

**IEEE Standard for Information Technology—  
Telecommunications and information exchange  
between systems  
Wireless Regional Area Networks (WRAN)—  
Specific requirements**

**Part 22: Cognitive Wireless RAN  
Medium Access Control (MAC) and  
Physical Layer (PHY) Specifications:  
Policies and Procedures for  
Operation in the TV Bands**

**Amendment 1: Management and Control  
Plane Interfaces and Procedures and  
Enhancement to the Management  
Information Base (MIB)**

**IEEE Computer Society**

Sponsored by the  
LAN/MAN Standards Committee

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IEEE  
3 Park Avenue  
New York, NY 10016-5997  
USA

**IEEE Std 802.22a™-2014**  
(Amendment to  
IEEE Std 802.22™-2011)



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Approved 27 March 2014  
**IEEE-SA Standards Board**

**Abstract:** This air interface, including the medium access control layer (MAC) and physical layer (PHY), of the fixed and portable point-to-multipoint wireless regional area networks (WRANs) operating in spectrum allocated to the Television Broadcasting Service in the frequency range of 54 MHz to 862 MHz is described in this amendment.

**Keywords:** broadband wireless access network, cognitive radio, fixed user terminals, IEEE 802.22a<sup>TM</sup>, portable user terminals, radio spectrum sensing, regional area network, WRAN standards

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## **Introduction**

This introduction is not part of IEEE Std 802.22a-2014, IEEE Standard for Information Technology—Telecommunications and information exchange between systems—Wireless Regional Area Networks(WRAN)—Specific requirements—Part 22: Cognitive Wireless RAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Policies and Procedures for Operation in the TV Bands—Amendment 1: Management and Control Plane Interfaces and Procedures and Enhancement to the Management Information Base (MIB).

This amendment to IEEE Std 802.22-2011 defines a new clause for Management and Control Plane interfaces and procedures for operation in very high frequency and ultra-high frequency (VHF/UHF) television (TV) broadcast bands between 54 MHz and 862 MHz. The Management Information Base (MIB) structure enhancement includes changes to comply with the ASN.1 format and support for the new clause. Modifications to the existing clause on primitives for cognitive radio capabilities (Clause 10) to align it with the content in the MIB clause (Clause 13) and the new clause (Clause 14) are also defined.

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<sup>1</sup> Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

## 5 System architecture

### 5.2 Management reference architecture

*Change the second paragraph of 5.2 as follows:*

Figure 5 shows an example of a management reference model for WRANs. ~~If~~This example consists of a Network Management System (NMS), a Network Control System (NCS), and managed nodes. The BS and CPEs shall collect and store the managed objects (see 5.2.4) in the format as defined in the WRAN Management Information Base (MIB). The MIB is defined and specified in Clause 13. The Network Control System contains the service flow and the associated QoS information that is pre-populated in service classes at the BS and instantiated when a CPE requests services.

*Change the fourth paragraph of 5.2 as follows:*

In the management reference architecture example in Figure 5, management information that is stored in the form of MIBs must be conveyed using SNMP messages. Use of MIBs to define the structure of management information and SNMP to convey this data is optional. If MIBs and the SNMP are not used to store and transport management information, the network operator and device manufacturers will have to specify another means to enable management functions. The management information between the CPE and the BS may be carried over a secondary management connection. The management information can also be conveyed using the normal SNMP messages.

*Change 5.2.1 as follows:*

#### 5.2.1 Service access primitives (SAPs)~~PHY/MAC to NCMS interface~~

In the Management/Control Plane, ~~t~~The NCMS is interfaced to the MAC and PHY layer entities of the CPE and BS through two Service Access Primitives Points (SAPs). The BS and CPE shall include a Control-SAP (C-SAP) and Management-SAP (M-SAP) that provide NCMS access to the control plane and management plane functions from upper layers. The M-SAP is used for less time-sensitive Management plane primitives, and the C-SAP is used for more time-sensitive Control plane primitives. The C-SAP and M-SAP interfaces are described in 5.2.1.1 and 5.2.1.2. The NCMS uses the C-SAP and M-SAP to interface with the IEEE 802.22 managed nodes.

In the Cognitive Plane, the SM is interfaced with the SSA through two SAPs. The SM uses the SM-SSF SAP to interface with the Spectrum Sensing Function on the SSA and the SM-GL SAP to interface with the Geolocation function on the SSA.

*Insert the following new subclauses (5.2.1.3 and 5.2.1.4) after 5.2.1.2:*

##### 5.2.1.3 SM-SSF SAP (SM-SSF-SAP)

The SM-SSF SAP includes, but is not limited to, primitives related to the following:

- Channel Sensing configuration
- Channel Sensing reporting

#### **5.2.1.4 SM-GL SAP (SM-GL-SAP)**

The SM-GL SAP includes, but is not limited to, primitives related to the following:

- Geolocation fix calculation request
- Geolocation fix calculation results

#### **5.2.4 Managed objects**

*Change 5.2.4 as follows:*

Managed information items are also known as “managed objects.” If managed objects are defined as MIBs (see Clause 13), the definition of them shall follow conventions. The definition of managed objects in this standard is expressed in IETF RFC 2578. It supports a management protocol agnostic approach, including SNMP. If managed objects are not defined as MIBs, use of conventions defined in IETF RFC 2578 to define them is optional, and use of SNMP to transport this information is optional as well.

### **10 Cognitive radio capability**

*Delete 10.7 to 10.7.6.4.2 (including Table 252 to Table 271) as follows:*

#### **10.7 Primitives for cognitive radio capabilities**

##### **10.7.1 Database service primitives [and its subclauses]**

The following ... **10.7.1.8** ... (latitude, longitude)

*NOTE—Information on database service primitives can now be found in 14.2.1.3.*

##### **10.7.2 BS configuration and monitoring primitives [and its subclauses]**

The BS ... **10.7.2.4.2** ... another request.

*NOTE—Information on BS configuration and monitoring primitives can now be found in 14.2.1.4.*

##### **10.7.3 CPE reports the resulting available WRAN services list [and its subclauses]**

The selection ... **10.7.3.3.2** ... another query.

*NOTE—Information on CPE reports the resulting available WRAN services list can now be found in 14.2.1.5.*

##### **10.7.4 Spectrum Sensing Services [and its subclauses]**

The IEEE ... **10.7.4.3.2** ... PHY SSF.

*NOTE—Information on spectrum sensing function primitives can now be found in 14.2.2.1.*

### **10.7.5 Geolocation services [and its subclauses]**

The PHY ... **10.7.5.3.2** ... another request.

**NOTE—Information on geolocation primitives can now be found in 14.2.3.1.**

### **10.7.6 Antenna primitives [and its subclauses]**

Essential antenna ... **10.7.6.4.2** ... to EIRP.

**NOTE—Information on antenna primitives can now be found in 14.2.1.6.**

## **12 Parameters and connection management**

### **12.1 Parameters, timers, message IEs**

#### **12.1.1 MAC (dynamic service flow, multicast, ARQ, capability, and bandwidth management)**

*Change Table 272 as follows:*

**Table 272—MAC parameters, timers, message IEs**

Entity/ Scope	Name	Reference	Min value	Default value	Max value
CPE, BS	DSx Request Retries	Number of Timeout Retries on DSA/DSC/DSD Requests.	—	3	—
CPE, BS	DSx Response Retries	Number of Timeout Retries on DSA/DSC/DSD Responses.	—	3	—
CPE	T6	Wait for registration response.	—	—	3 s
CPE, BS	T7	Wait for DSA/DSC/DSD Response timeout.	—	—	1 s
CPE, BS	T8	Wait for DSA/DSC Acknowledge timeout.	—	—	300 ms
BS	T9	Registration Timeout, the time allowed between the BS's sending a RNG-CMD (success) to a CPE and receiving a CBC-REQ from that same CPE.	300 ms	300 ms	—
CPE, BS	T10	Wait for Transaction End timeout.	—	—	3 s
BS	T13	The time allowed for an CPE, following receipt of a REG-RSP message to send a TFTP-CPLT message to the BS.	15 min	15 min	—
CPE	T14	Wait for DSx-RSP/DSX-RVD Timeout.	—	—	200 ms
BS	T15	Wait for MCA-RSP.	20 ms	20 ms	—
CPE	T16	Wait for bandwidth request grant.	10 ms	—	Service QoS dependent
CPE	T18	Wait for CBC-RSP timeout.	—	5 ms	<< T9
CPE, BS	T22	Wait for ARQ-Reset.	—	—	0.5 s
CPE	T26	Wait for TFTP-RSP.	10 ms	10 ms	200 ms

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	T27 as idle timer	Maximum time between unicast grants to CPE when BS believes CPE upstream transmission quality is <i>good enough</i> .	CPE Ranging Response Processing Time	—	—
BS	T27 as active timer	Maximum time between unicast grants to CPE when BS believes CPE upstream transmission quality is <i>not good enough</i> .	CPE Ranging Response Processing Time	—	—
BS	T28	Time allowed for the BS to complete the transmission of the backup/candidate channel list to its CPEs after initial registration by a new CPE, including the database service query.	—	60 s	<u>&lt;&lt; T45</u>
CPE	CBC Request Retries	Number of retries on CBC Request.	—	3	—
	DSx Flow Control	Maximum # of ongoing dynamic service flow (DSx) transactions that are ongoing.	1	4	Infinite
	MCA Flow Control	Maximum # of ongoing multicast group assignment (MCA-REQ/RSP) transactions.	1	—	Infinite
	Max # of multicast groups	Maximum # of multicast groups the BS supports in a cell.	—	—	<u>510511</u>
BS, CPE	T30	CPE registration Timer (see 7.7.7.3.4 and 7.14.2.11).	160 ms	40.8 s	10,485.6 s
BS, CPE	ARQ_BSN_MODULUS	Number of unique BSN values.	—	$2^{10}$	—
BS, CPE	ARQ_WINDOW_SIZE	Max # of un-acknowledged ARQ blocks at a given time.	—	—	$\leq (\text{ARQ\_BSN\_MODULUS})/2$
BS, CPE	ARQ_BLOCK_LIFETIME	Max time interval an ARQ block shall be managed by the Tx ARQ state machine.	10 $\mu$ s	—	655.36 ms
BS, CPE	ARQ_RETRY_TIMEOUT (TRANSMITTER_DELAY/ RECEIVER_DELAY)	Minimum time interval a transmitter shall wait before retransmission of a unacknowledged block.	10 $\mu$ s	—	655.36 ms
BS, CPE	ARQ_SYNC_LOSS_TIMEOUT	Max amount of time ARQ_TX_WINDOW_START or ARQ_RX_WINDOW_START shall be allowed to remain at the same value before declaring a loss of synchronization of the sender and receiver state machines for an ongoing transfer.	10 $\mu$ s	—	655.36 ms
BS, CPE	ARQ_RX_PURGE_TIMEOUT	Time interval the receiver shall wait after successful reception of a block that does not result in advancement of ARQ_RX_WINDOW_START, before advancing ARQ_RX_WINDOW_START.	10 $\mu$ s	—	655.36 ms
BS, CPE	ARQ_BLOCK_SIZE	Size of ARQ block that SDU is fragmented into.	1 octet	—	2040 octet

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	Max CPE Transmit EIRP	Maximum CPE Transmit EIRP as negotiated during registration.	-64 dBm	—	+63.5 dBm
CPE	Registration Request Retries	Number of retries on registration requests.	3	—	—
CPE	Request Retries	Number of retries on bandwidth allocation requests.	16	—	—

### 12.1.2 PHY (initialization, operation, and DS/US synchronization)

*Change Table 273 as follows:*

**Table 273—PHY parameters, timers, message IEs**

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	DCD Interval	Time between transmission of DCD messages.	—	—	10 s
BS	UCD Interval	Time between transmission of UCD messages.	—	—	10 s
BS	UCD Transition	The time the BS shall wait after repeating a UCD message with an incremented Configuration Change Count before issuing a US-MAP message referring to Upstream_Burst_Profiles defined in that UCD message.	2 MAC frames	—	—
BS	DCD Transition	The time the BS shall wait after repeating a DCD message with an incremented Configuration Change Count before issuing a DS-MAP message referring to Downstream_Burst_Profiles defined in that DCD message.	2 MAC frames	—	—
BS	Initial Ranging Interval	Time between Initial Ranging opportunities assigned by the BS.	—	—	2 s
BS	CLK-CMP Interval	Time between the clock compare measurements used for the generation of CLK-CMP messages.	50 ms	50 ms	50 ms
CPE	Lost DS-MAP Interval (T56)	Time since last received DS-MAP message before downstream synchronization is considered lost.	—	—	600 ms
CPE	Lost US-MAP Interval (T57)	Time since last received US-MAP message before upstream synchronization is considered lost.	—	—	600 ms
CPE	Lost SCH (T58)	Number of SCH that can be lost until synchronization is considered lost.	—	—	15
CPE	CDMA Ranging Retries	Number of retries on CDMA Ranging Requests.	1	—	4
CPE, BS	Invited Ranging Retries	Number of retries on inviting Ranging Requests.	16	—	—
BS	US-MAP Process Time	Time provided between arrival of the last bit of a US-MAP at a CPE and effectiveness of that map.	5 symbols	—	—

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	CPE Ranging Response Processing Time	Time allowed for a CPE following receipt of a ranging response before it is expected to reply to an invited ranging request.	10 ms	—	—
CPE	T1	Wait for DCD timeout.	—	—	$5 \times \text{DCD}$ interval maximum value
CPE	T2	Wait for broadcast ranging timeout.	—	—	$5 \times \text{ranging}$ interval
CPE	T3	Ranging Response reception timeout following the transmission of a Ranging Request.	—	200 ms	200 ms
CPE	T4	Wait for unicast ranging opportunity. If the pending-until-complete field was used earlier by this CPE, then the value of that field shall be added to this interval.	1 s	30 min (fixed) 10 min (portable)	30 min
BS	T5	Wait for Upstream Channel Change response.	—	—	2 s
CPE	T12	Wait for UCD descriptor.	—	—	$5 \times \text{UCD}$ Interval maximum value
CPE	T20	Time the CPE searches for preambles on a given channel.	2 MAC frames	—	—
CPE	T21	Time the CPE searches for DS-MAP on a given channel.	—	—	10 s
BS	EIRP <sub>BS</sub>	EIRP of BS (DS).	-64 dBm	—	63.5 dBm
BS	TTG	<u>Transmit-receive Turnaround Gap.</u> <u>Transmit/Receive Transition Gap</u>	$\underline{\underline{105\ \mu s}}$	210 $\mu$ s	$\underline{\underline{333\ \mu s}}$
CPE	RTG	<u>Receive-transmit Turnaround Gap.</u>	81.8 $\mu$ s	—	303.5 $\mu$ s
BS	DIUC Mandatory Exit Threshold	CINR at or below which this DIUC can no longer be used and where change to a more robust DIUC is required.	-64 dB	—	+63.5 dB
BS	DIUC Mandatory Entry Threshold	The minimum CINR required to start using this DIUC when changing from a more robust DIUC is required.	-64 dB	—	+63.5 dB
BS	Boosting	Boosting applied to a DS allocation.	-12 dB	0 dB	+9 dB
BS, CPE	BW Request Backoff Start	Initial size of BW Request opportunity used by CPEs to contend to send BW requests to BS.	0	—	15
BS, CPE	BW Request Backoff End	Final size of BW Request opportunity used by CPEs to contend to send BW requests to BS.	0 $\frac{1}{4}$	—	15
BS, CPE	UCS Notification Backoff Start	Initial backoff window size in units of UCS Notification opportunity used by CPEs to contend to send UCS notifications to BS.	0	—	15
BS, CPE	UCS Notification Backoff End	Final size of UCS Notification opportunity used by CPEs to contend to send UCS Notification to BS.	0 $\frac{1}{4}$	—	15

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS, CPE	Contention-based reservation Timeout	Number of US-MAPs to receive before contention-based reservation is attempted again for the same connection.	0 <sup>+</sup>	—	255
BS, CPE	BW Request opportunity size	Size (in OFDM slots) of PHY bursts, that a CPE may use to format and transmit a bandwidth request message in a contention request opportunity.	0 <sup>+</sup>	—	255
BS, CPE	UCS Notification request opportunity size	Size (in OFDM slots) of PHY bursts that a CPE may use to transmit a UCS Notification.	0 <sup>+</sup>	—	255
BS, CPE	# of initial ranging codes	Number of initial ranging CDMA codes (N).	0 <sup>+</sup>	—	255
BS, CPE	# of periodic ranging codes	Number of periodic ranging CDMA codes (M).	0 <sup>+</sup>	—	255
BS, CPE	# of bandwidth request codes	Number of bandwidth request CDMA codes (L).	0 <sup>+</sup>	—	255
BS, CPE	# of UCS notification codes	Number of UCS notification CDMA codes (I).	0 <sup>+</sup>	—	255
BS, CPE	Start of CDMA codes group	Indicates the starting number, S, of the group of codes used for the US.	0	See 6.10.3 —	255
BS, CPE	EIRP Density Level	EIRP Transmitted per subcarrier.	-104 dBm	—	+23.5 dBm
BS, CPE	EIRP Control	EIRP per subcarrier that the CPE should apply to correct its current transmission EIRP.	-104 dBm	—	+23.5 dBm
BS	EIRP Per subcarrier	EIRP transmitted per subcarrier.	-104 dBm	—	+23.5 dBm

### 12.1.3 Coexistence

*Change Table 274 as follows:*

**Table 274—Coexistence parameters, timers, message IEs**

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	T <sub>se</sub> (T33)	Time between transmission of the broadcast message of the operating backup and candidate channel sets for the purposes of spectrum etiquette.	—	—	60 s
BS	T32	Wait for the Frame Contention Response message.	1 superframe	—	32 superframes

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	FCW	Frame Contention Window: number of superframes during which a BS (FC_DST) accumulates the frame contention requests before reacting to it and responding to the FC_SRCs.	0 superframe	—	16 superframes
BS	SCWBackoff_Max	Integer denoting the maximum superframes for the SCW backoff window.	0	—	15
BS	Frame_Contention_Min	Number of frames not available for contention at a BS in a coexistence situation.	0	2	8
BS	FCN_range	Exponent in base 2 defining the extent of the range of the random number FCN.	4	—	16
BS	SF_release	Number of superframes after which the BS releases the frames won by another BS through frame contention.	—	5	—
CPE	T <sub>CBP</sub> (T34)	The minimum time between transmissions of a CBP packet carrying its MAC address for identification by nearby CPEs and BSs for coexistence purpose, as well as by spectrum monitoring systems to identify potential interference situations. Timing value may depend on the regulatory domain where the WRAN system operates (see Annex A).	8 s	—	15 min
BS	SCWBackoff_Timer (T35)	Backoff timer that controls exiting or continuation of Frame contention procedure.	—	—	SCWBackoff_Max

#### 12.1.4 Security

*Change Table 275 as follows:*

**Table 275—Security parameters, timers, message IEs**

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
CPE	EAP Authentication Timer (T36)	Timeout period between sending SCM EAP-Start or EAP-Transfer (8.2.2.5).	2 s	10 s	30 s
CPE	Authentication Grace Timer (T37)	Amount of time after authentication is complete that must pass before re-authentication is complete (8.2.2.5).	5 min (300 s)	10 min (600 s)	6 h (21,600) 35 days (3,024,000 s)
CPE	Max #of Authentication Attempts	Maximum # of Times a CPE is allowed to attempt EAP Authentication (8.2.2.5).	1 s	5 s	10 s
CPE	Operational Wait Timeout (T38)	Timeout period between sending of Key Request messages from the Op Wait state (8.2.3.2.4).	1 s	1 s	10 s
CPE	Rekey Wait Timeout (T39)	Timeout period between sending of Key Request messages from the Rekey Wait state (8.2.3.2.4).	1 s	1 s	10 s
CPE	GTEK/TEK Grace Time (T40)	Time interval, in seconds before the estimated expiration of a GTEK/TEK (8.2.3.2.4).	5 min (300 s)	1 h (3600 s)	3.5 days (302,400 s)

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS	AK Lifetime	Lifetime BS assigns to new AK.	1 day (86,400 s)	7 days (604,800 s)	70 days (6,048,000 s)
BS	TEK Lifetime	Lifetime BS assigns to new TEK.	30 min (1800 s)	12 h (43,200 s)	7 days (604,800 s)
BS, CPE	SCM Flow Control	The maximum number of concurrent SCM transactions.	0 (Default: unlimited # of transactions)	—	255
BS, CPE	Number of Supported Security Associations	The maximum # of supported security associations.	2	—	2+m where <i>m</i> is the number of multicast groups
BS, CPE	PN_ WINDOW_ SIZE	Window that defines the acceptable PNs for received PDUs that are to be processed by encryption/decryption process.	16	—	512
BS	T17	Time allowed for CPE to complete CPE Authorization and Key Exchange.	5 min	5 min	—

### 12.1.5 Cognitive radio capabilities (SM, SSA, incumbent protection, QP management)

*Change Table 276 as follows:*

**Table 276—Cognitive radio capability parameters, timers, message IEs**

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
CPE	T19	Time DS channel remains unusable.	—	—	—
CPE	T29	Wait for BLM-ACK timeout.	10 ms	—	300 ms
BS	T31	Wait for BLM-REP timeout.	1 MAC Frame	—	—
CPE	BLM-REP Retries	Number of retries allowed for sending BLM-REP.	—	3	—
BS, CPE	Channel Availability Check Time	The time during which a channel SHALL be checked for the presence of licensed incumbent signals having a level above the Incumbent Detection Threshold prior to the commencement of WRAN operation in that channel and, in the case of TV, a related channel at an EIRP level that can affect the measured channel.	—	30 s	—
BS, CPE	Non- Occupancy Period	The required period during which WRAN device transmissions SHALL NOT occur in a given channel because of the detected presence of an incumbent signal in that channel above the Incumbent Detection Threshold, or in the case of TV, above a given EIRP level.	10 min	—	—

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS, CPE	Channel Detection Time	The maximum time taken by a WRAN device to detect a licensed incumbent signal above the Incumbent Detection Threshold within a given channel during normal WRAN operation.	—	≤ 2 s to ≥ 90% Probability of Detection with a False Alarm rate of ≤ 10%	—
BS, CPE	Channel Setup Time	The window of time that may be taken by a WRAN CPE to transmit control information to a WRAN base station in order to establish operation with that base station at the prescribed power or, in the case of TV, at or below the allowable EIRP within a given channel.	—	2 s	—
BS, CPE	Channel Opening Transmission Time (Aggregate transmission time)	The aggregate duration of control transmissions by WRAN devices during the Channel Setup Time, which starts at the end of the Channel Availability Check Time.	—	100 ms	—
BS, CPE	Channel Move Time (In-service monitoring)	The time taken by a WRAN system to cease all interfering transmissions on the current channel upon detection of a licensed incumbent signal above the relevant Incumbent Detection Threshold, or in the case TV, to alternatively reduce its EIRP to that which is allowable within a given channel upon detection of a TV signal in the same or a related channel.	—	2 s	—
BS, CPE	Channel Closing Transmission Time (Aggregate transmission time)	The aggregate duration of control transmissions by the WRAN devices during the Channel Move/EIRP Reduction Time, which starts upon detection of a licensed incumbent signal above the relevant Incumbent Detection Threshold.	—	100 ms	—
BS, CPE	Channel Number	The channel number to be sensed by the SSF (10.4).	0	—	255
BS, CPE	Channel Bandwidth	The bandwidth of the channel to be sensed by the SSF (10.4).	—	6/7/8 MHz (depending on regulatory domain)	—
BS, CPE	Maximum Probability of false alarm	In sensing modes 0 and 1 this value specifies the maximum probability of false alarm for each sensing mode decision in the signal present array.	0.0	—	0.255
BS, CPE	NumSensingPeriods	Number of sensing periods field in a Sensing Window Specification Array entry.	0	1	127
BS, CPE	SensingPeriod Duration	Duration of sensing period field (in units of OFDM symbols) in a Sensing Window Specification Array entry.	0	16	1023
BS, CPE	SensingPeriod Interval	Periodicity of Sensing period field in a Sensing Window Specification Array entry.	0	200	2047

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS, CPE	Sensing Window Specification Array	Array containing Sensing Window specification for each signal type enumerated in Signal Type Array.	$1 \times \text{sizeof}(\text{NumSensingPeriods+SensingPeriodDuration+SensingPeriodInterval})$	—	$32 \times \text{sizeof}(\text{NumSensingPeriods+SensingPeriodDuration+SensingPeriodInterval})$
BS, CPE	Signal Type Array	Bitmap that indicates which signal types are to be sensed for in a given regulatory domain.	—	Set on a regulatory domain-by-domain basis (see Table A.11)	—
BS, CPE	Sensing Mode	The sensing mode a CPE supports. Negotiated during CPE initialization. Various modes are described in Table 238.	—	No Sensing	—
BS, CPE	Signal Present Decision	Indication of whether a signal of a specific type has been detected. All unused values are reserved.	0x00 (Absent)	0x7F (No Decision could be made)	0xFF (Signal Present)
BS, CPE	Confidence Metric	Confidence with which sensing can determine the signal type.	0x00 (No Confidence)	—	0xFF (Full confidence)
BS, CPE	Mean RSSI	Mean of M RSSI measurements.	-104 dBm	—	+23.5 dBm
BS, CPE	Standard Deviation of RSSI	Standard deviation of the M RSSI measurements.	+0.0 dB	—	+25.5 dB
BS, CPE	RSSI detection threshold	Energy detection threshold indicating the presence of an incumbent, other WRAN system, or interference.	-120 dBm	—	-10 dBm
BS, CPE	Microphone Protection Radius	Radius of the contour within which the WRAN system cannot operate due to potential interference with the microphone.	0.1 km	—	100 km
BS, CPE	T <sub>Candidate_Channel_Refresh</sub> (T41)	Maximum time interval allowed before sensing is performed on the candidate channel to ensure that no incumbents are detected.	1 s	6 s	10 s
BS, CPE	T <sub>Backup_Channel_Refresh</sub> (T42)	Maximum time interval allowed before sensing is performed on the backup channel to ensure that no incumbents are detected.	1 s	6 s	10 s
BS, CPE	T <sub>Candidate_to_Backup_Transition</sub> (T43)	Minimum time duration without detection of any incumbent for a candidate channel to transition to the backup channel.	1 s	30 s	100 s
BS, CPE	T <sub>Ch_Move</sub> (T44)	Maximum time to ensure that the channel move information is successfully conveyed to all the associated CPEs and BS (self-coexistence mode).	1 s	—	10 s
BS, CPE	T <sub>No_DB</sub> (T45)	Maximum WRAN operation time without access to the incumbent database service.	0.1 h	—	72 h
BS	T <sub>Wait_Before_Channel_Move</sub> (T46)	Waiting time before which the BS moves to the first backup channel. This is used to make sure that all the CPEs are ready to move to the backup channel before BS switches operation to this backup channel.	1 frame	—	256×16 frames

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
CPE	T <sub>Wait_Before_Channel_Move</sub> (T59)	Waiting time before which the CPE moves to its backup channels if it no longer hears from its BS. This is used to make sure that the CPE waits long enough after its UCS Notification so that the BS has had time to move to a backup channel, if it decided to do so.	1 frame	—	256×16 frames
BS, CPE	T <sub>Refresh_Database_Info</sub> (T47)	The prescribed time by the WRAN operator to refresh the incumbent database service.	0.1 h	—	72 h
BS, CPE	T <sub>Clear_N</sub> (T48)	Lapser Timer keeps track of whether the Operating Channel N has been cleared using spectrum sensing.	0.1 s	—	60 s
BS, CPE	T <sub>Clear_N-1</sub> (T49)	Lapser Timer keeps track of whether the Adjacent Channel N-1 has been cleared using spectrum sensing.	0.1 s	—	60 s
BS, CPE	T <sub>Clear_N+1</sub> (T50)	Lapser Timer keeps track of whether the Adjacent Channel N+1 has been cleared using spectrum sensing.	0.1 s	—	60 s
BS, CPE	T <sub>Loss_of_BS_Contact</sub> (T51)	Initiated when the CPE loses contact with the BS.	1 s	—	600 s
BS, CPE	T <sub>Range1</sub> (T52)	Used for terrestrial geolocation. Initiated when the downstream burst leaves the BS (i.e., at the start of the frame preamble).	1 TU	—	1000 TU
BS, CPE	T <sub>INsens</sub> (T53)	The parameter T <sub>INsens</sub> is used to verify that in-band sensing has been done within the required In-service monitoring period. The T <sub>INsens</sub> parameter is driven by the regulatory domain requirements. See Annex A.	0.1 s	—	60 s
BS, CPE	T <sub>OUTsens</sub> (T54)	The parameter T <sub>OUTsens</sub> is used to verify that out-of-band sensing has been done within the required “Acquiring a channel monitoring period” specified in Annex A, Table A.13 (30 s in the US). This value would be used to either initialize a “lapse timer” for each channel in the backup/candidate list at each CPE so that it is compared to T <sub>sens</sub> .	0.1 s	—	60 s
BS, CPE	T <sub>sensin</sub> (T55)	T <sub>sensin</sub> parameter corresponds to the maximum length of time required to carry out the sensing process on an in-band channel (N, N-1, or N+1). Manufacturers need to specify the sensing time required to detect the specified signals with required accuracy (see Figure 176).	1 ms	—	160 ms
CPE	T <sub>sensout</sub> (T60)	T <sub>sensout</sub> parameter corresponds to the maximum length of time required to carry out an out-of-band sensing process for a specified channel N (i.e., N, N-1, and N+1). Manufacturers need to specify the sensing time required to detect the specified signals out-of-band with required accuracy (see Figure 178).	20 ms	—	160 ms
BS, CPE	ISO 3166 IETF Country Code	3-character, ASCII string denoting the regulatory domain of operation (e.g., “USA” is for United States of America”).	—	3 characters	—

<b>Entity/ Scope</b>	<b>Name</b>	<b>Reference</b>	<b>Min value</b>	<b>Default value</b>	<b>Max value</b>
BS, CPE	TA <sub>CBP</sub>	Timing Advance of the CBP burst (see step 2 of 10.5.2.3). Note that the geolocation process will have to pre-adjust TA <sub>CBP</sub> depending on the distance between the two CPE to be geolocated and the reference CPEs so that the delays measured by Vernier <sub>3</sub> fall within the symbol cyclic prefix (e.g., 74.68 µs corresponding to 22.4 km).	-1024 TU	—	+1024 TU

## 13 MIB structure

*Change the third list item in the dashed list in the preliminary text of Clause 13 as follows:*

- wranIfBsSfMgmtMib: wranIfBsSfMgmt: Basic MIB for managing items related to Service Flow configuration, instantiation, and management

### 13.1 MIB description

#### 13.1.1 wranDevMib

*Change the dashed list in 13.1.1 as follows:*

- wranDevBsObjects: MIB objects to be implemented by the SNMP agent in BS
- wranDevCpeObjects: MIB objects to be implemented by the SNMP agent in CPE
- wranDevCommonObjects: MIB objects to be implemented by the SNMP agent in BS/CPE
- wranDevMibConformance: MIB objects related to conformance

##### 13.1.1.1 wranDevBsObjects

###### 13.1.1.1.1 wranDevBsSoftwareUpgradeTable

###### 13.1.1.1.1.1 wranDevBsSoftwareUpgradeEntry

*Change 13.1.1.1.1.1.9 as follows:*

###### 13.1.1.1.1.9 wranDevBsSoftwareUpgradeTimeStamp

This value is a timestamp to indicate when the last SW downloaded or activation took place.

**Change 13.1.1.1.2 and its subclauses as follows:**

### **13.1.1.1.2 wranDevBsNotification**

This group of objects relates to SNMP traps on the BS. There is a control element that enables/disables the traps (wranDevBsTrapControl) and whether or not what event information is logged when a trap is sent (wranDevBsTrapDefinition) when an event is logged.

#### **13.1.1.1.2.1 wranDevBsTrapControl**

Defines control elements for traps. This is a 2-bit field that enables setting a trap to indicate when a BS event is logged (wranDevBsEvent) or when a event log buffer size overruns the configured threshold (wranDevBsLogBuffExceedThreshold).

#### **13.1.1.2.213.1.1.2.1.1 wranDevBsTrapDefinitionwranDevBsTrapPrefix**

This object groups all of the notification objects for the BS. It is defined to be compatible with SNMPv1, following Sections 8.5 and 8.6 of IETF RFC 2758. It is a compound object made up of the contents of a logged BS event (wranDevBsEventTrap) and the indication of when the ratio of the portion used to total size of event log has been exceeded (wranDevBsLogBuffExceedThresholdTrap).

#### **13.1.1.1.2.1.2 wranDevBsTrapControlRegister**

This is ... wranDevBsLogBuffExceedThresholdTrapControl.

#### **13.1.1.1.2.2 wranDevBsEventTrapControl**

This trap ... wranDevCmnEventTable.

#### **13.1.1.1.2.2.1 wranDevBsEventTrap**

This object is a compound object that contains information that describes the event that is logged. This trap is caught when wranDevBsEvent in wranDevBsTrapControl is set.

#### **13.1.1.2.2.213.1.1.1.2.2.1 wranDevBsLogBuffExceedThresholdTrap**

This trap is sent when the size of the event log buffer is greater than the configured threshold object is a compound object that indicates the index of an entry (defined by wranDevCmnEventLogEntry) in wranDevCmnEventLogConfigTable and the object in that entry that defines the ratio (defined by wranDevCmnEventLogResidualBuffThreshold) of used capacity in Event Log versus total capacity. This trap is caught when wranDevBsLogBuffExceedThreshold in wranDevBsTrapControl is set.

### **13.1.1.2 wranDevCpeObjects**

*Change 13.1.1.2.2 and its subclauses as follows:*

#### **13.1.1.2.2 wranDevCpeNotification**

This group of objects relates to SNMP traps on the BSCPE. There is a control element that enables/disables the traps (wranDevCpeTrapControl) and whether or not what event information is logged when a trap is sent (wranDevCpeTrapDefinition) when an event is logged.

##### **13.1.1.2.2.1 wranDevCpeTrapControl**

Defines control elements for traps. This is a 2-bit field that enables setting a trap to indicate when a CPE event is logged (wranDevCpeEvent) or when a event log buffer size overruns the configured threshold (wranDevCpeLogBuffExceedThreshold).

##### **13.1.1.2.2.1.1 wranDevCpeTrapDefinitionwranDevCpeTrapPrefix**

This object groups all of the notification objects for the BSCPE. It is defined to be compatible with SNMPv1, following Sections 8.5 and 8.6 of IETF RFC 2758. It is a compound object made up of the contents of a logged BS event (wranDevCpeEventTrap) and the indication of when the ratio of the portion used to total size of event log has been exceeded (wranDevCpeLogBuffExceedThresholdTrap).

##### **13.1.1.2.2.1.2 wranDevCpeEventTrapwranDevCpeTrapControlRegister**

This object is a compound object that contains information that describes the event that is logged. This trap is caught when wranDevCpeEvent in wranDevCpeTrapControl is set. This is a 2-bit bitmap that enables the two BS traps that are available: wranDevCpeEventTrapControl, wranDevBsLogBuffExceedThresholdTrapControl.

##### **13.1.1.2.2.1.3 wranDevCpeLogBuffExceedThresholdTrap**

This object is a compound object that indicates the index of an entry (defined by wranDevCmnEventLogEntry) in wranDevCmnEventLogConfigTable and the object in that entry that defines the ratio (defined by wranDevCmnEventLogResidualBuffThreshold) of used capacity in Event Log versus total capacity. This trap is caught when wranDevCpeLogBuffExceedThreshold in wranDevCpeTrapControl is set.

##### **13.1.1.2.2.2 wranDevCpeEventTrapControl**

This trap ... wranDevCmnEventTable.

##### **13.1.1.2.2.2.1 wranDevBsLogBuffExceedThresholdTrap**

This trap ... configured threshold.

### **13.1.1.3 wranDevCommonObjects**

#### **13.1.1.3.1 wranDevCmnEventLog**

##### **13.1.1.3.1.1 wranDevCmnEventLogConfigTable**

*Change the subclauses of 13.1.1.3.1.1 as follows:*

###### **13.1.1.3.1.1.1 wranDevCmnEventLogConfigEntry**

This object ... wranDevCmnDeviceIndex.

###### **13.1.1.3.1.1.1.1.2 wranDevCmnDeviceIndex**

Index value ... wranDevCmnEventLogConfigTable.

###### **13.1.1.3.1.1.1.243.1.1.3.1.1.3 wranDevCmnEventLogEntryLimit**

Maximum number ... is reached.

###### **13.1.1.3.1.1.1.343.1.1.3.1.1.4 wranDevCmnEventLogLifeTimeLimit**

A value of 0 means that an entry is kept indefinitely. Any other value, it is the maximum time an entry can exist in wranDevCmnEventLogTable. If this value is changed while entries exist in wranDevCmnEventLogTable, entries older than this limit will be discarded.

###### **13.1.1.3.1.1.1.443.1.1.3.1.1.5 wranDevCmnEventLogEntryLimitPerEventId**

The number ... per event.

###### **13.1.1.3.1.1.1.543.1.1.3.1.1.6 wranDevCmnEventLogSeverityThreshold**

Minimum severity ... Event Log.

###### **13.1.1.3.1.1.1.643.1.1.3.1.1.7 wranDevCmnEventLogWrapAroundBuffEnable**

Indication of ... when full.

###### **13.1.1.3.1.1.1.743.1.1.3.1.1.8 wranDevCmnEventLogLatestEvent**

Index of ... Event Log.

###### **13.1.1.3.1.1.1.843.1.1.3.1.1.9 wranDevCmnEventLogPersistenceSupported**

Indication of ... of device.

###### **13.1.1.3.1.1.1.943.1.1.3.1.1.10 wranDevCmnEventLogResidualBuffThreshold**

Threshold ratio ... is issued.

### **13.1.1.3.1.2 wranDevCmnEventTable**

*Change 13.1.1.3.1.2.1 as follows:*

#### **13.1.1.3.1.2.1 wranDevCmnEventEntry**

This object defines the parameters of an event entry in the wranDevCmnEventTable. Each entry is indexed by ~~wranDevCmnDeviceIndex~~ and ~~wranDevCmnEventIdentifier~~.

### **13.1.1.3.1.3 wranDevCmnEventLogTable**

*Change 13.1.1.3.1.3.1 and 13.1.1.3.1.3.1.1 as follows:*

#### **13.1.1.3.1.3.1 wranDevCmnEventLogEntry~~wranDevCmnEventEntry~~**

Each entry ... several parameters.

##### **13.1.1.3.1.3.1.1 wranDevCmnEventId**

A counter used to index entries in the Event Log. When it reaches the maximum value, it will ~~wither~~ wrap-around if configured to wrap-around or the log will be flushed if it is not configured to wrap-around.

*Change 13.1.1.3.2 as follows:*

#### **13.1.1.3.2 wranDevCmnSnmpAgent**

This compound object deals with the common objects (wranDevCmnSnmpAgent and wranDevCmnSnmpV1V2TrapDestTable) related to SNMP agent configuration.

*Change 13.1.1.3.3 and its subclauses as follows:*

#### **13.1.1.3.3 wranDevCmnDeviceConfig**

This compound attribute contains the following:

- wranDevCmnResetDevice: Object that is used to reset the device
- wranDevMibGroups~~wranDevMibConformance~~: MIB objects that are required for conformance
- wranDevMibCompliance: MIB objects that are required for conformance

##### **13.1.1.3.3.1 wranDevCmnResetDevice**

There are ... reset itself.

##### **13.1.1.3.3.2 wranDevMibGroups~~wranDevMibConformance~~**

This object ... each group.

#### **13.1.1.3.3.2.1 wranDevMibBsGroup**

This MIB group is mandatory. It is made up of wranDevBsTrapControl,  
wranDevBsTrapControlRegister.

#### **13.1.1.3.3.2.2 wranDevMibBsSwUpgradeGroup**

This MIB group is mandatoryoptional. It is a compound object made up of wranDevBsVendorId, wranDevBsHwId, wranDevBsCurrentSwVersion, wranDevBsDownloadSwVersion, wranDevBsUpgradeFileName, wranDevBsSoftwareUpgradeAdminState, wranDevBsDownloadSwProgress, wranDevBsSoftwareUpgradeTimeStamp. It contains the values of the most recent/current entry in wranDevBsSoftwareUpgradeTable.

#### **13.1.1.3.3.2.3 wranDevMibCpeGroup**

This MIB group is mandatory. It is a compound object made up of wranDevCpeMicConfigSetting, wranDevCpeVendorIdwranDevBsVendorId, wranDevCpeHwId, wranDevCpeConfigFileVersionwranDevCpeSwVersion, wranDevCpeUpgradeFileName, wranDevCpeSwTftpServer, wranDevCpeTftpServerTimeStamp, wranDevCpeTrapControlwranDevCpeTrapControlRegister. It contains the values of the most recent/current entry in wranDevCpeConfigFileEncodingTable for a particular CPE.

#### **13.1.1.3.3.2.4 wranDevMibCmnGroup**

This MIB ... wranDevCmnEventLogTable.

#### **13.1.1.3.3.2.5 wranDevMibBsNotificationGroup**

This MIB ... wranDevBsLogBuffExceedThresholdTrap.

#### **13.1.1.3.3.2.6 wranDevMibCpeNotificationGroup**

This MIB ... wranDevCpeLogBuffExceedThresholdTrap.

#### **13.1.1.3.3.2.7 wranDevCpeTrapControlGroup**

Contains objects related to enabling/disabling CPE device traps.

#### **13.1.1.3.3.2.8 wranDevBsTrapControlGroup**

Contains objects related to enabling/disabling BS device traps.

#### **13.1.1.3.3.3 wranDevMibCompliance**

This object indicates which MIB groups in wranDevMibGroups are optional and which ones are mandatory.

### 13.1.2 wranIfBsMib

*Change 13.1.2.1 and 13.1.2.1.1 as follows:*

#### 13.1.2.1 wranIfBsFm

Exceptions and fault events can be reported by using the traps defined in this MIB. `wranIfBsFm` is made up of the following MIBs: `wranIfBsTrapControl`, `wranIfBsTrapControlRegister`, `wranIfBsTrapDefinition`, `wranIfBsNotificationObjectsTable`, `wranIfBsCpeNotificationObjectsTable`, `wranIfBsFmMibGroups`, and `wranIfBsFmMibCompliance`, `wranIfBsThresholdConfigTable`.

##### 13.1.2.1.1 wranIfBsTrapControlwranIfBsTrapControlRegister

This MIB is a bitmap that is used to disable/enable the following BS traps:

`wranIfBsCpeDynamicServiceNotification`,  
`wranIfBsCpeDynamicServiceFailNotification`,  
`wranIfBsCpeRssiStatusChangeNotification`,  
`wranIfBsSignalPowerMetricsStatusNotification`,  
`wranIfBsCpeEIRPStatusChangeNotification`,  
`wranIfBsCpeRegisterNotification`,  
`wranIfBsCpeScmNotification`, `wranIfBsCpeScmFailNotification`,  
`wranIfBsCpeStartupStatusChangeNotification`,  
`wranIfBsThroughputMetricsNotification`,  
`wranIfBsNetworkEntryMetricsNotification`,  
`wranIfBsPacketErrorRateChangeNotification`,  
`wranIfBsUserMetricsChangeNotification`,  
`wranIfBsCoexistenceStatusNotification`,  
`wranIfBsCpeCbpReceptionNotification`,  
`wranIfBsCpeWiMicBeaconMSF1Notification`,  
`wranIfBsCpeWiMicBeaconMSF12Notification`,  
`wranIfBsCpeWiMicBeaconMSF123Notification`,  
`wranIfBsInterFrameSensingStatusNotification`,  
`wranIfBsMeasurementStatusNotification`,  
`wranIfBsBasicCapabilityNotification`, `wranIfBsRangingNotification`, and  
`wranIfBsAuthMetricsNotification`. Enable of a trap indicates that the trap will be recorded in `wranIfBsCpeNotificationObjectsTable`.

*Insert the following new subclauses (13.1.2.1.2 to 13.1.2.1.2.14) after 13.1.2.1.1:*

*NOTE—For instructions for the former 13.1.2.1.2, see the new 13.1.2.1.3.*

#### 13.1.2.1.2 wranIfBsTrapDefinition

This object defines BS related traps for configuration, accounting, performance, and SCM management aspects in `wranIfBsMib`.

### **13.1.2.1.2.1 wranIfBsDynamicServiceTrap**

This trap contains information related to updating the configuration of either provisioned service flows (wranIfBsProvSfTable) or active service flows (wranIfBsActiveSfTable).

### **13.1.2.1.2.2 wranIfBsSignalPowerMetricsTrap**

This trap contains information related to updating of signal power metrics (wranIfBsSignalPowerMetricsTable).

### **13.1.2.1.2.3 wranIfBsRegNotificationTrap**

This trap contains the information related to indicating successful registration of a CPE (wranIfBsCpeRegCapabilityRspTable).

### **13.1.2.1.2.4 wranIfBsScmNotificationTrap**

This trap contains the information related to updating the configuration of the SCM protocol capabilities on a CPE (wranIfBsCpeScmCapabilityConfigTable) or current authentication status (wranIfBsCpeScmAuthConfigTable).

### **13.1.2.1.2.5 wranIfBsStartupStatusTrap**

This trap contains the information related to changes in a CPE's status with regard to network entry (wranIfBsStartupMetricsTable).

### **13.1.2.1.2.6 wranIfBsTxMetricsTrap**

This trap contains the information related to changes in throughput metrics (wranIfBsThroughputMetricsTable) or ARQ metrics (wranIfBsArqMetricsTable).

### **13.1.2.1.2.7 wranIfBsNetEntryMetricsTrap**

This trap contains the information related to updates in network entry and re-entry latency measurements (wranIfBsNetworkEntryMetricsTable).

### **13.1.2.1.2.8 wranIfBsPktErrorTrap**

This trap contains the information related to updates in packet error rate measurements (wranIfBsPacketErrorRateTable).

### **13.1.2.1.2.9 wranIfBsUserMetricsTrap**

This trap contains the information related to updates in tracking the number of active and non-active users (wranIfBsUserMetricsTable).

### **13.1.2.1.2.10 wranIfBsCoexistenceTrap**

This trap contains the information related to updates in tracking ongoing coexistence transaction (e.g., On-Demand Frame Contention in wranIfBsCoexistenceStatusTable), discovery of new potential coexistence sources (wranIfBsCoexistenceSourceTable), discovery of resource usage in neighboring networks (wranIfBsCoexistenceResourceListTable), and updates to a BS's own coexistence configuration (wranIfBsCoexistenceCurrentConfigTable).

### **13.1.2.1.2.11 wranIfBsBasicCapabilityTrap**

This trap contains the information related to updates in tracking updates to the basic capability configuration of CPEs (wranIfBsCpeBasicCapabilityRspTable).

### **13.1.2.1.2.12 wranIfBsRangingTrap**

This trap contains the information related to updates in tracking status of ranging of (wranIfBsCpeRngCapabilityCmdTable).

### **13.1.2.1.2.13 wranIfBsAuthMetricsTrap**

This trap contains the information related to updates in tracking updates to authentication metrics (wranIfBsAuthenticationMetricsTable).

### **13.1.2.1.2.14 wranIfBsDynamicServiceMetricsTrap**

This trap contains the information related to updates in tracking metrics for current provisioned and active service flows (wranIfBsAuthenticationMetricsTable).

*To create a new 13.1.2.1.3 with subclauses, change the former 13.1.2.1.2 and its subclauses as follows:*

*NOTE—For instructions for the former 13.1.2.1.3, see the deletions after the new 13.1.2.1.3.1.20.*

### **13.1.2.1.313.1.2.1.2 wranIfBsNotificationObjectsTable**

This table contains objects that represents notifications reported in BS fault traps. The table is made up of one or more entries.

#### **13.1.2.1.3.113.1.2.1.2.1 wranIfBsNotificationObjectsEntry**

##### **wranIfBsCpeNotificationObjectsEntry**

This MIB is a compound object that represents an entry in the MIB object wranIfBsNotificationsObjectsTablewranIfBsCpeNotificationsObjectsTable.

##### **13.1.2.1.3.1.1 wranIfBsNotificationObjectsIndex**

Index of entry in the table.

##### **13.1.2.1.3.1.213.1.2.1.2.1.1 wranIfBsNotificationMacAddr**

The MAC ... the notification.

##### **13.1.2.1.3.1.3 wranIfBsDynamicServiceType**

Indication if the configuration for a provisioned or active service flow has been configured.

##### **13.1.2.1.3.1.4 wranIfBsDynamicServiceNotificationIndex**

Index into wranIfBsProvSfTable or wranIfBsActiveSfTable that indicates which service flow configuration was added/updated.

### **13.1.2.1.3.1.5 wranIfBsSignaPowerNotificationIndex**

Index into wranIfBsSignalPowerMetricsTable that indicates the entry that contains updated signal power metrics data.

### **13.1.2.1.3.1.6 wranIfBsBsRegCapabilityNotificationIndex**

Index into wranIfBsCpeReqCapabilityRspTable that indicates the entry that contains updated registration for a CPE.

### **13.1.2.1.3.1.7 wranIfBsScmNotificationType**

Indication if the configuration of the SCM protocol or the authentication status of a CPE has been updated.

### **13.1.2.1.3.1.8 wranIfBsScmNotificationIndex**

Index into wranIfBsCpeScmCapabilityConfigTable that indicates which CPE has updated their SCM configuration, or wranIfBsCpeScmAuthConfigTable that indicates which CPE has had their authentication status updated.

### **13.1.2.1.3.1.9 wranIfBsStartupNotificationIndex**

This contains the index of entry in wranIfBsStartupMetricsTable that contains data on any changes in a CPE's status with regard to network entry.

### **13.1.2.1.3.1.10 wranIfBsTxMetricsType**

Indication if throughput metrics contained or ARQ Metrics in have been updated.

### **13.1.2.1.3.1.11 wranIfBsTxMetricsNotificationIndex**

Index into wranIfBsThroughputMetricsTable that indicates changes in measure throughput metrics, or wranIfBsArqMetricsTable that indicates changes in ARQ performance.

### **13.1.2.1.3.1.12 wranIfBsNetEntryMetricsNotificationIndex**

This contains the index of entry in wranIfBsNetworkEntryMetricsTable that contains data on any changes in network entry and re-entry latency measurements.

### **13.1.2.1.3.1.13 wranIfBsPktErrorMetricsNotificationIndex**

This contains the index of entry in wranIfBsPacketErrorRateTable that contains data on any changes in packet error rate measurements.

### **13.1.2.1.3.1.14 wranIfBsUserMetricsNotificationIndex**

This contains the index of entry in wranIfBsUserMetricsTable that contains data on any changes in the number of active and non-active users in the cell.

### **13.1.2.1.3.1.15 wranIfBsCoexMetricsType**

Indication if ongoing On-Demand Frame Coexistence Transactions, discovery of new potential coexistence resources, discovery of the resource usage in neighboring networks, and whether a BS's own coexistence configuration have been updated.

### **13.1.2.1.3.1.16 wranIfBsCoexNotificationIndex**

Index into wranIfBsCoexistenaceStatusTable that indicates changes in ongoing On-Demand Frame Contention transactions, wranIfBsCoexistenceSourceTable that indicates changes in the discovery of new potential coexistence sources, wranIfBsCoexistenceResourceListTable that indicates discovery of resource usage in neighboring networks, or wranIfBsCoexistenceCurrentConfigTable that indicates whether a BS's own coexistence configuration have been updated.

### **13.1.2.1.3.1.17 wranIfBsBasicNotificationIndex**

This contains the index of entry in wranIfBsCpeBasicCapabilityRspTable that contains data on any changes in tracking updates to the basic capability configuration of CPEs.

### **13.1.2.1.3.1.18 wranIfBsRngNotificationIndex**

This contains the index of entry in wranIfBsCpeRngCapabilityCmdTable that contains data on any changes in tracking updates to the status of ranging of CPEs.

### **13.1.2.1.3.1.19 wranIfBsAuthNotificationIndex**

This contains the index of entry in wranIfBsAuthenticationMetricsTable that contains data on any changes in tracking updates to authentication metrics.

### **13.1.2.1.3.1.20 wranIfBsDynSrvMetricsNotificationIndex**

This contains the index of entry in wranIfBsServiceFlowMetricsTable that contains information related to tracking metrics of ongoing.

### **13.1.2.1.2.1.2 wranIfBsCpeStartupStatusChange**

This object ... initialization procedures.

...

### **13.1.2.1.2.1.17 wranIfBsIntraFrameSensingStatus**

Indication when ... been changed.

### **13.1.2.1.3 wranIfBsThresholdConfigTable**

This MIB ... 13.1.2.1.3.1.4 ... EIRP alarm.

***Insert the following new subclauses (13.1.2.1.4 with its subclauses and 13.1.2.1.5) after 13.1.2.1.3.1.20:***

#### **13.1.2.1.4 wranIfBsFmMibGroups**

This object helps define which MIB groups are available in this module (wranIfBsFm) and which MIB objects are part of each group.

##### **13.1.2.1.4.1 wranIfBsFmTrapControlGroup**

This group contains objects related to enabling/disabling traps use for management of the BS.

##### **13.1.2.1.4.2 wranIfBsFmNotificationGroup**

This group contains objects related to traps used for management of the BS.

##### **13.1.2.1.5 wranIfBsFmMibCompliance**

MIB objects that are optional or mandatory for wranIfBsFm compliance.

***Change 13.1.2.2 as follows:***

#### **13.1.2.2 wranIfBsCm**

This MIB contains various objects related to Configuration Management. Within this MIB, the following tables are handled: wranIfBsCpeRngCapabilityReqTable, wranIfBsCpeRngCapabilityCmdTable, wranIfBsCpeBasicCapabilityReqTable, wranIfBsCpeBasicCapabilityRspTable, wranIfBsCpeRegCapabilityReqTable, wranIfBsCpeMeasSupportReqTable, wranIfBsCpeRegCapabilityRspTable, wranIfBsCpeMeasSupportRspTable, wranIfBsCpeAntennaGainTable, wranIfBsScmCapabilityConfiguration, wranIfBsCpeScmCapabilityConfigTable, wranIfBsScmAuthConfigTable, wranIfBsActionsTable, wranIfBsCpeMulticastConfigTable, wranIfBsCoexistenceConfigTable, wranIfBsCpeBasicCapabilityCmn, wranIfBsCpeRegCapabilityCmn, wranIfBsCpeMeasSupportCmn, wranIfBsCpeSystemParametersTable, wranIfBsCpeRegCapabilityCmn, wranIfBsCmMibGroups, and wranIfBsCmMibCompliance. For CBC-REQ/RSP and REG-REQ/RSP there are two MIB object groups that represent entries that are common to Basic and Registered Capability negotiation.

##### **13.1.2.2.1 wranIfBsCpeRngCapabilityReqTable**

###### **13.1.2.2.1.1 wranIfBsCpeRngCapabilityReqEntry**

***Change the subclauses of 13.1.2.2.1.1 as follows:***

###### **13.1.2.2.1.1.1 wranIfBsCpeRngCapabilityReqIndex**

Index of entry in the table.

#### **13.1.2.2.1.1.243.1.2.2.1.1.1 wranIfBsCpeMacAddress**

The MAC ... the BS.

#### **13.1.2.2.1.1.343.1.2.2.1.1.2 wranIfMmpPn**

Current value ... is used.

#### **13.1.2.2.1.1.443.1.2.2.1.1.3 wranIfCipherTextIcv**

Calculated value ... (see 8.2.4.6.1.2).

#### **13.1.2.2.1.1.543.1.2.2.1.1.4 wranIfRngAnomaly**

Indication of ... ranging process.

*Change 13.1.2.2 and its subclauses as follows:*

#### **13.1.2.2.2 wranIfBsCpeRngCapabilityCmdTable**

This object provides a table containing the ranging configuration the BS is specifying for CPE in the RNG-CMD during network entry. Each table is made up of multiple entries, one for each CPE that a RNG-CMD is sent to, that is defined by wranIfBsCpeRngCapabilityCmdEntry wranIfBsCpeRngCapabilityRepEntry.

#### **13.1.2.2.2.1 wranIfBsCpeRngCapabilityCmdEntry**

This object ... network entry.

#### **13.1.2.2.2.1.1 wranIfBsCpeRngCapabilityCmdIndex**

Index of entry in the table.

#### **13.1.2.2.2.1.243.1.2.2.2.1.1 wranIfBsCpeMacAddress**

MAC Address ... initial ranging.

#### **13.1.2.2.2.1.343.1.2.2.2.1.2 wranIfBSCpeStationId**

Station ID ... initial ranging.

#### **13.1.2.2.2.1.443.1.2.2.2.1.3 wranIfTimingAdvance**

Timing advance ... Table 44.

#### **13.1.2.2.2.1.543.1.2.2.2.1.4 wranIfEirpPerSubcarrier**

EIRP per ... Table 44.

#### **13.1.2.2.2.1.643.1.2.2.2.1.5 wranIfOffsetFreqAdjust**

Offset frequency ... Table 44.

### **13.1.2.2.2.1.7 13.1.2.2.2.1.6 wranIfRangingStatus**

Ranging status ... Table 44.

### **13.1.2.2.2.1.8 13.1.2.2.2.1.7 wranIfActionSuperFrameNum**

The Action ... Table 44.

### **13.1.2.2.2.1.9 13.1.2.2.2.1.8 wranIfCdmaCode**

The CDMA ... Table 44.

### **13.1.2.2.2.1.10 13.1.2.2.2.1.9 wranIfTxOpportunityOffset**

The Transmission ... Table 44.

## **13.1.2.2.3 wranIfBsCpeBasicCapabilityReqTable**

*Change 13.1.2.2.3.1 and its subclauses as follows:*

### **13.1.2.2.3.1 wranIfBsCpeBasicCapabilityReqEntry**

This object is a compound object that contains ~~the requested configuration of basic information on capabilities by that a CPE has declared to a BS during network entry. The list of objects used to make up wranIfBsCpeBasicCapabilityReqEntry can be found in wranIfBsCpeBasicCapabilityCmn (13.1.2.2.16).~~

#### **13.1.2.2.3.1.1 wranIfBsCpeBasicCapabilityReqEntryIndex**

A unique ... this table.

...

#### **13.1.2.2.3.1.11 wranIfCpeScmFlowControl**

Maximum number ... in 7.7.11.3.3.3.

## **13.1.2.2.4 wranIfBsCpeBasicCapabilityRspTable**

*Change 13.1.2.2.4.1 as follows:*

### **13.1.2.2.4.1 wranIfBsCpeBasicCapabilityRspEntry**

This object is a compound object that contains the configuration of basic capabilities BS has selected for a CPE during network entry. This table reflects the current configuration of a CPE's basic capabilities. ~~The list of objects used to make up wranIfBsCpeBasicCapabilityRspEntry can be found in wranIfBsCpeBasicCapabilityCmn (13.1.2.2.16).~~

**NOTE** The relevant objects that make up this entry are described in 13.1.2.2.3.1.1 to 13.1.2.2.3.1.11. All items defined for the entry will need to move to the beginning of the ASN.1 formatting of wranIfBsMib.

### **13.1.2.2.5 wranIfBsCpeRegCapabilityReqTable**

*Change 13.1.2.2.5.1 and its subclauses as follows:*

#### **13.1.2.2.5.1 wranIfBsCpeRegCapabilityReqEntry**

This object is a compound object that contains the information on the capabilities information for which that a CPE has requested confirmation from declared to the BS, e.g., through sending a REG-REQ to the BS. The objects that make up the entry are defined in wranIfBsCpeRegCapabilityCmn (13.1.2.2.17). A REG-REQ message comprises objects within this compound object, wranIfBsCpeAntennaGainTable (13.1.2.2.9), and wranIfBsCpeMeasSupportReqTable (13.1.2.2.6).

#### **13.1.2.2.5.1.1 wranIfBsRegisteredCpeMacAddress**

MAC address ... configured capabilities.

...

#### **13.1.2.2.5.1.24 wranIfCpeRegistrationTimer**

CPE Registration ... in 7.7.7.3.5.

*Change 13.1.2.2.6 and its subclauses as follows:*

#### **13.1.2.2.6 wranIfBsCpeMeasSupportReqTablewranIfBsCpeMeasurementSupportReqTable**

A compound object representing the Measurement Support IE of REG-REQ/RSP in 7.7.7.3.4.7. It is made up of multiple entries, one for each signal type for which sensing is supported by sensing. Each entry is defined by wranIfBsCpeMeasSupportReqEntry wranIfBsCpeMeasurementSupportReqEntry. Entries for a CPE are only present only if the value for wranIfSensModeSupportArray is anything other than “No Sensing.”

#### **13.1.2.2.6.1 wranIfBsCpeMeasSupportReqEntry**

##### **wranIfBsCpeMeasurementSupportReqEntry**

A compound object representing entries of Measurement Support IE of REG-REQ in 7.7.7.3.4.7. It is made up of multiple objects. A CPE will have one entry for each Signal Type in the Signal Type Array of the Measurement Support IE. The rest of the objects that represent each entry are defined in wranIfBsCpeMeasSupportCmn (13.1.2.2.18).

#### **13.1.2.2.6.1.1 wranIfMeasurementSupportEntryIndex**

A unique ... wranIfBsCpeMeasurementSupportReqTable.

...

### **13.1.2.2.6.1.9 wranIfMeasurementRecSensPeriodInterval**

Recommended length ... of frames.

### **13.1.2.2.7 wranIfBsCpeRegCapabilityRspTable**

*Change 13.1.2.2.7.1 as follows:*

#### **13.1.2.2.7.1 wranIfBsCpeRegCapabilityRspEntry**

This object is a compound object that contains the capabilities information that a BS has configured for a CPE, e.g., through sending a REG-RSP to the CPE. wranIfReqCapabilityPermanentStationId is unique to REG-RSP. The objects that make up the entry are defined in wranIfBsCpeRegCapabilityCmn (13.1.2.2.17). A REG-RSP message comprises objects within this compound object and wranIfBsCpeMeasSupportRspTable (13.1.2.2.8).

NOTE 1 As with CBC-RSP, the entries will contain the objects that have scope in both REG-REQ and REG-RSP object types as the REG-REQ objects, e.g., this entry will be made up of objects in 13.1.2.2.5.1.1-13.1.2.2.15.1.24.

NOTE 2 In addition to having the objects in 13.1.2.2.5.1.1 through 13.1.2.2.5.1.24, this compound object will have an object containing the permanent station Id when CPE privacy (see 8.7) is being used.

*Change 13.1.2.2.8 and 13.1.2.2.8.1 as follows:*

#### **13.1.2.2.8 wranIfBsCpeMeasSupportRspTable**

A compound object representing the Measurement Support IE of REG-REQ/RSP in 7.7.7.3.4.7. It is made up of multiple entries, one for each signal type that sensing supports. Each entry is defined by wranIfBsCpeMeasSupportRspEntry/wranIfBsCpeMeasurementSupportRspEntry.

#### **13.1.2.2.8.1 wranIfBsCpeMeasSupportRspEntry**

#### **wranIfBsCpeMeasurementSupportRspEntry**

A compound object representing entries of Measurement Support IE of REG-RSP in 7.7.7.3.4.7. It is made up of multiple objects. A CPE will have one entry for each Signal Type in the Signal Type Array of the Measurement Support IE. Entries for a CPE are only present only if the value for wranIfSensModeSupportArray is anything other than “No Sensing.” The rest of the objects that represent each entry are defined in wranIfBsCpeMeasSupportCmn (13.1.2.2.18).

NOTE This will contain the same objects types, e.g., this entry will be made of the objects in 13.1.2.2.6.1.1 through 13.1.2.2.6.1.9.

*Change 13.1.2.2.10 and its subclauses as follows:*

### **13.1.2.2.10 wranIfBsScmCapabilityConfigurationwranIfBsCapabilitiesConfigTable**

This MIB provides a bitmap that describes the cryptographic suites that the BS supports. The list of suites is provided in Table 193. This table is analogous to the wranIfBsCpeBasicCapabilityRspTable and wranIfBsCpeRegCapabilityRspTable, except there is ... contains all the entries specified in wranIfBsCpeBasicCapabilityRspEntry and wranIfBsCpeRegCapabilityRspEntry.

#### **13.1.2.2.10.1 wranIfBsCapabilitiesConfigEntry**

This object ... (wranIfBsMaxNumReqReqAttempts)].

##### **13.1.2.2.10.1.1 wranIfBsMaxNumReqReqAttempts**

This object ... is 5.

...

##### **13.1.2.2.10.1.37 wranIfBsT17**

Time allowed ... key exchange.

*Change 13.1.2.2.11 and its subclauses as follows:*

### **13.1.2.2.11 wranIfBsCpeScmCapabilityConfigTablewranIfBsMeasurementSupportTable**

This MIB provides a table that provides contains a listing for the security capabilities for each CPE. Each CPE stores this table, with one entry for itself. On the BS, this table is made up of multiple entries, one for each CPE. Entries on the BS table do not contain the wranIfBsCpeEapTlsTtlsCredential object. Each entry is defined by wranIfBsCpeScmCapabilityConfigEntry. The list of capabilities is listed in Table 193. A compound object representing default values that a BS uses ... is defined by wranIfMeasurementSupportEntry.

#### **13.1.2.2.11.1 wranIfBsCpeScmCapabilityConfigEntrywranIfBsMeasurementSupportEntry**

This object is a compound object that provides the definition of the entries wranIfBsCpeScmCapabilityConfigTable. A compound object representing entries of wranIfBsMeasurementSupportTable ... Signal Type Array of the Measurement Support IE.

NOTE This object is made up ... recommendations in Annex A.

##### **13.1.2.2.11.1.1 wranIfBsCpeScmCapabilityConfigIndex**

Index of entry in the table.

##### **13.1.2.2.11.1.2 wranIfBsCpeScmCapabilityConfigMacAddress**

The MAC address of the CPE.

### **13.1.2.2.11.1.3 wranIfBsCpeScmCapabilityConfiguration**

This MIB provides a bitmap that describes the cryptographic suites that the CPE supports. The list of suites is provided in Table 193.

### **13.1.2.2.11.1.4 wranIfBsCpeEapTlsTtlsCredentialSize**

Size, in number of octets, of X.509 certificate that defines the credential the CPE exchanges with the AAA server to perform authentication.

### **13.1.2.2.11.1.5 wranIfBsCpeEapTlsTtlsCredential**

X.509 certificate that defines the credential the CPE exchanges with the AAA server to perform authentication.

*Insert the following new subclauses (13.1.2.2.12 to 13.1.2.2.12.1.11) after 13.1.2.2.11.15:*

*NOTE—For instructions for the former 13.1.2.2.12, see the new 13.1.2.2.13.*

### **13.1.2.2.12 wranIfBsCpeScmAuthConfigTable**

This MIB provides a table that provides the configuration of the SCM attributes (e.g., timers and other items relating to the authorization process). This table is made up of one entry, defined by wranIfBsScmAuthConfigEntry.

#### **13.1.2.2.12.1 wranIfBsCpeScmAuthConfigEntry**

This object is a compound object that defines an entry in wranIfBsScmAuthConfigTable.

##### **13.1.2.2.12.1.1 wranIfBsScmAuthConfigIndex**

Index of entry in the table.

##### **13.1.2.2.12.1.2 wranIfBsT36**

EAP Authentication Timer, T36.

##### **13.1.2.2.12.1.3 wranIfBsT37**

Authentication Grace Timer, T37.

##### **13.1.2.2.12.1.4 wranIfBsMaxNumAuthAttempts**

Maximum number of Authentication Attempts.

##### **13.1.2.2.12.1.5 wranIfBsT38**

Operational Wait Timeout, T38.

##### **13.1.2.2.12.1.6 wranIfBsT39**

Rekey Wait Timeout, T39.

### **13.1.2.2.12.1.7 wranIfBsT40**

GTEK/TEK Grace time, T40.

### **13.1.2.2.12.1.8 wranIfBsAkLifetime**

Lifetime BS assigns to new AK.

### **13.1.2.2.12.1.9 wranIfBsTekLifetime**

Lifetime BS assigns to new TEK.

### **13.1.2.2.12.1.10 wranIfBsMaxNumSa**

Maximum number of SAs for which a CPE can be authorized.

### **13.1.2.2.12.1.11 wranIfBsT17**

Time for CPE to complete authentication and key exchange.

*To create a new 13.1.2.2.13 with subclauses, change the former 13.1.2.2.12 and its subclauses as follows:*

*NOTE—For instructions for the former 13.1.2.2.13, see the new 13.1.2.2.14.*

### **13.1.2.2.13.1.2.2.12 wranIfBsActionsTable**

This object ... wranIfBsActionsEntry.

#### **13.1.2.2.13.1.2.2.12.1 wranIfBsActionsEntry**

This object ... given time.

#### **13.1.2.2.13.1.1 wranIfBsActionsIndex**

Index of entry in this table.

#### **13.1.2.2.13.1.2.2.12.1.1 wranIfBsCpeActionsMacAddress**

This uniquely ... MAC address.

#### **13.1.2.2.13.1.2.2.12.1.2 wranIfBsCpeActionsRngCpewrانIfBsCpeActionsRangeCpe**

When set, ... is read.

#### **13.1.2.2.13.1.43.1.2.2.12.1.3 wranIfBsCpeActionsDeRegCpe**

When set ... is specified.

#### **13.1.2.2.13.1.53.1.2.2.12.1.4 wranIfBsCpeActionsSchedulewrانIfBsCpeActionsStatus**

This object ... executed properly.

*To create a new 13.1.2.2.14 with subclauses, change the former 13.1.2.2.13 and its subclauses as follows:*

*NOTE—For instructions for the former 13.1.2.2.14, see the new 13.1.2.2.15.*

**13.1.2.2.1413.1.2.2.13 wranIfBsCpeMcastConfigTablewranIfBsCpeMulticastConfigTable**

This table ... multicast group.

**13.1.2.2.14.113.1.2.2.13.1 wranIfBsCpeMcastConfigEntrywranIfBsCpeMulticastEntry**

This object ... membership configuration.

**13.1.2.2.14.1.1 wranIfBsCpeMcastConfigIndex**

Index of entry in this table.

**13.1.2.2.14.1.213.1.2.2.13.1.1 wranIfBsCpeMcastMacAddresswranIfBsCpeMacAddress**

This object ... wranIfBsCpeMulticastCid.

**13.1.2.2.14.1.313.1.2.2.13.1.2 wranIfBsCpeMcastSidwranIfBsMulticastSid**

This object ... multicast group.

**13.1.2.2.14.1.413.1.2.2.13.1.3 wranIfBsCpeMcastPeriodicAllocParameterMwranIfBsMulticastPeriodicAllocationParameterM**

This object ... multicast transmission.

**13.1.2.2.14.1.513.1.2.2.13.1.4 wranIfBsCpeMcastPeriodicAllocParameterKwranIfBsMulticastPeriodicAllocationParameterK**

This object ... multicast transmission.

**13.1.2.2.14.1.613.1.2.2.13.1.5 wranIfBsCpeMcastPeriodicAllocParameterNwranIfBsMulticastPeriodicAllocationParameterN**

This object ... multicast transmission.

*To create a new 13.1.2.2.15 with subclauses, change the former 13.1.2.2.14 and its subclauses as follows:*

*NOTE—For instructions for the former 13.1.2.2.15, see the new 13.1.2.2.23.*

**13.1.2.2.1513.1.2.2.14 wranIfBsCoexistenceConfigTable**

This table ... CBP transmission.

**13.1.2.2.15.113.1.2.2.14.1 wranIfBsCoexistenceConfigEntry**

This object ... wranIfBsCoexistenceConfigTable.

**13.1.2.2.15.1.1 wranIfBsCoexistenceConfigIndex**

Index of entry in this table.

**13.1.2.2.15.1.213.1.2.2.14.1.1 wranIfBsT34**

This governs ... is 300 s.

**13.1.2.2.15.1.313.1.2.2.14.1.2 wranIfBsT33**

Time between ... spectrum etiquette.

**13.1.2.2.15.1.413.1.2.2.14.1.3 wranIfBsT32**

Wait for ... (FC-RSP) message.

**13.1.2.2.15.1.513.1.2.2.14.1.4 wranIfBsFcw**

Frame contention ... to them.

**13.1.2.2.15.1.613.1.2.2.14.1.5 wranIfBsScwBackoffMax**

Maximum number ... backoff window.

**13.1.2.2.15.1.713.1.2.2.14.1.6 wranIfBsFcMin**

Number of ... the BS.

**13.1.2.2.15.1.813.1.2.2.14.1.7 wranIfBsFcnRange**

Exponent, base 2, ... the FCN.

**13.1.2.2.15.1.913.1.2.2.14.1.8 wranIfBsSfRel**

Number of ... frame contention.

**13.1.2.2.15.1.1013.1.2.2.14.1.9 wranIfBsT35**

SCW Backoff ... Contention Procedure.

***Insert the following new subclauses (13.1.2.2.16 to 13.1.2.2.22.1) after 13.1.2.2.15.1.10:***

**13.1.2.2.16 wranIfBsCpeBasicCapabilityCmn**

This MIB object is a group containing objects that are common to wranIfBsCpeBasicCapabilityReqEntry and wranIfBsCpeBasicCapabilityRspEntry.

**13.1.2.2.16.1 wranIfBasicCapabilityIndex**

Index of entry in wranIfBsCpeBasicCapabilityReqTable or wranIfBsCpeBasicCapabilityRspTable.

### **13.1.2.2.16.2 wranIfBasicCapabilityNumAttempts**

The current number of attempts that a CPE has attempted basic capability configuration during network entry. This item is set to 0 upon successful completion of registration process and a CPE is admitted into the network. This item is incremented every time a CPE attempts basic capability configuration, but is unsuccessful. If this value reaches the limit set by `wranIfBsMaxNumCbcReqAttempts`, then the BS shall reject the network entry request from the CPE. This object is only pertinent for entries in `wranIfBsCpeBasicCapabilityRspTable` (as the decision to reject basic capability negotiation is made by BS).

### **13.1.2.2.16.3 wranIfBasicCapabilityMacAddress**

The MAC address of the CPE attempting basic capability configuration.

### **13.1.2.2.16.4 wranIfBasicCapabilityStationId**

The Station ID of the CPE attempting basic capability configuration.

### **13.1.2.2.16.5 wranIfBasicCapabilityMacPduTxandConstruction**

An integer value that indicates the methods for transmission and construction of MAC PDUs that the CPE supports. This reflects the setting of the IE defined in 7.7.11.3.1.

### **13.1.2.2.16.6 wranIfBasicCapabilityMaxCpeTxEirp**

An integer value, encoded in hexadecimal, that indicates the maximum EIRP for which the CPE is configured. This reflects the setting of the IE defined in 7.7.11.3.2.1.

### **13.1.2.2.16.7 wranIfBasicCapabilityCpeDemodulator**

A bit map that encodes the DIUCs that the CPE supports. This reflects the setting of the IE defined in 7.7.11.3.2.2.1.

### **13.1.2.2.16.8 wranIfBasicCapabilityCpeModulator**

A bit map that encodes the UIUCs that the CPE supports. This reflects the setting of the IE defined in 7.7.11.3.2.2.2.

### **13.1.2.2.16.9 wranIfBasicCapabilityCpeScmVersionSupport**

Indicator of what version of the SCM protocol that the CPE supports. This reflects the setting of the IE defined in 6.9.11.3.3.1.

### **13.1.2.2.16.10 wranIfBasicCapabilityCpePnWindowSize**

Size of PN\_WINDOW (see 7.4) that is used to protect against replay attacks. This reflects the setting of the IE defined in 7.7.11.3.3.2.

### **13.1.2.2.16.11 wranIfBasicCapabilityCpeScmFlowControl**

Maximum number of ongoing SCM transactions that the CPE can support. This reflects the setting of the IE defined in 7.7.11.3.3.3.

### **13.1.2.2.17 wranIfBsCpeRegCapabilityCmn**

This MIB object is a group containing objects that are common to wranIfBsCpeRegCapabilityReqEntry and wranIfBsCpeRegCapabilityRspEntry.

#### **13.1.2.2.17.1 wranIfRegCapabilityIndex**

Index for unique entry in tables relating to registered capabilities.

#### **13.1.2.2.17.2 wranIfRegCapabilityMacAddress**

MAC address of CPE that is currently registered with BS.

#### **13.1.2.2.17.3 wranIfRegCapabilityReqNumAttempts**

The current number of attempts that a CPE has attempted network entry. This item is set to 0 upon successful completion of registration process and a CPE is admitted into the network. This item is incremented every time a CPE attempts registration, but is unsuccessful. If this value reaches the limit set by wranIfBsMaxNumRegReqAttempts, then the CPE shall restart network entry process.

#### **13.1.2.2.17.4 wranIfRegCapabilityNmeaLocStringSize**

Size of NMEA location string of the CPE in REG-REQ (see 7.7.7.3.1), in octets.

#### **13.1.2.2.17.5 wranIfRegCapabilityNmeaLocString**

NMEA location string of the CPE in REG-REQ (see 7.7.7.3.1).

#### **13.1.2.2.17.6 wranIfRegCapabilityCsConfig**

Indication in REG-REQ/RSP of how the provider will operate the CPE on an ongoing basis; either with the Ethernet CS only or the IP CS (see 7.7.7.3.2).

#### **13.1.2.2.17.7 wranIfRegCapabilityIpVersion**

What version of the IP protocol (either v4 or v6) indicate in REG-REQ/RSP the CPE supports (see 7.7.7.3.3).

#### **13.1.2.2.17.8 wranIfRegCapabilityIpRohcSupport**

Indicator in REG-REQ/RSP of whether CPE supports IP Robust Header Compression (ROHC) (see 7.7.7.3.4.1).

#### **13.1.2.2.17.9 wranIfRegCapabilityArqSupport**

ARQ Support IE of REG-REQ/RSP in 7.7.7.3.4.2.

#### **13.1.2.2.17.10 wranIfRegCapability2ndMgmtArqWindowSize**

Secondary Management flow - ARQ Window Size IE of REG-REQ/RSP defined in 7.7.8.9.17.2.

### **13.1.2.2.17.11 wranIfRegCapability2ndMgmtArqRetryTxDelay**

Secondary Management flow - Transmitter Delay component of ARQ Retry Timeout IE of REG-REQ/RSP defined in 7.7.8.9.17.3.

### **13.1.2.2.17.12 wranIfRegCapability2ndMgmtArqRetryRxDelay**

Secondary Management flow - Receiver Delay component of ARQ Retry Timeout IE of REG-REQ/RSP defined in 7.7.8.9.17.3.

### **13.1.2.2.17.13 wranIfRegCapability2ndMgmtArqBlockLifetime**

Secondary Management flow - ARQ Block Lifetime IE of REG-REQ/RSP defined in 7.7.8.9.17.4.

### **13.1.2.2.17.14 wranIfRegCapability2ndMgmtArqSyncLossTimeout**

Secondary Management flow - ARQ Sync Loss Timeout IE of REG-REQ/RSP defined in 7.7.8.9.17.5.

### **13.1.2.2.17.15 wranIfRegCapability2ndMgmtArqDeliverInOrder**

Secondary Management flow - ARQ Deliver In Order IE of REG-REQ/RSP defined in 7.7.8.9.17.6.

### **13.1.2.2.17.16 wranIfRegCapability2ndMgmtArqRxPurgeTimeout**

Secondary Management flow - ARQ Rx Purge Timeout IE of REG-REQ/RSP defined in 7.7.8.9.17.7.

### **13.1.2.2.17.17 wranIfRegCapability2ndMgmtArqBlockSize**

Secondary Management flow - ARQ Block Size IE of REG-REQ/RSP defined in 7.7.8.9.17.8.

### **13.1.2.2.17.18 wranIfRegCapabilityDsxFlowControl**

DSx Flow Control IE of REG-REQ/RSP in 7.7.7.3.4.4.

### **13.1.2.2.17.19 wranIfRegCapabilityMcaFlowControl**

MCA Flow Control IE of REG-REQ/RSP in 7.7.7.3.4.5.

### **13.1.2.2.17.20 wranIfRegCapabilityMaxNumMcastGroups**

Maximum Number of Multicast Groups IE of REG-REQ/RSP in 7.7.7.3.4.6.

### **13.1.2.2.17.21 wranIfRegCapabilitySensModeSupportArray**

Value of the "Sensing Mode Support Array" of the Measurement Support IE in REG-REQ/RSP in 7.7.7.3.4.7. If the value of this is set to "No Sensing" then `wranIfBsCpeMeasSupportReqTable` and `wranIfBsCpeMeasSupportRspTable` will not be stored for the CPE.

### **13.1.2.2.17.22 wranIfRegCapabilityAntennaModelSize**

Length of `wranIfRegCapabilityAntennaModel`, in octets (see Manufacturer Specific Antenna Model IE of REG-REQ in 7.7.7.3.4.8).

### **13.1.2.2.17.23 wranIfRegCapabilityAntennaModel**

Manufacturer Specific Antenna Model IE of REG-REQ in 7.7.7.3.4.8.

### **13.1.2.2.17.24 wranIfRegCapabilityCpeResidualDelay**

CPE Residual Delay IE of REG-REQ in 7.7.7.3.4.10.

### **13.1.2.2.17.25 wranIfRegCapability2ndMgmtIpAllocMethod**

Method for allocating IP Addresses on Secondary Management Connection IE of REG-REQ/RSP in 7.7.7.3.4.11.

### **13.1.2.2.17.26 wranIfRegCapabilityCpeOperationalCapability**

CPE Operation Capability IE of REG-REQ in 7.7.7.3.4.13.

### **13.1.2.2.17.27 wranIfRegCapabilityCpeRegistrationTimer**

CPE Registration Timer IE of REG-REQ/RSP in 7.7.7.3.5. This value is used to set T30 for the CPE.

### **13.1.2.2.17.28 wranIfRegCapabilityPermanentSid**

Permanent station ID assigned to CPE, when CPE is entering the network under the CPE Privacy method (see 8.7). The format of this IE is defined in 7.7.7.3.4.12.

### **13.1.2.2.18 wranIfBsCpeMeasSupportCmn**

This MIB object is a group containing objects that are common to wranIfBsCpeMeasSupportReqEntry and wranIfBsCpeMeasSupportRspEntry.

#### **13.1.2.2.18.1 wranIfMeasSupportIndex**

Index into entry of tables storing Measurement Support IE that is part of REG-REQ/RSP.

#### **13.1.2.2.18.2 wranIfMeasSupportMacAddress**

MAC address of CPE. This corresponds to an entry in wranIfBsCpeRegCapabilityReqTable for a registered CPE.

#### **13.1.2.2.18.3 wranIfMeasSupportSignalType**

Signal type to which measurement configuration this entry pertains (see Table 237).

#### **13.1.2.2.18.4 wranIfMeasSupportThreshold**

Signed number that signifies the sensitivity threshold for the signal type.

#### **13.1.2.2.18.5 wranIfMeasSupportPd**

Probability of detection (PD) for the signal type.

### **13.1.2.2.18.6 wranIfMeasSupportMpfa**

Maximum Probability of False Alarm for the signal type.

### **13.1.2.2.18.7 wranIfMeasSupportRecNumSensPeriods**

Recommended number of sensing periods required to sense the signal type.

### **13.1.2.2.18.8 wranIfMeasSupportRecSensPeriodDuration**

Recommended duration of sensing periods, units of symbols.

### **13.1.2.2.18.9 wranIfMeasSupportRecSensPeriodInterval**

Recommended length of sensing period interval, units of integer number of frames.

## **13.1.2.2.19 wranIfBsCpeSystemParametersTable**

This table contains objects that define system constants for REG-REQ/RSP, DSx-REQ/RSP, and MCA-RSP transactions. It only has one entry, as defined by wranIfBsCpeSystemParametersEntry.

### **13.1.2.2.19.1 wranIfBsCpeSystemParametersEntry**

This is a compound object that defines the entry in wranIfBsCpeSystemParametersTable.

#### **13.1.2.2.19.1.1 wranIfBsCpeSystemParametersIndex**

Index of entry in the table (defaults to 1).

#### **13.1.2.2.19.1.2 wranIfBsDsxReqRetries**

Maximum number of timeout retries for DSx-REQ messages.

#### **13.1.2.2.19.1.3 wranIfBsDsxRspRetries**

Maximum number of timeout retries for DSx-RSP messages.

#### **13.1.2.2.19.1.4 wranIfBsT6**

Timeout for receiving REG-RSP.

#### **13.1.2.2.19.1.5 wranIfBsT7**

Wait for DSx-RSP timeout.

#### **13.1.2.2.19.1.6 wranIfBsT8**

Wait for DSA/DSC-RSP timeout.

#### **13.1.2.2.19.1.7 wranIfBsT9**

Timeout between BS's transmitting RNG-CMD (success) to a CPE and receiving CBC-REQ from that same CPE.

### **13.1.2.2.19.1.8 wranIfBsT10**

Wait for Transaction End timeout.

