1) byte of the suppression field where the length of the octet string is ceiling (BsClassifierRulePhsSize/8). BS should use this value to create a new PHS rule index (PHSI) and field (PHSF) as defined in the standard. If flag phsMask in BsClassifierRuleBitMap is set to 0 and flag phsSize in BsClassifierRuleBitMap is set to 0, then BS can still create PHS rules using its own custom mask (i.e. the rule is not configured by NMS).	
BsClassifierRulePhsVerify	The value of this field indicates to the sending entity whether or not the packet header contents are to be verified prior to performing suppression.	
BsClassifierRuleIpv6FlowLabel	The value of this field specifies the matching values for the IPv6 Flow label field.	
BsClassifierContextId	The values of the field specify the context ID for ROHC- or ECRTP-compressed packets. The CS will attempt to match the context ID with the payload packet's one-byte or two-byte embedded Context ID field according to the scheme described in RFC 3095 section 5.1.3.	
BsClassifierActionRule	The value of this field specifies an action associate with the classifier rule.	bit 0: 0 = none. 1 = Discard packet bit 1-7: Reserved.

BsClassifierShortFormatContextId	The values of the field specify a short-format context ID for ROHC- or ECRTP-compressed packets. The CS will attempt to match the context ID with the payload packet's zero- or one-byte prefix Context ID field according to the scheme described in RFC 3095 section 5.1.3.	