### **13.1.2.2.19.1.9 wranIfBsT13**

Time allowed for a CPE, following receipt of a REG-RSP, to send a TFTP-CPLT message to the BS.

### **13.1.2.2.19.1.10 wranIfBsT14**

Wait for DSx-RSP timeout.

### **13.1.2.2.19.1.11 wranIfBsT15**

Wait for MCA-RSP.

### **13.1.2.2.19.1.12 wranIfBsT16**

Wait for bandwidth request grant.

### **13.1.2.2.19.1.13 wranIfBsT18**

Wait for CBC-RSP timeout.

### **13.1.2.2.19.1.14 wranIfBsT22**

Wait for ARQ-Reset.

### **13.1.2.2.19.1.15 wranIfBsT26**

Wait for TFT-RSP.

### **13.1.2.2.19.1.16 wranIfBsT27Idle**

Maximum time between unicast grants to CPE when BS believe CPE transmission quality is good enough.

### **13.1.2.2.19.1.17 wranIfBsT27Active**

Maximum time between unicast grants to CPE when BS believes CPE transmission quality is not good enough.

### **13.1.2.2.19.1.18 wranIfBsT28**

Time allowed for BS to complete the transmission of the backup/candidate channel list to its CPEs after initial registration by a new CPE, including the database service query.

### **13.1.2.2.20 wranIfBsCpeRegCapabilityDefTable**

This object defines a table containing default values of REG-REQ/RSP IEs. This table can be used by the BS to judge/verify a CPE's REG-REQ and used to construct the REG-RSP message. There is one entry in this table defined by wranIfBsCpeRegCapabilityDefEntry.

### **13.1.2.2.20.1 wranIfBsCpeRegCapabilityDefEntry**

This object defines an entry in wranIfBsCpeRegCapabilityDefTable. The objects that make up this entry are defined in wranIfBsCpeRegCapabilityCmn (13.1.2.2.17).

### **13.1.2.2.21 wranIfBsCpeBasicCapabilityDefTable**

This object defines a table containing default values of CBC-REQ/RSP IEs. This table can be used by the BS to judge/verify a CPE's CBC-REQ and used to construct the CBC-RSP message. There is one entry in this table defined by wranIfBsCpeBasicCapabilityDefEntry. The objects that make up this table are defined in wranIfBsCpeBasicCapabilityCmn (13.1.2.2.16).

### **13.1.2.2.21.1 wranIfBsCpeBasicCapabilityDefEntry**

This object defines an entry in wranIfBsCpeBasicCapabilityDefTable. The objects that make up this table are defined in wranIfBsCpeBasicCapabilityCmn (13.1.2.2.16).

### **13.1.2.2.22 wranIfBsCpeMeasurementSupportDefault**

This Table is a compound object containing default values of used to configure the Measurement Support IE REG-REQ/RSP. This table can be used by the BS to judge/verify the Measurement Support IE in CPE's REG-REQ and used to construct the Measurement Support IE sent by the BS in the REG-RSP message. There is one entry for each signal type, defined by wranIfBsCpeMeasurementSupportDefaultEntry.

### **13.1.2.2.22.1 wranIfBsCpeMeasurementSupportDefaultEntry**

A compound object representing the default entries of Measurement Support IE of REG-REQ in 7.7.7.3.4.7. There is one entry for each Signal Type that exists in the Signal Type Array IE in the REG-REQ/RSP. Each entry are defined in wranIfBsCpeMeasSupportCmn (13.1.2.2.18).

*To create a new 13.1.2.2.23 with subclauses, change the former 13.1.2.2.15 and its subclauses as follows:*

### **13.1.2.2.2343.1.2.2.15 wranIfBsPhy**

This MIB ... is supported.

### **13.1.2.2.23.113.1.2.2.15.1 wranIfBsOfdmaPhyUsChannelTable**

This object provides a table to describe attributes of upstream channels. It is a compound object that is made up of multiple entries (one for each CPE), each described by wranIfBsOfdmaPhyUsChannelTableEntry.

### **13.1.2.2.23.1.113.1.2.2.15.1.1 wranIfBsOfdmaPhyUsChannelEntry**

This object is a compound object that represents an entry for the BS-upstream channel.

### **13.1.2.2.23.1.1.1 wranIfBsOfdmaPhyUsChannelIndex**

Index of entry in the table.

**13.1.2.2.23.1.1.2 wranIfBsOfdmaPhyUsSid**

SID of CPE this entry represents.

**13.1.2.2.23.1.1.3 wranIfBsOfdmaPhyUsMacAddress**

MAC Address of CPE this entry represents.

**13.1.2.2.23.1.1.413.1.2.2.15.1.1.1 wranIfBsOfdmaCtBasedResvTimeout**

The number ... same connection.

**13.1.2.2.23.1.1.513.1.2.2.15.1.1.2 wranIfBsOfdmaUsCenterFrequency**

Upstream center frequency in kHz.

**13.1.2.2.23.1.1.613.1.2.2.15.1.1.3 wranIfBsOfdmaUsRadioResource**

Indicates the ... radio resources.

**13.1.2.2.23.1.1.713.1.2.2.15.1.1.4 wranIfBsOfdmaUsConfigChangeCount**

Current UCD change count.

**13.1.2.2.23.1.1.813.1.2.2.15.1.1.5 wranIfBsOfdmaUsUcsNotificationCodes**

Number of ... UCS Notification.

**13.1.2.2.23.1.1.913.1.2.2.15.1.1.6 wranIfBsOfdmaUsInitRngCodes**

Number of ... initial ranging.

**13.1.2.2.23.1.1.1013.1.2.2.15.1.1.7 wranIfBsOfdmaUsPeriodicRngCodes**

Number of ... periodic ranging.

**13.1.2.2.23.1.1.1113.1.2.2.15.1.1.8 wranIfBsOfdmaUsBWReqCodes**

Number of ... bandwidth requests.

**13.1.2.2.23.1.1.1213.1.2.2.15.1.1.9 wranIfBsOfdmaUsPeriodicRngBackoffStart**

Represented as ... ranging contention.

**13.1.2.2.23.1.1.1313.1.2.2.15.1.1.10 wranIfBsOfdmaUsPeriodicRngBackoffEnd**

Represented as ... ranging contention.

**13.1.2.2.23.1.1.1413.1.2.2.15.1.1.11 wranIfBsOfdmaUsStartofCodes**

Includes first ... mod 256.

**13.1.2.2.23.1.1.1513.1.2.2.15.1.1.12 wranIfBsOfdmaUsNormalizedCnrOverride**

This is a list of numbers, and follows the specification of the Normalized CNR override as defined in Table 33 and in 8.10.3.2, encoded by a nibble and interpreted by a signed integer. The nibbles are defined in 9.9.4.2. The number encoded by each nibble represents the difference in normalized CNR relative to the previous one.

**13.1.2.2.15.1.1.13 wranIfBsOfdmaUsNormalizedCnrValue**

A signed ... previous line.

**13.1.2.2.15.1.1.14 wranIfBsOfdmaUsCpeUpPowerAdjStep**

CPE specific up power offset adjustment step.

**13.1.2.2.23.1.1.1613.1.2.2.15.1.1.15 wranIfBsOfdmaUsInitialRangingInterval**

Number of ... interval allocation.

**13.1.2.2.15.1.1.16 wranIfBsOfdmaUsTxPowerReport**

Tx Power report.

**13.1.2.2.23.1.1.1713.1.2.2.15.1.1.17 wranIfBsOfdmaUsUcsNotificationBackoffStart**

Expressed as ... notification contention.

**13.1.2.2.23.1.1.1813.1.2.2.15.1.1.18 wranIfBsOfdmaUsUcsNotificationBackoffEnd**

Expressed as ... notification contention.

**13.1.2.2.23.1.1.1913.1.2.2.15.1.1.19 wranIfBsOfdmaUsInitialRngBackoffStart**

Expressed as ... ranging contention.

**13.1.2.2.23.1.1.2013.1.2.2.15.1.1.20 wranIfBsOfdmaUsInitialRngBackoffEnd**

Expressed as ... ranging contention.

**13.1.2.2.23.1.1.2113.1.2.2.15.1.1.21 wranIfBsOfdmaUsBwRequestBackoffStart**

Expressed as ... BW requests.

**13.1.2.2.23.1.1.2213.1.2.2.15.1.1.22 wranIfBsOfdmaUsBwRequestBackoffEnd**

Expressed as ... BW requests.

**13.1.2.2.15.1.1.23 wranIfBsOfdmaUsRelPwrOffsetMacMgmtBurst**

Relative to ... message transmission.

**13.1.2.2.15.1.1.24 wranIfBsOfdmaUsInitialTxTiming**

Initial timing reference for US transmissions.

**13.1.2.2.15.1.1.25 wranIfBsOfdmaUsRangingRegion**

US ranging region definition.

**13.1.2.2.23.1.1.2313.1.2.2.15.1.1.26 wranIfBsOfdmaUsUcdInterval**

Time between transmission of UCD messages.

**13.1.2.2.23.1.1.2413.1.2.2.15.1.1.27 wranIfBsOfdmaUsUcdTransition**

Time BS ... UCD message.

**13.1.2.2.23.1.1.2513.1.2.2.15.1.1.28 wranIfBsOfdmaUsClkCmplInterval**

Time between ... CLK-CMP messages.

**13.1.2.2.23.1.1.2613.1.2.2.15.1.1.29 wranIfBsOfdmaUsT57**

Lost US-MAP ... the CPE).

**13.1.2.2.23.1.1.2713.1.2.2.15.1.1.30 wranIfBsOfdmaT58**

Number of ... considered lost.

**13.1.2.2.23.1.1.2813.1.2.2.15.1.1.31 wranIfBsOfdmaUsCdmaRngRetries**

Number of ... RNG-REQs.

**13.1.2.2.23.1.1.2913.1.2.2.15.1.1.32 wranIfBsOfdmaUsInvRngReq**

Number of ... RNG-REQs.

**13.1.2.2.23.1.1.3013.1.2.2.15.1.1.33 wranIfBsOfdmaUsMapProcTime**

Time provided ... that map.

**13.1.2.2.23.1.1.3113.1.2.2.15.1.1.34 wranIfBsOfdmaUsT3**

RNG-CMD ... RNG-REQ.

**13.1.2.2.23.1.1.3213.1.2.2.15.1.1.35 wranIfBsOfdmaUsT4**

Time to ... ranging opportunity.

**13.1.2.2.23.1.1.3313.1.2.2.15.1.1.36 wranIfBsOfdmaUsT5**

Time to ... Change response.

**13.1.2.2.23.1.1.3413.1.2.2.15.1.1.37 wranIfBsOfdmaUsT12**

Wait for UCD descriptor.

### **13.1.2.2.23.2.13.1.2.2.15.2 wranIfBsOfdmaPhyDsChannelTable**

This object provides a table to describe attributes of downstream channels. It is a compound object that is made up of multiple entries (one for each CPE), each described by `wranIfBsOfdmaPhyDsChannelTableEntry`.

#### **13.1.2.2.23.2.13.1.2.2.15.2.1 wranIfBsOfdmaPhyDsChannelTableEntry**

This object is a compound object that represents an entry for each the BS downstream channel in each BS.

##### **13.1.2.2.23.2.1.1 wranIfBsOfdmaPhyDsChannelIndex**

Index of entry in the table.

##### **13.1.2.2.23.2.1.2 wranIfBsOfdmaDsBsid**

BS ID (MAC Address) of base station.

##### **13.1.2.2.23.2.1.343.1.2.2.15.2.1.1 wranIfBsOfdmaDsEirp**

The equivalent ... transmitter.

##### **13.1.2.2.23.2.1.443.1.2.2.15.2.1.2 wranIfBsOfdmaDsChannelNumber**

Current operating channel.

##### **13.1.2.2.23.2.1.543.1.2.2.15.2.1.3 wranIfBsOfdmaDsPhyMaxEirp**

Initial ranging ... of 1 dBm.

##### **13.1.2.2.23.2.1.643.1.2.2.15.2.1.4 wranIfBsOfdmaDsCenterFreq**

DS center frequency in kHz.

##### **13.1.2.2.15.2.1.5 wranIfBsOfdmaDsBsid**

Base Station Id.

##### **13.1.2.2.23.2.1.743.1.2.2.15.2.1.6 wranIfBsOfdmaDsMacVersion**

The MAC ... is conformant.

##### **13.1.2.2.23.2.1.843.1.2.2.15.2.1.7 wranIfBsOfdmaDsCyclicPrefix**

Ratio of ... 1/32.

##### **13.1.2.2.23.2.1.943.1.2.2.15.2.1.8 wranIfBsOfdmaDsRadioResource**

Average ratio ... radio resources.

##### **13.1.2.2.15.2.1.9 wranIfBsOfdmaDsHysteresisMargin**

When the ... network entry.

**13.1.2.2.23.2.1.10****13.1.2.2.15.2.1.10** **wranIfBsOfdmaDsCellType**

This object ... network entry.

**13.1.2.2.23.2.1.11****13.1.2.2.15.2.1.11** **wranIfBsOfdmaDsConfigChangeCount**

Current BS DCD configuration change count.

**13.1.2.2.15.2.1.12** **wranIfBsOfdmaDsPowerControlMode**

Defines the ... to CPE.

**13.1.2.2.23.2.1.12****13.1.2.2.15.2.1.13** **wranIfBsOfdmaDsFrameDuration**

Duration of the DS portion of a frame.

**13.1.2.2.23.2.1.13****13.1.2.2.15.2.1.14** **wranIfBsOfdmaDsRssiCinrAvgParameter**

Bits 0–3 ... averaging parameter.

**13.1.2.2.23.2.1.14****13.1.2.2.15.2.1.15** **wranIfBsOfdmaDsThresholdAddBsServiceSet**

Threshold used ... WRAN service.

**13.1.2.2.23.2.1.15****13.1.2.2.15.2.1.16** **wranIfBsOfdmaDsThresholdDelBsServiceSet**

Threshold used ... diversity set.

**13.1.2.2.23.2.1.16****13.1.2.2.15.2.1.17** **wranIfBsOfdmaDsDcdInterval**

Time between ... DCD messages.

**13.1.2.2.23.2.1.17****13.1.2.2.15.2.1.18** **wranIfBsOfdmaDsDcdTransition**

Time BS ... DCD message.

**13.1.2.2.23.2.1.18****13.1.2.2.15.2.1.19** **wranIfBsOfdmaDsT56**

Time since ... considered lost.

**13.1.2.2.23.2.1.19****13.1.2.2.15.2.1.20** **wranIfBsOfdmaDsT1**

Wait for DCD timeout.

**13.1.2.2.23.2.1.20****13.1.2.2.15.2.1.21** **wranIfBsOfdmaDsT2**

Wait for broadcast ranging timeout.

**13.1.2.2.23.2.1.21****13.1.2.2.15.2.1.22** **wranIfBsOfdmaDsT20**

Time CPE ... given channel.

**13.1.2.2.23.2.1.2213.1.2.2.15.2.1.23 wranIfBsOfdmaDsT21**

Time the ... given channel.

**13.1.2.2.23.2.1.2313.1.2.2.15.2.1.24 wranIfBsOfdmaDsTtg**

Transmit/Receive Transition Gap.

**13.1.2.2.23.313.1.2.2.15.3 wranIfBsOfdmaUcdBurstProfileTable**

This table ... wranIfBsOfdmaUcdBurstProfileEntry.

**13.1.2.2.23.3.113.1.2.2.15.3.1 wranIfBsOfdmaUcdBurstProfileEntry**

This is ... wranIfBsOfdmaUcdBurstProfileTable.

**13.1.2.2.23.3.1.113.1.2.2.15.3.1.1 wranIfBsOfdmaUcdUiucIndex**

The UIUC ... UCD message.

**13.1.2.2.15.3.1.2 wranIfBsOfdmaUcdFecCodeType**

Modulation and FEC for upstream.

**13.1.2.2.23.3.1.213.1.2.2.15.3.1.3 wranIfBsOfdmaUcdUiucExitThreshold**

CINR at ... is required.

**13.1.2.2.23.3.1.313.1.2.2.15.3.1.4 wranIfBsOfdmaUcdUiucEntryThreshold**

Minimum CINR ... is required.

**13.1.2.2.23.3.1.413.1.2.2.15.3.1.5 wranIfBsOfdmaUcdRangingDataRatio**

Difference in ... of 1 dB.

**13.1.2.2.23.413.1.2.2.15.4 wranIfBsOfdmaDcdBurstProfileTable**

This table ... wranIfBsOfdmaDcdBurstProfileEntry.

**13.1.2.2.23.4.113.1.2.2.15.4.1 wranIfBsOfdmaDcdBurstProfileEntry**

This is ... wranIfBsOfdmaDcdBurstProfileTable.

**13.1.2.2.23.4.1.113.1.2.2.15.4.1.1 wranIfBsOfdmaDcdDiucIndex**

The DIUC ... DCD message.

**13.1.2.2.15.4.1.2 wranIfBsOfdmaDcdFecCodeType**

Modulation and FEC for downstream.

**13.1.2.2.23.4.1.243.1.2.2.15.4.1.3 wranIfBsOfdmaDcdDiucExitThreshold**

CINR at ... is required.

**13.1.2.2.23.4.1.343.1.2.2.15.4.1.4 wranIfBsOfdmaDcdDiucEntryThreshold**

Minimum CINR ... is required.

**13.1.2.2.23.513.1.2.2.15.5 wranIfBsOfdmaDsRegionTable**

This table ... wranIfBsOfdmaDsRegionEntry.

**13.1.2.2.23.5.113.1.2.2.15.5.1 wranIfBsOfdmaDsRegionEntry**

This is ... wranIfBsOfdmaDsRegionTable.

**13.1.2.2.23.5.1.143.1.2.2.15.5.1.1 wranIfBsOfdmaDsRegionIndex**

Index DS region in table.

**13.1.2.2.23.5.1.243.1.2.2.15.5.1.2 wranIfBsOfdmaDsDuration**

Number of ... burst region.

**13.1.2.2.23.613.1.2.2.15.6 wranIfBsOfdmaUsRegionTable**

This table ... wranIfBsOfdmaUsRegionEntry.

**13.1.2.2.23.6.113.1.2.2.15.6.1 wranIfBsOfdmaUsRegionEntry**

This is compound object that describes each entry in wranIfBsOfdmaUsRegionTable  
wranIfUsOfdmaDsRegionTable.

**13.1.2.2.23.6.1.143.1.2.2.15.6.1.1 wranIfBsOfdmaUsRegionIndex**

Index US region in table.

**13.1.2.2.23.6.1.243.1.2.2.15.6.1.2 wranIfBsOfdmaUsDuration**

Number of ... burst region.

*Insert the following new subclauses (13.1.2.2.24 with its subclauses and 13.1.2.2.25) after 13.1.2.2.23.6.1.2:*

**13.1.2.2.24 wranIfBsCmMibGroups**

This object helps define which MIB groups are available in this module (wranIfBsCm) and which MIB objects are part of each group.

#### **13.1.2.2.24.1 wranIfBsCmRangingGroup**

This group contains objects related to management of the ranging process.

#### **13.1.2.2.24.2 wranIfBsCmBasicCapabilityGroup**

This group contains objects related to management of the CBC-REQ/RSP process.

#### **13.1.2.2.24.3 wranIfBsCmRegCapabilityGroup**

This group contains objects related to management of the REG-REQ/RSP process.

#### **13.1.2.2.24.4 wranIfBsCmMeasSupportGroup**

This group contains objects related to management of the measurement process.

#### **13.1.2.2.24.5 wranIfBsCpeCmAntennaGroup**

This group contains objects related to management of antenna configuration.

#### **13.1.2.2.24.6 wranIfBsScmCmGroup**

This group contains objects related to management of the SCM protocol and SCM status on a CPE/BS.

#### **13.1.2.2.24.7 wranIfBsActionsCmGroup**

This group contains objects related to management of actions the BS can take.

#### **13.1.2.2.24.8 wranIfBsMulticastCmGroup**

This group contains objects related to management of multicast configuration.

#### **13.1.2.2.24.9 wranIfBsCoexistenceCmGroup**

This group contains objects related to management of coexistence configuration.

#### **13.1.2.2.24.10 wranIfBsSystemParametersCmGroup**

This group contains objects related to management of system parameter configuration.

#### **13.1.2.2.24.11 wranIfBsPhyCmGroup**

This group contains objects related to management of PHY configuration.

#### **13.1.2.2.25 wranIfBsCmMibCompliance**

MIB objects that are optional or mandatory for wranIfBsCm compliance.

### 13.1.2.3 wranIfBsAm

#### 13.1.2.3.1 wranIfBsOtaUsageDataRecordTable

##### 13.1.2.3.1.1 wranIfBsOtaUsageDataRecordEntry

*Change the subclauses of 13.1.2.3.1.1 as follows:*

###### 13.1.2.3.1.1.1 wranIfBsOtaUsageRecordIndex

Index of entry in this table.

###### 13.1.2.3.1.1.2 13.1.2.3.1.1.1.1 wranIfBsOtaUsageSid wranIfBsSid

A 9-bit ... carrying traffic.

###### 13.1.2.3.1.1.3 13.1.2.3.1.1.1.2 wranIfBsOtaUsageFid wranIfBsFid

A 3-bit ... wranIfBsServiceFlowId).

###### 13.1.2.3.1.1.4 13.1.2.3.1.1.1.3 wranIfBsOtaUsageSessionId wranIfBsSessionId

An identifier ... is changing.

###### 13.1.2.3.1.1.4 wranIfBsServiceFlowId

31-bit identifier ... of CPEs).

###### 13.1.2.3.1.1.5 wranIfBsOtaUsageMacSduCount wranIfBsMacSduCount

Counter of ... and US.

###### 13.1.2.3.1.1.6 wranIfBsOtaUsageOctetCount wranIfBsOctetCount

Counter of ... air interface.

###### 13.1.2.3.1.1.7 wranIfBsOtaUsageSessionStartTime wranIfBsSessionStartTime

Date and ... was established.

###### 13.1.2.3.1.1.8 wranIfBsOtaUsageSessionEndTime wranIfBsSessionEndTime

Date and ... was ended.

###### 13.1.2.3.1.1.9 wranIfBsOtaUsageQoSServiceFlowListSize wranIfBsOtaQoSProfileIndex

Number of items in wranIfBsOtaUsageQoSServiceFlowList. This index points to entry in QoS Profile table that defines the QoS parameter set used in the session.

###### 13.1.2.3.1.1.10 wranIfBsOtaUsageQoSServiceFlowList

A list of SFIDs for each service flow active during this session (i.e., a list of SFIDs that pertain to service flows as defined in wranIfBsActiveSFTable).

### **13.1.2.3.1.1.11 wranIfBsOtaUsageQoSProfileListSize**

Number of items in wranIfBsOtaUsageQoSProfileList.

### **13.1.2.3.1.1.12 wranIfBsOtaUsageQoSProfileList**

A list of indexes into wranIfBsScTable, that point to the definition of the QoS parameter set of each service flow listed in wranIfBsOtaUsageQoSServiceFlowList (and hence were active during this session).

*Insert the following new subclauses (13.1.2.3.2, 13.1.2.3.2.1, and 13.1.2.3.3) after 13.1.2.3.1.1.12:*

### **13.1.2.3.2 wranIfBsAmMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

#### **13.1.2.3.2.1 wranIfBsOtaUsageDataGroup**

This group contains objects related to tracking of OTA resources per CPE.

#### **13.1.2.3.3 wranIfBsAmMibCompliance**

MIB objects that are optional and mandatory for wranIfBsAm compliance.

### **13.1.2.4 wranIfBsPm**

*Change the second list item in the dashed list in 13.1.2.4 as follows:*

- wranIfBsSignalPowerMetricsTablewranIfBsRssiCinrMetricsTable: Helps track metrics related to measurement of CPE upstream signal by BS and BS downstream signal by CPE.

*Insert the following list items at the end of the dashed list in 13.1.2.4:*

- wranIfBsPmMibGroups: Helps define which MIB groups are available within this module and which MIB objects are part of each group.
- wranIfBsPmMibCompliance: Defines which groups are optional and mandatory for wranIfBsPm compliance.

### **13.1.2.4.1 wranIfBsPmConfigurationTable**

#### **13.1.2.4.1.1 wranIfBsPmConfigurationEntry**

*Change the subclauses of 13.1.2.4.1.1 as follows:*

##### **13.1.2.4.1.1.1 wranIfBsPmConfigurationEntryIndex**

Index of entry in the table (defaults to 1).

### **13.1.2.4.1.1.213.1.2.4.1.1.1 wranIfBsGranularityInterval**

Data rate statistics captured in wranIfBsDataRateStatisticsTable, wranIfBsSignalPowerMetricsTable, wranIfBsStartupMetricsTable, wranIfBsThroughputMetricsTable, wranIfBsNetworkEntryMetricsTable, wranIfBsPacketErrorRateTable, wranIfBsUserMetricsTable, wranIfBsServiceFlowMetricsTable, wranIfBsAqMetricsTable, and wranIfBsAuthenticationMetricsTable are measured over the time interval this object specifies.

### **13.1.2.4.1.1.313.1.2.4.1.1.2 wranIfBsCountersReportInterval**

This MIB ... the NCMS.

### **13.1.2.4.1.1.413.1.2.4.1.1.3 wranIfBsPmMeasurementBitmap**

This MIB object is a-A 13-bit bitmap indicating which of the measurement tables are enabled or disabled. When a position in bitmap is set (=1), that measurement table is enabled; when it is unset (=0), the table is disabled.

*Change 13.1.2.4.2 and its subclauses as follows:*

### **13.1.2.4.2 wranIfBsSignalPowerMetricsTablewranIfBsRssiCinrMetricsTable**

This MIB object contains a table that records BS upstream measurement of a CPE's transmissions as well as CPE measurement of BS downstream signal. The data is stored as a histogram. This table is made up of entries defined by wranIfBsSignalPowerMetricsEntrywranIfBsRssiCinrMetricsEntry. Each entry is uniquely identified by the CPE's MAC address and the index of the entry in the histogram.

#### **13.1.2.4.2.1 wranIfBsSignalPowerMetricsEntrywranIfBsRssiCinrMetricsTable**

This is a compound object made up objects that represent an entry in wranIfBsSignalPowerMetricsTablewranIfBsRssiCinrMetricsTable.

##### **13.1.2.4.2.1.1 wranIfBsSignalPowerMetricsIndex**

Index in histogram to which entry pertains.

##### **13.1.2.4.2.1.213.1.2.4.2.1.1 wranIfBsCpeMacAddress**

MAC address of the CPE.

##### **13.1.2.4.2.1.2 wranIfBsCpeHistogramIndex**

Index in ... entry pertains.

##### **13.1.2.4.2.1.3 wranIfBsChannelDirection**

Direction of ... was done.

...

##### **13.1.2.4.2.1.11 wranIfBsStdDevRssiReport**

Standard Deviation RSSI report.

#### **13.1.2.4.2.1.12 wranIfBsMaxEIRPReport**

Max EIRP Report.

#### **13.1.2.4.2.1.13 wranIfBsPerScEIRPReport**

Per Subchannel EIRP Report.

*Change 13.1.2.4.3 and its subclauses as follows:*

#### **13.1.2.4.3 wranIfBsStartupMetricsTable**

This MIB provides a table to track how CPEs perform during initial network entry and re-entry. This table is made of one entry entries, defined by wranIfBsStartupMetricsEntry. This There is one entry reflects startup metrics recorded during the current reporting session for each sector of the BS.

##### **13.1.2.4.3.1 wranIfBsStartupMetricsEntry**

This object ... wranIfBsStartupMetricsTable.

###### **13.1.2.4.3.1.1 wranIfBsStartupMetricsIndex**

Index for entry in this table.

###### **13.1.2.4.3.1.243.1.2.4.3.1.1 wranIfBsNumAuthAttempt**

A counter ... authentication attempts.

###### **13.1.2.4.3.1.343.1.2.4.3.1.2 wranIfBsNumAuthSuccess**

A counter ... handshake completions.

###### **13.1.2.4.3.1.443.1.2.4.3.1.3 wranIfBsAuthSuccessRate**

Success rate ... ( $wranIfBsNumAuthSuccess / wranIfBsNumAuthAttempt$ ).

###### **13.1.2.4.3.1.543.1.2.4.3.1.4 wranIfBsNumRangingAttempt**

Number of ... requests received.

###### **13.1.2.4.3.1.643.1.2.4.3.1.5 wranIfBsNumRangingSuccess**

Number of ... responses sent.

###### **13.1.2.4.3.1.743.1.2.4.3.1.6 wranIfBsRangingSuccessRate**

Success rate ... ( $wranIfBsNumRangingSuccess / wranIfBsNumRangingAttempt$ ).

#### **13.1.2.4.4 wranIfBsThroughputMetricsTable**

##### **13.1.2.4.4.1 wranIfBsThroughputMetricsEntry**

*Change the subclauses of 13.1.2.4.4.1 as follows:*

###### **13.1.2.4.4.1.1 wranIfBsThroughputMetricsIndex**

Index of entry in the table.

###### **13.1.2.4.4.1.213.1.2.4.4.1.1 wranIfBsAvgDsUserThroughput**

This records ... over time.

###### **13.1.2.4.4.1.313.1.2.4.4.1.2 wranIfBsAvgUsUserThroughput**

This records ... over time.

###### **13.1.2.4.4.1.413.1.2.4.4.1.3 wranIfBsAvgDsMacThroughput**

This records ... over time.

###### **13.1.2.4.4.1.513.1.2.4.4.1.4 wranIfBsAvgUsMacThroughput**

This records ... over time.

###### **13.1.2.4.4.1.613.1.2.4.4.1.5 wranIfBsAvgDsPhyThroughput**

This records ... over time.

###### **13.1.2.4.4.1.713.1.2.4.4.1.6 wranIfBsAvgUsPhyThroughput**

This records ... over time.

###### **13.1.2.4.4.1.813.1.2.4.4.1.7 wranIfBsPeakDsUserThroughput**

This records ... over time.

###### **13.1.2.4.4.1.913.1.2.4.4.1.8 wranIfBsPeakUsUserThroughput**

This records ... over time.

###### **13.1.2.4.4.1.1013.1.2.4.4.1.9 wranIfBsPeakDsMacThroughput**

This records ... over time.

###### **13.1.2.4.4.1.1113.1.2.4.4.1.10 wranIfBsPeakUsMacThroughput**

This records ... over time.

###### **13.1.2.4.4.1.1213.1.2.4.4.1.11 wranIfBsPeakDsPhyThroughput**

This records ... over time.

**13.1.2.4.4.1.13 13.1.2.4.4.1.12 wranIfBsPeakUsPhyThroughput**  
**wranIfBsAvgUsPhyThroughput**

This records ... over time.

**13.1.2.4.4.1.14 13.1.2.4.4.1.13 wranIfBsAvgDsCellEdgeThroughput**

This records ... using QPSK.

**13.1.2.4.4.1.15 13.1.2.4.4.1.14 wranIfBsAvgUsCellEdgeThroughput**

This records ... using QPSK.

**13.1.2.4.4.1.15 wranIfBsNumThroughputMeasurements**

~~This tracks ... throughput measurements.~~

**13.1.2.4.5 wranIfBsNetworkEntryMetricsTable**

**13.1.2.4.5.1 wranIfBsNetworkEntryMetricsEntry**

*Change the subclauses of 13.1.2.4.5.1 as follows:*

**13.1.2.4.5.1.1 wranIfBsNetworkEntryMetricsIndex**

Index into entry in the table.

**13.1.2.4.5.1.2 13.1.2.4.5.1.1 wranIfBsAvgNetworkEntryLatency**

Average network ... in seconds.

**13.1.2.4.5.1.3 13.1.2.4.5.1.2 wranIfBsMaxNetworkEntryLatency**

Maximum network ... in seconds.

**13.1.2.4.5.1.4 13.1.2.4.5.1.3 wranIfBsAvgNetworkReEntryLatency**

Average network ... in seconds.

**13.1.2.4.5.1.5 13.1.2.4.5.1.4 wranIfBsMaxNetworkReEntryLatency**

Maximum network ... in seconds.

**13.1.2.4.5.1.6 13.1.2.4.5.1.5 wranIfBsNumNetworkEntryAttempts**

Number of network entry attempts.

**13.1.2.4.5.1.7 13.1.2.4.5.1.6 wranIfBsNumNetworkReEntryAttempts**

Number of network re-entry attempts.

#### **13.1.2.4.6 wranIfBsPacketErrorRateTable**

##### **13.1.2.4.6.1 wranIfBsPacketErrorRateEntry**

*Change the subclauses of 13.1.2.4.6.1 as follows:*

###### **13.1.2.4.6.1.1 wranIfBsPacketErrorRateIndex**

Index of entry in the table.

###### **13.1.2.4.6.1.213.1.2.4.6.1.1 wranIfBsDsPacketsSent**

Total number ... has sent.

###### **13.1.2.4.6.1.313.1.2.4.6.1.2 wranIfBsDsPacketsErrored**

Total number ... been acknowledged.

###### **13.1.2.4.6.1.413.1.2.4.6.1.3 wranIfBsDsPacketErrorRate**

wranIfBsDsPacketErrorRate ... of 1e-7.

###### **13.1.2.4.6.1.513.1.2.4.6.1.4 wranIfBsUsPacketsReceived**

Total number ... has received.

###### **13.1.2.4.6.1.613.1.2.4.6.1.5 wranIfBsUsPacketsErrored**

Total number ... the BS.

###### **13.1.2.4.6.1.713.1.2.4.6.1.6 wranIfBsUsPacketErrorRate**

wranIfBsUsPacketErrorRate ... of 1e-7.

#### **13.1.2.4.7 wranIfBsUserMetricsTable**

##### **13.1.2.4.7.1 wranIfBsUserMetricsEntry**

*Change the subclauses of 13.1.2.4.7.1 as follows:*

###### **13.1.2.4.7.1.1 wranIfBsUserMetricsIndex**

Index of entry in the table.

###### **13.1.2.4.7.1.213.1.2.4.7.1.1 wranIfBsNumActiveUsers**

Total number ... on them.

###### **13.1.2.4.7.1.313.1.2.4.7.1.2 wranIfBsNumTotalUsers**

Total number ... (REG-REQ/RSP) process.

### **13.1.2.4.7.1.3 wranIfBsNumTimeoutUsers**

Total number of users that are in Timeout.

*Change 13.1.2.4.8 and its subclauses as follows:*

### **13.1.2.4.8 wranIfBsServiceFlowMetricsTable**

This MIB object provides a table to track metrics related to service flows. This table is made up of one entry, multiple entries, one for each BS sector. Each entry is defined by wranIfBsServiceFlowMetricsEntry.

#### **13.1.2.4.8.1 wranIfBsServiceFlowMetricsEntry**

This object ... wranIfBsServiceFlowMetricsTable.

##### **13.1.2.4.8.1.1 wranIfBsServiceFlowMetricsIndex**

Index of entry in the table.

##### **13.1.2.4.8.1.213.1.2.4.8.1.1 wranIfBsNumDsaReq**

Number of ... reporting period.

##### **13.1.2.4.8.1.313.1.2.4.8.1.2 wranIfBsNumDsaReqSuccess**

Number of ... particular DSA-REQ.

##### **13.1.2.4.8.1.413.1.2.4.8.1.3 wranIfBsDsaSuccessRate**

wranIfBsNumDsaSuccessRate ... × 100.

##### **13.1.2.4.8.1.513.1.2.4.8.1.4 wranIfBsNumDscReq**

Number of ... reporting period.

##### **13.1.2.4.8.1.613.1.2.4.8.1.5 wranIfBsNumDscReqSuccess**

Number of ... particular DSC-REQ.

##### **13.1.2.4.8.1.713.1.2.4.8.1.6 wranIfBsDscSuccessRate**

wranIfBsNumDscSuccessRate ... × 100.

##### **13.1.2.4.8.1.813.1.2.4.8.1.7 wranIfBsNumDsdReq**

Number of ... reporting period.

##### **13.1.2.4.8.1.913.1.2.4.8.1.8 wranIfBsNumDsdReqSuccess**

Number of ... particular DSD-REQ.

**13.1.2.4.8.1.1013.1.2.4.8.1.9 wranIfBsDsdSuccessRate**

wranIfBsNumDsdSuccessRate ... × 100.

**13.1.2.4.8.1.1113.1.2.4.8.1.10 wranIfBsMaxActiveServiceFlow**

Maximum number ... reporting period.

**13.1.2.4.8.1.1213.1.2.4.8.1.11 wranIfBsAvgActiveServiceFlow**

Average number ... reporting period.

**13.1.2.4.8.1.1313.1.2.4.8.1.12 wranIfBsMaxProvisionedServiceFlow**

Maximum number ... reporting period.

**13.1.2.4.8.1.1413.1.2.4.8.1.13 wranIfBsAvgProvisionedServiceFlow**

Average number ... reporting period.

**13.1.2.4.8.1.1513.1.2.4.8.1.14 wranIfBsMaxDsServiceFlow**

Maximum number ... reporting period.

**13.1.2.4.8.1.1613.1.2.4.8.1.15 wranIfBsMaxUsServiceFlow**

Maximum number ... reporting period.

**13.1.2.4.8.1.1713.1.2.4.8.1.16 wranIfBsAvgDsServiceFlow**

Average number ... reporting period.

**13.1.2.4.8.1.1813.1.2.4.8.1.17 wranIfBsAvgUsServiceFlow**

Average number ... reporting period.

**13.1.2.4.8.1.1913.1.2.4.8.1.18 wranIfBsNumSfidAllocated**

Number of ... reporting period.

**13.1.2.4.9 wranIfBsArqMetricsTable**

**13.1.2.4.9.1 wranIfBsArqMetricsEntry**

*Change the subclauses of 13.1.2.4.9.1 as follows:*

**13.1.2.4.9.1.1 wranIfBsArqMetricsIndex**

Index of entry in the table.

### **13.1.2.4.9.1.213.1.2.4.9.1.1 wranIfBsDsNumArqBlocks**

Total number ... reporting period.

### **13.1.2.4.9.1.313.1.2.4.9.1.2 wranIfBsDsNumArqBlocksDropped**

Total number ... at retransmission.

### **13.1.2.4.9.1.413.1.2.4.9.1.3 wranIfBsDsArqBlockErrorRate**

wranIfBsDsArqBlockErrorRate ... of 1e-7.

### **13.1.2.4.9.1.513.1.2.4.9.1.4 wranIfBsDsNumArqBlockReTx wranIfBsDsNumArqBlockReTransmissions**

Total number ... were retransmitted.

### **13.1.2.4.9.1.613.1.2.4.9.1.5 wranIfBsDsArqBlockEfficiency**

wranIfBsDsArqBlockEfficiency = ( wranIfBsDsNumArqBlockReTx  
wranIfBsDsNumArqBlockReTransmissions / wranIfBsDsNumArqBlocks ) × 10000000, in units of 1e-7.

### **13.1.2.4.9.1.713.1.2.4.9.1.6 wranIfBsUsNumArqBlocks**

Total number ... reporting period.

### **13.1.2.4.9.1.8 wranIfBsUsNumArqBlocksDropped**

Total number of US ARQ blocks that were dropped, due to unsuccessful attempts at retransmission.

### **13.1.2.4.9.1.9 wranIfBsUsArqBlockErrorRate**

wranIfBsUsArqBlockErrorRate = ( wranIfBsUsNumArqBlocksDropped / wranIfBsUsNumArqBlocks ) × 10000000, in units of 1e-7.

### **13.1.2.4.9.1.1013.1.2.4.9.1.7 wranIfBsUsNumArqBlockReTx wranIfBsUsNumArqBlockReTransmissions**

Total number ... reporting period.

### **13.1.2.4.9.1.1113.1.2.4.9.1.8 wranIfBsDsArqBlockEfficiency**

wranIfBsUsArqBlockEfficiency = ( wranIfBsUsNumArqBlockReTx  
wranIfBsUsNumArqBlockReTransmissions / wranIfBsUsNumArqBlocks ) × 10000000, in units of 1e-7.

#### **13.1.2.4.10 wranIfBsAuthenticationMetricsTable**

##### **13.1.2.4.10.1 wranIfBsAuthenticationMetricsEntry**

*Change the subclauses of 13.1.2.4.10.1 as follows:*

###### **13.1.2.4.10.1.1 wranIfBsAuthenticationMetricsIndex**

Index of entry in the table.

###### **13.1.2.4.10.1.213.1.2.4.10.1.1 wranIfBsMgmtAuthErrors** **wranIfBsMgmtAuthenticationErrors**

A counter ... properly authenticated.

###### **13.1.2.4.10.1.313.1.2.4.10.1.2 wranIfBsDataAuthErrors** **wranIfBsDataAuthenticationErrors**

A counter ... properly authenticated.

###### **13.1.2.4.10.1.413.1.2.4.10.1.3 wranIfBsWiMicAuthErrors** **wranIfBsWiMicAuthenticationErrors**

A counter ... properly authenticated.

###### **13.1.2.4.10.1.513.1.2.4.10.1.4 wranIfBsCbpAuthErrors** **wranIfBsCbpAuthenticationErrors**

A counter ... properly authenticated.

#### **13.1.2.4.11 wranIfBsCoexistenceStatusTable**

##### **13.1.2.4.11.1 wranIfBsCoexistenceStatusEntry**

*Change the subclauses of 13.1.2.4.11.1 as follows:*

###### **13.1.2.4.11.1.1 wranIfBsCoexistenceStatusIndex**

Index of entry in the table.

###### **13.1.2.4.11.1.213.1.2.4.11.1.1 wranIfBsContentionChannel**

Channel number ... contented for).

###### **13.1.2.4.11.1.313.1.2.4.11.1.2 wranIfBsFCREQSourceIDwranIfBsFrameContentionSourceID**

BS ID ... the FC-REQ.

###### **13.1.2.4.11.1.413.1.2.4.11.1.3 wranIfBsFrameContentionSeqNum**

Sequence number ... FC-REQ message.

**13.1.2.4.11.1.513.1.2.4.11.1.4 wranIfBsFrameContentionNumber**

Value of ... the FC-REQ.

**13.1.2.4.11.1.613.1.2.4.11.1.5 wranIfBsContentionReqFrameIndexVector**

Bitmap index ... current one.

**13.1.2.4.12 wranIfBsCoexistenceSourceTable**

**13.1.2.4.12.1 wranIfBsCoexistenceSourceEntry**

*Change the subclauses of 13.1.2.4.12.1 as follows:*

**13.1.2.4.12.1.1 wranIfBsCoexistenceSourceIndex**

Index of entry in the table.

**13.1.2.4.12.1.213.1.2.4.12.1.1 wranIfBsCBPSourceIDwranIfBsMacAddress**

BS ID ... Table 9).

**13.1.2.4.12.1.313.1.2.4.12.1.2 wranIfBsSchDataIndex**

SCH Data ... this table.

**13.1.2.4.12.1.413.1.2.4.12.1.3 wranIfBsSchData**

SCH Data ... wranIfBsSchDataIndex.

**13.1.2.4.13 wranIfBsCoexistenceResourceListTable**

**13.1.2.4.13.1 wranIfBsCoexistenceResourceListEntry**

*Change the subclauses of 13.1.2.4.13.1 as follows:*

**13.1.2.4.13.1.1 wranIfBsCoexistenceResourceListIndex**

Index of entry in the table. When set to 1, refers to a BS own Coexistence Resource.

**13.1.2.4.13.1.213.1.2.4.13.1.1 wranIfBsCoexistenceResourceIDwranIfBsMacAddress**

BS ID ... Table 9).

**13.1.2.4.13.1.313.1.2.4.13.1.2 wranIfBsSelfCoexistenceCapabilityIndicator**  
**wranIfBsSelfCoexistenceCapacityIndicator**

Field within ... are null.

### **13.1.2.4.13.1.3 wranIfBsNumBackupCandidateChannels**

Number of ... wranIfBsBackupCandidateChannelList.

### **13.1.2.4.13.1.4 wranIfBsNumBackupChannels**

Number of backup channels in wranIfBsBackupChannelList wranIfBsBackupCandidateChannelList.

### **13.1.2.4.13.1.5 wranIfBsBackupChannelListwranIfBsBackupCandidateChannelList**

This object is a vector, of the length = 8 bits × wranIfBsNumBackupChannels wranIfBsNumBackupCandidateChannels, that contains the backup/candidate channel list received in a CBP burst from a neighbor WRAN.

### **13.1.2.4.13.1.6 wranIfBsCurrentDSUSSplit**

Current US/DS ... neighbor WRAN.

...

### **13.1.2.4.13.1.12 wranIfBsScwCycleFrameBitmap**

DS/US Change ... neighbor WRAN.

## **13.1.2.4.14 wranIfBsCoexistenceCurrentConfigTable**

### **13.1.2.4.14.1 wranIfBsCoexistenceCurrentConfigEntry**

*Change the subclauses of 13.1.2.4.14.1 as follows:*

#### **13.1.2.4.14.1.1 wranIfBsCoexistenceCurrentConfigIndex**

Index of entry in the table.

#### **13.1.2.4.14.1.213.1.2.4.14.1.1 wranIfBsContentionChannel**

Channel number ... was executed.

#### **13.1.2.4.1.313.1.2.4.14.1.2 wranIfBsFrameContentionSourceID**

BS ID ... won contention.

#### **13.1.2.4.1.413.1.2.4.14.1.3 wranIfBsAwardedSeqNum**

Sequence number ... FC-REQ message.

#### **13.1.2.4.1.513.1.2.4.14.1.4 wranIfBsContentionRspFrameIndexVector**

Sequence number ... FC-REQ message.

### **13.1.2.4.14.1.6 13.1.2.4.14.1.5 wranIfBsContentionRspFrameReleaseTime**

Starting from ... contention destination.

*Insert the following new subclauses (13.1.2.4.15 with its subclauses and 13.1.2.4.16) after 13.1.2.4.14.1.6:*

### **13.1.2.4.15 wranIfBsPmMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

#### **13.1.2.4.15.1 wranIfBsPmConfigGroup**

This group contains objects relate to configuration of measurement records used in wranIfBsPm.

#### **13.1.2.4.15.2 wranIfBsPmSignalPowerGroup**

This group contains objects related to tracking CPE signal power measurements.

#### **13.1.2.4.15.3 wranIfBsPmStartupGroup**

This group contains objects related to tracking CPE performance during network entry and re-entry.

#### **13.1.2.4.15.4 wranIfBsPmThroughputGroup**

This group contains objects related to tracking CPE peak/average data rate.

#### **13.1.2.4.15.5 wranIfBsPmNetEntryGroup**

This group contains objects related to tracking latency of network entry and re-entry for CPEs.

#### **13.1.2.4.15.6 wranIfBsPmPktErrorGroup**

This group contains objects related to tracking packet error rate measurements.

#### **13.1.2.4.15.7 wranIfBsPmUserGroup**

This group contains objects related to tracking status of users in the cell.

#### **13.1.2.4.15.8 wranIfBsPmServiceFlowGroup**

This group contains objects related to tracking services flow metrics.

#### **13.1.2.4.15.9 wranIfBsPmArqGroup**

This group contains objects related to tracking ARQ performance.

#### **13.1.2.4.15.10 wranIfBsPmAuthGroup**

This group contains objects related to tracking the number of authentication/encryption errors that occur.

#### **13.1.2.4.15.11 wranIfBsPmCoexStatusGroup**

This group contains objects related to tracking the status of on going coexistence (Frame Contention) transactions.

#### **13.1.2.4.15.12 wranIfBsPmCoexSourceGroup**

This group contains objects related to tracking which neighbor BSs are attempting a coexistence (Frame Contention) transaction.

#### **13.1.2.4.15.13 wranIfBsPmCoexResourceGroup**

This group contains objects related to tracking what resources are used by neighboring WRANs.

#### **13.1.2.4.15.14 wranIfBsPmCoexConfigGroup**

This group contains objects related to tracking what resources have been allocated to neighboring WRANs during coexistence (Frame Contention) transactions.

#### **13.1.2.4.16 wranIfBsPmMibCompliance**

MIB objects that are optional and mandatory for wranIfBsPm compliance.

*Change 13.1.2.5 and its subclauses as follows:*

#### **13.1.2.5 wranIfBsScm**

This MIB group has objects related to Security Management. The following tables are included in this MIB object:

- wranIfBsScmCapabilityConfiguration: Contains information on what cryptographic suite capabilities are supported on the BS.
- wranIfBsCpeCapabilityConfigTable: Contains information on what cryptographic suite capabilities are supported on the CPE.
- wranIfBsScmAuthConfigTable: Contains information on configuration of SCM attributes, e.g., timers and constants as defined in Clause 8.
- wranIfBsCpeScmAuthStatusTable: Contains information related to the current status of CPE authentication.
- wranIfBsCpeScmSaConfigTable: Contains information related to attributes of SAs that are configured on CPEs.
- wranIfBsCpeTekRefreshTable: Contains information related to ongoing SCM Key-Request/Reply transactions.
- wranIfBsCBPAuthCACertTable: Contains CA root certificates used in CBP Authentication.
- wranIfBsCBPAuthBsImplicitCertTable: Contains BS implicit certificates used in CBP Authentication.
- wranIfBsWiMicAuthCertTable: Contains implicit certificates contained in MSF3 of captured wireless microphone beacons.
- wranIfBsScmMibGroups: Defines which MIB groups are available within this module and which MIB objects are part of each group.

- wranIfBsScmMibCompliance: MIB objects that are optional and mandatory for wranIfBsPmCompliance.

#### **13.1.2.5.1 wranIfBsScmCapabilityConfiguration**

This MIB ... Table 193.

#### **13.1.2.5.2 wranIfBsCpeScmCapabilityConfigTable**

This MIB ... **13.1.2.5.2.1.2** ... Table 193.

#### **13.1.2.5.3 wranIfBsScmAuthConfigTable**

This MIB ... **13.1.2.5.3.1.10** ... key exchange.

#### **13.1.2.5.1.13.1.2.5.4 wranIfBsCpeScmAuthStatusTable**

This object ... wranIfBsCpeScmAuthStatusEntry.

##### **13.1.2.5.1.13.1.2.5.4.1 wranIfBsCpeScmAuthStatusEntry**

This object ... wranIfBsCpeScmAuthStatusTable.

##### **13.1.2.5.1.1.1 wranIfBsCpeAuthStatusIndex**

Index of entry in the table.

##### **13.1.2.5.1.1.213.1.2.5.4.1.1 wranIfBsCpeScmAuthStatus**

Current sState of CPE's authentication state machine (see 8.2.2.1) that CPE is in.

##### **13.1.2.5.1.1.313.1.2.5.4.1.2 wranIfBsCpeScmAuthRecentEvent**

Indication of ... the ASM.

##### **13.1.2.5.1.1.413.1.2.5.4.1.3 wranIfBsCpeScmNumAuthAttempts**

Current number of EAP authentication attempts.

##### **13.1.2.5.1.1.5 wranIfBsCpeScmAuthRecentMsgSize**

Size of wranIfBsCpeScmAuthRecentMsg in octets.

##### **13.1.2.5.1.1.613.1.2.5.4.1.4 wranIfBsCpeScmAuthRecentMsg**

Contents of ... or EAP-Transfer.

##### **13.1.2.5.1.1.713.1.2.5.4.1.5 wranIfBsCpeScmAuthEapAuthTimerExpiration**

Indication of ... to expire.

**13.1.2.5.1.1.813.1.2.5.4.1.6 wranIfBsCpeScmAuthGraceTimer1**

Indication of ... will expire.

**13.1.2.5.1.1.913.1.2.5.4.1.7 wranIfBsCpeScmAuthGraceTimer2**

Indication of ... will expire.

**13.1.2.5.1.1.1013.1.2.5.4.1.8 wranIfBsCpeScmAk1Lifetime**

Remaining lifetime for current (active) AK-will expire.

**13.1.2.5.1.1.1113.1.2.5.4.1.9 wranIfBsCpeScmAk2Lifetime**

Remaining lifetime for second generation (non-active) AK-will expire.

**13.1.2.5.1.1.1213.1.2.5.4.1.12 wranIfBsCpeScmConfigRequestSize**

Size of wranIfBsCpeScmConfigRequest in octets.

**13.1.2.5.1.1.1313.1.2.5.4.1.10 wranIfBsCpeScmConfigRequest**

Contents of ... AAA server.

**13.1.2.5.1.1.1413.1.2.5.4.1.14 wranIfBsCpeScmConfigReplySize**

Size of wranIfBsCpeScmConfigReply in octets.

**13.1.2.5.1.1.1513.1.2.5.4.1.11 wranIfBsCpeScmConfigReply**

Contents of ... to CPE.

**13.1.2.5.213.1.2.5.5 wranIfBsCpeScmSaConfigTable**

This object provides a table that provides the configuration of the SA attributes that are related to SAs configured on each CPE. This table is maintained on each CPE as well as on the BS. On the BS, this table represents the configuration of SAs for all CPEs under its control. On the CPE, this table is made up of one entry for each SA that a CPE supports. Each entry is defined by wranIfBsCpeScmSaConfigEntry.

**13.1.2.5.2.113.1.2.5.5.1 wranIfBsCpeScmSaConfigEntrywranIfBsCpeScmSaConfigEntry**

This object ... wranIfBsCpeScmSaConfigTable.

**13.1.2.5.2.1.113.1.2.5.5.1.1 wranIfBsCpeScmSaConfigIndex**

Index of entry in the table.

**13.1.2.5.2.1.213.1.2.5.5.1.1 wranIfBsCpeMacAddress**

MAC address of the CPE.

**13.1.2.5.2.1.313.1.2.5.5.1.2 wranIfBsCpeSaid**

SAID of ... entry refers.

**13.1.2.5.2.1.413.1.2.5.5.1.3 wranIfBsCpeSaType**

Type of ... or Group.

**13.1.2.5.2.1.5 wranIfBsCpeCryptoSuiteListSize**

Number of items in wranIfBsCpeCryptoSuiteList.

**13.1.2.5.2.1.613.1.2.5.5.1.4 wranIfBsCpeCryptoSuiteListwranIfBsCpeCryptoSuiteCapability**

This MIB object provides a bitmaplist that describes the cryptographic suites that the CPE supports for this particular SA. The complete list of suites is provided in Table 193.

**13.1.2.5.2.1.713.1.2.5.5.1.5 wranIfBsCpeActiveTekSequenceNumber**  
**wranIfBsCpeTekN-1SequenceNumber**

The EKS ... this SA.

**13.1.2.5.2.1.813.1.2.5.5.1.6 wranIfBsCpeActiveTekLifetime**  
**wranIfBsCpeTekN-1Lifetime**

The remaining lifetime, in units of time (e.g., seconds), for the current (active) generation of the two TEKs that are configured for this SA.

**13.1.2.5.2.1.913.1.2.5.5.1.7 wranIfBsCpeActiveTekPn**  
**wranIfBsCpeTekN-1Pn**

Current value ... this SA.

**13.1.2.5.2.1.1013.1.2.5.5.1.8 wranIfBsCpeActiveTekExpireTime**  
**wranIfBsCpeTekN-1ExpireTime**

Time at which current (active) generation of the two TEKS configured for an SA will expire. This time is calculated as a function of the (Reception Time of Key Reply with TEK N-1Active TEK) + (wranIfBsCpeActiveTekLifetime TEK N-1 Lifetime).

**13.1.2.5.2.1.1113.1.2.5.5.1.9 wranIfBsCpeNonActiveTekSequenceNumber**  
**wranIfBsCpeTekNSequenceNumber**

The EKS ... this SA.

**13.1.2.5.2.1.1213.1.2.5.5.1.10 wranIfBsCpeNonActiveTekLifetime**  
**wranIfBsCpeTekNLifetime**

The lifetime ... this SA.

**13.1.2.5.2.1.1313.1.2.5.5.1.11 wranIfBsCpeNonActiveTekPn**  
**wranIfBsCpeTekNPn**

Current value ... this SA.

**13.1.2.5.2.1.14 13.1.2.5.5.1.12 wranIfBsCpeNonActiveTekExpireTime**  
**wranIfBsCpeTekNExpireTime**

Time at ... TEK N Lifetime.

**13.1.2.5.3 13.1.2.5.6 wranIfBsCpeTekRefreshTable**

This MIB ... wranIfBsCpeTekRefreshEntry.

**13.1.2.5.3.1 13.1.2.5.6.1 wranIfBsCpeTekRefreshEntry**

This object ... wranIfBsCpeTekRefreshTable.

**13.1.2.5.3.1.1 wranIfBsCpeTekRefreshIndex**

Index of entry in the table.

**13.1.2.5.3.1.2 13.1.2.5.6.1.1 wranIfBsCpeScmReqTransactionId**  
**wranIfBsCpeScmReqId**

Value of SCM-Transaction IdentifierID field of SCM REQ that carried the corresponding Key-Request message (see Table 160).

**13.1.2.5.3.1.3 13.1.2.5.6.1.2 wranIfBsCpeScmKeyReqKeySeqNum**

Key Sequence Number of Key Sequence-Key-Request message (see Table 165).

**13.1.2.5.3.1.4 13.1.2.5.6.1.3 wranIfBsCpeScmKeyReqSaid**

SAID for ... being requested.

**13.1.2.5.3.1.5 13.1.2.5.6.1.4 wranIfBsCpeScmKeyReqGroupKeyIndicator**

Indicator of whether or not Key-Request was for a GSA or not.

**13.1.2.5.3.1.6 13.1.2.5.6.1.5 wranIfBsCpeScmKeyReqCpeRandom**

Random number ... the Key-Request.

**13.1.2.5.4 13.1.2.5.7 wranIfBsCBPAuthCACertTable**

This object ... wranIfBsCBPAuthCACertEntry.

**13.1.2.5.4.1 13.1.2.5.7.1 wranIfBsCBPAuthCACertEntry**

This object ... wranIfBsCBPAuthCACertTable.

**13.1.2.5.4.1.1 wranIfBsCBPAuthCACertIndex**

Index of entry in the table.

**13.1.2.5.4.1.2 13.1.2.5.7.1.1 wranIfBsCBPAuthCACertCAID**

CA ID, ... root certificate.

#### **13.1.2.5.4.1.313.1.2.5.7.1.2 wranIfBsCBPAuthCACertKeyID**

Key ID, ... root certificate.

#### **13.1.2.5.4.1.413.1.2.5.7.1.3 wranIfBsCBPAuthCACertKeyValidityDate**

Key Validity ... becomes valid.

#### **13.1.2.5.4.1.513.1.2.5.7.1.4 wranIfBsCBPAuthCACertKeyValidityTimePeriod**

Key Validity Time Period, length of time from Key Validity Date (Not Before) in 6-month increments,  
during which CA root certificate is valid.

#### **13.1.2.5.4.1.613.1.2.5.7.1.5 wranIfBsCBPAuthCACertVersion**

Version of ... certificate supports.

#### **13.1.2.5.4.1.713.1.2.5.7.1.6 wranIfBsCBPAuthCACertECDomainParameters**

Elliptic Curve ... CA uses.

#### **13.1.2.5.4.1.8 wranIfBsCBPAuthCACertCAPubKrdSize**

Size of wranIfBsCBPAuthCACertCAPubKrd in octets.

#### **13.1.2.5.4.1.913.1.2.5.7.1.7 wranIfBsCBPAuthCACertCAPubKrd**

Public Key ... root certificate.

#### **13.1.2.5.7.1.8 wranIfBsCBPAuthCACertCAPubK**

Public Key ... root certificate.

#### **13.1.2.5.513.1.2.5.8 wranIfBsCBPAuthBsImplicitCertTable**

This object provides a table to store BS implicit certificates for neighbor WRANs that use CBP authentication. There will be one entry for each BS whose implicit certificate is installed (via this object) on the BS or received by CERT-REQ/RSP. A BS may keep an entry for its own implicit certificate in this object. Each entry is defined by wranIfBsCBPAuthBsImplicitCertEntry.

#### **13.1.2.5.5.113.1.2.5.8.1 wranIfBsCBPAuthBsImplicitCertEntry**

This object ... wranIfBsCBPAuthBsImplicitCertTable.

#### **13.1.2.5.5.1.1 wranIfBsCBPAuthBsImplicitCertIndex**

Index of entry in the table.

#### **13.1.2.5.5.1.213.1.2.5.8.1.1 wranIfBsCBPAuthBsImplicitCertBsID**

BS ID ... belongs to.

**13.1.2.5.5.1.313.1.2.5.8.1.2 wranIfBsCBPAuthBsImplicitCertCAID**

CA ID, ... implicit certificate.

**13.1.2.5.5.1.413.1.2.5.8.1.3 wranIfBsCBPAuthBsImplicitCertKeyID**

Key ID, ... implicit certificate.

**13.1.2.5.5.1.513.1.2.5.8.1.4 wranIfBsCBPAuthBsImplicitCertKeyValidityDate**

Key Validity ... becomes valid.

**13.1.2.5.5.1.613.1.2.5.8.1.5 wranIfBsCBPAuthBsImplicitCertKeyValidityTimePeriod**

Key Validity ... is valid.

**13.1.2.5.5.1.713.1.2.5.8.1.6 wranIfBsCBPAuthBsImplicitCertVersion**

Version of ... certificate supports.

**13.1.2.5.5.1.8 wranIfBsCBPAuthBsImplicitCertPubKrdSize**

Size of wranIfBsCBPAuthBsImplicitCertPubKrd in octets.

**13.1.2.5.5.1.913.1.2.5.8.1.7 wranIfBsCBPAuthBsImplicitCertPubKrd**

Public Key ... implicit certificate.

**13.1.2.5.8.1.8 wranIfBsCBPAuthBsImplicitCertPubK**

Public Key ... implicit certificate.

**13.1.2.5.8.1.9 wranIfBsCBPAuthBsImplicitCertPrKrd**

Private Key ... certificate entries.

**13.1.2.5.8.1.10 wranIfBsCBPAuthBsImplicitCertPrKrd**

Private Key ... other BSs.

**13.1.2.5.613.1.2.5.9 wranIfBsWiMicAuthCertTable**

This object provides a table to store wireless microphone implicit certificates contained in MSF3 of decoded wireless microphone beacons. This table is made up of multiple entries, one defined for each unique wireless microphone beacon implicit certificate. Each entry is defined by wranIfBsWiMicAuthCertEntry. Entries are added to this table when a wireless microphone beacon (MSF1+MSF2+MSF3) has been successfully received and decoded.

**13.1.2.5.6.113.1.2.5.9.1 wranIfBsWiMicAuthCertEntry**

This object ... wranIfBsWiMicAuthCertTable.

### **13.1.2.5.6.1.1 wranIfBsWiMicAuthCertIndex**

Index of entry in the table.

### **13.1.2.5.6.1.2 13.1.2.5.9.1.1 wranIfBsWiMicAuthSrcAddress**

Source Address ... implicit certificate.

### **13.1.2.5.6.1.3 wranIfBsWiMicAuthImplicitCertSize**

Size of `wranIfBsWiMicAuthImplicitCert` in octets.

### **13.1.2.5.6.1.4 13.1.2.5.9.1.2 wranIfBsWiMicAuthImplicitCert**

Wireless microphone ... IEEE Std 802.22.1-2010.

### **13.1.2.5.7 wranIfBsScmMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

#### **13.1.2.5.7.1 wranIfBsScmAuthStatusGroup**

This group contains objects related to tracking the current state of a CPEs authentication state machine.

#### **13.1.2.5.7.2 wranIfBsScmSaConfigGroup**

This group contains objects related to tracking the configurations of SAs configured on CPEs.

#### **13.1.2.5.7.3 wranIfBsScmTekGroup**

This group contains objects related to tracking on going Key-Request transactions.

#### **13.1.2.5.7.4 wranIfBsScmCBPAuthCACertGroup**

This group contains objects related to storing CA Root certificates that used to validate BS Implicit Certificates used in CBP authentication.

#### **13.1.2.5.7.5 wranIfBsScmCBPBsCertGroup**

This group contains objects related to storing BS implicit certificates used in CBP authentication.

#### **13.1.2.5.7.6 wranIfBsScmWiMicAuthGroup**

This group contains objects related to storing wireless microphone beacon (IEEE Std 802.22.1-2010) certificates transmitted in MSF3 of wireless microphone beacons.

#### **13.1.2.5.8 wranIfBsScmMibCompliance**

MIB objects that are optional and mandatory for `wranIfBsScm`.

*Change 13.1.3 as follows:*

### **13.1.3 wranIfBsSfMgmtMibwranIfBsSfMgmt**

This MIB group provides objects for managing service flows in the network.

Classification rules to be defined by the operator shall be downloadable to the BS and CPEs in a uniform and standardized format. The resulting behavior of a given classification rule shall be standardized and implementation independent. This shall be done by the MIB.

In this MIB group the following tables are defined:

- wranIfBsProvSfTable: Contains information about service flows provisioned by the NCMS.
- wranIfBsSctable: Contains the QoS parameter set for service flows defined for the supported service classes.
- wranIfBsActiveSfTable~~wranIfBsSfTable~~: Contains information about dynamic service flows that are created/torn-down on-the-fly.
- wranIfBsProvClassifierRuleTable: Contains information about classifier rules as applied to service flows provisioned by the NCMS.
- wranIfBsClassifierRuleTable: Contains information about classifier rules as applied to service flows applied to dynamic service flows.
- wranIfBsSfTrapControl: Defines trap control related to enabling/disabling service flow management event recording.
- wranIfBsSfTrapDefinition: Defines configuration of data recorded with traps.
- wranIfBsSfNotificationObjectsTable: Table that tracks information reported by traps.
- wranIfBsSfMibGroups: Definition of MIB groups available within wranIfBsSfMgmtMib.
- wranIfBsSfMibCompliance: Definition of compliance object for wranIfBsSfMgmtMib.

#### **13.1.3.1 wranIfBsProvSfTable**

##### **13.1.3.1.1 wranIfBsProvSfEntry**

*Change the subclauses of 13.1.3.1.1 as follows:*

###### **13.1.3.1.1.1 wranIfBsProvEntryIndex**

Index of entry in the table.

###### **13.1.3.1.213.1.3.1.1.1 wranIfBsCpeProvMacAddress**

MAC address ... is provisioned.

###### **13.1.3.1.313.1.3.1.1.2 wranIfBsProvSfIdwranIfBsSfId**

Unique identifier ... particular CPE.

###### **13.1.3.1.413.1.3.1.1.3 wranIfBsProvSfDirectionwranIfBsSfDirection**

Indication of ... DS SF.

### **13.1.3.1.1.513.1.3.1.1.4 wranIfBsProvScIndexwranIfBsScIndex**

Index into ... service flow.

### **13.1.3.1.1.613.1.3.1.1.5 wranIfBsProvCsSpecificationwranIfBsCsSpecification**

Indication of which convergence sublayer has been used to encapsulate the higher-layer SDU\_(see 7.7.8.9.18.1).

### **13.1.3.1.1.713.1.3.1.1.6 wranIfBsProvSfStatus**

Indication of whether ~~or not~~ the provisioned service flow is currently provisioned, admitted, or active (see 7.7.8.9.4 and 7.18.2)~~or not~~.

### **13.1.3.1.1.813.1.3.1.1.7 wranIfBsProvSfProvisioningTime**

If currently active (see 13.1.3.1.1.713.1.3.1.1.6), the time at which the service flow was provisioned.

### **13.1.3.1.1.9 wranIfBsProvTargetSaid**

SAID of SA to which the service flow is being mapped. Provisioned service flows can be mapped to the Primary or Secondary SA of the CPE.

### **13.1.3.1.1.10 wranIfBsProvCIsRuleListSize**

Number of wranIfBsProvCIsfrRuleIndex values in wranIfBsProvCIsRuleList.

### **13.1.3.1.1.11 wranIfBsProvCIsRuleList**

List of wranIfBsProvCIsfrRuleIndex values pointing to entries in the wranIfBsProvClassifierRuleTable that contain packet classification rules assigned to this service flow.

*Change 13.1.3.2 and its subclauses as follows:*

## **13.1.3.2 wranIfBsScTable**

This MIB object provides a table that describes attributes of provisioned and dynamic service flows, such as the QoS parameter set. This table is made up of multiple entries, one for each service class. Each entry is defined by wranIfBsScEntry.

### **13.1.3.2.1 wranIfBsScEntry**

This object ... wranIfBsScTable.

#### **13.1.3.2.1.1 wranIfBsScIndex**

Index value ... wranIfBsScTable.

#### **13.1.3.2.1.2 wranIfBsQosSfSfid**

SFID of service flow.

#### **13.1.3.2.1.3 wranIfBsQosSfFid**

FID to which service flow is mapped.

#### **13.1.3.2.1.4 wranIfBsQosServiceClassNameSize**

Size, e.g., number of octets, of wranIfBsQosServiceClassName.

#### **13.1.3.2.1.513.1.3.2.1.2 wranIfBsQosServiceClassName**

Defines the name of the service class associated with this entry. If a service class is not assigned, this will be blank.

#### **13.1.3.2.1.3 wranIfBsQoSTrafficPriority**

Priority of ... bandwidth requests.

#### **13.1.3.2.1.6 wranIfBsQosParameterSetType**

Indication of whether the QoS Parameter set defined by this entry is applied to the Provisioned, Admitted, or Active parameter set of the service flow.

#### **13.1.3.2.1.713.1.3.2.1.4 wranIfBsQosMaxSustainedRate**

Peak information/data ... per second.

#### **13.1.3.2.1.813.1.3.2.1.5 wranIfBsQosTrafficSize**

If fixed-length SDUs (see 13.1.3.2.1.1213.1.3.2.1.9) are enabled, this represents the size of SDU assigned to the service flow. If variable-length SDUs (see 13.1.3.2.1.1213.1.3.2.1.19) are enabled, this represents the average size of SDU assigned the service flow.

#### **13.1.3.2.1.913.1.3.2.1.6 wranIfBsQosMinReservedRate**

Minimum required ... per second.

#### **13.1.3.2.1.1013.1.3.2.1.7 wranIfBsQosToleratedJitter**

The maximum ... service flow.

#### **13.1.3.2.1.1113.1.3.2.1.8 wranIfBsQosMaxLatency**

The maximum ... service flow.

#### **13.1.3.2.1.1213.1.3.2.1.9 wranIfBsQosEnableVariableLengthSdus**

Setting this object allows the turning on/off to enable/disable use of variable-length SDUs support. Default is to allow use of variable-length SDUs.

#### **13.1.3.2.1.1313.1.3.2.1.10 wranIfBsQosSchedulingType**

The scheduling ... is BE.

**13.1.3.2.1.14 13.1.3.2.1.11 wranIfBsQosArqEnable**

Setting this ... is enabled.

**13.1.3.2.1.15 13.1.3.2.1.12 wranIfBsQosArqWindowSize**

Indication of ... is set.

**13.1.3.2.1.16 13.1.3.2.1.13 wranIfBsQosArqTxRetryTimeout**

Total time before timing out retransmissions of ARQ blocks (in 10-microsecond blocks). For BS, this should include time to compensate for scheduling and the propagation time for transmission.

**13.1.3.2.1.17 13.1.3.2.1.14 wranIfBsQosArqRxRetryTimeout**

Total time before timing out reception of ARQ block retransmission (in 10-microsecond blocks). For BS, this should include time to compensate for scheduling and the propagation time for transmission.

**13.1.3.2.1.18 13.1.3.2.1.15 wranIfBsQosArqBlockLifetime**

The maximum ... is dropped.

**13.1.3.2.1.19 13.1.3.2.1.16 wranIfBsQosArqSyncLossTimeout**

Timeout for ... become unsynchronized.

**13.1.3.2.1.20 13.1.3.2.1.17 wranIfBsQosArqDeliverInOrderEnable**

Disable/enables ... the transmitter.

**13.1.3.2.1.21 13.1.3.2.1.18 wranIfBsQosArqRxPurgeTimeout**

How much ... is received.

**13.1.3.2.1.22 13.1.3.2.1.19 wranIfBsQosArqBlockSizeReq**

This object ... REG-REQ messages.

**13.1.3.2.1.23 13.1.3.2.1.20 wranIfBsQosArqBlockSizeRsp**

This object ... REG-RSP messages.

**13.1.3.2.1.24 13.1.3.2.1.21 wranIfBsQosReqTxPolicy**

This value is a bitmap that enables/disables the following capabilities for a service flow: Use of broadcast BW request for US, use of multicast BW request for US only, piggyback BW requests on data for US transmissions, enable/disable fragmentation, enable/disable packing, and use of CRC for MAC PDU (see Table 83).

**13.1.3.2.1.22 wranIfBsCsSpecification**

The CS ... service flow.

### **13.1.3.2.1.23 wranIfBsTargetSaid**

SAID of ... being mapped.

### **13.1.3.2.1.24 wranIfBsFsnType**

Indication of ... the connection.

*Change 13.1.3.3 and its subclauses as follows:*

## **13.1.3.3 wranIfBsActiveSfTablewranIfBsSfTable**

This MIB object provides a table that is used to manage service flows that are currently active between the BS and CPEs. This table is made up of multiple entries, one for each service flow mapped to a particular CPE. Each entry is defined by wranIfBsActiveSfEntrywranIfBsSfEntry.

### **13.1.3.3.1 wranIfBsActiveSfEntrywranIfBsSfEntry**

This object is a compound object that provides the definition of an entry in wranIfBsActiveSfTablewranIfBsSfTable.

#### **13.1.3.3.1.1 wranIfBsActiveSfIndex**

Index of entry in wranIfBsActiveSfTable.

#### **13.1.3.3.1.213.1.3.3.1.1 wranIfBsActiveSfSfidwranIfBsSfSfid**

SFID of the active service flow that is assigned to a particular CPE.

#### **13.1.3.3.1.2 wranIfBsSfCid**

CID (SID ... is mapped).

#### **13.1.3.3.1.3 wranIfBsActiveSfMacAddress**

The 48-bit MAC Address assigned to CPE to which this service flow is mapped.

#### **13.1.3.3.1.4 wranIfBsActiveSfSid**

SID of CPE assigned to service flow. If wranIfBsActiveSfSid is a multicast SID, there will be multiple entries in this table, one for each wranIfBsActiveSfMacAddress assigned to this service flow with the same wranIfBsActiveSfSid.

#### **13.1.3.3.1.513.1.3.3.1.3 wranIfBsActiveSfDirectionwranIfBsSfDirection**

Direction of ... BS (US).

#### **13.1.3.3.1.613.1.3.3.1.4 wranIfBsActiveSfStatuswranIfBsSfState**

Current state ... service flow).

### **13.1.3.3.1.5 wranIfBsSfPriority**

Priority of ... be serviced.

...

### **13.1.3.3.1.23 wranIfBsSfReqTxPolicy**

This value ... MAC PDU.

### **13.1.3.3.1.7 wranIfBsActiveScIndex**

Index into a wranIfBsScTable entry that indicates the QoS parameter set for this service flow.

### **13.1.3.3.1.8 13.1.3.3.1.24 wranIfBsActiveCsSpecification wranIfBsCsSpecification**

The CS ... service flow.

### **13.1.3.3.1.9 13.1.3.3.1.25 wranIfBsActiveTargetSaid wranIfBsTargetSaid**

SAID of ... being mapped.

### **13.1.3.3.1.26 wranIfBsSfFsnType**

Indication of ... the connection.

### **13.1.3.3.1.10 wranIfBsActiveSfClsRuleListSize**

Number of items in wranIfBsActiveSfClsRuleList.

### **13.1.3.3.1.11 wranIfBsActiveSfClsRuleList**

List of wranIfBsClsfrRuleIndex values pointing to entries in the wranIfBsClassifierRuleTable that contain packet classification rules assigned to this service flow.

## **13.1.3.4 wranIfBsProvClassifierRuleTable**

### **13.1.3.4.1 wranIfBsProvClassifierRuleEntry**

*Change the subclauses of 13.1.3.4.1 as follows:*

#### **13.1.3.4.1.1 wranIfBsProvClsfrRuleIndex wranIfBsProvClfrRuleIndex**

Index to ... wranIfBsProvClassifierRuleTable.

#### **13.1.3.4.1.2 wranIfBsProvClfrRuleMap**

A bitmap that indicates which classification parameters are included in the classification rule. A parameter exists in this rule if the corresponding bit is set to 1.

**13.1.3.4.1.313.1.3.4.1.2 wranIfBsProvClfrRulePrioritywranIfBsProvClfrRulePriority**

Priority of the classification rule. This determines the order in which classification rules are applied.

**13.1.3.4.1.413.1.3.4.1.3 wranIfBsProvClfrRuleIpProtocolwranIfBsProvClfrRuleIpProtocol**

Value of ... by IANA.

**13.1.3.4.1.5 wranIfBsProvClfrRuleIpSrcAddrType**

Type of IP address that Source IP address from IP header is.

**13.1.3.4.1.613.1.3.4.1.4 wranIfBsProvClfrRuleIpSrcAddrwranIfBsProvClfrRuleIpSrcAddr**

Source IP address from IP header.

**13.1.3.4.1.713.1.3.4.1.5 wranIfBsProvClfrRuleIpSrcMaskwranIfBsProvClfrRuleIpSrcMask**

IP address mask. IP source address (wranIfBsProvClfrRuleIpSrcAddr  
wranIfBsProvClfrRuleIpSrcAddr) is matched when output of applying (bitwise AND) this value to IP source address from IP packet.

**13.1.3.4.1.8 wranIfBsProvClfrRuleIpDestAddrType**

Type of IP address that Destination IP address from IP header is.

**13.1.3.4.1.913.1.3.4.1.6 wranIfBsProvClfrRuleIpDestAddrwranIfBsProvClfrRuleIpDestAddr**

Destination IP address from IP header.

**13.1.3.4.1.1013.1.3.4.1.7 wranIfBsProvClfrRuleIpDestMask**  
**wranIfBsProvClfrRuleIpDestMask**

IP address mask. IP destination address (wranIfBsProvClfrRuleIpDestAddr  
wranIfBsProvClfrRuleIpDestAddr) is matched when output of applying (bitwise AND) this value to IP destination address from IP packet.

**13.1.3.4.1.1113.1.3.4.1.8 wranIfBsProvClfrRuleSrcPortStart**  
**wranIfBsProvClfrRuleSrcPortStart**

Start (inclusive) of range of source ports against which that packet will be compared against.

**13.1.3.4.1.1213.1.3.4.1.9 wranIfBsProvClfrRuleSrcPortEnd**  
**wranIfBsProvClfrRuleSrcPortEnd**

End (inclusive) ... be compared.

**13.1.3.4.1.1313.1.3.4.1.10 wranIfBsProvClfrRuleDestPortStart**  
**wranIfBsProvClfrRuleDestPortStart**

Start (inclusive) of range of destination ports against which that packet will be compared against.

**13.1.3.4.1.14 13.1.3.4.1.11 wranIfBsProvClfrRuleDestPortEnd****wranIfBsProvClfrRuleDestPortEnd**

End (inclusive) ... be compared.

**13.1.3.4.1.15 13.1.3.4.1.12 wranIfBsProvClfrRuleDestMacAddr****wranIfBsProvClfrRuleDestMacAddr**

Destination MAC ... Ethernet header.

**13.1.3.4.1.16 13.1.3.4.1.13 wranIfBsProvClfrRuleDestMacAddrMask****wranIfBsProvClfrRuleDestMacMask**

MAC address mask. A destination MAC address (wranIfBsProvClfrRuleDestMacAddr wranIfBsProvClfrRuleDestMacAddr) is matched when the destination MAC address from Ethernet header is applied (bitwise AND) with this mask.

**13.1.3.4.1.17 13.1.3.4.1.14 wranIfBsProvClfrRuleSrcMacAddr****wranIfBsProvClfrRuleSrcMacAddr**

Source MAC ... Ethernet header.

**13.1.3.4.1.18 13.1.3.4.1.15 wranIfBsProvClfrRuleSrcMacAddrMask****wranIfBsProvClfrRuleDestMacMask**

MAC address mask. A source MAC address (wranIfBsProvClfrRuleSrcMacAddr wranIfBsProvClfrRuleSrcMacAddr) is matched when the source MAC address from Ethernet header is applied (bitwise AND) with this mask.

**13.1.3.4.1.19 13.1.3.4.1.16 wranIfBsProvClfrRuleEonetProtType****wranIfBsProvClfrRuleEonetProtType**

Identifier of layer 3 protocol type in an Ethernet frame. There are three types defined in Ethernet frame classification: Enable/disable use no layer 3 protocol type in Ethernet frame, EtherType in DIX/SNAP based frames, and DSAP in IEEE 802.3 frames, are used in Ethernet frame classification. If IEEE Std 802.1Q [B9] is supported, the EtherType value in the IEEE 802.1Q header is used.

**13.1.3.4.1.20 13.1.3.4.1.17 wranIfBsProvClfrRuleEonetProtocol****wranIfBsProvClfrRuleEonetProtocol**

Ethernet protocol type value that is used for classification. When wranIfBsProvClfrRuleEonetProtType is set to EtherType, the value of this object is matched against the 16-bit EtherType value in an Ethernet header or IEEE 802.1Q header (if IEEE Std 802.1Q [B9] is supported). When wranIfBsProvClfrRuleEonetProtType is set to DSAP, then the DSAP byte in IEEE 802.3 frames is matched against the 8 LSBs of this object's value. This value will be processed based on what is set in wranIfBsProvClfrRuleEonetProtType.

**13.1.3.4.1.21 13.1.3.4.1.18 wranIfBsProvClfrRuleUserPriLow****wranIfBsProvClfrRuleUserPriLow**

Low value ... being used.

**13.1.3.4.1.22 13.1.3.4.1.19 wranIfBsProvClfrRuleUserPriHigh**  
**wranIfBsProvClfrRuleUserPriHigh**

High value ... being used.

**13.1.3.4.1.23 13.1.3.4.1.20 wranIfBsProvClfrRuleVlanId**  
**wranIfBsProvClfrRuleVlanId**

VLAN Id ... being used.

**13.1.3.4.1.24 13.1.3.4.1.21 wranIfBsProvClfrRuleIpv6FlowLabel**  
**wranIfBsProvClfrRuleIpv6FlowLabel**

Flow label field from IPv6 header. The IPv6 Flow Label field is mapped to the 20 LSBs of this object, and the first 4 MSBs are set to 0.

**13.1.3.4.1.25 13.1.3.4.1.22 wranIfBsProvClfrRuleIpTypeOfService**  
**wranIfBsProvClfrRuleIpTypeOfService**

The value to match the IP TOS octet from IP header. The 6 MSBs of the value contained in this object are read in as the DSCP (IETF RFC 2474 [B24]), and the 2 LSBs are ignored.

**13.1.3.4.1.23 wranIfBsProvClfrRuleMap**

A bitmap ... classification rule.

**13.1.3.4.1.24 wranIfBsProvClfrRulePktCount**

Counter to ... this rule.

**13.1.3.5 wranIfBsClassifierRuleTable**

**13.1.3.5.1 wranIfBsClassifierRuleEntry**

*Change the subclauses of 13.1.3.5.1 as follows:*

**13.1.3.5.1.1 wranIfBsClfrRuleIndex**  
**wranIfBsClfrRuleIndex**

Index to ... wranIfBsClassifierRuleTable.

**13.1.3.5.1.2 wranIfBsClfrRuleMap**

A bitmap that indicates which classification parameters are included in the classification rule. A parameter exists in this rule if the corresponding bit is set to 1.

**13.1.3.5.1.3 13.1.3.5.1.2 wranIfBsClfrRulePriority**  
**wranIfBsClfrRulePriority**

Priority of ... are applied.

**13.1.3.5.1.4 13.1.3.5.1.3 wranIfBsClfrRuleIpProtocol**  
**wranIfBsClfrRuleIpProtocol**

Value of ... by IANA.

**13.1.3.5.1.5 wranIfBsClstrRuleIpSrcAddrType**

Type of IP address that Source IP address from IP header is.

**13.1.3.5.1.613.1.3.5.1.4 wranIfBsClstrRuleIpSrcAddrwranIfBsClstrRuleIpSrcAddr**

Source IP ... IP header.

**13.1.3.5.1.713.1.3.5.1.5 wranIfBsClstrRuleIpSrcMaskwranIfBsClstrRuleIpSrcMask**

IP address mask. IP source address (wranIfBsClstrRuleIpSrcAddr  
wranIfBsClstrRuleIpSrcAddr) is matched when output of applying (bitwise AND) this value to IP source address from IP packet.

**13.1.3.5.1.8 wranIfBsClstrRuleIpDestAddrType**

Type of IP address that Destination IP address from IP header is.

**13.1.3.5.1.913.1.3.5.1.6 wranIfBsClstrRuleIpDestAddrwranIfBsClstrRuleIpDestAddr**

Destination IP address from IP header.

**13.1.3.5.1.1013.1.3.5.1.7 wranIfBsClstrRuleIpDestMaskwranIfBsClstrRuleIpDestMask**

IP address mask. IP destination address (wranIfBsClstrRuleIpDestAddr  
wranIfBsClstrRuleIpDestAddr) is matched when output of applying (bitwise AND) this value to IP destination address from IP packet.

**13.1.3.5.1.1113.1.3.5.1.8 wranIfBsClstrRuleSrcPortStartwranIfBsClstrRuleSrcPortStart**

Start (inclusive) of range of source ports against which that that packet will be compared against.

**13.1.3.5.1.1213.1.3.5.1.9 wranIfBsClstrRuleSrcPortEndwranIfBsClstrRuleSrcPortEnd**

End (inclusive) ... be compared.

**13.1.3.5.1.1313.1.3.5.1.10 wranIfBsClstrRuleDestPortStartwranIfBsClstrRuleDestPortStart**

Start (inclusive) of range of destination ports against which that that packet will be compared against.

**13.1.3.5.1.1413.1.3.5.1.11 wranIfBsClstrRuleDestPortEndwranIfBsClstrRuleDestPortEnd**

End (inclusive) ... be compared.

**13.1.3.5.1.1513.1.3.5.1.12 wranIfBsClstrRuleDestMacAddrwranIfBsClstrRuleDestMacAddr**

Destination MAC ... Ethernet header.

**13.1.3.5.1.1613.1.3.5.1.13 wranIfBsClstrRuleDestMacAddrMask**  
**wranIfBsClstrRuleDestMacMask**

MAC address mask. A destination MAC address (wranIfBsProvClstrRuleDestMacAddr  
wranIfBsProvClstrRuleDestMacAddr) is matched when the destination MAC address from Ethernet header is applied (bitwise AND) with this mask.

**13.1.3.5.1.17 13.1.3.5.1.14 wranIfBsClfrRuleSrcMacAddr**  
**wranIfBsClfrRuleSrcMacAddr**

Source MAC ... Ethernet header.

**13.1.3.5.1.18 13.1.3.5.1.15 wranIfBsClfrRuleSrcMacAddrMask**  
**wranIfBsClfrRuleDestMacMask**

MAC address mask. A source MAC address (wranIfBsProvClfrRuleSrcMacAddr) is matched when the source MAC address from Ethernet header is applied (bitwise AND) with this mask.

**13.1.3.5.1.19 13.1.3.5.1.16 wranIfBsClfrRuleEonetProtType**  
**wranIfBsClfrRuleEonetProtType**

Identifier of layer 3 protocol type in an Ethernet frame. There are three types defined in Ethernet frame classification: ~~Enable/disable use no~~ layer 3 protocol type in Ethernet frame, EtherType in DIX/SNAP based frames, DSAP in IEEE 802.3 frames, ~~are used in Ethernet frame classification~~. If IEEE Std 802.1Q [B9] is supported, the EtherType value in the IEEE 802.1Q header is used.

**13.1.3.5.1.20 13.1.3.5.1.17 wranIfBsClfrRuleEonetProtocol**  
**wranIfBsClfrRuleEonetProtocol**

Ethernet protocol type value that is used for classification. This value will be processed based on what is set in wranIfBsClfrRuleEonetProtType.

**13.1.3.5.1.21 13.1.3.5.1.18 wranIfBsClfrRuleUserPriLow**  
**wranIfBsClfrRuleUserPriLow**

Low value ... being used.

**13.1.3.5.1.22 13.1.3.5.1.19 wranIfBsClfrRuleUserPriHigh**  
**wranIfBsClfrRuleUserPriHigh**

High value ... being used.

**13.1.3.5.1.23 13.1.3.5.1.20 wranIfBsClfrRuleVlanId**  
**wranIfBsClfrRuleVlanId**

VLAN Id ... being used.

**13.1.3.5.1.24 13.1.3.5.1.21 wranIfBsClfrRuleIpv6FlowLabel**  
**wranIfBsClfrRuleIpv6FlowLabel**

Flow label field from IPv6 header.

**13.1.3.5.1.25 13.1.3.5.1.22 wranIfBsClfrRuleIpTypeOfService**  
**wranIfBsClfrRuleIpTypeOfService**

The value ... (IETF RFC 2474 [B24]).

**13.1.3.5.1.23 wranIfBsClfrRuleMap**

A bitmap ... classification rule.

**13.1.3.5.1.24 wranIfBsClfrRulePktCount**

Counter to ... this rule.

*Insert the following new subclauses (13.1.3.6 to 13.1.3.10) after 13.1.3.5.1.25:*

### **13.1.3.6 wranIfBsSfTrapControl**

Defines control elements for traps related to management of service flows. This is a 5-bit field that enables setting a trap for particular Service Flow events: wranIfBsProvSfChange, wranIfBsScChange, wranIfBsActiveSfChange, wranIfBsProvClassifierRuleChange, and wranIfBsClassifierRuleChange.

### **13.1.3.7 wranIfBsSfTrapDefinition**

This object defines service flow management traps that can be enabled/disabled in wranIfBsSfTrapControl.

#### **13.1.3.7.1 wranIfBsProvSfChangeTrap**

This trap contains the information related to the status of provisioned service flows.

#### **13.1.3.7.2 wranIfBsScChangeTrap**

This trap contains the information related to the status of the configuration of service flow parameters.

#### **13.1.3.7.3 wranIfBsActiveSfChangeTrap**

This trap contains the information related to the status of dynamic service flows.

#### **13.1.3.7.4 wranIfBsProvClassifierRuleChangeTrap**

This trap contains the information related to the status of classifier rules for provisioned service flows.

#### **13.1.3.7.5 wranIfBsClassifierRuleChangeTrap**

This trap contains the information related to the status of classifier rules for dynamic service flows.

### **13.1.3.8 wranIfBsSfNotificationObjectsTable**

This MIB provides a table to track notification objects that have been reported by the traps related to the management of service flows. It is made up of one entry containing objects related to the most recent trap/even. The entry is defined by wranIfBsNotificationObjectsEntry.

#### **13.1.3.8.1 wranIfBsSfNotificationObjectsEntry**

This object defines an entry in wranIfBsNotificationObjectsTable.

##### **13.1.3.8.1.1 wranIfBsSfNotificationIndex**

Index of entry in the table (defaults to 1).

##### **13.1.3.8.1.2 wranIfBsSfNotificationProvSfStatus**

Status of provisioned service flow for which trap is enabled; see wranIfBsProvSfStatus (13.1.3.1.7).

### **13.1.3.8.1.3 wranIfBsSfNotificationProvEntryIndex**

Index into `wranIfBsProvSfTable` that contains information on provisioned service that was recently modified.

### **13.1.3.8.1.4 wranIfBsSfNotificationScEntryIndex**

Index into `wranIfBsScTable` that contains information on modified service flow parameters.

### **13.1.3.8.1.5 wranIfBsSfNotificationActiveSfIndex**

Index into `wranIfBsActiveSfTable` that contains information on active service flows whose configuration has been updated.

### **13.1.3.8.1.6 wranIfBsSfNotificationActiveSfStatus**

Current status of dynamic service flow; see `wranIfBsActiveSfStatus` (13.1.3.3.1.6).

### **13.1.3.8.1.7 wranIfBsSfNotificationProvClsfrRuleIndex**

Index of entry in `wranIfBsProvClassifierRuleTable` that contains entry pertaining to a classifier rule for a provisioned service flow that was recently modified.

### **13.1.3.8.1.8 wranIfBsSfNotificationProvClsfrRuleMap**

Value of `wranIfBsProvClsfrRuleMap` that contains the configuration of which classifier rules are part of the classifier rule set of a provisioned service flow that was recently modified.

### **13.1.3.8.1.9 wranIfBsSfNotificationClsfrRuleIndex**

Index of entry in `wranIfBsClassifierRuleTable` that contains entry pertaining to a classifier rule for a dynamic service flow that was recently modified.

### **13.1.3.8.1.10 wranIfBsSfNotificationProvClsfrRuleMap**

Value of `wranIfBsClsfrRuleMap` that contains the configuration of which classifier rules are part of the classifier rule set of a dynamic service flow that was recently modified.

## **13.1.3.9 wranIfBsSfMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

### **13.1.3.9.1 wranIfBsProvSfMibGroup**

This group contains objects related to the configuration of provisioned service flows.

### **13.1.3.9.2 wranIfBsScMibGroup**

This group contains objects related to the configuration of QoS parameters for provisioned and dynamic service flows.

### **13.1.3.9.3 wranIfBsActiveSfMibGroup**

This group contains objects related to the configuration of dynamic service flows.

### **13.1.3.9.4 wranIfBsProvClassifierRuleMibGroup**

This group contains objects related to the configuration of classifier rules for provisioned service flows.

### **13.1.3.9.5 wranIfBsClassifierRuleMibGroup**

This group contains objects related to the configuration of classifier rules for dynamic service flows.

### **13.1.3.9.6 wranIfBsSfTrapControlGroup**

This group contains objects related to enabling/disabling traps used for service flow management.

### **13.1.3.9.7 wranIfBsSfNotificationMibGroup**

This group contains objects related to traps used for service flow management.

### **13.1.3.10 wranIfBsSfMibCompliance**

MIB objects that are optional and mandatory for service flow management compliance.

*Change 13.1.4 and its subclauses as follows:*

### **13.1.4 wranIfCpeMib**

This MIB defines objects used for managing CPEs. It is broken up into the following subclauses:

- wranIfCpeConfigurationTable: Definition of system parameters, timers, and constants related to CPE operation.
- wranIfCpeTrapControl: Enabling/disabling of traps ~~and setting thresholds for certain events concerning events related to CPE operation~~.
- wranIfCpeThresholdConfigTable: Table containing configuration bounds for recording CPE events.
- wranIfCpeTrapDefinitions: Definition of traps and objects that can be reported by traps.
- wranIfCpeNotificationObjectsTable: Table containing information related to configured traps.

#### **13.1.4.1 wranIfCpeConfigurationTable**

This MIB ... wranIfCpeConfigurationEntry.

##### **13.1.4.1.1 wranIfCpeConfigurationEntry**

This object ... wranIfCpeConfigurationTable.

**13.1.4.1.1.1 wranIfCpeConfigurationIndex**

Index of entry in this table (defaults to 1).

**13.1.4.1.1.213.1.4.1.1.1 wranIfCpeLostDsMapInterval**

Amount of ... considered lost.

**13.1.4.1.1.313.1.4.1.1.2 wranIfCpeLostUsMapInterval**

Amount of ... considered lost.

**13.1.4.1.1.413.1.4.1.1.3 wranIfCpeContentionRangingRetries**

Maximum number ... contention-based ranging.

**13.1.4.1.1.513.1.4.1.1.4 wranIfCpeContentionBwRetries**

Maximum number ... bandwidth requests.

**13.1.4.1.1.613.1.4.1.1.5 wranIfCpeRegReqRetries**

Maximum number ... registration requests.

**13.1.4.1.1.713.1.4.1.1.6 wranIfCpeTftpBackoffStart**

Initial backoff value for TFTP StartBackoff.

**13.1.4.1.1.813.1.4.1.1.7 wranIfCpeTftpBackoffEnd**

Last value for TFTP backoff.

**13.1.4.1.1.913.1.4.1.1.8 wranIfCpeTftpReqRetries**

Maximum number ... CPE configuration.

**13.1.4.1.1.1013.1.4.1.1.9 wranIfCpeTftpDownloadRetries**

Maximum number ... CPE configuration.

**13.1.4.1.1.1113.1.4.1.1.10 wranIfCpeTftpWait**

Time to ... via TFTP.

**13.1.4.1.1.1213.1.4.1.1.11 wranIfCpeToDRetries**

Maximum number ... of day.

**13.1.4.1.1.1313.1.4.1.1.12 wranIfCpeToDRetryPeriod**

Amount of ... failed attempt.

#### **13.1.4.1.1.14 13.1.4.1.1.13 wranIfCpeCBCReqRetries**

Maximum number of retries allowed for sending ~~SBCCBC~~ request.

#### **13.1.4.1.1.15 13.1.4.1.1.14 wranIfCpeTftpCplItRetries**

Maximum number ... to BS.

#### **13.1.4.1.1.15 wranIfCpePowerCtrlProcTime**

~~Maximum time ... is executed.~~

#### **13.1.4.1.1.16 wranIfCpeUsMapProcTime**

Time provided ... frame length.

#### **13.1.4.1.1.17 wranIfCpeRangRspProcTime**

Maximum time ... in RNG-CMD.

#### **13.1.4.1.1.16 13.1.4.1.1.18 wranIfCpeInvitedRangRetries**

Maximum number ... ranging requests.

#### **13.1.4.1.1.17 13.1.4.1.1.19 wranIfCpeDSxReqRetries**

Maximum number ... on DSx-REQ.

#### **13.1.4.1.1.18 13.1.4.1.1.20 wranIfCpeDSxRspRetries**

Maximum number ... on DSx-RSP.

#### **13.1.4.2 wranIfCpeTrapControl**

~~wranIfCpeTrapControl is comprised of the following two MIBs that deal with SNMP traps: wranIfCpeTrapControlRegister and wranIfCpeThresholdConfigTable.~~

#### **13.1.4.2.1 wranIfCpeTrapControlRegister**

Defines a control element for traps related to CPE operation. This MIB object is a bitmap that allows the following SNMP traps to be set for CPEs: wranIfCpeDhcpSuccess, wranIfCpeRssiStatusChange, wranIfCpeEirpPerScStatusChange, wranIfCpeEirpStatusChange, wranIfCpeMaxEirpStatusChange, and wranIfCpeScmStateChange. wranIfCpeSilentState.

#### **13.1.4.3 13.1.4.2.2 wranIfCpeThresholdConfigTable**

This MIB provides a table that allows the setting of thresholds that can be used to detect the crossing of RSSI and EIRP thresholds. Each table is made up of one entry defined by wranIfCpeThresholdConfigEntry entries for low and high thresholds for RSSI and EIRP.

### **13.1.4.3.13.1.4.2.2.1 wranIfCpeThresholdConfigEntry**

This object ... wranIfCpeThresholdConfigTable.

#### **13.1.4.3.1.1 wranIfCpeThresholdConfigIndex**

Index of entry in this table (defaults to 1).

#### **13.1.4.3.1.213.1.4.2.2.1.1 wranIfCpeRssiLowThreshold**

Low threshold ... RSSI alarm.

#### **13.1.4.3.1.313.1.4.2.2.1.2 wranIfCpeRssiHighThreshold**

High threshold ... RSSI alarm.

#### **13.1.4.3.1.413.1.4.2.2.1.3 wranIfCpeEirpPerScLowThresholdwranIfCpeEirpLowThreshold**

Low threshold for generating an EIRP per subcarrier alarm.

#### **13.1.4.3.1.513.1.4.2.2.1.4 wranIfCpeEirpPerScHighThresholdwranIfCpeEirpHighThreshold**

High threshold for generating an EIRP per subcarrier alarm.

#### **13.1.4.3.1.6 wranIfCpeMaxEirpLowThreshold**

Low threshold for generating a maximum EIRP (over all 60 subchannels) alarm.

#### **13.1.4.3.1.7 wranIfCpeMaxEirpHighThreshold**

High threshold for generating a maximum EIRP (over all 60 subchannels) alarm.

***NOTE—For information for the former 13.1.4.2.3, see the new 13.1.4.5.***

### **13.1.4.4 wranIfCpeTrapDefinition**

This MIB group specifies the definition of CPE traps that can be enabled/disabled in wranIfCpeTrapControl.

#### **13.1.4.4.1 wranIfCpeRssiStatusChangeTrap**

This trap indicates that the RSSI is outside the range defined by wranIfCpeRssiLowThreshold and wranIfCpeRssiHighThreshold.

#### **13.1.4.4.2 wranIfCpeEirpPerScStatusChangeTrap**

This trap indicates that the EIRP per subcarrier is outside the range defined by wranIfCpeEirpPerScLowThreshold and wranIfCpeEirpPerScHighThreshold.

#### **13.1.4.4.3 wranIfCpeDhcpSuccessTrap**

This trap indicates whether a specific CPE has been successful in acquiring an IP address via DHCP.

#### **13.1.4.4.4 wranIfCpeScmStateChangeTrap**

This trap indicates that the CPE has entered the Idle state of the SCM Authentication state machine.

#### **13.1.4.4.5 wranIfCpeMaxEirpStatusChangeTrap**

This trap indicates that the maximum EIRP per subcarrier is outside the range defined by wranIfCpeMaxEirpLowThreshold and wranIfCpeMaxEirpHighThreshold.

#### **13.1.4.5 13.1.4.2.3 wranIfCpeNotificationObjectsTable**

This MIB provides a table to track notification objects that have been reported by traps on a particular CPE. There is one entry for each CPE's trap defining the notification objects for that particular CPE. Each entry is defined by wranIfCpeNotificationObjectsEntry.

##### **13.1.4.5.1 13.1.4.2.3.1 wranIfCpeNotificationObjectsEntry**

This object ... wranIfCpeNotificationObjectsTable.

###### **13.1.4.5.1.1 wranIfCpeNotificationObjectsEntryIndex**

Index of entry in the table.

###### **13.1.4.5.1.2 13.1.4.2.3.1.1 wranIfCpeNotificationMacAddresswranIfCpeMacAddress**

MAC address ... the trap.

###### **13.1.4.5.1.3 13.1.4.2.3.1.2 wranIfCpeRssiStatus**

An RSSI alarm is generated when RSSI is lower than wranIfCpeRssiLowThreshold or higher than wranIfCpeRssiHighThreshold. This alarm is generated when wranIfCpeRssiStatusChange in wranIfCpeTrapControl is set.

###### **13.1.4.5.1.4 13.1.4.2.3.1.3 wranIfCpeEirpPerScStatuswranIfCpeEirpStatus**

An EIRP RSSI alarm is generated when EIRP is lower than wranIfCpeEirpPerScLowThreshold or higher than wranIfCpeEirpPerScHighThreshold. This alarm is generated when wranIfCpeEirpPerScStatusChange in wranIfCpeTrapControl is set.

###### **13.1.4.5.1.5 wranIfCpeMaxEirpStatus**

An EIRP alarm is generated when EIRP is lower than wranIfCpeMaxEirpLowThreshold or higher than wranIfCpeMaxEirpHighThreshold. This alarm is generated when wranIfCpeMaxEirpStatusChange in wranIfCpeTrapControl is set.

###### **13.1.4.5.1.6 wranIfCpeDhcpStatus**

An DHCP alarm is generated when CPE is able to obtain an IP address via DHCP. This alarm is generated when wranIfCpeDhcpSuccess in wranIfCpeTrapControl is set.

#### **13.1.4.5.1.7 wranIfCpeScmStatus**

An SCM state alarm is generated when the CPE's authentication state machine changes state. This alarm is generated when wranIfCpeScmStateChange in wranIfCpeTrapControl is set.

#### **13.1.4.6 wranIfCpeMibGroups**

This object helps define which MIB groups are available in this module and which MIB objects are part of each group. Two groups are defined: wranIfCpeMibConfigGroup and wranIfCpeMibNotificationsGroup.

##### **13.1.4.6.1 wranIfCpeMibConfigGroup**

This group contains configuration objects for the CPE.

##### **13.1.4.6.2 wranIfCpeTrapControlGroup**

This group contains configuration objects related to enabling/disabling traps for the CPE.

##### **13.1.4.6.3 wranIfCpeMibNotificationsGroup**

This group contains CPE event notifications.

#### **13.1.4.7 wranIfCpeMibCompliance**

MIB objects that are optional and mandatory for CPE conformance.

*Change 13.1.5 as follows:*

#### **13.1.5 wranIfSmMib**

This MIB group deals with objects related to the configuration, operation, and monitoring of the SM. This MIB group is made up of the following objects:

- wranIfSmConfigTable: Definition of system parameters, timers, and constants related to SM operation.
- wranIfSmPendingBlmReqTable: Tracks the status of the execution of ongoing sensing requests (BLM-REQ).
- wranIfSmBlmRepTable: Tracks the status of ongoing reporting (BLM-REP) in response to sensing requests.
- wranIfSmChClassificationStatusTable: Tracks classification status of channels the SM is managing.
- wranIfSmChannelSetTable: Stores information related to the Occupied, Backup, and Local Priority Channel sets used by the SM.
- wranIfSmCurrentStatusTable: Tracks current state of the SM state machine.
- wranIfSmRegTrackingTable: Tracks the location of CPEs currently associated with the BS.
- wranIfSmTrapControl: Control element related to enabling/disabling of traps for the SM.
- wranIfSmTrapDefinition: Definition of traps that can be enabled/disabled in wranIfSnTrapControl.

- wranIfSmNotificationObjectsTable: Contains information related to most recent event raise by a trap.
- wranIfSmMibGroups: Definition of which MIB groups are available within this module and which MIB objects are a part of each group.
- wranIfSmMibCompliance: Defines MIB objects that are optional and mandatory for SM compliance.

### 13.1.5.1 wranIfSmConfigTable

#### 13.1.5.1.1 wranIfSmConfigEntry

*Change the subclauses of 13.1.5.1.1 as follows:*

##### 13.1.5.1.1.1 wranIfSmConfigIndex

Index of entry in the table (defaults to 1).

##### 13.1.5.1.1.2 13.1.5.1.1.1 wranIfSmT31

Wait for BLM-REP timeout.

##### 13.1.5.1.1.3 13.1.5.1.1.2 wranIfSmChAvailabilityCheckTime wranIfSmSsaChAvailabilityCheckTime

Time during ... TV channel.

##### 13.1.5.1.1.4 13.1.5.1.1.3 wranIfSmNonOccupancyPeriod wranIfSmSsaNonOccupancyPeriod

The required ... EIRP level.

##### 13.1.5.1.1.5 13.1.5.1.1.4 wranIfSmChannelDetectionTime wranIfSmSsaChannelDetectionTime

Maximum time ... WRAN operation.

##### 13.1.5.1.1.6 13.1.5.1.1.5 wranIfSmChannelSetupTime wranIfSmSsaChannelSetupTime

The window ... TV channel.

##### 13.1.5.1.1.7 13.1.5.1.1.6 wranIfSmChannelOpeningTxTime wranIfSmSsaChannelOpeningTxTime

The aggregate ... Check Time.

##### 13.1.5.1.1.8 13.1.5.1.1.7 wranIfSmChannelMoveTime wranIfSmSsaChannelMoveTime

The time ... related channel.

**13.1.5.1.1.9 13.1.5.1.1.8 wranIfSmChannelClosingTxTime**  
**wranIfSmSsaChannelClosingTxTime**

The aggregate ... Detection Threshold.

**13.1.5.1.1.10 13.1.5.1.1.9 wranIfSmMicProtectionRadius**  
**wranIfSmSsaMicProtectionRadius**

Radius of ... the microphone.

**13.1.5.1.1.11 13.1.5.1.1.10 wranIfSmT41**  
**wranIfSmSsaT41**

Maximum time ... are detected.

**13.1.5.1.1.12 13.1.5.1.1.11 wranIfSmT42**  
**wranIfSmSsaT42**

Maximum time ... are detected.

**13.1.5.1.1.13 13.1.5.1.1.12 wranIfSmT43**  
**wranIfSmSsaT43**

Minimum time ... backup channel.

**13.1.5.1.1.14 13.1.5.1.1.13 wranIfSmT44**  
**wranIfSmSsaT44**

Maximum time ... (self-coexistence mode).

**13.1.5.1.1.15 13.1.5.1.1.14 wranIfSmT45**  
**wranIfSmSsaT45**

Maximum WRAN ... database service.

**13.1.5.1.1.16 13.1.5.1.1.15 wranIfSmT46**

Waiting time ... backup channel.

**13.1.5.1.1.17 13.1.5.1.1.16 wranIfSmT59**  
**wranIfSmSsaT59**

Waiting time ... do so.

**13.1.5.1.1.18 13.1.5.1.1.17 wranIfSmT47**  
**wranIfSmSsaT47**

The prescribed ... database service.

**13.1.5.1.1.19 13.1.5.1.1.18 wranIfSmT48**  
**wranIfSmSsaT48**

Lapse timer ... spectrum sensing.

**13.1.5.1.1.20 13.1.5.1.1.19 wranIfSmT49**  
**wranIfSmSsaT49**

Lapse timer ... spectrum sensing.

**13.1.5.1.1.21 13.1.5.1.1.20 wranIfSmT50**  
**wranIfSmSsaT50**

Lapse timer ... spectrum sensing.

**13.1.5.1.1.22 13.1.5.1.1.21 wranIfSmT51wranIfSmSsaT51**

Initiated when ... the SM.

**13.1.5.1.1.23 13.1.5.1.1.22 wranIfSmT53wranIfSmSsaT53**

The parameter ... (Annex A).

**13.1.5.1.1.24 13.1.5.1.1.23 wranIfSmT54wranIfSmSsaT54**

The parameter ... to  $T_{\text{sensout}}$ .

**13.1.5.1.1.25 13.1.5.1.1.24 wranIfSmT55wranIfSmSsaT55**

The  $T_{55}$  ... required accuracy.

**13.1.5.1.1.26 13.1.5.1.1.25 wranIfSmT60wranIfSmSsaT60**

The  $T_{60}$  or  $T_{\text{sensout}}$  parameter corresponds to the maximum length of time required to carry out the out-of-band sensing process to clear one channel (see Figure 178). Manufacturers need to specify the sensing time required to detect the specified signals with required accuracy for out-of-band sensing.

**13.1.5.2 wranIfSmPendingBlmReqTable**

**13.1.5.2.1 wranIfSmPendingBlmReqEntry**

*Change the subclauses of 13.1.5.2.1 as follows:*

**13.1.5.2.1.1 wranIfSmPendinBlmReqIndex**

Index of entry in this table.

**13.1.5.2.1.23 13.1.5.2.1.1 wranIfSsaPendingBlmReqTransactionId**

Transaction ID of BLM-REQ.

**13.1.5.2.1.3 wranIfSmPendingBlmReqMsgSize**

Size of BLM-REQ message pending a report.

**13.1.5.2.1.43 13.1.5.2.1.2 wranIfSmPendingBlmReqMsg**

Contents of ... a report.

**13.1.5.2.1.51 13.1.5.2.1.3 wranIfSmPendingBlmRspReceived**

Indication of ... from SSA.

**13.1.5.2.1.61 13.1.5.2.1.4 wranIfSmPendingBlmRspMulticastReceived**

If BLM-REQ ... multicast group.

**13.1.5.2.1.7 13.1.5.2.1.5 wranIfSmPendingBlmRepTimeout**

Indication of ... this BLM-REP.

**13.1.5.2.1.8 13.1.5.2.1.6 wranIfSmPendingBlmRepReceived**

Indication of ... from SSA.

**13.1.5.2.1.9 13.1.5.2.1.7 wranIfSmPendingBlmRepMulticastReceived**

If BLM-REQ ... multicast group.

**13.1.5.2.1.10 13.1.5.2.1.8 wranIfSsaPendingBlmRepAck**

Indication of ... to SSA(s).

**13.1.5.3 wranIfSmBlmRepTable**

**13.1.5.3.1 wranIfSmBlmRepEntry**

*Change the subclauses of 13.1.5.3.1 as follows:*

**13.1.5.3.1.1 wranIfSmBlmRepIndex**

Index of entry in the table.

**13.1.5.3.1.2 13.1.5.3.1.1 wranIfSmBlmRepSid**

SID of ... the BLM-REP.

**13.1.5.3.1.3 13.1.5.3.1.2 wranIfSmBlmRepTransactionId**

Transaction ID ... wranIfSmPendingBlmReqTable.

**13.1.5.3.1.4 wranIfSmBlmRepMsgSize**

Size of BLM-REP msg.

**13.1.5.3.1.5 13.1.5.3.1.3 wranIfSmBlmRepMsg**

Contents of BLM-REP msg.

**13.1.5.4 wranIfSmChClassificationStatusTable**

**13.1.5.4.1 wranIfSmChClassificationStatusEntry**

*Change the subclauses of 13.1.5.4.1 as follows:*

#### **13.1.5.4.1.1 wranIfSmChClassificationIndex**

Index of entry in this table.

#### **13.1.5.4.1.2 13.1.5.4.1.1 wranIfSmManagedChannel**

Channel number of channel being managed.

#### **13.1.5.4.1.3 13.1.5.4.1.2 wranIfSmManagedChannelStatus**

The state ... in IPC-UPD).

#### **13.1.5.4.1.4 13.1.5.4.1.3 wranIfSmManagedChannelRecentEvent**

Most recent ... current state.

*To create a new 13.1.5.5 with subclauses, change the former 13.1.5.5 through 13.1.5.14 as follows:*

### **13.1.5.5 wranIfSmChannelSetTable**

This MIB object represents a table that stores information related to the contents of the Occupied, Backup, and Local Priority Channel sets used by the SM (see 10.2.3.2). There is one entry in this table defined by wranIfSmChannelSetEntry.

#### **13.1.5.5.1 wranIfSmChannelSetEntry**

This object defines an entry in wranIfSmChannelSetTable. There is only one entry in this table.

##### **13.1.5.5.1.1 wranIfSmChannelSetIndex**

Index of entry in the table (defaults to 1).

##### **13.1.5.5.1.2 13.1.5.5 wranIfSmSizeWranOccupiedChannelSet**

Number of ... Channel Set.

##### **13.1.5.5.1.3 13.1.5.6 wranIfSmWranOccupiedChannelSet**

Vector of ... (see 10.2.3.2).

##### **13.1.5.5.1.4 13.1.5.7 wranIfSmSizeNghbrWranBackupChannelSet**

Number of ... Channel Set.

##### **13.1.5.5.1.5 13.1.5.8 wranIfSmNghbrWranBackupChannelSet** **wranIfSmNghbrOccupiedChannSet**

Vector of ... (see 9.2.3.2).

##### **13.1.5.5.1.6 13.1.5.9 wranIfSmSizeLocalPrioritySet1**

Number of ... Set 1.

**13.1.5.5.1.713.1.5.10 wranIfSmLocalPrioritySet1**

Vector of ... (see 10.2.3.2).

**13.1.5.5.1.813.1.5.11 wranIfSmSizeLocalPrioritySet2**

Number of ... Set 2.

**13.1.5.5.1.913.1.5.12 wranIfSmLocalPrioritySet2**

Vector of ... (see 10.2.3.2).

**13.1.5.5.1.1013.1.5.13 wranIfSmSizeLocalPrioritySet3**

Number of ... wranIfSmSizeWranOccupiedChannelSet.

**13.1.5.5.1.1113.1.5.14 wranIfSmLocalPrioritySet3**

Vector of ... wranIfSmWranOccupiedChannelSet.

*To create a new 13.1.5.6 with subclauses, change the former 13.1.5.15 and its subclauses as follows:*

**13.1.5.613.1.5.15 wranIfSmCurrentStatusTable**

This MIB ... wranIfSmCurrentStatusEntry.

**13.1.5.6.143.1.5.15.1 wranIfSmCurrentStatusEntry**

This object ... wranIfSmCurrentStatusTable.

**13.1.5.6.1.1 wranIfSmCurrentStatusIndex**

Index of entry in the table.

**13.1.5.6.1.213.1.5.15.1.1 wranIfSmCurrentState**

The state (see [Figure 164](#)[Figure 162](#)) that the SM is in.

**13.1.5.6.1.313.1.5.15.1.2 wranIfSmRecentEvent**

Recent event ... in 10.2.6.1.

**13.1.5.6.1.413.1.5.15.1.3 wranIfSmRecentAction**

Recent action ... in 10.2.6.1.

**13.1.5.6.1.513.1.5.15.1.4 wranIfSmInitiateChannelMove**

Current value ... flag.

**13.1.5.6.1.6****13.1.5.15.1.5 wranIfSmSelfCoexistenceMode**

Current value ... flag.

**13.1.5.6.1.7****13.1.5.15.1.6 wranIfSmCurrentOperatingChannel**

Current operating channel.

**13.1.5.6.1.8****13.1.5.15.1.7 wranIfSmRecentSignalType**

Type of signal recently detected (see Table 237).

**13.1.5.6.1.9****13.1.5.15.1.8 wranIfSmCurrentT47**

Current value of T47.

**13.1.5.6.1.10****13.1.5.15.1.9 wranIfSmCurrentT46**

Current value of T46.

*To create a new 13.1.5.7 with subclauses, change the former 13.1.5.16 and its subclauses as follows:*

**13.1.5.7****13.1.5.16 wranIfSmRegTrackingTable**

This MIB ... wranIfSmRegTrackingEntry.

**13.1.5.7.1****13.1.5.16.1 wranIfSmRegTrackingEntry**

This object ... wranIfSmRegTrackingTable.

**13.1.5.7.1.1 wranIfSmRegTrackingIndex**

Index of entry in the table.

**13.1.5.7.1.2****13.1.5.16.1.1 wranIfSmRegTrackingCpeSid**

SID of ... with BS.

**13.1.5.7.1.3****13.1.5.16.1.2 wranIfSmRegTrackingCurrentT30**

Current value ... by SM.

**13.1.5.7.1.4****13.1.5.16.1.3 wranIfSmRegTrackingLocStringSize**

Size of ... in octets.

**13.1.5.7.1.5****13.1.5.16.1.4 wranIfSmRegTrackingLocString**

CPE's location string.

***Insert the following new subclauses (13.1.5.8 to 13.1.5.12) after 13.1.5.7.1.5:***

### **13.1.5.8 wranIfSmTrapControl**

Defines control elements for traps related to the operation of the SM. This is a 9-bit field that enables setting a trap for particular SM events: wranIfSmBlmReqChange, wranIfSmBlmRepChange, wranIfSmOccupiedChannelSetChange, wranIfSmNghbrBackupChannelSetChange, wranIfSmLocalPrioritySet1Change, wranIfSmLocalPriority2Change, wranIfSmLocalPriority3Change, wranIfSmCurrentStatusChange, and wranIfSmRegTrackingChange.

### **13.1.5.9 wranIfSmTrapDefinition**

This MIB group specifies the definition of traps that can be enabled/disabled in wranIfSmTrapControl.

#### **13.1.5.9.1 wranIfSmBlmReqChangeTrap**

This trap contains the information related to a BLM-REQ that is pending in the SM.

#### **13.1.5.9.2 wranIfSmBlmRepChangeTrap**

This trap contains the information related to a BLM-REP that is received by the SM.

#### **13.1.5.9.3 wranIfSmOccupiedChannelSetChangeTrap**

This trap contains the information related to the current state of the Occupied Channel Set in the SM.

#### **13.1.5.9.4 wranIfSmNghbrBackupChannelSetChangeTrap**

This trap contains the information related to the current state of the Neighbor WRAN Backup Channel Set in the SM.

#### **13.1.5.9.5 wranIfSmLocalPrioritySet1ChangeTrap**

This trap contains the information related to the current state of the Local Priority Set 1 in the SM.

#### **13.1.5.9.6 wranIfSmLocalPrioritySet2ChangeTrap**

This trap contains the information related to the current state of the Local Priority Set 2 in the SM.

#### **13.1.5.9.7 wranIfSmLocalPrioritySet3ChangeTrap**

This trap contains the information related to the current state of the Local Priority Set 3 in the SM.

#### **13.1.5.9.8 wranIfSmCurrentStatusChangeTrap**

This trap contains the information related to the current state the SM is in.

#### **13.1.5.9.9 wranIfSmRegTrackingChangeTrap**

This trap contains the information related to tracking the location of CPEs within the purview of the BS.

### **13.1.5.10 wranIfSmNotificationObjectsTable**

This MIB provides a table to track notification objects that have been reported by traps related to the operation of the SM. It is made up of one entry containing the objects related to the most recent trap/event. The entry is defined by wranIfSmNotificationObjectsEntry.

#### **13.1.5.10.1 wranIfSmNotificationObjectsEntry**

This object defines an entry in wranIfSmNotificationObjectsTable.

##### **13.1.5.10.1.1 wranIfSmNotificationObjectsEntryIndex**

Index of entry in the table.

##### **13.1.5.10.1.2 wranIfSmNotificationSid**

SID of station generating trap. wranIfNotificationSid set == 0 is reserved for traps dealing with channel set management (see wranIfSmOccupiedChannelSetChangeTrap, wranIfSmNghbrBackupChannelSetChangeTrap, wranIfSmLocalPrioritySet1ChangeTrap, wranIfSmLocalPrioritySet2ChangeTrap, wranIfSmLocalPrioritySet3ChangeTrap) and the current state of the SM (see wranIfSmCurrentStatusChangeTrap). wranIfNotificationSid set == 1..511 when dealing with traps for bulk measurement (see wranIfSmBlmReqChangeTrap, wranIfSmBlmRepChangeTrap) or CPE registration tracking (see wranIfSmRegTackingChangeTrap).

##### **13.1.5.10.1.3 wranIfSmNotificationBlmTransactionId**

The transaction ID of the bulk measurement transaction. Only pertinent when wranIfSmBlmReqChangeTrap or wranIfSmBlmRepChangeTrap is enabled.

##### **13.1.5.10.1.4 wranIfSmNotificationSizeOccupiedChannelSet**

Size of the current/new WRAN Occupied Channel Set. Only pertinent when wranIfSmOccupiedChannelSetChangeTrap is enabled.

##### **13.1.5.10.1.5 wranIfSmNotificationOccupiedChannelSet**

The current/new contents of the WRAN Occupied Channel Set. Only pertinent when wranIfSmOccupiedChannelSetChangeTrap is enabled.

##### **13.1.5.10.1.6 wranIfSmNotificationSizeBackupChannelSet**

Size of the current/new Neighbor WRAN Backup Channel Set. Only pertinent when wranIfSmNghbrBackupChannelSetChangeTrap is enabled.

##### **13.1.5.10.1.7 wranIfSmNotificationBackupChannelSet**

The current/new contents of the Neighbor WRAN Backup Channel Set. Only pertinent when wranIfSmNghbrBackupChannelSetChangeTrap is enabled.

#### **13.1.5.10.1.8 wranIfSmNotificationSizeLocalPrioritySet1**

Size of the current/new Local Priority Set 1. Only pertinent when wranIfSmLocalPrioritySet1ChangeTrap is enabled.

#### **13.1.5.10.1.9 wranIfSmNotificationLocalPrioritySet1**

The current/new contents of the Local Priority Set 1. Only pertinent when wranIfSmLocalPrioritySet1ChangeTrap is enabled.

#### **13.1.5.10.1.10 wranIfSmNotificationSizeLocalPrioritySet2**

Size of the current/new Local Priority Set 2. Only pertinent when wranIfSmLocalPrioritySet2ChangeTrap is enabled.

#### **13.1.5.10.1.11 wranIfSmNotificationLocalPrioritySet2**

The current/new contents of the Local Priority Set 2. Only pertinent when wranIfSmLocalPrioritySet2ChangeTrap is enabled.

#### **13.1.5.10.1.12 wranIfSmNotificationSizeLocalPrioritySet3**

Size of the current/new Local Priority Set 3. Only pertinent when wranIfSmLocalPrioritySet3ChangeTrap is enabled.

#### **13.1.5.10.1.13 wranIfSmNotificationLocalPrioritySet3**

The current/new contents of the Local Priority Set 3. Only pertinent when wranIfSmLocalPrioritySet3ChangeTrap is enabled.

#### **13.1.5.10.1.14 wranIfSmNotificationRecentAction**

Value of wranIfSmRecentAction that triggered transition to current state of SM. Only pertinent when wranIfSmCurrentStatusChangeTrap is enabled.

#### **13.1.5.10.1.15 wranIfSmPendingBlmReqStatus**

Indicates BLM-RSP pertaining to bulk measurement transaction (defined by wranIfSmNotificationBlmTransactionId) was received from wranIfSmNotificationSid, if wranIfSmNotificationSid is a unicast SID, or if all BLM-RSP received from members of the multicast group identified by wranIfSmNotificationSid.

#### **13.1.5.10.1.16 wranIfSmBlmRepStatus**

Indicates whether BLM-ACK has been sent, pertaining to BLM-REP received in bulk measurement transaction defined by wranIfSmNotificationBlmTransactionId.

#### **13.1.5.10.1.17 wranIfSmOccupiedChannelSetStatus**

Indication of whether channels have been added or removed when the WRAN Occupied Channel Set is modified.

### **13.1.5.10.1.18 wranIfSmNghbrBackupChannelSetStatus**

Indication of whether channels have been added or removed when the Neighbor WRAN Backup Channel Set is modified.

### **13.1.5.10.1.19 wranIfSmLocalPrioritySet1Status**

Indication of whether channels have been added or removed when the Local Priority Set 1 is modified.

### **13.1.5.10.1.20 wranIfSmLocalPrioritySet2Status**

Indication of whether channels have been added or removed when the Local Priority Set 2 is modified.

### **13.1.5.10.1.21 wranIfSmLocalPrioritySet3Status**

Indication of whether channels have been added or removed when the Local Priority Set 3 is modified.

### **13.1.5.10.1.22 wranIfSmCurrentStateStatus**

Bitmap indicating current value of Initiate\_Channel\_Move flag, value of Self\_Coexistence\_Mode flag, whether operating channel assignment has been changed, whether recently detected signal was properly classified (i.e., not found to be == undetermined), whether T47 expired, and whether T46 has expired.

### **13.1.5.11 wranIfSmMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are a part of each group.

#### **13.1.5.11.1 wranIfSmConfigGroup**

This group contains objects related to configuration of the SM.

#### **13.1.5.11.2 wranIfSmPendingBlmReqGroup**

This group contains objects related to tracking pending BLM-REQs.

#### **13.1.5.11.3 wranIfSmBlmReqGroup**

This group contains objects related to tracking received BLM-REPs.

#### **13.1.5.11.4 wranIfSmChClassificationGroup**

This group contains objects used to track how channels the SM is managing have been classified.

#### **13.1.5.11.5 wranIfSmChannelSetGroup**

This group contains objects used to track the various channel sets with which the SM operates.

#### **13.1.5.11.6 wranIfSmCurrentStatusGroup**

This group contains objects used to track the current state of the SM.

### **13.1.5.11.7 wranIfSmRegTrackingGroup**

This group contains objects the SM uses to keep track of the location of registered CPEs.

### **13.1.5.11.8 wranIfSmTrapControlGroup**

This group contains objects related to enabling/disabling traps related to SM operation.

### **13.1.5.11.9 wranIfSmNotificationsGroup**

This group contains notification objects related to traps configured for the SM.

### **13.1.5.12 wranIfSmMibCompliance**

Defines MIB objects that are optional and mandatory for SM compliance.

*Change 13.1.6 as follows:*

### **13.1.6 wranIfSsaMib**

This MIB group deals with objects related to the configuration, operation, and monitoring of the Spectrum Automaton.

The automaton needs to be told what needs to be sensed in the given regulatory domain. This can be done through the MIB referring to the regulatory domain information from Annex A. The CPE also need to be told which type of incumbent requires urgent, less urgent, and non-urgent reporting to the BS (see Table A.7). The background sensing done by the automaton shall be done under the MIB guidance.

This MIB group is made up of the following objects:

- wranIfSsaSensingCapTable: Definition of SSA sensing capabilities.
- wranIfSsaStatusTable: Tracks the status of the SSA state machine.
- wranIfSsaConfigTable: Defines the default configuration of SSA timers and constants.
- wranIfSsaPendingBlmRepTable: Tracks the status of ongoing sensing reporting (BLM-REP) the SSA has been assigned.
- wranIfSsaSensingRecordTable: Tracks status of sensing on each channel.
- wranIfSsaSsfMode0OutputTable: Tracks output of Mode 0 sensing by SSF.
- wranIfSsaSsfMode1OutputTable: Tracks output of Mode 1 sensing by SSF.
- wranIfSsaSsfMode2OutputTable: Tracks output of Mode 2 sensing by SSF.
- wranIfSsaSsfWiMicMSFTable: Tracks output of wireless microphone beacon sensing by SSF.
- wranIfSsaGeolocationTable: Tracks calculation of parameters used in geolocation functions.
- wranIfSsaTrapControl: Defines control element to enable/disable traps related to SSA.
- wranIfSsaTrapDefinition: Definition of traps that can be enabled for SSA monitoring.
- wranIfSsaNotificationObjectsTable: Tracks notification objects reported by SSA traps.
- wranIfSsaMibGroups: Defines MIB groups associated with this module.
- wranIfSsaMibCompliance: Defines MIB objects that are optional and mandatory for SSA compliance.

*Change 13.1.6.1 and its subclauses as follows:*

### **13.1.6.1 wranIfSsaSensingCapTable**

This MIB object represents a table that stores the current sensing capabilities for an SSA under control of the SM. There is one entry in this table for an SSA, defined by `wranIfSsaSensingCapEntry`. This MIB is stored at the BS and CPE. These values are also stored in `wranIfBsCpeRegCapabilityRspTable`, `wranIfBsRegisteredCpeTable` (see [13.1.2.2.7|10.4.2](#)) at the BS, in an entry specific to this CPE.

#### **13.1.6.1.1 wranIfSsaSensingCapEntry**

This object represents the entry that stores a CPE's sensing capabilities. The entry is identified by `wranIfSsaSensingCapIndex`.

##### **13.1.6.1.1.1 wranIfSsaSensingCapIndex**

Index of entry in this table (defaults to 1).

##### **13.1.6.1.1.2 wranIfSsaSensingThreshold**

This object ... -114 dBm).

##### **13.1.6.1.1.3 wranIfSsaSensRecContigPeriodDuration**

This object ... length value.

##### **13.1.6.1.1.4 wranIfSsaSensRecNumPeriods**

This object ... length value.

##### **13.1.6.1.1.5 wranIfSsaSensRecPeriodInterval**

This object ... length value.

### **13.1.6.2 wranIfSsaStatusTable**

#### **13.1.6.2.1 wranIfSsaStatusEntry**

*Change the subclauses of 13.1.6.2.1 as follows:*

##### **13.1.6.2.1.1 wranIfSsaStatusIndex**

Index of entry in the table (defaults to 1).

##### **13.1.6.2.1.2 wranIfSsaCurrentState**

The current ... Out-of-band Sensing”.

##### **13.1.6.2.1.3 wranIfSsaRecentEvent**

The recent ... Figure 173).

**13.1.6.2.1.413.1.6.2.1.3 wranIfSsaRecentAction**

The recent ... Figure 173).

**13.1.6.2.1.5 wranIfSsaIpcUpdChannelsSize**

Number of channels in wranIfSsaIpcUpdChannels.

**13.1.6.2.1.613.1.6.2.1.4 wranIfSsaIpcUpdChannelswranIfSsaInProhibitedChannels**

Contents of ... from SM.

**13.1.6.2.1.713.1.6.2.1.5 wranIfSsaCurrentT48**

Current value of T48 at the SSA in 0.1 s increments from 0 to 60 s.

**13.1.6.2.1.813.1.6.2.1.6 wranIfSsaCurrentT49**

Current value of T49 at the SSA in 0.1 s increments from 0 to 60 s.

**13.1.6.2.1.913.1.6.2.1.7 wranIfSsaCurrentT50**

Current value of T50 at the SSA in 0.1 s increments from 0 to 60 s.

**13.1.6.2.1.1013.1.6.2.1.8 wranIfSsaIntraFrameQpCycleLength**

Obtained from ... is canceled.

**13.1.6.2.1.1113.1.6.2.1.9 wranIfSsaIntraFrameQpCycleOffset**

Obtained from ... sensing cycle.

**13.1.6.2.1.1213.1.6.2.1.10 wranIfSsaIntraFrameQpCycleFrameBitmap**

Obtained from ... period Duration.

**13.1.6.2.1.1313.1.6.2.1.11 wranIfSsaIntraFrameQpDuration**

Obtained from ... take place.

**13.1.6.2.1.1413.1.6.2.1.12 wranIfSsaInterFrameQpDuration**

Obtained from ... currently scheduled.

**13.1.6.2.1.1513.1.6.2.1.13 wranIfSsaInterFrameQpOffset**

Obtained from ... will start.

### 13.1.6.3 wranIfSsaConfigTable

#### 13.1.6.3.1 wranIfSsaConfigEntry

*Change the subclauses of 13.1.6.3.1 as follows:*

##### 13.1.6.3.1.1 wranIfSsaConfigIndex

Index of entry in this table.

##### 13.1.6.3.1.213.1.6.3.1.1 wranIfSsaT19

Time DS-channel remains unusable.

##### 13.1.6.3.1.313.1.6.3.1.2 wranIfSsaT29

Wait for BLM-ACK timeout.

##### 13.1.6.3.1.413.1.6.3.1.3 wranIfSsaMaxBlmRepRetries

Maximum number ... sending BLM-REP.

##### 13.1.6.3.1.513.1.6.3.1.4 wranIfSsaChAvailabilityCheckTime wranIfSmSsaChAvailabilityCheckTime

Time during ... TV channel.

##### 13.1.6.3.1.613.1.6.3.1.5 wranIfSsaNonOccupancyPeriodwranIfSmSsaNonOccupancyPeriod

The required ... EIRP level.

##### 13.1.6.3.1.713.1.6.3.1.6 wranIfSsaChannelDetectionTime wranIfSmSsaChannelDetectionTime

Maximum time ... WRAN operation.

##### 13.1.6.3.1.813.1.6.3.1.7 wranIfSsaChannelSetupTimewranIfSmSsaChannelSetupTime

The window ... TV channel.

##### 13.1.6.3.1.913.1.6.3.1.8 wranIfSsaChannelOpeningTxTime wranIfSmSsaChannelOpeningTxTime

The aggregate ... Check Time.

##### 13.1.6.3.1.1013.1.6.3.1.9 wranIfSsaChannelMoveTimewranIfSmSsaChannelMoveTime

The time ... related channel.

##### 13.1.6.3.1.1113.1.6.3.1.10 wranIfSsaChannelClosingTxTime wranIfSmSsaChannelClosingTxTime

The aggregate ... Detection Threshold.

**13.1.6.3.1.12 13.1.6.3.1.11 wranIfSsaMicProtectionRadiuswranIfSmSsaMicProtectionRadius**

Radius of ... the microphone.

**13.1.6.3.1.13 13.1.6.3.1.12 wranIfSsaT41wranIfSmSsaT41**

Maximum time ... are detected.

**13.1.6.3.1.14 13.1.6.3.1.13 wranIfSsaT42wranIfSmSsaT42**

Maximum time ... are detected.

**13.1.6.3.1.15 13.1.6.3.1.14 wranIfSsaT43wranIfSmSsaT43**

Minimum time ... backup channel.

**13.1.6.3.1.16 13.1.6.3.1.15 wranIfSsaT44wranIfSmSsaT44**

Maximum time ... (self-coexistence mode).

**13.1.6.3.1.17 13.1.6.3.1.16 wranIfSsaT45wranIfSmSsaT45**

Maximum WRAN ... database service.

**13.1.6.3.1.18 13.1.6.3.1.17 wranIfSsaT59wranIfSmSsaT59**

Waiting time ... do so.

**13.1.6.3.1.19 13.1.6.3.1.18 wranIfSsaT47wranIfSmSsaT47**

The prescribed ... database service.

**13.1.6.3.1.20 13.1.6.3.1.19 wranIfSsaT48wranIfSmSsaT48**

Lapse timer ... spectrum sensing.

**13.1.6.3.1.21 13.1.6.3.1.20 wranIfSsaT49wranIfSmSsaT49**

Lapse timer ... spectrum sensing.

**13.1.6.3.1.22 13.1.6.3.1.21 wranIfSsaT50wranIfSmSsaT50**

Lapse timer ... spectrum sensing.

**13.1.6.3.1.23 13.1.6.3.1.22 wranIfSsaT51wranIfSmSsaT51**

Initiated when ... the SM.

**13.1.6.3.1.24 13.1.6.3.1.23 wranIfSsaT53wranIfSmSsaT53**

The parameter ... (Annex A).

**13.1.6.3.1.25 13.1.6.3.1.24 wranIfSsaT54wranIfSmSsaT54**

The parameter ... to  $T_{\text{sensout}}$ .

**13.1.6.3.1.26 13.1.6.3.1.25 wranIfSsaT55wranIfSmSsaT55**

The  $T_{55}$  ... in-band sensing.

**13.1.6.3.1.27 13.1.6.3.1.26 wranIfSsaT60wranIfSmSsaT60**

The  $T_{60}$  ... out-of-band sensing.

**13.1.6.4 wranIfSsaPendingBlmRepTable**

**13.1.6.4.1 wranIfSsaPendingBlmRepEntry**

*Change the subclauses of 13.1.6.4.1 as follows:*

**13.1.6.4.1.1 wranIfSsaPendingBlmReqIndex**

Index of entry in this table.

**13.1.6.4.1.2 13.1.6.4.1.1 wranIfSsaPendingBlmReqTransactionId**

Transaction ID for pending BLM-REQ.

**13.1.6.4.1.3 wranIfSsaPendingBlmReqMsgSize**

Size of BLM-REQ message stored in wranIfSsaPendingBlmReqMsg.

**13.1.6.4.1.4 13.1.6.4.1.2 wranIfSsaPendingBlmReqMsg**

Contents of pending BLM-REQ message.

**13.1.6.4.1.5 13.1.6.4.1.3 wranIfSsaPendingBlmRspSent**

Indication of ... been sent.

**13.1.6.4.1.6 13.1.6.4.1.4 wranIfSsaPendingBlmRepGenerated**

Indication of ... been executed.

**13.1.6.4.1.7 wranIfSsaPendingBlmRepMsgSize**

Size of BLM-REP message stored in wranIfSsaPendingBlmRepMsg.

**13.1.6.4.1.8 13.1.6.4.1.5 wranIfSsaPendingBlmRepMsg**

Contents of ... the BLM-REQ.

**13.1.6.4.1.9 13.1.6.4.1.6 wranIfSsaPendingBlmRepSent**

Indication of ... been sent.

**13.1.6.4.1.10 13.1.6.4.1.7 wranIfSsaPendingBlmRepAck**

Indication of whether BLM-ACK has been sent to acknowledge all transmitters of BLM-REP messages pertaining to BLM-REQ that was issued or not BLM REP pertaining to BLM REQ has been acknowledged (via BLM ACK).

**13.1.6.4.1.11 13.1.6.4.1.8 wranIfSsaPendingBlmRepNumTx**

Current number ... been resent.

**13.1.6.5 wranIfSsaSensingRecordTable**

**13.1.6.5.1 wranIfSsaSensingRecordEntry**

*Change the subclauses of 13.1.6.5.1 as follows:*

**13.1.6.5.1.1 wranIfSsaSensingRecordIndex**

Index of entry in the table.

**13.1.6.5.1.2 13.1.6.5.1.1 wranIfSsaSensingChannel**

Channel that ... in IPC-UPD.

**13.1.6.5.1.3 13.1.6.5.1.2 wranIfSsaTimeLastSensing**

Last time ... was sensed.

**13.1.6.5.1.4 13.1.6.5.1.3 wranIfSsaTimeLastPositive**

Last time ... this channel.

**13.1.6.5.1.5 13.1.6.5.1.4 wranIfSsaSensingPathRssi**

RSSI on sensing path.

**13.1.6.5.1.6 13.1.6.5.1.5 wranIfSsaWranPathRssi**

RSSI on WRAN sensing path.

**13.1.6.5.1.7 13.1.6.5.1.6 wranIfSsaSignalType**

Type of ... the channel.

**13.1.6.5.1.8 13.1.6.5.1.7 wranIfSsaWranServiceAdvertisement**

If signal ... neighbor WRAN.

### **13.1.6.5.1.9 13.1.6.5.1.8 wranIfSsaldcUpdIndication**

Indication if channel is on IPC-UPD.

### **13.1.6.6 wranIfSsaSsfMode0OutputTable**

#### **13.1.6.6.1 wranIfSsaSsfMode0OutputEntry**

*Change the subclauses of 13.1.6.6.1 as follows:*

##### **13.1.6.6.1.1 wranIfSsaSsfMode0OutputIndex**

Index of entry in the table.

##### **13.1.6.6.1.2 13.1.6.6.1.1 wranIfSsaSsfMode0SignalType**

Type of ... be sensed.

##### **13.1.6.6.1.3 13.1.6.6.1.2 wranIfSsaSsfMode0SignalPresent**

Indication of ... was detected.

### **13.1.6.7 wranIfSsaSsfMode1OutputTable**

#### **13.1.6.7.1 wranIfSsaSsfMode1OutputEntry**

*Change the subclauses of 13.1.6.7.1 as follows:*

##### **13.1.6.7.1.1 wranIfSsaSsfMode1OutputIndex**

Index of entry in table.

##### **13.1.6.7.1.2 13.1.6.7.1.1 wranIfSsaSsfMode1SignalType**

Type of ... be sensed.

##### **13.1.6.7.1.3 13.1.6.7.1.2 wranIfSsaSsfMode1SignalPresent**

Indication of ... was detected.

##### **13.1.6.7.1.4 13.1.6.7.1.3 wranIfSsaSsfMode1SignalConfidence**

Confidence level in signal present decision, where 0x00 represents no confidence and 0xFF represents total confidence (see Table 241).

### 13.1.6.8 wranIfSsaSsfMode2OutputTable

#### 13.1.6.8.1 wranIfSsaSsfMode2OutputEntry

*Change the subclauses of 13.1.6.8.1 as follows:*

##### 13.1.6.8.1.1 wranIfSsaSsfMode2OutputIndex

Index of entry in the table.

##### 13.1.6.8.1.2 wranIfSsaSsfMode2SignalType

Type of ... be sensed.

##### 13.1.6.8.1.3 wranIfSsaSsfMode2SignalRssiMean

~~wranIfSsaSsfMode0SignalRssiMean~~

Mean of RSSI signal measurements.

##### 13.1.6.8.1.4 wranIfSsaSsfMode2SignalStdDevRssi

~~wranIfSsaSsfMode0SignalStdDevRssi~~

Standard Deviation of RSSI signal measurements.

*Change 13.1.6.9 and its subclauses as follows:*

### 13.1.6.9 wranIfSsaSsfWiMicMSFTable

This object contains the current output ~~the payload of MSF1, MSF1+MSF2, or MSF1+MSF2+MSF3 of an IEEE 802.22.1 beacon on recently sensed channels. It is made up of multiple entries for each channel on which one or more MSFs have been a MSF1 was sensed on.~~ Each entry is defined by wranIfSsaSsfWiMicMSFEntry.

#### 13.1.6.9.1 wranIfSsaSsfWiMicMSFEntry

This object represents the entry in wranIfSsaSsfWiMicMSFTable.

##### 13.1.6.9.1.1 wranIfSsaSsfWiMicMSFIndex

An index to an entry in this table.

##### 13.1.6.9.1.2 wranIfSsaSsfWiMicMSFChannel

Channel number ... was captured.

##### 13.1.6.9.1.3 wranIfSsaSsfWiMicMSFPayloadSize

Size of MSF payload stored in wranIfSsaSsfWiMicMSFPayload. Indicates whether MSF1 by itself (17 octets), MSF1+MSF2 (68 octets), or MSF1+MSF2+MSF3 (101 octets) have been captured (see Figure 16, 7.2.1, 7.2.2, and 7.2.3 of IEEE Std 802.22.1-2010). This size does not reflect CRC1/CRC2/CRC3 from the MSFs.

**13.1.6.9.1.413.1.6.9.1.2 wranIfSsaSsfWiMicMSFPayloadwranIfSsaSsfWiMicMSF1Payload**

Payload of MSF1, MSF1+MSF2, or MSF1+MSF2+MSF3, not including the CRC1/CRC2/CRC3 field (see 7.2.1, 7.2.2, 7.2.3 of IEEE Std 802.22.1-2010).

**13.1.6.9.1.513.1.6.9.1.3 wranIfSsaSsfWiMicMSFCrc1Status**  
**wranIfSsaSsfWiMicMSF1Crc1Status**

Indication of ... of CRC1.

**13.1.6.9.1.6 wranIfSsaSsfWiMicMSFCrc2Status**

Indication of whether MSF2 passed verification of CRC2.

**13.1.6.9.1.7 wranIfSsaSsfWiMicMSFCrc3Status**

Indication of whether MSF3 passed verification of CRC3.

***Delete 13.1.6.10 to 13.1.6.11.1.3 as follows:***

**13.1.6.10 wranIfSsaSsfWiMicMSF2Table**

This object ... **13.1.6.10.1.3** ... of CRC2.

**13.1.6.11 wranIfSsaSsfWiMicMSF3Table**

This object ... **13.1.6.11.1.3** ... of CRC3.

***To create a new 13.1.6.10 with subclauses, change the former 13.1.6.12 and its subclauses as follows:***

**13.1.6.1013.1.6.12 wranIfSsaGeolocationTable**

This object contains the current parameters and calculations being used by the Geolocation component of the SSA. It is made up of one entry to contain current values being used/calculated in the BS-to-CPE fine ranging, CPE-to-CPE fine ranging, and geolocation calculation function outputs, and final geolocation string. It is made up of one entry, defined by `wranIfSsaGeolocationEntry`.

**13.1.6.10.143.1.6.12.1 wranIfSsaGeolocationEntry**

This object ... `wranIfSsaGeolocationTable`.

**13.1.6.10.1.1 wranIfSsaGeolocationIndex**

Index of entry in the table.

**13.1.6.10.1.2 wranIfSsaGeolocationVernier1Size**

Size of Vernier<sub>1</sub> data recorded only at the CPE.

### **13.1.6.10.1.3 13.1.6.12.1.1 wranIfSsaGeolocationVernier1**

Vernier<sub>1</sub>, recorded only at the CPE.

### **13.1.6.10.1.4 wranIfSsaGeolocationVernier2Size**

Size of Vernier<sub>2</sub> data recorded only at the BS.

### **13.1.6.10.1.5 13.1.6.12.1.2 wranIfSsaGeolocationVernier2**

Vernier<sub>2</sub>, recorded only at the BS.

### **13.1.6.10.1.6 wranIfSsaGeolocationVernier3Size**

Size of Vernier<sub>3</sub> data recorded only at the CPE.

### **13.1.6.10.1.7 13.1.6.12.1.3 wranIfSsaGeolocationVernier3**

Vernier<sub>3</sub>, recorded only at the CPE.

### **13.1.6.10.1.8 13.1.6.12.1.4 wranIfSsaGeolocationTRange1**

T<sub>Range1</sub>, also ... frame preamble.

### **13.1.6.10.1.9 13.1.6.12.1.5 wranIfSsaGeolocationTACbp**

TA<sub>CBP</sub>, Timing ... ranging calculations.

*Insert the following new subclauses (13.1.6.11 to 13.1.6.15) after 13.1.6.10.1.9:*

### **13.1.6.11 wranIfSsaTrapControl**

Defines control elements for traps related to interaction with the SSA. This is 9-bit field that enables setting a trap for particular CPE events: wranIfSsaSensingCpaChange, wranIfSsaStatusChange, wranIfSsaBImRepChange, wranIfSsaSsfMode0Change, wranIfSsaSsfMode2Change, wranIfSsaSsfRecordChange, wranIfSsaSsfMode1Change, wranIfSsaSsfWiMicChange, and wranIfSsaGeolocationChange.

### **13.1.6.12 wranIfSsaTrapDefinition**

This MIB group specifies the definition of traps that can be enabled/disabled in wranIfSsaTrapControl.

#### **13.1.6.12.1 wranIfSsaSensingCapChangeTrap**

This trap contains information related to the configuration of SSA sensing capabilities.

#### **13.1.6.12.2 wranIfSsaStatusChangeTrap**

This trap contains information related to current state of the SSA.

### **13.1.6.12.3 wranIfSsaBlmRepChangeTrap**

This trap contains information related to pending BLM transactions at the SSA.

### **13.1.6.12.4 wranIfSsaSensingRecordChangeTrap**

This trap contains information related to sensing records maintained by the SSA.

### **13.1.6.12.5 wranIfSsaSsfMode0ChangeTrap**

This trap contains information related to sensing output using Mode 0.

### **13.1.6.12.6 wranIfSsaSsfMode1ChangeTrap**

This trap contains information related to sensing output using Mode 1.

### **13.1.6.12.7 wranIfSsaSsfMode2ChangeTrap**

This trap contains information related to sensing output using Mode 2.

### **13.1.6.12.8 wranIfSsaSsfWiMicMSFChangeTrap**

This trap contains information related to sensing and capturing wireless microphone beacons (see IEEE Std 802.22.1-2010).

### **13.1.6.12.9 wranIfSsaGeolocationChangeTrap**

This trap contains information related to terrestrial geolocation.

## **13.1.6.13 wranIfSsaNotificationObjectsTable**

This MIB provides a table to track notification objects that have been reported by the traps related to operation of the SSA. It is made up of one entry, containing the objects related to the most recent trap/event. The entry is defined by `wranIfSsaNotificationObjectsEntry`.

### **13.1.6.13.1 wranIfSsaNotificationObjectsEntry**

Definition of an entry in `wranIfSsaNotificationObjectsTable`. Each entry is defined by `wranIfSsaNotificationIndex`.

#### **13.1.6.13.1.1 wranIfSsaNotificationIndex**

Index of entry in the table.

#### **13.1.6.13.1.2 wranIfSsaNotificationCurrentState**

Current state that SSA is in as defined by current value of `wranIfSsaCurrentState`.

#### **13.1.6.13.1.3 wranIfSsaNotificationRecentEvent**

Recent event that occurred for SSA as defined by current value of `wranIfSsaRecentEvent`.

#### **13.1.6.13.1.4 wranIfSsaNotificationRecentAction**

Recent action SSA has taken as defined by current value of `wranIfSsaRecentAction`.

#### **13.1.6.13.1.5 wranIfSsaNotificationPendingBlmRepIndex**

Index of entry in `wranIfSsaPendingBlmRepTable` that indicates the handling of which pending BLM-REP has triggered a trap.

#### **13.1.6.13.1.6 wranIfSsaNotificationSensingRecordIndex**

Index of entry in `wranIfSsaSensingRecordTable` that indicates the handling of which sensing record has triggered a trap.

#### **13.1.6.13.1.7 wranIfSsaSsfNotificationMode0OutputIndex**

Index of entry in `wranIfSsaSsfMode0OutputTable` that indicates the handling of which signal type detected by Mode 0 triggered a trap.

#### **13.1.6.13.1.8 wranIfSsaSsfNotificationMode1OutputIndex**

Index of entry in `wranIfSsaSsfMode1OutputTable` that indicates the handling of which signal type detected by Mode 1 triggered a trap.

#### **13.1.6.13.1.9 wranIfSsaSsfNotificationMode1Confidence**

Confidence value of entry indexed by `wranIfSsaSsfNotificationMode1OutputIndex` in `wranIfSsaSsfMode1OutputTable` that indicates handling of which signal type detected by Mode 1 triggered a trap.

#### **13.1.6.13.1.10 wranIfSsaSsfNotificationMode2OutputIndex**

Index of entry in `wranIfSsaSsfMode2OutputTable` that indicates the handling of which signal type detected by Mode 2 triggered a trap.

#### **13.1.6.13.1.11 wranIfSsaSsfNotificationMode2SignalRssiMean**

Current Mean of RSSI signal measurements, between  $-104$  dBm to  $+23.5$  dBm in  $0.5$  dB steps, for which a trap was caught.

#### **13.1.6.13.1.12 wranIfSsaSsfNotificationMode2SignalStdDevRssi**

Current Standard Deviation of RSSI signal measurements, between  $-104$  dBm to  $+23.5$  dBm in  $0.5$  dB steps, for which a trap was caught.

#### **13.1.6.13.1.13 wranIfSsaNotificationWiMicMSFIndex**

Index of entry in `wranIfSsaSsfWiMicMSFTable` that indicates the handling of which channel the capture of a wireless microphone beacon MSF has triggered a trap.

### **13.1.6.13.1.14 wranIfSsaSensingCapabilityStatus**

The 8-bit bitmap that indicates changes to the sensing capabilities defined in wranIfSsaSensingCapTable.

### **13.1.6.13.1.15 wranIfSsaStatus**

Concerning the current state of the SSA, this 10-bit bitmap indicates whether what type of change to SSA state occurred to trigger the trap.

### **13.1.6.13.1.16 wranIfSsaBlmRepStatus**

Concerning the current state of pending BLM-REQ messages, this object indicates how far along in the sensing and report generation process is the SSA.

### **13.1.6.13.1.17 wranIfSsaSensingRecordStatus**

A 5-bit bitmap concerning the update of an entry in wranIfSsaSensingRecordTable.

### **13.1.6.13.1.18 wranIfSsaSsfMode0Status**

Whether a specific signal type is present or not present using Mode 0 sensing.

### **13.1.6.13.1.19 wranIfSsaSsfMode1Status**

Whether a specific signal type is present or not present using Mode 1 sensing.

### **13.1.6.13.1.20 wranIfSsaSsfMode2Status**

Whether the mean or standard deviation RSSI for a detected signal has changed.

### **13.1.6.13.1.21 wranIfSsaSsfWiMicMSFStatus**

Indication of how much wireless microphone beacon payload has been received and decoded on a given channel.

### **13.1.6.13.1.22 wranIfSsaGeolocationStatus**

Indication of which geolocation parameters have been updated.

## **13.1.6.14 wranIfSsaMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

### **13.1.6.14.1 wranIfSsaSensingCapGroup**

This group represents objects related to the sensing capabilities supported by the SSA.

### **13.1.6.14.2 wranIfSsaStatusGroup**

This group represents objects related to the current state of the SSA.

### **13.1.6.14.3 wranIfSsaConfigGroup**

This group represents objects related to the configuration of the SSA.

### **13.1.6.14.4 wranIfSsaPendingBlmRepGroup**

This group represents objects related to the pending BLM transactions and sensing reports (BLM-REP) that are to be generated.

### **13.1.6.14.5 wranIfSsaSensingRecordGroup**

This group represents objects related to the sensing status of each channel.

### **13.1.6.14.6 wranIfSsaSsfMode0OutputGroup**

This group represents objects related to output of Mode 0 sensing.

### **13.1.6.14.7 wranIfSsaSsfMode1OutputGroup**

This group represents objects related to output of Mode 1 sensing.

### **13.1.6.14.8 wranIfSsaSsfMode2OutputGroup**

This group represents objects related to output of Mode 2 sensing.

### **13.1.6.14.9 wranIfSsaSsfWiMicMSFGroup**

This group contains objects related to the detection of wireless microphone beacons as defined by IEEE Std 802.22.1-2010.

### **13.1.6.14.10 wranIfSsaGeolocationGroup**

This group contains objects related to geolocation function of the SSA.

### **13.1.6.14.11 wranIfSsaTrapControlGroup**

This group contains objects related to enabling/disabling traps on the SSA.

### **13.1.6.14.12 wranIfSsaNotificationsGroup**

This group contains objects related to traps that are configured for the SSA.

### **13.1.6.15 wranIfSsaMibCompliance**

MIB objects that are optional and mandatory for SSA compliance.

*Change 13.1.7 as follows:*

### **13.1.7 wranIfDatabaseServiceMib**

This MIB group deals with objects related to the configuration of access to, as well as the interaction with, the database service. This group is made up of the following objects:

- wranIfBsMgmtInfoTable: Stores information on BS's management interface the database service can access.
- wranIfBsDeviceEnlistmentTable: Stores information regarding devices for which BS has attempted registration with database service.
- wranIfDbsChannelIndicationTable: Stores information on channels indicated as available by database service.
- wranIfDbsAccessTable: Stores access information for database service(s) that are available.
- wranIfDbsTrapControl: Enables/Disables recording of traps regarding database service access and interaction.
- wranIfDbsTrapDefinition: Defines traps related to database service access and interaction.
- wranIfDbsNotificationObjectsTable: Stores notification objects related to most recent trap.
- wranIfDbsMibGroups: Definition of MIB groups associated with this module.
- wranIfDbsMibCompliance: Definition of which MIB groups are mandatory or optional for compliance.

### **13.1.7.1 wranIfBsMgmtInfoTable**

#### **13.1.7.1.1 wranIfBsMgmtInfoEntry**

*Change the subclauses of 13.1.7.1.1 as follows:*

##### **13.1.7.1.1.1 wranIfBsMgmtInfoIndex**

Index of entry in the table (defaults to 0).

##### **13.1.7.1.1.2 wranIfBsSizeMgmtUrl**

Size of Base Station Management URL (see 14.2.1.3).

##### **13.1.7.1.1.3~~13.1.7.1.1.1~~ wranIfBsMgmtUrl**

Base Station Management URL (see 14.2.1.3~~10.7.1.1~~).

##### **13.1.7.1.1.4 wranIfBsSizeMgmtDeviceId**

Size of BS FCC Device ID (see 14.2.1.3).

##### **13.1.7.1.1.5~~13.1.7.1.1.2~~ wranIfBsMgmtDeviceId**

BS FCC Device ID (see 14.2.1.3~~10.7.1.1~~).

##### **13.1.7.1.1.6 wranIfBsSizeMgmtSn**

Size of BS serial number (see 14.2.1.3).

##### **13.1.7.1.1.7~~13.1.7.1.1.3~~ wranIfBsMgmtSn**

BS serial number (see 14.2.1.3~~10.7.1.1~~).

**13.1.7.1.1.8 wranIfBsSizeMgmtLocation**

Size of Location data string of BS (see 14.2.1.3).

**13.1.7.1.1.913.1.7.1.1.4 wranIfBsMgmtLocation**

Location data string of BS.

**13.1.7.1.1.1013.1.7.1.1.5 wranIfBsMgmtAntennaHeight**

Antenna height at the BS (see 14.2.1.3).

**13.1.7.1.1.11 wranIfBsSizeMgmtContactName**

Size of Contact Name for person(s) who has ownership of the BS (see 14.2.1.3).

**13.1.7.1.1.1213.1.7.1.1.6 wranIfBsMgmtContactName**

Contact Name for person(s) who has ownership of the BS (see 14.2.1.3).

**13.1.7.1.1.13 wranIfBsSizeMgmtContactPhysAddress**

Size of Physical address for the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.1413.1.7.1.1.7 wranIfBsMgmtContactPhysAddress**

Physical address for contacting the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.15 wranIfBsSizeMgmtEmailAddress**

Size of E-mail address for the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.1613.1.7.1.1.8 wranIfBsMgmtEmailAddress**

E-mail address for contacting the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.17 wranIfBsSizeMgmtPhoneNumber**

Size of Telephone number for the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.1813.1.7.1.1.9 wranIfBsMgmtPhoneNumber**

Telephone number for contacting the owner of the BS (see 14.2.1.3).

**13.1.7.1.1.19 wranIfBsSizeAccessUrl**

Size of Base Station Access Service URL (see 14.2.1.3).

**13.1.7.1.1.20 wranIfBsAccessUrl**

Base Station Access Service URL (see 14.2.1.3).

*Change 13.1.7.2 and its subclauses as follows:*

### **13.1.7.2 wranIfDbsDeviceEnlistmentTablewranIfBsDeviceEnlistmentTable**

This object stores information regarding information on devices entering the network that the BS has attempted to enlist/register with the database service. It is made up of multiple entriesvalues, each defined by wranIfDbsDeviceEnlistmentEntrywranIfBsDeviceEnlistmentEntry.

#### **13.1.7.2.1 wranIfDbsDeviceEnlistmentEntrywranIfBsDeviceEnlistmentEntry**

This object defines an entry in wranIfDbsDeviceEnlistmentTablewranIfBsDeviceEnlistmentTable.

##### **13.1.7.2.1.1 wranIfDbsDeviceEnlistmentIndex**

Index of entry in the table.

##### **13.1.7.2.1.213.1.7.2.1.1 wranIfDbsDeviceEnlistmentConfirmedwranIfBsDeviceEnlistmentConfirmed**

Has this enlistment been confirmed via receipt of M-DB-ENLISTMENT-CONFIRMATION M DEVICE ENLISTMENT CONFIRM (see 14.2.1.3.410.7.1.4) from the database service?

##### **13.1.7.2.1.313.1.7.2.1.2 wranIfDbsConfirmedDeviceTypewranIfBsDeviceType**

Type of ... personal/portable.

##### **13.1.7.2.1.4 wranIfDbsSizeConfirmedDeviceId**

Size of Device ID of device that is being enlisted/registered with the database service.

##### **13.1.7.2.1.513.1.7.2.1.3 wranIfDbsConfirmedDeviceIdwranIfBsDeviceId**

Device ID ... database service.

##### **13.1.7.2.1.6 wranIfDbsSizeConfirmedDeviceSn**

Size of Serial number of device that is being enlisted/registered with the database service.

##### **13.1.7.2.1.713.1.7.2.1.4 wranIfDbsConfirmedDeviceSnwranIfBsDeviceSn**

Serial number ... database service.

##### **13.1.7.2.1.8 wranIfDbsSizeConfirmedDeviceLocation**

Size of location string of device requesting enlistment.

##### **13.1.7.2.1.913.1.7.2.1.5 wranIfDbsConfirmedDeviceLocationwranIfBsDeviceLocation**

Location string ... requesting enlistment.

##### **13.1.7.2.1.10 wranIfDbsSizeProxyDeviceId**

Device ID of proxy device BS may use to send queries to the database.

**13.1.7.2.1.11 13.1.7.2.1.6 wranIfDbsProxyDeviceId**  
**wranIfBsProxyDeviceId**

Device ID ... the database.

**13.1.7.2.1.12 wranIfDbsSizeProxySn**

Size of Serial number of proxy device BS may use to send queries to the database.

**13.1.7.2.1.13 13.1.7.2.1.7 wranIfDbsProxySn**  
**wranIfBsProxySn**

Serial number ... the database.

**13.1.7.2.1.14 wranIfDbsSizeRespPartyName**

Name of party responsible for device enlistment/registration.

**13.1.7.2.1.15 13.1.7.2.1.8 wranIfDbsRespPartyName**  
**wranIfBsRespPartyName**

Name of ... enlistment/registration.

**13.1.7.2.1.16 13.1.7.2.1.9 wranIfDbsConfirmedDeviceAntennaHeight**  
**wranIfBsDeviceAntennaHeight**

Antenna height ... being enlisted.

**13.1.7.2.1.17 wranIfDbsSizeConfirmedDeviceContactName**

Size of Contact Name for person(s) who has ownership of the device; only pertinent if device type is fixed BS or CPE.

**13.1.7.2.1.18 13.1.7.2.1.10 wranIfDbsConfirmedDeviceContactName**  
**wranIfBsDeviceContactName**

Contact Name for person(s) who has ownership of the device; only pertinent *if* device type is fixed BS or CPE.

**13.1.7.2.1.19 wranIfDbsSizeConfirmedDeviceContactPhysAddress**

Size of Physical address for the owner of the device; only pertinent if device type is fixed BS or CPE.

**13.1.7.2.1.20 13.1.7.2.1.11 wranIfDbsConfirmedDeviceContactPhysAddress**  
**wranIfBsDeviceContactPhysAddress**

Physical address ... fixed CPE.

**13.1.7.2.1.21 wranIfDbsSizeConfirmedDeviceEmailAddress**

Size of E-mail address for the owner of the device; only pertinent if device type is fixed BS or CPE.

**13.1.7.2.1.22 13.1.7.2.1.12 wranIfDbsConfirmedDeviceEmailAddress**  
**wranIfBsDeviceEmailAddress**

E-mail address ... fixed CPE.

### **13.1.7.2.1.23 wranIfDbsSizeConfirmedDevicePhoneNumber**

Size of Telephone number for the owner of the device; only pertinent if device type is fixed BS or CPE.

### **13.1.7.2.1.2413.1.7.2.1.13 wranIfDbsConfirmedDevicePhoneNumber**

#### **wranIfBsDevicePhoneNumber**

Telephone number ... fixed CPE.

### **13.1.7.2.1.2513.1.7.2.1.14 wranIfDbsConfirmedDeviceAntennaInformation**

#### **wranIfBsDeviceAntennaInformation**

Antenna information ... database service.

### **13.1.7.2.1.2613.1.7.2.1.15 wranIfDbsConfirmedDeviceAntennaAzimuth**

#### **wranIfBsDeviceAntennaAzimuth**

Antenna azimuth ... database service.

### **13.1.7.2.1.2713.1.7.2.1.16 wranIfDbsConfirmedDeviceConfirmationMsgTime**

#### **wranIfBsDeviceConfirmationMsgTime**

Timestamp of transmission for ~~M-DB-ENLISTMENT-REQUEST~~ DEVICE ENLISTMENT REQUEST.

*Change 13.1.7.3 and its subclauses as follows:*

### **13.1.7.3 wranIfDbsChannelIndicationTable**

This object stores information on what channels have been indicated (upon receipt of M-DB-AVAILABLE-CHANNEL-INDICATION) as available and their EIRP limit at a given location for a particular device. It is made up of multiple entries, one each for the tuple of location||channel||EIRP||DeviceID. Each entry is defined by wranIfDbsChannelIndicationEntry.

#### **13.1.7.3.1 wranIfDbsChannelIndicationEntry**

Compound object ...wranIfDbsChannelIndicationTable.

##### **13.1.7.3.1.1 wranIfDbsChannelIndicationIndex**

Index of entry in this table.

##### **13.1.7.3.1.2 wranIfDbsSizeDeviceId**

Size of Device ID of device for which channel is indicated as available.

##### **13.1.7.3.1.313.1.7.3.1.1 wranIfDbsDeviceIdwranIfBsDeviceId**

Device ID ... as available.

##### **13.1.7.3.1.4 wranIfDbsSizeDeviceSn**

Size of Serial number of device for which channel is indicated as available.

**13.1.7.3.1.513.1.7.3.1.2 wranIfDbsDeviceSnwranIfBsDeviceSn**

Serial number ... as available.

**13.1.7.3.1.613.1.7.3.1.3 wranIfDbsDeviceChannelNumberwranIfBsDeviceChannelNumber**

Channel number ... is indicated.

**13.1.7.3.1.713.1.7.3.1.4 wranIfDbsDeviceMaxAllowedEirpwranIfBsDeviceMaxAllowedEirp**

Maximum allowed EIRP on the channel.

**13.1.7.3.1.8 wranIfDbsSizeDeviceLocation**

Size of Location string of device requesting for which channel availability is indicated.

**13.1.7.3.1.913.1.7.3.1.5 wranIfDbsDeviceLocationwranIfBsDeviceLocation**

Location string ... is indicated.

**13.1.7.3.1.1013.1.7.3.1.6 wranIfDbsDeviceDbsIndexwranIfBsDeviceDbsIndex**

Index of ... channel indication.

**13.1.7.4 wranIfDbsAccessTable**

**13.1.7.4.1 wranIfDbsAccessEntry**

*Change the subclauses of 13.1.7.4.1 as follows:*

**13.1.7.4.1.1 wranIfDbsAccessEntryIndex**

Index of entry in this table.

**13.1.7.4.1.2 wranIfDbsSizeAccessUrl**

Size of URL used to access database service.

**13.1.7.4.1.313.1.7.4.1.2 wranIfDbsAccessUrl**

URL used to access database service.

**13.1.7.4.1.413.1.7.4.1.3 wranIfDbsAccessCredentialType**

Indication of ... database service.

**13.1.7.4.1.5 wranIfDbsSizeAccessCertCredential**

Size of Certificate Credential BS or proxy device uses to authenticate access to the database; only pertinent when wranIfDbsAccessCredentialType is set to certificate.

#### **13.1.7.4.1.6 13.1.7.4.1.4 wranIfDbsAccessCertCredential**

Certificate Credential BS or proxy device used to authenticate access to the database; only pertinent when wranIfDbsAccessCredentialType is set to service, e.g., password, certificate.

#### **13.1.7.4.1.7 wranIfDbsSizeAccessUserID**

Size of login User ID used for accessing the database service; only pertinent when wranIfDbsAccessCredentialType is set to userID and password.

#### **13.1.7.4.1.8 wranIfDbsAccessUserID**

Login User ID used for accessing the database service; only pertinent when wranIfDbsAccessCredentialType is set to userID and password.

#### **13.1.7.4.1.9 wranIfDbsSizeAccessPassword**

Size of login password (or hash of password) used for accessing the database service; only pertinent when wranIfDbsAccessCredentialType is set to userID and password.

#### **13.1.7.4.1.10 wranIfDbsAccessPassword**

Login password (or hash of password) used for accessing the database service; only pertinent when wranIfDbsAccessCredentialType is set to userID and password.

#### **13.1.7.4.1.11 13.1.7.4.1.5 wranIfDbsAccessLastTxTime**

Time indication ... database service.

#### **13.1.7.4.1.12 13.1.7.4.1.6 wranIfDbsAccessLastRxTime**

Time indication ... database service.

#### **13.1.7.4.1.13 13.1.7.4.1.7 wranIfDbsAccessAntennaInfoRequired**

Indication of ... database service.

#### **13.1.7.4.1.14 wranIfDbsAccessPriority**

Priority of database service. Higher priority means that a particular database service will be preferred when device enlistment and channel indication requests need to be made.

***Insert the following new subclauses (13.1.7.5 to 13.1.7.9) after 13.1.7.4.1.14:***

#### **13.1.7.5 wranIfDbsTrapControl**

Defines control elements for traps related to interaction with the database service. This is 3-bit field that enables setting a trap for particular CPE events: wranIfDbsAvailabilityChange, wranIfDbsEnlistmentChange, and wranIfDbsChannelIndicationChange.

### **13.1.7.6 wranIfDbsTrapDefinition**

This MIB group specifies the definition of traps that can be enabled/disable in wranIfDbsTrapControl.

#### **13.1.7.6.1 wranIfDbsAvailabilityChangeTrap**

This trap contains information related to the last time a particular database service was accessed.

#### **13.1.7.6.2 wranIfDbsEnlistmentChangeTrap**

This traps contains information regarding the status of enlistment confirmation for a particular device in the network.

#### **13.1.7.6.3 wranIfDbsChannelIndicationChangeTrap**

This trap contains information regarding the status of channel indication responses from the database service.

### **13.1.7.7 wranIfDbsNotificationObjectsTable**

This MIB provides a table to track notification objects that have been reported by the traps related to access to the database. It is made up of one entry containing the objects related to the most recent trap/event. The entry is defined by wranIfDbsNotificationObjectsEntry.

#### **13.1.7.7.1 wranIfDbsNotificationObjectsEntry**

Definition of an entry in wranIfDbsNotificationObjectsTable. Each entry is identified by wranIfNotificationDeviceId.

##### **13.1.7.7.1.1 wranIfDbsNotificationObjectsEntryIndex**

Index of entry in the table.

##### **13.1.7.7.1.2 wranIfDbsNotificationSizeDeviceId**

Size of Device ID of the device for which trap status information is stored.

##### **13.1.7.7.1.3 wranIfDbsNotificationDeviceId**

Device ID of the device for which trap status information is stored.

##### **13.1.7.7.1.4 wranIfDbsNotificationSizeDeviceSn**

Size of Serial Number of the device for which trap status information is stored.

##### **13.1.7.7.1.5 wranIfDbsNotificationDeviceSn**

Serial Number of the device for which trap status information is stored.

##### **13.1.7.7.1.6 wranIfDbsNotificationDbsSizeAccessUrl**

Size of Access URL of database service with which device enlistment of channel indication query was exchanged.

### **13.1.7.7.1.7 wranIfDbsNotificationDbsAccessUrl**

Access URL of database service with which device enlistment of channel indication query was exchanged.

### **13.1.7.7.1.8 wranIfDbsAccessStatus**

Indication of whether a message is transmitted or received from database service.

### **13.1.7.7.1.9 wranIfDbsConfirmedDeviceStatus**

Indication of whether the enlistment of the device has been successfully completed.

### **13.1.7.7.1.10 wranIfDbsChannelIndicationStatus**

Indication of whether channels have been indicated as available for the device in question.

## **13.1.7.8 wranIfDbsMibGroups**

This object helps define which MIB groups are available within this module and which MIB objects are part of each group.

### **13.1.7.8.1 wranIfDbsMgmtGroup**

This group contains configuration objects related to the management interface on the BS that the database service can access.

### **13.1.7.8.2 wranIfDbsEnlistmentGroup**

This group contains configuration objects related to enlistment of devices.

### **13.1.7.8.3 wranIfDbsChannelIndicationGroup**

This group contains configuration objects related to indication of available channels.

### **13.1.7.8.4 wranIfDbsAccessGroup**

This group contains configuration objects related to current accessibility of the database service.

### **13.1.7.8.5 wranIfDbsTrapControlGroup**

This group contains configuration objects related to enabling/disabling traps related to the accessibility of the database service.

### **13.1.7.8.6 wranIfDbsNotificationsGroup**

This group contains notification objects related to traps configured for access to the database service.

### **13.1.7.9 wranIfDbsMibCompliance**

Defines MIB objects that are optional and mandatory for database service.

**Insert the following new subclauses (13.2 to 13.2.7) after 13.1.7.9:**

## 13.2 MIB module definitions (ASN.1)

### 13.2.1 wranDevMib

```

IEEE802dot22-WRAN-DEV-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPv2-CONF;

wranDevMib MODULE-IDENTITY
LAST-UPDATED      "201405300000Z" - May 30, 2014
ORGANIZATION      "IEEE 802.22"
CONTACT-INFO
    "WG E-mail: STDs-802-22@LISTSERV.IEEE.ORG
     WG Chair: Apurva N. Mody
     E-mail: apurva.mody@ieee.org
    TGA Chair/Editor: Ranga Reddy
    E-mail: ranga.reddy@ieee.org"
DESCRIPTION
    "This material is from IEEE Std 802.22a-2014
     Copyright (c) 2014. This MIB Module
     Defines device related manage objects
     for IEEE Std 802.22-2011 base Customer
     Premise Equipment and Base Station and
     is under
     iso(1).std(0).iso8802(8802).wran(22).wranDevMib(1)"
REVISION          "201405300000Z"
DESCRIPTION
    "The first version of IEEE802dot22-WRAN-DEV-MIB."
::= {iso std(0) iso8802(8802) wran(22) 1}

wranDevBsObjects      OBJECT IDENTIFIER ::= { wranDevMib 1 }
wranDevCpeObjects    OBJECT IDENTIFIER ::= { wranDevMib 2 }
wranDevCommonObjects OBJECT IDENTIFIER ::= { wranDevMib 3 }

wranDevBsObjects      OBJECT IDENTIFIER

```

```

                                ::= { wranDevMib 1 }
wranDevBsSoftwareUpgradeTable OBJECT IDENTIFIER
                                ::= { wranDevBsObjects 1 }
wranDevBsNotification          OBJECT IDENTIFIER
                                ::= { wranDevBsObjects 2 }

wranDevBsSoftwareUpgradeTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranDevBsSoftwareUpgradeEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table defines objects associated with BS
         software configuration"
    ::= { wranDevBsObjects 1 }

wranDevBsSoftwareUpgradeEntry OBJECT-TYPE
    SYNTAX      wranDevBsSoftwareUpgradeEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
         wranDevBsSoftwareUpgradeTable. Each entry is
         identified by wranDevBsDeviceIndex."
    INDEX { wranDevBsDeviceIndex }
    ::= { wranDevBsSoftwareUpgradeTable 1 }

wranDevBsSoftwareUpgradeEntry ::= SEQUENCE {
    wranDevBsDeviceIndex           INTEGER,
    wranDevBsVendorId             OCTET STRING,
    wranDevBsHwId                 OCTET STRING,
    wranDevBsCurrentSwVersion     OCTET STRING,
    wranDevBsDownloadSwVersion    OCTET STRING,
    wranDevBsUpgradeFileName      OCTET STRING,
    wranDevBsSoftwareUpgradeAdminState INTEGER,
    wranDevBsDownloadSwProgress   INTEGER,
    wranDevBsSoftwareUpgradeTimeStamp DateAndTime }

wranDevBsDeviceIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in table."
    ::= { wranDevBsSoftwareUpgradeEntry 1 }

wranDevBsVendorId         OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(2..256))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This value identifies the managed BS vendor to
         which SW upgrade was applied."
    ::= { wranDevBsSoftwareUpgradeEntry 2 }

wranDevBsHwId              OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(2..256))

```

```

MAX-ACCESS      read-only
STATUS         current
DESCRIPTION
    "Version of HW that SW upgrade is applied to."
 ::= { wranDevBsSoftwareUpgradeEntry 3 }

wranDevBsCurrentSwVersion   OBJECT-TYPE
SYNTAX          OCTET STRING (SIZE(2..256))
MAX-ACCESS      read-only
STATUS         current
DESCRIPTION
    "Version of SW that is currently running on the BS.
    This value is set by the vendor specified by the
    Vendor ID. The SW version and HW ID (wranDevBsHwId)
    should be a unique Tuple. After the downloaded
    software is activated, the value in this object
    shall value of this object shall be replaced with
    the version in wranDevBsDownloadSwVersion."
 ::= { wranDevBsSoftwareUpgradeEntry 4 }

wranDevBsDownloadSwVersion   OBJECT-TYPE
SYNTAX          OCTET STRING (SIZE(2..256))
MAX-ACCESS      read-write
STATUS         current
DESCRIPTION
    "Version of the SW to be downloaded. This value is
    set by the vendor specified by the Vendor ID. The SW
    version and HW ID (wranDevBsHwId) should be a
    unique type. This should be initialized before
    software is downloaded or activated."
 ::= { wranDevBsSoftwareUpgradeEntry 5 }

wranDevBsUpgradeFileName     OBJECT-TYPE
SYNTAX          OCTET STRING (SIZE(2..256))
MAX-ACCESS      read-write
STATUS         current
DESCRIPTION
    "Fully qualified path name that points to the
    location of the SW version that is to be
    downloaded/activated."
 ::= { wranDevBsSoftwareUpgradeEntry 6 }

wranDevBsSoftwareUpgradeAdminState   OBJECT-TYPE
SYNTAX          INTEGER { null(0), download(1)
                      activate(2) }
MAX-ACCESS      read-write
STATUS         current
DESCRIPTION
    "This value can take on two states. When set to
    Download, the software listed by
    wranDevBsDownloadSwVersion will be downloaded. When
    set to Activate, the software recently downloaded
    will be activated. The Download and Activate
    procedures are vendor specific operations that are
    not defined in this standard."
DEFVAL        { null }

```

```

 ::= { wranDevBsSoftwareUpgradeEntry 7 }

wranDevBsDownloadSwProgress OBJECT-TYPE
    SYNTAX          INTEGER (0..100)
    UNITS           "%"
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This value shows the progress of the SW download
         highlighted by wranDevBsDownloadSwVersion, encoded
         as the percentage of the download successfully
         completed."
 ::= { wranDevBsSoftwareUpgradeEntry 8 }

wranDevBsSoftwareUpgradeTimeStamp OBJECT-TYPE
    SYNTAX          DateAndTime
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This value is a timestamp to indicate when the last
         SW download or activation took place."
 ::= { wranDevBsSoftwareUpgradeEntry 9 }

-- wranDevBsNotification: Managed Objects related to SNMP traps on BS

wranDevBsNotification OBJECT IDENTIFIER
    ::= { wranDevBsObjects 2 }
wranDevBsTrapControl OBJECT IDENTIFIER
    ::= { wranDevBsNotification 1 }
wranDevBsTrapDefinition OBJECT IDENTIFIER
    ::= { wranDevBsNotification 2 }

wranDevBsTrapControl OBJECT-TYPE
    SYNTAX          BITS { wranDevBsEvent(0),
                           wranDevBsLogBuffExceedThreshold(1) }
    MAX-ACCESS      read-write
    STATUS          current
    DESCRIPTION
        "Defines control elements for traps. This is a 2-bit
         field that enables setting a trap to indicate when a
         BS event is logged (wranDevBsEvent) or when a event
         log buffer size overruns configured threshold
         (wranDevBsLogBuffExceedThreshold)."
    ::= { wranDevBsNotification 1 }

-- wranDevBsTrapDefinition: This object groups all of the notification
-- objects for the BS. It is defined to be compatible with SNMPv1,
-- following Sections 8.5 and 8.6 of RFC 2758.

wranDevBsTrapDefinition OBJECT IDENTIFIER
    ::= { wranDevBsNotification 2 }
wranDevBsEventTrap OBJECT IDENTIFIER
    ::= { wranDevBsTrapDefinition 1 }
wranDevBsLogBuffExceedThresholdTrap OBJECT IDENTIFIER
    ::= { wranDevBsTrapDefinition 2 }

```

```

wranDevBsEventTrap      NOTIFICATION-TYPE
    OBJECTS      { wranDevCmnEventId,
                    wranDevCmnEventLogIndex,
                    wranDevCmnEventLoggedTime,
                    wranDevCmnEventDescription,
                    wranDevCmnEventSeverity }
    STATUS       current
    DESCRIPTION
        "This object is a compound object that contains
         information the objects in wranDevCmnEventEntry in
         wranDevCmnEventLogTable that describes the event
         that is logged. This trap is caught when
         wranDevBsEvent in wranDevBsTrapControl is set."
    ::= { wranDevBsTrapDefinition 1 }

wranDevBsLogBuffExceedThresholdTrap NOTIFICATION-TYPE
    OBJECTS      { wranDevCmnEventId,
                    wranDevCmnEventLogResidualBuffThreshold }
    STATUS       current
    DESCRIPTION
        "This object is a compound object that indicates the
         index of an entry (defined by
         wranDevCmnEventLogEntry) in
         wranDevCmnEventLogConfigTable and the object in
         that entry that defines the ratio (defined by
         wranDevCmnEventLogResidualBuffThreshold) of used
         capacity in the Event Log vs. total capacity. This
         trap is caught when wranDevBsLogBuffExceedThreshold
         in wranDevBsTrapControl is set."
    ::= { wranDevBsTrapDefinition 2 }

wranDevCpeObjects          OBJECT IDENTIFIER
                           ::= { wranDevMib 2 }
wranDevCpeConfigFileEncodingTable   OBJECT IDENTIFIER
                           ::= { wranDevCpeObjects 1 }
wranDevCpeNotification        OBJECT IDENTIFIER
                           ::= { wranDevCpeObjects 2 }

wranDevCpeConfigFileEncodingTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranDevCpeFileEncodingEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table defines objects associated with CPE
         software configuration. This table may only have one
         entry, defined by a compound attribute,
         wranDevCpeConfigFileEncodingEntry."
    ::= { wranDevCpeObjects 1 }

wranDevCpeConfigFileEncodingEntry   OBJECT-TYPE
    SYNTAX      wranDevCpeConfigFileEncodingEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
         wranDevBsSoftwareUpgradeTable. Each entry is

```

```

        identified by wranDevBsDeviceIndex."
INDEX { wranDevCpeDeviceIndex }
 ::= { wranDevCpeConfigFileEncodingTable 1 }

wranDevCpeConfigFileEncodingEntry ::= SEQUENCE {
    wranDevCpeDeviceIndex           INTEGER,
    wranDevCpeMicConfigSetting     OCTET STRING,
    wranDevBsVendorId              OCTET STRING,
    wranDevBsHwId                  OCTET STRING,
    wranDevCpeConfigFileVersion    OCTET STRING,
    wranDevCpeUpgradeFileName      OCTET STRING,
    wranDevCpeSwTftpServer         InetAddress,
    wranDevCpeTftpServerTimeStamp DateAndTime }

wranDevCpeDeviceIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in table, defaults to 1."
 ::= { wranDevCpeConfigFileEncodingEntry 1 }

wranDevCpeMicConfigSetting   OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(20))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This value contains the MIC (Message Integrity Code)
     calculated for the CPE configuration file."
 ::= { wranDevCpeConfigFileEncodingEntry 2 }

wranDevCpeVendorId          OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(2..256))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This value identifies the vendor of the managed CPE
     to which a configuration file upgrade is to be
     applied."
 ::= { wranDevCpeConfigFileEncodingEntry 3 }

wranDevCpeHwId               OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(2..256))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This value identifies the hardware version of the
     CPE to which the configuration file upgrade is to be
     applied."
 ::= { wranDevCpeConfigFileEncodingEntry 4 }

wranDevCpeConfigFileVersion   OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(2..256))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

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```

        "Version of the configuration file to be downloaded.
        This value is set by the vendor specified by the
        Vendor ID. The SW version and HW ID (wranDevCpeHwId)
        should be a unique tuple. This should be initialized
        before software is downloaded or activated."
 ::= { wranDevCpeConfigFileEncodingEntry 5 }

wranDevCpeUpgradeFileName OBJECT-TYPE
    SYNTAX          OCTET STRING (SIZE(2..256))
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "Fully qualified path name that points to the
        location of the SW version that is to be
        downloaded/activated."
 ::= { wranDevCpeConfigFileEncodingEntry 6 }

wranDevCpeSwTftpServer OBJECT-TYPE
    SYNTAX          InetAddress
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "IP address of the TFTP server on which the new
        configuration file resides."
 ::= { wranDevCpeConfigFileEncodingEntry 7 }

wranDevCpeTftpServerTimeStamp OBJECT-TYPE
    SYNTAX          DateAndTime
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "The time the configuration file was in seconds, as
        defined by IETF RFC 868."
 ::= { wranDevCpeConfigFileEncodingEntry 8 }

-- wranDevCpeNotification: This group of objects relate to SNMP traps
-- on the CPE. There is a control element that enables/disables the
-- traps
-- (wranDevCpeTrapControl) and what event information is logged when a
-- trap is sent (wranDevCpeTrapDefinition).

wranDevCpeNotification OBJECT IDENTIFIER
 ::= { wranDevCpeObjects 2 }
wranDevCpeTrapControl   OBJECT IDENTIFIER
 ::= { wranDevCpeNotification 1 }
wranDevCpeTrapDefinition OBJECT IDENTIFIER
 ::= { wranDevCpeNotification 2 }

wranDevCpeTrapControl   OBJECT-TYPE
    SYNTAX          BITS { wranDevCpeEvent(0),
                           wranDevCpeLogBuffExceedThreshold(1) }
    MAX-ACCESS     read-write
    STATUS         current
    DESCRIPTION
        "Defines control elements for traps. This is a 2-bit
        field that enables setting a trap to indicate when a

```

```

        CPE event is logged (wranDevCpeEvent) or when a
        event log buffer size overruns configured threshold
        (wranDevCpeLogBuffExceedThreshold)."
        ::= { wranDevCpeNotification 1 }

-- wranDevCpeTrapDefinition: This object groups all of the notification
-- objects for the CPE. It is defined to be compatible with SNMPv1,
-- following Sections 8.5 and 8.6 of RFC 2758. It is a compound object
-- made of the elements of a logged BS event
-- (wranDevCpeEventTrap) and the indication of when the ratio used
-- portion to total size of event log has been exceeded
-- (wranDevCpeLogBuffExceedThresholdTrap).

wranDevCpeTrapDefinition          OBJECT IDENTIFIER
                                ::= { wranDevCpeNotification 2 }
wranDevCpeEventTrap              OBJECT IDENTIFIER
                                ::= { wranDevCpeTrapDefinition 1 }
wranDevCpeLogBuffExceedThresholdTrap      OBJECT IDENTIFIER
                                ::= { wranDevCpeTrapDefinition 2 }

wranDevCpeEventTrap      NOTIFICATION-TYPE
OBJECTS            { wranDevCmnEventId,
                     wranDevCmnEventLogIndex,
                     wranDevCmnEventLoggedTime,
                     wranDevCmnEventDescription,
                     wranDevCmnEventSeverity }
STATUS             current
DESCRIPTION
                    "This object is a compound object that contains
                     information the objects in wranDevCmnEventEntry in
                     wranDevCmnEventLogTable that describes the event
                     that is logged. This trap is caught when
                     wranDevCpeEvent in wranDevCpeTrapControl is set."
        ::= { wranDevCpeTrapDefinition 1 }

wranDevCpeLogBuffExceedThresholdTrap      NOTIFICATION-TYPE
OBJECTS            { wranDevCmnEventId,
                     wranDevCmnEventLogResidualBuffThreshold }
STATUS             current
DESCRIPTION
                    "This object is a compound object that indicates the
                     index of an entry (defined by
                     wranDevCmnEventLogEntry) in
                     wranDevCmnEventLogConfigTable and the object in
                     that entry that defines the ratio (defined by
                     wranDevCmnEventLogResidualBuffThreshold) of used
                     capacity in the Event Log vs. total capacity. This
                     trap is caught when wranDevCpeLogBuffExceedThreshold
                     in wranDevCpeTrapControl is set."
        ::= { wranDevCpeTrapDefinition 2 }

-- wranDevCommonObjects: This object contains managed elements that are
-- common to the CPE and BS.

wranDevCommonObjects   OBJECT IDENTIFIER
                                ::= { wranDevMib 3 }

```

```

wranDevCmnEventLog          OBJECT IDENTIFIER
                                ::= { wranDevCommonObjects 1 }
wranDevCmnSnmpAgent         OBJECT IDENTIFIER
                                ::= { wranDevCommonObjects 2 }
wranDevCmnDeviceConfig      OBJECT IDENTIFIER
                                ::= { wranDevCommonObjects 3 }

--wranDevCmnEventLog comprises three tables that control the
-- configuration of event recording and store recorded events.

wranDevCmnEventLog          OBJECT IDENTIFIER
                                ::= { wranDevCommonObjects 1 }
wranDevCmnEventLogConfigTable OBJECT IDENTIFIER
                                ::= { wranDevCmnEventLog 1 }
wranDevCmnEventTable         OBJECT IDENTIFIER
                                ::= { wranDevCmnEventLog 2 }
wranDevCmnEventLogTable      OBJECT IDENTIFIER
                                ::= { wranDevCmnEventLog 3 }

wranDevCmnEventLogConfigTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranDevCmnEventLogConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Each entry stores the Event Log configuration for a
        device."
    ::= { wranDevCmnEventLog 1 }

wranDevCmnEventLogConfigEntry OBJECT-TYPE
    SYNTAX      wranDevCmnEventLogConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
        wranDevCmnEventLogConfigTable. Each entry is
        identified by wranDevCmnDeviceIndex."
    INDEX { wranDevCmnDeviceIndex }
    ::= { wranDevCmnEventLogConfigTable 1 }

wranDevCmnEventLogConfigEntry::= SEQUENCE {
    wranDevCmnDeviceIndex          INTEGER,
    wranDevCmnEventLogEntryLimit   INTEGER,
    wranDevCmnEventLogLifeTimeLimit INTEGER,
    wranDevCmnEventLogEntryLimitPerEventId INTEGER,
    wranDevCmnEventLogSeverityThreshold INTEGER,
    wranDevCmnEventLogWrapAroundBuffEnable TruthEnable,
    wranDevCmnEventLogLatestEvent  Unsigned32,
    wranDevCmnEventLogPersistenceSupported TruthEnable,
    wranDevCmnEventLogResidualBuffThreshold INTEGER }

wranDevCmnDeviceIndex     OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index value that identifies a BS or CPE entry in the

```

```

        wranDevCmnEventLogConfigTable."
        ::= { wranDevCmnEventLogConfigEntry 1 }

wranDevCmnEventLogEntryLimit      OBJECT-TYPE
    SYNTAX      INTEGER (1..10000)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Maximum number of entries in
         wranDevCmnEventLogConfigTable. If this value is
         changed while entries exist in
         wranDevCmnEventLogTable, old entries will be
         discarded until limit is reached."
    DEFVAL      { 100 }
    ::= { wranDevCmnEventLogConfigEntry 2 }

wranDevCmnEventLogLifeTimeLimit   OBJECT-TYPE
    SYNTAX      INTEGER (1..10000)
    UNITS      "minutes"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "A value of 0 means that an entry is kept
         indefinitely. Any other value is the maximum time
         an entry can exist in wranDevCmnEventLogTable. If
         this value is changed while entries exist in
         wranDevCmnEventLogTable, entries older than this
         limit will be discarded."
    DEFVAL      { 1440 }
    ::= { wranDevCmnEventLogConfigEntry 3 }

wranDevCmnEventLogEntryLimitPerEventId   OBJECT-TYPE
    SYNTAX      INTEGER (1..100)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The number of log entries that can be logged per
         event."
    DEFVAL      { 10 }
    ::= { wranDevCmnEventLogConfigEntry 4 }

wranDevCmnEventLogSeverityThreshold OBJECT-TYPE
    SYNTAX      INTEGER (emergency(1),
                    alert(2),
                    critical(3),
                    error(4),
                    warning(5),
                    notice(6),
                    informational(7),
                    debug(8))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Minimum severity level of an event that can be
         logged into the Event Log."
    DEFVAL      { warning }

```

```

 ::= { wranDevCpeConfigFileEncodingEntry 5 }

wranDevCmnEventLogWrapAroundBuffEnable OBJECT-TYPE
    SYNTAX      TruthEnable
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "True (1), indicates that the log buffer will be
         wrapped around with the buffer is full."
    DEFVAL     { true }
 ::= { wranDevCpeConfigFileEncodingEntry 6 }

wranDevCmnEventLogLatestEvent OBJECT-TYPE
    SYNTAX      Unsigned32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of latest event in Event Log."
    DEFVAL     { 1 }
 ::= { wranDevCpeConfigFileEncodingEntry 7 }

wranDevCmnEventLogPersistenceSupported OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "True (1), indicates that the Event Log persisted
         through power cycle and reset."
    DEFVAL     { false }
 ::= { wranDevCpeConfigFileEncodingEntry 8 }

wranDevCmnEventLogResidualBuffThreshold OBJECT-TYPE
    SYNTAX      INTEGER (1..100)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Threshold ratio of used capacity for Event Log to
         total capacity of Event Log, that when reached a
         TRAP is issued."
    DEFVAL     { 10 }
 ::= { wranDevCpeConfigFileEncodingEntry 9 }

wranDevCmnEventTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranDevCmnEventEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This compound object defines the types of events
         that are supported by a BS or CPE. Each event is
         defined."
    DEFVAL     { wranDevCmnEventLog 2 }

wranDevCmnEventEntry OBJECT-TYPE
    SYNTAX      wranDevCmnEventEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines the parameters of an event entry
         "

```

```

        into the wranDevCmnEventTable. Each entry is indexed
        by wranDevCmnEventIdentifier."
INDEX { wranDevCmnEventIdentifier }
 ::= { wranDevCmnEventTable 1 }

wranDevCmnEventEntry ::= SEQUENCE {
    wranDevCmnEventIdentifier           INTEGER,
    wranDevCmnEventDescription         SnmpAdminString,
    wranDevCmnEventSeverity            INTEGER,
    wranDevCmnEventNotification        TruthValue,
    wranDevCmnEventNotificationOid     OBJECT IDENTIFIER }

wranDevCmnEventIdentifier OBJECT-TYPE
    SYNTAX      INTEGER (0..100000)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Event Identifier encoded as a numeric value."
 ::= { wranDevCmnEventEntry 1 }

wranDevCmnEventDescription OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Description of the event in the form of an
         SnmpAdminString"
 ::= { wranDevCmnEventEntry 2 }

wranDevCmnEventSeverity OBJECT-TYPE
    SYNTAX      INTEGER {emergency(1),
                           alert(2),
                           critical(3),
                           error(4),
                           warning(5),
                           notice(6),
                           informational(7),
                           debug(8)}
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The severity of the event as assigned by the device.
         The severity assigned to an event is configurable by
         the system."
    DEFVAL     { warning }
 ::= { wranDevCmnEventEntry 3 }

wranDevCmnEventNotification OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "When True (1), an event notification will be
         reported."
    DEFVAL     { false }
 ::= { wranDevCmnEventEntry 4 }

```

```

wranDevCmnEventNotificationOid      OBJECT-TYPE
    SYNTAX      OBJECT IDENTIFIER
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the object identifier of a notification
         object. If wranDevCmnEventNotification True (1), a
         trap identified by the OID
         will be reported."
    ::= { wranDevCmnEventEntry 5 }

wranDevCmnEventLogTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranDevCmnEventLogEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is the log table that stores local events as
         they happen. This table shall reside in non-volatile
         memory that may persist after power cycle or reseat
         of the device. The maximum number of entries in this
         table is determined by the
         wranDevCmnEventLogEntryLimit. If it is setup as a
         wrap-around log, then the oldest entry will be
         removed to make room for the newest entry. If it is
         not set up as a wrap-around log, then the log will
         be flushed. Multiple entries are stored in the
         table. Each entry is defined by
         wranDevCmnEventLogEntry."
    ::= { wranDevCmnEventLog 3 }

wranDevCmnEventLogEntry OBJECT-TYPE
    SYNTAX      wranDevCmnEventLogEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object represents an entry in
         wranDevCmnEventLogTable. It is indexed by
         wranDevCmnEventId."
    INDEX { wranDevCmnEventLogId }
    ::= { wranDevCmnEventLogTable 1 }

wranDevCmnEventLogEntry ::= SEQUENCE {
    wranDevCmnEventLogId          Unsigned32,
    wranDevCmnEventLoggedTime     DateAndTime,
    wranDevCmnEventLogDescription SnmpAdminString,
    wranDevCmnEventLogSeverity    INTEGER }

wranDevCmnEventId OBJECT-TYPE
    SYNTAX      Unsigned32(1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter used to index entries in the Event Log.
         When it reaches a maximum value, it will wrap-
         around if configured to wrap-around or the log will

```

```

        be flushed if it is not configured to wrap-around."
 ::= { wranDevCmnEventLogEntry 1 }

wranDevCmnEventLoggedTime      OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "The time that the entry was placed into the Event
         Log. If this event happened just before the last
         initialization of the management system, then this
         value is set to 0."
 ::= { wranDevCmnEventLogEntry 2 }

wranDevCmnEventLogDescription OBJECT-TYPE
    SYNTAX          SnmpAdminString
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "Description of the event, in the form of an
         SnmpAdminString"
 ::= { wranDevCmnEventLogEntry 3 }

wranDevCmnEventLogSeverity     OBJECT-TYPE
    SYNTAX          INTEGER {emergency(1),
                           alert(2),
                           critical(3),
                           error(4),
                           warning(5),
                           notice(6),
                           informational(7),
                           debug(8)}
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "Severity of the recorded event."
    DEFVAL         { warning }
 ::= { wranDevCmnEventLogEntry 4 }

-- wranDevCmnSnmpAgent: This object comprises one table that
-- deals with SNMP agent configuration.

wranDevCmnSnmpAgent           OBJECT IDENTIFIER
 ::= { wranDevCommonObjects 2 }
wranDevCmnSnmpV1V2TrapDestTable OBJECT IDENTIFIER
 ::= { wranDevCmnSnmpAgent 1 }

wranDevCmnSnmpV1V2TrapDestTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF wranDevCmnSnmpV1V2TrapDestEntry
    MAX-ACCESS     not-accessible
    STATUS         current
    DESCRIPTION
        "This compound object deals with the configuration of
         items of the SNMP agent. Each configuration item is
         represented by wranDevCmnSnmpV1V2TrapDestEntry."
 ::= { wranDevCmnSnmpAgent 1 }

```

```

wranDevCmnSnmpV1V2TrapDestEntry      OBJECT-TYPE
    SYNTAX      wranDevCmnSnmpV1V2TrapDestEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The compound object contains the parameters that
         identify the destination of an SNMP trap."
    INDEX { wranDevCmnSnmpV1V1TrapDestIndex }
    ::= { wranDevCmnSnmpV1V2TrapDestTable 1 }

wranDevCmnSnmpV1V2TrapDestEntry ::= SEQUENCE {
    wranDevCmnSnmpV1V1TrapDestIndex          Unsigned32,
    wranDevCmnSnmpV1V2TrapDestIpAddrType     InetAddressType,
    wranDevCmnSnmpV1V2TrapDestIpAddr         InetAddress,
    wranDevCmnSnmpV1V2TrapDestPort           Integer32,
    wranDevCmnSnmpV1V2TrapDestRowStatus      RowStatus }

wranDevCmnSnmpV1V1TrapDestIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..8)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Identifies the trap in the table. This parameter
         shall have a maximum value of 8."
    ::= { wranDevCmnSnmpV1V2TrapDestEntry 1 }

wranDevCmnSnmpV1V2TrapDestIpAddrType      OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Type of IP address stored in
         wranDevCmnSnmpV1V2TrapDestIpAddr."
    ::= { wranDevCmnSnmpV1V2TrapDestEntry 2 }

wranDevCmnSnmpV1V2TrapDestIpAddr      OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "SNMP manager's IP address that is configured as a
         destination for traps."
    ::= { wranDevCmnSnmpV1V2TrapDestEntry 3 }

wranDevCmnSnmpV1V2TrapDestPort      OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Port number of SNMP manager application configured
         as trap destination."
    ::= { wranDevCmnSnmpV1V2TrapDestEntry 4 }

wranDevCmnSnmpV1V2TrapDestRowStatus  OBJECT-TYPE
    SYNTAX      RowStatus

```

```

        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used to make sure that any write
             operation to multiple columns is treated as an
             atomic operation."
        ::= { wranDevCmnSnmpV1V2TrapDestEntry 5 }

wranDevCmnDeviceConfig  OBJECT IDENTIFIER
    ::= { wranDevCommonObjects 3 }
wranDevCmnResetDevice   OBJECT IDENTIFIER
    ::= { wranDevCmnDeviceConfig 1 }
wranDevMibGroups        OBJECT IDENTIFIER
    ::= { wranDevCmnDeviceConfig 2 }
wranDevMibCompliance    OBJECT IDENTIFIER
    ::= { wranDevCmnDeviceConfig 3 }

wranDevCmnResetDevice   OBJECT-TYPE
    SYNTAX      INTEGER { actionResetDeviceNoAction(0),
                      actionResetDevice(1) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "There are two actions defined. When set to
             actionResetDeviceNoAction, no action is taken. When
             set to actionResetDevice, device will reset itself."
    ::= { wranDevCmnDeviceConfig 1 }

-- wranDevMibGroups: This object helps define which MIB groups are
-- necessary to meet conformance and what MIB objects are part of each
-- group.

wranDevMibGroups         OBJECT IDENTIFIER
    ::= { wranDevCmnDeviceConfig 2 }
wranDevMibBsGroup        OBJECT IDENTIFIER
    ::= { wranDevMibGroups 1 }
wranDevMibBsSwUpgradeGroup OBJECT IDENTIFIER
    ::= { wranDevMibGroups 2 }
wranDevMibCpeGroup       OBJECT IDENTIFIER
    ::= { wranDevMibGroups 3 }
wranDevMibCmnGroup       OBJECT IDENTIFIER
    ::= { wranDevMibGroups 4 }
wranDevMibBsNotificationGroup OBJECT IDENTIFIER
    ::= { wranDevMibGroups 5 }
wranDevMibCpeNotificationGroup OBJECT IDENTIFIER
    ::= { wranDevMibGroups 6 }
wranDevCpeTrapControlGroup OBJECT IDENTIFIER
    ::= { wranDevMibGroups 7 }
wranDevBsTrapControlGroup OBJECT IDENTIFIER
    ::= { wranDevMibGroups 8 }

wranDevMibBsGroup OBJECT-GROUP
    OBJECTS     { wranDevBsTrapControl }
    STATUS      current
    DESCRIPTION
            "Group of objects for the BS."

```

```

 ::= { wranDevMibGroups 1 }

wranDevMibBsSwUpgradeGroup      OBJECT-GROUP
    OBJECTS      { wranDevBsVendorId, wranDevBsHwId,
                    wranDevBsCurrentSwVersion,
                    wranDevBsUpgradeFileName,
                    wranDevBsSoftwareUpgradeAdminState,
                    wranDevBsDownloadSwProgress,
                    wranDevBsSoftwareUpgradeAdminState,
                    wranDevBsDownloadSwProgress,
                    wranDevBsSoftwareUpgradeTimeStamp }
    STATUS      current
    DESCRIPTION
        "This group contains the values of the most
         recent/current entry in
         wranDevBsSoftwareUpgradeTable."
 ::= { wranDevMibGroups 2 }

wranDevMibCpeGroup      OBJECT-GROUP
    OBJECTS      { wranDevCpeMicConfigSetting,
                    wranDevCpeVendorId, wranDevCpeHwId,
                    wranDevCpeConfigFileVersion,
                    wranDevCpeUpgradeFileName,
                    wranDevCpeSwTftpServer,
                    wranDevCpeTftpServerTimeStamp,
                    wranDevCpeTrapControl }
    STATUS      current
    DESCRIPTION
        "This group contains values of the most
         recent/current entry in
         wranDevCpeConfigFileEncodingTable for a particular
         CPE."
 ::= { wranDevMibGroups 3 }

wranDevMibCmnGroup      OBJECT-GROUP
    OBJECTS      { wranDevCmnSnmpV1V2TrapDestIpAddrType,
                    wranDevCmnSnmpV1V2TrapDestIpAddr,
                    wranDevCmnSnmpV1V2TrapDestPort,
                    wranDevCmnSnmpV1V2TrapDestRowStatus,
                    wranDevCmnResetDevice, wranDevCmnDeviceIndex,
                    wranDevCmnEventLogEntryLimit,
                    wranDevCmnEventLogLifeTimeLimit,
                    wranDevCmnEventLogEntryLimitPerEventId,
                    wranDevCmnEventLogSeverityThreshold,
                    wranDevCmnEventLogWrapAroundBuffEnable,
                    wranDevCmnEventLogLatestEvent,
                    wranDevCmnEventLogPersistenceSupported,
                    wranDevCmnEventLogResidualBuffThreshold,
                    wranDevCmnEventDescription,
                    wranDevCmnEventSeverity,
                    wranDevCmnEventNotification,
                    wranDevCmnEventNotificationOid,
                    wranDevCmnEventId, wranDevCmnEventLoggedTime,
                    wranDevCmnEventLogDescription,
                    wranDevCmnEventLogSeverity }
    STATUS      current

```

```
DESCRIPTION
    "It contains the values of most recent/current entry
     in wranDevVMnSnmpV1V2TrapDestTable and
     wranDevCmnEventLogTable."
 ::= { wranDevMibGroups 4 }

wranDevMibBsNotificationGroup OBJECT-GROUP
    OBJECTS      { wranDevBsEventTrap,
                    wranDevBsLogBuffExceedThresholdTrap }
    STATUS       current
    DESCRIPTION
        "Contains the contents of wranDevBsEventTrap and
         wranDevBsLogBuffExceedThresholdTrap."
 ::= { wranDevMibGroups 5 }

wranDevMibCpeNotificationGroup      OBJECT-GROUP
    OBJECTS      { wranDevCpeEventTrap,
                    wranDevCpeLogBuffExceedThresholdTrap }
    STATUS       current
    DESCRIPTION
        "Contains the contents of wranDevCpeEventTrap and
         wranDevCpeLogBuffExceedThresholdTrap."
 ::= { wranDevMibGroups 6 }

wranDevCpeTrapControlGroup      OBJECT-GROUP
    OBJECTS      { wranDevCpeTrapControl }
    STATUS       current
    DESCRIPTION
        "Contains objects related to enabling/disabling CPE
         device traps."
 ::= { wranDevMibGroups 7 }

wranDevBsTrapControlGroup      OBJECT-GROUP
    OBJECTS      { wranDevBsTrapControl }
    STATUS       current
    DESCRIPTION
        "Contains objects related to enabling/disabling BS
         device traps."
 ::= { wranDevMibGroups 8 }

wranDevMibCompliance      MODULE-COMPLIANCE
    STATUS       current
    DESCRIPTION
        "MIB object groups that are optional and mandatory
         for conformance."
    MODULE      wranDevMib
    MANDATORY-GROUPS { wranDevMibBsGroup,
                        wranDevMibBsSwUpgradeGroup,
                        wranDevMibCpeGroup, wranDevMibCmnGroup,
                        wranDevCpeTrapControlGroup,
                        wranDevBsTrapControlGroup }
    -- OPTIONAL-GROUPS      { wranDevMibBsNotificationGroup,
                                wranDevMibCpeNotificationGroup }
 ::= { wranDevCmnDeviceConfig 3 }

END
```

### 13.2.2 wranIfBsMib

```

IEEE802dot22-WRAN-IF-BS-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32
    Counter64
        From SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPv2-CONF

wranIfBsMib MODULE-IDENTITY
    LAST-UPDATED      "201405300000Z"    -- May 30, 2014
    ORGANIZATION      "IEEE 802.22"
    CONTACT-INFO
        "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
         WG Chair: Apurva N. Mody
         E-mail: apurva.mody@ieee.org
        TGA Chair/Editor: Ranga Reddy
        E-mail: ranga.reddy@ieee.org"
    DESCRIPTION
        "This material is from IEEE Std 802.22a-2014
         Copyright (c) 2014. This MIB Module Defines managed
         objects for Base Station based on IEEE Std 802.22-
         2011 and is under
         iso(1).std(0).iso8802(8802).wran(22).wranIfBsMib(2)"
    REVISION      "201405300000Z"
    DESCRIPTION
        "The first version of IEEE802dot22-WRAN-IF-BS-
         MIB that provides for management of the base
         station."
    ::= {iso std(0) iso8802(8802) wran(22) 2}

wranIfBsFm          OBJECT IDENTIFIER ::= { wranIfBsMib 1 }
wranIfBsCm          OBJECT IDENTIFIER ::= { wranIfBsMib 2 }
wranIfBsAm          OBJECT IDENTIFIER ::= { wranIfBsMib 3 }
wranIfBsPm          OBJECT IDENTIFIER ::= { wranIfBsMib 4 }
wranIfBsScm         OBJECT IDENTIFIER ::= { wranIfBsMib 5 }
wranIfBsMibGroups   OBJECT IDENTIFIER ::= { wranIfBsMib 6 }
wranIfBsMibCompliance OBJECT IDENTIFIER ::= { wranIfBsMib 7 }

```

```

-- wranIfBsFm: Exceptions and fault events can be reported using the
-- traps defined in this MIB.

wranIfBsTrapControl          OBJECT IDENTIFIER
                                ::= { wranIfBsFm 1 }

wranIfBsTrapDefinition        OBJECT IDENTIFIER
                                ::= { wranIfBsFm 2 }

wranIfBsNotificationObjectsTable OBJECT IDENTIFIER
                                ::= { wranIfBsFm 3 }

wranIfBsTrapControl          OBJECT-TYPE
    SYNTAX      BITS { dynamicService(0),
                      signalPowerMetrics(1),
                      regNotification(2), scmNotification(3),
                      cpeStartupStatusChange(4),
                      txMetrics(5), netEntryMetrics(6),
                      pktErrRateNotification(7),
                      userMetricsNotification(8),
                      coexistenceNotification(9),
                      basicCapabilityNotification(10),
                      rangingNotification(11),
                      authMetricsNotification(12)
                      dynamicServeMetrics(13) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object is a bitmap that allows
         enabling/disabling of traps related
         setup/configuration of dynamic service flows (Bit0),
         recording power measurements (Bit1), registration of
         CPEs (Bit2), authentication+keying of CPEs (Bit3),
         startup status of CPEs (Bit4), change in throughput
         & retransmission metrics (Bit5), update of network
         entry metrics (Bit6), update of packet error metrics
         (Bit7), update of user metrics (Bit8), change in
         coexistence status (Bit9), change in basic
         capability configuration of CPEs (Bit10), change in
         ranging status of CPEs (Bit11), update of
         authentication metrics (Bit12), update of dynamic
         service metrics (Bit13). A trap is enabled if the
         bit is set to 1 and disable if set to 0."
    ::= { wranIfBsFm 1 }

wranIfBsTrapDefinition        OBJECT IDENTIFIER
                                ::= { wranIfBsFm 2 }

wranIfBsDynamicServiceTrap    OBJECT IDENTIFIER
                                ::= { wranIfBsTrapDefinition 1 }

wranIfBsSignalPowerMetricsTrap OBJECT IDENTIFIER
                                ::= { wranIfBsTrapDefinition 2 }

wranIfBsRegNotificationTrap   OBJECT IDENTIFIER
                                ::= { wranIfBsTrapDefinition 3 }

wranIfBsScmNotificationTrap   OBJECT IDENTIFIER
                                ::= { wranIfBsTrapDefinition 4 }

wranIfBsStartupStatusTrap     OBJECT IDENTIFIER

```

```

wranIfBsTxMetricsTrap          ::= { wranIfBsTrapDefinition 5 }
OBJECT IDENTIFIER
wranIfBsNetEntryMetricsTrap   ::= { wranIfBsTrapDefinition 6 }
OBJECT IDENTIFIER
wranIfBsPktErrorTrap         ::= { wranIfBsTrapDefinition 7 }
OBJECT IDENTIFIER
wranIfBsUserMetricsTrap       ::= { wranIfBsTrapDefinition 8 }
OBJECT IDENTIFIER
wranIfBsCoexistenceTrap      ::= { wranIfBsTrapDefinition 9 }
OBJECT IDENTIFIER
wranIfBsBasicCapabilityTrap  ::= { wranIfBsTrapDefinition 10 }
OBJECT IDENTIFIER
wranIfBsRangingTrap          ::= { wranIfBsTrapDefinition 11 }
OBJECT IDENTIFIER
wranIfBsAuthMetricsTrap       ::= { wranIfBsTrapDefinition 12 }
OBJECT IDENTIFIER
wranIfBsDynamicServiceMetricsTrap ::= { wranIfBsTrapDefinition 13 }
OBJECT IDENTIFIER
wranIfBsDynamicServiceTrap    ::= { wranIfBsTrapDefinition 14 }

wranIfBsDynamicServiceTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfBsDynamicServiceType,
               wranIfBsDynamicServiceNotificationIndex }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     updating the configuration of either provisioned
     service flows (wranIfBsProvSfTable) or active
     service flows (wranIfBsActiveSfTable)."
 ::= { wranIfBsTrapDefinition 1 }

wranIfBsSignalPowerMetricsTrap NOTIFICATION-TYPE
OBJECTS      { wranIfBsSignalPowerNotificationIndex }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     updating of signal power metrics
     (wranIfBsSignalPowerMetricsTable)."
 ::= { wranIfBsTrapDefinition 2 }

wranIfBsRegNotificationTrap   NOTIFICATION-TYPE
OBJECTS      { wranIfBsRegCapabilityNotificationIndex }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     indicating successful execution of the registration
     of a CPE (wranIfBsCpeRegCapabilityRspTable)."
 ::= { wranIfBsTrapDefinition 3 }

wranIfBsScmNotificationTrap   NOTIFICATION-TYPE
OBJECTS      { wranIfBsScmNotificationType,
               wranIfBsScmNotificationIndex }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     updating the configuration of either SCM protocol

```

```

        capabilities on a CPE
        (wranIfBsCpeScmCapabilityConfigTable) or current
        authentication status
        (wranIfBsCpeScmAuthConfigTable)."
 ::= { wranIfBsTrapDefinition 4 }

wranIfBsStartupStatusTrap      NOTIFICATION-TYPE
OBJECTS          { wranIfBsStartupNotificationIndex }
STATUS           current
DESCRIPTION
    "This trap contains the information related to
    changes in a CPE's status with regard to network
    entry (wranIfBsStartupMetricsTable)."
 ::= { wranIfBsTrapDefinition 5 }

wranIfBsTxMetricsTrap      NOTIFICATION-TYPE
OBJECTS          { wranIfBsTxMetricsType,
                   wranIfBstxMetricsNotificationIndex }
STATUS           current
DESCRIPTION
    "This trap contains the information related to
    changes in throughput metrics
    (wranIfBsThroughputMetricsTable) or ARQ metrics
    (wranIfBsArqMetricsTable)."
 ::= { wranIfBsTrapDefinition 6 }

wranIfBsNetEntryMetricsTrap  NOTIFICATION-TYPE
OBJECTS          { wranIfBsNetEntryMetricsNotificationIndex }
STATUS           current
DESCRIPTION
    "This trap contains the information related to
    updates in network entry and re-entry latency
    measurements (wranIfBsNetworkEntryMetricsTable)."
 ::= { wranIfBsTrapDefinition 7 }

wranIfBsPktErrorTrap      NOTIFICATION-TYPE
OBJECTS          { wranIfBsPktErrorMetricsNotificationIndex }
STATUS           current
DESCRIPTION
    "This trap contains the information related to
    updates in packet error rate measurements
    (wranIfBsPacketErrorRateTable)."
 ::= { wranIfBsTrapDefinition 8 }

wranIfBsUserMetricsTrap   NOTIFICATION-TYPE
OBJECTS          { wranIfBsUserMetricsNotificationIndex }
STATUS           current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking the number of active and non-
    active users in the cell
    (wranIfBsUserMetricsTable)."
 ::= { wranIfBsTrapDefinition 9 }

wranIfBsCoexistenceTrap  NOTIFICATION-TYPE
OBJECTS          { wranIfBsCoexMetricsType,

```

```

        wranIfBsCoexNotificationIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking ongoing coexistence (e.g., On-
    Demand Frame Contention transactions
    (wranIfBsCoexistenceStatusTable), discovery of new
    potential coexistence sources
    (wranIfBsCoexistenceSourceTable), discovery the
    the resource usage in neighboring networks
    (wranIfBsCoexistenceResourceListTable), and updates
    to a BS's own coexistence configuration
    (wranIfBsCoexistenceCurrentConfigTable)."
::= { wranIfBsTrapDefinition 10 }

wranIfBsBasicCapabilityTrap   NOTIFICATION-TYPE
OBJECTS      { wranIfBsBasicNotificationIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking updates to basic capability
    configuration of CPEs
    (wranIfBsCpeBasicCapabilityRspTable)."
::= { wranIfBsTrapDefinition 11 }

wranIfBsRangingTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfBsRngNotificationIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking updates to status of ranging of
    CPEs (wranIfBsCpeRngCapabilityCmdTable)."
::= { wranIfBsTrapDefinition 12 }

wranIfBsAuthMetricsTrap NOTIFICATION-TYPE
OBJECTS      { wranIfBsAuthNotificationIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking updates to authentication
    metrics (wranIfBsAuthenticationMetricsTable)."
::= { wranIfBsTrapDefinition 13 }

wranIfBsDynamicServiceMetricsTrap NOTIFICATION-TYPE
OBJECTS      { wranIfBsDynSrvMetricsNotificationIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to
    updates in tracking metrics current provisioned and
    active service flows
    (wranIfBsServiceFlowMetricsTable)."
::= { wranIfBsTrapDefinition 14 }

wranIfBsNotificationObjectsTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsNotificationObjectsEntry
MAX-ACCESS  not-accessible

```

```

        STATUS      current
        DESCRIPTION
            "This table contains objects that represents
             notifications reported in BS fault traps. The table
             is made up of one or more entries."
        ::= { wranIfBsFm 3 }

wranIfBsNotificationObjectsEntry      OBJECT-TYPE
        SYNTAX      wranIfBsNotificationObjectsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            " This MIB is a compound object that represents an
             entry in the MIB object
             wranIfBsNotificationsObjectsTable."
        INDEX { wranIfBsNotificationObjectsIndex }
        ::= { wranIfBsNotificationObjectsTable 1 }

wranIfBsNotificationObjectsEntry      ::= SEQUENCE {
        wranIfBsNotificationObjectsIndex          INTEGER,
        wranIfBsNotificationMacAddr              MacAddress,
        wranIfBsDynamicServiceType              INTEGER,
        wranIfBsDynamicServiceNotificationIndex Integer32,
        wranIfBsSignalPowerNotificationIndex    Integer32,
        wranIfBsRegCapabilityNotificationIndex  Integer32,
        wranIfBsScmNotificationType            INTEGER,
        wranIfBsScmNotificationIndex           Integer32,
        wranIfBsStartupNotificationIndex       INTEGER,
        wranIfBsTxMetricsType                INTEGER,
        wranIfBsTxMetricsNotificationIndex    Integer32,
        wranIfBsNetEntryMetricsNotificationIndex Integer32,
        wranIfBsPktErrorMetricsNotificationIndex Integer32,
        wranIfBsUserErrorMetricsNotificationIndex Integer32,
        wranIfBsCoexMetricsType              INTEGER,
        wranIfBsCoexNotificationIndex         Integer32,
        wranIfBsBasicNotificationIndex        Integer32,
        wranIfBsRngNotificationIndex         Integer32,
        wranIfBsAuthNotificationIndex        INTEGER,
        wranIfBsDynSrvMetricsNotificationIndex Integer32 }

wranIfBsNotificationObjectsIndex      OBJECT-TYPE
        SYNTAX      INTEGER (1..1)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Index of entry in table."
        ::= { wranIfBsNotificationObjectsEntry 1 }

wranIfBsNotificationMacAddr          OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "MAC Address reporting the notification."
        ::= { wranIfBsNotificationObjectsEntry 2 }
    
```

```

wranIfBsDynamicServiceType      OBJECT-TYPE
    SYNTAX      INTEGER { provisioned(0), active(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication if the configuration for a provisioned
         or active service flow has been configured."
    ::= { wranIfBsNotificationObjectsEntry 3 }

wranIfBsDynamicServiceNotificationIndex   OBJECT-TYPE
    SYNTAX      Integer32 (1..2048)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsProvSfTable or
         wranIfBsActiveSfTable that indicates which service
         flow configuration was added/updated."
    ::= { wranIfBsNotificationObjectsEntry 4 }

wranIfBsSignalPowerNotificationIndex      OBJECT-TYPE
    SYNTAX      Integer32 (1..261120)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsSignalPowerMetricsTable that
         indicates the entry that contains updated signal
         power metrics data."
    ::= { wranIfBsNotificationObjectsEntry 5 }

wranIfBsRegCapabilityNotificationIndex    OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityIndex
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsCpeRegCapabilityRspTable that
         indicates the entry that contains updated
         registration for a CPE."
    ::= { wranIfBsNotificationObjectsEntry 6 }

wranIfBsScmNotificationType    OBJECT-TYPE
    SYNTAX      INTEGER { scmCapability(0), scmAuthConfig(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication if the configuration of the SCM protocol
         or the authentication status of a CPE has been
         updated."
    ::= { wranIfBsNotificationObjectsEntry 7 }

wranIfBsScmNotificationIndex   OBJECT-TYPE
    SYNTAX      Integer32 (1..512)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsCpeScmCapabilityConfigTable that
         indicates which CPE has updated their SCM"

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```

        configuration or wranIfBsCpeScmAuthConfigTable that
        indicates which CPE has had their authentication
        status updated."
 ::= { wranIfBsNotificationObjectsEntry 8 }

wranIfBsStartupNotificationIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
        wranIfBsStartupMetricsTable that contains data on
        any changes in a CPE's status with regard to network
        entry."
 ::= { wranIfBsNotificationObjectsEntry 9 }

wranIfBsTxMetricsType      OBJECT-TYPE
    SYNTAX      INTEGER { throughput(0), arq(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication if throughput metrics or ARQ metrics have
        been updated."
 ::= { wranIfBsNotificationObjectsEntry 10 }

wranIfBsTxMetricsIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsThroughputMetricsTable that
        indicates changes in measure throughput metrics, or
        wranIfBsArqMetricsTable that indicates changes in
        ARQ performance."
 ::= { wranIfBsNotificationObjectsEntry 11 }

wranIfBsNetEntryMetricsNotificationIndex  OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
        wranIfBsNetworkEntryMetricsTable that contains data
        on any changes in network entry and re-entry latency
        measurements."
 ::= { wranIfBsNotificationObjectsEntry 12 }

wranIfBsPktErrorMetricsNotificationIndex  OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
        wranIfBsPacketErrorRateTable that contains data on
        any changes in packet error rate measurements."
 ::= { wranIfBsNotificationObjectsEntry 13 }

```

```

wranIfBsUserMetricsNotificationIndex          OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
         wranIfBsUserMetricsTable that contains data on any
         changes in the number of active and non-active users
         in the cell."
    ::= { wranIfBsNotificationObjectsEntry 14 }

wranIfBsCoexMetricsType OBJECT-TYPE
    SYNTAX      INTEGER { odhcTransaction(0),
                           potentialCoexSource(1),
                           resourceUsage(2),
                           coexistenceConfig(3) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication if ongoing On-Demand Frame Coexistence
         Transactions, discovery of new potential coexistence
         resources, discovery of the resource usage in
         neighboring networks, and whether a BS's own
         coexistence configuration have been updated."
    ::= { wranIfBsNotificationObjectsEntry 15 }

wranIfBsCoexNotificationIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..4096)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsCoexistenaceStatusTable that
         indicates changes in ongoing On-Demand Frame
         Contention transactions,
         wranIfBsCoexistenceSourceTable that indicates
         changes in the discovery of new potential
         coexistence sources,
         wranIfBsCoexistenceResourceListTable that indicates
         discovery of resource usage in neighboring networks,
         or wranIfBsCoexistenceCurrentConfigTable that
         indicates whether a BS's own coexistence
         configuration have been updated."
    ::= { wranIfBsNotificationObjectsEntry 16 }

wranIfBsBasicNotificationIndex   OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityIndex
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
         wranIfBscpeBasicCapabilityRspTable that contains
         data on any changes in tracking updates to the basic
         capability configuration of CPEs."
    ::= { wranIfBsNotificationObjectsEntry 17 }

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```

wranIfBsRngNotificationIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..512)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
         wranIfBsCpeRngCapabilityCmdTable that contains data
         on any changes in tracking updates to the status of
         ranging of CPEs."
    ::= { wranIfBsNotificationObjectsEntry 18 }

wranIfBsAuthNotificationIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
         wranIfBsAuthenticationMetricsTable that contains
         data on any changes in tracking updates to
         authentication metrics."
    ::= { wranIfBsNotificationObjectsEntry 19 }

wranIfBsDynSrvMetricsNotificationIndex     OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This contains the index of entry in
         wranIfBsServiceFlowMetricsTable that contains
         information related to tracking metrics of ongoing."
    ::= { wranIfBsNotificationObjectsEntry 20 }

-- wranIfBsFmMibGroups: This object helps define which MIB groups are
-- available in this module (wranIfBsFm) and which MIB objects are
-- part of each group.

wranIfBsFmMibGroups          OBJECT IDENTIFIER
                                ::= { wranIfBsFm 4 }
wranIfBsFmTrapControlGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsFmMibGroups 1 }
wranIfBsFmNotificationGroup  OBJECT IDENTIFIER
                                ::= { wranIfBsFmMibGroups 2 }

wranIfBsFmTrapControlGroup      OBJECT-GROUP
    OBJECTS      { wranIfBsTrapControl }
    STATUS      current
    DESCRIPTION
        "This group contains objects related to
         enabling/disabling traps used for service
         flow management."
    ::= { wranIfBsFmMibGroups 1 }

wranIfBsFmNotificationGroup      OBJECT-GROUP
    OBJECTS      { wranIfBsDynamicServiceTrap,
                    wranIfBsSignalPowerMetricsTrap,
                    wranIfBsRegNotificationTrap,

```

```

wranIfBsScmNotificationTrap,
wranIfBsStartupStatusTrap,
wranIfBsTxMetricsTrap,
wranIfBsNetEntryMetricsTrap,
wranIfBsPktErrorTrap, wranIfBsUserMetricsTrap,
wranIfBsCoexistenceTrap,
wranIfBsBasicCapabilityTrap,
wranIfBsRangingTrap, wranIfBsAuthMetricsTrap,
wranIfBsDynamicServiceMetricsTrap,
wranIfBsNotificationObjectsIndex,
wranIfBsNotificationMacAddr,
wranIfBsDynamicServiceType,
wranIfBsDynamicServiceNotificationIndex,
wranIfBsSignalPowerNotificationIndex,
wranIfBsRegCapabilityNotificationIndex,
wranIfBsScmNotificationType,
wranIfBsScmNotificationIndex,
wranIfBsStartupNotificationIndex,
wranIfBsTxMetricsType,
wranIfBsTxMetricsNotificationIndex,
wranIfBsNetEntryMetricsNotificationIndex,
wranIfBsPktErrorMetricsNotificationIndex,
wranIfBsUserErrorMetricsNotificationIndex,
wranIfBsCoexMetricsType,
wranIfBsCoexNotificationIndex,
wranIfBsBasicNotificationIndex,
wranIfBsRngNotificationIndex,
wranIfBsAuthNotificationIndex,
wranIfBsDynSrvMetricsNotificationIndex }

STATUS      current
DESCRIPTION
"This group contains objects related to
traps used for management of the BS."
 ::= { wranIfBsFmMibGroups 2 }

wranIfBsFmMibCompliance MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
"MIB objects that are optional and mandatory for
wranIfBsFm compliance."
MODULE      wranIfBsFm
MANDATORY-GROUPS  { wranIfBsFmTrapControlGroup }
-- OPTIONAL-GROUPS       { wranIfBsFmNotificationGroup }
 ::= { wranIfBsFm 5 }

-- wranIfBsCm: This MIB group contains various objects related to
-- Configuration Management.

wranIfBsCpeRngCapabilityReqTable          OBJECT IDENTIFIER
                                         ::= { wranIfBsCm 1 }
wranIfBsCpeRngCapabilityCmdTable          OBJECT IDENTIFIER
                                         ::= { wranIfBsCm 2 }
wranIfBsCpeBasicCapabilityReqTable        OBJECT IDENTIFIER
                                         ::= { wranIfBsCm 3 }
wranIfBsCpeBasicCapabilityRspTable        OBJECT IDENTIFIER
                                         ::= { wranIfBsCm 4 }

```

```

wranIfBsCpeRegCapabilityReqTable      ::= { wranIfBsCm 4 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 5 }
wranIfBsCpeMeasSupportReqTable      ::= { wranIfBsCm 6 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 7 }
wranIfBsCpeRegCapabilityRspTable    ::= { wranIfBsCm 8 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 9 }
wranIfBsCpeMeasSupportRspTable     ::= { wranIfBsCm 10 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 11 }
wranIfBsScmCapabilityConfiguration ::= { wranIfBsCm 12 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 13 }
wranIfBsCpeScmCapabilityConfigTable ::= { wranIfBsCm 14 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 15 }
wranIfBsScmAuthConfigTable         ::= { wranIfBsCm 16 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 17 }
wranIfBsActionsTable               ::= { wranIfBsCm 18 }
OBJECT IDENTIFIER
      ::= { wranIfBsCm 19 }
wranIfBsPhy                         ::= { wranIfBsCm 20 }

wranIfBsCpeRngCapabilityReqTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsCpeRngCapabilityReqEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object provides a table containing the ranging
    configuration requested by the CPE in RNG-REQ during
    network entry. The table is made up of multiple
    entries, one for each CPE that has sent a RNG-REQ,
    that is defined by
    wranIfBsCpeRngCapabilityReqEntry."
 ::= { wranIfBsCm 1 }

wranIfBsCpeRngCapabilityReqEntry   OBJECT-TYPE
SYNTAX      wranIfBsCpeRngCapabilityReqEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
    entry in wranIfBsCpeRngCapabilityReqTable."
INDEX { wranIfBsCpeRngCapabilityReqIndex }
 ::= { wranIfBsCpeRngCapabilityReqTable 1 }

```

```

wranIfBsCpeRngCapabilityReqEntry ::= SEQUENCE {
    wranIfBsCpeRngCapabilityReqIndex      Integer32,
    wranIfBsCpeMacAddress                MacAddress,
    wranIfMmpPn                          Integer32,
    wranIfCiphertextIcv                 Counter64,
    wranIfRngAnomaly                     BITS }

wranIfBsCpeRngCapabilityReqIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 512)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsCpeRngCapabilityReqEntry 1 }

wranIfBsCpeMacAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsCpeRngCapabilityReqEntry 2 }

wranIfMmpPn OBJECT-TYPE
    SYNTAX      Integer32 (0..16777215)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of MMP_PN that CPE is using if
         authenticated ranging (see 8.2.4.6.1.2) is used."
    ::= { wranIfBsCpeRngCapabilityReqEntry 3 }

wranIfCiphertextIcv OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Calculated value of Ciphertext ICV, calculated over
         RNG-REQ is authenticated ranging (see 8.2.4.6.1.2)."
    ::= { wranIfBsCpeRngCapabilityReqEntry 4 }

wranIfRngAnomaly OBJECT-TYPE
    SYNTAX      BITS { atMaxEIRP(0), atMinEIRP(1),
                      timingAdvTooLarge(2) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "3-bit bitmap that gives indication of any error
         condition detected by CPE during ranging process."
    ::= { wranIfBsCpeRngCapabilityReqEntry 5 }

wranIfBsCpeRngCapabilityCmdTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeRngCapabilityCmdEntry
    MAX-ACCESS  not-accessible
    STATUS      current

```

**DESCRIPTION**

"This object provides a table containing the ranging configuration the BS is specifying for CPE in the RNG-CMD during network entry. Each table is made up of multiple entries, one for each CPE that a RNG-CMD is sent, that is defined by wranIfBsCpeRngCapabilityCmdEntry."  
`::= { wranIfBsCm 2 }`

wranIfBsCpeRngCapabilityCmdEntry OBJECT-TYPE  
 SYNTAX wranIfBsCpeRngCapabilityReqEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
**DESCRIPTION**  
 "This object is a compound object that defines an entry in wranIfBsCpeRngCapabilityCmdTable."  
 INDEX { wranIfBsCpeRngCapabilityCmdIndex }  
`::= { wranIfBsCpeRngCapabilityCmdTable 1 }`

wranIfBsCpeRngCapabilityCmdEntry ::= SEQUENCE {  
 wranIfBsCpeRngCapabilityCmdIndex Integer32,  
 wranIfBsCpeMacAddress MacAddress,  
 wranIfBsCpeStationId Integer32,  
 wranIfTimingAdvance Integer32,  
 wranIfEirpPerSubcarrier INTEGER,  
 wranIfOffsetFreqAdjust Integer32,  
 wranIfRangingStatus INTEGER,  
 wranIfActionSuperFrameNum INTEGER,  
 wranIfCdmaCode INTEGER,  
 wranIfTxOpportunityOffset INTEGER }

wranIfBsCpeRngCapabilityCmdIndex OBJECT-TYPE  
 SYNTAX Integer32 (1.. 512)  
 MAX-ACCESS not-accessible  
 STATUS current  
**DESCRIPTION**  
 "Index of entry in this table."  
`::= { wranIfBsCpeRngCapabilityCmdEntry 1 }`

wranIfBsCpeMacAddress OBJECT-TYPE  
 SYNTAX MacAddress  
 MAX-ACCESS read-only  
 STATUS current  
**DESCRIPTION**  
 "MAC Address of CPE that RNG-CMD is sent to. This is used to fill in the MAC Address field of RNG-CMD, when RNG-CMD is sent in response to initial ranging."  
`::= { wranIfBsCpeRngCapabilityCmdEntry 2 }`

wranIfBsCpeStationId OBJECT-TYPE  
 SYNTAX Integer32 (1..512)  
 MAX-ACCESS read-only  
 STATUS current  
**DESCRIPTION**  
 "Station ID of CPE that RNG-CMD is sent to. This is

```

        used to fill in the Station ID field of RNG-CMD,
        when RNG-CMD is sent in response to initial
        ranging."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 3 }

wranIfTimingAdvance      OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    UNITS "TU"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Unsigned timing advance to be applied to compensate
         for signal propagation delay on both the US and DS,
         in number of TU."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 4 }

wranIfEirpPerSubcarrier OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "EIRP to be applied to subcarrier, from -104 dBm to
         +23.5 dBm in 0.5 dB steps."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 5 }

wranIfOffsetFreqAdjust   OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Offset frequency adjustment parameter of RNG-CMD."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 6 }

wranIfRangingStatus     OBJECT-TYPE
    SYNTAX      INTEGER { continue(0), abort(1),
                           success(2), reRange(3),
                           reAuth(4), reRngAndrReg(5) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Ranging status sent to CPE in RNG-CMD to indicate
         what step the CPE should take next."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 7 }

wranIfActionSuperFrameNum OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The superframe number (modulo 256) at which Channel
         Action shall be performed."
 ::= { wranIfBsCpeRngCapabilityCmdEntry 8 }

wranIfCdmaCode          OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only

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        STATUS      current
        DESCRIPTION
            "CDMA code value to be sent in RNG-CMD to enable
             dedicated ranging (selected from initial ranging
             codeset)."
        ::= { wranIfBsCpeRngCapabilityCmdEntry 9 }

wranIfTxOpportunityOffset      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "symbols"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Transmission opportunity offset sent to CPE in RNG-
         CMD, to used for dedicated ranging."
    ::= { wranIfBsCpeRngCapabilityCmdEntry 10 }

wranIfBsCpeBasicCapabilityReqTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeBasicCapabilityReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object provides a table containing the basic
         capability information CPEs that have declared to
         the BS in the CBC-REQ. Each table is made up of
         multiple entries, one for each CPE that has
         transmitted the CBC-REQ, that is defined by
         wranIfBsCpeBasicCapabilityReqEntry."
    ::= { wranIfBsCm 3 }

wranIfBsCpeBasicCapabilityReqEntry  OBJECT-TYPE
    SYNTAX      wranIfBsCpeBasicCapabilityReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that contains
         information on capabilities that a CPE has declared
         to a BS during network entry. The list of objects
         used to make wranIfBsCpeBasicCapabilityReqEntry can
         be found in 13.1.2.2.16
         (wranIfBsCpeBasicCapabilityCmn)."
    INDEX { wranIfBsCpeBasicCapabilityReqIndex }
    ::= { wranIfBsCpeBasicCapabilityReqTable 1 }

wranIfBsCpeBasicCapabilityReqEntry ::= SEQUENCE {
    wranIfBsCpeBasicCapabilityReqIndex,
    wranIfBasicCapbilityIndex,
    wranIfBsCpeBasicCapabilityReqMacAddress,
    wranIfBasicCapabilityMacAdddress,
    wranIfBsCpeBasicCapabilityReqStationId,
    wranIfBasicCapbilityStationId,
    wranIfBsCpeBasicCapabilityReqMacPduTxAndConstruction,
    wranIfBasicCapabilityMacPduTxAndConstruction,
    wranIfBsCpeBasicCapabilityReqMaxCpeTxEirp
    wranIfBasicCapabilityMaxCpeTxEirp,
}

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wranIfBsCpeBasicCapabilityReqCpeDemodulator
    wranIfBasicCapabilityCpeDemodulator,
wranIfBsCpeBasicCapabilityReqCpeModulator
    wranIfBasicCapabilityCpeModulator,
wranIfBsCpeBasicCapabilityReqScmVersionSupport
    wranIfBasicCapabilityCpeScmVersionSupport,
wranIfBsCpeBasicCapabilityReqPnWindowSize
    wranIfBasicCapabilityCpePnWindowSize,
wranIfBsCpeBasicCapabilityReqScmFlowControl
    wranIfBasicCapabilityScmFlowControl }

wranIfBsCpeBasicCapabilityReqIndex OBJECT-TYPE
    SYNTAX      wranIfBasicCapbilityIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityIndex."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 1 }

wranIfBsCpeBasicCapabilityReqMacAddress OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityMacAdddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityMacAdddress."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 2 }

wranIfBsCpeBasicCapabilityReqStationId OBJECT-TYPE
    SYNTAX      wranIfBasicCapbilityStationId
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapbilityStationId."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 3 }

wranIfBsCpeBasicCapabilityReqMacPduTxAndConstruction OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityMacPduTxAndConstruction
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfBasicCapabilityMacPduTxAndConstruction."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 4 }

wranIfBsCpeBasicCapabilityReqMaxCpeTxEirp OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityMaxCpeTxEirp
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityMaxCpeTxEirp."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 5 }

wranIfBsCpeBasicCapabilityReqCpeDemodulator OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityCpeDemodulator
    MAX-ACCESS  read-only
    STATUS      current

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DESCRIPTION
    "Defined by wranIfBasicCapabilityCpeDemodulator."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 6 }

wranIfBsCpeBasicCapabilityReqCpeModulator OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpeModulator
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityCpeModulator."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 7 }

wranIfBsCpeBasicCapabilityReqScmVersionSupport OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpeScmVersionSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfBasicCapabilityCpeScmVersionSupport."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 8 }

wranIfBsCpeBasicCapabilityReqPnWindowSize OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpePnWindowSize
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityCpePnWindowSize."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 9 }

wranIfBsCpeBasicCapabilityReqScmFlowControl   OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityScmFlowControl
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityScmFlowControl."
 ::= { wranIfBsCpeBasicCapabilityReqEntry 10 }

wranIfBsCpeBasicCapabilityRspTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsCpeBasicCapabilityRspEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object provides a table containing the basic
    capability information BS has configured for CPEs in
    the CBC-RSP. Each table is made up of multiple
    entries, one for each CPE that has transmitted the
    CBC-RSP, that is defined by
    wranIfBsCpeBasicCapabilityRspEntry."
 ::= { wranIfBsCm 4 }

wranIfBsCpeBasicCapabilityRspEntry  OBJECT-TYPE
SYNTAX      wranIfBsCpeBasicCapabilityRspEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that contains

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information on capabilities that a BS has selected
for a CPE during network entry. This table reflects
the current configuration of a CPE's basic
capabilities. The list of objects used to make up
wranIfBsCpeBasicCapabilityRspEntry can be found in
13.1.2.2.16 (wranIfBsCpeBasicCapabilityCmn)."
INDEX { wranIfBsCpeBasicCapabilityRspIndex }
 ::= { wranIfBsCpeBasicCapabilityRspTable 1 }

wranIfBsCpeBasicCapabilityRspEntry ::= SEQUENCE {
    wranIfBsCpeBasicCapabilityRspIndex
        wranIfBasicCapbilityIndex,
    wranIfBsCpeBasicCapabilityRspNumAttempts
        wranIfBasicCapabilityNumAttempts,
    wranIfBsCpeBasicCapabilityRspMacAddress
        wranIfBasicCapabilityMacAdddress,
    wranIfBsCpeBasicCapabilityRspStationId
        wranIfBasicCapbilityStationId,
    wranIfBsCpeBasicCapabilityRspMacPduTxAndConstruction
        wranIfBasicCapabilityMacPduTxAndConstruction,
    wranIfBsCpeBasicCapabilityRspCpeDemodulator
        wranIfBasicCapabilityCpeDemodulator,
    wranIfBsCpeBasicCapabilityRspCpeModulator
        wranIfBasicCapabilityCpeModulator,
    wranIfBsCpeBasicCapabilityRspScmVersionSupport
        wranIfBasicCapabilityCpeScmVersionSupport,
    wranIfBsCpeBasicCapabilityRspPnWindowSize
        wranIfBasicCapabilityCpePnWindowSize,
    wranIfBsCpeBasicCapabilityRspScmFlowControl
        wranIfBasicCapabilityScmFlowControl }

wranIfBsCpeBasicCapabilityRspIndex OBJECT-TYPE
    SYNTAX      wranIfBasicCapbilityIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityIndex."
    ::= { wranIfBsCpeBasicCapabilityRspEntry 1 }

wranIfBsCpeBasicCapabilityRspNumAttempts OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityNumAttempts
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityNumAttempts."
    ::= { wranIfBsCpeBasicCapabilityRspEntry 2 }

wranIfBsCpeBasicCapabilityRspMacAddress OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityMacAdddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityMacAdddress."
    ::= { wranIfBsCpeBasicCapabilityRspEntry 3 }

wranIfBsCpeBasicCapabilityRspStationId OBJECT-TYPE

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SYNTAX      wranIfBasicCapbilityStationId
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapbilityStationId."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 4 }

wranIfBsCpeBasicCapabilityRspMacPduTxAndConstruction OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityMacPduTxAndConstruction
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfBasicCapabilityMacPduTxAndConstruction."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 5 }

wranIfBsCpeBasicCapabilityRspCpeDemodulator OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpeDemodulator
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityCpeDemodulator."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 6 }

wranIfBsCpeBasicCapabilityRspCpeModulator OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpeModulator
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityCpeModulator."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 7 }

wranIfBsCpeBasicCapabilityRspScmVersionSupport OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpeScmVersionSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfBasicCapabilityCpeScmVersionSupport."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 8 }

wranIfBsCpeBasicCapabilityRspPnWindowSize OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityCpePnWindowSize
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityCpePnWindowSize."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 9 }

wranIfBsCpeBasicCapabilityRspScmFlowControl OBJECT-TYPE
SYNTAX      wranIfBasicCapabilityScmFlowControl
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfBasicCapabilityScmFlowControl."
 ::= { wranIfBsCpeBasicCapabilityRspEntry 10 }

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wranIfBsCpeRegCapabilityReqTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeRegCapabilityReqEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object provides a table containing the
         capability information that a CPE has declared to
         the BS in the REG-REQ. Each table is made up of
         multiple entries, one for each CPE, that is defined
         by wranIfBsCpeRegCapabilityReqEntry."
    ::= { wranIfBsCm 5 }

wranIfBsCpeRegCapabilityReqEntry      OBJECT-TYPE
    SYNTAX      wranIfBsCpeRegCapabilityReqEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object is a compound object that contains
         information on capabilities that a CPE has declared
         to a BS, e.g., through sending a REG-REQ to the BS.
         The objects that make up the entry are defined in
         wranIfBsCpeRegCapabilityCmn (13.1.2.2.17). A REG-REQ
         message comprises objects within this compound
         object, wranIfBsCpeAntennaGainTable(13.1.2.2.9), and
         wranIfBsCpeMeasSupportReqTable
         (13.1.2.2.6)."
    INDEX { wranIfBsCpeRegCapabilityReqIndex }
    ::= { wranIfBsCpeRegCapabilityReqTable 1 }

wranIfBsCpeRegCapabilityReqEntry      ::= SEQUENCE {
    wranIfBsCpeRegCapabilityReqIndex,
    wranIfRegCapabilityIndex,
    wranIfBsCpeRegCapabilityReqMacAddress
        wranIfRegCapabilityMacAddress,
    wranIfBsCpeRegCapabilityReqNMEAlocStringSize
        wranIfRegCapabilityNMEAlocStringSize,
    wranIfBsCpeRegCapabilityReqNMEAlocString
        wranIfRegCapabilityNMEAlocString,
    wranIfBsCpeRegCapabilityReqCsConfig
        wranIfRegCapabilityCsConfig,
    wranIfBsCpeRegCapabilityReqIpVersion
        wranIfRegCapabilityIpVersion,
    wranIfBsCpeRegCapabilityReqIpRochSupport
        wranIfRegCapabilityIpRochSupport,
    wranIfBsCpeRegCapabilityReqArqSupport
        wranIfRegCapabilityArqSupport,
    wranIfBsCpeRegCapabilityReq2ndMgmtArqWindowSize
        wranIfRegCapability2ndMgmtArqWindowSize,
    wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryTxDelay
        wranIfRegCapability2ndMgmtArqRetryTxDelay,
    wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryRxDelay
        wranIfRegCapability2ndMgmtArqRetryRxDelay,
    wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockLifetime
        wranIfRegCapability2ndMgmtArqBlockLifetime,
    wranIfBsCpeRegCapabilityReq2ndMgmtArqSyncLossTimeout

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        wranIfRegCapability2ndMgmtArqSyncLossTimeout,
        wranIfBsCpeRegCapabilityReq2ndMgmtArqDeliverInOrder,
            wranIfRegCapability2ndMgmtArqDeliverInOrder,
        wranIfBsCpeRegCapabilityReq2ndMgmtArqRxPurgeTimeout
            wranIfRegCapability2ndMgmtArqRxPurgeTimeout,
        wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockSize
            wranIfRegCapability2ndMgmtArqBlockSize,
        wranIfBsCpeRegCapabilityReqDsxFlowControl
            wranIfRegCapabilityDsxFlowControl,
        wranIfBsCpeRegCapabilityReqMcaFlowControl
            wranIfRegCapabilityMcaFlowControl,
        wranIfBsCpeRegCapabilityReqMaxNumMcastGroups
            wranIfRegCapabilityMaxNumMcastGroups,
        wranIfBsCpeRegCapabilityReqSensModeSupportArray
            wranIfRegCapabilitySensModeSupportArray,
        wranIfBsCpeRegCapabilityReqAntennaModelSize
            wranIfRegCapabilityAntennaModelSize,
        wranIfBsCpeRegCapabilityReqAntennaModel
            wranIfRegCapabilityAntennaModel,
        wranIfBsCpeRegCapabilityReqCpeResidualDelay
            wranIfRegCapabilityCpeResidualDelay,
        wranIfBsCpeRegCapabilityReq2ndMgmtIpAllocMethod
            wranIfRegCapability2ndMgmtIpAllocMethod,
        wranIfBsCpeRegCapabilityReqCpeOperationalCapability
            wranIfRegCapabilityCpeOperationalCapability,
        wranIfBsCpeRegCapabilityReqCpeRegistrationTimer
            wranIfRegCapabilityCpeRegistrationTimer }

wranIfBsCpeRegCapabilityReqIndex      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityIndex."
    ::= { wranIfBsCpeRegCapabilityReqEntry 1 }

wranIfBsCpeRegCapabilityReqMacAddress      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityMacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityMacAddress."
    ::= { wranIfBsCpeRegCapabilityReqEntry 2 }

wranIfBsCpeRegCapabilityReqNMEALocStringSize      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityNMEALocStringSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityNMEALocStringSize."
    ::= { wranIfBsCpeRegCapabilityReqEntry 3 }

wranIfBsCpeRegCapabilityReqNMEALocString      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityNMEALocString
    MAX-ACCESS  read-only
    STATUS      current

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DESCRIPTION
    "Defined by wranIfRegCapabilityNMEAlocString."
 ::= { wranIfBsCpeRegCapabilityReqEntry 4 }

wranIfBsCpeRegCapabilityReqCsConfig OBJECT-TYPE
SYNTAX      wranIfRegCapabilityCsConfig
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityCsConfig."
 ::= { wranIfBsCpeRegCapabilityReqEntry 5 }

wranIfBsCpeRegCapabilityReqIpVersion      OBJECT-TYPE
SYNTAX      wranIfRegCapabilityIpVersion
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityIpVersion."
 ::= { wranIfBsCpeRegCapabilityReqEntry 6 }

wranIfBsCpeRegCapabilityReqIpRochSupport  OBJECT-TYPE
SYNTAX      wranIfRegCapabilityIpRochSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityIpRochSupport."
 ::= { wranIfBsCpeRegCapabilityReqEntry 7 }

wranIfBsCpeRegCapabilityReqArqSupport     OBJECT-TYPE
SYNTAX      wranIfRegCapabilityArqSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityArqSupport."
 ::= { wranIfBsCpeRegCapabilityReqEntry 8 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqWindowSize OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqWindowSize
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapability2ndMgmtArqWindowSize."
 ::= { wranIfBsCpeRegCapabilityReqEntry 9 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryTxDelay   OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqRetryTxDelay
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
        wranIfRegCapability2ndMgmtArqRetryTxDelay."
 ::= { wranIfBsCpeRegCapabilityReqEntry 10 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryRxDelay   OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqRetryRxDelay
MAX-ACCESS  read-only

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        STATUS      current
        DESCRIPTION
            "Defined by
            wranIfRegCapability2ndMgmtArqRetryRxDelay."
        ::= { wranIfBsCpeRegCapabilityReqEntry 11 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockLifetime   OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqBlockLifetime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
        wranIfRegCapability2ndMgmtArqBlockLifetime."
    ::= { wranIfBsCpeRegCapabilityReqEntry 12 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqSyncLossTimeout  OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqSyncLossTimeout
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
        wranIfRegCapability2ndMgmtArqSyncLossTimeout."
    ::= { wranIfBsCpeRegCapabilityReqEntry 13 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqDeliverInOrder   OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqDeliverInOrder
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
        wranIfRegCapability2ndMgmtArqDeliverInOrder."
    ::= { wranIfBsCpeRegCapabilityReqEntry 14 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqRxPurgeTimeout   OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqRxPurgeTimeout
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
        wranIfRegCapability2ndMgmtArqRxPurgeTimeout."
    ::= { wranIfBsCpeRegCapabilityReqEntry 15 }

wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockSize   OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqBlockSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapability2ndMgmtArqBlockSize."
    ::= { wranIfBsCpeRegCapabilityReqEntry 16 }

wranIfBsCpeRegCapabilityReqDsxFlowControl OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityDsxFlowControl
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityDsxFlowControl."

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 ::= { wranIfBsCpeRegCapabilityReqEntry 17 }

wranIfBsCpeRegCapabilityReqMcaFlowControl OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityMcaFlowControl
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityMcaFlowControl."
 ::= { wranIfBsCpeRegCapabilityReqEntry 18 }

wranIfBsCpeRegCapabilityReqMaxNumMcastGroups   OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityMaxNumMcastGroups
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityMaxNumMcastGroups."
 ::= { wranIfBsCpeRegCapabilityReqEntry 19 }

wranIfBsCpeRegCapabilityReqSensModeSupportArray OBJECT-TYPE
    SYNTAX      wranIfRegCapabilitySensModeSupportArray
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilitySensModeSupportArray."
 ::= { wranIfBsCpeRegCapabilityReqEntry 20 }

wranIfBsCpeRegCapabilityReqAntennaModelSize     OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityAntennaModelSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityAntennaModelSize."
 ::= { wranIfBsCpeRegCapabilityReqEntry 21 }

wranIfBsCpeRegCapabilityReqAntennaModel         OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityAntennaModel
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityAntennaModel."
 ::= { wranIfBsCpeRegCapabilityReqEntry 22 }

wranIfBsCpeRegCapabilityReqCpeResidualDelay     OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeResidualDelay
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityCpeResidualDelay."
 ::= { wranIfBsCpeRegCapabilityReqEntry 23 }

wranIfBsCpeRegCapabilityReq2ndMgmtIpAllocMethod OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtIpAllocMethod
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapability2ndMgmtIpAllocMethod."

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 ::= { wranIfBsCpeRegCapabilityReqEntry 24 }

wranIfBsCpeRegCapabilityReqCpeOperationalCapability OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeOperationalCapability
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapabilityCpeOperationalCapability."
 ::= { wranIfBsCpeRegCapabilityReqEntry 25 }

wranIfBsCpeRegCapabilityReqCpeRegistrationTimer OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeRegistrationTimer
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapabilityCpeRegistrationTimer."
 ::= { wranIfBsCpeRegCapabilityReqEntry 26 }

wranIfBsCpeMeasSupportReqTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeMeasSupportReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A compound object representing the Measurement
         Support IE of REG-REQ in 7.7.7.3.4.7. It is made
         up of multiple entries, one for each signal type
         supported by sensing. Each entry is defined by
         wranIfBsCpeMeasSupportReqEntry. Entries for a CPE
         are only present if the value for
         wranIfSensModeSupportArray is anything other than
         'No Sensing'.""
 ::= { wranIfBsCm 6 }

wranIfBsCpeMeasSupportReqEntry      OBJECT-TYPE
    SYNTAX      wranIfBsCpeMeasSupportReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A compound object representing the entries of
         Measurement Support IE of REG-REQ in 7.7.7.3.4.7. It
         is made up of multiple objects. A CPE will have one
         entry for each Signal Type in the Signal Type Array
         of the Measurement Support IE. The rest of the
         objects that represent each entry are defined in
         wranIfBsCpeMeasSupportCmn (13.1.2.2.18)."
INDEX { wranIfBsCpeMeasSupportReqIndex }
 ::= { wranIfBsCpeMeasSupportReqTable 1 }

wranIfBsCpeMeasSupportReqEntry      ::= SEQUENCE {
    wranIfBsCpeMeasSupportReqIndex
        wranIfMeasSupportIndex,
    wranIfBsCpeMeasSupportReqMacAddress
        wranIfMeasSupportMacAddress,
    wranIfBsCpeMeasSupportReqSignalType
}

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        wranIfMeasSupportSignalType,
        wranIfBsCpeMeasSupportReqThreshold
            wranIfMeasSupportThreshold,
        wranIfBsCpeMeasSupportReqPd
            wranIfMeasSupportPd,
        wranIfBsCpeMeasSupportReqMpfa
            wranIfMeasSupportMpfa,
        wranIfBsCpeMeasSupportReqRecNumSensPeriods
            wranIfMeasSupportRecNumSensPeriods,
        wranIfBsCpeMeasSupportReqRecSensPeriodDuration
            wranIfMeasSupportRecSensPeriodDuration,
        wranIfBsCpeMeasSupportReqRecSensPeriodInterval
            wranIfMeasSupportRecSensPeriodInterval }

wranIfBsCpeMeasSupportReqIndex      OBJECT-TYPE
    SYNTAX      wranIfMeasSupportIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportIndex."
    ::= { wranIfBsCpeMeasSupportReqEntry 1 }

wranIfBsCpeMeasSupportReqMacAddress OBJECT-TYPE
    SYNTAX      wranIfMeasSupportMacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportMacAddress."
    ::= { wranIfBsCpeMeasSupportReqEntry 2 }

wranIfBsCpeMeasSupportReqSignalType OBJECT-TYPE
    SYNTAX      wranIfMeasSupportSignalType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportSignalType."
    ::= { wranIfBsCpeMeasSupportReqEntry 3 }

wranIfBsCpeMeasSupportReqThreshold OBJECT-TYPE
    SYNTAX      wranIfMeasSupportThreshold
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportThreshold."
    ::= { wranIfBsCpeMeasSupportReqEntry 4 }

wranIfBsCpeMeasSupportReqPd      OBJECT-TYPE
    SYNTAX      wranIfMeasSupportPd
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportPd."
    ::= { wranIfBsCpeMeasSupportReqEntry 5 }

wranIfBsCpeMeasSupportReqMpfa   OBJECT-TYPE
    SYNTAX      wranIfMeasSupportMpfa

```

```

        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Defined by wranIfMeasSupportMpfa."
        ::= { wranIfBsCpeMeasSupportReqEntry 6 }

wranIfBsCpeMeasSupportReqRecNumSensPeriods      OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecNumSensPeriods
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecNumSensPeriods."
    ::= { wranIfBsCpeMeasSupportReqEntry 7 }

wranIfBsCpeMeasSupportReqRecSensPeriodDuration  OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodDuration
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecSensPeriodDuration."
    ::= { wranIfBsCpeMeasSupportReqEntry 8 }

wranIfBsCpeMeasSupportReqRecSensPeriodInterval   OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodInterval
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecSensPeriodInterval."
    ::= { wranIfBsCpeMeasSupportReqEntry 9 }

wranIfBsCpeRegCapabilityRspTable    OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeRegCapabilityRspEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object provides a table containing the
         capability information that a BS has configured for
         a CPE in REG-RSP. Each table is made up of multiple
         entries, one for each CPE, that is defined by
         wranIfBsCpeRegCapabilityRspEntry."
    ::= { wranIfBsCm 7 }

wranIfBsCpeRegCapabilityRspEntry     OBJECT-TYPE
    SYNTAX      wranIfBsCpeRegCapabilityRspEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that contains the
         capabilities information that a BS has configured
         for the CPE, e.g., through sending a REG-RSP to the
         CPE. wranIfRegCapabilityPermanentStationId is unique
         to REG-RSP. The objects that make up the entry are
         defined in wranIfBsCpeRegCapabilityCmn
         (13.1.2.2.18). A REG-RSP message comprises
         objects within this compound and
         wranIfBsCpeMeasSupportRspTable (13.1.2.2.8)."

```

```

INDEX { wranIfBsCpeRegCapabilityRspIndex }
::= { wranIfBsCpeRegCapabilityRspTable 1 }

wranIfBsCpeRegCapabilityRspEntry ::= SEQUENCE {
    wranIfBsCpeRegCapabilityRspIndex
        wranIfRegCapabilityIndex,
    wranIfBsCpeRegCapabilityRspMacAddress
        wranIfRegCapabilityMacAddress,
    wranIfBsCpeRegCapabilityRspNumAttempts
        wranIfRegCapabilityNumAttempts,
    wranIfBsCpeRegCapabilityRspCsConfig
        wranIfRegCapabilityCsConfig,
    wranIfBsCpeRegCapabilityRspIpVersion
        wranIfRegCapabilityIpVersion,
    wranIfBsCpeRegCapabilityRspIpRochSupport
        wranIfRegCapabilityIpRochSupport,
    wranIfBsCpeRegCapabilityRspArqSupport
        wranIfRegCapabilityIpArqSupport,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqWindowSize
        wranIfRegCapability2ndMgmtArqWindowSize,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryTxDelay
        wranIfRegCapability2ndMgmtArqRetryTxDelay,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryRxDelay
        wranIfRegCapability2ndMgmtArqRetryRxDelay,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockLifetime
        wranIfRegCapability2ndMgmtArqBlockLifetime,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqSyncLossTimeout
        wranIfRegCapability2ndMgmtArqSyncLossTimeout,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqDeliverInOrder
        wranIfRegCapability2ndMgmtArqDeliverInOrder,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqRxPurgeTimeout
        wranIfRegCapability2ndMgmtArqRxPurgeTimeout,
    wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockSize
        wranIfRegCapability2ndMgmtArqBlockSize,
    wranIfBsCpeRegCapabilityRspDsxFlowControl
        wranIfRegCapabilityDsxFlowControl,
    wranIfBsCpeRegCapabilityRspMcaFlowControl
        wranIfRegCapabilityMcaFlowControl,
    wranIfBsCpeRegCapabilityRspMaxNumMcastGroups
        wranIfRegCapabilityMaxNumMcastGroups,
    wranIfBsCpeRegCapabilityRspSensModeSupportArray
        wranIfRegCapabilitySensModeSupportArray,
    wranIfBsCpeRegCapabilityRspAntennaModelSize
        wranIfRegCapabilityAntennaModelSize,
    wranIfBsCpeRegCapabilityRspAntennaModel
        wranIfRegCapabilityAntennaModel,
    wranIfBsCpeRegCapabilityRsp2ndMgmtIpAllocMethod
        wranIfRegCapability2ndMgmtIpAllocMethod,
    wranIfBsCpeRegCapabilityRspCpeOperationalCapability
        wranIfRegCapabilityCpeOperationalCapability,
    wranIfBsCpeRegCapabilityRspCpeRegistrationTimer
        wranIfRegCapabilityCpeRegistrationTimer,
    wranIfBsCpeRegCapabilityRspPermanentSid
        wranIfRegCapabilityPermanentSid }

```

wranIfBsCpeRegCapabilityRspIndex OBJECT-TYPE

```
SYNTAX      wranIfRegCapabilityIndex
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityIndex."
 ::= { wranIfBsCpeRegCapabilityRspEntry 1 }

wranIfBsCpeRegCapabilityRspMacAddress      OBJECT-TYPE
SYNTAX      wranIfRegCapabilityMacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityMacAddress."
 ::= { wranIfBsCpeRegCapabilityRspEntry 2 }

wranIfBsCpeRegCapabilityRspNumAttempts     OBJECT-TYPE
SYNTAX      wranIfRegCapabilityNumAttempts
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityNumAttempts."
 ::= { wranIfBsCpeRegCapabilityRspEntry 3 }

wranIfBsCpeRegCapabilityRspCsConfig        OBJECT-TYPE
SYNTAX      wranIfRegCapabilityCsConfig
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityCsConfig."
 ::= { wranIfBsCpeRegCapabilityRspEntry 4 }

wranIfBsCpeRegCapabilityRspIpVersion       OBJECT-TYPE
SYNTAX      wranIfRegCapabilityIpVersion
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityIpVersion."
 ::= { wranIfBsCpeRegCapabilityRspEntry 5 }

wranIfBsCpeRegCapabilityRspIpRochSupport   OBJECT-TYPE
SYNTAX      wranIfRegCapabilityIpRochSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityIpRochSupport."
 ::= { wranIfBsCpeRegCapabilityRspEntry 6 }

wranIfBsCpeRegCapabilityRspArqSupport      OBJECT-TYPE
SYNTAX      wranIfRegCapabilityArqSupport
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityArqSupport."
 ::= { wranIfBsCpeRegCapabilityRspEntry 7 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqWindowSize OBJECT-TYPE
```

```

SYNTAX      wranIfRegCapability2ndMgmtArqWindowSize
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapability2ndMgmtArqWindowSize."
 ::= { wranIfBsCpeRegCapabilityRspEntry 8 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryTxDelay      OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqRetryTxDelay
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqRetryTxDelay."
 ::= { wranIfBsCpeRegCapabilityRspEntry 9 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryRxDelay      OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqRetryRxDelay
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqRetryRxDelay."
 ::= { wranIfBsCpeRegCapabilityRspEntry 10 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockLifetime      OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqBlockLifetime
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqBlockLifetime."
 ::= { wranIfBsCpeRegCapabilityRspEntry 11 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqSyncLossTimeout   OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqSyncLossTimeout
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqSyncLossTimeout."
 ::= { wranIfBsCpeRegCapabilityRspEntry 12 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqDeliverInOrder    OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqDeliverInOrder
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqDeliverInOrder."
 ::= { wranIfBsCpeRegCapabilityRspEntry 13 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqRxPurgeTimeout   OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqRxPurgeTimeout
MAX-ACCESS  read-only
STATUS      current

```

```
DESCRIPTION
    "Defined by
     wranIfRegCapability2ndMgmtArqRxPurgeTimeout."
 ::= { wranIfBsCpeRegCapabilityRspEntry 14 }

wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockSize OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqBlockSize
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapability2ndMgmtArqBlockSize."
 ::= { wranIfBsCpeRegCapabilityRspEntry 15 }

wranIfBsCpeRegCapabilityRspDsxFlowControl OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityDsxFlowControl
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityDsxFlowControl."
 ::= { wranIfBsCpeRegCapabilityRspEntry 16 }

wranIfBsCpeRegCapabilityRspMcaFlowControl OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityMcaFlowControl
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityMcaFlowControl."
 ::= { wranIfBsCpeRegCapabilityRspEntry 17 }

wranIfBsCpeRegCapabilityRspMaxNumMcastGroups OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityMaxNumMcastGroups
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityMaxNumMcastGroups."
 ::= { wranIfBsCpeRegCapabilityRspEntry 18 }

wranIfBsCpeRegCapabilityRspSensModeSupportArray OBJECT-TYPE
    SYNTAX      wranIfRegCapabilitySensModeSupportArray
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilitySensModeSupportArray."
 ::= { wranIfBsCpeRegCapabilityRspEntry 19 }

wranIfBsCpeRegCapabilityRspAntennaModelSize OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityAntennaModelSize
    MAX-ACCESS  read-only
    STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityAntennaModelSize."
 ::= { wranIfBsCpeRegCapabilityRspEntry 20 }

wranIfBsCpeRegCapabilityRspAntennaModel OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityAntennaModel
    MAX-ACCESS  read-only
```

```

        STATUS      current
        DESCRIPTION
            "Defined by wranIfRegCapabilityAntennaModel."
        ::= { wranIfBsCpeRegCapabilityRspEntry 21 }

wranIfBsCpeRegCapabilityRsp2ndMgmtIpAllocMethod OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtIpAllocMethod
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapability2ndMgmtIpAllocMethod."
    ::= { wranIfBsCpeRegCapabilityRspEntry 22 }

wranIfBsCpeRegCapabilityRspCpeOperationalCapability OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeOperationalCapability
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
            wranIfRegCapabilityCpeOperationalCapability."
    ::= { wranIfBsCpeRegCapabilityRspEntry 23 }

wranIfBsCpeRegCapabilityRspCpeRegistrationTimer OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeRegistrationTimer
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
            wranIfRegCapabilityCpeRegistrationTimer."
    ::= { wranIfBsCpeRegCapabilityRspEntry 24 }

wranIfBsCpeRegCapabilityRspPermanentSid OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityPermanentSid
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
            wranIfRegCapabilityPermanentSid."
    ::= { wranIfBsCpeRegCapabilityRspEntry 25 }

wranIfBsCpeMeasSupportRspTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeMeasSupportRspEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A compound object representing the Measurement
        Support IE of REG-RSP in 7.7.7.3.4.7. It is made
        up of multiple entries, one for each signal type
        supported by sensing. Each entry is defined by
        wranIfBsCpeMeasSupportRspEntry. Entries for a CPE
        are only present if the value for
        wranIfSensModeSupportArray is anything other than
        'No Sensing'.""
    ::= { wranIfBsCm 8 }

wranIfBsCpeMeasSupportRspEntry      OBJECT-TYPE

```

```

SYNTAX      wranIfBsCpeMeasSupportRspEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A compound object representing the entries of
     Measurement Support IE of REG-RSP in 7.7.7.3.4.7. It
     is made up of multiple objects. A CPE will have one
     entry for each Signal Type in the Signal Type Array
     of the Measurement Support IE. The rest of the
     objects that represent each entry are defined in
     wranIfBsCpeMeasSupportCmn (13.1.2.2.18)."
INDEX { wranIfBsCpeMeasSupportRspIndex }
 ::= { wranIfBsCpeMeasSupportRspTable 1 }

wranIfBsCpeMeasSupportRspEntry      ::= SEQUENCE {
    wranIfBsCpeMeasSupportRspIndex
        wranIfMeasSupportIndex,
    wranIfBsCpeMeasSupportRspMacAddress
        wranIfMeasSupportMacAddress,
    wranIfBsCpeMeasSupportRspSignalType
        wranIfMeasSupportSignalType,
    wranIfBsCpeMeasSupportRspThreshold
        wranIfMeasSupportThreshold,
    wranIfBsCpeMeasSupportRspPd
        wranIfMeasSupportPd,
    wranIfBsCpeMeasSupportRspMpfa
        wranIfMeasSupportMpfa,
    wranIfBsCpeMeasSupportRspRecNumSensPeriods
        wranIfMeasSupportRecNumSensPeriods,
    wranIfBsCpeMeasSupportRspRecSensPeriodDuration
        wranIfMeasSupportRecSensPeriodDuration,
    wranIfBsCpeMeasSupportRspRecSensPeriodInterval
        wranIfMeasSupportRecSensPeriodInterval }

wranIfBsCpeMeasSupportRspIndex      OBJECT-TYPE
SYNTAX      wranIfMeasSupportIndex
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Defined by wranIfMeasSupportIndex."
 ::= { wranIfBsCpeMeasSupportRspEntry 1 }

wranIfBsCpeMeasSupportRspMacAddress OBJECT-TYPE
SYNTAX      wranIfMeasSupportMacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfMeasSupportMacAddress."
 ::= { wranIfBsCpeMeasSupportRspEntry 2 }

wranIfBsCpeMeasSupportRspSignalType OBJECT-TYPE
SYNTAX      wranIfMeasSupportSignalType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfMeasSupportSignalType."

```

```

 ::= { wranIfBsCpeMeasSupportRspEntry 3 }

wranIfBsCpeMeasSupportRspThreshold OBJECT-TYPE
    SYNTAX      wranIfMeasSupportThreshold
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportThreshold."
 ::= { wranIfBsCpeMeasSupportRspEntry 4 }

wranIfBsCpeMeasSupportRspPd OBJECT-TYPE
    SYNTAX      wranIfMeasSupportPd
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportPd."
 ::= { wranIfBsCpeMeasSupportRspEntry 5 }

wranIfBsCpeMeasSupportRspMpfa OBJECT-TYPE
    SYNTAX      wranIfMeasSupportMpfa
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportMpfa."
 ::= { wranIfBsCpeMeasSupportRspEntry 6 }

wranIfBsCpeMeasSupportRspRecNumSensPeriods OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecNumSensPeriods
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecNumSensPeriods."
 ::= { wranIfBsCpeMeasSupportRspEntry 7 }

wranIfBsCpeMeasSupportRspRecSensPeriodDuration OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodDuration
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecSensPeriodDuration."
 ::= { wranIfBsCpeMeasSupportRspEntry 8 }

wranIfBsCpeMeasSupportRspRecSensPeriodInterval OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodInterval
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecSensPeriodInterval."
 ::= { wranIfBsCpeMeasSupportRspEntry 9 }

wranIfBsCpeAntennaGainTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeAntennaGainEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "At the CPE this object represents a compound object"

```

```

representing the entries of the CPE Antenna Gain IE
(7.7.7.3.4.9), that carries a CPE's receive antenna
gain when a CPE transmits a REG-REQ to the BS. At
the BS, this object is a compound object that
represents the entries for its own transmit antenna
gain as well as the receive antenna gain information
for each CPE that sent a CPE Antenna Gain IE in a
REG-REQ (and successfully completed registration).
This object is a table that is made up of multiple
entries, each defined by
wranIfBsCpeAntennaGainEntry."
 ::= { wranIfBsCpeAntennaGainEntry 9 }

wranIfBsCpeAntennaGainEntry OBJECT-TYPE
    SYNTAX      wranIfBsCpeAntennaGainEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A compound object representing the on-axis gain (in
         db) for each channel the CPE's or BS's antenna is
         capable of operating on."
    INDEX { wranIfBsCpeAntennaGainIndex }
    ::= { wranIfBsCpeAntennaGainTable 1 }

wranIfBsCpeAntennaGainEntry ::= SEQUENCE {
    wranIfBsCpeAntennaGainIndex          Integer32,
    wranIfBsCpeAntennaGainMacAddress     MacAddress,
    wranIfBsCpeTvChannel                INTEGER,
    wranIfBsCpeOnAxisGain               INTEGER }

wranIfBsCpeAntennaGainIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 131072)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsCpeAntennaGainEntry 1 }

wranIfBsCpeAntennaGainMacAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAC Address of the device."
    ::= { wranIfBsCpeAntennaGainEntry 2 }

wranIfBsCpeTvChannel OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "TV Channel number."
    ::= { wranIfBsCpeAntennaGainEntry 3 }

wranIfBsCpeOnAxisGain OBJECT-TYPE
    SYNTAX      INTEGER (0..255)

```

```

        UNITS          "dB"
        MAX-ACCESS    read-only
        STATUS         current
        DESCRIPTION
            "Maximum gain in the specified TV channel, from -91.5
             db."
        ::= { wranIfBsCpeAntennaGainEntry 4 }

wranIfBsScmCapabilityConfiguration OBJECT-TYPE
    SYNTAX      BITS { suite0(0), suite1(1), suite1(2),
                      suite3(3), suite4(4), suite5(5),
                      suite6(6), suite7(7), suite8(8),
                      suite9(9), suiteA(10), suiteB(11),
                      suiteC(12), suiteD(13), suiteE(14),
                      suiteF(15) }
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object provides a bitmap that describes the
         cryptographic suites that the BS supports. The list
         of suites is provided in Table 193 in 8.4.1.
         The bit for suite0 corresponds to 'No Protection',
         and so on. A cryptographic suite is supported when
         the corresponding bit is set to 1 and disabled/not
         supported when the suite is not supported. Currently
         Bit8-Bit15 will all be set to 0."
    ::= { wranIfBsCm 10 }

wranIfBsCpeScmCapabilityConfigTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeScmCapabilityConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table that contains a listing
         for the security capabilities of each CPE. CPE
         stores this table. On the BS, this table is made
         up of multiple entries, one for each CPE. Each entry
         is defined by wranIfBsCpeScmCapabilityConfigEntry.
         Entries on the BS table do not contain the
         wranIfBsCpeEapTlsTtlsCredential object. The list of
         capabilities is listed in Table 193."
    ::= { wranIfBsCm 11 }

wranIfBsCpeScmCapabilityConfigEntry OBJECT-TYPE
    SYNTAX      wranIfBsCpeScmCapabilityConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that provides the
         definition of entries in
         wranIfBsCpeScmCapabilityConfigTable."
    INDEX { wranIfBsCpeScmCapabilityConfigIndex }
    ::= { wranIfBsCpeScmCapabilityConfigTable 1 }

wranIfBsCpeScmCapabilityConfigEntry ::= SEQUENCE {
    wranIfBsCpeScmCapabilityConfigIndex      Integer32,

```

```

wranIfBsCpeScmCapabilityConfigMacAddress OBJECT-TYPE
    SYNTAX      MacAddress,
    MAX-ACCESS  BITS,
    STATUS      Integer32,
    DESCRIPTION OCTET STRING }

wranIfBsCpeScmCapabilityConfigIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 512)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsCpeScmCapabilityConfigEntry 1 }

wranIfBsCpeScmCapabilityConfigMacAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAC Address of the CPE."
    ::= { wranIfBsCpeScmCapabilityConfigEntry 2 }

wranIfBsCpeScmCapabilityConfiguration OBJECT-TYPE
    SYNTAX      BITS { suite0(0), suite1(1), suite1(2),
                      suite3(3), suite4(4), suite5(5),
                      suite6(6), suite7(7), suite8(8),
                      suite9(9), suiteA(10), suiteB(11),
                      suiteC(12), suiteD(13), suiteE(14),
                      suiteF(15) }
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object provides a bitmap that describes the
         cryptographic suites that the CPE supports. The list
         of suites is provided in Table 193 in 8.4.1.
         The bit for suite0 corresponds to 'No Protection',
         and so on. A cryptographic suite is supported when
         the corresponding bit is set to 1 and disabled/not
         supported when the suite is not supported. Currently
         Bit8-Bit15 will all be set to 0."
    ::= { wranIfBsCpeScmCapabilityConfigEntry 3 }

wranIfBsCpeEapTlsTtlsCredentialSize OBJECT-TYPE
    SYNTAX      Integer32 (1..10000)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Size, in # of octets, of X.509 certificate that
         defines the credential the CPE exchanges with the
         AAA server to perform authentication."
    ::= { wranIfBsCpeScmCapabilityConfigEntry 4 }

wranIfBsCpeEapTlsTtlsCredential OBJECT-TYPE
    SYNTAX      OCTET STRING
                (SIZEOF(wranIfBsCpeEapTlsTtlsCredentialSize))
    MAX-ACCESS  read-only
    STATUS      current

```

```

DESCRIPTION
    "X.509 certificate that defines the credential the
     CPE exchanges with the AAA server to perform
     authentication."
 ::= { wranIfBsCpeScmCapabilityConfigEntry 5 }

wranIfBsCpeScmAuthConfigTable          OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsCpeScmAuthConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB provides a table that provides the
     configuration of the SCM attributes (e.g., timers
     and other items related to the authentication
     process). This table is made up of one entry,
     defined by wranIfBsCpeScmAuthConfigEntry."
 ::= { wranIfBsCm 12 }

wranIfBsCpeScmAuthConfigEntry OBJECT-TYPE
SYNTAX      wranIfBsCpeScmAuthConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that provides the
     definition of entries in
     wranIfBsCpeScmCapabilityConfigTable."
INDEX { wranIfBsCpeScmAuthConfigIndex }
 ::= { wranIfBsCpeScmAuthConfigTable 1 }

wranIfBsCpeScmAuthConfigEntry ::= SEQUENCE {
    wranIfBsScmAuthConfigIndex      Integer32,
    wranIfBsT36                     INTEGER,
    wranIfBsT37                     Integer32,
    wranIfBsMaxNumAuthAttempts     INTEGER,
    wranIfBsT38                     INTEGER,
    wranIfBsT39                     INTEGER,
    wranIfBsT40                     Integer32,
    wranIfBsAkLifetime             Integer32,
    wranIfBsTekLifetime            Integer32,
    wranIfBsMaxNumSa               Integer32,
    wranIfBsT17                     INTEGER }

wranIfBsCpeScmAuthConfigIndex OBJECT-TYPE
SYNTAX      Integer32 (1.. 512)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in this table."
 ::= { wranIfBsCpeScmAuthConfigEntry 1 }

wranIfBsT36 OBJECT-TYPE
SYNTAX      INTEGER (2..30)
UNITS      "seconds"
MAX-ACCESS  read-only
STATUS      current

```

```
DESCRIPTION
    "EAP Authentication Timer, T36."
 ::= { wranIfBsCpeScmAuthConfigEntry 2 }

wranIfBsT37 OBJECT-TYPE
    SYNTAX      Integer32 (300..3024000)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Authentication Grace Timer, T37."
 ::= { wranIfBsCpeScmAuthConfigEntry 3 }

wranIfBsMaxNumAuthAttempts   OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum # of Authentication Attempts."
 ::= { wranIfBsCpeScmAuthConfigEntry 4 }

wranIfBsT38 OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Operational Wait Timeout, T38."
 ::= { wranIfBsCpeScmAuthConfigEntry 5 }

wranIfBsT39 OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Rekey Wait Timeout, T39."
 ::= { wranIfBsCpeScmAuthConfigEntry 6 }

wranIfBsT40 OBJECT-TYPE
    SYNTAX      Integer32 (300..302400)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "GTEK/TEK Grace Time, T40."
 ::= { wranIfBsCpeScmAuthConfigEntry 7 }

wranIfBsAkLifetime          OBJECT-TYPE
    SYNTAX      Integer32 (86400..6048000)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Lifetime BS assigns to new AK."
 ::= { wranIfBsCpeScmAuthConfigEntry 8 }
```

```

wranIfBsTekLifetime      OBJECT-TYPE
    SYNTAX      Integer32 (1800..604800)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Lifetime BS assigns to new TEK."
    ::= { wranIfBsCpeScmAuthConfigEntry 9 }

wranIfBsMaxNumSa      OBJECT-TYPE
    SYNTAX      Integer32 (1..510)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum # of multicast groups."
    ::= { wranIfBsCpeScmAuthConfigEntry 10 }

wranIfBsT17      OBJECT-TYPE
    SYNTAX      Integer32 (5..5)
    UNITS      "minutes"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time for CPE to complete authentication and key
         exchange."
    ::= { wranIfBsCpeScmAuthConfigEntry 11 }

wranIfBsActionsTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsActionsEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object provides a table that stores actions
         that can be configured to have BS direct a CPE how
         to act up receiving unsolicited MAC management
         messages such as RNG-CMD and DREG-CMD. This table is
         made up of multiple entries, one for each CPE for
         which an action is set up. Each entry is defined by
         wranIfBsActionsEntry."
    ::= { wranIfBsCm 13 }

wranIfBsActionsEntry    OBJECT-TYPE
    SYNTAX      wranIfBsActionsEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object defines an entry in
         wranIfBsActionsTable."
    INDEX { wranIfBsCpeActionsIndex }
    ::= { wranIfBsActionsTable 1 }

wranIfBsActionsEntry    ::= SEQUENCE {
    wranIfBsCpeActionsIndex      Integer32,
    wranIfBsCpeActionsMacAddress MacAddress,
    wranIfBsCpeActionsRngCpe     INTEGER,
}

```

```

wranIfBsCpeActionsDeRegCpe      INTEGER,
wranIfBsCpeActionsSchedule     DateAndTime }

wranIfBsCpeActionsIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 512)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsActionsEntry 1 }

wranIfBsCpeActionsMacAddress   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAC Address of CPE that action is directed towards."
    ::= { wranIfBsActionsEntry 2 }

wranIfBsCpeActionsRngCpe      OBJECT-TYPE
    SYNTAX      INTEGER { continue(0), abort(1), success(2),
                           reRange(3), reAuth(4),
                           reRangeAndRegister(5),
                           doNothing(15) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "When set, the BS will send an unsolicited RNG-CMD to
         a CPE with the Ranging Status field set to the value
         written to this object. No action is to be taken if
         this object is read or if set to an invalid Ranging
         Status value. Valid values for the Ranging Status
         field of RNG-CMD are listed in Table 44."
    ::= { wranIfBsActionsEntry 3 }

wranIfBsCpeActionsDeRegCpe      OBJECT-TYPE
    SYNTAX      INTEGER { ac0(0), ac1(1), ac2(2),
                           ac3(3), ac4(4), ac5(5),
                           doNothing(15) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "When set to an Action code value as defined in Table
         115, the BS will send a DREG-CMD to the CPE with
         that Action Code. No action is to be taken if this
         object is read or an invalid Action Code is
         specified."
    ::= { wranIfBsActionsEntry 4 }

wranIfBsCpeActionsSchedule     OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object contains the date and time, whereby
         scheduled action, either DREG-CMD or RNG-CMD, is
    
```

```

        sent to the CPE."
 ::= { wranIfBsActionsEntry 5 }

wranIfBsCpeMcastConfigTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsCpeMcastConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table contains the configuration of multicast
    groups and what CPEs are assigned to them. Each
    table is made up of multiple entries, defined by
    wranIfBsCpeMcastConfigEntry. A CPE may have multiple
    entries in this table, one for each multicast group
    that it belongs to. Entries will be deleted whenever
    a CPE is asked to leave a multicast group."
 ::= { wranIfBsCm 14 }

wranIfBsCpeMcastConfigEntry   OBJECT-TYPE
SYNTAX      wranIfBsCpeMcastConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
    wranIfBsCpeMcastConfigTable."
INDEX { wranIfBsCpeMcastConfigIndex }
 ::= { wranIfBsCpeMcastConfigTable 1 }

wranIfBsCpeMcastConfigEntry   ::= SEQUENCE {
    wranIfBsCpeMcastConfigIndex          Integer32,
    wranIfBsCpeMcastMacAddress          MacAddress,
    wranIfBsCpeMcastSid                Integer32,
    wranIfBsCpeMcastPeriodicAllocParameterM  INTEGER,
    wranIfBsCpeMcastPeriodicAllocParameterK  INTEGER,
    wranIfBsCpeMcastPeriodicAllocParameterN  INTEGER }

wranIfBsCpeMcastIndex   OBJECT-TYPE
SYNTAX      Integer32 (1..262144)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in this table."
 ::= { wranIfBsCpeMcastConfigEntry 1 }

wranIfBsCpeMcastMacAddress   OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This object refers to a CPE's MAC address. It is
    used to uniquely identify the multicast group
    configuration for a particular CPE in
    wranIfBsCpeMcastConfigTable, along with
    wranIfBsCpeMcastSid."
 ::= { wranIfBsCpeMcastConfigEntry 2 }

wranIfBsCpeMcastSid   OBJECT-TYPE

```

```

SYNTAX      Integer32 (1..512)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This object refers to the multicast SID that is
     assigned to a multicast SID that is assigned to a
     multicast group."
 ::= { wranIfBsCpeMcastConfigEntry 3 }

wranIfBsCpeMcastPeriodicAllocParameterM   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object defines the 'M' value (see Table 103)
         that is used to calculate the periodic allocation
         for multicast transmission."
 ::= { wranIfBsCpeMcastConfigEntry 4 }

wranIfBsCpeMcastPeriodicAllocParameterK   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object defines the 'K' value (see Table 103)
         that is used to calculate the periodic allocation
         for multicast transmission."
 ::= { wranIfBsCpeMcastConfigEntry 5 }

wranIfBsCpeMcastPeriodicAllocParameterN   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object defines the 'N' value (see Table 103)
         that is used to calculate the periodic allocation
         for multicast transmission."
 ::= { wranIfBsCpeMcastConfigEntry 6 }

wranIfBsCoexistenceConfigTable          OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCoexistenceConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains configuration items related to
         Coexistence operation and CBP transmission. It is
         made up of one entry that represents the default
         values for Coexistence operation and CBP
         transmission."
 ::= { wranIfBsCm 15 }

wranIfBsCoexistenceConfigEntry          OBJECT-TYPE
    SYNTAX      wranIfBsCoexistenceConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION

```

```

        "This object defines an entry in
        wranIfBsCoexistenceConfigTable."
INDEX { wranIfBsCoexistenceConfigIndex }
 ::= { wranIfBsCoexistenceConfigTable 1 }

wranIfBsCoexistenceConfigEntry      ::= SEQUENCE {
        wranIfBsCoexistenceConfigIndex      INTEGER,
        wranIfBsT34                      Integer32,
        wranIfBsT33                      INTEGER,
        wranIfBsT32                      INTEGER,
        wranIfBsFcw                       INTEGER,
        wranIfBsScwBackoffMax             INTEGER,
        wranIfBsFcMin                     INTEGER,
        wranIfBsFcNRange                  INTEGER,
        wranIfBsSfRel                     INTEGER,
        wranIfBsT35                       INTEGER }

wranIfBsCoexistenceConfigIndex      OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "Index of entry in this table."
 ::= { wranIfBsCoexistenceConfigEntry 1 }

wranIfBsT34 OBJECT-TYPE
SYNTAX      Integer32 (8..900)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "This governs how often in (seconds) the Device
        Identification IE is transmitted in a CBP burst.
        Recommended value is 300s."
 ::= { wranIfBsCoexistenceConfigEntry 2 }

wranIfBsT33 OBJECT-TYPE
SYNTAX      INTEGER (1..60)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Time between transmission of CBP bursts with
        backup/candidate channel list information (see
        7.6.1.3.1.1) to facilitate spectrum etiquette."
 ::= { wranIfBsCoexistenceConfigEntry 3 }

wranIfBsT32 OBJECT-TYPE
SYNTAX      INTEGER (1..32)
UNITS       "superframes"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Time between transmission of CBP bursts with
        backup/candidate channel list information (see
        7.6.1.3.1.1) to facilitate spectrum etiquette."

```

```
 ::= { wranIfBsCoexistenceConfigEntry 4 }

wranIfBsFcw OBJECT-TYPE
    SYNTAX      INTEGER (1..16)
    UNITS      "superframes"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Frame contention window, the number of superframes
         that a contention destination accumulates frame
         contention requests before responding to them."
 ::= { wranIfBsCoexistenceConfigEntry 5 }

wranIfBsScwBackoffMax   OBJECT-TYPE
    SYNTAX      INTEGER (1..16)
    UNITS      "superframes"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum number of superframes for the SCW backoff
         window."
 ::= { wranIfBsCoexistenceConfigEntry 6 }

wranIfBsFcMin          OBJECT-TYPE
    SYNTAX      INTEGER (0..8)
    UNITS      "superframes"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum number of superframes for the SCW backoff
         window."
 ::= { wranIfBsCoexistenceConfigEntry 7 }

wranIfBsFcnRange        OBJECT-TYPE
    SYNTAX      INTEGER (4..16)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Exponent, base 2, defining range of random numbers
         for the FCN."
 ::= { wranIfBsCoexistenceConfigEntry 8 }

wranIfBsSfRel           OBJECT-TYPE
    SYNTAX      INTEGER (5..16)
    UNITS      "superframes"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Number of superframes, after which a BS releases the
         frames won by another BS through frame contention."
 ::= { wranIfBsCoexistenceConfigEntry 9 }

wranIfBsT35   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    UNITS      "self-coexistence windows"
    MAX-ACCESS  read-only
```

```

        STATUS      current
        DESCRIPTION
            "SCW backoff timer, timer controlling continuation or
             exiting of Frame Contention procedure."
            ::= { wranIfBsCoexistenceConfigEntry 10 }

-- wranIfBsCpeBasicCapabilityCmn: This MIB object is defines group
-- containing objects that are common to
-- wranIfBsCpeBasicCapabilityReqEntry,
-- wranIfBsCpeBasicCapabilityRspEntry, and
-- wranIfBsCpeBasicCapabilityDefEntry.

        wranIfBsCpeBasicCapabilityCmn OBJECT IDENTIFIER
            ::= { wranIfBsCm 16 }
        wranIfBasicCapabilityIndex OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 1 }
        wranIfBasicCapabilityNumAttempts OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 2 }
        wranIfBasicCapabilityMacAddress OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 3 }
        wranIfBasicCapabilityStationId OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 4 }
        wranIfBasicCapabilityMacPduTxandConstruction OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 5 }
        wranIfBasicCapabilityMaxCpeTxEirp OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 6 }
        wranIfBasicCapabilityCpeDemodulator OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 7 }
        wranIfBasicCapabilityCpeModulator OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 8 }
        wranIfBasicCapabilityCpeScmVersionSupport OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 9 }
        wranIfBasicCapabilityCpePnWindowSize OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 10 }
        wranIfBasicCapabilityCpeScmFlowControl OBJECT IDENTIFIER
            ::= { wranIfBsCpeBasicCapabilityCmn 11 }

        wranIfBasicCapabilityIndex      ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Index of entry in this table."
        SYNTAX     Integer32 (1..511)

        wranIfBasicCapabilityNumAttempts      ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The current number of attempts that a CPE has
             attempted basic capability configuration during
             network entry. This item is set to 0 upon
             successful completion of registration process and a
             CPE is admitted into the network. This item is
             incremented every time a CPE attempts basic
             capability configuration, but is unsuccessful. If
             this value reaches the limit set by
             wranIfBsMaxNumCbcReqAttempts, then the BS shall
             reject network entry."

```

SYNTAX            INTEGER (5..10)

wranIfBasicCapabilityMacAddress        ::= TEXTUAL-CONVENTION

STATUS            current

DESCRIPTION

"The MAC address of the CPE attempting basic capability configuration."

SYNTAX            MacAddress

wranIfBasicCapabilityStationId        ::= TEXTUAL-CONVENTION

STATUS            current

DESCRIPTION

"The Station ID of the CPE attempting basic capability configuration."

SYNTAX            Integer32 (1..512)

wranIfBasicCapabilityMacPduTxandConstruction

                  ::= TEXTUAL-CONVENTION

STATUS            current

DESCRIPTION

"An integer value that indicates the methods for transmission and construction of MAC PDUs that the CPE supports. This reflects the setting of the IE defined in 7.7.11.3.1."

SYNTAX            INTEGER { reqPiggybackedWithData(0) }

wranIfBasicCapabilityMaxCpeTxEirp    ::= TEXTUAL-CONVENTION

STATUS            current

DESCRIPTION

"An integer value, encoded in hexadecimal, that indicates the maximum EIRP for which the CPE is configured. This reflects the setting of the IE defined in 7.7.11.3.2.1. On the range from -64 dBm (0x00) to +63.5 dBm (0xFF) in 0.5 dB steps."

SYNTAX            INTEGER (0..255)

wranIfBasicCapabilityCpeDemodulator ::= TEXTUAL-CONVENTION

STATUS            current

DESCRIPTION

"A bit map that encodes the DIUCs that the CPE supports. This reflects the setting of the IE defined in 7.7.11.3.2.2.1. DIUCs are listed in Table 27."

BITS { diuc0(0), diuc1(1), diuc2(2), diuc3(3), diuc4(4),  
diuc5(5), diuc6(6), diuc7(7), diuc8(8), diuc9(9),  
diuc10(10), diuc11(11), diuc12(12), diuc13(13),  
diuc14(14), diuc15(15), diuc16(16), diuc17(17),  
diuc18(18), diuc19(19), diuc20(20), diuc21(21),  
diuc22(22), diuc23(23), diuc24(24), diuc25(25),  
diuc26(26), diuc27(27), diuc28(28), diuc29(29),  
diuc30(30), diuc31(31), diuc32(32), diuc33(33),  
diuc34(34), diuc35(35), diuc36(36), diuc37(37),  
diuc38(38), diuc39(39), diuc40(40), diuc41(41),  
diuc42(42), diuc43(43), diuc44(44), diuc45(45),  
diuc46(46), diuc47(47), diuc48(48), diuc49(49),  
diuc50(50), diuc51(51), diuc52(52), diuc53(53),

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        diuc54(54), diuc55(55), diuc56(56), diuc57(57),
        diuc58(58), diuc59(59), diuc60(60), diuc61(61),
        diuc62(62), diuc63(63) }

wranIfBasicCapabilityCpeModulator ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "A bit map that encodes the UIUCs that the CPE
     supports. This reflects the setting of the IE
     defined in 7.7.11.3.2.2.2. UIUCs are listed in Table
     36."
BITS { uiuc0(0), uiuc1(1), uiuc2(2), uiuc3(3), uiuc4(4),
       uiuc5(5), uiuc6(6), uiuc7(7), uiuc8(8), uiuc9(9),
       uiuc10(10), uiuc11(11), uiuc12(12), uiuc13(13),
       uiuc14(14), uiuc15(15), uiuc16(16), uiuc17(17),
       uiuc18(18), uiuc19(19), uiuc20(20), uiuc21(21),
       uiuc22(22), uiuc23(23), uiuc24(24), uiuc25(25),
       uiuc26(26), uiuc27(27), uiuc28(28), uiuc29(29),
       uiuc30(30), uiuc31(31), uiuc32(32), uiuc33(33),
       uiuc34(34), uiuc35(35), uiuc36(36), uiuc37(37),
       uiuc38(38), uiuc39(39), uiuc40(40), uiuc41(41),
       uiuc42(42), uiuc43(43), uiuc44(44), uiuc45(45),
       uiuc46(46), uiuc47(47), uiuc48(48), uiuc49(49),
       uiuc50(50), uiuc51(51), uiuc52(52), uiuc53(53),
       uiuc54(54), uiuc55(55), uiuc56(56), uiuc57(57),
       uiuc58(58), uiuc59(59), uiuc60(60), uiuc61(61),
       uiuc62(62), uiuc63(63) }

wranIfBasicCapabilityCpeScmVersionSupport ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Indicator of what version of SCM protocol the CPE
     supports."
SYNTAX      INTEGER { v1(0) }

wranIfBasicCapabilityCpePnWindowSize      ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Size of PN_WINDOW (see 7.4) that is used to protect
     against replay attacks. This reflects the setting of
     the IE defined in 7.7.11.3.3.2."
SYNTAX      Integer32 { 1..65535 }

wranIfBasicCapabilityCpeScmFlowControl    ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Maximum # of ongoing SCM transactions the CPE can
     support. This reflects the setting of the IE defined
     in 7.7.11.3.3.3. Here a value of (0x00) indicates no
     limit, while 0x01-0xFF indicates 1..255
     transactions."
SYNTAX      INTEGER { 0..255 }

-- wranIfBsCpeRegCapabilityCmn: This MIB object is defines group
-- containing objects that are common to
-- wranIfBsCpeRegCapabilityReqEntry,

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```

-- wranIfBsCpeRegCapabilityRspEntry, and
-- wranIfBsCpeRegCapabilityDefEntry.

wranIfBsCpeRegCapabilityCmn      OBJECT IDENTIFIER
                                ::= { wranIfBsCm 17 }
wranIfRegCapabilityIndex   OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 1 }
wranIfRegCapabilityMacAddress  OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 2 }
wranIfRegCapabilityReqNumAttempts OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 3 }
wranIfRegCapabilityNMEAlocStringSize OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 4 }
wranIfRegCapabilityNMEAlocString  OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 5 }
wranIfRegCapabilityCsConfig    OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 6 }
wranIfRegCapabilityIpVersion   OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 7 }
wranIfRegCapabilityIpRohcSupport OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 8 }
wranIfRegCapabilityArqSupport  OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 9 }
wranIfRegCapability2ndMgmtArqWindowSize OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 10 }
wranIfRegCapability2ndMgmtArqRetryTxDelay OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 11 }
wranIfRegCapability2ndMgmtArqRetryRxDelay OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 12 }
wranIfRegCapability2ndMgmtArqBlockLifetime OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 13 }
wranIfRegCapability2ndMgmtArqSyncLossTimeout OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 14 }
wranIfRegCapability2ndMgmtArqDeliverInOrder OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 15 }
wranIfRegCapability2ndMgmtArqRxPurgeTimeout OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 16 }
wranIfRegCapability2ndMgmtArqBlockSize OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 17 }
wranIfRegCapabilityDsxFlowControl OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 18 }
wranIfRegCapabilityMcaFlowControl OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 19 }
wranIfRegCapabilityMaxNumMcastGroups OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 20 }
wranIfRegCapabilitySensModeSupportArray OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 21 }
wranIfRegCapabilityAntennaModelSize OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 22 }
wranIfRegCapabilityAntennaModel  OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 23 }
wranIfRegCapabilityCpeResidualDelay OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 24 }
wranIfRegCapability2ndMgmtIpAllocMethod OBJECT IDENTIFIER
                                ::= { wranIfBsCpeRegCapabilityCmn 25 }
wranIfRegCapabilityCpeOperationalCapability OBJECT IDENTIFIER

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        ::= { wranIfBsCpeRegCapabilityCmn 26 }
wranIfRegCapabilityCpeRegistrationTimer OBJECT IDENTIFIER
        ::= { wranIfBsCpeRegCapabilityCmn 27 }
wranIfRegCapabilityPermanentStationId OBJECT IDENTIFIER
        ::= { wranIfBsCpeRegCapabilityCmn 28 }

wranIfRegCapabilityIndex      ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Index of entry in this table."
    SYNTAX      Integer32 (1..511)

wranIfRegCapabilityMacAddress ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "The MAC address of the CPE that is currently
         registered with BS."
    SYNTAX      MacAddress

wranIfRegCapabilityReqNumAttempts   ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "The current number of attempts that a CPE has
         attempted network entry. This item is set to 0
         upon successful completion of registration process
         and a CPE is admitted into the network. This item
         is incremented every time a CPE attempts
         registration, but is unsuccessful. If this value
         reaches the limit set by
         wranIfBsmaxNumRegReqAttempts, then the CPE shall
         restart the network entry process."
    SYNTAX      INTEGER (5..10)

wranIfRegCapabilityNMEAlocStringSize      ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Size of NMEA Location String of the CPE (see
         7.7.7.3.1), in octets."
    SYNTAX      Integer32 (1..10000)

wranIfRegCapabilityNMEAlocString      ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "NMEA Location String of the CPE (see
         7.7.7.3.1), in octets."
    SYNTAX      OCTET STRING (SIZE(wranIfRegCapabilityNMEAlocStringSize))

wranIfRegCapabilityCsConfig      ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Indication in REG-REQ/RSP of how the provider will
         operate the CPE on an ongoing basis; either with
         Ethernet CS only or the IP CS (see 7.7.7.3.2)."
    SYNTAX      INTEGER { ethCS(0), ipCS(1) }

```

```
wranIfRegCapabilityIpVersion ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "What version of the IP protocol (either v4 or v6)
         indicate in REG-REQ/RSP the CPE supports (see
         7.7.7.3.3)."
    SYNTAX      INTEGER { ipv4(0), ipv6(1) }

wranIfRegCapabilityIpRohcSupport ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Indicator in REG-RES/RSP of whether CPE
         supports IP Robust Header Compression (ROHC), see
         7.7.7.3.4.1."
    SYNTAX      INTEGER { ipROHCdisabled(0), ipROHCEnabled (1) }

wranIfRegCapabilityArqSupport ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "ARQ Support IE of REG-REQ/RSP in 7.7.7.3.4.2."
    SYNTAX      INTEGER { noARQ(0), arqOn2ndMgmtOnly(1),
                           arqOnTransportOnly(2), arqOnall(3) }

wranIfRegCapability2ndMgmtArqWindowSize ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Secondary Management flow - ARQ Window Size IE of
         REG-REQ/RSP defined in 7.7.8.9.17.2. Where
         ARQ_BSN_MODULUS is the # of unique BSN values =
         2^10."
    SYNTAX      Integer32 (1..ARQ_BSN_MODULUS/2)

wranIfRegCapability2ndMgmtArqRetryTxDelay ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Secondary Management flow - Transmitter delay
         component of ARQ Retry Timeout IE of REG-REQ/RSP
         defined in 7.7.8.9.17.3. Encoded from 0 to 655350
         microseconds in 10-microsecond blocks."
    SYNTAX      Integer32 (0..65535)

wranIfRegCapability2ndMgmtArqRetryRxDelay ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Secondary Management flow - Receiver delay
         component of ARQ Retry Timeout IE of REG-REQ/RSP
         defined in 7.7.8.9.17.3. Encoded from 0 to 655350
         microseconds in 10-microsecond blocks."
    SYNTAX      Integer32 (0..65535)

wranIfRegCapability2ndMgmtArqBlockLifetime
                                ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Secondary Management flow - ARQ Block Lifetime IE of
         REG-REQ/RSP defined in 7.7.8.9.17.4. =0 indicates
```

```

        Infinite lifetime. =1..65535 # of 10-microsecond
        blocks."
SYNTAX      Integer32 (0..65535)

wranIfRegCapability2ndMgmtArqSyncLossTimeout ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Secondary Management flow - ARQ Sync Loss Timeout IE
     of REG-REQ/RSP defined in 7.7.8.9.17.5. =0 indicates
     Infinite timeout. =1..65535 # of 10-microsecond
     blocks."
SYNTAX      Integer32 (0..65535)

wranIfRegCapability2ndMgmtArqDeliverInOrder ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Secondary Management flow - ARQ Deliver in Order IE
     of REG-REQ/RSP defined in 7.7.8.9.17.6."
SYNTAX      INTEGER { notInOrder(0), orderPreserved(1) }

wranIfRegCapability2ndMgmtArqRxPurgeTimeout ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Secondary Management flow - ARQ Rx Purge Timeout IE
     of REG-REQ/RSP defined in 7.7.8.9.17.7. =0 indicates
     Infinite timeout. =1..65535 # of 10-microsecond
     blocks."
SYNTAX      Integer32 (0..65535)

wranIfRegCapability2ndMgmtArqBlockSize ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "Secondary Management flow - ARQ Block Size IE
     of REG-REQ/RSP defined in 7.7.8.9.17.8"
SYNTAX      Integer32 (1..2040)

wranIfRegCapabilityDsxFlowControl ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "DSx Flow Control IE of REG-REQ/RSP defined in
     7.7.7.3.4.4. =0, no limit. 1..255 indicates #
     maximum concurrent transactions."
SYNTAX      INTEGER (0..255)

wranIfRegCapabilityMcaFlowControl ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION
    "MCA Flow Control IE of REG-REQ/RSP defined in
     7.7.7.3.4.5. =0, no limit. 1..255 indicates #
     maximum concurrent transactions."
SYNTAX      INTEGER (0..255)

wranIfRegCapabilityMaxNumMcastGroups ::= TEXTUAL-CONVENTION

```

```

        STATUS      current
        DESCRIPTION
            "Maximum # of Multicast Groups IE of REG-REQ/RSP
             defined in 7.7.7.3.4.5. =0, no limit. 1..255
             indicates # maximum concurrent transactions."
        SYNTAX      INTEGER (0..255)

wranIfRegCapabilitySensModeSupportArray ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Value of the 'Sensing Mode Support Array' of the
             Measurement Support IE in REG-REQ/RSP in
             7.7.7.3.4.7. If the value of this is set to 'No
             Sensing', then wranIfBsCpeMeasSupportReqTable and
             wranIfBsCpeMeasSupportRspTable will not be stored
             for the CPE. Bit4 through Bit7 are reserved and set
             to 0. A mode is supported when the corresponding bit
             is set to 1 and disabled when set to 0."
        SYNTAX      BITS { noSensing(0), mode0(1), mode1(2),
                           mode2(3), res1(4), res2(5), res3(6),
                           res4(7) }

wranIfRegCapabilityAntennaModelSize ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Length of wranIfRegCapabilityAntennaModel, in octets
             (see Manufacturer Specific Antenna Model IE of REG-
             REQ in 7.7.7.3.4.8)."
        SYNTAX      Integer32 (1..65535)

wranIfRegCapabilityAntennaModel      ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Manufacturer Specific Antenna Model IE of REG-
             REQ in 7.7.7.3.4.8."
        SYNTAX      OCTET STRING (SIZE(wranIfRegCapabilityAntennaModelSize))

wranIfRegCapabilityCpeResidualDelay ::= TEXTUAL-CONVENTION
        STATUS      current
        UNITS      "nanoseconds"
        DESCRIPTION
            "CPE Residual Delay IE of REG-REQ in 7.7.7.3.4.10."
        SYNTAX      Integer32 (-16777215..16777216)

wranIfRegCapability2ndMgmtIpAllocMethod   ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Method for allocating IP Address on Secondary
             Management Connection IE of REG-REQ in
             7.7.7.3.4.11. A method is selected when the bit in
             corresponding position is set to 1 and is disabled
             when the bit is set to 0. Bit4-Bit7 Reserved and set
             to 0."
        SYNTAX      BITS { DHCPv4(0), MIPv4(1), DHCPv6(2),
                           v6Stateless(3), res1(4), res2(5),
                           res3(6) }
    
```

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        res3(6), res4(7) }

wranIfRegCapabilityCpeOperationalCapability ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "CPE Operation Capability IE of REG-REQ in
         7.7.7.3.4.13."
    SYNTAX      INTEGER { fixed(0), portable(1) }

wranIfRegCapabilityCpeRegistrationTimer ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "CPE Registration Timer IE of REG-REQ/RSP in
         7.7.7.3.5. This value is used to set T30 for the
         CPE. =0x0000 is reserved. =0x0001..0xFFFF represents
         time in units of 160 ms blocks. "
    SYNTAX      Integer32 (1..65535)

wranIfRegCapabilityPermanentStationId ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Permanent station ID assigned to CPE, when CPE is
         entering the network under the CPE Privacy method
         (see 8.7). The format of this IE is defined in
         7.7.7.3.4.12."
    SYNTAX      Integer32 (1..512)

-- wranIfBsCpeMeasSupportCmn: This MIB object is a group containing
-- objects that textual conventions used in to
-- wranIfBsCpeMeasSupportReqEntry, wranIfBsCpeMeasSupportRspEntry, and
-- wranIfBsCpeMeasSupportDefEntry.

wranIfBsCpeMeasSupportCmn      OBJECT IDENTIFIER
                                ::= { wranIfBsCm 18 }
wranIfMeasSupportIndex          OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 1 }
wranIfMeasSupportMacAddress     OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 2 }
wranIfMeasSupportSignalType     OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 3 }
wranIfMeasSupportThreshold     OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 4 }
wranIfMeasSupportPd             OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 5 }
wranIfMeasSupportMpfa           OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 6 }
wranIfMeasSupportRecNumSensPeriods OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 7 }
wranIfMeasSupportRecSensPeriodDuration OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 8 }
wranIfMeasSupportRecSensPeriodInterval OBJECT IDENTIFIER
                                ::= { wranIfBsCpeMeasSupportCmn 9 }

wranIfMeasSupportIndex ::= TEXTUAL-CONVENTION
    STATUS      current

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DESCRIPTION
    "Index of entry defined by
    wranIfBsCpeMeasSupportReqEntry or
    wranifBsCpeMeasSupportRspEntry."
SYNTAX      Integer32 (1.. 16384)

wranIfMeasSupportMacAddress   ::= TEXTUAL-CONVENTION
STATUS        current
DESCRIPTION
    "MAC address of CPE. This corresponds to an entry in
    wranIfBsCpeRegCapabilityReqTable for a registered
    CPE."
SYNTAX      MacAddress

wranIfMeasSupportSignalType  ::= TEXTUAL-CONVENTION
STATUS        current
DESCRIPTION
    "Signal type to which measurement configuration this
    entry pertains (see Table 237)."
SYNTAX      INTEGER { undetermined(0), dot22Wran(1),
                    atsc(2), dvbt(3), isdbt(4), ntsc(5),
                    pal(6), secam(7), wimic(8),
                    dot22dot1SyncBurst(9),
                    dot22dot1Msf1(10), dot22dot1Msf2(11),
                    dot22dot1Msf3(12) }

wranIfMeasSupportThreshold   ::= TEXTUAL-CONVENTION
STATUS        current
UNITS         "dBm"
DESCRIPTION
    "Signed # that signifies the sensitivity threshold
    for the signal type. Values indicates a sensitivity
    threshold in dBm on the range from -127.5 to +128
    dBm in 0.5 dB steps."
SYNTAX      Integer32 (0..511)

wranIfMeasSupportPd          ::= TEXTUAL-CONVENTION
STATUS        current
DESCRIPTION
    "Probability of detection (PD) for the signal type.
    Ranges from 0 (0x00) to 1 (0xFA) in increments of
    0.004."
SYNTAX      INTEGER (0..250)

wranIfMeasSupportMpfa        ::= TEXTUAL-CONVENTION
STATUS        current
DESCRIPTION
    "Maximum Probability of False Alarm for the signal
    type. Probability is specified from 0 (0x00) to
    0.255 (0xFF) in 0.001 increments."
SYNTAX      INTEGER (0..255)

wranIfMeasSupportRecNumSensPeriods ::= TEXTUAL-CONVENTION
STATUS        current
DESCRIPTION
    "Recommended # of sensing periods required to sense

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        signal type (see Table 238)."
SYNTAX      INTEGER (0..127)

wranIfMeasSupportRecSensPeriodDuration      ::= TEXTUAL-CONVENTION
STATUS      current
UNITS       "symbols"
DESCRIPTION
    "Recommended duration of sensing periods in units of
     symbols (see Table 238)."
SYNTAX      Integer32 (0..1023)

wranIfMeasSupportRecSensPeriodInterval      ::= TEXTUAL-CONVENTION
STATUS      current
UNITS       "frames"
DESCRIPTION
    "Recommended length of sensing period interval, units
     of integer number of frames (see Table 238)."
SYNTAX      Integer32 (0..2047)

wranIfBsCpeSystemParametersTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsCpeSystemParametersEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table contains objects that define system
     constants for REG-REQ/RSP, DSx-REQ/RSP, and MCA-RSP
     transactions. It only has one entry, as defined by
     wranIfBsCpeSystemParametersEntry."
 ::= { wranIfBsCm 19 }

wranIfBsCpeSystemParametersEntry      OBJECT-TYPE
SYNTAX      wranIfBsCpeSystemParametersEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfBsCpeSystemParametersTable."
INDEX { wranIfBsCpeSystemParametersIndex }
 ::= { wranIfBsCpeSystemParametersTable 1 }

wranIfBsCpeSystemParametersEntry      ::= SEQUENCE {
    wranIfBsCpeSystemParametersIndex      INTEGER,
    wranIfBsDsxReqRetries              INTEGER,
    wranIfBsDsxRspRetries              INTEGER,
    wranIfBst6                         INTEGER,
    wranIfBst7                         INTEGER,
    wranIfBst8                         Integer32,
    wranIfBst9                         Integer32,
    wranIfBst10                        INTEGER,
    wranIfBst13                        INTEGER,
    wranIfBst14                        INTEGER,
    wranIfBst15                        INTEGER,
    wranIfBst16                        Integer32,
    wranIfBst18                        Integer32,
    wranIfBst22                        INTEGER,
    wranIfBst26                        INTEGER,
}

```

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wranIfBsT27Idle          Integer32,
wranIfBsT27Active        Integer32,
wranIfBsT28              Integer32 }

wranIfBsCpeSystemParametersIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "Index of entry in this table."
    ::= { wranIfBsCpeSystemParametersEntry 1 }

wranIfBsDsxReqRetries   OBJECT-TYPE
    SYNTAX      INTEGER (3..5)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum number of timeout retries for DSx-REQ
         messages."
    ::= { wranIfBsCpeSystemParametersEntry 2 }

wranIfBsDsxRspRetries   OBJECT-TYPE
    SYNTAX      INTEGER (3..5)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Maximum number of timeout retries for DSx-RSP
         messages."
    ::= { wranIfBsCpeSystemParametersEntry 3 }

wranIfBsT6   OBJECT-TYPE
    SYNTAX      INTEGER (1..3)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Timeout for receiving REG-RSP."
    ::= { wranIfBsCpeSystemParametersEntry 4 }

wranIfBsT7   OBJECT-TYPE
    SYNTAX      INTEGER (1..250)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Timeout for receiving DSx-RSP, representing a range
         from 4 ms to 1 s in 4 ms increments."
    ::= { wranIfBsCpeSystemParametersEntry 5 }

wranIfBsT8   OBJECT-TYPE
    SYNTAX      Integer32 (1..300)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Timeout for receiving DSA-ACK/DSC-ACK, representing

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a range from 1 ms to 300 ms in 1 ms increments."  
 ::= { wranIfBsCpeSystemParametersEntry 6 }  
  
wranIfBsT9 OBJECT-TYPE  
SYNTAX Integer32 (300..1000)  
UNITS "milliseconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Timeout between BS's transmitting RNG-CMD (success)  
to a CPE and receiving CBC-REQ from that same CPE."  
 ::= { wranIfBsCpeSystemParametersEntry 7 }  
  
wranIfBsT10 OBJECT-TYPE  
SYNTAX INTEGER (1..3)  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Wait for Transaction End timeout."  
 ::= { wranIfBsCpeSystemParametersEntry 8 }  
  
wranIfBsT13 OBJECT-TYPE  
SYNTAX INTEGER (1..3)  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Time allowed for CPE, following receipt of a REG-RSP  
to send a TFTP-CPLT message to the BS."  
 ::= { wranIfBsCpeSystemParametersEntry 9 }  
  
wranIfBsT14 OBJECT-TYPE  
SYNTAX INTEGER (10..200)  
UNITS "milliseconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Wait for DSx-RSP timeout."  
 ::= { wranIfBsCpeSystemParametersEntry 10 }  
  
wranIfBsT15 OBJECT-TYPE  
SYNTAX INTEGER (20..200)  
UNITS "milliseconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Wait for MCA-RSP."  
 ::= { wranIfBsCpeSystemParametersEntry 11 }  
  
wranIfBsT16 OBJECT-TYPE  
SYNTAX Integer32 (10..2000)  
UNITS "milliseconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION
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        "Wait for bandwidth request grant."
        ::= { wranIfBsCpeSystemParametersEntry 12 }

wranIfBsT18 OBJECT-TYPE
    SYNTAX      Integer32 (10..2000)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Wait for CBC-REQ timeout."
        ::= { wranIfBsCpeSystemParametersEntry 13 }

wranIfBsT22 OBJECT-TYPE
    SYNTAX      INTEGER (1..250)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Wait for ARQ-Reset."
        ::= { wranIfBsCpeSystemParametersEntry 14 }

wranIfBsT26 OBJECT-TYPE
    SYNTAX      INTEGER (1..250)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Wait for TFT-RSP."
        ::= { wranIfBsCpeSystemParametersEntry 15 }

wranIfBsT27Idle   OBJECT-TYPE
    SYNTAX      Integer32 (200..500)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum time between unicast grants to CPE when BS
         believe CPE transmission quality is good enough."
        ::= { wranIfBsCpeSystemParametersEntry 16 }

wranIfBsT27Active OBJECT-TYPE
    SYNTAX      Integer32 (200..500)
    UNITS       "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum time between unicast grants to CPE when BS
         believe CPE transmission quality is not good
         enough."
        ::= { wranIfBsCpeSystemParametersEntry 17 }

wranIfBsT28 OBJECT-TYPE
    SYNTAX      Integer32 (60..300)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current

```

**DESCRIPTION**

"Time allowed for BS to complete the transmission of the backup/candidate channel list to its CPEs after initial registration by a new CPE, including the database service query."

**::= { wranIfBsCpeSystemParametersEntry 18 }**

**wranIfBsCpeRegCapabilityDefTable OBJECT-TYPE**

**SYNTAX** SEQUENCE OF **wranIfBsCpeRegCapabilityDefEntry**

**MAX-ACCESS** not-accessible

**STATUS** current

**DESCRIPTION**

"This object defines a table containing default values of REG-REQ/RSP IEs. This table can be used by the BS to judge/verify a CPE's REG-REQ and used to construct the REG-RSP message. There is one entry in this table, defined by **wranIfBsCpeRegCapabilityDefEntry**."

**::= { wranIfBsCm 20 }**

**wranIfBsCpeRegCapabilityDefEntry OBJECT-TYPE**

**SYNTAX** **wranIfBsCpeRegCapabilityDefEntry**

**MAX-ACCESS** not-accessible

**STATUS** current

**DESCRIPTION**

"This object defines an entry in **wranIfBsCpeRegCapabilityDefTable**. The objects that make up this entry are defined in **wranIfBsCpeRegCapabilityCmn** (13.1.2.2.17)."

**INDEX { wranIfBsCpeRegCapabilityDefIndex }**

**::= { wranIfBsCpeRegCapabilityDefTable 1 }**

**wranIfBsCpeRegCapabilityDefEntry ::= SEQUENCE {**

**wranIfBsCpeRegCapabilityDefIndex**,

**wranIfRegCapbilityIndex,**

**wranIfBsCpeRegCapabilityDefCsConfig**,

**wranIfRegCapabilityCsConfig,**

**wranIfBsCpeRegCapabilityDefIpVersion**,

**wranIfRegCapabilityIpVersion,**

**wranIfBsCpeRegCapabilityDefIpRochSupport**,

**wranIfRegCapabilityIpRochSupport,**

**wranIfBsCpeRegCapabilityDefArqSupport**,

**wranIfRegCapabilityArqSupport,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqWindowSize**,

**wranIfRegCapability2ndMgmtArqWindowSize,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryTxDelay**,

**wranIfRegCapability2ndMgmtArqRetryTxDelay,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryRxDelay**,

**wranIfRegCapability2ndMgmtArqRetryRxDelay,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockLifetime**,

**wranIfRegCapability2ndMgmtArqBlockLifetime,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqSyncLossTimeout**,

**wranIfRegCapability2ndMgmtArqSyncLossTimeout,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqDeliverInOrder**,

**wranIfRegCapability2ndMgmtArqDeliverInOrder,**

**wranIfBsCpeRegCapabilityDef2ndMgmtArqRxPurgeTimeout**

```

        wranIfRegCapability2ndMgmtArqRxPurgeTimeout,
        wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockSize
            wranIfRegCapability2ndMgmtArqBlockSize,
        wranIfBsCpeRegCapabilityDefDsxFlowControl
            wranIfRegCapabilityDsxFlowControl,
        wranIfBsCpeRegCapabilityDefMcaFlowControl
            wranIfRegCapabilityMcaFlowControl,
        wranIfBsCpeRegCapabilityDefMaxNumMcastGroups
            wranIfRegCapabilityMaxNumMcastGroups,
        wranIfBsCpeRegCapabilityDefSensModeSupportArray
            wranIfRegCapabilitySensModeSupportArray,
        wranIfBsCpeRegCapabilityDef2ndMgmtIpAllocMethod
            wranIfRegCapability2ndMgmtIpAllocMethod,
        wranIfBsCpeRegCapabilityDefCpeOperationalCapability
            wranIfRegCapabilityCpeOperationalCapability,
        wranIfBsCpeRegCapabilityDefCpeRegistrationTimer
            wranIfRegCapabilityCpeRegistrationTimer }

wranIfBsCpeRegCapabilityDefIndex      OBJECT-TYPE
    SYNTAX      wranIfRegCapbilityIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapbilityIndex."
    ::= { wranIfBsCpeRegCapabilityDefEntry 1 }

wranIfBsCpeRegCapabilityDefCsConfig OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCsConfig
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityCsConfig."
    ::= { wranIfBsCpeRegCapabilityDefEntry 2 }

wranIfBsCpeRegCapabilityDefIpVersion      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityIpVersion
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityIpVersion."
    ::= { wranIfBsCpeRegCapabilityDefEntry 3 }

wranIfBsCpeRegCapabilityDefIpRochSupport OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityIpRochSupport
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityIpRochSupport."
    ::= { wranIfBsCpeRegCapabilityDefEntry 4 }

wranIfBsCpeRegCapabilityDefArqSupport      OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityArqSupport
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapabilityArqSupport."

```

```

 ::= { wranIfBsCpeRegCapabilityDefEntry 5 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqWindowSize OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqWindowSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfRegCapability2ndMgmtArqWindowSize."
 ::= { wranIfBsCpeRegCapabilityDefEntry 6 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryTxDelay      OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqRetryTxDelay
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapability2ndMgmtArqRetryTxDelay."
 ::= { wranIfBsCpeRegCapabilityDefEntry 7 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryRxDelay      OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqRetryRxDelay
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapability2ndMgmtArqRetryRxDelay."
 ::= { wranIfBsCpeRegCapabilityDefEntry 8 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockLifetime     OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqBlockLifetime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapability2ndMgmtArqBlockLifetime."
 ::= { wranIfBsCpeRegCapabilityDefEntry 9 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqSyncLossTimeout   OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqSyncLossTimeout
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapability2ndMgmtArqSyncLossTimeout."
 ::= { wranIfBsCpeRegCapabilityDefEntry 10 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqDeliverInOrder    OBJECT-TYPE
    SYNTAX      wranIfRegCapability2ndMgmtArqDeliverInOrder
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapability2ndMgmtArqDeliverInOrder."
 ::= { wranIfBsCpeRegCapabilityDefEntry 11 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqRxPurgeTimeout    OBJECT-TYPE

```

```
SYNTAX      wranIfRegCapability2ndMgmtArqRxPurgeTimeout
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by
    wranIfRegCapability2ndMgmtArqRxPurgeTimeout."
 ::= { wranIfBsCpeRegCapabilityDefEntry 12 }

wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockSize  OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtArqBlockSize
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapability2ndMgmtArqBlockSize."
 ::= { wranIfBsCpeRegCapabilityDefEntry 13 }

wranIfBsCpeRegCapabilityDefDsxFlowControl  OBJECT-TYPE
SYNTAX      wranIfRegCapabilityDsxFlowControl
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityDsxFlowControl."
 ::= { wranIfBsCpeRegCapabilityDefEntry 14 }

wranIfBsCpeRegCapabilityDefMcaFlowControl  OBJECT-TYPE
SYNTAX      wranIfRegCapabilityMcaFlowControl
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityMcaFlowControl."
 ::= { wranIfBsCpeRegCapabilityDefEntry 15 }

wranIfBsCpeRegCapabilityDefMaxNumMcastGroups  OBJECT-TYPE
SYNTAX      wranIfRegCapabilityMaxNumMcastGroups
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilityMaxNumMcastGroups."
 ::= { wranIfBsCpeRegCapabilityDefEntry 16 }

wranIfBsCpeRegCapabilityDefSensModeSupportArray  OBJECT-TYPE
SYNTAX      wranIfRegCapabilitySensModeSupportArray
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapabilitySensModeSupportArray."
 ::= { wranIfBsCpeRegCapabilityDefEntry 17 }

wranIfBsCpeRegCapabilityDef2ndMgmtIpAllocMethod  OBJECT-TYPE
SYNTAX      wranIfRegCapability2ndMgmtIpAllocMethod
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Defined by wranIfRegCapability2ndMgmtIpAllocMethod."
 ::= { wranIfBsCpeRegCapabilityDefEntry 18 }
```

```

wranIfBsCpeRegCapabilityDefCpeOperationalCapability OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeOperationalCapability
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapabilityCpeOperationalCapability."
    ::= { wranIfBsCpeRegCapabilityDefEntry 19 }

wranIfBsCpeRegCapabilityDefCpeRegistrationTimer OBJECT-TYPE
    SYNTAX      wranIfRegCapabilityCpeRegistrationTimer
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfRegCapabilityCpeRegistrationTimer."
    ::= { wranIfBsCpeRegCapabilityDefEntry 20 }

wranIfBsCpeBasicCapabilityDefTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeBasicCapabilityDefEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines a table containing default
         values of CBC-REQ/RSP IEs. This table can be used by
         the BS to judge/verify a CPE's CBC-REQ and used to
         construct the CBC-RSP message. There is one entry in
         this table defined by
         wranIfBsCpeBasicCapabilityDefEntry."
    ::= { wranIfBsCm 21 }

wranIfBsCpeBasicCapabilityDefEntry OBJECT-TYPE
    SYNTAX      wranIfBsCpeBasicCapabilityDefEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfBsCpeBasicCapabilityDefTable. The objects that
         make up this table are defined in
         wranIfBsCpeBasicCapabilityCmn (13.1.2.2.16)."
    INDEX { wranIfBsCpeBasicCapabilityDefIndex }
    ::= { wranIfBsCpeBasicCapabilityDefTable 1 }

wranIfBsCpeBasicCapabilityDefEntry ::= SEQUENCE {
    wranIfBsCpeBasicCapabilityDefIndex,
    wranIfBasicCapbilityIndex,
    wranIfBsCpeBasicCapabilityDefMacPduTxAndConstruction,
    wranIfBasicCapbilityMacPduTxAndConstruction,
    wranIfBsCpeBasicCapabilityDefCpeDemodulator,
    wranIfBasicCapabilityCpeDemodulator,
    wranIfBsCpeBasicCapabilityDefCpeModulator,
    wranIfBasicCapabilityCpeModulator,
    wranIfBsCpeBasicCapabilityDefScmVersionSupport,
    wranIfBasicCapabilityCpeScmVersionSupport,
    wranIfBsCpeBasicCapabilityDefPnWindowSize,
    wranIfBasicCapabilityCpePnWindowSize,
}

```

```
wranIfBsCpeBasicCapabilityDefScmFlowControl
    wranIfBasicCapabilityScmFlowControl }

wranIfBsCpeBasicCapabilityDefIndex OBJECT-TYPE
    SYNTAX      wranIfBasicCapbilityIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityIndex."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 1 }

wranIfBsCpeBasicCapabilityDefMacPduTxAndConstruction OBJECT-TYPE
    SYNTAX      wranIfBasicCapbilityMacPduTxAndConstruction
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfBasicCapbilityMacPduTxAndConstruction."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 2 }

wranIfBsCpeBasicCapabilityDefCpeDemodulator OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityCpeDemodulator
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityCpeDemodulator."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 3 }

wranIfBsCpeBasicCapabilityDefCpeModulator OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityCpeModulator
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityCpeModulator."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 4 }

wranIfBsCpeBasicCapabilityDefScmVersionSupport OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityCpeScmVersionSupport
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by
         wranIfBasicCapabilityCpeScmVersionSupport."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 5 }

wranIfBsCpeBasicCapabilityDefPnWindowSize OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityCpePnWindowSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfBasicCapabilityCpePnWindowSize."
    ::= { wranIfBsCpeBasicCapabilityDefEntry 6 }

wranIfBsCpeBasicCapabilityDefScmFlowControl OBJECT-TYPE
    SYNTAX      wranIfBasicCapabilityScmFlowControl
    MAX-ACCESS  read-only
```

```

        STATUS      current
        DESCRIPTION
            "Defined by wranIfBasicCapabilityScmFlowControl."
        ::= { wranIfBsCpeBasicCapabilityDefEntry 7 }

wranIfBsCpeMeasSupportDefTable      OBJECT-TYPE
        SYNTAX      SEQUENCE OF wranIfBsCpeMeasSupportDefEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "A compound object representing the default
            configuration of the Measurement Support IE of REG-
            REQ/RSP. This table can be used by the BS to
            judge/verify the Measurement Support IE in CPE's
            REG-REQ and used to construct the Measurement
            Support IE sent by the BS in the REG-RSP message.
            There is one entry for each signal type, defined by
            wranIfBsCpeMeasSupportDefEntry. This table is only
            valid if the value for wranIfSensModeSupportArray is
            anything other than 'No Sensing'."
        ::= { wranIfBsCm 22 }

wranIfBsCpeMeasSupportDefEntry      OBJECT-TYPE
        SYNTAX      wranIfBsCpeMeasSupportDefEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "A compound object representing the entries
            of wranIfBsCpeMeasSupportDefTable. Each part
            entry is defined in wranIfBsCpeMeasSupportCmn
            (13.1.2.2.18)."
        INDEX { wranIfBsCpeMeasSupportDefIndex }
        ::= { wranIfBsCpeMeasSupportDefTable 1 }

wranIfBsCpeMeasSupportReqEntry      ::= SEQUENCE {
        wranIfBsCpeMeasSupportDefIndex
            wranIfMeasSupportIndex,
        wranIfBsCpeMeasSupportDefSignalType
            wranIfMeasSupportSignalType,
        wranIfBsCpeMeasSupportDefThreshold
            wranIfMeasSupportThreshold,
        wranIfBsCpeMeasSupportDefPd
            wranIfMeasSupportPd,
        wranIfBsCpeMeasSupportDefMpfa
            wranIfMeasSupportMpfa,
        wranIfBsCpeMeasSupportDefRecNumSensPeriods
            wranIfMeasSupportRecNumSensPeriods,
        wranIfBsCpeMeasSupportDefRecSensPeriodDuration
            wranIfMeasSupportRecSensPeriodDuration,
        wranIfBsCpeMeasSupportDefRecSensPeriodInterval
            wranIfMeasSupportRecSensPeriodInterval
}

wranIfBsCpeMeasSupportDefIndex      OBJECT-TYPE
        SYNTAX      wranIfMeasSupportIndex
        MAX-ACCESS  not-accessible
        STATUS      current

```

```
DESCRIPTION
    "Defined by wranIfMeasSupportIndex."
 ::= { wranIfBsCpeMeasSupportDefEntry 1 }

wranIfBsCpeMeasSupportDefSignalType OBJECT-TYPE
    SYNTAX      wranIfMeasSupportSignalType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportSignalType."
 ::= { wranIfBsCpeMeasSupportDefEntry 2 }

wranIfBsCpeMeasSupportDefThreshold OBJECT-TYPE
    SYNTAX      wranIfMeasSupportThreshold
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportThreshold."
 ::= { wranIfBsCpeMeasSupportDefEntry 3 }

wranIfBsCpeMeasSupportDefPd   OBJECT-TYPE
    SYNTAX      wranIfMeasSupportPd
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportPd."
 ::= { wranIfBsCpeMeasSupportDefEntry 4 }

wranIfBsCpeMeasSupportDefMpfa OBJECT-TYPE
    SYNTAX      wranIfMeasSupportMpfa
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportMpfa."
 ::= { wranIfBsCpeMeasSupportDefEntry 5 }

wranIfBsCpeMeasSupportDefRecNumSensPeriods      OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecNumSensPeriods
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecNumSensPeriods."
 ::= { wranIfBsCpeMeasSupportDefEntry 6 }

wranIfBsCpeMeasSupportDefRecSensPeriodDuration  OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodDuration
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Defined by wranIfMeasSupportRecSensPeriodDuration."
 ::= { wranIfBsCpeMeasSupportDefEntry 7 }

wranIfBsCpeMeasSupportDefRecSensPeriodInterval  OBJECT-TYPE
    SYNTAX      wranIfMeasSupportRecSensPeriodInterval
    MAX-ACCESS  read-only
    STATUS      current
```

```

DESCRIPTION
    "Defined by wranIfMeasSupportRecSensPeriodInterval."
 ::= { wranIfBsCpeMeasSupportDefEntry 8 }

-- wranIfBsPhy: This MIB object contains managed objects related to PHY
-- configuration. All object described are related to the OFDMA PHY
-- that is supported.

wranIfBsPhy                                OBJECT IDENTIFIER
                                                ::= { wranIfBsCm 23 }
wranIfBsOfdmaPhyUsChannelTable              OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 1 }
wranIfBsOfdmaPhyDsChannelTable              OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 2 }
wranIfBsOfdmaUcdBurstProfileTable          OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 3 }
wranIfBsOfdmaDcdBurstProfileTable          OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 4 }
wranIfBsOfdmaDsRegionTable                  OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 5 }
wranIfBsOfdamUsRegionTable                  OBJECT IDENTIFIER
                                                ::= { wranIfBsPhy 6 }

wranIfBsOfdmaPhyUsChannelTable      OBJECT-TYPE
SYNTAX           SEQUENCE OF wranIfBsOfdmaPhyUsChannelEntry
MAX-ACCESS       not-accessible
STATUS           current
DESCRIPTION
    "This object provides a table to describe attributes
     of upstream channels. It is a compound object that
     is made up of multiple entries (one for each CPE),
     described by wranIfBsOfdmaPhyUsChannelTableEntry."
 ::= { wranIfBsPhy 1 }

wranIfBsOfdmaPhyUsChannelEntry    OBJECT-TYPE
SYNTAX           wranIfBsOfdmaPhyUsChannelEntry
MAX-ACCESS       not-accessible
STATUS           current
DESCRIPTION
    "This object is a compound object that represents an
     entry a CPE's upstream channel configuration."
INDEX { wranIfBsOfdmaPhyUsChannelIndex }
 ::= { wranIfBsOfdmaPhyUsChannelTable 1 }

wranIfBsOfdmaPhyUsChannelEntry    ::= SEQUENCE {
wranIfBsOfdmaPhyUsChannelIndex        Integer32,
wranIfBsOfdmaPhyUsSid                Integer32,
wranIfBsOfdmaPhyUsMacAddress         MacAddress,
wranIfBsOfdmaCtBasedResvTimeout     INTEGER,
wranIfBsOfdmaUsCenterFrequency      Integer32,
wranIfBsOfdmaUsRadioResource        INTEGER,
wranIfBsOfdmaUsUcsConfigChangeCount INTEGER,
wranIfBsOfdmaUsUcsNotificationCodes INTEGER,
wranIfBsOfdmaUsInitRngCodes         INTEGER,
wranIfBsOfdmaUsPeriodicRngCodes     INTEGER,
wranIfBsOfdmaUsBWReqCodes           INTEGER,
}

```

```

wranIfBsOfdmaUsPeriodicRngBackoffStart      INTEGER,
wranIfBsOfdmaUsPeriodicRngBackoffEnd        INTEGER,
wranIfBsOfdmaUsStartofCodes                 INTEGER,
wranIfBsOfdmaUsNormalizedCnrOverride       OCTET STRING,
wranIfBsOfdamUsInitialRangingInterval      INTEGER,
wranIfBsOfdmaUsUcsNotificationBackoffStart  INTEGER,
wranIfBsOfdmaUsUcsNotificationBackoffEnd    INTEGER,
wranIfBsOfdmaUsInitialRngBackoffStart      INTEGER,
wranIfBsOfdmaUsInitialRngBackoffEnd        INTEGER,
wranIfBsOfdmaUsBwRequestBackoffStart       INTEGER,
wranIfBsOfdmaUsBwRequestBackoffEnd         INTEGER,
wranIfBsOfdmaUsUcdInterval                INTEGER,
wranIfBsOfdmaUsUcdTransition              INTEGER,
wranIfBsOfdmaUsClkCmpInterval            INTEGER,
wranIfBsOfdmaUsT57                      INTEGER,
wranIfBsOfdmaUsT58                      INTEGER,
wranIfBsOfdmaUsCdmaRngRetries           INTEGER,
wranIfBsOfdmaUsInvRngReq                INTEGER,
wranIfBsOfdmaUsMapProctime              INTEGER,
wranIfBsOfdmaUsT3                       INTEGER,
wranIfBsOfdmaUsT4                       Integer32,
wranIfBsOfdmaUsT5                       INTEGER,
wranIfBsOfdmaUsT12                     INTEGER }

wranIfBsOfdmaPhyUsChannelIndex      OBJECT-TYPE
    SYNTAX      Integer32 (1.. 131071)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsOfdmaPhyUsChannelEntry 1 }

wranIfBsOfdmaPhyUsSid      OBJECT-TYPE
    SYNTAX      Integer32 (0.. 512)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A 9-bit Station ID that identifies the station whose
         US is defined in this entry."
    ::= { wranIfBsOfdmaPhyUsChannelEntry 2 }

wranIfBsOfdmaPhyUsMacAddress   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAC Address of CPE whose upstream is defined in this
         table."
    ::= { wranIfBsOfdmaPhyUsChannelEntry 3 }

wranIfBsOfdmaCtBasedResvTimeout   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of US-MAPs to receive before contention-

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```
based reservation is attempted again for the same
connection."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 4 }

wranIfBsOfdmaUsCenterFrequency      OBJECT-TYPE
    SYNTAX      Integer32 (0..6000000)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Upstream center frequency in kHz."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 5 }

wranIfBsOfdmaUsRadioResource   OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates the average percentage (ratio) of non-
        assigned US radio resources to total usable US radio
        resources (should be the same across all CPEs on the
        same channel."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 6 }

wranIfBsOfdmaUsConfigChangeCount   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current UCD change count."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 7 }

wranIfBsOfdmaUsUcsNotificationCodes OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of CDMA codes for UCS Notification."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 8 }

wranIfBsOfdmaUsInitRngCodes      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of CDMA codes for Initial Ranging."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 9 }

wranIfBsOfdmaUsPeriodicRngCodes   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of CDMA codes for periodic ranging."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 10 }

wranIfBsOfdmaUsBWReqCodes        OBJECT-TYPE
```

```

SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Number of CDMA codes for bandwidth requests."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 11 }

wranIfBsOfdmaUsPeriodicRngBackoffStart      OBJECT-TYPE
SYNTAX      INTEGER (0..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Expressed as a power of 2, initial backoff window
     size for Periodic ranging."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 12 }

wranIfBsOfdmaUsPeriodicRngBackoffEnd        OBJECT-TYPE
SYNTAX      INTEGER (1..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, initial size of backoff
     window used for periodic ranging contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 13 }

wranIfBsOfdmaUsStartofCodes      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Includes first code in block of codes to be used in
     a particular BS, known as S. The total set of codes
     ranges from S to
     (wranIfBsOfdmaUsInitRngCodes+wranIfBsOfdmaUsPeriodicR
     ngCodes+wranIfBsOfdmaUsBWReqCodes+wranIfBsOfdmaUsUcsN
     otificationCodes) mod 256."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 14 }

wranIfBsOfdmaUsNormalizedCnrOverride      OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(7))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This is a list of numbers and follows the
     specification of the Normalized CNR override as
     defined in Table 33 and in 8.10.3.2. The
     number encoded by each nibble represents the
     difference in normalized CNR relative to the
     previous one."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 15 }

wranIfBsOfdamUsInitialRangingInterval     OBJECT-TYPE
SYNTAX      INTEGER (2..15)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current

```

```

DESCRIPTION
    "Number of frames between initial ranging interval
     allocation."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 16 }

wranIfBsOfdmaUsUcsNotificationBackoffStart      OBJECT-TYPE
SYNTAX      INTEGER (0..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, initial backoff
     window size used for UCS notification contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 17 }

wranIfBsOfdmaUsUcsNotificationBackoffEnd   OBJECT-TYPE
SYNTAX      INTEGER (1..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, final backoff
     window size used for UCS notification contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 18 }

wranIfBsOfdmaUsInitialRngBackoffStart      OBJECT-TYPE
SYNTAX      INTEGER (0..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, initial backoff
     window size used for initial ranging contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 19 }

wranIfBsOfdmaUsInitialRngBackoffEnd   OBJECT-TYPE
SYNTAX      INTEGER (1..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, final backoff
     window size used for initial ranging contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 20 }

wranIfBsOfdmaUsBwRequestBackoffStart      OBJECT-TYPE
SYNTAX      INTEGER (0..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Represented in powers of 2, initial backoff
     window size used for contention-based BW requests
     contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 21 }

wranIfBsOfdmaUsBwRequestBackoffEnd   OBJECT-TYPE
SYNTAX      INTEGER (1..15)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

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```

        "Represented in powers of 2, final backoff
        window size used for contention-based BW requests
        contention."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 22 }

wranIfBsOfdmaUsUcdInterval      OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time between transmission of UCD messages."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 23 }

wranIfBsOfdmaUsUcdTransition   OBJECT-TYPE
    SYNTAX      INTEGER (2..5)
    UNITS      "frames"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time BS shall wait after repeating a UCD message
        with an incremented Configuration Change Count
        before issuing a US-MAP message referring to
        Upstream_Burst_Profiles defined in that UCD
        message."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 24 }

wranIfBsOfdmaUsClkCmpInterval  OBJECT-TYPE
    SYNTAX      INTEGER (50)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time between the clock compare measurements used for
        the generation of CLK-CMP messages."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 25 }

wranIfBsOfdmaUsT57      OBJECT-TYPE
    SYNTAX      Integer32 (10..600)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Lost US-MAP interval, time since last received US-
        MAP message before upstream synchronization is
        considered lost (used on the CPE)."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 26 }

wranIfBsOfdmaUsT58      OBJECT-TYPE
    SYNTAX      Integer32 (10..600)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Number of SCH that can be lost until synchronization
        is considered lost."

```

```

 ::= { wranIfBsOfdmaPhyUsChannelEntry 27 }

wranOfBsOfdmaUsCdmaRngRetries OBJECT-TYPE
    SYNTAX      INTEGER (1..4)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "# of retries on CDMA RNG-REQs."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 28 }

wranIfBsOfdmaUsInvRngReq      OBJECT-TYPE
    SYNTAX      INTEGER (16..32)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "# of retries on inviting RNG-REQs."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 29 }

wranIfBsOfdmaUsMapProcTime    OBJECT-TYPE
    SYNTAX      INTEGER (5)
    UNITS      "symbols"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Time provided between arrival of the last bit of a
         US-MAP at a CPE and the effectiveness of that map."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 30 }

wranIfBsOfdmaUsT3 OBJECT-TYPE
    SYNTAX      INTEGER (200)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "RNG-CMD reception timeout following the transmission
         of RNG-REQ."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 31 }

wranIfBsOfdmaUsT4 OBJECT-TYPE
    SYNTAX      Integer32 (1..1800)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Time to wait for unicast ranging opportunity."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 32 }

wranIfBsOfdmaUsT5 OBJECT-TYPE
    SYNTAX      INTEGER (2)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Time to wait for Upstream Channel Change response."
 ::= { wranIfBsOfdmaPhyUsChannelEntry 33 }

```

```

wranIfBsOfdmaUsT12      OBJECT-TYPE
    SYNTAX      INTEGER (1..50)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Wait for UCD descriptor."
    ::= { wranIfBsOfdmaPhyUsChannelEntry 34 }

wranIfBsOfdmaPhyDsChannelTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsOfdmaPhyDsChannelEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object provides a table to describe attributes
         of downstream channels. It is a compound object that
         is made up of multiple entries (one for each CPE),
         described by wranIfBsOfdmaPhyDsChannelTableEntry."
    ::= { wranIfBsPhy 2 }

wranIfBsOfdmaPhyDsChannelEntry      OBJECT-TYPE
    SYNTAX      wranIfBsOfdmaPhyDsChannelEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object is a compound object that represents an
         entry a each downstream channel in each BS."
    INDEX { wranIfBsOfdmaPhyDsChannelIndex }
    ::= { wranIfBsOfdmaPhyDsChannelTable 1 }

wranIfBsOfdmaPhyDsChannelEntry      ::= SEQUENCE {
    wranIfBsOfdmaPhyDsChannelIndex          INTEGER,
    wranIfBsOfdmaDsBsId                    MacAddress,
    wranIfBsOfdmaDsEirp                   INTEGER,
    wranIfBsOfdmaDsChannelNumber          INTEGER,
    wranIfBsOfdmaDsPhyMaxEirp            INTEGER,
    wranIfBsOfdmaDsCenterFreq             Integer32,
    wranIfBsOfdmaDsMacVersion            INTEGER,
    wranIfBsOfdmaDsCyclicPrefix          INTEGER,
    wranIfBsOfdmaDsRadioResource         INTEGER,
    wranIfBsOfdmaDsCellType              INTEGER,
    wranIfBsOfdmaDsConfigChangeCount     INTEGER,
    wranIfBsOfdmaDsFrameDuration         OCTET STRING,
    wranIfBsOfdmaDsRssiCinrAvgParameter BITS,
    wranIfBsOfdmaDsThresholdAddBsServiceSet INTEGER,
    wranIfBsOfdmaDsThresholdDelBsServiceSet INTEGER,
    wranIfBsOfdmaDsDcdInterval           INTEGER,
    wranIfBsOfdmaDsDcdTransition         Integer32,
    wranIfBsOfdmaDsT56                  INTEGER,
    wranIfBsOfdmaDsT1                   INTEGER,
    wranIfBsOfdmaDsT2                   INTEGER,
    wranIfBsOfdmaDsT20                 INTEGER,
    wranIfBsOfdmaDsT21                 INTEGER,
    wranIfBsOfdmaDsTtg                  INTEGER }

wranIfBsOfdmaPhyDsChannelIndex      OBJECT-TYPE

```

```

SYNTAX      INTEGER (1.. 255)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in this table, defaults to 1."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 1 }

wranIfBsOfdmaDsBsId      OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "BS ID (MAC Address) of the base station."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 2 }

wranIfBsOfdmaDsEirp      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
UNITS       "dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The equivalent isotropic radiated power of the base
     station, which is computed for a simple single-
     antenna transmitter (ranging from -64 dBm to +63.5
     dBm in 0.5 dB steps)."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 3 }

wranIfBsOfdmaDsChannelNumber  OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Current operating channel."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 4 }

wranIfBsOfdmaDsPhyMaxEirp      OBJECT-TYPE
SYNTAX      INTEGER (0..127)
UNITS       "dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Initial ranging maximum EIRP, at BS in units of 1
     dBm (ranging from -104 dBm to +23 dBm)."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 5 }

wranIfBsOfdmaDsCenterFreq      OBJECT-TYPE
SYNTAX      Integer32 (0..10000000)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "DS center frequency in kHz."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 6 }

wranIfBsOfdmaDsMacVersion      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only

```

```
STATUS      current
DESCRIPTION
    "The MAC version to which the BS is conformant."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 7 }

wranIfBsOfdmaDsCyclicPrefix   OBJECT-TYPE
SYNTAX      INTEGER { oneQuarter(0), oneEighth(1),
                     oneSixteenth(2),
                     oneThirtySecond(3) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Ratio of CP time to useful symbol time; possible
     values are 1/4, 1/8, 1/16, and 1/32."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 8 }

wranIfBsOfdmaDsRadioResource  OBJECT-TYPE
SYNTAX      INTEGER (0..100)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Average ratio of non-assigned DS radio resources to
     total usable DS radio resources."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 9 }

wranIfBsOfdmaDsCellType      OBJECT-TYPE
SYNTAX      INTEGER { fixed(0), personalPortable(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This object identifies classes of BSs that can be
     used by CPE when selecting the cell with which to
     attempt network entry."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 10 }

wranIfBsOfdmaDsConfigChangeCount   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Current BS DCD configuration change count."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 11 }

wranIfBsOfdmaDsFrameDuration    OBJECT-TYPE
SYNTAX      INTEGER (0..63)
UNITS       "symbols"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Duration of DS portion of a frame (from the start of
     frame including preambles)."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 12 }

wranIfBsOfdmaDsRssiCinrAvgParameter OBJECT-TYPE
SYNTAX      BITS { avg0(0), avg1(1), avg2(2), avg3(3) }
UNITS       "seconds"
```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Bits 0-3 of default RSSI and CINR averaging
     parameter."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 13 }

wranIfBsOfdmaDsThresholdAddBsServiceSet   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
UNITS       "dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Threshold used by CPE to add a neighbor BS to the
     list of available WRAN services (ranging from -104
     dBm to +23.5 dBm in 0.5 dB steps)."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 14 }

wranIfBsOfdmaDsThresholdDelBsServiceSet   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Threshold used by CPE to delete a neighbor BS from
     the list of available WRAN services (ranging from
     -104 dBm to +23.5 dBm in 0.5 dB steps)."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 15 }

wranIfBsOfdmaDsDcdInterval    OBJECT-TYPE
SYNTAX      INTEGER (1..10)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Time between transmission of DCD messages."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 16 }

wranIfBsOfdmaDsDcdTransition   OBJECT-TYPE
SYNTAX      INTEGER (2..5)
UNITS       "frames"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Time BS shall wait after repeating a DCD message
     with an incremented Configuration Change Count
     before issuing a DS-MAP message referring to
     Downstream_Burst_Profiles defined in that DCD
     message."
 ::= { wranIfBsOfdmaPhyDsChannelEntry 17 }

wranIfBsOfdmaDsT56      OBJECT-TYPE
SYNTAX      Integer32 (10..600)
UNITS       "milliseconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

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```

        "Time since last received DS-MAP message before
        downstream synchronization is considered lost."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 18 }

wranIfBsOfdmaDsT1 OBJECT-TYPE
    SYNTAX      INTEGER (1..50)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Wait for DCD timeout."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 19 }

wranIfBsOfdmaDsT2 OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Wait for broadcast ranging timeout."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 20 }

wranIfBsOfdmaDsT20      OBJECT-TYPE
    SYNTAX      INTEGER (1..5)
    UNITS      "frames"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time CPE searches for preambles on a given channel."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 21 }

wranIfBsOfdmaDsT21      OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Time the CPE searches for a DS-MAP on a given
        channel."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 22 }

wranIfBsOfdmaDsTtg      OBJECT-TYPE
    SYNTAX      INTEGER { 105us(0), 210us(1), 333us(3) }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Transmit/Receive Transition Gap."
        ::= { wranIfBsOfdmaPhyDsChannelEntry 23 }

wranIfBsOfdmaUcdBurstProfileTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsOfdmaUcdBurstProfileEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This table contains the UCD burst profile
        configurations for each upstream channel. Each entry

```

```

        in the table is represented by
        wranIfBsOfdmaUcdBurstProfileEntry."
 ::= { wranIfBsPhy 3 }

wranIfBsOfdmaUcdBurstProfileEntry   OBJECT-TYPE
    SYNTAX      wranIfBsOfdmaUcdBurstProfileEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is a compound object that defines an entry in
         wranIfBsOfdmaUcdBurstProfileTable."
    INDEX { wranIfBsOfdmaUcdUiucIndex }
 ::= { wranIfBsOfdmaUcdBurstProfileTable 1 }

wranIfBsOfdmaUcdBurstProfileEntry   ::= SEQUENCE {
    wranIfBsOfdmaUcdUiucIndex           INTEGER,
    wranIfBsOfdmaUcdUicuExitThreshold  INTEGER,
    wranIfBsOfdmaUcdUicuEntryThreshold INTEGER,
    wranIfBsOfdmaUcdRangingDataRatio   INTEGER }

wranIfBsOfdmaUcdUiucIndex   OBJECT-TYPE
    SYNTAX      INTEGER (0.. 63)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, this index value
         maps to the UIUCs listed in Table 36."
 ::= { wranIfBsOfdmaUcdBurstProfileEntry 1 }

wranIfBsOfdmaUcdUicuExitThreshold   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "CINR at or below which this UIUC can no longer be
         used where change to a more robust UIUC is required
         (ranging from -104 dBm to +23.5 dBm in 0.5 dB
         steps)."
 ::= { wranIfBsOfdmaUcdBurstProfileEntry 2 }

wranIfBsOfdmaUcdUicuEntryThreshold   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Minimum CINR required to start using this UIUC when
         changing from a more robust UIUC is required
         (ranging from -104 dBm to +23.5 dBm in 0.5 dB
         steps)."
 ::= { wranIfBsOfdmaUcdBurstProfileEntry 3 }

wranIfBsOfdmaUcdRangingDataRatio   OBJECT-TYPE
    SYNTAX      INTEGER (0..127)
    UNITS      "dB"

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Difference in power from burst UCD and power to be
    used for CDMA ranging in units of 1 dB (ranging from
    -104 dBm to +23 dBm)."
 ::= { wranIfBsOfdmaUcdBurstProfileEntry 4 }

wranIfBsOfdmaDcdBurstProfileTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsOfdmaDcdBurstProfileEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table provides configuration for each DCD burst
    profile. It is made up of multiple entries defined
    by wranIfBsOfdmaDcdBurstProfileEntry."
 ::= { wranIfBsPhy 4 }

wranIfBsOfdmaDcdBurstProfileEntry   OBJECT-TYPE
SYNTAX      wranIfBsOfdmaDcdBurstProfileEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This is a compound object that defines an entry in
    wranIfBsOfdmaDcdBurstProfileTable."
INDEX { wranIfBsOfdmaDcdDiucIndex }
 ::= { wranIfBsOfdmaDcdBurstProfileTable 1 }

wranIfBsOfdmaDcdBurstProfileEntry   ::= SEQUENCE {
    wranIfBsOfdmaDcdDiucIndex          INTEGER,
    wranIfBsOfdmaDcdDicuExitThreshold  INTEGER,
    wranIfBsOfdmaDcdDicuEntryThreshold INTEGER }

wranIfBsOfdmaDcdDiucIndex   OBJECT-TYPE
SYNTAX      INTEGER (0.. 63)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in this table, this index value
    maps to the DIUCs listed in Table 27."
 ::= { wranIfBsOfdmaDcdBurstProfileEntry 1 }

wranIfBsOfdmaDcdDicuExitThreshold   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
UNITS      "dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "CINR at or below which this DIUC can no longer be
    used where change to a more robust DIUC is required
    (ranging from -104 dBm to +23.5 dBm in 0.5 dB
    steps)."
 ::= { wranIfBsOfdmaDcdBurstProfileEntry 2 }

wranIfBsOfdmaDcdDicuEntryThreshold   OBJECT-TYPE
SYNTAX      INTEGER (0..255)

```

```

        UNITS          "dBm"
        MAX-ACCESS    read-only
        STATUS         current
        DESCRIPTION
            "Minimum CINR required to start using this DIUC when
             changing from a more robust DIUC is required
             (ranging from -104 dBm to +23.5 dBm in 0.5 dB
             steps)."
        ::= { wranIfBsOfdmaDcdBurstProfileEntry 3 }

wranIfBsOfdmaDsRegionTable      OBJECT-TYPE
    SYNTAX        SEQUENCE OF wranIfBsOfdmaDsRegionEntry
    MAX-ACCESS   not-accessible
    STATUS        current
    DESCRIPTION
        "This table provides the configuration of the DS
         subframe. It is made up of entries defined by
         wranIfBsOfdmaDsRegionEntry."
    ::= { wranIfBsPhy 5 }

wranIfBsOfdmaDsRegionEntry      OBJECT-TYPE
    SYNTAX        wranIfBsOfdmaDsRegionEntry
    MAX-ACCESS   not-accessible
    STATUS        current
    DESCRIPTION
        "This is a compound object that describes each entry
         in wranIfBsOfdmaDsRegionTable."
    INDEX { wranIfBsOfdmaDsRegionIndex }
    ::= { wranIfBsOfdmaDsRegionTable 1 }

wranIfBsOfdmaDsRegionEntry     ::= SEQUENCE {
    wranIfBsOfdmaDsRegionIndex           INTEGER,
    wranIfBsOfdmaDsDuration             INTEGER }

wranIfBsOfdmaDsRegionIndex     OBJECT-TYPE
    SYNTAX        Integer32 (1.. 512)
    MAX-ACCESS   not-accessible
    STATUS        current
    DESCRIPTION
        "Index DS region in table."
    ::= { wranIfBsOfdmaDsRegionEntry 1 }

wranIfBsOfdmaDsDuration       OBJECT-TYPE
    SYNTAX        Integer32 (0..65535)
    MAX-ACCESS   read-only
    STATUS        current
    DESCRIPTION
        "Number of OFDMA slots allocated to a DS burst
         region."
    ::= { wranIfBsOfdmaDsRegionEntry 2 }

wranIfBsOfdmaUsRegionTable    OBJECT-TYPE
    SYNTAX        SEQUENCE OF wranIfBsOfdmaUsRegionEntry
    MAX-ACCESS   not-accessible
    STATUS        current
    DESCRIPTION

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```

        "This table provides the configuration of the DS
        subframe. It is made up of entries defined by
        wranIfBsOfdmaUsRegionEntry."
 ::= { wranIfBsPhy 6 }

wranIfBsOfdmaUsRegionEntry      OBJECT-TYPE
    SYNTAX      wranIfBsOfdmaUsRegionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This is a compound object that describes each entry
         in wranIfBsOfdmaUsRegionTable."
    INDEX { wranIfBsOfdmaUsRegionIndex }
 ::= { wranIfBsOfdmaUsRegionTable 1 }

wranIfBsOfdmaUsRegionEntry      ::= SEQUENCE {
    wranIfBsOfdmaUsRegionIndex      INTEGER,
    wranIfBsOfdmaUsDuration        INTEGER }

wranIfBsOfdmaUsRegionIndex      OBJECT-TYPE
    SYNTAX      Integer32 (1.. 512)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index US region in table."
 ::= { wranIfBsOfdmaUsRegionEntry 1 }

wranIfBsOfdmaUsDuration        OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of OFDMA slots allocated to a US burst
         region."
 ::= { wranIfBsOfdmaUsRegionEntry 2 }

-- wranIfBsCmMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfBsCmMibGroups            OBJECT IDENTIFIER
 ::= { wranIfBsCm 24 }
wranIfBsCmRangingGroup         OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 1 }
wranIfBsCmBasicCapabilityGroup OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 2 }
wranIfBsCmRegCapabilityGroup   OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 3 }
wranIfBsCmMeasSupportGroup     OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 4 }
wranIfBsCpeCmAntennaGroup      OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 5 }
wranIfBsScmCmGroup              OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 6 }
wranIfBsActionsCmGroup          OBJECT IDENTIFIER
 ::= { wranIfBsCmMibGroups 7 }

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wranIfBsMulticastCmGroup          OBJECT IDENTIFIER
                                    ::= { wranIfBsCmMibGroups 8 }
wranIfBsCoexistenceCmGroup        OBJECT IDENTIFIER
                                    ::= { wranIfBsCmMibGroups 9 }
wranIfBsSystemParametersCmGroup   OBJECT IDENTIFIER
                                    ::= { wranIfBsCmMibGroups 10 }
wranIfBsPhyCmGroup               OBJECT IDENTIFIER
                                    ::= { wranIfBsCmMibGroups 11 }

wranIfBsCmRangingGroup           OBJECT-GROUP
OBJECTS      { wranIfBscpeRngCapabilityReqIndex,
                wranIfBscpeMacAddress, wranIfMmpPn,
                wranIfCiphertextIcv,
                wranIfRngAnomaly,
                wranIfBscpeRngCapabilityCmdIndex,
                wranIfBscpeMacAddress,
                wranIfBscpeStationId,
                wranIfTimingAdvance,
                wranIfEirpPerSubcarrier,
                wranIfOffsetFreqAdjust,
                wranIfRangingStatus,
                wranIfActionSuperFrameNum,
                wranIfCdmaCode,
                wranIfTxOpportunityOffset }
STATUS       current
DESCRIPTION
    "This group contains objects related to
     management of the ranging process."
 ::= { wranIfBsCmMibGroups 1 }

wranIfBsCmBasicCapabilityGroup    OBJECT-GROUP
OBJECTS      { wranIfBscpeBasicCapabilityReqIndex,
                wranIfBscpeBasicCapabilityReqMacAddress,
                wranIfBscpeBasicCapabilityReqStationId,
                wranIfBscpeBasicCapabilityReqMacPduTxAndConstruction,
                wranIfBscpeBasicCapabilityReqMaxCpeTxEirp,
                wranIfBscpeBasicCapabilityReqCpeDemodulator,
                wranIfBscpeBasicCapabilityReqCpeModulator,
                wranIfBscpeBasicCapabilityReqScmVersionSupport,
                wranIfBscpeBasicCapabilityReqPnWindowSize,
                wranIfBscpeBasicCapabilityReqScmFlowControl,
                wranIfBscpeBasicCapabilityRspIndex,
                wranIfBscpeBasicCapabilityRspNumAttempts,
                wranIfBscpeBasicCapabilityRspMacAddress,
                wranIfBscpeBasicCapabilityRspStationId,
                wranIfBscpeBasicCapabilityRspMacPduTxAndConstruction,
                wranIfBscpeBasicCapabilityRspCpeDemodulator,
                wranIfBscpeBasicCapabilityRspCpeModulator,
                wranIfBscpeBasicCapabilityRspScmVersionSupport,
                wranIfBscpeBasicCapabilityRspPnWindowSize,
                wranIfBscpeBasicCapabilityRspScmFlowControl,
                wranIfBscpeBasicCapabilityDefIndex,
                wranIfBscpeBasicCapabilityDefMacPduTxAndConstruction,
                wranIfBscpeBasicCapabilityDefCpeDemodulator,
                wranIfBscpeBasicCapabilityDefCpeModulator,
                wranIfBscpeBasicCapabilityDefScmVersionSupport,

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wranIfBsCpeBasicCapabilityDefPnWindowSize,
wranIfBsCpeBasicCapabilityDefScmFlowControl }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of the CBC-REQ/RSP process."
 ::= { wranIfBsCmMibGroups 2 }

wranIfBsCmRegCapabilityGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCpeRegCapabilityReqIndex,
               wranIfBsCpeRegCapabilityReqMacAddress,
               wranIfBsCpeRegCapabilityReqNMEAlocStringSize,
               wranIfBsCpeRegCapabilityReqNMEAlocString,
               wranIfBsCpeRegCapabilityReqCsConfig,
               wranIfBsCpeRegCapabilityReqIpVersion,
               wranIfBsCpeRegCapabilityReqIpRochSupport,
               wranIfBsCpeRegCapabilityReqArqSupport,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqWindowSize,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryTxDelay,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqRetryRxDelay,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockLifetime,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqSyncLossTimeout,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqDeliverInOrder,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqRxPurgeTimeout,
               wranIfBsCpeRegCapabilityReq2ndMgmtArqBlockSize,
               wranIfBsCpeRegCapabilityReqDsxFlowControl,
               wranIfBsCpeRegCapabilityReqMcaFlowControl,
               wranIfBsCpeRegCapabilityReqMaxNumMcastGroups,
               wranIfBsCpeRegCapabilityReqSensModeSupportArray,
               wranIfBsCpeRegCapabilityReqAntennaModelSize,
               wranIfBsCpeRegCapabilityReqAntennaModel,
               wranIfBsCpeRegCapabilityReqCpeResidualDelay,
               wranIfBsCpeRegCapabilityReq2ndMgmtIpAllocMethod,
               wranIfBsCpeRegCapabilityReqCpeOperationalCapability,
               wranIfBsCpeRegCapabilityReqCpeRegistrationTimer,
               wranIfBsCpeRegCapabilityRspIndex,
               wranIfBsCpeRegCapabilityRspMacAddress,
               wranIfBsCpeRegCapabilityRspNumAttempts,
               wranIfBsCpeRegCapabilityRspCsConfig,
               wranIfBsCpeRegCapabilityRspIpVersion,
               wranIfBsCpeRegCapabilityRspIpRochSupport,
               wranIfBsCpeRegCapabilityRspArqSupport,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqWindowSize,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryTxDelay,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqRetryRxDelay,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockLifetime,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqSyncLossTimeout,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqDeliverInOrder,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqRxPurgeTimeout,
               wranIfBsCpeRegCapabilityRsp2ndMgmtArqBlockSize,
               wranIfBsCpeRegCapabilityRspDsxFlowControl,
               wranIfBsCpeRegCapabilityRspMcaFlowControl,
               wranIfBsCpeRegCapabilityRspMaxNumMcastGroups,
               wranIfBsCpeRegCapabilityRspSensModeSupportArray,
               wranIfBsCpeRegCapabilityRspAntennaModelSize,
               wranIfBsCpeRegCapabilityRspAntennaModel,
```

```

wranIfBsCpeRegCapabilityRsp2ndMgmtIpAllocMethod,
wranIfBsCpeRegCapabilityRspCpeOperationalCapability,
wranIfBsCpeRegCapabilityRspCpeRegistrationTimer,
wranIfBsCpeRegCapabilityRspPermanentSid,
wranIfBsCpeRegCapabilityDefIndex,
wranIfBsCpeRegCapabilityDefCsConfig,
wranIfBsCpeRegCapabilityDefIpVersion,
wranIfBsCpeRegCapabilityDefIpRochSupport,
wranIfBsCpeRegCapabilityDefArqSupport,
wranIfBsCpeRegCapabilityDef2ndMgmtArqWindowSize,
wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryTxDelay,
wranIfBsCpeRegCapabilityDef2ndMgmtArqRetryRxDelay,
wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockLifetime,
wranIfBsCpeRegCapabilityDef2ndMgmtArqSyncLossTimeout,
wranIfBsCpeRegCapabilityDef2ndMgmtArqDeliverInOrder,
wranIfBsCpeRegCapabilityDef2ndMgmtArqRxPurgeTimeout,
wranIfBsCpeRegCapabilityDef2ndMgmtArqBlockSize,
wranIfBsCpeRegCapabilityDefDsxFlowControl,
wranIfBsCpeRegCapabilityDefMcaFlowControl,
wranIfBsCpeRegCapabilityDefMaxNumMcastGroups,
wranIfBsCpeRegCapabilityDefSensModeSupportArray,
wranIfBsCpeRegCapabilityDef2ndMgmtIpAllocMethod,
wranIfBsCpeRegCapabilityDefCpeOperationalCapability,
wranIfBsCpeRegCapabilityDefCpeRegistrationTimer }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of the REG-REQ/RSP process."
::= { wranIfBsCmMibGroups 3 }

wranIfBsCmMeasSupportGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCpeMeasSupportReqIndex,
                wranIfBsCpeMeasSupportReqMacAddress,
                wranIfBsCpeMeasSupportReqSignalType,
                wranIfBsCpeMeasSupportReqThreshold,
                wranIfBsCpeMeasSupportReqPd,
                wranIfBsCpeMeasSupportReqMpfa,
                wranIfBsCpeMeasSupportReqRecNumSensPeriods,
                wranIfBsCpeMeasSupportReqRecSensPeriodDuration,
                wranIfBsCpeMeasSupportReqRecSensPeriodInterval,
                wranIfBsCpeMeasSupportRspIndex,
                wranIfBsCpeMeasSupportRspMacAddress,
                wranIfBsCpeMeasSupportRspSignalType,
                wranIfBsCpeMeasSupportRspThreshold,
                wranIfBsCpeMeasSupportRspPd,
                wranIfBsCpeMeasSupportRspMpfa,
                wranIfBsCpeMeasSupportRspRecNumSensPeriods,
                wranIfBsCpeMeasSupportRspRecSensPeriodDuration,
                wranIfBsCpeMeasSupportRspRecSensPeriodInterval,
                wranIfBsCpeMeasSupportDefIndex,
                wranIfBsCpeMeasSupportDefSignalType,
                wranIfBsCpeMeasSupportDefThreshold,
                wranIfBsCpeMeasSupportDefPd,
                wranIfBsCpeMeasSupportDefMpfa,
                wranIfBsCpeMeasSupportDefRecNumSensPeriods,
                wranIfBsCpeMeasSupportDefRecSensPeriodDuration,
}

```

```

        wranIfBsCpeMeasSupportDefRecSensPeriodInterval }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of the measurement process."
 ::= { wranIfBsCmMibGroups 4 }

wranIfBsCpeCmAntennaGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCpeAntennaGainIndex,
                wranIfBsCpeAntennaGainMacAddress,
                wranIfBsCpeTvChannel,
                wranIfBsCpeOnAxisGain }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of the antenna configuration."
 ::= { wranIfBsCmMibGroups 5 }

wranIfBsScmCmGroup          OBJECT-GROUP
OBJECTS      { wranIfBsScmCapabilityConfiguration,
                wranIfBsCpeScmCapabilityConfigIndex,
                wranIfBsCpeScmCapabilityConfigMacAddress,
                wranIfBsCpeScmCapabilityConfig,
                wranIfBsCpeEapTlsTtlsCredentialSize,
                wranIfBsCpeEapTlsTtlsCredential,
                wranIfBsScmAuthConfigIndex,
                wranIfBsT36, wranIfBsT37,
                wranIfBsMaxNumAuthAttempts,
                wranIfBsT38, wranIfBsT39,
                wranIfBsT40, wranIfBsAkLifetime,
                wranIfBsTekLifetime, wranIfBsMaxNumSa,
                wranIfBsT17 }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of the SCM protocol and SCM status
     on a CPE/BS."
 ::= { wranIfBsCmMibGroups 6 }

wranIfBsActionsCmGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCpeActionsIndex,
                wranIfBsCpeActionsMacAddress,
                wranIfBsCpeActionsRngCpe,
                wranIfBsCpeActionsDeRegCpe,
                wranIfBsCpeActionsSchedule }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of actions the BS can take."
 ::= { wranIfBsCmMibGroups 7 }

wranIfBsMulticastCmGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCpeMcastConfigIndex,
                wranIfBsCpeMcastMacAddress,
                wranIfBsCpeMcastSid,
                wranIfBsCpeMcastPeriodicAllocParameterM,
                wranIfBsCpeMcastPeriodicAllocParameterL,
                wranIfBsCpeMcastPeriodicAllocParameterU,
                wranIfBsCpeMcastPeriodicAllocParameterD,
                wranIfBsCpeMcastPeriodicAllocParameterR,
                wranIfBsCpeMcastPeriodicAllocParameterS,
                wranIfBsCpeMcastPeriodicAllocParameterT,
                wranIfBsCpeMcastPeriodicAllocParameterB,
                wranIfBsCpeMcastPeriodicAllocParameterH,
                wranIfBsCpeMcastPeriodicAllocParameterV,
                wranIfBsCpeMcastPeriodicAllocParameterX,
                wranIfBsCpeMcastPeriodicAllocParameterY,
                wranIfBsCpeMcastPeriodicAllocParameterZ }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of multicast traffic parameters.
     It includes parameters for periodic allocation
     of bandwidth and other related parameters.
     These parameters are used to manage the
     transmission of multicast traffic from the
     BS to the CPEs."
```

```

                                wranIfBsCpeMcastPeriodicAllocParameterK,
                                wranIfBsCpeMcastPeriodicAllocParameterN }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of multicast configuration."
 ::= { wranIfBsCmMibGroups 8 }

wranIfBsCoexistenceCmGroup          OBJECT-GROUP
OBJECTS      { wranIfBsCoexistenceConfigIndex,
                wranIfBsT34, wranIfBsT33,
                wranIfBsT32, wranIfBsFcw,
                wranIfBsScwBackoffMax,
                wranIfBsFcMin, wranIfBsFcnRange,
                wranIfBsSfRel, wranIfBsT35 }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of coexistence configuration."
 ::= { wranIfBsCmMibGroups 9 }

wranIfBsSystemParametersCmGroup      OBJECT-GROUP
OBJECTS      { wranIfBsCpeSystemParametersIndex,
                wranIfBsDsxReqRetries,
                wranIfBsDsxRspRetries,
                wranIfBsT6, wranIfBsT7, wranIfBsT8,
                wranIfBsT9, wranIfBsT10, wranIfBsT13,
                wranIfBsT14, wranIfBsT15, wranIfBsT16,
                wranIfBsT18, wranIfBsT22, wranIfBsT26,
                wranIfBsT27Idle, wranIfBsT27Active,
                wranIfBsT28 }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of system parameter configuration."
 ::= { wranIfBsCmMibGroups 10 }

wranIfBsPhyCmGroup                  OBJECT-GROUP
OBJECTS      { wranIfBsOfdmaPhyUsChannelIndex,
                wranIfBsOfdmaPhyUsSid,
                wranIfBsOfdmaPhyUsMacAddress,
                wranIfBsOfdmaCtBasedResvTimeout,
                wranIfBsOfdmaUsCenterFrequency, ,
                wranIfBsOfdmaUsRadioResource,
                wranIfBsOfdmaUsUcsConfigChangeCount,
                wranIfBsOfdmaUsUcsNotificationCodes,
                wranIfBsOfdmaUsInitRngCodes,
                wranIfBsOfdmaUsPeriodicRngCodes,
                wranIfBsOfdmaUsBwReqCodes,
                wranIfBsOfdmaUsPeriodicRngBackoffStart,
                wranIfBsOfdmaUsPeriodicRngBackoffEnd,
                wranIfBsOfdmaUsStartofCodes,
                wranIfBsOfdmaUsNormalizedCnrOverride,
                wranIfBsOfdmaUsInitialRangingInterval,
                wranIfBsOfdmaUsUcsNotificationBackoffStart,
                wranIfBsOfdmaUsUcsNotificationBackoffEnd,

```

```
wranIfBsOfdmaUsInitialRngBackoffStart,
wranIfBsOfdmaUsInitialRngBackoffEnd,
wranIfBsOfdmaUsBwRequestBackoffStart,
wranIfBsOfdmaUsBwRequestBackoffEnd,
wranIfBsOfdmaUsUcdInterval,
wranIfBsOfdmaUsUcdTransition,
wranIfBsOfdmaUsClkCmpInterval,
wranIfBsOfdmaUsT57,
wranIfBsOfdmaUsT58,
wranIfBsOfdmaUsCdmaRngRetries,
wranIfBsOfdmaUsInvRngReq,
wranIfBsOfdmaUsMapProcTime,
wranIfBsOfdmaUsT3,
wranIfBsOfdmaUsT4,
wranIfBsOfdmaUsT5,
wranIfBsOfdmaUsT12,
wranIfBsOfdmaPhyDsChannelIndex,
wranIfBsOfdmaDsBsId,
wranIfBsOfdmaDsEirp,
wranIfBsOfdmaDsChannelNumber,
wranIfBsOfdmaDsPhyMaxEirp,
wranIfBsOfdmaDsCenterFreq,
wranIfBsOfdmaDsMacVersion,
wranIfBsOfdmaDsCyclicPrefix,
wranIfBsOfdmaDsRadioResource,
wranIfBsOfdmaDsCellType,
wranIfBsOfdmaDsConfigChangeCount,
wranIfBsOfdmaDsFrameDuration,
wranIfBsOfdmaDsRssiCinrAvgParameter,
wranIfBsOfdmaDsThresholdAddBsServiceSet,
wranIfBsOfdmaDsThresholdDelBsServiceSet,
wranIfBsOfdmaDsDcdInterval,
wranIfBsOfdmaDsDcdTransition,
wranIfBsOfdmaDsT56,
wranIfBsOfdmaDsT1,
wranIfBsOfdmaDsT2,
wranIfBsOfdmaDsT20,
wranIfBsOfdmaDsT21,
wranIfBsOfdmaDsTtg,
wranIfBsOfdmaUcdUiucIndex,
wranIfBsOfdmaUcdUiucExitThreshold,
wranIfBsOfdmaUcdUiucEntryThreshold,
wranIfBsOfdmaUcdRangingDataRatio,
wranIfBsOfdmaDcdDiucIndex,
wranIfBsOfdmaDcdDicuExitThreshold,
wranIfBsOfdmaDcdDicuEntryThreshold,
wranIfBsOfdmaDsRegionIndex,
wranIfBsOfdmaDsDuration,
wranIfBsOfdmaUsRegionIndex,
wranIfBsOfdmaUsDuration }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     management of PHY configuration."
::= { wranIfBsCmMibGroups 11 }
```

```
wranIfBsCmMibCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "MIB objects that are optional and mandatory for
         wranIfBsCm compliance."
    MODULE      wranIfBsCm
    MANDATORY-GROUPS { wranIfBsCmRangingGroup,
                        wranIfBsCmBasicCapabilityGroup,
                        wranIfBsCmRegCapabilityGroup,
                        wranIfBsCmMeasSupportGroup,
                        wranIfBsCpeAntennaGroup,
                        wranIfBsActionsGroup,
                        wranIfBsScmGroup,
                        wranIfBsActionsGroup,
                        wranIfBsCoexistenceGroup,
                        wranIfBsSystemParametersGroup,
                        wranIfBsPhyGroup }
    -- OPTIONAL-GROUPS      { wranIfBsMulticastGroup }
    ::= { wranIfBsCm 25 }

-- wranIfBsAm: This MIB group contains various objects related to
-- Accounting Management.

wranIfBsOtaUsageDataRecordTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsOtaUsageDataRecordEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object contains usage entries that track the
         number of octets/packets transmitted or received
         over the air interface. Records may be transferred
         to an external database, such as an AAA server,
         after which they can be deleted from this table.
         Each entry is defined by
         wranIfBsOtaUsageDataRecordEntry."
    ::= { wranIfBsAm 1 }

wranIfBsOtaUsageDataRecordEntry      OBJECT-TYPE
    SYNTAX      wranIfBsOtaUsageDataRecordEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsOtaUsageDataRecordTable."
    INDEX { wranIfBsOtaUsageDataRecordIndex }
    ::= { wranIfBsOtaUsageDataRecordTable 1 }

wranIfBsOtaUsageDataRecordEntry      ::= SEQUENCE {
    wranIfBsOtaUsageDataRecordIndex          Integer32,
    wranIfBsOtaUsageSid                    Integer32,
    wranIfBsOtaUsageFid                   INTEGER,
    wranIfBsOtaUsageSessionId             Integer32,
    wranIfBsOtaUsageMacSduCount          Integer32,
    wranIfBsOtaUsageOctetCount           INTEGER,
    wranIfBsOtaUsageSessionStartTime     DateAndTime,
    wranIfBsOtaUsageSessionEndTime       DateAndTime,
```

```

wranIfBsOtaUsageQoSServiceFlowListSize      INTEGER,
wranIfBsOtaUsageQoSServiceFlowList          OCTET STRING,
wranIfBsOtaUsageQoSProfileListSize         INTEGER,
wranIfBsOtaUsageQoSProfileList            OCTET STRING }

wranIfBsOtaUsageDataRecordIndex      OBJECT-TYPE
SYNTAX      Integer32 (1.. 2048)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Index of entry in this table, defaults to 1."
::= { wranIfBsOtaUsageDataRecordEntry 1 }

wranIfBsOtaUsageSid      OBJECT-TYPE
SYNTAX      Integer32 (0.. 512)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "A 9-bit Station ID that identifies the station that
     is carrying traffic."
::= { wranIfBsOtaUsageDataRecordEntry 2 }

wranIfBsOtaUsageFid      OBJECT-TYPE
SYNTAX      INTEGER (0..7)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "A 3-bit Flow Id that identifies the specific flow
     assigned to a station that is carrying traffic. For
     data traffic this identifies the FID that is mapped
     to a service flow id (i.e., wranIfBsServiceFlowId)."
::= { wranIfBsOtaUsageDataRecordEntry 3 }

wranIfBsOtaUsageSessionId      OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "An identifier for a session. A session is a segment
     in time when a service flow is active. Multiple
     sessions can be created during service flow
     activation time to the allow the BS to track usage
     during period when service flow configuration is
     changing."
::= { wranIfBsOtaUsageDataRecordEntry 4 }

wranIfBsOtaUsageMacSduCount      OBJECT-TYPE
SYNTAX      Integer32 (0.. 4294967295)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Counter of the number of MAC SDUs transmitted on a
     FID. If the FID represents a basic,
     primary/secondary management, or multicast
     management FID, then this deals with traffic
     transmitted on both the DS and US."

```

```

 ::= { wranIfBsOtaUsageDataRecordEntry 5 }

wranIfBsOtaUsageOctetCount      OBJECT-TYPE
    SYNTAX      Integer32 (0.. 4294967295)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Counter of the number of MAC PDUs that have been
         transmitted and received over the air interface."
 ::= { wranIfBsOtaUsageDataRecordEntry 6 }

wranIfBsOtaUsageSessionStartTime   OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Date and time session was established."
 ::= { wranIfBsOtaUsageDataRecordEntry 7 }

wranIfBsOtaUsageSessionEndTime     OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Date and time session was ended."
 ::= { wranIfBsOtaUsageDataRecordEntry 8 }

wranIfBsOtaUsageServiceFlowListSize OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Number of items in
         wranIfBsOtaUsageQoSServiceFlowList."
 ::= { wranIfBsOtaUsageDataRecordEntry 9 }

wranIfBsOtaUsageServiceFlowList     OBJECT-TYPE
    SYNTAX      OCTET STRING
                (SIZE(wranIfBsOtaUsageServiceFlowListSize*4))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "A list of service flow IDs (SFIDs), identifying
         each service flow active during this session (i.e.,
         a list of SFIDs that pertain to service flows as
         defined in wranIfBsActiveSfTable)."
 ::= { wranIfBsOtaUsageDataRecordEntry 10 }

wranIfBsOtaUsageQoSProfileListSize OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Number of items in
         wranIfBsOtaUsageQoSProfileList."
 ::= { wranIfBsOtaUsageDataRecordEntry 11 }

```

```

wranIfBsOtaUsageQoSProfileList      OBJECT-TYPE
    SYNTAX      OCTET STRING
(SIZE(wranIfBsOtaUsageQoSProfileListSize*2))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "A list of indexes into wranIfBsScTable, that point
         to the definition of the QoS parameter set of each
         service flow listed in
         wranIfBsOtaUsageQoSServiceFlowList (and hence were
         active during this session)."
    ::= { wranIfBsOtaUsageDataRecordEntry 12 }

-- wranIfBsAmMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfBsAmMibGroups          OBJECT IDENTIFIER
                                ::= { wranIfBsAm 2 }
wranIfBsAmOtaUsageDataGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsAmMibGroups 1 }

wranIfBsAmOtaUsageDataGroup   OBJECT-GROUP
    OBJECTS      { wranIfBsOtaUsageDataRecordIndex,
                    wranIfBsOtaUsageSid,
                    wranIfBsOtaUsageFid,
                    wranIfBsOtaUsageSessionId,
                    wranIfBsOtaUsageMacSduCount,
                    wranIfBsOtaUsageOctetCount,
                    wranIfBsOtaUsageSessionStartTime,
                    wranIfBsOtaUsageSessionEndTime,
                    wranIfBsOtaUsageQoSServiceFlowListSize,
                    wranIfBsOtaUsageQoSServiceFlowList,
                    wranIfBsOtaUsageQoSProfileListSize,
                    wranIfBsOtaUsageQoSProfileList }
    STATUS      current
    DESCRIPTION
        "This group contains objects related to
         tracking usage of OTA resources per CPE."
    ::= { wranIfBsAmMibGroups 1 }

wranIfBsAmMibCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "MIB objects that are optional and mandatory for
         wranIfBsAm compliance."
    MODULE      wranIfBsCm
    MANDATORY-GROUPS { wranIfBsAmOtaUsageDataGroup }
    ::= { wranIfBsAm 3 }

-- wranIfBsPm: This MIB group contains various objects related to
-- Performance Management.

wranIfBsPmConfigurationTable   OBJECT IDENTIFIER ::= { wranIfBsPm 1 }

```

```

wranIfBsSignalPowerMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 2 }
wranIfBsStartupMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 3 }
wranIfBsThroughputMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 4 }
wranIfBsNetworkEntryMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 5 }
wranIfBsPacketErrorRateTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 6 }
wranIfBsUserMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 7 }
wranIfBsServiceFlowMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 8 }
wranIfBsArqMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 9 }
wranIfBsAuthenticationMetricsTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 10 }
wranIfBsCoexistenceStatusTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 11 }
wranIfBsCoexistenceSourceTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 12 }
wranIfBsCoexistenceResourceListTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 13 }
wranIfBsCoexistenceCurrentConfigTable
    OBJECT IDENTIFIER ::= { wranIfBsPm 14 }
wranIfBsPmMibGroups
    OBJECT IDENTIFIER ::= { wranIfBsPm 15 }
wranIfBsPmMibCompliance
    OBJECT IDENTIFIER ::= { wranIfBsPm 16 }

wranIfBsPmConfigurationTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsPmConfigurationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The configuration of statistics recording and
        measurement is captured in this table. There is one
        entry in this table, defined by
        wranIfBsPmConfigurationEntry."
    ::= { wranIfBsPm 1 }

wranIfBsPmConfigurationEntry OBJECT-TYPE
    SYNTAX      wranIfBsPmConfigurationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
        entry in wranIfBsPmConfigurationTable."
    INDEX { wranIfBsPmConfigurationEntryIndex }
    ::= { wranIfBsPmConfigurationTable 1 }

wranIfBsPmConfigurationEntry ::= SEQUENCE {
    wranIfBsPmConfigurationEntryIndex          INTEGER,
    wranIfBsGranularityInterval               Integer32,
    wranIfBsCountersReportInterval            Integer32,
}

```

```

        wranIfBsPmMeasurementBitmap          OBJECT-TYPE
            BITS } 

wranIfBsOtaUsageDataRecordIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsPmConfigurationEntry 1 }

wranIfBsGranularityInterval      OBJECT-TYPE
    SYNTAX      INTEGER (1.. 255)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Data rate statistics captured in
         wranIfBsRssiCinrMetricsTable,
         wranIfBsStartupMetricsTable,
         wranIfBsThroughputMetricsTable,
         wranIfBsPacketErrorRateTable,
         wranIfBsUserMetricsTable,
         wranIfBsServiceFlowMetricsTable,
         wranIfBsArqMetricsTable, and
         wranIfBsAuthenticationMetricsTable are measured over
         the time interval this object specifics."
    ::= { wranIfBsPmConfigurationEntry 2 }

wranIfBsCountersReportInterval      OBJECT-TYPE
    SYNTAX      INTEGER (1.. 255)
    UNITS      "minutes"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Determines the interval in which traps in enabled in
         wranIfBsTrapControl, related to performance
         measurement, are sent to the NCMS."
    ::= { wranIfBsPmConfigurationEntry 2 }

wranIfBsPmMeasurementBitmap      OBJECT-TYPE
    SYNTAX      BITS { RssiCinr(0),
                      Startup(1),
                      Throughput(2),
                      NetworkEntry(3),
                      PacketError(4),
                      User(5),
                      ServiceFlow(6),
                      Arq(7),
                      Authentication(8),
                      CoexistenceStatus(9),
                      CoexistenceSource(10),
                      CoexistenceResourceList(11),
                      CoexistenceCurrentConfig(12) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

```

"A 13-bit bitmap indicating which of the measurement tables are enabled or disabled. When a position in the bitmap is set(=1) that measurement table is enabled, when it is unset (=0) the table is disabled. The bitmap position to table assignment is as follows:

```

Bit0->wranIfBsSignalPowerMetricsTable
Bit1->wranIfBsStartupMetricsTable
Bit2->wranIfBsThroughputMetricsTable
Bit3->wranIfBsNetworkEntryMetricsTable
Bit4->wranIfBsPacketErrorRateTable
Bit5->wranIfBsUserMetricsTable
Bit6->wranIfBsServiceFlowMetricsTable
Bit7->wranIfBsArqMetricsTable
Bit8->wranIfBsAuthenticationMetricsTable
Bit9->wranIfBsCoexistenceStatusTable
Bit10->wranIfBsCoexistenceSourceTable
Bit11->wranIfBsCoexistenceResourceListTable
Bit12->wranIfBsCoexistenceCurrentConfigTable."
 ::= { wranIfBsPmConfigurationEntry 3 }
```

wranIfBsSignalPowerMetricsTable OBJECT-TYPE  
 SYNTAX SEQUENCE OF wranIfBsSignalPowerMetricsEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION
 "This MIB object contains a table that records BS US measurement of a CPE's transmissions, as well as CPE measurement of BS DS signal. The data in each entry is stored as a histogram. This table is made up of entries defined by wranIfBsRssiCinrMetricsEntry. Each entry is uniquely identified by the CPE's MAC Address and the index of the entry in the table."
 ::= { wranIfBsPm 2 }

wranIfBsSignalPowerMetricsEntry OBJECT-TYPE  
 SYNTAX wranIfBsSignalPowerMetricsEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION
 "This object is a compound object that defines an entry in wranIfBsRssiCinrMetricsTable."
 INDEX { wranIfBsSignalPowerMetricsIndex }
 ::= { wranIfBsSignalPowerMetricsTable 1 }

wranIfBsSignalPowerMetricsEntry ::= SEQUENCE {
 wranIfBsRssiCinrMetricsIndex Integer32,
 wranIfBsCpeMacAddress MacAddress,
 wranIfBsChannelDirection INTEGER,
 wranIfBsChannelNumber INTEGER,
 wranIfBsStartFrame INTEGER
 wranIfBsMeasurementDuration Integer32,
 wranIfBsSignalReportType INTEGER,
 wranIfBsMeanCinrReport INTEGER,
 wranIfBsMeanRssiReport INTEGER,
 wranIfBsStdDevCinrReport INTEGER,

```

wranIfBsStdDevRssiReport           INTEGER,
wranIfBsMaxEIRPReport             INTEGER,
wranIfBsPerScEIRPReport           INTEGER }

wranIfBsSignalPowerMetricsIndex     OBJECT-TYPE
SYNTAX      Integer32 (1.. 261120)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in this table, defaults to 1."
::= { wranIfBsSignalPowerMetricsEntry 1 }

wranIfBsCpeMacAddress   OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "MAC Address of the CPE."
::= { wranIfBsSignalPowerMetricsEntry 2 }

wranIfBsChannelDirection   OBJECT-TYPE
SYNTAX      INTEGER { ds(0), us(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Direction of channel, whether DS or US, that
     measurement was done on."
::= { wranIfBsSignalPowerMetricsEntry 3 }

wranIfBsChannelNumber     OBJECT-TYPE
SYNTAX      INTEGER
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Channel number that measurement was done on."
::= { wranIfBsSignalPowerMetricsEntry 4 }

wranIfBsStartFrame        OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Frame number in which measurement was conducted in."
::= { wranIfBsSignalPowerMetricsEntry 5 }

wranIfBsMeasurementDuration OBJECT-TYPE
SYNTAX      Integer32 (1.. 16777215)
UNITS      "symbols"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Duration of measurement period in units of symbol
     period."
::= { wranIfBsRssiCinrMetricsEntry 6 }

wranIfBsSignalReportType   OBJECT-TYPE

```

```

SYNTAX      INTEGER { undetermined(0),
                  ieee802dot22wran(1),
                  atsc(2),
                  dvbt(3),
                  isdbt(4),
                  ntsc(5),
                  pal(6),
                  secam(7),
                  wirelessMicrophone(8),
                  ieee802dot22dot1Sync(9),
                  ieee802dot22dot1Msf1(10),
                  ieee802dot22dot1Msf2(11),
                  ieee802dot22dot1Msf3(12) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Type of signal detected during the measurement
     recorded in this entry."
 ::= { wranIfBsSignalPowerMetricsEntry 7 }

wranIfBsMeanCinrReport   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Mean CINR report, on an interval -64 to +63.5 dBm in
         0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 8 }

wranIfBsMeanRssiReport   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Mean RSSI report, on an interval -104 to +23.5 dBm
         in 0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 9 }

wranIfBsStdDevCinrReport   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Standard Deviation CINR report, on an interval -64
         to +63.5 dBm in 0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 10 }

wranIfBsStdDevRssiReport   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

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```

        "Standard Deviation RSSI report, on an interval -104
        to +23.5 dBm in 0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 11 }

wranIfBsMaxEIRPReport OBJECT-TYPE
SYNTAX      INTEGER (0..255)
UNITS      "dBm"
MAX-ACCESS  read-only
STATUS     current
DESCRIPTION
        "Max EIRP report, on an interval -104 to +23.5 dBm in
        0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 12 }

wranIfBsPerScEIRPReport OBJECT-TYPE
SYNTAX      INTEGER (0..255)
UNITS      "dBm"
MAX-ACCESS  read-only
STATUS     current
DESCRIPTION
        "Per subchannel EIRP report, on an interval -104 to
        +23.5 dBm in 0.5 dB steps."
 ::= { wranIfBsSignalPowerMetricsEntry 13 }

wranIfBsStartupMetricsTable OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsStartupMetricsEntry
MAX-ACCESS  not-accessible
STATUS     current
DESCRIPTION
        "This MIB provides a table to track how CPEs perform
        during initial network entry and re-entry. This
        table is made of one entry, defined by
        wranIfBsStartupMetricsEntry. This entry reflects the
        startup metrics recorded during the current reporting
        session."
 ::= { wranIfBsPm 3 }

wranIfBsStartupMetricsEntry OBJECT-TYPE
SYNTAX      wranIfBsStartupMetricsEntry
MAX-ACCESS  not-accessible
STATUS     current
DESCRIPTION
        "This object is a compound object that defines an
        entry in wranIfBsStartupMetricsTable."
INDEX { wranIfBsStartupMetricsIndex }
 ::= { wranIfBsStartupMetricsTable 1 }

wranIfBsStartupMetricsEntry ::= SEQUENCE {
    wranIfBsStartupMetricsIndex          INTEGER,
    wranIfBsNumAuthAttempt              Integer32,
    wranIfBsNumAuthSuccess              Integer32,
    wranIfBsAuthSuccessRate             INTEGER,
    wranIfBsNumRangingAttempt          Integer32,
    wranIfBsNumRangingSuccess          Integer32,
    wranIfBsRangingSuccessRate         INTEGER,
    wranIfBsMeanCinrReport             INTEGER }

```

```

wranIfBsStartupMetricsIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsStartupMetricsEntry 1 }

wranIfBsNumAuthAttempt   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter for the number of CPE authentication
         attempts."
    ::= { wranIfBsStartupMetricsEntry 2 }

wranIfBsNumAuthSuccess   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter for the number of successful
         authentication handshake completions. "
    ::= { wranIfBsStartupMetricsEntry 3 }

wranIfBsAuthSuccessRate  OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Success rate of authentication attempts:
         wranIfBsAuthSuccessRate = floor( 100 *
         wranIfBsNumAuthSuccess / wranIfBsNumAuthAttempts )."
    ::= { wranIfBsStartupMetricsEntry 4 }

wranIfBsNumRangingAttempt   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of CPE ranging requests received."
    ::= { wranIfBsStartupMetricsEntry 5 }

wranIfBsNumRangingSuccess   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of CPE ranging responses sent."
    ::= { wranIfBsStartupMetricsEntry 6 }

wranIfBsRangingSuccessRate  OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "Success rate of ranging attempts:
             wranIfBsRangingSuccessRate = floor( 100 *
             wranIfBsNumRangingSuccess /
             wranIfBsNumRangingAttempts )."
        ::= { wranIfBsStartupMetricsEntry 7 }

wranIfBsThroughputMetricsTable      OBJECT-TYPE
        SYNTAX      SEQUENCE OF wranIfBsThroughputMetricsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This MIB object provides a table to record
             peak/average data rate. This table is made of one
             entry, defined by wranIfBsThroughputMetricsEntry."
        ::= { wranIfBsPm 4 }

wranIfBsThroughputMetricsEntry      OBJECT-TYPE
        SYNTAX      wranIfBsThroughputMetricsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This object is a compound object that defines an
             entry in wranIfBsThroughputMetricsTable."
        INDEX { wranIfBsThroughputMetricsIndex }
        ::= { wranIfBsThroughputMetricsTable 1 }

wranIfBsThroughputMetricsEntry      ::= SEQUENCE {
        wranIfBsThroughputMetricsIndex      INTEGER,
        wranIfBsAvgDsUserThroughput        Integer32,
        wranIfBsAvgUsUserThroughput        Integer32,
        wranIfBsAvgDsMacThroughput        Integer32,
        wranIfBsAvgUsMacThroughput        Integer32,
        wranIfBsAvgDsPhyThroughput        Integer32,
        wranIfBsAvgUsPhyThroughput        Integer32,
        wranIfBsPeakDsUserThroughput      Integer32,
        wranIfBsPeakUsUserThroughput      Integer32,
        wranIfBsPeakDsMacThroughput      Integer32,
        wranIfBsPeakUsMacThroughput      Integer32,
        wranIfBsPeakDsPhyThroughput      Integer32,
        wranIfBsPeakUsPhyThroughput      Integer32,
        wranIfBsAvgDsCellEdgeThroughput   Integer32,
        wranIfBsAvgUsCellEdgeThroughput   Integer32 }

wranIfBsThroughputMetricsIndex      OBJECT-TYPE
        SYNTAX      INTEGER (1.. 1)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Index of entry in this table, defaults to 1."
        ::= { wranIfBsThroughputMetricsEntry 1 }

wranIfBsAvgDsUserThroughput      OBJECT-TYPE
        SYNTAX      Integer32 (0..4294967295)
        UNITS      "bps"

```

```
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average user throughput in the DS.
     This is a function of the number of octets of MAC
     SDUs transmitted by the BS to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 2 }

wranIfBsAvgUsUserThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average user throughput in the US.
     This is a function of the number of octets of MAC
     SDUs transmitted by the CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 3 }

wranIfBsAvgDsMacThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average MAC throughput in the DS.
     This is a function of the number of octets of MAC
     PDUs transmitted by the BS to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 4 }

wranIfBsAvgUsMacThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average MAC throughput in the US.
     This is a function of the number of octets of MAC
     PDUs transmitted by the CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 5 }

wranIfBsAvgDsPhyThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average PHY throughput in the DS.
     This is a function of the number of burst octets
     (e.g., MAC PDU + PHY overhead) transmitted by the BS
     to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 6 }

wranIfBsAvgUsPhyThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average PHY throughput in the US.
    This is a function of the number of burst octets
    (e.g., MAC PDU + PHY overhead) transmitted by the
    CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 7 }

wranIfBsPeakDsUserThroughput  OBJECT-TYPE
    SYNTAX      Integer32 (0..4294967295)
    UNITS      "bps"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This records the peak user throughput in the DS.
        This is a function of the number of octets of MAC
        SDUs transmitted by the BS to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 8 }

wranIfBsPeakUsUserThroughput  OBJECT-TYPE
    SYNTAX      Integer32 (0..4294967295)
    UNITS      "bps"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This records the peak user throughput in the US.
        This is a function of the number of octets of MAC
        SDUs transmitted by the CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 9 }

wranIfBsPeakDsMacThroughput  OBJECT-TYPE
    SYNTAX      Integer32 (0..4294967295)
    UNITS      "bps"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This records the peak MAC throughput in the DS.
        This is a function of the number of octets of MAC
        PDUs transmitted by the BS to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 10 }

wranIfBsPeakUsMacThroughput  OBJECT-TYPE
    SYNTAX      Integer32 (0..4294967295)
    UNITS      "bps"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This records the peak MAC throughput in the US.
        This is a function of the number of octets of MAC
        PDUs transmitted by the CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 11 }

wranIfBsPeakDsPhyThroughput  OBJECT-TYPE
    SYNTAX      Integer32 (0..4294967295)
    UNITS      "bps"

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the peak PHY throughput in the DS.
    This is a function of the number of burst octets
    (e.g., MAC PDU + PHY overhead) transmitted by the BS
    to CPEs over time."
 ::= { wranIfBsThroughputMetricsEntry 12 }

wranIfBsPeakUsPhyThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the peak PHY throughput in the US.
    This is a function of the number of burst octets
    (e.g., MAC PDU + PHY overhead) transmitted by the
    CPEs to BS over time."
 ::= { wranIfBsThroughputMetricsEntry 13 }

wranIfBsAvgDsCellEdgeThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average MAC throughput in the DS
    transmitted with the most robust MCS. This is a
    function of the number of octets of MAC PDUs
    transmitted by the BS to the CPEs over time using
    QPSK."
 ::= { wranIfBsThroughputMetricsEntry 14 }

wranIfBsAvgUsCellEdgeThroughput   OBJECT-TYPE
SYNTAX      Integer32 (0..4294967295)
UNITS       "bps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "This records the average MAC throughput in the US
    transmitted with the most robust MCS. This is a
    function of the number of octets of MAC PDUs
    transmitted by the CPEs to the BS over time using
    QPSK."
 ::= { wranIfBsThroughputMetricsEntry 15 }

wranIfBsNetworkEntryMetricsTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsNetworkEntryMetricsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB provides a table that contains latency
    (time) for network entry and re-entry. Network entry
    time is measured as the time in between receiving
    the first RNG-REQ from a CPE until the CPE has

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```

        received the REG-RSP. Network re-entry process is
        governed by the policies in (Policy) Table 234.
        This could required execution of the entire network
        entry process if the CPE is forced to re-initialize
        itself or it could only required execution of the
        CPE initialization procedure through the ranging
        process (see 7.14.2). There is one entry in the
        table, defined by wranIfBsNetworkEntryMetricsEntry."
        ::= { wranIfBsPm 5 }

wranIfBsNetworkEntryMetricsEntry      OBJECT-TYPE
    SYNTAX      wranIfBsNetworkEntryMetricsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsNetworkEntryMetricsTable."
    INDEX { wranIfBsNetworkEntryMetricsIndex }
    ::= { wranIfBsNetworkEntryMetricsTable 1 }

wranIfBsNetworkEntryMetricsEntry      ::= SEQUENCE {
    wranIfBsNetworkEntryMetricsIndex      INTEGER,
    wranIfBsAvgNetworkEntryLatency       Integer32,
    wranIfBsMaxNetworkEntryLatency       Integer32,
    wranIfBsAvgNetworkReEntryLatency    Integer32,
    wranIfBsMaxNetworkReEntryLatency    Integer32,
    wranIfBsNumNetworkEntryAttempts     Integer32,
    wranIfBsNumNetworkReEntryAttempts   Integer32 }

wranIfBsNetworkEntryMetricsIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsNetworkEntryMetricsEntry 1 }

wranIfBsAvgNetworkEntryLatency      OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Average network entry latency, measured in milli-
         seconds."
    ::= { wranIfBsNetworkEntryMetricsEntry 2 }

wranIfBsMaxNetworkEntryLatency      OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum network entry latency, measured in milli-
         seconds."
    ::= { wranIfBsNetworkEntryMetricsEntry 3 }

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```

wranIfBsAvgNetworkReEntryLatency OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Average network re-entry latency, measure in milli-
         seconds."
    ::= { wranIfBsNetworkEntryMetricsEntry 4 }

wranIfBsMaxNetworkReEntryLatency OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Average network re-entry latency, measure in milli-
         seconds."
    ::= { wranIfBsNetworkEntryMetricsEntry 5 }

wranIfBsNumNetworkEntryAttempts OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Number of network entry attempts."
    ::= { wranIfBsNetworkEntryMetricsEntry 6 }

wranIfBsNumNetworkReEntryAttempts OBJECT-TYPE
    SYNTAX      Integer32 (1.. 3600000)
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Number of network re-entry attempts."
    ::= { wranIfBsNetworkEntryMetricsEntry 7 }

wranIfBsPacketErrorRateTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsPacketErrorRateEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This MIB object contains information about packet
         error rate measurements. There is one entry in the
         table, defined by wranIfBsPacketErrorRateEntry."
    ::= { wranIfBsPm 6 }

wranIfBsPacketErrorRateEntry OBJECT-TYPE
    SYNTAX      wranIfBsPacketErrorRateEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsPacketErrorRateTable."
    INDEX { wranIfBsPacketErrorRateIndex }
    ::= { wranIfBsPacketErrorRateTable 1 }

```

```

wranIfBsNetworkEntryMetricsEntry ::= SEQUENCE {
    wranIfBsPacketErrorRateIndex      INTEGER,
    wranIfBsDsPacketsSent           Integer32,
    wranIfBsDsPacketsErrored        Integer32,
    wranIfBsDsPacketsErrorRate     INTEGER,
    wranIfBsUsPacketsSent           Integer32,
    wranIfBsUsPacketsErrored        Integer32,
    wranIfBsUsPacketsErrorRate     INTEGER }

wranIfBsPacketErrorRateIndex OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsPacketErrorRateEntry 1 }

wranIfBsDsPacketsSent OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of MAC SDUs that the BS has sent."
    ::= { wranIfBsPacketErrorRateEntry 2 }

wranIfBsDsPacketsErrored OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of MAC SDUs, including ARQ blocks that
         have not been acknowledged."
    ::= { wranIfBsPacketErrorRateEntry 3 }

wranIfBsDsPacketsErrorRate OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "DS Packet error rate, as measured:
         wranIfBsPacketErrorRate = (wranIfBsDsPacketsErrored
         / wranIfBsDsPacketsSent) * 10000000, in units of
         1e-7."
    ::= { wranIfBsPacketErrorRateEntry 4 }

wranIfBsUsPacketsReceived OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of MAC SDUs that the BS has received."
    ::= { wranIfBsPacketErrorRateEntry 5 }

wranIfBsUsPacketsErrored OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Total number of MAC SDUs with CRC errors and/or ARQ
     blocks that required retransmission that have been
     received by BS."
 ::= { wranIfBsPacketErrorRateEntry 6 }

wranIfBsUsPacketsErrorRate   OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "US Packet error rate, as measured:
     wranIfBsUsPacketsErrorRate =
     (wranIfBsUsPacketsErrored /
     wranIfBsUsPacketsReceived) * 10000000, in unites of
     1e-7."
 ::= { wranIfBsPacketErrorRateEntry 7 }

wranIfBsUserMetricsTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfUserMetricsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object provides a table to track the
     current status of users in the cell. There is one
     entry in the table, defined by
     wranIfUserMetricsEntry."
 ::= { wranIfBsPm 7 }

wranIfUserMetricsEntry   OBJECT-TYPE
SYNTAX      wranIfUserMetricsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsUserMetricsTable."
INDEX { wranIfBsUserMetricsIndex }
 ::= { wranIfBsUserMetricsTable 1 }

wranIfUserMetricsEntry ::= SEQUENCE {
    wranIfBsUserMetricsIndex          INTEGER,
    wranIfBsNumActiveUsers           Integer32,
    wranIfBsNumTotalUsers            Integer32 }

wranIfBsUserMetricsIndex      OBJECT-TYPE
SYNTAX      INTEGER (1.. 1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in this table, defaults to 1."
 ::= { wranIfUserMetricsEntry 1 }

wranIfBsNumActiveUsers       OBJECT-TYPE
SYNTAX      INTEGER (0..512)

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Total number of users that have FIDs with active SFs
     on them."
 ::= { wranIfUserMetricsEntry 2 }

wranIfBsNumTotalUsers          OBJECT-TYPE
SYNTAX      INTEGER (0..512)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Total number of users that have completed
     registration (REG-REQ/RSP) process."
 ::= { wranIfUserMetricsEntry 3 }

wranIfBsServiceFlowMetricsTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsServiceFlowMetricsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object provides a table to track metrics
     related to service flows. There is one entry in the
     table, defined by wranIfBsServiceFlowMetricsEntry."
 ::= { wranIfBsPm 8 }

wranIfBsServiceFlowMetricsEntry   OBJECT-TYPE
SYNTAX      wranIfBsServiceFlowMetricsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsServiceFlowMetricsTable."
INDEX { wranIfBsServiceFlowMetricsIndex }
 ::= { wranIfBsServiceFlowMetricsTable 1 }

wranIfBsServiceFlowMetricsEntry   ::= SEQUENCE {
wranIfBsServiceFlowMetricsIndex      INTEGER,
wranIfBsNumDsaReq                  Integer32,
wranIfBsNumDsaReqSuccess           Integer32,
wranIfBsDsaSuccessRate             INTEGER,
wranIfBsNumDscReq                  Integer32,
wranIfBsNumDscReqSuccess           Integer32,
wranIfBsDscSuccessRate             INTEGER,
wranIfBsNumDsdReq                 Integer32,
wranIfBsNumDsdReqSuccess           Integer32,
wranIfDsSuccessRate                INTEGER,
wranIfBsMaxActiveServiceFlow       Integer32,
wranIfBsAvgActiveServiceFlow        Integer32,
wranIfBsMaxProvisionedServiceFlow  Integer32,
wranIfBsAvgProvisionedServiceFlow  Integer32,
wranIfBsMaxDsServiceFlow           Integer32,
wranIfBsMaxUsServiceFlow           Integer32,
wranIfBsAvgDsServiceFlow           Integer32,
wranIfBsAvgUsServiceFlow           Integer32,
wranIfBsNumSfidAllocated          Integer32 }

```

```

wranIfBsServiceFlowMetricsIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsServiceFlowMetricsEntry 1 }

wranIfBsNumDsaReq      OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of DSA-REQ counted during reporting period."
    ::= { wranIfBsServiceFlowMetricsEntry 2 }

wranIfBsNumDsaReqSuccess      OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of successful SF activations counted during
         reporting period. A successful activation of SF is
         noted when a BS receives a DSA-RSP with a successful
         confirmation in response to a particular DSA-REQ."
    ::= { wranIfBsServiceFlowMetricsEntry 3 }

wranIfBsDsaSuccessRate      OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsDsaSuccessRate = ( wranIfBsNumDsaReqSuccess
         / wranIfBsNumDsaReq ) * 100."
    ::= { wranIfBsServiceFlowMetricsEntry 4 }

wranIfBsNumDscReq      OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of DSC-REQ counted during reporting period."
    ::= { wranIfBsServiceFlowMetricsEntry 5 }

wranIfBsNumDscReqSuccess      OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of successful SF modifications counted during
         reporting period. A successful modification of SF is
         noted when a BS receives a DSC-RSP with a successful
         confirmation in response to a particular DSC-REQ."
    ::= { wranIfBsServiceFlowMetricsEntry 6 }

```

```
wranIfBsDscSuccessRate OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsDscSuccessRate = ( wranIfBsNumDscReqSuccess
        / wranIfBsNumDscReq ) * 100."
    ::= { wranIfBsServiceFlowMetricsEntry 7 }

wranIfBsNumDsdReq OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of DSD-REQ counted during reporting period."
    ::= { wranIfBsServiceFlowMetricsEntry 8 }

wranIfBsNumDsdReqSuccess      OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of successful SF deletions counted during
        reporting period. A successful deletion of SF is
        noted when a BS receives a DSD-RSP with a successful
        confirmation in response to a particular DSD-REQ."
    ::= { wranIfBsServiceFlowMetricsEntry 9 }

wranIfBsDsdSuccessRate OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsDsdSuccessRate = ( wranIfBsNumDsdReqSuccess
        / wranIfBsNumDsdReq ) * 100."
    ::= { wranIfBsServiceFlowMetricsEntry 10 }

wranIfBsMaxActiveServiceFlow  OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum number of service flows active during
        reporting period."
    ::= { wranIfBsServiceFlowMetricsEntry 11 }

wranIfBsAvgActiveServiceFlow  OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Average number of service flows active during
        reporting period."
    ::= { wranIfBsServiceFlowMetricsEntry 12 }

wranIfBsMaxProvisionedServiceFlow  OBJECT-TYPE
```

```
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Maximum number of pre-provisioned service flows
     active during reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 13 }

wranIfBsAvgProvisionedServiceFlow   OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Average number of pre-provisioned service flows
     active during reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 14 }

wranIfBsMaxDsServiceFlow          OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Maximum number of DS service flows active during
     reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 15 }

wranIfBsMaxUsServiceFlow          OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Maximum number of US service flows active during
     reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 16 }

wranIfBsAvgDsServiceFlow          OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Average number of DS service flows active during
     reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 17 }

wranIfBsAvgUsServiceFlow          OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Average number of US service flows active during
     reporting period."
 ::= { wranIfBsServiceFlowMetricsEntry 18 }

wranIfBsNumSfidAllocated         OBJECT-TYPE
SYNTAX      Integer32 (1.. 4294967295)
MAX-ACCESS  read-only
```

```

        STATUS      current
        DESCRIPTION
            "Number of SFIDs allocated during reporting period."
        ::= { wranIfBsServiceFlowMetricsEntry 19 }

wranIfBsArqMetricsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfArqMetricsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object provides a table to track metrics
         related to service flows. There is one entry in the
         table, defined by wranIfArqMetricsEntry."
    ::= { wranIfBsPm 9 }

wranIfBsArqMetricsEntry OBJECT-TYPE
    SYNTAX      wranIfArqMetricsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsArqMetricsTable."
    INDEX { wranIfBsArqMetricsIndex }
    ::= { wranIfBsArqMetricsTable 1 }

wranIfBsArqMetricsEntry ::= SEQUENCE {
    wranIfBsArqMetricsIndex          INTEGER,
    wranIfBsDsNumArqBlocks          Integer32,
    wranIfBsDsNumArqBlocksDropped   Integer32,
    wranIfBsDsNumArqBlockErrorRate  INTEGER,
    wranIfBsDsNumArqBlockRetx       Integer32,
    wranIfBsDsNumArqBlockEfficiency INTEGER,
    wranIfBsUsNumArqBlocks          Integer32,
    wranIfBsUsNumArqBlocksDropped   Integer32,
    wranIfBsUsNumArqBlockErrorRate  INTEGER,
    wranIfBsUsNumArqBlockRetx       Integer32,
    wranIfBsUsNumArqBlockEfficiency INTEGER }

wranIfBsArqMetricsIndex OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsArqMetricsEntry 1 }

wranIfBsDsNumArqBlocks OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of ARQ blocks, including
         retransmissions, that BS has sent during reporting
         period."
    ::= { wranIfBsArqMetricsEntry 2 }

```

```
wranIfBsDsNumArqBlocksDropped OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of ARQ blocks that were dropped, due
         to unsuccessful attempts at retransmission."
    ::= { wranIfBsArqMetricsEntry 3 }

wranIfBsDsArqBlockErrorRate   OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsDsArqBlockErrorRate = (
            wranIfBsDsNumArqBlocksDropped / wranIfBsDsNumArqBlocks
            ) * 10000000, in units of 1e-7."
    ::= { wranIfBsArqMetricsEntry 4 }

wranIfBsDsNumArqBlockReTx     OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of ARQ blocks that were retransmitted."
    ::= { wranIfBsArqMetricsEntry 5 }

wranIfBsDsArqBlockEfficiency OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsDsArqBlockEfficiency = (
            wranIfBsDsArqBlockReTx / wranIfBsDsNumArqBlocks )
            * 10000000, in units of 1e-7."
    ::= { wranIfBsArqMetricsEntry 6 }

wranIfBsUsNumArqBlocks      OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of ARQ blocks, including
         retrasmssions, that BS has received during
         reporting period."
    ::= { wranIfBsArqMetricsEntry 7 }

wranIfBsUsNumArqBlocksDropped OBJECT-TYPE
    SYNTAX      Integer32 (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of US ARQ blocks that were dropped, due
         to unsuccessful attempts at retransmission."
    ::= { wranIfBsArqMetricsEntry 8 }
```

```

wranIfBsUsArqBlockErrorRate OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsUsArqBlockErrorRate = (
            wranIfBsUsNumArqBlocksDropped /
            wranIfBsUsNumArqBlocks ) * 10000000, in units of 1e-
            7."
    ::= { wranIfBsArqMetricsEntry 9 }

wranIfBsUsNumArqBlockReTx OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total number of US ARQ blocks that were
         retransmitted."
    ::= { wranIfBsArqMetricsEntry 10 }

wranIfBsUsArqBlockEfficiency OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfBsUsArqBlockEfficiency = (
            wranIfBsUsNumArqBlockReTx / wranIfBsUsNumArqBlocks )
            * 10000000, in units of 1e-7."
    ::= { wranIfBsArqMetricsEntry 11 }

wranIfBsAuthenticationMetricsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsAuthenticationMetricsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table to track the number of
         authentication/encryption errors that occur. This
         table is made up of one entry, defined by
         wranIfBsAuthenticationMetricsEntry."
    ::= { wranIfBsPm 10 }

wranIfBsAuthenticationMetricsEntry OBJECT-TYPE
    SYNTAX      wranIfBsAuthenticationMetricsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsAuthenticationMetricsTable."
    INDEX { wranIfBsAuthenticationMetricsIndex }
    ::= { wranIfBsAuthenticationMetricsTable 1 }

wranIfBsAuthenticationMetricsEntry ::= SEQUENCE {
    wranIfBsAuthenticationMetricsIndex  INTEGER,
    wranIfBsMgmtAuthErrors          Integer32,
    wranIfBsDataAuthErrors          Integer32,
    wranIfBsWiMicAuthErrors         Integer32,
}

```

```

wranIfBsDsNumArqBlockReTx          Integer32,
wranIfBsDsNumArqBlockEfficiency   INTEGER,
wranIfBsUsNumArqBlocks           Integer32,
wranIfBsUsNumArqBlocksDropped    Integer32,
wranIfBsUsNumArqBlockErrorRate   INTEGER,
wranIfBsUsNumArqBlockReTx        Integer32,
wranIfBsUsNumArqBlockEfficiency  INTEGER }

wranIfBsAuthenticationMetricsIndex OBJECT-TYPE
    SYNTAX      INTEGER (1.. 1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfBsAuthenticationMetricsEntry 1 }

wranIfBsMgmtAuthErrors  OBJECT-TYPE
    SYNTAX      INTEGER (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current count of the number of management messages
         from CPEs that cannot be properly authenticated."
    ::= { wranIfBsAuthenticationMetricsEntry 2 }

wranIfBsDataAuthErrors  OBJECT-TYPE
    SYNTAX      INTEGER (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current count of the number of data messages
         from CPEs that cannot be properly authenticated."
    ::= { wranIfBsAuthenticationMetricsEntry 3 }

wranIfBsWiMicAuthErrors OBJECT-TYPE
    SYNTAX      INTEGER (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current count of the number of wireless microphones
         beacons (MSF1+MSF2+MSF3) that were not properly
         authenticated."
    ::= { wranIfBsAuthenticationMetricsEntry 4 }

wranIfBsCbpAuthErrors  OBJECT-TYPE
    SYNTAX      INTEGER (1..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current count of the number of CBP bursts from
         neighboring WRANs that were not properly
         authenticated."
    ::= { wranIfBsAuthenticationMetricsEntry 5 }

wranIfBsCoexistenceStatusTable     OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCoexistenceStatusEntry

```

```

MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB provides a table to track the on going
    coexistence (Frame Contention) transactions. This
    table is made up of multiple entries, one for each
    ongoing transaction. Each entry is defined by
    wranIfBsCoexistenceStatusEntry. If a Frame
    Contention Destination receives a FC-REQ from a
    source on a channel from which it already has a
    message, then the existing entry is updated."
 ::= { wranIfBsPm 11 }

wranIfBsCoexistenceStatusEntry      OBJECT-TYPE
SYNTAX      wranIfBsCoexistenceStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
    entry in wranIfBsCoexistenceStatusTable."
INDEX { wranIfBsCoexistenceStatusIndex }
 ::= { wranIfBsCoexistenceStatusTable 1 }

wranIfBsCoexistenceStatusEntry      ::= SEQUENCE {
    wranIfBsCoexistenceStatusIndex          Integer32,
    wranIfBsContentionChannel              INTEGER,
    wranIfBsFCREQSourceID                 MacAddress,
    wranIfBsFrameContentionSeqNum         INTEGER,
    wranIfBsFrameContentionNumber         Integer32,
    wranIfBsContentionReqFrameIndexVector BITS }

wranIfBsCoexistenceStatusIndex      OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in this table. At BS can conduct
    Frame Contention with at most 16 other BSS
    simultaneously on a given channel."
 ::= { wranIfBsCoexistenceStatusEntry 1 }

wranIfBsContentionChannel          OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Channel # of channel that FC-REQ was received on
    (i.e., channel that is being contended for)."
 ::= { wranIfBsCoexistenceStatusEntry 2 }

wranIfBsFCREQSourceID              OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "BS ID (MAC Address) of the transmitter of a FC-REQ

```

```

        message in a CBP burst. This is pulled from the SCH
        data in the CBP MAC PDU header pulled from the CBP
        burst containing the FC-REQ."
 ::= { wranIfBsCoexistenceStatusEntry 3 }

wranIfBsFrameContentionSeqNum OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Sequence # field of received FC-REQ message."
 ::= { wranIfBsCoexistenceStatusEntry 4 }

wranIfBsFrameContentionNumber OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Value of the frame contention number (FCN) in FC-
         REQ."
 ::= { wranIfBsCoexistenceStatusEntry 5 }

wranIfBsFrameContentionReqFrameIndexVector      OBJECT-TYPE
    SYNTAX      BITS { frame1(0), frame2(1),
                      frame3(2), frame4(3),
                      frame5(4), frame6(5),
                      frame7(6), frame8(7),
                      frame9(8), frame10(9),
                      frame11(10), frame12(11),
                      frame13(12), frame14(13),
                      frame15(14), frame16(15) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Bitmap index of data frames w/in a superframe that a
         Frame Contention Source is requesting, to be
         scheduled in the next superframe after the current
         one. A frame is selected if the Bit is set to 1 and
         is not selected when set to 0."
 ::= { wranIfBsCoexistenceStatusEntry 6 }

wranIfBsCoexistenceSourceTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCoexistenceSourceEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table to track what neighbor BSSs
         are attempting a coexistence (Frame Contention)
         transaction with a particular BS or have
         communicated other information (e.g.,
         Backup/Candidate channel list) via CBP. Each entry
         is defined by wranIfBsCoexistenceSourceEntry."
 ::= { wranIfBsPm 12 }

wranIfBsCoexistenceSourceEntry      OBJECT-TYPE
    SYNTAX      wranIfBsCoexistenceSourceEntry

```

```

MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsCoexistenceSourceTable."
INDEX { wranIfBsCoexistenceSourceIndex }
 ::= { wranIfBsCoexistenceSourceTable 1 }

wranIfBsCoexistenceSourceEntry      ::= SEQUENCE {
    wranIfBsCoexistenceSourceIndex      Integer32,
    wranIfBSCBPSourceID                MacAddress,
    wranIfBsSchDataIndex               INTEGER,
    wranIfBsSchData                   OCTET STRING }

wranIfBsCoexistenceSourceIndex      OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in this table. At BS can conduct
     Frame Contention with at most 16 other BSS
     simultaneously on a given channel."
 ::= { wranIfBsCoexistenceSourceEntry 1 }

wranIfBSCBPSourceID                OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "BS ID of BS that sent CBP burst, obtained from SCH
     data in CBP MAC PDU header (see Table 1 and Table
     9)."
 ::= { wranIfBsCoexistenceSourceEntry 2 }

wranIfBsSchDataIndex               OBJECT-TYPE
SYNTAX      INTEGER { FirstSeven(0),
                    DsUsSplit(1),
                    ScwScheduling(2),
                    InterFrameQP(4),
                    IntraFrameQP(8) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "SCH Data Index field of CBP MAC PDU header. It
     indicates the length of and indication of what SCH
     fields comprise the wranIfBsSchData contents. For
     example (see Table 8), when set to 0 wranIfBsSchData
     contains 11 octets and comprises the first
     seven parameters of the SCH."
 ::= { wranIfBsCoexistenceSourceEntry 3 }

wranIfBsSchData                   OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(wranIfBsSchDataIndex))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

```

```

        "SCH Data from CBP MAC PDU header. The length of this
        field is governed by wranIfBsSchDataIndex."
 ::= { wranIfBsCoexistenceSourceEntry 4 }

wranIfBsCoexistenceResourceListTable          OBJECT-TYPE
SYNTAX
SEQUENCE OF wranIfBsCoexistenceResourceListEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"This MIB provides a table to track the resources
being used by neighboring WRANs. This includes the
Backup/Candidate Lists being transmitted by
neighboring WRANs, as well as the DS/US split. This
table is made up of multiple entries defined by
wranIfBsCoexistenceResourceListEntry."
 ::= { wranIfBsPm 13 }

wranIfBsCoexistenceResourceListEntry          OBJECT-TYPE
SYNTAX      wranIfBsCoexistenceResourceListEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"This object is a compound object that defines an
entry in wranIfBsCoexistenceResourceListTable."
INDEX { wranIfBsCoexistenceResourceListIndex }
 ::= { wranIfBsCoexistenceResourceListTable 1 }

wranIfBsCoexistenceResourceListEntry      ::= SEQUENCE {
wranIfBsCoexistenceResourceListIndex      Integer32,
wranIfBsCoexistenceResourceID            MacAddress,
wranIfBsSelfCoexistenceCapabilityIndicator INTEGER,
wranIfBsNumBackupChannels               INTEGER,
wranIfBsBackupChannelList               OCTET STRING,
wranIfBsCurrentDSUSSplit              INTEGER,
wranIfBsClaimedDSUSSplit              INTEGER,
wranIfBsDSUSChangeOffset              INTEGER,
wranfBsFrameAllocationMap             BITS,
wranIfBsScwCycleLength                INTEGER,
wranIfBsScwCycleOffset                INTEGER,
wranIfBsScwCycleBitmap                BITS }

wranIfBsCoexistenceResourceListIndex      OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Index of entry in this table. When set to 1,
refers to a BS's own coexistence resource
configuration."
 ::= { wranIfBsCoexistenceResourceListEntry 1 }

wranIfBsCoexistenceResourceID OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "BS ID of BS that sent CBP burst, obtained from SCH
             data in CBP MAC PDU header (see Table 1 and Table
             9)."
        ::= { wranIfBsCoexistenceResourceListEntry 2 }

wranIfBsSelfCoexistenceCapabilityIndicator      OBJECT-TYPE
    SYNTAX      INTEGER { noCapability(0),
                           onlySE(1),
                           SEAndFC(2) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Field within SCH Data field of CBP MAC PDU header
         that indicates what coexistence capabilities a BS
         supports. If this field is 0000, the remaining
         fields of this entry are null."
    ::= { wranIfBsCoexistenceResourceListEntry 3 }

wranIfBsNumBackupChannels      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of backup and candidate channels in the
         wranIfBsBackupChannelList."
    ::= { wranIfBsCoexistenceResourceListEntry 4 }

wranIfBsBackupChannelList      OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsNumBackupChannels))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object is a vector, of length = 8 bits *
         wranIfBsBackupChannelList, that contains
         backup/candidate channel list received in a CBP
         burst from a neighbor WRAN."
    ::= { wranIfBsCoexistenceResourceListEntry 5 }

wranIfBsCurrentDSUSSplit      OBJECT-TYPE
    SYNTAX      INTEGER (0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current US/DS split indicated in SCH data of CBP MAC
         PDU header received from neighbor WRAN."
    ::= { wranIfBsCoexistenceResourceListEntry 6 }

wranIfBsClaimedDSUSSplit      OBJECT-TYPE
    SYNTAX      INTEGER (0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Claimed US/DS split indicated in SCH data of CBP MAC
         PDU header received from neighbor WRAN."
    ::= { wranIfBsCoexistenceResourceListEntry 7 }

```

```

 ::= { wranIfBsCoexistenceResourceListEntry 7 }

wranIfBsDSUSChangeOffset      OBJECT-TYPE
    SYNTAX      Integer32 (0..4095)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "DS/US Change Offset indicated in SCH data of CBP MAC
         PDU header received from neighbor WRAN."
 ::= { wranIfBsCoexistenceResourceListEntry 8 }

wranIfBsFrameAllocationMap     OBJECT-TYPE
    SYNTAX      BITS { frame1(0), frame2(1),
                      frame3(2), frame4(3),
                      frame5(4), frame5(5),
                      frame7(6), frame8(7),
                      frame9(8), frame10(9),
                      frame11(10), frame12(11),
                      frame13(12), frame14(13),
                      frame15(14), frame16(15) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates which frames in a superframe are allocated
         to the neighbor WRAN BS. A frame is allocated if the
         bit is set to 1 and unallocated if the bit is set to
         0."
 ::= { wranIfBsCoexistenceResourceListEntry 9 }

wranIfBsScwCycleLength        OBJECT-TYPE
    SYNTAX      INTEGER { never(0), every1SF(1),
                          every2SF(2), every4SF(4),
                          every8SF(8), every16SF(16) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "SCW Cycle Length being applied by neighbor WRAN."
 ::= { wranIfBsCoexistenceResourceListEntry 10 }

wranIfBsScwCycleOffset        OBJECT-TYPE
    SYNTAX      INTEGER { never(0), every1SF(1),
                          every2SF(2), every4SF(4),
                          every8SF(8), every16SF(16) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "SCW Cycle Offset being applied by neighbor WRAN."
 ::= { wranIfBsCoexistenceResourceListEntry 11 }

wranIfBsScwCycleBitmap        OBJECT-TYPE
    SYNTAX      BITS { frame1bit1(0), frame1bit2(1),
                      frame2bit1(2), frame2bit2(3),
                      frame3bit1(4), frame3bit2(5),
                      frame4bit1(6), frame4bit2(7),
                      frame5bit1(8), frame5bit2(9),
                      frame6bit1(10), frame6bit2(11),

```

```

frame7bit1(12), frame7bit2(13),
frame8bit1(14), frame8bit2(15),
frame9bit1(16), frame9bit2(17),
frame10bit1(18), frame10bit2(19),
frame11bit1(20), frame11bit2(21),
frame12bit1(22), frame12bit2(23),
frame13bit1(24), frame13bit2(25),
frame14bit1(26), frame14bit2(27),
frame15bit1(28), frame15bit2(29),
frame16bit1(30), frame16bit2(31) }

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Valid within the context of a superframe, indicates
     for each frame if no SCW is setup (00), the BS has
     setup a reservation-based SCW for itself (11), a
     reservation-based SCW for a neighboring WRAN (10),
     or a contention-based SCW to be shared by
     neighboring WRANs (01). This is set in groups of two
     bits, e.g., BIT#0 & BIT#1 correspond to frame 1
     within the superframe."
 ::= { wranIfBsCoexistenceResourceListEntry 12 }

wranIfBsCoexistenceCurrentConfigTable      OBJECT-TYPE
SYNTAX
    SEQUENCE OF wranIfBsCoexistenceCurrentConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB provides a table to track what frame
     allocation has been awarded to a frame contention
     winner and when the awarded resource will be
     released. It is made up of multiple entries, one for
     each channel that frame contention procedure was
     executed on, as defined in
     wranIfBsCoexistenceCurrentConfigEntry. When a frame
     contention winner is selected, the corresponding
     entries in wranIfBsCoexistenceCurrentConfigTable are
     removed."
 ::= { wranIfBsPm 14 }

wranIfBsCoexistenceCurrentConfigEntry      OBJECT-TYPE
SYNTAX      wranIfBsCoexistenceCurrentConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsCoexistenceCurrentConfigTable."
INDEX { wranIfBsCoexistenceCurrentConfigIndex }
 ::= { wranIfBsCoexistenceCurrentConfigTable 1 }

wranIfBsCoexistenceCurrentConfigEntry      ::= SEQUENCE {
    wranIfBsCoexistenceCurrentConfigIndex      INTEGER,
    wranIfBsContentionChannel                  INTEGER,
    wranIfBsFrameContentionSourceID           MacAddress,
    wranIfBsAwardedSeqNum                     INTEGER,
}

```

```

wranIfBsContentionRspFrameIndexVector      OBJECT-TYPE
    SYNTAX      BITS { frame1(0), frame2(1),
                      frame3(2), frame4(3),
                      frame5(4), frame5(5),
                      frame7(6), frame8(7),
                      frame9(8), frame10(9),
                      frame11(10), frame12(11),
                      frame13(12), frame14(13),
                      frame15(14), frame16(15) }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "A bitmap containing the indexes of frames within the
         superframe that the Contention Source has won. When
         a frame is allocated to the contention source, it is
         set to 1. When a frame is not allocated, the
         corresponding bit is set to 0."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 5 }

wranIfBsContentionRspFrameReleaseTime      OBJECT-TYPE
    SYNTAX      INTEGER { 0..1000000000 }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "The time at which the contention source will release
         the channel after contention has been won." 
    ::= { wranIfBsCoexistenceCurrentConfigEntry 6 }

wranIfBsContentionCurrentConfigIndex      OBJECT-TYPE
    SYNTAX      INTEGER { 1..255 }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 1 }

wranIfBsContentionChannel      OBJECT-TYPE
    SYNTAX      INTEGER { 1..255 }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Channel # of channel that frame contention was
         executed on."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 2 }

wranIfBsFrameContentionSourceID      OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "BS ID of frame contention source that has won
         contention."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 3 }

wranIfBsAwardedSeqNum      OBJECT-TYPE
    SYNTAX      INTEGER { 1..255 }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "Sequence number from FC-REQ message of frame
         contention winner."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 4 }

wranIfBsContentionRspFrameIndexVector      OBJECT-TYPE
    SYNTAX      BITS { frame1(0), frame2(1),
                      frame3(2), frame4(3),
                      frame5(4), frame5(5),
                      frame7(6), frame8(7),
                      frame9(8), frame10(9),
                      frame11(10), frame12(11),
                      frame13(12), frame14(13),
                      frame15(14), frame16(15) }
    MAX-ACCESS  read-only
    STATUS     current
    DESCRIPTION
        "A bitmap containing the indexes of frames within the
         superframe that the Contention Source has won. When
         a frame is allocated to the contention source, it is
         set to 1. When a frame is not allocated, the
         corresponding bit is set to 0."
    ::= { wranIfBsCoexistenceCurrentConfigEntry 5 }

```

```

wranIfBsContentionRspFrameReleaseTime      OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Starting from the next superframe, the number of
         superframes after which the channel shall be
         released by the frame contention destination BS."
        ::= { wranIfBsCoexistenceCurrentConfigEntry 6 }

-- wranIfBsPmMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfBsPmMibGroups          OBJECT IDENTIFIER
                                ::= { wranIfBsPm 15 }
wranIfBsPmConfigGroup        OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 1 }
wranIfBsPmSignalPowerGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 2 }
wranIfBsPmStartupGroup       OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 3 }
wranIfBsPmThroughputGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 4 }
wranIfBsPmNetEntryGroup     OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 5 }
wranIfBsPmPktErrorGroup    OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 6 }
wranIfBsPmUserGroup         OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 7 }
wranIfBsPmServiceFlowGroup  OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 8 }
wranIfBsPmArqGroup          OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 9 }
wranIfBsPmAuthGroup         OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 10 }
wranIfBsPmCoexStatusGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 11 }
wranIfBsPmCoexSourceGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 12 }
wranIfBsPmCoexResourceGroup OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 13 }
wranIfBsPmCoexConfigGroup   OBJECT IDENTIFIER
                                ::= { wranIfBsPmMibGroups 14 }

wranIfBsPmConfigGroup        OBJECT-GROUP
    OBJECTS      { wranIfBsPmConfigurationEntryIndex,
                  wranIfBsGranularityInterval,
                  wranIfBsCountersReportInterval,
                  wranIfBsPmMeasurementBitmap }
    STATUS      current
    DESCRIPTION
        "This group contains objects configuration of
         measurement records used in wranIfBsPm."
        ::= { wranIfBsPmMibGroups 1 }

```

```

wranIfBsPmSignalPowerGroup          OBJECT-GROUP
    OBJECTS      { wranIfBsRssiCinrMetricsIndex,
                    wranIfBsCpeMacAddress,
                    wranIfBsChannelDirection,
                    wranIfBsChannelNumber,
                    wranIfBsStartFrame,
                    wranIfBsMeasurementDuration,
                    wranIfBsSignalReportType,
                    wranIfBsMeanCinrReport,
                    wranIfBsMeanRssiReport,
                    wranIfBsStdDevCinrReport,
                    wranIfBsStdDevRssiReport,
                    wranIfBsMaxEIRPReport,
                    wranIfBsPerScEIRPReport }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking CPE signal power measurements."
    ::= { wranIfBsPmMibGroups 2 }

wranIfBsPmStartupGroup           OBJECT-GROUP
    OBJECTS      { wranIfBsStartupMetricsIndex,
                    wranIfBsNumAuthAttempt,
                    wranIfBsNumAuthSuccess,
                    wranIfBsAuthSuccessRate,
                    wranIfBsNumRangingAttempt,
                    wranIfBsNumRangingSuccess,
                    wranIfBsRangingSuccessRate,
                    wranIfBsMeanCinrReport }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking CPE performance during network entry
         and re-entry."
    ::= { wranIfBsPmMibGroups 3 }

wranIfBsPmThroughputGroup        OBJECT-GROUP
    OBJECTS      { wranIfBsThroughputMetricsIndex,
                    wranIfBsAvgDsUserThroughput,
                    wranIfBsAvgUsUserThroughput,
                    wranIfBsAvgDsMacThroughput,
                    wranIfBsAvgUsMacThroughput,
                    wranIfBsAvgDsPhyThroughput,
                    wranIfBsAvgUsPhyThroughput,
                    wranIfBsPeakDsUserThroughput,
                    wranIfBsPeakUsUserThroughput,
                    wranIfBsPeakDsMacThroughput,
                    wranIfBsPeakUsMacThroughput,
                    wranIfBsPeakDsPhyThroughput,
                    wranIfBsPeakUsPhyThroughput,
                    wranIfBsAvgDsCellEdgeThroughput,
                    wranIfBsAvgUsCellEdgeThroughput }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to

```

```

        tracking CPE peak/average data rate."
 ::= { wranIfBsPmMibGroups 4 }

wranIfBsPmNetEntryGroup      OBJECT-GROUP
OBJECTS      { wranIfBsNetworkMetricsIndex,
                wranIfBsAvgNetworkEntryLatency,
                wranIfBsMaxNetworkEntryLatency,
                wranIfBsAvgNetworkReEntryLatency,
                wranIfBsMaxNetworkReEntryLatency,
                wranIfBsNumNetworkEntryAttempts,
                wranIfBsNumNetworkReEntryAttempts }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking latency of network entry and re-entry
     for CPEs."
 ::= { wranIfBsPmMibGroups 5 }

wranIfBsPmPktErrorGroup      OBJECT-GROUP
OBJECTS      { wranIfBsPacketErrorRateIndex,
                wranIfBsDsPacketsSent,
                wranIfBsDsPacketsErrored,
                wranIfBsDsPacketsErrorRate,
                wranIfBsUsPacketsSent,
                wranIfBsUsPacketsErrored,
                wranIfBsUsPacketsErrorRate }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking packet error rate measurements."
 ::= { wranIfBsPmMibGroups 6 }

wranIfBsPmUserGroup          OBJECT-GROUP
OBJECTS      { wranIfBsUserMetricsIndex,
                wranIfBsNumActiveUsers,
                wranIfBsNumTotalUsers }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking status of users in the cell."
 ::= { wranIfBsPmMibGroups 7 }

wranIfBsPmServiceFlowGroup   OBJECT-GROUP
OBJECTS      { wranIfBsServiceFlowMetricsIndex,
                wranIfBsNumDsaReq,
                wranIfBsNumDsaReqSuccess,
                wranIfBsDsaSuccessRate,
                wranIfBsNumDscReq,
                wranIfBsNumDscReqSuccess,
                wranIfBsDscSuccessRate,
                wranIfBsNumDsdReq,
                wranIfBsNumDsdReqSuccess,
                wranIfDsdSuccessRate,
                wranIfBsMaxActiveServiceFlow,
                wranIfBsAvgActiveServiceFlow,
                wranIfBsMaxProvisionedServiceFlow,

```

```

wranIfBsAvgProvisionedServiceFlow,
wranIfBsMaxDsServiceFlow,
wranIfBsMaxUsServiceFlow,
wranIfBsAvgDsServiceFlow,
wranIfBsAvgUsServiceFlow,
wranIfBsNumSfidAllocated }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking service flow metrics."
::= { wranIfBsPmMibGroups 8 }

wranIfBsPmArqGroup          OBJECT-GROUP
OBJECTS      { wranIfBsArqMetricsIndex,
               wranIfBsDsNumArqBlocks,
               wranIfBsDsNumArqBlocksDropped,
               wranIfBsDsNumArqBlockErrorRate,
               wranIfBsDsNumArqBlockRetx,
               wranIfBsDsNumArqBlockEfficiency,
               wranIfBsUsNumArqBlocks,
               wranIfBsUsNumArqBlocksDropped,
               wranIfBsUsNumArqBlockErrorRate,
               wranIfBsUsNumArqBlockRetx,
               wranIfBsUsNumArqBlockEfficiency }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking ARQ performance."
::= { wranIfBsPmMibGroups 9 }

wranIfBsPmAuthGroup         OBJECT-GROUP
OBJECTS      { wranIfBsAuthenticationMetricsIndex,
               wranIfBsMgmtAuthErrors,
               wranIfBsDataAuthErrors,
               wranIfBsWiMicAuthErrors,
               wranIfBsDsNumArqBlockRetx,
               wranIfBsDsNumArqBlockEfficiency,
               wranIfBsUsNumArqBlocks,
               wranIfBsUsNumArqBlocksDropped,
               wranIfBsUsNumArqBlockErrorRate,
               wranIfBsUsNumArqBlockRetx,
               wranIfBsUsNumArqBlockEfficiency }

STATUS      current
DESCRIPTION
    "This group contains objects related to
     tracking the number of
     authentication/encryption errors that occur."
::= { wranIfBsPmMibGroups 10 }

wranIfBsPmCoexStatusGroup   OBJECT-GROUP
OBJECTS      { wranIfBsCoexistenceStatusIndex,
               wranIfBsContentionChannel,
               wranIfBsFCREQSourceID,
               wranIfBsFrameContentionSeqNum,
               wranIfBsFrameContentionNumber,
               wranIfBsContentionReqFrameIndexVector }

```

```

        STATUS      current
        DESCRIPTION
            "This group contains objects related to
            tracking the status of on going coexistence (Frame
            Contention) transactions."
        ::= { wranIfBsPmMibGroups 11 }

wranIfBsPmCoexSourceGroup          OBJECT-GROUP
        OBJECTS      { wranIfBsCoexistenceSourceIndex,
                        wranIfBsCBPSourceID,
                        wranIfBsSchDataIndex,
                        wranIfBsSchData }
        STATUS      current
        DESCRIPTION
            "This group contains objects related to
            tracking which neighbor BSs are attempting
            a coexistence (Frame Contention) transaction."
        ::= { wranIfBsPmMibGroups 12 }

wranIfBsPmCoexResourceGroup        OBJECT-GROUP
        OBJECTS      { wranIfBsCoexistenceResourceListIndex,
                        wranIfBsCoexistenceResourceID,
                        wranIfBsSelfCoexistenceCapabilityIndicator,
                        wranIfBsNumBackupChannels,
                        wranIfBsBackupChannelList,
                        wranIfBsCurrentDSUSSplit,
                        wranIfBsClaimedDSUSSplit,
                        wranIfBsDSUSChangeOffset,
                        wranfBsFrameAllocationMap,
                        wranIfBsScwCycleLength,
                        wranIfBsScwCycleOffset,
                        wranIfBsScwCycleFrameBitmap }
        STATUS      current
        DESCRIPTION
            "This group contains objects related to
            tracking what resources are used by
            neighboring WRANs."
        ::= { wranIfBsPmMibGroups 13 }

wranIfBsPmCoexConfigGroup         OBJECT-GROUP
        OBJECTS      { wranIfBsCoexistenceCurrentConfigIndex,
                        wranIfBsContentionChannel,
                        wranIfBsFrameContentionSourceID,
                        wranIfBsAwardedSeqNum,
                        wranIfBsContentionRspFrameIndexVector,
                        wranIfBsContentionRspFrameReleaseTime }
        STATUS      current
        DESCRIPTION
            "This group contains objects related to
            tracking what resources have been
            allocated to neighboring WRANs during
            coexistence (Frame Contention) transactions."
        ::= { wranIfBsPmMibGroups 14 }
    
```

wranIfBsPmMibCompliance MODULE-COMPLIANCE

```

        STATUS      current
DESCRIPTION
        "MIB objects that are optional and mandatory for
        wranIfBsPm compliance."
MODULE      wranIfBsCm
MANDATORY-GROUPS { wranIfBsPmConfigGroup }
-- OPTIONAL-GROUPS   { wranIfBsPmSignalPowerGroup,
                      wranIfBsPmStartupGroup,
                      wranIfBsPmThroughputGroup,
                      wranIfBsPmNetEntryGroup,
                      wranIfBsPmPktErrorGroup,
                      wranIfBsPmUserGroup,
                      wranIfBsPmServiceFlowGroup,
                      wranIfBsPmArqGroup,
                      wranIfBsPmAuthGroup,
                      wranIfBsPmCoexStatusGroup,
                      wranIfBsPmCoexSourceGroup,
                      wranIfBsPmCoexResourceGroup,
                      wranIfBsPmCoexConfigGroup }
        ::= { wranIfBsPm 16 }

-- wranIfBsScm: This MIB group has objects related to security
-- management.

wranIfBsCpeScmAuthStatusTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 1 }
wranIfBsCpeScmSaConfigTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 2 }
wranIfBsCpeTekRefreshTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 3 }
wranIfBsCBPAuthCACertTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 4 }
wranIfBsCBPAuthBsImplicitCertTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 5 }
wranIfBsWiMicAuthCertTable
        OBJECT IDENTIFIER ::= { wranIfBsScm 6 }
wranIfBsPmMibGroups
        OBJECT IDENTIFIER ::= { wranIfBsScm 7 }
wranIfBsScmMibCompliance
        OBJECT IDENTIFIER ::= { wranIfBsScm 8 }

wranIfBsCpeScmAuthStatusTable OBJECT-TYPE
SYNTAX
        SEQUENCE OF wranIfBsCpeScmAuthStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "This object provides a table that stores information
        regarding the current state of the CPE's
        authentication state machine. This table is stored
        on each CPE and made of one entry, defined by
        wranIfBsCpeScmAuthStatusEntry."
        ::= { wranIfBsScm 1 }

wranIfBsCpeScmAuthStatusEntry OBJECT-TYPE
SYNTAX      wranIfBsCpeScmAuthStatusEntry

```

```

MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsCpeScmAuthStatusTable."
INDEX { wranIfBsCpeAuthStatusIndex }
 ::= { wranIfBsCpeScmAuthStatusTable 1 }

wranIfBsCpeScmAuthStatusEntry ::= SEQUENCE {
    wranIfBsCpeAuthStatusIndex          INTEGER,
    wranIfBsCpeScmAuthStatus           INTEGER,
    wranIfBsCpeScmAuthRecentEvent      MacAddress,
    wranIfBsCpeScmNumAuthAttempts     INTEGER,
    wranIfBsCpeAuthRecentMsgSize      Integer32,
    wranIfBsCpeScmAuthRecentMsg       OCTET STRING,
    wranIfBsCpeScmAuthEapAuthTimerExpiration Integer32,
    wranIfBsCpeAuthGraceTimer1        Integer32,
    wranIfBsCpeAuthGraceTimer2        Integer32,
    wranIfBsCpeScmAk1Lifetime        Integer32,
    wranIfBsCpeScmAk2Lifetime        Integer32,
    wranIfBsCpeScmConfigRequestSize   Integer32,
    wranIfBsCpeScmConfigRequest      OCTET STRING,
    wranIfBsCpeScmConfigReplySize    Integer32,
    wranIfBsCpeScmConfigReply        OCTET STRING }

wranIfBsCpeAuthStatusIndex      OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfBsCpeScmAuthStatusEntry 1 }

wranIfBsCpeScmAuthStatus       OBJECT-TYPE
SYNTAX      INTEGER { idle(0), notAuthenticated(1),
                      reAuthWait(2), authenticated(3) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Current state of CPE's authentication state machine
     (see 8.2.2.1)."
 ::= { wranIfBsCpeScmAuthStatusEntry 2 }

wranIfBsCpeScmAuthRecentEvent  OBJECT-TYPE
SYNTAX      INTEGER { startAuth(0), eapTimeout(1),
                      eapFailure(2), eapRetryExhaustion(3),
                      eapSuccess(4), reAuthNeeded(5),
                      authGraceTimeout(6) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of most recent event (see 8.2.2.4) that
     has occurred in the ASM."
 ::= { wranIfBsCpeScmAuthStatusEntry 3 }

wranIfBsCpeScmNumAuthAttempts OBJECT-TYPE

```

```
SYNTAX      INTEGER (1..11)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Current # of EAP authentication attempts."
 ::= { wranIfBsCpeScmAuthStatusEntry 4 }

wranIfBsCpeAuthRecentMsgSize  OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Size of wranIfBsCpeScmAuthRecentMsg in octets."
 ::= { wranIfBsCpeScmAuthStatusEntry 5 }

wranIfBsCpeAuthRecentMsg      OBJECT-TYPE
    SYNTAX
        OCTETS STRING (SIZE(wranIfCpeAuthRecentMsgSize))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Contents of most recent authentication message,
         either EAP-Start or EAP-Transfer."
 ::= { wranIfBsCpeScmAuthStatusEntry 6 }

wranIfBsCpeScmAuthEapAuthTimerExpiration  OBJECT-TYPE
    SYNTAX      Integer32 (300..3024000)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Contents of most recent authentication message,
         either EAP-Start or EAP-Transfer."
 ::= { wranIfBsCpeScmAuthStatusEntry 7 }

wranIfBsCpeScmAuthGraceTimer1  OBJECT-TYPE
    SYNTAX      Integer32 (1..3024000)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication of when Authentication Grace timer for
         current (active) AK will expire."
 ::= { wranIfBsCpeScmAuthStatusEntry 8 }

wranIfBsCpeScmAuthGraceTimer2  OBJECT-TYPE
    SYNTAX      Integer32 (1..3024000)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication of when Authentication Grace timer for
         second generation (non-active) AK will expire."
 ::= { wranIfBsCpeScmAuthStatusEntry 9 }

wranIfBsCpeScmAk1Lifetime     OBJECT-TYPE
```

```

SYNTAX      Integer32 (1..6048000)
UNITS      "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Remaining lifetime for current (active) AK."
 ::= { wranIfBsCpeScmAuthStatusEntry 10 }

wranIfBsCpeScmAk2Lifetime      OBJECT-TYPE
SYNTAX      Integer32 (1..6048000)
UNITS      "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Remaining lifetime for second generation (non-
     active) AK."
 ::= { wranIfBsCpeScmAuthStatusEntry 11 }

wranIfBsCpeScmConfigRequestSize      OBJECT-TYPE
SYNTAX      Integer32 (1..65535)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of wranIfBsCpeScmConfigRequest in octets."
 ::= { wranIfBsCpeScmAuthStatusEntry 12 }

wranIfBsCpeScmConfigRequest      OBJECT-TYPE
SYNTAX
    OCTETS STRING (SIZE(wranIfBsCpeScmConfigRequestSize))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Contents of SCM configuration request (see Table
     187) sent by CPE, upon initial authentication or re-
     authentication, to AAA server."
 ::= { wranIfBsCpeScmAuthStatusEntry 13 }

wranIfBsCpeScmConfigReplySize OBJECT-TYPE
SYNTAX      Integer32 (1..65535)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of wranIfBsCpeScmConfigReply in octets."
 ::= { wranIfBsCpeScmAuthStatusEntry 14 }

wranIfBsCpeScmConfigReply      OBJECT-TYPE
SYNTAX
    OCTETS STRING (SIZE(wranIfBsCpeScmConfigReplySize))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Contents of SCM configuration reply (see Table
     188) sent by AAA server, upon confirmation of
     initial authentication or re-authentication, to
     CPE."
 ::= { wranIfBsCpeScmAuthStatusEntry 15 }

```

```

wranIfBsCpeScmSaConfigTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCpeScmConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object provides a table that provides the
         configuration of the SA attributes that are related
         to SAs configured on each CPE. This table is
         maintained on each CPE as well as on the BS. On the
         BS, this table represents the configuration of SAs
         for all CPEs under its control. On the CPE, this
         table is made up of entry for each SA that a CPE
         supports. Each entry is defined by
         wranIfBsCpeScmSaConfigEntry."
    ::= { wranIfBsScm 2 }

wranIfBsCpeScmSaConfigEntry   OBJECT-TYPE
    SYNTAX      wranIfBsCpeScmSaConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsCpeScmSaConfigTable."
INDEX { wranIfBsCpeScmSaConfigIndex }
 ::= { wranIfBsCpeScmSaConfigTable 1 }

wranIfBsCpeScmSaConfigEntry   ::= SEQUENCE {
    wranIfBsCpeScmSaConfigIndex           Integer32,
    wranIfBsCpeMacAddress                MacAddress,
    wranIfBsCpeSaid                     Integer32,
    wranIfBsCpeSaType                   INTEGER,
    wranIfBsCpeCryptoSuiteListSize       INTEGER,
    wranIfBsCpeCryptoSuiteList          OCTET STRING,
    wranIfBsCpeActiveTekSequenceNumber  INTEGER,
    wranIfBsCpeActiveTekLifetime        Integer32,
    wranIfBsCpeActiveTekPn              Integer32,
    wranIfBsCpeActiveTekExpireTime     DateAndTime,
    wranIfBsCpeNonActiveTekSequenceNumber Integer32,
    wranIfBsCpeNonActiveTekLifetime    Integer32,
    wranIfBsCpeNonActiveTekPn          Integer32,
    wranIfBsCpeNonActiveTekExpireTime  DateAndTime }

wranIfBsCpeScmSaConfigIndex   OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfBsCpeScmSaConfigEntry 1 }

wranIfBsCpeMacAddress   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

```

```

        "MAC address of CPE."
        ::= { wranIfBsCpeScmSaConfigEntry 2 }

wranIfBsCpeSaid      OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "SAID of SA that this entry refers to."
        ::= { wranIfBsCpeScmSaConfigEntry 3 }

wranIfBsCpeSaType   OBJECT-TYPE
    SYNTAX      INTEGER { null(0), primary(1),
                           secondary(2), group(3) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Type of SA, either Null, Primary, Secondary, or
         Group."
        ::= { wranIfBsCpeScmSaConfigEntry 4 }

wranIfBsCpeCryptoSuiteListSize   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of items in wranIfBsCpeCryptoSuiteList."
        ::= { wranIfBsCpeScmSaConfigEntry 5 }

wranIfBsCpeCryptoSuiteList   OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfBsCpeCryptoSuiteListSize))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object provides a list that describes the
         cryptographic suites that the CPE supports for this
         particular SA. The complete list of suites is
         provided in Table 193."
        ::= { wranIfBsCpeScmSaConfigEntry 6 }

wranIfBsCpeActiveTekSequenceNumber   OBJECT-TYPE
    SYNTAX      INTEGER (0..3)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The EKS value for the current (active) generation of
         the two TEKs that are configured for this SA."
        ::= { wranIfBsCpeScmSaConfigEntry 7 }

wranIfBsCpeActiveTekLifetime   OBJECT-TYPE
    SYNTAX      Integer32 (0..604800)
    UNITS      "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

```

```

        "The remaining lifetime, in units of time (e.g.,
        seconds), for the current (active) generation of the
        two TEKs that are configured for this SA."
 ::= { wranIfBsCpeScmSaConfigEntry 8 }

wranIfBsCpeActiveTekPn   OBJECT-TYPE
    SYNTAX      Integer32 (0..16777216)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of the PN counter for the current
        (active) generation of the two TEKs that are
        configured for this SA."
 ::= { wranIfBsCpeScmSaConfigEntry 9 }

wranIfBsCpeActiveTekExpireTime      OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Time at which current (active) generation of the two
        TEKs configured for an SA will expire. This time is
        calculated as a function of the (Reception Time of
        Key Reply with Active Tek) +
        (wranIfBsCpeActiveTekLifetime)."
 ::= { wranIfBsCpeScmSaConfigEntry 10 }

wranIfBsCpeNonActiveTekSequenceNumber   OBJECT-TYPE
    SYNTAX      INTEGER (0..3)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The EKS value for the second (non-active) generation
        of the two TEKs that are configured for this SA."
 ::= { wranIfBsCpeScmSaConfigEntry 11 }

wranIfBsCpeNonActiveTekLifetime      OBJECT-TYPE
    SYNTAX      Integer32 (0..604800)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The remaining lifetime, in units of time (e.g.,
        seconds), for the second (non-active) generation of
        the two TEKs that are configured for this SA."
 ::= { wranIfBsCpeScmSaConfigEntry 12 }

wranIfBsCpeNonActiveTekPn   OBJECT-TYPE
    SYNTAX      Integer32 (0..16777216)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of the PN counter for the second
        (non-active) generation of the two TEKs that are

```

```

        configured for this SA."
 ::= { wranIfBsCpeScmSaConfigEntry 13 }

wranIfBsCpeNonActiveTekExpireTime      OBJECT-TYPE
SYNTAX          DateAndTime
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION
    "Time at which current (active) generation of the two
     TEKs configured for an SA will expire. This time is
     calculated as a function of the (Reception Time of
     Key Reply with Non-Active Tek) +
     (wranIfBsCpeNonActiveTekLifetime)."
 ::= { wranIfBsCpeScmSaConfigEntry 14 }

wranIfBsCpeTekRefreshTable      OBJECT-TYPE
SYNTAX          SEQUENCE OF wranIfBsCpeTekRefreshEntry
MAX-ACCESS     not-accessible
STATUS         current
DESCRIPTION
    "This MIB object provides a table to track
     information related to ongoing Key-Request
     transactions. This table has one entry for each
     current SCM Key-Request transaction. Each entry is
     defined by wranIfBsCpeTekRefreshEntry."
 ::= { wranIfBsScm 3 }

wranIfBsCpeTekRefreshEntry      OBJECT-TYPE
SYNTAX          wranIfBsCpeTekRefreshEntry
MAX-ACCESS     not-accessible
STATUS         current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsCpeTekRefreshTable."
INDEX { wranIfBsCpeTekRefreshIndex }
 ::= { wranIfBsCpeTekRefreshTable 1 }

wranIfBsCpeTekRefreshEntry      ::= SEQUENCE {
    wranIfBsCpeTekRefreshIndex          Integer32,
    wranIfBsCpeScmReqId                Integer32,
    wranIfBsCpeScmKeyReqKeySeqNum     INTEGER,
    wranIfBsCpeScmKeyReqSaid          Integer32,
    wranIfBsCpeScmKeyReqGroupKeyIndicator Integer,
    wranIfBsCpeScmKeyReqCpeRandom     Counter64 }

wranIfBsCpeTekRefreshIndex      OBJECT-TYPE
SYNTAX          Integer32 (1..131070)
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfBsCpeTekRefreshEntry 1 }

wranIfBsCpeScmReqId      OBJECT-TYPE
SYNTAX          INTEGER (0..65535)
MAX-ACCESS     read-only

```

```

        STATUS      current
        DESCRIPTION
            "Value of Transaction ID field of SCM REQ that
             carried the corresponding Key-Request message (see
             Table 160)."
        ::= { wranIfBsCpeTekRefreshEntry 2 }

wranIfBsCpeScmKeyReqKeySeqNum OBJECT-TYPE
        SYNTAX      INTEGER (0..15)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Key Sequence Number of Key-Request message (see
             Table 165)."
        ::= { wranIfBsCpeTekRefreshEntry 3 }

wranIfBsCpeScmKeyReqSaid      OBJECT-TYPE
        SYNTAX      Integer32 (1..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Key Sequence Number of Key-Request message (see
             Table 165)."
        ::= { wranIfBsCpeTekRefreshEntry 4 }

wranIfBsCpeScmKeyReqGroupKeyIndicator      OBJECT-TYPE
        SYNTAX      INTEGER { unicastSA(0), groupSA(1) }
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indication of whether Key-Request was for a
             GSA."
        ::= { wranIfBsCpeTekRefreshEntry 5 }

wranIfBsCpeScmKeyReqCpeRandom OBJECT-TYPE
        SYNTAX      Counter64 (0..18446744073709551615)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Random number generated by CPE and sent in the Key-
             Request."
        ::= { wranIfBsCpeTekRefreshEntry 6 }

wranIfBsCBPAuthCACertTable      OBJECT-TYPE
        SYNTAX      SEQUENCE OF wranIfBsCBPAuthCACertEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This object provides a table to CA root certificates
             (see 8.6.2.3) used to validate CBP BS implicit
             certificates. There will be one entry for each CA
             for which a root certificate is installed. Each
             entry is defined by wranIfBsCBPAuthCACertEntry."
        ::= { wranIfBsScm 4 }
    
```

```

wranIfBsCBPAuthCACertEntry      OBJECT-TYPE
    SYNTAX      wranIfBsCBPAuthCACertEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsCBPAuthCACertTable."
    INDEX { wranIfBsCBPAuthCACertIndex }
    ::= { wranIfBsCBPAuthCACertTable 1 }

wranIfBsCBPAuthCACertEntry      ::= SEQUENCE {
    wranIfBsCBPAuthCACertIndex          INTEGER,
    wranIfBsCBPAuthCACertCAID          INTEGER,
    wranIfBsCBPAuthCACertKeyID         Integer32,
    wranIfBsCBPAuthCACertKeyValidityDate DateAndTime,
    wranIfBsCBPAuthCACertKeyValidityTimePeriod INTEGER,
    wranIfBsCBPAuthCACertVersion       INTEGER,
    wranIfBsCBPAuthCACertECDomainParameters INTEGER,
    wranIfBsCBPAuthCACertCAPubKrdSize  Integer32,
    wranIfBsCBPAuthCACertCAPubKrd      OCTET STRING }

wranIfBsCBPAuthCACertIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfBsCBPAuthCACertEntry 1 }

wranIfBsCBPAuthCACertCAID      OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "CA ID, identifier of CA in CA root certificate."
    ::= { wranIfBsCBPAuthCACertEntry 2 }

wranIfBsCBPAuthCACertKeyID      OBJECT-TYPE
    SYNTAX      Integer32 (1..512)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Key ID, identifier of assigned of public key
         reconstruction data in CA root certificate."
    ::= { wranIfBsCBPAuthCACertEntry 3 }

wranIfBsCBPAuthCACertKeyValidityDate      OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Key Validity Date (Not Before), date/time at which
         CA root certificate becomes valid."
    ::= { wranIfBsCBPAuthCACertEntry 4 }

wranIfBsCBPAuthCACertKeyValidityTimePeriod      OBJECT-TYPE

```

```

SYNTAX      INTEGER (1..128)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Key Validity Time Period, length of time from Key
     Validity Date (Not Before) in 6-month increments,
     during which CA root certificate is valid."
 ::= { wranIfBsCBPAuthCACertEntry 5 }

wranIfBsCBPAuthCACertVersion   OBJECT-TYPE
    SYNTAX      INTEGER (1..64)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Version of CBP Authentication being applied that CA
         root certificate supports."
 ::= { wranIfBsCBPAuthCACertEntry 6 }

wranIfBsCBPAuthCACertECDomainParameters   OBJECT-TYPE
    SYNTAX      INTEGER (0..15)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication of which EC Domain parameters are
         associated with this CA root certificate (see Table
         197)."
 ::= { wranIfBsCBPAuthCACertEntry 7 }

wranIfBsCBPAuthCACertCAPubKrdSize   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Size of wranIfBsCBPAuthCACertCAPubKrd in octets."
    DEFVAL { 31 }
 ::= { wranIfBsCBPAuthCACertEntry 8 }

wranIfBsCBPAuthCACertCAPubKrd   OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfBsCBPAuthCACertCAPubKrdSize))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Public Key Reconstruction Data that can be used to
         generate the public key associated with CA Root
         certificate."
 ::= { wranIfBsCBPAuthCACertEntry 9 }

wranIfBsCBPAuthBsImplicitCertTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsCBPAuthBsImplicitCertEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object provides a table to store BS implicit
         certificates for neighbor WRANs that use CBP
         authentication. There will be one entry for each BS
    
```

```

        whose implicit certificate is installed (via this
        object) on the BS or received by CERT-REQ/RSP. A BS
        make keep an entry for its own implicit certificate
        in this object. Each is defined
        wranIfBscBPAuthBsImplicitCertEntry."
 ::= { wranIfBsScm 5 }

wranIfBscBPAuthBsImplicitCertEntry OBJECT-TYPE
    SYNTAX      wranIfBscBPAuthBsImplicitCertEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
        entry in wranIfBscBPAuthBsImplicitCertTable."
INDEX { wranIfBscBPAuthBsImplicitCertIndex }
 ::= { wranIfBscBPAuthBsImplicitCertTable 1 }

wranIfBscBPAuthBsImplicitCertEntry ::= SEQUENCE {
    wranIfBscBPAuthBsImplicitCertIndex          Integer32,
    wranBscBPAuthBsImplicitCertBsID            MacAddress,
    wranIfBscBPAuthBsImplicitCertCAID          INTEGER,
    wranIfBscBPAuthBsImplicitKeyID             Integer32,
    wranIfBscBPAuthBsImplicitKeyValidityDate   DateAndTime,
    wranIfBscBPAuthBsImplicitKeyValidityTimePeriod INTEGER,
    wranIfBscBPAuthBsImplicitCertVersion       INTEGER,
    wranIfBscBPAuthBsImplicitPubKrdSize        Integer32,
    wranIfBscBPAuthBsImplicitPubKrd            OCTET STRING }

wranIfBscBPAuthBsImplicitCertIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..4080)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
 ::= { wranIfBscBPAuthBsImplicitCertEntry 1 }

wranBscBPAuthBsImplicitCertBsID OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "BS ID (MAC Address) of BS that implicit certificates
        belongs to."
 ::= { wranIfBscBPAuthBsImplicitCertEntry 2 }

wranIfBscBPAuthBsImplicitCertCAID OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "CA ID, identifier of CA in BS implicit certificate."
 ::= { wranIfBscBPAuthBsImplicitCertEntry 3 }

wranIfBscBPAuthBsImplicitKeyID OBJECT-TYPE
    SYNTAX      Integer32 (1..512)
    MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "Key ID, identifier of assigned of public key
             reconstruction data in BS implicit certificate."
        ::= { wranIfBsCBPAuthBsImplicitCertEntry 4 }

wranIfBsCBPAuthBsImplicitKeyValidityDate OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Key Validity Date (Not Before), date/time at which
         BS implicit certificate becomes valid."
    ::= { wranIfBsCBPAuthBsImplicitCertEntry 5 }

wranIfBsCBPAuthBsImplicitKeyValidityTimePeriod OBJECT-TYPE
    SYNTAX      INTEGER (1..128)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Key Validity Time Period, length of time from Key
         Validity Date (Not Before) in 6-month increments,
         during which BS implicit certificate is valid."
    ::= { wranIfBsCBPAuthBsImplicitCertEntry 6 }

wranIfBsCBPAuthBsImplicitCertVersion      OBJECT-TYPE
    SYNTAX      INTEGER (1..64)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Version of CBP Authentication being applied that BS
         implicit certificate supports."
    ::= { wranIfBsCBPAuthBsImplicitCertEntry 7 }

wranIfBsCBPAuthBsImplicitPubKrdSize OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Size of wranIfBsCBPAuthCACertCAPubKrd in octets."
    DEFVAL { 31 }
    ::= { wranIfBsCBPAuthBsImplicitCertEntry 8 }

wranIfBsCBPAuthBsImplicitPubKrd      OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfBsCBPAuthBsImplicitPubKrdSize))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Public Key Reconstruction Data that can be used to
         generate the public key associated with BS implicit
         certificate."
    ::= { wranIfBsCBPAuthBsImplicitCertEntry 9 }

wranIfBsWiMicAuthCertTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsWiMicAuthCertEntry

```

```

MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object provides a table to store wireless
    microphone implicit certificates contained in MSF3
    of decoded wireless microphone beacons. This table
    is made up of multiple entries, one defined for each
    unique wireless microphone beacon implicit
    certificate. Each entry is defined by
    wranIfBsWiMicAuthCertEntry. Entries are added to
    this table when a wireless microphone beacon
    (MSF1+MSF2+MSF3) has been successfully received and
    decoded."
 ::= { wranIfBsScm 6 }

wranIfBsWiMicAuthCertEntry      OBJECT-TYPE
SYNTAX      wranIfBsWiMicAuthCertEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
    entry in wranIfBsWiMicAuthCertTable."
INDEX { wranIfBsWiMicAuthCertIndex }
 ::= { wranIfBsWiMicAuthCertTable 1 }

wranIfBsWiMicAuthCertEntry      ::= SEQUENCE {
    wranIfBsWiMicAuthCertIndex          Integer32,
    wranIfBsWiMicAuthSrcAddress        MacAddress,
    wranIfBsWiMicAuthImplicitCertSize Integer32,
    wranIfBsWiMicAuthImplicitCert     OCTET STRING }

wranIfBsWiMicAuthCertIndex      OBJECT-TYPE
SYNTAX      Integer32 (1..4080)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfBsWiMicAuthCertEntry 1 }

wranIfBsWiMicAuthSrcAddress    OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Source Address from MSF1 of received wireless
    microphone beacon. It is stored as a 48-bit IEEE
    conformant MAC address that identifies the beaconing
    device associated with the implicit certificate."
 ::= { wranIfBsWiMicAuthCertEntry 2 }

wranIfBsWiMicAuthImplicitCertSize  OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of wranIfBsWiMicAuthImplicitCert in octets."

```

```

        DEFVAL { 31 }
        ::= { wranIfBsWiMicAuthCertEntry 3 }

wranIfBsWiMicAuthImplicitCert OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfBsWiMicAuthImplicitCertSize))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Wireless microphone beacon implicit certificate
     obtained form MSF3 of received wireless microphone
     beacon. Format of implicit certificate is defined in
     7.5.5 of IEEE Std 802.22.1-2010."
 ::= { wranIfBsWiMicAuthCertEntry 4 }

-- wranIfBsScmMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfBsScmMibGroups          OBJECT IDENTIFIER
                                ::= { wranIfBsPm 7 }
wranIfBsScmAuthStatusGroup    OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 1 }
wranIfBsScmSaConfigGroup     OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 2 }
wranIfBsScmTekGroup          OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 3 }
wranIfBsScmCBPAuthCACertGroup OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 4 }
wranIfBsScmCBPBsCertGroup    OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 5 }
wranIfBsScmWiMicAuthGroup    OBJECT IDENTIFIER
                                ::= { wranIfBsScmMibGroups 6 }

wranIfBsScmAuthStatusGroup    OBJECT-GROUP
OBJECTS      { wranIfBsCpeAuthStatusIndex,
                wranIfBsCpeScmAuthStatus,
                wranIfBsCpeScmAuthRecentEvent,
                wranIfBsCpeScmNumAuthAttempts,
                wranIfBsCpeAuthRecentMsgSize,
                wranIfBsCpeScmAuthRecentMsg,
                wranIfBsCpeScmAuthEapAuthTimerExpiration,
                wranIfBsCpeAuthGraceTimer1,
                wranIfBsCepAuthGraceTimer2,
                wranIfBsCpeScmAk1Lifetime,
                wranIfBsCpeScmAk2Lifetime,
                wranIfBsCpeScmConfigRequestSize,
                wranIfBsCpeScmConfigRequest,
                wranIfBsCpeScmConfigReplySize,
                wranIfBsCpeScmConfigReply }
STATUS       current
DESCRIPTION
    "This group contains objects related to
     tracking the current state of a CPEs
     authentication state machine."
 ::= { wranIfBsScmMibGroups 1 }

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```

wranIfBsScmSaConfigGroup          OBJECT-GROUP
    OBJECTS      { wranIfBsCpeScmSaConfigIndex,
                    wranIfBsCpeMacAddress,
                    wranIfBsCpeSaid,
                    wranIfBsCpeSaType,
                    wranIfBsCpeCryptoSuiteListSize,
                    wranIfBsCpeCryptoSuiteList,
                    wranIfBsCpeActiveTekSequenceNumber,
                    wranIfBsCpeActiveTekLifetime,
                    wranIfBsCpeActiveTekPn,
                    wranIfBsCpeActiveTekExpireTime,
                    wranIfBsCpeNonActiveTekSequenceNumber,
                    wranIfBsCpeNonActiveTekLifetime,
                    wranIfBsCpeNonActiveTekPn,
                    wranIfBsCpeNonActiveTekExpireTime }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking the configuration of SAs configured
         on CPEs."
    ::= { wranIfBsScmMibGroups 2 }

wranIfBsScmTekGroup              OBJECT-GROUP
    OBJECTS      { wranIfBsCpeTekRefreshIndex,
                    wranIfBsCpeScmReqId,
                    wranIfBsCpeScmKeyReqKeySeqNum,
                    wranIfBsCpeScmKeyReqSaid,
                    wranIfBsCpeScmKeyReqGroupKeyIndicator,
                    wranIfBsCpeScmKeyReqCpeRandom }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking on going Key-Request transactions."
    ::= { wranIfBsScmMibGroups 3 }

wranIfBsScmCBPAuthCACertGroup    OBJECT-GROUP
    OBJECTS      { wranIfBscBpAuthCACertIndex,
                    wranIfBscBpAuthCACertCAID,
                    wranIfBscBpAuthCACertKeyID,
                    wranIfBscBpAuthCACertKeyValidityDate,
                    wranIfBscBpAuthCACertKeyValidityTimePeriod,
                    wranIfBscBpAuthCACertVersion,
                    wranIfBscBpAuthCACertECDomainParameters,
                    wranIfBscBpAuthCACertCAPubKrdSize,
                    wranIfBscBpAuthCACertCAPubKrd }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         storing CA Root certificates that used to
         validate BS Implicit Certificates."
    ::= { wranIfBsScmMibGroups 4 }

wranIfBsScmCBPBsCertGroup        OBJECT-GROUP
    OBJECTS      { wranIfBscBpAuthCACertIndex,
                    wranIfBscBpAuthCACertCAID,

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wranIfBscBpauthCACertKeyID,
wranIfBscBpauthCACertKeyValidityDate,
wranIfBscBpauthCACertKeyValidityTimePeriod,
wranIfBscBpauthCACertVersion,
wranIfBscBpauthCACertECDomainParameters,
wranIfBscBpauthCACertCAPubKrdSize,
wranIfBscBpauthCACertCAPubKrd }

STATUS      current
DESCRIPTION
    "This group contains objects related to
    storing BS implicit certificates used in CBP
    authentication."
 ::= { wranIfBsScmMibGroups 5 }

wranIfBsScmWiMicAuthGroup          OBJECT-GROUP
OBJECTS      { wranIfBsWiMicAuthCertIndex,
               wranIfBsWiMicAuthSrcAddress,
               wranIfBsWiMicAuthImplicitCertSize,
               wranIfBsWiMicAuthImplicitCert }
STATUS      current
DESCRIPTION
    "This group contains objects related to
    storing wireless microphone beacon (IEEE Std
    802.22.1-2010) certificates transmitted in
    MSF3 of wireless microphone beacons."
 ::= { wranIfBsScmMibGroups 6 }

wranIfBsScmMibCompliance        MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
    "MIB objects that are optional and mandatory for
    wranIfBsScm compliance."
MODULE      wranIfBsCm
MANDATORY-GROUPS  { wranIfBsScmAuthStatusGroup,
                     wranIfBsScmSaConfigGroup,
                     wranIfBsScmTekGroup }
-- OPTIONAL-GROUPS     { wranIfBsScmCBPAuthCACertGroup,
                         wranIfBsScmCBPBsCertGroup,
                         wranIfBsScmWiMicAuthGroup }
 ::= { wranIfBsScm 8 }
```

END

### 13.2.3 wranIfBsSfMgmtMib

```

IEEE802dot22-WRAN-IF-BS-SF-MGMT-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32,
    Counter64
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPV2-CONF

wranIfBsSfMgmtMib      MODULE-IDENTITY
LAST-UPDATED           "201405300000Z"   -- May 30, 2014
ORGANIZATION            "IEEE 802.22"
CONTACT-INFO
    "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
     WG Chair: Apurva N. Mody
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    TGA Chair/Editor: Ranga Reddy
    E-mail: ranga.reddy@ieee.org"
DESCRIPTION
    "This material is from IEEE Std 802.22a-2014
     Copyright (c) 2014. This MIB Module Defines managed
     objects for Service Flow management based on
     IEEE Std 802.22-2011 and is under iso(1).std(0)
     .iso8802(8802).wran(22).wranIfBsSfMgmtMib(3)"
REVISION                "201405300000Z"
DESCRIPTION
    "The first version of IEEE802dot22-WRAN-IF-BS-SF-
     MGMT-MIB that provides for management of service
     flows."
::= {iso std(0) iso8802(8802) wran(22) 3}

wranIfBsProvSfTable          OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 1 }
wranIfBsScTable              OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 2 }
wranIfBsSfActiveTable         OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 3 }
wranIfBsProvClassifierRuleTable OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 4 }
wranIfBsClassifierRuleTable   OBJECT IDENTIFIER

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        ::= { wranIfBsSfMgmtMib 5 }
wranIfBsSfTrapControl          OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 6 }
wranIfBsSfTrapDefinition       OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 7 }
wranIfBsSfNotificationObjectsTable OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 8 }
wranIfBsSfMibGroups           OBJECT IDENTIFIER
                                ::= { wranIfBsSfMgmtMib 9 }
wranIfBsSfMibCompliance       OBJECT IDENTIFIER
                                ::= { wranIfSfMgmtMib 10 }

wranIfBsProvSfTable           OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsProvSfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object defines the profiles for services
         that are provisioned by the NCMS. Service flow that
         are provisioned for a particular CPE are tied to
         that CPE via that CPE's MAC Address. This table is
         made up of multiple entries, each specific to a
         particular provisioned service flow. Each entry is
         defined by wranIfBsProvSfEntry. The QoS parameters
         for provisioned service flows are mapped to
         information in wranIfBsScTable. Classification rules
         for provisioned service flows are defined in
         wranIfBsProvClassifierRuleTable."
    ::= { wranIfBsSfMgmtMib 1 }

wranIfBsProvSfEntry            OBJECT-TYPE
    SYNTAX      wranIfBsProvSfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that defines an
         entry in wranIfBsProvSfTable."
    INDEX { wranIfBsProvEntryIndex }
    ::= { wranIfBsProvSfTable 1 }

wranIfBsProvSfEntry      ::= SEQUENCE {
    wranIfBsProvEntryIndex          Integer32,
    wranIfBsCpeProvMacAddress      MacAddress,
    wranIfBsProvSfId               Integer32,
    wranIfBsProvSfDirection        INTEGER,
    wranIfBsProvScIndex            Integer32,
    wranIfBsProvCsSpecification    INTEGER,
    wranIfBsProvSfStatus           INTEGER,
    wranIfBsProvSfProvisioningTime DateAndTime,
    wranIfBsProvTargetSaid         INTEGER,
    wranIfBsProvClsRuleListSize    INTEGER
    wranIfBsProvClsRuleList        OCTET STRING }

wranIfBsProvEntryIndex   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 2048)
    MAX-ACCESS  read-only

```



```

                admitted(1),
                active(2) }

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether the provisioned service
    flow is currently provisioned, admitted, or active
    (see 7.7.8.9.4 and 7.18.2)."
::= { wranIfBsProvSfEntry 7 }

wranIfBsProvSfProvisioningTime          OBJECT-TYPE
SYNTAX        DateAndTime
MAX-ACCESS   read-write
STATUS       current
DESCRIPTION
    "If currently active (see 13.1.3.1.1.7), the time at
    which the service flow was provisioned."
::= { wranIfBsProvSfEntry 8 }

wranIfBsProvTargetSaid                  OBJECT-TYPE
SYNTAX        INTEGER { primarySA(0),
                      secondarySA(1) }
MAX-ACCESS   read-write
STATUS       current
DESCRIPTION
    "SAID of SA to which service flow is being mapped.
    Provisioned services flows can be mapped to the
    Primary or Secondary SA."
::= { wranIfBsProvSfEntry 9 }

wranIfBsProvClsRuleListSize            OBJECT-TYPE
SYNTAX        INTEGER (1..255)
MAX-ACCESS   read-write
STATUS       current
DESCRIPTION
    "Number of wranIfBsProvClsfrRuleIndex values in
    wranIfBsProvClsRuleList."
::= { wranIfBsProvSfEntry 10 }

wranIfBsProvClsRuleList               OBJECT-TYPE
SYNTAX        OCTET STRING (SIZE(wranIfBsProvClsRuleListSize))
MAX-ACCESS   read-write
STATUS       current
DESCRIPTION
    "List of wranIfBsProvClsfrRuleIndexValues pointing to
    entries in the wranIfBsProvClassifierRuleTable that
    contain packet classification rules assigned to this
    service flow."
::= { wranIfBsProvSfEntry 11 }

wranIfBsScTable                      OBJECT-TYPE
SYNTAX        SEQUENCE OF wranIfBsScEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION

```

```

    "This MIB object provides a table that describes
    attributes of provisioned and dynamic service flows,
    such as QoS Parameter Set. This table is made up of
    multiple entries, one for each service class. Each
    entry is defined by wranIfBsScEntry."
 ::= { wranIfBsSfMgmtMib 2 }

wranIfBsScEntry      OBJECT-TYPE
    SYNTAX          wranIfBsScEntry
    MAX-ACCESS     not-accessible
    STATUS         current
    DESCRIPTION
        "This object is a compound object that defines an
        entry in wranIfBsScTable."
INDEX { wranIfBsScIndex }
 ::= { wranIfBsScTable 1 }

wranIfBsScEntry      ::= SEQUENCE {
    wranIfBsScIndex          Integer32,
    wranIfBsQosSfSfid        Integer32,
    wranIfBsQosSfFid         INTEGER,
    wranIfBsQosServiceClassNameSize  INTEGER,
    wranIfBsQosServiceClassName   OCTET STRING,
    wranIfBsQosParameterSetType  INTEGER,
    wranIfBsQosMaxSustainedRate  Integer32,
    wranIfBsQosTrafficSize     Integer32,
    wranIfBsQosMinReservedRate  Integer32,
    wranIfBsQosToleratedJitter  Integer32,
    wranIfBsQosMaxLatency      INTEGER,
    wranIfBsQosEnableVariableLengthSdus TruthValue,
    wranIfBsQosSchedulingType   INTEGER,
    wranIfBsQosArqEnable       TruthValue,
    wranIfBsQosArqWindowSize   Integer32,
    wranIfBsQosArqTxRetryTimeout Integer32,
    wranIfBsQosArqRxRetryTimeout Integer32,
    wranIfBsQosArqBlockLifetime Integer32,
    wranIfBsQosArqSyncLossTimeout Integer32,
    wranIfBsQosArqDeliverInOrderEnable TruthValue,
    wranIfBsQosArqRxPurgeTimeout Integer32,
    wranIfBsQosArqBlockSizeReq  Integer32,
    wranIfBsQosArqBlockSizeRsp  Integer32,
    wranIfBsQosReqTxPolicy     BITS }
}

wranIfBsScIndex      OBJECT-TYPE
    SYNTAX          Integer32 (1..4096)
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "Index value to uniquely identify an entry in
        wranIfBsScTable."
 ::= { wranIfBsScEntry 1 }

wranIfBsQosSfSfid    OBJECT-TYPE
    SYNTAX          Integer32 (1..4294967295)
    MAX-ACCESS     read-write
    STATUS         current

```

```

DESCRIPTION
    "SFID of service flow."
 ::= { wranIfBsScEntry 2 }

wranIfBsQosSffid   OBJECT-TYPE
SYNTAX      INTEGER { be(2), nrtPS(3), rtPS(4),
                     ugs(5), reserved(6) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "FID to which service flow is mapped."
 ::= { wranIfBsScEntry 3 }

wranIfBsQosServiceClassNameSize   OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size, e.g., number of octets, of
     wranIfBsQosServiceClassName."
 ::= { wranIfBsScEntry 4 }

wranIfBsQosServiceClassName   OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfBsQosServiceClassNameSize))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Defines the name of the service class associated
     with this entry. If service class is not assigned,
     this will be blank."
 ::= { wranIfBsScEntry 5 }

wranIfBsQosParameterSetType   OBJECT-TYPE
SYNTAX      INTEGER (0..7)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether the QoS parameter set
     defined by this entry is applied to the Provisioned,
     Admitted, or Active Parameter Set of the service
     flow (see Table 77)."
 ::= { wranIfBsScEntry 6 }

wranIfBsQosMaxSustainedRate   OBJECT-TYPE
SYNTAX      Integer32 (1.. 16777216)
UNITS      "bps"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Peak information/data rate of SDUs carried by the
     service flow, defined in units of bits per second."
 ::= { wranIfBsScEntry 7 }

wranIfBsQosTrafficSize   OBJECT-TYPE
SYNTAX      Integer32 (1.. 16777216)

```

```

        UNITS          "bytes"
        MAX-ACCESS    read-write
        STATUS         current
        DESCRIPTION
            "If fixed-length SDUs (see 13.1.3.2.1.10) are
             enabled, this represents the size of the SDU
             assigned to the service flow. If variable-length
             SDUs (see 13.1.3.2.1.10) are enabled, this
             represents the average size of SDU assigned the
             service flow."
        ::= { wranIfBsScEntry 8 }

wranIfBsQosMinReservedRate   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    UNITS       "bps"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Minimum required information/data rate of SDUs
         carried by the service flow, defined in units of
         bits per second."
    ::= { wranIfBsScEntry 9 }

wranIfBsQosToleratedJitter   OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The maximum jitter (variation in delay) that can be
         suffered by the traffic assigned to the service
         flow."
    ::= { wranIfBsScEntry 10 }

wranIfBsQosMaxLatency       OBJECT-TYPE
    SYNTAX      Integer32 (1.. 16777216)
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The maximum delay that can be suffered by traffic
         assigned to the service flow."
    ::= { wranIfBsScEntry 11 }

wranIfBsQosEnableVariableLengthSdus OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Setting this object allows the turning on/off of
         variable-length SDU support. Default is to allow use
         of variable-length SDUs, Truth(1)."
    ::= { wranIfBsScEntry 12 }

wranIfBsQosSchedulingType    OBJECT-TYPE
    SYNTAX      INTEGER { be(0), nrtPS(1), rtPS(2), ugs(3) }

```

```

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Setting this object allows the turning on/off of
     variable-length SDU support. Default is to allow use
     of variable-length SDUs."
 ::= { wranIfBsScEntry 13 }

wranIfBsQosArqEnable   OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Setting this object enables/disables ARQ for a
     service flow. Default is that ARQ is enabled,
     Truth(1)."
 ::= { wranIfBsScTable 14 }

wranIfBsQosArqWindowSize   OBJECT-TYPE
SYNTAX      Integer32 (1..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of the maximum number of unacknowledged
     fragments at any given time. Only valid if
     wranIfBsQosArqEnable is set."
 ::= { wranIfBsScEntry 15 }

wranIfBsQosArqTxRetryTimeout   OBJECT-TYPE
SYNTAX      Integer32 (0..655350)
UNITS       "microseconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Total time before timing out retransmissions of ARQ
     blocks (in 10-microsecond blocks). For BS, this
     should include time to compensate for scheduling and
     the propagation time for transmission."
 ::= { wranIfBsScEntry 16 }

wranIfBsQosArqRxRetryTimeout   OBJECT-TYPE
SYNTAX      Integer32 (0..655350)
UNITS       "microseconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Total time before timing out receptions of ARQ block
     retransmission (in 10-microsecond blocks). For BS,
     this should include time to compensate for
     scheduling and the propagation
     time for transmission."
 ::= { wranIfBsScEntry 17 }

wranIfBsQosArqBlockLifetime   OBJECT-TYPE
SYNTAX      Integer32 (0..655350)
UNITS       "microseconds"

```

```

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The maximum amount of time that an ARQ block can be
    held in the ARQ state machine before it is dropped
    (in 10-microsecond blocks). Setting this to 0,
    indicates an indefinite lifetime."
 ::= { wranIfBsScEntry 18 }

wranIfBsQosArqSyncLossTimeout OBJECT-TYPE
    SYNTAX      Integer32 (0..655350)
    UNITS      "microseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Timeout for determining the that transmitter and
        receiver state machines have become unsynchronized
        (in 10-microsecond blocks). Setting this to 0,
        indicates an indefinite lifetime."
 ::= { wranIfBsScEntry 19 }

wranIfBsQosArqDeliverInOrderEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Disable/enable ability to deliver ARQ blocks to
        higher layer at receiver in the same order they were
        transmitted by the transmitter."
 ::= { wranIfBsScEntry 20 }

wranIfBsQosArqRxPurgeTimeout OBJECT-TYPE
    SYNTAX      Integer32 (0..655350)
    UNITS      "microseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "How much the ARQ window is advanced after an ARQ
        fragment is received (in 10-microsecond blocks)."
 ::= { wranIfBsScEntry 21 }

wranIfBsQosArqBlockSizeReq   OBJECT-TYPE
    SYNTAX      Integer32 (1..2048)
    UNITS      "bytes"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object defines the value of the ARQ block size
        included in DSA-REQ and REG-REQ messages."
 ::= { wranIfBsScEntry 22 }

wranIfBsQosArqBlockSizeRsp   OBJECT-TYPE
    SYNTAX      Integer32 (1..2048)
    UNITS      "bytes"
    MAX-ACCESS  read-write
    STATUS      current

```

```

DESCRIPTION
    "This object defines the value of the ARQ block size
     included in DSA-RSP and REG-RSP messages."
 ::= { wranIfBsScEntry 23 }

wranIfBsQosReqTxPolicy   OBJECT-TYPE
    SYNTAX      BITS { noUseOfBroadcastBwReqOpportunities(0),
                      reserved(1),
                      noPiggyReqWithData(2),
                      noFragmentationOfData(3),
                      noSuppressionOfPayloadHeaders(4),
                      noPacking(5),
                      reserved(6),
                      reserved(7) }
    MAX-ACCESS  read-write
    STATUS      current
DESCRIPTION
    "This value is a bitmap that enables/disables the
     following capabilities for a service flow: Use of
     broadcast BW request for US, use of multicast BW
     request for US only, piggyback BW requests on data
     for US transmissions, enable/disable fragmentation,
     enable/disable packing, and use of CRC for MAC PDU
     (See Table 83). Bits #1, #6, and #7, are reserved
     and should default to 0."
 ::= { wranIfBsScEntry 24 }

wranIfBsActiveSfTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsActiveSfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
DESCRIPTION
    "This MIB object provides a table that is used to
     manage service flows that are currently active
     between the BS and CPEs. This table is made up of
     multiple entries, one for each service flow mapped
     to a particular CPE. Each entry is defined by
     wranIfBsActiveSfEntry."
 ::= { wranIfBsSfMgmtMib 3 }

wranIfBsActiveSfEntry   OBJECT-TYPE
    SYNTAX      wranIfBsActiveSfEntry
    MAX-ACCESS  not-accessible
    STATUS      current
DESCRIPTION
    "This object is a compound object that defines an
     entry in wranIfBsActiveSfTable."
INDEX { wranIfBsActiveSfIndex }
 ::= { wranIfBsActiveSfTable 1 }

wranIfBsActiveSfEntry   ::= SEQUENCE {
    wranIfBsActiveSfIndex           Integer32,
    wranIfBsActiveSfSfid            Integer32,
    wranIfBsActiveSfMacAddress      MacAddress,
    wranIfBsActiveSfSid             Integer32,
    wranIfBsActiveSfDirection       INTEGER,

```

```

wranIfBsActiveSfStatus          INTEGER,
wranIfBsActiveScIndex           Integer32,
wranIfBsActiveCsSpecification   INTEGER,
wranIfBsActiveTargetSaid        Integer32,
wranIfBsActiveSfClsRuleListSize INTEGER,
wranIfBsActiveSfClsRuleList     OCTET STRING }

wranIfBsActiveSfIndex      OBJECT-TYPE
SYNTAX          Integer32 (1..4096)
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Index value to uniquely identify an entry in
     wranIfBsActiveSfTable."
::= { wranIfBsActiveSfEntry 1 }

wranIfBsActiveSfSfid      OBJECT-TYPE
SYNTAX          Integer32 (1.. 4294967296)
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "SFID of active service flow that is assigned to a
     particular CPE."
::= { wranIfBsActiveSfEntry 2 }

wranIfBsActiveSfMacAddress  OBJECT-TYPE
SYNTAX          MacAddress
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "48-bit IEEE MAC Address assigned to CPE to which
     this service flow is mapped."
::= { wranIfBsActiveSfEntry 3 }

wranIfBsActiveSfSid       OBJECT-TYPE
SYNTAX          Integer32 (0..511)
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "SID of CPE assigned to service flow. If
     wranIfBsActiveSfSid is a multicast SID, there will be
     multiple entries in this table, one for each
     wranIfBsActiveSfMacAddress assigned to this service
     flow with the same wranIfBsActiveSfSid."
::= { wranIfBsActiveSfEntry 4 }

wranIfBsActiveSfDirection  OBJECT-TYPE
SYNTAX          INTEGER { ds(0), us(1) }
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Direction of service flow: BS to CPE (DS), CPE to BS
     (US)."
::= { wranIfBsActiveSfEntry 5 }

wranIfBsActiveSfStatus      OBJECT-TYPE

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```

SYNTAX      INTEGER { inactive(0), provisioned(1),
                  admitted(2), active(3) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Current state of service flow. Service flow can be in
    one of four states: inactive, provisioned, admitted
    (service flow initiated but not received BW yet), or
    active (service flow initiated and there has been BW
    assigned to use on service flow)."
 ::= { wranIfBsActiveSfEntry 6 }

wranIfBsActiveScIndex   OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Index into wranIfBsScTable entry that indicates the
    QoS parameter set for this service flow."
 ::= { wranIfBsActiveSfEntry 7 }

wranIfBsActiveCsSpecification OBJECT-TYPE
SYNTAX      INTEGER { noCS(0), ethCS(1), ipCS(2) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The CS used for encapsulating SDUs for this service
    flow (see 7.7.8.9.18.1)."
 ::= { wranIfBsActiveSfEntry 8 }

wranIfBsActiveTargetSaid   OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The CS used for encapsulating SDUs for this service
    flow (see 7.7.8.9.18.1)."
 ::= { wranIfBsActiveSfEntry 9 }

wranIfBsActiveSfClsRuleListSize   OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Number of items in wranIfBsActiveSfClsRuleList."
 ::= { wranIfBsActiveSfEntry 10 }

wranIfBsActiveSfClsRuleList      OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfBsActiveSfClsRuleListSize))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "List of wranIfBsClsfrRuleIndex values pointing to
    entries in the wranIfBsClassifierRuleTable that
    contain packet classification rules assigned to this

```

```

        service flow."
 ::= { wranIfBsActiveSfEntry 11 }

wranIfBsProvClassifierRuleTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfBsProvClassifierRuleEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table contains classifier rules that are to be
     applied to service flows for CPEs that are
     provisioned by the NCMS. There are multiple entries
     in this table, one for each classifier rule. Each
     entry is defined by
     wranIfBsProvClassifierRuleEntry."
 ::= { wranIfBsSfMgmtMib 4 }

wranIfBsProvClassifierRuleEntry      OBJECT-TYPE
SYNTAX      wranIfBsProvClassifierRuleEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is a compound object that provides the
     definition of entries in
     wranIfBsProvClassifierRuleTable."
INDEX { wranIfBsProvClsfrRuleIndex }
 ::= { wranIfBsProvClassifierRuleTable 1 }

wranIfBsProvClassifierRuleEntry      ::= SEQUENCE {
wranIfBsProvClsfrRuleIndex          Integer32,
wranIfBsProvClsfrRuleMap            BITS,
wranIfBsProvClsfrRulePriority      INTEGER,
wranIfBsProvClsfrRuleProtocol      INTEGER,
wranIfBsProvClsfrRuleIpSrcAddrType InetAddressType,
wranIfBsProvClsfrRuleIpSrcAddr     InetAddress,
wranIfBsProvClsfrRuleIpSrcMask     InetAddress,
wranIfBsProvClsfrRuleIpDestAddrType InetAddressType,
wranIfBsProvClsfrRuleIpDestAddr    InetAddress,
wranIfBsProvClsfrRuleIpDestMask    InetAddress,
wranIfBsProvClsfrRuleSrcPortStart  Integer32,
wranIfBsProvClsfrRuleSrcPortEnd    Integer32,
wranIfBsProvClsfrRuleDestPortStart Integer32,
wranIfBsProvClsfrRuleDestPortEnd   Integer32,
wranIfBsProvClsfrRuleDestMacAddr   MacAddress,
wranIfBsProvClsfrRuleDestMacAddrMask MacAddress,
wranIfBsProvClsfrRuleSrcMacAddr    MacAddress,
wranIfBsProvClsfrRuleSrcMacAddrMask MacAddress,
wranIfBsProvClsfrRuleEnetProtType  INTEGER,
wranIfBsProvClsfrRuleEnetProtocol  Integer32,
wranIfBsProvClsfrRuleUserPriLow   INTEGER,
wranIfBsProvClsfrRuleUserPriHigh  INTEGER,
wranIfBsProvClsfrRuleVlanId       Integer32,
wranIfBsProvClsfrRuleIpv6FlowLabel OCTET STRING,
wranIfBsProvClsfrRuleIpTypeOfService OCTET STRING }

wranIfBsProvClsfrRuleIndex      OBJECT-TYPE
SYNTAX      Integer32 (1..65535)

```

```
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index value to uniquely identify an entry in
     wranIfBsProvClassifierRuleTable."
 ::= { wranIfBsProvClassifierRuleEntry 1 }

wranIfBsProvClsfrRuleMap      OBJECT-TYPE
SYNTAX      BITS { priority(0),
                  protocol(1),
                  ipSrcAddrType(2),
                  ipSrcAddr(3),
                  ipSrcMask(4),
                  ipDestAddrType(5),
                  ipDestAddr(6),
                  ipDestMask(7),
                  srcPortStart(8),
                  srcPortEnd(9),
                  destPortStart(10),
                  destPortEnd(11),
                  destMacAddr(12),
                  destMacAddrMask(13),
                  srcMacAddr(14),
                  srcMacAddrMask(15),
                  enetProtType(16),
                  enetProtocol(17),
                  userPriLow(18),
                  userPriHigh(19),
                  vlanId(20),
                  ipv6FlowLabel(21),
                  ipTypeOfService(22) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "A bitmap that indicates which classification
     parameters are included in the classification rule.
     A parameter exists in this rule if the corresponding
     bit is set to 1."
 ::= { wranIfBsProvClassifierRuleEntry 2 }

wranIfBsProvClsfrRulePriority OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Priority of the classification rule. This determines
     the order in which classification rules are
     applied."
 ::= { wranIfBsProvClassifierRuleEntry 3 }

wranIfBsProvClsfrRuleIpProtocol      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Value of IP Protocol field. For IPv6 headers, this
```

```
refers to the next header entry in the last header
of the IP header list. The value of this field
follows the "Protocol Numbers" specification
defined by IANA."
 ::= { wranIfBsProvClassifierRuleEntry 4 }

wranIfBsProvClsfrRuleIpSrcAddrType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Type of IP address that Source IP address
     from IP header is."
 ::= { wranIfBsProvClassifierRuleEntry 5 }

wranIfBsProvClsfrRuleIpSrcAddr      OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Source IP address from IP header."
 ::= { wranIfBsProvClassifierRuleEntry 6 }

wranIfBsProvClsfrRuleIpSrcMask      OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "IP address mask. IP source address
     (wranIfBsProvClsfrRuleIpSrcAddr) is matched when
     output of applying (bitwise AND) this value to IP
     source address from IP packet."
 ::= { wranIfBsProvClassifierRuleEntry 7 }

wranIfBsProvClsfrRuleIpDestAddrType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Type of IP address that Destination IP
     address from IP header is."
 ::= { wranIfBsProvClassifierRuleEntry 8 }

wranIfBsProvClsfrRuleIpDestAddr      OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Destination IP address from IP header."
 ::= { wranIfBsProvClassifierRuleEntry 9 }

wranIfBsProvClsfrRuleIpDestMask      OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

```
"IP address mask. IP destination address
(wranIfBsProvClsfrRuleIpDestAddr) is matched when
output of applying (bitwise AND) this value to IP
destination address from IP packet."
 ::= { wranIfBsProvClassifierRuleEntry 10 }

wranIfBsProvClsfrRuleSrcPortStart    OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Start (inclusive) of range of source ports against
     which that packet will be compared."
 ::= { wranIfBsProvClassifierRuleEntry 11 }

wranIfBsProvClsfrRuleSrcPortEnd      OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "End (inclusive) of range of source ports against
     which that packet will be compared."
 ::= { wranIfBsProvClassifierRuleEntry 12 }

wranIfBsProvClsfrRuleDestPortStart   OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Start (inclusive) of range of destination ports
     against which that packet will be compared."
 ::= { wranIfBsProvClassifierRuleEntry 13 }

wranIfBsProvClsfrRuleDestPortEnd    OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "End (inclusive) of range of destination ports
     against which that packet will be compared."
 ::= { wranIfBsProvClassifierRuleEntry 14 }

wranIfBsProvClsfrRuleDestMacAddr    OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Destination MAC address to be matched against
     destination MAC address in Ethernet header."
 ::= { wranIfBsProvClassifierRuleEntry 15 }

wranIfBsProvClsfrRuleDestMacAddrMask    OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

```

"MAC address mask. A destination MAC address
(wranIfBsProvClsfrRuleDestMacAddr) is matched when
the destination MAC address from Ethernet header is
applied (bitwise AND) with this mask."
 ::= { wranIfBsProvClassifierRuleEntry 16 }

wranIfBsProvClsfrRuleSrcMacAddr      OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Source MAC address to be matched against source MAC
     address in Ethernet header."
 ::= { wranIfBsProvClassifierRuleEntry 17 }

wranIfBsProvClsfrRuleSrcMacAddrMask OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "MAC address mask. A source MAC address
     (wranIfBsProvClsfrRuleDestMacAddr) is matched when
     the source MAC address from Ethernet header is
     applied (bitwise AND) with this mask."
 ::= { wranIfBsProvClassifierRuleEntry 18 }

wranIfBsProvClsfrRuleEnetProtType   OBJECT-TYPE
SYNTAX      INTEGER { noProtocol(0),
                      ethertype(1),
                      dsap(2) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Identifier of layer 3 protocol type in an Ethernet
     frame. There are three types defined in Ethernet
     frame classification: no layer 3 protocol type in
     Ethernet frame, EtherType in DIX/SNAP based frames,
     and DSAP in IEEE 802.3 frames. If 802.1Q is
     supported, the EtherType value in the 802.1Q header
     is used."
 ::= { wranIfBsProvClassifierRuleEntry 19 }

wranIfBsProvClsfrRuleEnetProtocol  OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Ethernet protocol type value that is used for
     classification. When
     wranIfBsProvClsfrRuleEnetProtType is set to
     EtherType, the value of this object is matched
     against the 16-bit EtherType value in an Ethernet
     header or 802.1Q header (if 802.1Q is supported).
     When wranIfBsProvClsfrRuleEnetProtType is set to
     DSAP, the DSAP byte in IEEE 802.3 frames is
     matched against the 8 LSB of this object's value."

```

```
::= { wranIfBsProvClassifierRuleEntry 20 }

wranIfBsProvClsfrRuleUserPriLow      OBJECT-TYPE
    SYNTAX      INTEGER (0..7)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Low value (inclusive) in range of 3-bit user
         priority value. This field is part of 16 bit tag of
         a 802.1Q header. Only valid if 802.1Q is being
         used."
:={ wranIfBsProvClassifierRuleEntry 21 }

wranIfBsProvClsfrRuleUserPriHigh     OBJECT-TYPE
    SYNTAX      INTEGER (0..7)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "High value (inclusive) in range of 3-bit user
         priority value. This field is part of 16 bit tag of
         a 802.1Q header. Only valid if 802.1Q is being
         used."
:={ wranIfBsProvClassifierRuleEntry 22 }

wranIfBsProvClsfrRuleVlanId        OBJECT-TYPE
    SYNTAX      Integer32 (0..4095)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "VLAN Id from Ethernet frame. Only valid if 802.1Q is
         being used."
:={ wranIfBsProvClassifierRuleEntry 23 }

wranIfBsProvClsfrRuleIpv6FlowLabel  OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(3))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Flow label field from IPv6 header. The IPv6 Flow
         Label field is mapped to the 20 LSB of this object;
         the first 4 MSB are set to 0."
:={ wranIfBsProvClassifierRuleEntry 24 }

wranIfBsProvClsfrRuleIpTypeOfService OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(1))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The value to match the IP TOS octet from IP header.
         The 6 MSBs of the value contained in this object are
         read in as the DSCP (RFC 2474), the 2 LSB are
         ignored."
:={ wranIfBsProvClassifierRuleEntry 25 }

wranIfBsClassifierRuleTable        OBJECT-TYPE
```

```

SYNTAX      SEQUENCE OF wranIfBsClassifierRuleEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object provides a table to contain
    classification rules for service flows that are
    dynamically created/destroyed. There are multiple
    entries in this table, one for each classifier rule.
    Each entry is defined by
    wranIfBsClassifierRuleEntry."
 ::= { wranIfBsSfMgmtMib 5 }

wranIfBsClassifierRuleEntry   OBJECT-TYPE
    SYNTAX      wranIfBsClassifierRuleEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is a compound object that provides the
        definition of entries in
        wranIfBsClassifierRuleTable."
INDEX { wranIfBsClsfrRuleIndex }
 ::= { wranIfBsClassifierRuleTable 1 }

wranIfBsClassifierRuleEntry  ::= SEQUENCE {
    wranIfBscclsfrRuleIndex          Integer32,
    wranIfBscclsfrRuleMap            BITS,
    wranIfBscclsfrRulePriority      INTEGER,
    wranIfBscclsfrRuleProtocol      INTEGER,
    wranIfBscclsfrRuleIpSrcAddrType InetAddressType,
    wranIfBscclsfrRuleIpSrcAddr     InetAddress,
    wranIfBscclsfrRuleIpSrcMask     InetAddress,
    wranIfBscclsfrRuleIpDestAddrType InetAddressType,
    wranIfBscclsfrRuleIpDestAddr    InetAddress,
    wranIfBscclsfrRuleIpDestMask    InetAddress,
    wranIfBscclsfrRuleSrcPortStart  Integer32,
    wranIfBscclsfrRuleSrcPortEnd    Integer32,
    wranIfBscclsfrRuleDestPortStart Integer32,
    wranIfBscclsfrRuleDestPortEnd   Integer32,
    wranIfBscclsfrRuleDestMacAddr   MacAddress,
    wranIfBscclsfrRuleDestMacAddrMask MacAddress,
    wranIfBscclsfrRuleSrcMacAddr    MacAddress,
    wranIfBscclsfrRuleSrcMacAddrMask MacAddress,
    wranIfBscclsfrRuleEnetProtType  INTEGER,
    wranIfBscclsfrRuleEnetProtocol  Integer32,
    wranIfBscclsfrRuleUserPriLow    INTEGER,
    wranIfBscclsfrRuleUserPriHigh   INTEGER,
    wranIfBscclsfrRuleVlanId       Integer32,
    wranIfBscclsfrRuleIpv6FlowLabel OCTET STRING,
    wranIfBscclsfrRuleIpTypeOfService OCTET STRING }

wranIfBsClsfrRuleIndex   OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index value to uniquely identify an entry in

```

```

        wranIfBsClassifierRuleTable."
        ::= { wranIfBsClassifierRuleEntry 1 }

wranIfBsClsfrRuleMap      OBJECT-TYPE
    SYNTAX      BITS { priority(0),
                      protocol(1),
                      ipSrcAddrType(2),
                      ipSrcAddr(3),
                      ipSrcMask(4),
                      ipDestAddrType(5),
                      ipDestAddr(6),
                      ipDestMask(7),
                      srcPortStart(8),
                      srcPortEnd(9),
                      destPortStart(10),
                      destPortEnd(11),
                      destMacAddr(12),
                      destMacAddrMask(13),
                      srcMacAddr(14),
                      srcMacAddrMask(15),
                      enetProtType(16),
                      enetProtocol(17),
                      userPriLow(18),
                      userPriHigh(19),
                      vlanId(20),
                      ipv6FlowLabel(21),
                      ipTypeOfService(22) }
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "A bitmap that indicates which classification
         parameters are included in the classification rule.
         A parameter exists in this rule if the corresponding
         bit is set to 1."
        ::= { wranIfBsClassifierRuleEntry 2 }

wranIfBsClsfrRulePriority      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Priority of the classification rule. This determines
         the order in which classification rules are
         applied."
        ::= { wranIfBsClassifierRuleEntry 3 }

wranIfBsClsfrRuleIpProtocol      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Value of IP Protocol field. For IPv6 headers, this
         refers to the next header entry in the last header
         of the IP header list. The value of this field
         follows the "Protocol Numbers" specification defined
         by IANA."

```

```
 ::= { wranIfBsClassifierRuleEntry 4 }

wranIfBsClsfrRuleIpSrcAddrType      OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Type of IP address that Source IP address
         from IP header is."
 ::= { wranIfBsClassifierRuleEntry 5 }

wranIfBsClsfrRuleIpSrcAddr      OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Source IP address from IP header."
 ::= { wranIfBsClassifierRuleEntry 6 }

wranIfBsClsfrRuleIpSrcMask      OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "IP address mask. IP source address
         (wranIfBsClsfrRuleIpSrcAddr) is matched when output
         of applying (bitwise AND) this value to IP source
         address from IP packet."
 ::= { wranIfBsClassifierRuleEntry 7 }

wranIfBsClsfrRuleIpDestAddrType      OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Type of IP address that Destination IP
         address from IP header is."
 ::= { wranIfBsClassifierRuleEntry 8 }

wranIfBsClsfrRuleIpDestAddr      OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Destination IP address from IP header."
 ::= { wranIfBsClassifierRuleEntry 9 }

wranIfBsClsfrRuleIpDestMask      OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "IP address mask. IP destination address
         (wranIfBsClsfrRuleIpDestAddr) is matched when output
         of applying (bitwise AND) this value to IP
         destination address from IP packet."
```

```

 ::= { wranIfBsClassifierRuleEntry 10 }

wranIfBsClsfrRuleSrcPortStart OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Start (inclusive) of range of source ports against
         which that packet will be compared."
 ::= { wranIfBsClassifierRuleEntry 11 }

wranIfBsClsfrRuleSrcPortEnd   OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "End (inclusive) of range of source ports against
         which that packet will be compared."
 ::= { wranIfBsClassifierRuleEntry 12 }

wranIfBsClsfrRuleDestPortStart      OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Start (inclusive) of range of destination ports
         against which that packet will be compared."
 ::= { wranIfBsClassifierRuleEntry 13 }

wranIfBsClsfrRuleDestPortEnd     OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "End (inclusive) of range of destination ports
         against which that packet will be compared."
 ::= { wranIfBsClassifierRuleEntry 14 }

wranIfBsClsfrRuleDestMacAddr   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Destination MAC address to be matched against
         destination MAC address in Ethernet header."
 ::= { wranIfBsClassifierRuleEntry 15 }

wranIfBsClsfrRuleDestMacAddrMask   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "MAC address mask. A destination MAC address
         (wranIfBsClsfrRuleDestMacAddr) is matched when the
         destination MAC address from Ethernet header is
         applied (bitwise AND) with this mask."

```

```

 ::= { wranIfBsClassifierRuleEntry 16 }

wranIfBsClsfrRuleSrcMacAddr      OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Source MAC address to be matched against source MAC
         address in Ethernet header."
 ::= { wranIfBsClassifierRuleEntry 17 }

wranIfBsClsfrRuleSrcMacAddrMask   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "MAC address mask. A source MAC address
         (wranIfBsClsfrRuleDestMacAddr) is matched when the
         source MAC address from Ethernet header is applied
         (bitwise AND) with this mask."
 ::= { wranIfBsClassifierRuleEntry 18 }

wranIfBsClsfrRuleEonetProtType   OBJECT-TYPE
    SYNTAX      INTEGER { noProtocol(0),
                           ethertype(1),
                           dsap(2) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Identifier of layer 3 protocol type in an Ethernet
         frame. There are three types defined in Ethernet
         frame classification: no layer 3 protocol type in
         Ethernet frame, EtherType in DIX/SNAP based frames,
         and DSAP in IEEE 802.3 frames. If 802.1Q is
         supported, the EtherType value in the 802.1Q header
         is used."
 ::= { wranIfBsClassifierRuleEntry 19 }

wranIfBsClsfrRuleEonetProtocol  OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Ethernet protocol type value that is used for
         classification. When wranIfBsClsfrRuleEonetProtType
         is set to EtherType, the value of this object is
         matched against the 16-bit EtherType value in an
         Ethernet header or 802.1Q header (if 802.1Q is
         supported). When wranIfBsClsfrRuleEonetProtType is
         set to DSAP, the DSAP byte in IEEE 802.3 frames
         is matched against the 8 LSB of this object's
         value."
 ::= { wranIfBsClassifierRuleEntry 20 }

wranIfBsClsfrRuleUserPriLow     OBJECT-TYPE
    SYNTAX      INTEGER (0..7)

```

```

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Low value (inclusive) in range of 3-bit user
    priority value. This field is part of 16 bit tag of
    a 802.1Q header. Only valid if 802.1Q is being
    used."
 ::= { wranIfBsClassifierRuleEntry 21 }

wranIfBsClsfrRuleUserPriHigh OBJECT-TYPE
    SYNTAX      INTEGER (0..7)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "High value (inclusive) in range of 3-bit user
        priority value. This field is part of 16 bit tag of
        a 802.1Q header. Only valid if 802.1Q is being
        used."
 ::= { wranIfBsClassifierRuleEntry 22 }

wranIfBsClsfrRuleVlanId OBJECT-TYPE
    SYNTAX      Integer32 (0..4095)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "VLAN Id from Ethernet frame. Only valid if 802.1Q is
        being used."
 ::= { wranIfBsClassifierRuleEntry 23 }

wranIfBsClsfrRuleIpv6FlowLabel     OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(3))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Flow label field from IPv6 header. The IPv6 Flow
        Label field is mapped to the 20 LSB of this object;
        the first 4 MSB are set to 0."
 ::= { wranIfBsClassifierRuleEntry 24 }

wranIfBsClsfrRuleIpTypeOfService   OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(1))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The value to match the IP TOS octet from IP header.
        The 6 MSBs of the value contained in this object are
        read in as the DSCP (RFC 2474), the 2 LSB are
        ignored."
 ::= { wranIfBsClassifierRuleEntry 25 }

wranIfBsSfTrapControl   OBJECT-TYPE
    SYNTAX      BITS { wranIfBsProvSfChange(0),
                      wranIfBsScChange(1),
                      wranIfBsActiveSfChange(2),
                      wranIfBsProvClassifierRuleChange(3),
                      wranIfBsClassifierRuleChange (4) }

```

```

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Defines control elements for traps related to
    management of service flows. This is a 5-bit field
    that enables setting a trap for particular Service
    Flow events: wranIfBsProvSfChange, wranIfBsScChange,
    wranIfBsActiveSfChange,
    wranIfBsProvClassifierRuleChange,
    wranIfBsClassifierRuleChange."
 ::= { wranIfBsSfMgmtMib 6 }

wranIfBsSfTrapDefinition          OBJECT IDENTIFIER
 ::= { wranIfBsSfMgmtMib 7 }
wranIfBsProvSfChangeTrap         OBJECT IDENTIFIER
 ::= { wranIfBsSfTrapDefinition 1 }
wranIfBsScChangeTrap             OBJECT IDENTIFIER
 ::= { wranIfBsSfTrapDefinition 2 }
wranIfBsActiveSfChangeTrap       OBJECT IDENTIFIER
 ::= { wranIfBsSfTrapDefinition 3 }
wranIfBsProvClassifierRuleChangeTrap OBJECT IDENTIFIER
 ::= { wranIfBsSfTrapDefinition 4 }
wranIfBsClassifierRuleChangeTrap OBJECT IDENTIFIER
 ::= { wranIfBsSfTrapDefinition 5 }

wranIfBsProvSfChangeTrap        NOTIFICATION-TYPE
OBJECTS      { wranIfBsProvSfStatus,
                wranIfBsProvEntryIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
    status of provisioned service flows."
 ::= { wranIfBsSfTrapDefinition 1 }

wranIfBsScChangeTrap            NOTIFICATION-TYPE
OBJECTS      { wranIfBsScIndex }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
    status of the configuration of service flow
    parameters."
 ::= { wranIfBsSfTrapDefinition 2 }

wranIfBsActiveSfChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfBsActiveSfIndex,
                wranIfBsActiveSfStatus }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
    status of dynamic service flows."
 ::= { wranIfBsSfTrapDefinition 3 }

wranIfBsProvClassifierRuleChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfBsProvCclsfrRuleIndex,
                wranIfBsProvCclsfrRuleMap }
STATUS      current

```

```

DESCRIPTION
    "This trap contains information related to the status
     of classifier rules for provisioned service flows."
 ::= { wranIfBsSfTrapDefinition 4 }

wranIfBsClassifierRuleChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfBsClsfrRuleIndex,
                wranIfBsClsfrRuleMap }
STATUS       current
DESCRIPTION
    "This trap contains information relate to the status
     of classifier rules for dynamic service flows."
 ::= { wranIfBsSfTrapDefinition 5 }

wranIfBsSfNotificationObjectsTable   OBJECT-TYPE
SYNTAX       SEQUENCE OF wranIfBsSfNotificationObjectsEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
    "This MIB provides a table to track notification
     objects that have been reported by the traps related
     to the management of service flows. It is made up of
     one entry containing objects related to the most
     recent trap/event. The entry is defined by
     wranIfBsSfNotificationObjectsEntry."
 ::= { wranIfBsSfMgmtMib 8 }

wranIfBsSfNotificationObjectsEntry   OBJECT-TYPE
SYNTAX       wranIfBsSfNotificationObjectsEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
    "This object defines an entry in
     wranIfBsSfNotificationObjectsTable."
INDEX { wranIfBsNotificationIndex }
 ::= { wranIfBsSfNotificationObjectsTable 1 }

wranIfBsSfNotificationObjectsEntry  ::= SEQUENCE {
    wranIfBsSfNotificationIndex          INTEGER,
    wranIfBsSfNotificationProvSfStatus  INTEGER,
    wranIfBsSfNotificationProvEntryIndex Integer32,
    wranIfBsSfNotificationScEntryIndex  Integer32,
    wranIfBsSfNotificationActiveSfIndex Integer32,
    wranIfBsSfNotificationActiveSfStatus INTEGER,
    wranIfBsSfNotificationProvClsfrRuleIndex Integer32,
    wranIfBsSfNotificationProvClsfrRuleMap
                                wranIfBsProvClsfrRuleMap,
    wranIfBsSfNotificationClsfrRuleIndex Integer32,
    wranIfBsSfNotificationClsfrRuleMap
                                wranIfBsClsfrRuleMap }

wranIfBsSfNotificationIndex      OBJECT-TYPE
SYNTAX       INTEGER (1..1)
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION

```

```

        "Index of entry in table."
 ::= { wranIfBsSfNotificationObjectsEntry 1 }

wranIfBsSfNotificationProvSfStatus OBJECT-TYPE
    SYNTAX      INTEGER (0..2)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Status of provisioned service flow trap is enabled
         for, see wranIfBsProvSfStatus."
 ::= { wranIfBsSfNotificationObjectsEntry 2 }

wranIfBsSfNotificationProvEntryIndex          OBJECT-TYPE
    SYNTAX      Integer32 (1..2048)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsProvSfTable that contains
         information on provisioned service flow that was
         recently modified."
 ::= { wranIfBsSfNotificationObjectsEntry 3 }

wranIfBsSfNotificationScEntryIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsScTable entry that contains
         information on modified service flow parameters."
 ::= { wranIfBsSfNotificationObjectsEntry 4 }

wranIfBsSfNotificationActiveSfIndex OBJECT-TYPE
    SYNTAX      Integer32 (1.. 4096)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index into wranIfBsActiveSfTable entry that contains
         information on an active service flow whose
         configuration has been updated."
 ::= { wranIfBsSfNotificationObjectsEntry 5 }

wranIfBsSfNotificationActiveSfStatus          OBJECT-TYPE
    SYNTAX      INTEGER (0..3)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current status of dynamic service flow, see
         wranIfBsActiveSfStatus"
 ::= { wranIfBsSfNotificationObjectsEntry 6 }

wranIfBsSfNotificationProvCclsfrRuleIndex   OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfBsProvClassifierRuleTable"

```

```

        that contains entry pertaining to a classifier rule
        for a provisioned service flow that was recently
        modified."
 ::= { wranIfBsSfNotificationObjectsEntry 7 }

wranIfBsSfNotificationProvClsfrRuleMap      OBJECT-TYPE
    SYNTAX      wranIfBsProvClsfrRuleMap
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Value of wranIfBsProvClsfrRuleMap that contains the
         configuration of which classifier rules are part of
         the classifier rule set of a provisioned service
         flow that was recently modified."
 ::= { wranIfBsSfNotificationObjectsEntry 8 }

wranIfBsSfNotificationClsfrRuleIndex      OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfBsClassifierRuleTable that
         contains entry pertaining to a classifier rule for a
         dynamic service flow that was recently modified."
 ::= { wranIfBsSfNotificationObjectsEntry 9 }

wranIfBsSfNotificationClsfrRuleMap      OBJECT-TYPE
    SYNTAX      wranIfBsClsfrRuleMap
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Value of wranIfBsClsfrRuleMap that contains the
         configuration of which classifier rules are part of
         the classifier rule set of a dynamic service flow
         that was recently modified."
 ::= { wranIfBsSfNotificationObjectsEntry 10 }

-- wranIfBsSfMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfBsSfMibGroups                      OBJECT IDENTIFIER
 ::= { wranIfBsSfMgmtMib 9 }
wranIfBsProvSfMibGroup                   OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 1 }
wranIfBsScMibGroup                      OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 2 }
wranIfBsActiveSfMibGroup                 OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 3 }
wranIfBsProvClassifierRuleMibGroup       OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 4 }
wranIfBsClassifierRuleMibGroup           OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 5 }
wranIfBsSfTrapControlGroup              OBJECT IDENTIFIER
 ::= { wranIfBsSfMibGroups 6 }
wranIfBsSfNotificationMibGroup          OBJECT IDENTIFIER

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        ::= { wranIfBsSfMibGroups 7 }

wranIfBsProvSfMibGroup      OBJECT-GROUP
    OBJECTS      { wranIfBsProvEntryIndex,
                    wranIfBsCpeProvMacAddress,
                    wranIfBsProvSfId, wranIfBsProvSfDirection,
                    wranIfBsProvScIndex,
                    wranIfBsProvCsSpecification,
                    wranIfBsProvSfStatus,
                    wranIfBsProvSfProvisioningTime,
                    wranIfBsProvTargetSaid,
                    wranIfBsProvClsRuleListSize,
                    wranIfBsProvClsRuleList }
    STATUS      current
    DESCRIPTION
        "This group contains objects related to the
         configuration of provisioned service flows."
    ::= { wranIfBsSfMibGroups 1 }

wranIfBsScMibGroup          OBJECT-GROUP
    OBJECTS      { wranIfBsScIndex,
                    wranIfBsQosSfSfid, wranIfBsQosSfFid,
                    wranIfBsQosServiceClassNameSize,
                    wranIfBsQosServiceClassName,
                    wranIfBsQosParameterSetType,
                    wranIfBsQosMaxSustainedRate,
                    wranIfBsQoSTrafficSize,
                    wranIfBsQosMinReservedRate,
                    wranIfBsQosToleratedJitter,
                    wranIfBsQosMaxLatency,
                    wranIfBsQosEnableVariableLengthSdus,
                    wranIfBsQosSchedulingType,
                    wranIfBsQosArqEnable,
                    wranIfBsQosArqWindowSize,
                    wranIfBsQosArqTxRetryTimeout,
                    wranIfBsQosArqRxRetryTimeout,
                    wranIfBsQosArqBlockLifetime,
                    wranIfBsQosArqSyncLossTimeout,
                    wranIfBsQosArqDeliverInOrderEnable,
                    wranIfBsQosArqRxPurgeTimeout,
                    wranIfBsQosArqBlockSizeReq,
                    wranIfBsQosArqBlockSizeRsp,
                    wranIfBsQosReqTxPolicy }
    STATUS      current
    DESCRIPTION
        "This group contains objects related to the
         configuration of QoS Parameters for
         provisioned and dynamic service flows."
    ::= { wranIfBsSfMibGroups 2 }

wranIfBsActiveSfMibGroup     OBJECT-GROUP
    OBJECTS      { wranIfBsActiveSfIndex, wranIfBsActiveSfSfid,
                    wranIfBsActiveSfMacAddress,
                    wranIfBsActiveSfSid,
                    wranIfBsActiveSfDirection,
                    wranIfBsActiveSfStatus,

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wranIfBsActiveScIndex,
wranIfBsActiveCsSpecification,
wranIfBsActiveTargetSaid,
wranIfBsActiveSfClsRuleListSize,
wranIfBsActiveSfClsRuleList }

STATUS      current
DESCRIPTION
    "This group contains objects related to the
     configuration of dynamic service flows."
::= { wranIfBsSfMibGroups 3 }

wranIfBsProvClassifierRuleMibGroup          OBJECT-GROUP
OBJECTS      { wranIfBsProvClsfrRuleIndex,
                wranIfBsProvClsfrRuleMap,
                wranIfBsProvClsfrRulePriority,
                wranIfBsProvClsfrRuleProtocol,
                wranIfBsProvClsfrRuleIpSrcAddrType,
                wranIfBsProvClsfrRuleIpSrcAddr,
                wranIfBsProvClsfrRuleIpSrcMask,
                wranIfBsProvClsfrRuleIpDestAddrType,
                wranIfBsProvClsfrRuleIpDestAddr,
                wranIfBsProvClsfrRuleIpDestMask,
                wranIfBsProvClsfrRuleSrcPortStart,
                wranIfBsProvClsfrRuleSrcPortEnd,
                wranIfBsProvClsfrRuleDestPortStart,
                wranIfBsProvClsfrRuleDestPortEnd,
                wranIfBsProvClsfrRuleDestMacAddr,
                wranIfBsProvClsfrRuleDestMacAddrMask,
                wranIfBsProvClsfrRuleSrcMacAddr,
                wranIfBsProvClsfrRuleSrcMacAddrMask,
                wranIfBsProvClsfrRuleEnetProtType,
                wranIfBsProvClsfrRuleEnetProtocol,
                wranIfBsProvClsfrRuleUserPriLow,
                wranIfBsProvClsfrRuleUserPriHigh,
                wranIfBsProvClsfrRuleVlanId,
                wranIfBsProvClsfrRuleIpv6FlowLabel,
                wranIfBsProvClsfrRuleIpTypeOfService }

STATUS      current
DESCRIPTION
    "This group contains objects related to the
     configuration of classifier rules for
     provisioned service flows."
::= { wranIfBsSfMibGroups 4 }

wranIfBsClassifierRuleMibGroup          OBJECT-GROUP
OBJECTS      { wranIfBscclsfrRuleIndex, wranIfBsCclsfrRuleMap,
                wranIfBscclsfrRulePriority,
                wranIfBscclsfrRuleProtocol,
                wranIfBscclsfrRuleIpSrcAddrType,
                wranIfBscclsfrRuleIpSrcAddr,
                wranIfBscclsfrRuleIpSrcMask,
                wranIfBscclsfrRuleIpDestAddrType,
                wranIfBscclsfrRuleIpDestAddr,
                wranIfBscclsfrRuleIpDestMask,
                wranIfBscclsfrRuleSrcPortStart,
                wranIfBscclsfrRuleSrcPortEnd,
                wranIfBscclsfrRuleDestPortStart,
                wranIfBscclsfrRuleDestPortEnd,
                wranIfBscclsfrRuleDestMacAddr,
                wranIfBscclsfrRuleDestMacAddrMask,
                wranIfBscclsfrRuleSrcMacAddr,
                wranIfBscclsfrRuleSrcMacAddrMask,
                wranIfBscclsfrRuleEnetProtType,
                wranIfBscclsfrRuleEnetProtocol,
                wranIfBscclsfrRuleUserPriLow,
                wranIfBscclsfrRuleUserPriHigh,
                wranIfBscclsfrRuleVlanId,
                wranIfBscclsfrRuleIpv6FlowLabel,
                wranIfBscclsfrRuleIpTypeOfService }

```

```

        wranIfBsClsfrRuleDestPortStart,
        wranIfBsClsfrRuleDestPortEnd,
        wranIfBsClsfrRuleDestMacAddr,
        wranIfBsClsfrRuleDestMacAddrMask,
        wranIfBsClsfrRuleSrcMacAddr,
        wranIfBsClsfrRuleSrcMacAddrMask,
        wranIfBsClsfrRuleEnetProtType,
        wranIfBsClsfrRuleEnetProtocol,
        wranIfBsClsfrRuleUserPriLow,
        wranIfBsClsfrRuleUserPriHigh,
        wranIfBsClsfrRuleVlanId,
        wranIfBsClsfrRuleIpv6FlowLabel,
        wranIfBsClsfrRuleIpTypeOfService }

STATUS      current
DESCRIPTION
    "This group contains objects related to the
     configuration of classifier rules for dynamic
     service flows."
 ::= { wranIfBsSfMibGroups 5 }

wranIfBsSfTrapControlGroup          OBJECT-GROUP
OBJECTS      { wranIfBsSfTrapControl }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     enabling/disabling traps used for service
     flow management."
 ::= { wranIfBsSfMibGroups 6 }

wranIfBsSfNotificationMibGroup      OBJECT-GROUP
OBJECTS      { wranIfBsProvSfChangeTrap,
                wranIfBsScChangeTrap,
                wranIfBsActiveSfChangeTrap,
                wranIfBsProvClassifierRuleChangeTrap,
                wranIfBsClassifierRuleChangeTrap,
                wranIfBsSfNotificationIndex,
                wranIfBsSfNotificationProvSfStatus,
                wranIfBsSfNotificationProvEntryIndex,
                wranIfBsSfNotificationScIndex,
                wranIfBsSfNotificationActiveSfIndex,
                wranIfBsSfNotificationActiveSfStatus,
                wranIfBsSfNotificationProvClsfrRuleIndex,
                wranIfBsSfNotificationProvClsfrRuleMap,
                wranIfBsSfProvClsfrRuleMap,
                wranIfBsSfNotificationClsfrRuleIndex,
                wranIfBsSfNotificationClsfrRuleMap }
STATUS      current
DESCRIPTION
    "This group contains objects related to traps
     used for service flow management."
 ::= { wranIfBsSfMibGroups 7 }

wranIfBsSfMibCompliance MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
    "MIB objects that are optional and mandatory for

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```
    service flow management compliance."  
MODULE      wranIfBsSfMgmtMib  
MANDATORY-GROUPS { wranIfBsProvSfMibGroup,  
                   wranIfBsScMibGroup,  
                   wranIfBsSfMibGroup,  
                   wranIfBsProvClassifierRuleMibGroup,  
                   wranIfBsClassifierRuleMibGroup,  
                   wranIfBsSfTrapControlGroup }  
-- OPTIONAL-GROUPS { wranIfBsSfNotificationMibGroup }  
 ::= { wranIfBsSfMgmtMib 10 }  
  
END
```

### 13.2.4 wranIfCpeMib

```

IEEE802dot22-WRAN-IF-CPE-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32,
    Counter64
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPV2-CONF

wranIfCpeMib MODULE-IDENTITY
    LAST-UPDATED      "201405300000Z"    -- May 30, 2014
    ORGANIZATION      "IEEE 802.22"
    CONTACT-INFO
        "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
         WG Chair: Apurva N. Mody
         E-mail: apurva.mody@ieee.org
        TGA Chair/Editor: Ranga Reddy
        E-mail: ranga.reddy@ieee.org"
    DESCRIPTION
        "This material is from IEEE Std 802.22a-2014
         Copyright (c) 2014. This MIB Module Defines managed
         objects for Customer Premise Equipment based on
         IEEE Std 802.22-2011 and is under iso(1).std(0)
         .iso8802(8802).wran(22).wranIfCpeMib(4)"
    REVISION      "201405300000Z"
    DESCRIPTION
        "The first version of IEEE802dot22-WRAN-IF-CPE-MIB."
        ::= {iso std(0) iso8802(8802) wran(22) 4}

wranIfCpeConfigurationTable          OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 1 }
wranIfCpeTrapControl                OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 2 }
wranIfCpeThresholdConfigTable       OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 3 }
wranIfCpeTrapDefinition              OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 4 }
wranIfCpeNotificationObjectsTable   OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 5 }
wranIfCpeMibGroups                  OBJECT IDENTIFIER
                                         ::= { wranIfCpeMib 6 }

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        ::= { wranIfCpeMib 6 }
wranIfCpeMibCompliance      OBJECT IDENTIFIER
        ::= { wranIfCpeMib 7 }

wranIfCpeConfigurationTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfCpeConfigurationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table that provides the values
         for system parameters. The parameters in this table
         are applied to all CPEs in the network, hence there
         is one entry in the table, defined by
         wranIfCpeConfigurationEntry."
    ::= { wranIfCpeMib 1 }

wranIfCpeConfigurationEntry   OBJECT-TYPE
    SYNTAX      wranIfCpeConfigurationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
         wranIfCpeConfigurationTable. There is only one entry
         in each CPE."
    ::= { wranIfCpeConfigurationTable 1 }

wranIfCpeConfigurationEntry   ::= SEQUENCE {
    wranIfCpeConfigurationIndex          INTEGER,
    wranIfCpeLostDsMapInterval          Integer32,
    wranIfCpeLostUsMapInterval          Integer32,
    wranIfCpeContentionRangingRetries  Integer32,
    wranIfCpeContentionBwRetries       Integer32,
    wranIfCpeRegReqRetries             INTEGER,
    wranIfCpeTftpBackoffStart          Integer32,
    wranIfCpeTftpBackoffEnd            Integer32,
    wranIfCpeTftpReqRetries           Integer32,
    wranIfCpeTftpDownloadRetries      Integer32,
    wranIfCpeTftpWait                 Integer32,
    wranIfCpeToDRetries                Integer32,
    wranIfCpeToDRetryPeriod           Integer32
    wranIfCpeCBCReqRetries            INTEGER,
    wranIfCpeTftpCpltRetries          Integer32,
    wranIfCpeInvitedRangRetries       Integer32,
    wranIfCpeDSxReqRetries            INTEGER,
    wranIfCpeDSxRspRetries            INTEGER }

wranIfCpeConfigurationIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
    ::= { wranIfCpeConfigurationEntry 1 }

wranIfCpeLostDsMapInterval   OBJECT-TYPE
    SYNTAX      Integer32 (0..600)

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```
UNITS          "milliseconds"
MAX-ACCESS    read-write
STATUS         current
DESCRIPTION
    "Amount of time (in milliseconds) since reception of
     last DS-MAP before DS synchronization was lost."
 ::= { wranIfCpeConfigurationEntry 2 }

wranIfCpeLostUsMapInterval   OBJECT-TYPE
SYNTAX          Integer32 (0..600)
UNITS           "milliseconds"
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Amount of time (in milliseconds) since reception of
     last US-MAP before US synchronization is considered
     lost."
 ::= { wranIfCpeConfigurationEntry 3 }

wranIfCpeContentionRangingRetries   OBJECT-TYPE
SYNTAX          Integer32 (16..65535)
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Number of retries on contention ranging requests."
 ::= { wranIfCpeConfigurationEntry 4 }

wranIfCpeContentionBwRetries   OBJECT-TYPE
SYNTAX          Integer32 (16..65535)
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Number of retries on contention bandwidth requests."
 ::= { wranIfCpeConfigurationEntry 5 }

wranIfCpeRegReqRetries   OBJECT-TYPE
SYNTAX          INTEGER (1..255)
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Maximum number of retries allowed for registration
     requests."
 ::= { wranIfCpeConfigurationEntry 6 }

wranIfCpeTftpBackoffStart   OBJECT-TYPE
SYNTAX          Integer32 (1..65535)
UNITS           "seconds"
MAX-ACCESS      read-write
STATUS          current
DESCRIPTION
    "Initial backoff for TFTP Start."
 ::= { wranIfCpeConfigurationEntry 7 }

wranIfCpeTftpBackoffEnd   OBJECT-TYPE
SYNTAX          Integer32 (1..65535)
UNITS           "seconds"
```

```
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Last value for TFTP backoff."
::= { wranIfCpeConfigurationEntry 8 }

wranIfCpeTftpReqRetries OBJECT-TYPE
SYNTAX      Integer32 (16..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum number of retires allowed for attempting
     TFTP to get CPE configuration."
::= { wranIfCpeConfigurationEntry 9 }

wranIfCpeTftpDownloadRetries OBJECT-TYPE
SYNTAX      Integer32 (3..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum number of retries allowed for re-attempting
     TFTP (after failed/corrupted download) to get CPE
     configuration."
::= { wranIfCpeConfigurationEntry 10 }

wranIfCpeTftpWait OBJECT-TYPE
SYNTAX      Integer32 (2..65535)
UNITS       "minutes"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Time to wait before consecutive attempts to obtain
     configuration via TFTP."
::= { wranIfCpeConfigurationEntry 11 }

wranIfCpeToDRetries   OBJECT-TYPE
SYNTAX      Integer32 (3..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Number of retries allowed for establishing Time of
     Day, per network entry procedures."
::= { wranIfCpeConfigurationEntry 12 }

wranIfCpeToDRetryPeriod OBJECT-TYPE
SYNTAX      Integer32 (5..65535)
UNITS       "minutes"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Amount of time to wait before retrying establishment
     of time of day after failed attempt."
::= { wranIfCpeConfigurationEntry 13 }

wranIfCpeCBCReqRetries OBJECT-TYPE
SYNTAX      INTEGER (3..16)
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MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum number of retries for sending CBC request."
DEFVAL { 3 }
 ::= { wranIfCpeConfigurationEntry 14 }

wranIfCpeTftpCpltRetries   OBJECT-TYPE
SYNTAX      INTEGER (3..16)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum number of retries allowed for sending TFTP-
     CPLT messages to BS."
 ::= { wranIfCpeConfigurationEntry 15 }

wranIfCpeInvitedRangRetries OBJECT-TYPE
SYNTAX      Integer32 (16..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum time number of retries on invited ranging
     requests."
 ::= { wranIfCpeConfigurationEntry 16 }

wranIfCpeDSxReqRetries   OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Number of timeout retries on DSx-REQ."
DEFVAL { 3 }
 ::= { wranIfCpeConfigurationEntry 17 }

wranIfCpeDSxRspRetries   OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Number of timeout retries on DSx-RSP."
DEFVAL { 3 }
 ::= { wranIfCpeConfigurationEntry 17 }

wranIfCpeTrapControl     OBJECT-TYPE
SYNTAX      BITS { wranIfCpeDhcpSuccess(0),
                  wranIfCpeRssiStatusChange(1),
                  wranIfCpeEirpPerScStatusChange(2),
                  wranIfCpeMaxEirpStatusChange(3),
                  wranIfCpeScmStateChange(4) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Defines control elements for traps related to CPE
     operation. This is a 5-bit field that enables
     setting a trap for particular CPE events:
     wranIfCpeDhcpSuccess, wranIfCpeRssiStatusChange,

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        wranIfCpeEirpPerScStatusChange,
        wranIfCpeMaxEirpStatusChange and
        wranIfCpeScmStateChange."
 ::= { wranIfCpeMib 2 }

wranIfCpeThresholdConfigTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfCpeThresholdConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table that allows the setting of
         thresholds that can be used to detect the crossing
         of RSSI and EIRP thresholds. Each table is made of
         one entry defined by wranIfCpeThresholdConfigEntry."
 ::= { wranIfCpeMib 3 }

wranIfCpeThresholdConfigEntry OBJECT-TYPE
    SYNTAX      wranIfCpeThresholdConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
         wranIfCpeConfigurationTable. There is only one entry
         in each CPE."
 ::= { wranIfCpeThresholdConfigTable 1 }

wranIfCpeThresholdConfigEntry ::= SEQUENCE {
    wranIfCpeThresholdConfigIndex          INTEGER,
    wranIfCpeRssiLowThreshold            INTEGER,
    wranIfCpeRssiHighThreshold          INTEGER,
    wranIfCpeEirpPerScLowThreshold      INTEGER,
    wranIfCpeEirpPerScHighThreshold     INTEGER,
    wranIfCpeMaxEirpLowThreshold        INTEGER,
    wranIfCpeMaxEirpHighThreshold       INTEGER }

wranIfCpeThresholdConfigIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
 ::= { wranIfCpeThresholdConfigEntry 1 }

wranIfCpeRssiLowThreshold      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Low threshold for RSSI alarm trap (between -104 dBm
         to +23.5 dBm in 0.5 dB steps)."
 ::= { wranIfCpeThresholdConfigEntry 2 }

wranIfCpeRssiHighThreshold     OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"

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        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "High threshold for RSSI alarm trap (between -104 dBm
             to +23.5 dBm in 0.5 dB steps)."
        ::= { wranIfCpeThresholdConfigEntry 3 }

wranIfCpeEirpPerScLowThreshold      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Low threshold for EIRP per subcarrier alarm trap
         (between -104 dBm to +23.5 dBm in 0.5 dB steps)."
    ::= { wranIfCpeThresholdConfigEntry 4 }

wranIfCpeEirpPerScHighThreshold     OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "High threshold for EIRP per subcarrier alarm trap
         (between -104 dBm to +23.5 dBm in 0.5 dB steps)."
    ::= { wranIfCpeThresholdConfigEntry 5 }

wranIfCpeMaxEirpLowThreshold       OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Low threshold for maximum EIRP (over all 60
         subchannels) alarm trap (between -64 dBm to +63.5
         dBm in 0.5 dB steps)."
    ::= { wranIfCpeThresholdConfigEntry 6 }

wranIfCpeMaxEirpHighThreshold      OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "High threshold for maximum EIRP (over all 60
         subchannels) alarm trap (between -64 dBm to +63.5
         dBm in 0.5 dB steps)."
    ::= { wranIfCpeThresholdConfigEntry 7 }

-- wranIfCpeTrapDefinition: This MIB group specifies the definition of
-- CPE traps that can be enabled/disable in wranIfCpeTrapControl.

wranIfCpeTrapDefinition           OBJECT IDENTIFIER
                                ::= { wranIfCpeMib 4 }
wranIfCpeRssiStatusChangeTrap    OBJECT IDENTIFIER
                                ::= { wranIfCpeTrapDefinition 1 }

```

```

wranIfCpeEirpPerScStatusChangeTrap          OBJECT IDENTIFIER
                                         ::= { wranIfCpeTrapDefinition 2 }
wranIfCpeDhcpSuccessTrap                  OBJECT IDENTIFIER
                                         ::= { wranIfCpeTrapDefinition 3 }
wranIfCpeScmStateChangeTrap              OBJECT IDENTIFIER
                                         ::= { wranIfCpeTrapDefinition 4 }
wranIfCpeMaxEirpStatusChangeTrap         OBJECT IDENTIFIER
                                         ::= { wranIfCpeTrapDefinition 5 }

wranIfCpeRssiStatusChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfCpeMacAddress,
                wranIfCpeRssiStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to the
    RSSI alarm that is contained in
    wranIfCpeNotificationObjectsTable."
 ::= { wranIfCpeTrapDefinition 1 }

wranIfCpeEirpPerScStatusChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfCpeMacAddress,
                wranIfCpeEirpPerScStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to the
    EIRP per subcarrier alarm that is contained in
    wranIfCpeNotificationObjectsTable."
 ::= { wranIfCpeTrapDefinition 2 }

wranIfCpeDhcpSuccessTrap     NOTIFICATION-TYPE
OBJECTS      { wranIfCpeMacAddress,
                wranIfCpeDhcpStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to the
    DHCP alarm that is contained in
    wranIfCpeNotificationObjectsTable."
 ::= { wranIfCpeTrapDefinition 3 }

wranIfCpeScmStateChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfCpeMacAddress,
                wranIfCpeScmStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to the
    SCM state change alarm that is contained in
    wranIfCpeNotificationObjectsTable."
 ::= { wranIfCpeTrapDefinition 4 }

wranIfCpeMaxEirpStatusChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfCpeMacAddress,
                wranIfCpeMaxEirpStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to the
    maximum EIRP (over all 60 subchannels) subcarrier

```

```

        alarm that is contained in
        wranIfCpeNotificationObjectsTable."
 ::= { wranIfCpeTrapDefinition 5 }

wranIfCpeNotificationObjectsTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfCpeNotificationObjectsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB provides a table to track notification
         objects that have been reported by the traps on a
         particular CPE. There is one entry in this table,
         defining the notification objects for that
         particular CPE. Each entry is defined by
         wranIfCpeNotificationObjectsEntry."
 ::= { wranIfCpeMib 5 }

wranIfCpeNotificationObjectsEntry   OBJECT-TYPE
    SYNTAX      wranIfCpeNotificationObjectsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Definition of an entry in
         wranIfCpeNotificationObjectsTable. There is only one
         entry in each CPE."
 INDEX { wranIfCpeNotificationMacAddress }
 ::= { wranIfCpeNotificationObjectsTable 1 }

wranIfCpeNotificationObjectsEntry  ::= SEQUENCE {
    wranIfCpeNotificationObjectsEntryIndex      INTEGER,
    wranIfCpeNotificationMacAddress            MacAddress,
    wranIfCpeRssiStatus                      INTEGER,
    wranIfCpeEirpPerScStatus                 INTEGER,
    wranIfCpeDhcpStatus                      INTEGER,
    wranIfCpeScmIdleStatus                  INTEGER,
    wranIfCpeMaxEirpStatus                  INTEGER }

wranIfCpeNotificationObjectsEntryIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in this table, defaults to 1."
 ::= { wranIfCpeNotificationObjectsEntry 1 }

wranIfCpeNotificationMacAddress          OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAC Address of the CPE generating the trap."
 ::= { wranIfCpeNotificationObjectsEntry 2 }

wranIfCpeRssiStatus       OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           ...
                           maxThresholdAlarm(255) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "RSSI threshold alarm level for this CPE.
         The alarm is triggered when the RSSI value
         falls below or above the specified threshold.
         The values are relative to the maximum RSSI
         supported by the CPE."}
 ::= { wranIfCpeNotificationObjectsEntry 3 }

wranIfCpeEirpPerScStatus  OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           ...
                           maxThresholdAlarm(255) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "EIRP per SubCarrier threshold alarm level for this CPE.
         The alarm is triggered when the EIRP value
         falls below or above the specified threshold.
         The values are relative to the maximum EIRP
         supported by the CPE."}
 ::= { wranIfCpeNotificationObjectsEntry 4 }

wranIfCpeDhcpStatus        OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           ...
                           maxThresholdAlarm(255) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "DHCP status threshold alarm level for this CPE.
         The alarm is triggered when the DHCP status
         falls below or above the specified threshold.
         The values are relative to the maximum DHCP
         supported by the CPE."}
 ::= { wranIfCpeNotificationObjectsEntry 5 }

wranIfCpeScmIdleStatus     OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           ...
                           maxThresholdAlarm(255) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "SCM idle status threshold alarm level for this CPE.
         The alarm is triggered when the SCM idle status
         falls below or above the specified threshold.
         The values are relative to the maximum SCM
         supported by the CPE."}
 ::= { wranIfCpeNotificationObjectsEntry 6 }

wranIfCpeMaxEirpStatus     OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           ...
                           maxThresholdAlarm(255) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "MAX EIRP threshold alarm level for this CPE.
         The alarm is triggered when the MAX EIRP
         falls below or above the specified threshold.
         The values are relative to the maximum MAX EIRP
         supported by the CPE."}
 ::= { wranIfCpeNotificationObjectsEntry 7 }

```

```

                noAlarm(2)  }

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication if RSSI alarm was for an RSSI value below
     wranIfCpeRssiLowThreshold, for an RSSI value above
     wranIfCpeRssiHighThreshold, or the RSSI as returned
     to within the bounds set by
     wranIfCpeRssiLowThreshold and
     wranIfCpeRssiHighThreshold."
::= { wranIfCpeNotificationObjectsEntry 3 }

wranIfCpeEirpPerScStatus      OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           noAlarm(2)  }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication if EIRP per subcarrier alarm was for an
     EIRP value below wranIfCpeEirpPerScLowThreshold, for
     an EIRP value above wranIfCpeEirpPerScHighThreshold,
     or the EIRP as returned to within the bounds set by
     wranIfCpeEirpPerScLowThreshold and
     wranIfCpeEirpPerScHighThreshold."
::= { wranIfCpeNotificationObjectsEntry 4 }

wranIfCpeDhcpStatus      OBJECT-TYPE
    SYNTAX      INTEGER { failure(0),
                           successful(1)  }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "An DHCP alarm is generated when a CPE is
     successfully able to obtain an IP address or fails
     to obtain an IP address."
::= { wranIfCpeNotificationObjectsEntry 5 }

wranIfCpeScmStatus      OBJECT-TYPE
    SYNTAX      INTEGER { idle(0),
                           notAuthenticated(1),
                           authenticated(2),
                           reAuthWait(3)  }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "An SCM alarm is generated when a CPE changes to a
     different state in the SCM Authentication state
     machine."
::= { wranIfCpeNotificationObjectsEntry 6 }

wranIfCpeMaxEirpStatus  OBJECT-TYPE
    SYNTAX      INTEGER { lowThresholdAlarm(0),
                           highThresholdAlarm(1),
                           noAlarm(2)  }
MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "Indication if maximum EIRP (over all 60 subchannels)
             was for an EIRP value below
             wranIfCpeMaxEirpLowThreshold, for an EIRP value
             above wranIfCpeMaxEirpHighThreshold, or the EIRP as
             returned to within the bounds set by
             wranIfCpeMaxEirpLowThreshold and
             wranIfCpeMaxEirpHighThreshold."
        ::= { wranIfCpeNotificationObjectsEntry 7 }

-- wranIfCpeMibGroups: This object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

        wranIfCpeMibGroups          OBJECT IDENTIFIER
        ::= { wranIfCpeMib 6 }
        wranIfCpeMibConfigGroup     OBJECT IDENTIFIER
        ::= { wranIfCpeMibGroups 1 }
        wranIfCpeTrapControlGroup   OBJECT IDENTIFIER
        ::= { wranIfCpeMibGroups 2 }
        wranIfCpeMibNotificationGroup OBJECT IDENTIFIER
        ::= { wranIfCpeMibGroups 3 }

        wranIfCpeMibConfigGroup     OBJECT-GROUP
        OBJECTS      { wranIfCpeConfigurationIndex,
                      wranIfCpeLostDsMapInterval,
                      wranIfCpeLostUsMapInterval,
                      wranIfCpeContentionRangingRetries,
                      wranIfCpeContentionBwRetries,
                      wranIfCpeRegReqRetries,
                      wranIfCpeTftpBackoffStart,
                      wranIfCpeTftpBackoffEnd,
                      wranIfCpeTftpReqRetries,
                      wranIfCpeTftpDownloadRetries,
                      wranIfCpeTftpWait, wranIfCpeToDRetries,
                      wranIfCpeToDRetryPeriod,
                      wranIfCpeCBCReqRetries,
                      wranIfCpeTftpCpltRetries,
                      wranIfCpeInvitedRangRetries,
                      wranIfCpeInvitedRangRetries,
                      wranIfCpeDSxReqRetries,
                      wranIfCpeDSxRspRetries }
        STATUS      current
        DESCRIPTION
            "This group contains configuration objects for
             the CPE."
        ::= { wranIfCpeMibGroups 1 }

        wranIfCpeTrapControlGroup   OBJECT-GROUP
        OBJECTS      { wranIfCpeTrapControl }
        STATUS      current
        DESCRIPTION
            "This group contains configuration objects
             related to enabling/disabling traps for the
             CPE."

```

```
::= { wranIfCpeMibGroups 2 }

wranIfCpeMibNotificationsGroup      OBJECT-TYPE
    OBJECTS      { wranIfCpeThresholdConfigIndex,
                    wranIfCpeRssiLowThreshold,
                    wranIfCpeRssiHighThreshold,
                    wranIfCpeEirpPerScLowThreshold,
                    wranIfCpeEiprPerScHighThreshold,
                    wranIfCpeMaxEirpLowThreshold,
                    wranIfCpeMaxEirpHighThreshold,
                    wranIfCpeNotificationMacAddress,
                    wranIfCpeRssiStatus,
                    wranIfCpeEirpPerScStatus,
                    wranIfCpeMaxEirpStatus,
                    wranIfCpeDhcpStatus,
                    wranIfCpeScmIdleStatus,
                    wranIfCpeRssiStatusChangeTrap,
                    wranIfCpeEirpPerScStatusChangeTrap,
                    wranIfCpeDhcpSuccessTrap,
                    wranIfCpeScmStateChangeTrap,
                    wranIfCpeMaxEirpStatusChangeTrap }
    STATUS      current
    DESCRIPTION
        "This group contains CPE event notifications."
:={ wranIfCpeMibGroups 3 }

wranIfCpeMibCompliance  MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "MIB objects that are optional and mandatory for CPE
         conformance."
    MODULE      wranIfCpeMib
    MANDATORY-GROUPS  { wranIfCpeMibConfigGroup,
                        wranIfCpeTrapControlGroup }
    -- OPTIONAL-GROUPS      { wranIfCpeMibNotificationsGroup }
:={ wranIfCpeMib 7 }

END
```

### 13.2.5 wranIfSmMib

```

IEEE802dot22-WRAN-IF-SM-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32,
    Counter64
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPV2-CONF

wranIfSmMib MODULE-IDENTITY
    LAST-UPDATED      "201405300000Z"      -- May 30, 2014
    ORGANIZATION      "IEEE 802.22"
    CONTACT-INFO
        "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
         WG Chair: Apurva N. Mody
         E-mail: apurva.mody@ieee.org
        TGA Chair/Editor: Ranga Reddy
        E-mail: ranga.reddy@ieee.org"
    DESCRIPTION
        "This material is from IEEE Std 802.22a-2014
         Copyright (c) 2014. This MIB Module object is
         related to configuration, operation and monitoring
         of the Spectrum Manager (SM). Objects in this module
         are based on IEEE Std 802.22-2011 and is under
         iso(1).std(0).iso8802(8802).wran(22).wranIfSmMib(5)"
    REVISION          "201405300000Z"
    DESCRIPTION
        "The first version of IEEE802dot22-WRAN-IF-SM-MIB."
    ::= {iso std(0) iso8802(8802) wran(22) 5}

wranIfSmConfigTable                      OBJECT IDENTIFIER
    ::= { wranIfSmMib 1 }
wranIfSmPendingBImReqTable               OBJECT IDENTIFIER
    ::= { wranIfSmMib 2 }
wranIfSmBImRepTable                     OBJECT IDENTIFIER
    ::= { wranIfSmMib 3 }
wranIfSmChClassificationStatusTable     OBJECT IDENTIFIER
    ::= { wranIfSmMib 4 }
wranIfSmChannelSetTable                 OBJECT IDENTIFIER
    ::= { wranIfSmMib 5 }

```

```

wranIfSmCurrentStatusTable          OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 6 }
wranIfSmRegTrackingTable           OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 7 }
wranIfSmTrapControl                OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 8 }
wranIfSmTrapDefinition              OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 9 }
wranIfSmNotificationObjectsTable   OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 10 }
wranIfSmMibGroups                  OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 11 }
wranIfSmMibCompliance              OBJECT IDENTIFIER
                                    ::= { wranIfSmMib 12 }

-- NOTE: In this module "Sm" or "SM" refers to Spectrum Manager, while
-- "Ssa" or "SSA" refers to Spectrum Sensing Automaton.

wranIfSmConfigTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSmConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object represents a table that tracks the
     default configuration of SM timers and constants. It
     is made up of one entry, defined by
     wranIfSmConfigEntry."
 ::= { wranIfSmMib 1 }

wranIfSmConfigEntry    OBJECT-TYPE
SYNTAX      wranIfSmConfigEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in wranIfSmConfigTable.
     Each entry is identified by wranIfSmConfigIndex."
INDEX { wranIfSmConfigIndex }
 ::= { wranIfSmConfigTable 1 }

wranIfSmConfigEntry    ::= SEQUENCE {
    wranIfSmConfigIndex          INTEGER,
    wranIfSmT31                  INTEGER,
    wranIfSmChAvailabilityCheckTime Integer32,
    wranIfSmNonOccupancyPeriod    Integer32,
    wranIfSmChannelDetectionTime  INTEGER,
    wranIfSmChannelSetupTime      INTEGER,
    wranIfSmChannelOpeningTxTime  Integer32,
    wranIfSmChannelMoveTime       INTEGER,
    wranIfSmChannelClosingTxTime  Integer32,
    wranIfSmMicProtectionRadius   Integer32,
    wranIfSmT41                  INTEGER,
    wranIfSmT42                  INTEGER,
    wranIfSmT43                  INTEGER,
    wranIfSmT44                  INTEGER,
    wranIfSmT45                  Integer32,
    wranIfSmT46                  Integer32,
}

```

```

wranIfSmt59          Integer32,
wranIfSmt47          Integer32,
wranIfSmt48          Integer32,
wranIfSmt49          Integer32,
wranIfSmt50          Integer32,
wranIfSmt51          Integer32,
wranIfSmt53          Integer32,
wranIfSmt54          Integer32,
wranIfSmt55          INTEGER,
wranIfSmt60          INTEGER }

wranIfSmConfigIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table, defaults to 1."
    ::= { wranIfSmConfigEntry 1 }

wranIfSmT31           OBJECT-TYPE
    SYNTAX      INTEGER (1..64)
    UNITS      "frames"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Wait for BLM-REP timeout."
    ::= { wranIfSmConfigEntry 2 }

wranIfSmChAvailabilityCheckTime   OBJECT-TYPE
    SYNTAX      Integer32 (30..3600)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Time during which a TV channel shall be checked for
         the presence of licensed incumbent signals having a
         level above the incumbent detection threshold prior
         to commencement of WRAN operation in the channel,
         and in the case of TV, a related channel at an EIRP
         level that can affect the measured TV channel."
    ::= { wranIfSmConfigEntry 3 }

wranIfSmNonOccupancyPeriod     OBJECT-TYPE
    SYNTAX      Integer32 (10..60)
    UNITS      "minutes"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The required period during which WRAN device
         transmissions SHALL NOT occur in a given TV channel
         because of the detected presence of an incumbent
         signal in that channel above the Incumbent detection
         threshold, or in the case of TV, above a given EIRP
         level."
    ::= { wranIfSmConfigEntry 4 }

```

```
wranIfSmChannelDetectionTime OBJECT-TYPE
    SYNTAX      INTEGER (2..128)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Maximum time taken by a WRAN device to detect a
         licensed incumbent signal above the Incumbent
         Detection Threshold within a given TV channel during
         normal WRAN operation."
    ::= { wranIfSmConfigEntry 5 }

wranIfSmChannelSetupTime OBJECT-TYPE
    SYNTAX      INTEGER (2..128)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The window of time that may be taken by a WRAN CPE
         to transmit control information to a WRAN base
         station in order to establish operation with that
         base station at the prescribed power or, in the case
         of TV, at or below the allowable EIRP within a given
         TV channel."
    ::= { wranIfSmConfigEntry 6 }

wranIfSmChannelOpeningTxTime OBJECT-TYPE
    SYNTAX      Integer32 (100..480)
    UNITS      "milliseconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The aggregate duration of control transmissions by
         WRAN devices during the Channel Setup Time that
         starts at the end of the Channel Availability Check
         Time."
    ::= { wranIfSmConfigEntry 7 }

wranIfSmChannelMoveTime OBJECT-TYPE
    SYNTAX      INTEGER (2..60)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The time taken by WRAN system to cease all
         interfering transmissions on the current TV channel
         upon detection of a license incumbent signal above
         the relevant Incumbent Detection Threshold, or in
         the case of TV, to alternatively reduces its EIRP to
         which is allowable within a given TV channel upon
         detection of a TV signal in the same or a related
         channel."
    ::= { wranIfSmConfigEntry 8 }

wranIfSmChannelClosingTxTime OBJECT-TYPE
    SYNTAX      Integer32 (100..480)
```

```

        UNITS      "milliseconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "The aggregate duration of control transmissions by
             the WRAN devices during the Channel Move/EIRP
             Reduction Time that starts upon detection of a
             licensed incumbent signal above the relevant
             Incumbent Detection Threshold."
        ::= { wranIfSmConfigEntry 9 }

wranIfSmMicProtectionRadius      OBJECT-TYPE
        SYNTAX      Integer32 (100..100000)
        UNITS      "meters"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Radius of contour within which the WRAN system
             cannot operate due to potential interference with
             the microphone."
        ::= { wranIfSmConfigEntry 10 }

wranIfSmT41                      OBJECT-TYPE
        SYNTAX      INTEGER (1..10)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Maximum time interval allowed before sensing is
             performed on the candidate channel to ensure that no
             incumbents are detected."
        ::= { wranIfSmConfigEntry 11 }

wranIfSmT42                      OBJECT-TYPE
        SYNTAX      INTEGER (1..10)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Maximum time interval allowed before sensing is
             performed on the backup channel to ensure that no
             incumbents are detected."
        ::= { wranIfSmConfigEntry 12 }

wranIfSmT43                      OBJECT-TYPE
        SYNTAX      INTEGER (1..100)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Minimum time duration without detection of any
             incumbent for a candidate channel to transition to
             the backup channel."
        ::= { wranIfSmConfigEntry 13 }

wranIfSmT44                      OBJECT-TYPE

```

```
SYNTAX      INTEGER (1..100)
UNITS       "seconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum time to ensure that the channel move
     information is successfully conveyed to all the
     associated CPEs and BS (self-coexistence mode)."
 ::= { wranIfSmConfigEntry 14 }

wranIfSmT45          OBJECT-TYPE
SYNTAX      Integer32 (0..720)
UNITS       "hours"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Maximum WRAN operation time without access to the
     incumbent database service, from 0 to 72 h in
     0.1-h steps."
 ::= { wranIfSmConfigEntry 15 }

wranIfSmT46          OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
UNITS       "frames"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Waiting time before which the BS moves to the first
     backup channel. This is used to make sure that all
     the CPEs are ready to move to the backup channel
     before BS switches operation to this backup
     channel."
 ::= { wranIfSmConfigEntry 16 }

wranIfSmT59          OBJECT-TYPE
SYNTAX      Integer32 (1..4096)
UNITS       "frames"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Waiting time before which the CPE moves to its
     backup channels if it no longer hears from its BS.
     This is used to make sure that the CPE waits long
     enough after UCS Notification so that BS has had
     time to move to the backup channel, it decided to do
     so."
 ::= { wranIfSmConfigEntry 17 }

wranIfSmT47          OBJECT-TYPE
SYNTAX      Integer32 (0..720)
UNITS       "hours"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The prescribed time by the WRAN operator to refresh
     the incumbent database service."
```

```

 ::= { wranIfSmConfigEntry 18 }

wranIfSmT48          OBJECT-TYPE
SYNTAX      Integer32 (0..600)
UNITS       "seconds"
MAX-ACCESS   read-write
STATUS      current
DESCRIPTION
    "Lapse timer keeps track of whether the Operating
    Channel N has been cleared using spectrum sensing,
    from 0 to 60 s in 0.1 s steps."
 ::= { wranIfSmConfigEntry 19 }

wranIfSmT49          OBJECT-TYPE
SYNTAX      Integer32 (0..600)
UNITS       "seconds"
MAX-ACCESS   read-write
STATUS      current
DESCRIPTION
    "Lapse timer keeps track of whether the Adjacent
    Channel N-1 has been cleared using spectrum sensing,
    from 0 to 60 s in 0.1 s steps."
 ::= { wranIfSmConfigEntry 20 }

wranIfSmT50          OBJECT-TYPE
SYNTAX      Integer32 (0..600)
UNITS       "seconds"
MAX-ACCESS   read-write
STATUS      current
DESCRIPTION
    "Lapse timer keeps track of whether the Adjacent
    Channel N+1 has been cleared using spectrum
    sensing, from 0 to 60 s in 0.1 s steps."
 ::= { wranIfSmConfigEntry 21 }

wranIfSmT51          OBJECT-TYPE
SYNTAX      Integer32 (1..600)
UNITS       "seconds"
MAX-ACCESS   read-write
STATUS      current
DESCRIPTION
    "Initiated when SSA loses contact with the SM."
 ::= { wranIfSmConfigEntry 22 }

wranIfSmT53          OBJECT-TYPE
SYNTAX      Integer32 (1..600)
UNITS       "seconds"
MAX-ACCESS   read-write
STATUS      current
DESCRIPTION
    "The parameter TINsens is used to verify that in-band
    sensing has been done within the required In-service
    monitoring period. The TINsens parameter is driven
    by regulatory domain requirements (Annex A), from 0
    to 60 s in 0.1 s steps."
 ::= { wranIfSmConfigEntry 23 }

```

```

wranIfSmT54          OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The parameter TOUTsens is used to verify that out-
        of-band sensing has been done within the required
        "Acquiring a channel monitoring period" specified in
        Annex A. This value would be used to initialize a
        lapse timer for each channel in the backup candidate
        channel list at each CPE so that it is compared to
        Tsensout, from 0 to 60 s in 0.1 s steps."
    ::= { wranIfSmConfigEntry 24 }

wranIfSmT55          OBJECT-TYPE
    SYNTAX      INTEGER (1..160)
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The T55 or Tsensin parameter corresponds to the
        maximum length of time required to carry out the
        sensing process on an in-band channel (see Figure
        176). Manufacturers need to specify the sensing time
        required to detect the specified signals with
        required accuracy, from 0 to 60 s in 0.1 s
        steps."
    ::= { wranIfSmConfigEntry 25 }

wranIfSmT60          OBJECT-TYPE
    SYNTAX      INTEGER (20..160)
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The T60 or Tsensout parameter corresponds to the
        maximum length of time required to carry out the
        out-of-band sensing process to clear one channel
        (see Figure 178). Manufacturers need to specify the
        sensing time required to detect the specified
        signals with required accuracy for out-of-band
        sensing."
    ::= { wranIfSmConfigEntry 26 }

wranIfSmPendingBlmReqTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSmPendingBlmReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object represents a table that tracks the
        status of the execution of ongoing sensing requests
        (BLM-REQ). For each BLM-REQ there is a corresponding
        BLM-RSP to indicate that REQ message was received by
        the SSA. When an SSA is done with the sensing it

```

```

        will send a BLM-REP to the SM. This table keeps
        track of any BLM-REP messages that are pending
        transmission from the SSA. When a report is received
        a response is acknowledgement is sent to the SSA,
        and then the entry corresponding to the report and
        request will be cleared. Each entry is defined by
        wranIfSmPendingBlmReqEntry."
 ::= { wranIfSmMib 2 }

wranIfSmPendingBlmReqEntry      OBJECT-TYPE
    SYNTAX      wranIfSmPendingBlmReqEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
        wranIfSmPendingBlmReqTable. Each entry is identified
        by wranIfSmPendingBlmReqIndex."
INDEX { wranIfSmPendingBlmReqIndex }
 ::= { wranIfSmPendingBlmReqTable 1 }

wranIfSmPendingBlmReqEntry      ::= SEQUENCE {
    wranIfSmPendingBlmReqIndex          INTEGER,
    wranIfSmPendingBlmReqTransactionId Integer32,
    wranIfSmPendingBlmReqMsgSize       Integer32,
    wranIfSmPendingBlmReqMsg          OCTET STRING,
    wranIfSmPendingBlmRspReceived     TruthValue,
    wranIfSmPendingBlmRspMulticastReceived TruthValue,
    wranIfSmPendingBlmRepTimeout      Integer32,
    wranIfSmPendingBlmRepReceived     TruthValue,
    wranIfSmPendingBlmRepMulticastReceived TruthValue,
    wranIfSmPendingBlmRepAck          TruthValue }

wranIfSmPendingBlmReqIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..100)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
 ::= { wranIfSmPendingBlmReqEntry 1 }

wranIfSmPendingBlmReqTransactionId  OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Transaction ID of BLM-REQ."
 ::= { wranIfSmPendingBlmReqEntry 2 }

wranIfSmPendingBlmReqMsgSize     OBJECT-TYPE
    SYNTAX      Integer32 (SIZE(1..65535))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BLM-REQ pending a report."
 ::= { wranIfSmPendingBlmReqEntry 3 }

```

```
wranIfSmPendingBlmReqMsg          OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSmPendingBlmReqMsgSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Contents of BLM-REQ pending a report."
    ::= { wranIfSmPendingBlmReqEntry 4 }

wranIfSmPendingBlmRspReceived   OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-RSP pertaining to BLM-REQ has been received from
         SSA."
    ::= { wranIfSmPendingBlmReqEntry 5 }

wranIfSmPendingBlmRspMulticastReceived   OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "If BLM-REQ was multicast, indication of whether
         (Truth(1)) or not (Truth(0)) BLM-RSP pertaining to
         BLM-REQ has been received from each SSA (CPE) in the
         multicast group."
    ::= { wranIfSmPendingBlmReqEntry 6 }

wranIfSmPendingBlmRepTimeout          OBJECT-TYPE
    SYNTAX      Integer32 (1..640)
    UNITS      "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of current value of T31 set for this BLM-
         REP."
    ::= { wranIfSmPendingBlmReqEntry 7 }

wranIfSmPendingBlmRepReceived       OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-REP pertaining to BLM-REQ has been received from
         SSA."
    ::= { wranIfSmPendingBlmReqEntry 8 }

wranIfSmPendingBlmRepMulticastReceived   OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "If BLM-REQ was multicast, indication of whether
```

```

        (Truth(1)) or not (Truth(0)) BLM-REP pertaining to
        BLM-REQ has been received from each SSA (CPE) in the
        multicast group."
 ::= { wranIfSmPendingBlmReqEntry 9 }

wranIfSsaPendingBlmRepAck      OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether (Truth(1)) or not (Truth(0))
     BLM-ACK, has been sent to acknowledge all
     transmitters of BLM-REP messages pertaining to BLM-
     REQ that was issued."
 ::= { wranIfSmPendingBlmReqEntry 10 }

wranIfSmBlmRepTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSmBlmRepEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object contains BLM-REP messages received in
     response to BLM-REQ; it is made up of multiple
     entries, one for each BLM-REP that pertains to a
     BLM-REQ. Once a BLM-REP has been processed the entry
     will be removed. Each entry is defined by
     wranIfSmBlmRepEntry."
 ::= { wranIfSmMib 3 }

wranIfSmBlmRepEntry      OBJECT-TYPE
SYNTAX      wranIfSmBlmRepEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in wranIfSmBlmRepTable.
     Each entry is identified by wranIfSmBlmReqIndex."
INDEX { wranIfSmBlmReqIndex }
 ::= { wranIfSmBlmRepTable 1 }

wranIfSmBlmRepEntry      ::= SEQUENCE {
    wranIfSmBlmRepIndex          INTEGER,
    wranIfSmBlmRepSid            INTEGER,
    wranIfSmBlmRepTransactionId  Integer32,
    wranIfSmBlmRepMsgSize         Integer32,
    wranIfSmBlmRepMsg             OCTET STRING }

wranIfSmBlmRepIndex      OBJECT-TYPE
SYNTAX      INTEGER (1..100)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfSmBlmRepEntry 1 }

wranIfSmBlmRepSid  OBJECT-TYPE
SYNTAX      INTEGER (1..512)

```

```

        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "SID of CPE that sent the BLM-REP."
        ::= { wranIfSmBlmRepEntry 2 }

wranIfSmBlmRepTransactionId   OBJECT-TYPE
    SYNTAX      Integer32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Transaction ID of BLM-REP, it should match a
        transaction ID of an entry in
        wranIfSmPendingBlmReqTable."
    ::= { wranIfSmBlmRepEntry 3 }

wranIfSmBlmRepMsgSize   OBJECT-TYPE
    SYNTAX      Integer32 (SIZE(1..65535))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BLM-REP msg."
    ::= { wranIfSmBlmRepEntry 4 }

wranIfSmBlmRepMsg OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfSmBlmRepMsgSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Contents of BLM-REP msg."
    ::= { wranIfSmBlmRepEntry 5 }

wranIfSmChClassificationStatusTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSmChClassificationStatusEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object represents a table that the status
        for channels that the SM is managing. It is made up
        of multiple entries, one for each channel, as
        defined in wranIfSmChClassificationStatusEntry."
    ::= { wranIfSmMib 4 }

wranIfSmChClassificationStatusEntry OBJECT-TYPE
    SYNTAX      wranIfSmChClassificationStatusEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
        wranIfSmChClassificationStatusTable. Each entry is
        identified by wranIfSmChClassificationStatusIndex."
    INDEX { wranIfSmChClassificationStatusIndex }
    ::= { wranIfSmChClassificationStatusTable 1 }

wranIfSmChClassificationStatusEntry ::= SEQUENCE {
    wranIfSmChClassificationStatusIndex INTEGER,

```

```

wranIfSmManagedChannel          INTEGER,
wranIfSmManagedChannelStatus    INTEGER,
wranIfSmManagedChannelRecentEvent  INTEGER }

wranIfSmChClassificationStatusIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfSmChClassificationStatusEntry 1 }

wranIfSmManagedChannel   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        " Channel number of channel being managed."
    ::= { wranIfSmChClassificationStatusEntry 2 }

wranIfSmManagedChannelStatus  OBJECT-TYPE
    SYNTAX      INTEGER { unclassified(0),
                           candidate(1),
                           protected(2),
                           operating(3),
                           backup(4),
                           disallowed(5) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The state of the channel as set by the states in the
         SM Channel Set Transition Diagram (Figure 162) or
         disallowed state (if channel is in IPC-UPD)."
    ::= { wranIfSmChClassificationStatusEntry 3 }

wranIfSmManagedChannelRecentEvent OBJECT-TYPE
    SYNTAX      INTEGER { disallowed(0),
                           event1(1),
                           event2(2),
                           event3(3),
                           event4(4),
                           event5(5),
                           event6(6),
                           event7(7),
                           event8(8) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Most recent event (see 10.2.3.1) that dictated a
         transition to the current state. disallowed(0)
         pertains to reception of IPC-UPD."
    ::= { wranIfSmChClassificationStatusEntry 4 }

wranIfSmChannelSetTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSmChannelSetEntry
    MAX-ACCESS  not-accessible

```

```

        STATUS      current
        DESCRIPTION
            "This MIB object represents a table that stores
             information related to the contents of the Occupied,
             Backup Channel, and Local Priority channel sets used
             by the Spectrum Manager (see 10.2.3.2)."
        ::= { wranIfSmMib 5 }

wranIfSmChannelSetEntry OBJECT-TYPE
    SYNTAX      wranIfSmChannelSetEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfSmChannelSetTable. There is only one entry in
         this table."
    INDEX { wranIfSmChannelSetIndex }
    ::= { wranIfSmChannelSetTable 1 }

wranIfSmChannelSetEntry ::= SEQUENCE {
    wranIfSmChannelSetIndex          INTEGER,
    wranIfSmSizeWranOccupiedChannelSet OCTET STRING,
    wranIfSmWranOccupiedChannelSet    OCTET STRING,
    wranIfSmSizeNghbrWranBackupChannelSet INTEGER,
    wranIfSmNghbrWranBackupChannelSet OCTET STRING,
    wranIfSmSizeLocalPrioritySet1    INTEGER,
    wranIfSmLocalPrioritySet1       OCTET STRING,
    wranIfSmSizeLocalPrioritySet2    INTEGER,
    wranIfSmLocalPrioritySet2       OCTET STRING,
    wranIfSmSizeLocalPrioritySet3    INTEGER,
    wranIfSmLocalPrioritySet3       OCTET STRING }

wranIfSmChannelSetIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfSmChannelSetEntry 1 }

wranIfSmSizeWranOccupiedChannelSet  OBJECT-TYPE
    SYNTAX      INTEGER (1..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Number of channels in WRAN Occupied Channel Set."
    ::= { wranIfSmChannelSetEntry 2 }

wranIfSmWranOccupiedChannelSet      OBJECT-TYPE
    SYNTAX
        OCTET STRING
        (SIZE(wranIfSmSizeWranOccupiedChannelSet))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Vector of channels of length 8 bits ×"

```

```

        wranIfSmSizeWranOccupiedChannelSet that indicate the
        channels that occupy the WRAN Occupied Channel Set
        used by the Spectrum Etiquette procedure (see
        10.2.3.2)."
 ::= { wranIfSmChannelSetEntry 3 }

wranIfSmSizeNghbrWranBackupChannelSet      OBJECT-TYPE
SYNTAX          INTEGER (1..256)
MAX-ACCESS     read-write
STATUS         current
DESCRIPTION
    "Number of channels in Neighbor WRAN Backup Channel
     Set."
 ::= { wranIfSmChannelSetEntry 4 }

wranIfSmNghbrWranBackupChannelSet      OBJECT-TYPE
SYNTAX
OCTET STRING
(SIZE(wranIfSmSizeNghbrWranBackupChannelSet))
MAX-ACCESS     read-write
STATUS         current
DESCRIPTION
    "Vector of channels of length 8 bits ×
     wranIfSmSizeNghbrWranBackupChannelSet that indicate
     the channels that occupy the Neighbor WRAN Backup
     Channel Set used by the Spectrum Etiquette procedure
     (see 10.2.3.2)."
 ::= { wranIfSmChannelSetEntry 5 }

wranIfSmSizeLocalPrioritySet1 OBJECT-TYPE
SYNTAX          INTEGER (1..256)
MAX-ACCESS     read-write
STATUS         current
DESCRIPTION
    "Number of channels in Local Priority Set 1."
 ::= { wranIfSmChannelSetEntry 6 }

wranIfSmLocalPrioritySet1      OBJECT-TYPE
SYNTAX
OCTET STRING (SIZE(wranIfSmSizeLocalPrioritySet1))
MAX-ACCESS     read-write
STATUS         current
DESCRIPTION
    "Vector of channels of length 8 bits ×
     wranIfSmSizeLocalPrioritySet1 that indicate the
     channels that occupy the Local Priority Set 1 used
     by the Spectrum Etiquette procedure (see 10.2.3.2)."
 ::= { wranIfSmChannelSetEntry 7 }

wranIfSmSizeLocalPrioritySet2 OBJECT-TYPE
SYNTAX          INTEGER (1..256)
MAX-ACCESS     read-write
STATUS         current
DESCRIPTION
    "Number of channels in Local Priority Set 2."
 ::= { wranIfSmChannelSetEntry 8 }

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```

wranIfSmLocalPrioritySet2      OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSmSizeLocalPrioritySet2))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Vector of channels of length 8 bits ×
         wranIfSmSizeLocalPrioritySet2 that indicate the
         channels that occupy the Local Priority Set 2 used
         by the Spectrum Etiquette procedure (see 10.2.3.2)."
    ::= { wranIfSmChannelSetEntry 9 }

wranIfSmSizeLocalPrioritySet3 OBJECT-TYPE
    SYNTAX      INTEGER (1..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Number of channels in Local Priority Set 3, should
         be the same size as
         wranIfSmSizeWranOccupiedChannelSet."
    ::= { wranIfSmChannelSetEntry 10 }

wranIfSmLocalPrioritySet3      OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSmSizeLocalPrioritySet3))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Vector of channels of length 8 bits ×
         wranIfSmSizeLocalPrioritySet3 that indicate the
         channels that occupy the Local Priority Set 3 used
         by the Spectrum Etiquette procedure (see 10.2.3.2).
         Should contain the same channel set as
         wranIfSmWranOccupiedChannelSet."
    ::= { wranIfSmChannelSetEntry 11 }

wranIfSmCurrentStatusTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSmCurrentStatusEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object represents a table that records
         the current status of the SM. This includes the
         state the SM is in, the event that triggered a move
         into that state, as well as the current state of any
         relevant timers. There is one entry in this table
         defined in wranIfSmCurrentStatusEntry."
    ::= { wranIfSmMib 6 }

wranIfSmCurrentStatusEntry   OBJECT-TYPE
    SYNTAX      wranIfSmCurrentStatusEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in

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        wranIfSmCurrentStatusTable. There is only one entry
        in this table."
INDEX { wranIfSmCurrentStatusIndex }
 ::= { wranIfSmCurrentStatusTable 1 }

wranIfSmCurrentStatusEntry ::= SEQUENCE {
    wranIfSmCurrentStatusIndex          INTEGER,
    wranIfSmCurrentState               INTEGER,
    wranIfSmRecentEvent                INTEGER,
    wranIfSmRecentAction               INTEGER,
    wranIfSmInitiateChannelMove       TruthValue,
    wranIfSmSelfCoexistenceMode      TruthValue,
    wranIfSmCurrentOperatingChannel   INTEGER,
    wranIfSmRecentSignalType          INTEGER,
    wranIfSmCurrentT47                 Integer32,
    wranIfSmCurrentT46                 Integer32 }

wranIfSmCurrentStatusIndex OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfSmCurrentStatusEntry 1 }

wranIfSmCurrentState OBJECT-TYPE
SYNTAX      INTEGER { init(0),
                      operation(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The state (see Figure 164) that the SM is in. A
     value of 0 indicates that the SM is in the 'Spectrum
     Manager at Network Initialization State', a value of
     1 indicates that the SM is in the 'Spectrum Manager
     at Network Operation' state."
 ::= { wranIfSmCurrentStatusEntry 2 }

wranIfSmRecentEvent OBJECT-TYPE
SYNTAX      INTEGER { timeT46expires(0),
                      operatingChannelIdentified(1),
                      initiateChannelMoveSet(2),
                      newCpeRegRequest(3),
                      timerT47expires(4),
                      signalDetected(5),
                      selfCoexistenceModeSet(6) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Recent event that triggered a transition into the
     current state as given in 10.2.6.1"
 ::= { wranIfSmCurrentStatusEntry 3 }

wranIfSmRecentAction OBJECT-TYPE
SYNTAX
    INTEGER { smFindOperatingChannel(0),

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        smEstablishNetwork(1),
        smInitiateChannelMove(2),
        smNewCpeVerification(3),
        smDatabaseUpdate(4),
        smDetermineSignalTypeExecutePolicies(5),
        smSelfCoexistenceMode(6) }

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Recent action that was taken when transitioning into
     the current state as given in 10.2.6.1."
 ::= { wranIfSmCurrentStatusEntry 4 }

wranIfSmInitiateChannelMove   OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of Initiate_Channel_Move flag.
         Truth(1) if the flag is set to 1, Truth(0) if
         the flag is set to 0."
 ::= { wranIfSmCurrentStatusEntry 5 }

wranIfSmSelfCoexistenceMode   OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of Self_Coexistence_Mode flag.
         Truth(1) if the flag is set to 1, Truth(0) if
         the flag is set to 0."
 ::= { wranIfSmCurrentStatusEntry 6 }

wranIfSmCurrentOperatingChannel   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current operating channel."
 ::= { wranIfSmCurrentStatusEntry 7 }

wranIfSmRecentSignalType       OBJECT-TYPE
    SYNTAX      INTEGER { undetermined(0),
                           ieee802dot22wran(1),
                           atsc(2),
                           dvbt(3),
                           isdbt(4),
                           ntsc(5),
                           pal(6),
                           secam(7),
                           wirelessMicrophone(8),
                           ieee802dot22dot1Sync(9),
                           ieee802dot22dot1Msf1(10),
                           ieee802dot22dot1Msf2(11),
                           ieee802dot22dot1Msf3(12) }
    MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "Type of signal recently detected (see Table 237)."
        ::= { wranIfSmCurrentStatusEntry 8 }

wranIfSmCurrentT47      OBJECT-TYPE
    SYNTAX      Integer32 (1..720)
    UNITS      "hours"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of T47, in 0.1 h increments from 0 to
         72 h."
    ::= { wranIfSmCurrentStatusEntry 9 }

wranIfSmCurrentT46      OBJECT-TYPE
    SYNTAX      Integer32 (1..4096)
    UNITS      "frames"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Current value of T46."
    ::= { wranIfSmCurrentStatusEntry 10 }

wranIfSmRegTrackingTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSmRegTrackingEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This MIB object represents a table that records the
         SM's monitoring of CPEs associated with the BS. It
         contains the location data string and current value
         of T30 for each CPE. There are multiple entries in
         this table (one for each CPE) defined in
         wranIfSmRegTrackingEntry."
    ::= { wranIfSmMib 7 }

wranIfSmRegTrackingEntry      OBJECT-TYPE
    SYNTAX      wranIfSmRegTrackingEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfSmRegTrackingTable."
    INDEX { wranIfSmRegTrackingIndex }
    ::= { wranIfSmRegTrackingTable 1 }

wranIfSmRegTrackingEntry      ::= SEQUENCE {
    wranIfSmRegTrackingIndex          INTEGER,
    wranIfSmRegTrackingCpeSid        INTEGER,
    wranIfSmRegTrackingCurrentT30    Integer32,
    wranIfSmRegTrackingLocStringSize INTEGER,
    wranIfSmRegTrackingLocString     OCTET STRING }

wranIfSmRegTrackingIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..255)

```

```

        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Index of entry in the table."
        ::= { wranIfSmRegTrackingEntry 1 }

wranIfSmRegTrackingCpeSid      OBJECT-TYPE
    SYNTAX      INTEGER (1..511)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "SID of CPE whose location is being tracked."
    ::= { wranIfSmRegTrackingEntry 2 }

wranIfSmRegTrackingCurrentT30 OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Current value of CPE's T30, as known by SM. From
         0.16 s to 10 485.6 s in 0.16 s increments."
    ::= { wranIfSmRegTrackingEntry 3 }

wranIfSmRegTrackingLocStringSize   OBJECT-TYPE
    SYNTAX      INTEGER (1..512)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of the location string
         (wranIfSmRegTrackingLocString) in octets."
    ::= { wranIfSmRegTrackingEntry 4 }

wranIfSmRegTrackingLocString   OBJECT-TYPE
    SYNTAX
        OCTET STRING(SIZE(wranIfSmRegTrackingLocStringSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of the location string
         (wranIfSmRegTrackingLocString) in octets."
    ::= { wranIfSmRegTrackingEntry 5 }

wranIfSmTrapControl      OBJECT-TYPE
    SYNTAX      BITS { wranIfSmBlmReqChange(0),
                      wranIfSmBlmRepChange(1),
                      wranIfSmOccupiedChannelSetChange(2),
                      wranIfSmNghbrBackupChannelSetChange(3),
                      wranIfSmLocalPrioritySet1Change(4),
                      wranIfSmLocalPrioritySet2Change(5),
                      wranIfSmLocalPrioritySet3Change(6),
                      wranIfSmCurrentStatusChange(7),
                      wranIfSmRegTrackingChange(8) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Defines control elements for traps related to
         trap types defined in the wranIfSmTrapType object
         definition.".
    ::= { wranIfSmRegTrackingEntry 6 }

```

```

operation of the spectrum manager. This is a 9-bit
field that enables setting a trap for particular SM
events: wranIfSmBlmReqChange,
wranIfSmBlmRepChange,
wranIfSmOccupiedChannelSetChange,
wranIfSmNghbrBackupChannelSetChange,
wranIfSmLocalPrioritySet1Change,
wranIfSmLocalPrioritySet2Change,
wranIfSmLocalPrioritySet3Change,
wranIfSmCurrentStatusChange,
and wranIfSmRegTrackingChange."
 ::= { wranIfSmMib 8 }

wranIfSmTrapDefinition          OBJECT IDENTIFIER
 ::= { wranIfSmMib 9 }

wranIfSmBlmReqChangeTrap      OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 1 }

wranIfSmBlmRepChangeTrap      OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 2 }

wranIfSmOccupiedChannelSetChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 3 }

wranIfSmNghbrBackupChannelSetChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 4 }

wranIfSmLocalPrioritySet1ChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 5 }

wranIfSmLocalPrioritySet2ChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 6 }

wranIfSmLocalPrioritySet3ChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 7 }

wranIfSmCurrentStatusChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 8 }

wranIfSmRegTrackingChangeTrap   OBJECT IDENTIFIER
 ::= { wranIfSmTrapDefinition 9 }

wranIfSmBlmReqChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfSmPendingBlmReqTransactionId,
               wranIfSmPendingBlmReqStatus }
STATUS      current
DESCRIPTION
    "This trap contains the information related to a BLM-
     REQ that is pending in the SM."
 ::= { wranIfSmTrapDefinition 1 }

wranIfSmBlmRepChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfSmBlmRepTransactionId,
               wranIfSmBlmRepStatus }
STATUS      current
DESCRIPTION
    "This trap contains the information related to a BLM-
     REP that is received by the SM."
 ::= { wranIfSmTrapDefinition 2 }

wranIfSmOccupiedChannelSetChangeTrap   NOTIFICATION-TYPE
OBJECTS      { wranIfSmSizeWranOccupiedChannelSet,
               wranIfSmWranOccupiedChannelSet,
               wranIfSmOccupiedChannelSetStatus }

```

```
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
     current state of the Occupied Channel Set in the
     SM."
 ::= { wranIfSmTrapDefinition 3 }

wranIfSmNghbrBackupChannelSetChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSmSizeNghbrWranBackupChannelSet,
                wranIfSmNghbrWranBackupChannelSet,
                wranIfSmNghbrBackupChannelSetStatus }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
     current state of the Neighbor WRAN Backup Channel
     Set in the SM."
 ::= { wranIfSmTrapDefinition 4 }

wranIfSmLocalPrioritySet1ChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSmSizeLocalPrioritySet1,
                wranIfSmLocalPrioritySet1,
                wranIfSmLocalPrioritySet1Status }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
     current state of the Local Priority Set 1 in the
     SM."
 ::= { wranIfSmTrapDefinition 5 }

wranIfSmLocalPrioritySet2ChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSmSizeLocalPrioritySet2,
                wranIfSmLocalPrioritySet2,
                wranIfSmLocalPrioritySet2Status }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
     current state of the Local Priority Set 2 in the
     SM."
 ::= { wranIfSmTrapDefinition 6 }

wranIfSmLocalPrioritySet3ChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSmSizeLocalPrioritySet3,
                wranIfSmLocalPrioritySet3,
                wranIfSmLocalPrioritySet3Status }
STATUS      current
DESCRIPTION
    "This trap contains the information related to the
     current state of the Local Priority Set 3 in the
     SM."
 ::= { wranIfSmTrapDefinition 7 }

wranIfSmCurrentStatusChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfSmRecentAction,
                wranIfSmCurrentStateStatus }
STATUS      current
DESCRIPTION
```

```

        "This trap contains the information related to the
        current state the SM is in."
 ::= { wranIfSmTrapDefinition 8 }

wranIfSmRegTrackingChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSmRegTrackingCpeSid,
                wranIfSmRegTrackingStatus }
STATUS       current
DESCRIPTION
        "This trap contains the information related to the
        tracking of the location of CPEs within the purview
        of the BS."
 ::= { wranIfSmTrapDefinition 9 }

wranIfSmNotificationObjectsTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSmNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "This MIB provides a table to track notification
        objects that have been reported by the traps related
        to the operation of the SM. It is made up of one
        entry containing objects related to the most recent
        trap/event. The entry is defined by
        wranIfSmNotificationObjectsEntry."
 ::= { wranIfSmMib 10 }

wranIfSmNotificationObjectsEntry      OBJECT-TYPE
SYNTAX      wranIfSmNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "This object defines an entry in
        wranIfSmNotificationObjectsTable."
INDEX { wranIfSmNotificationSid }
 ::= { wranIfSmNotificationObjectsTable 1 }

wranIfSmNotificationObjectsEntry      ::= SEQUENCE {
    wranIfSmNotificationObjectsEntryIndex          INTEGER,
    wranIfSmNotificationSid                      INTEGER,
    wranIfSmNotificationBlmTransactionId         Integer32,
    wranIfSmNotificationSizeOccupiedChannelSet   INTEGER,
    wranIfSmNotificationOccupiedChannelSet        OCTET STRING,
    wranIfSmNotificationSizeBackupChannelSet     INTEGER,
    wranIfSmNotificationBackupChannelSet         OCTET STRING,
    wranIfSmNotificationSizeLocalPrioritySet1    INTEGER,
    wranIfSmNotificationLocalPrioritySet1        OCTET STRING,
    wranIfSmNotificationSizeLocalPrioritySet2    INTEGER,
    wranIfSmNotificationLocalPrioritySet2        OCTET STRING,
    wranIfSmNotificationSizeLocalPrioritySet3    INTEGER,
    wranIfSmNotificationLocalPrioritySet3        OCTET STRING,
    wranIfSmNotificationRecentAction            INTEGER,
    wranIfSmPendingBlmReqStatus                INTEGER,
    wranIfSmBlmRepStatus                      INTEGER,
    wranIfSmOccupiedChannelSetStatus           INTEGER,
    wranIfSmNghbrBackupChannelSetStatus        INTEGER,
}

```

```

wranIfSmLocalPrioritySet1Status          INTEGER,
wranIfSmLocalPrioritySet2Status          Integer32,
wranIfSmLocalPrioritySet3Status          Integer32,
wranIfSmCurrentStateStatus              Integer32,
wranIfSmRegTrackingStatus               Integer32 }

wranIfSmNotificationObjectsEntryIndex     OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The transaction ID of the bulk measurement
    transaction. Only pertinent when
    wranIfSmBlmReqChangeTrap or wranIfSmBlmRepChangeTrap
    is enabled."
::= { wranIfSmNotificationObjectsEntry 1 }

wranIfSmNotificationSid OBJECT-TYPE
SYNTAX      INTEGER (0..511)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "SID of station generating trap.
    wranIfSmNotificationSid set == 0 is reserved for
    traps dealing with channel set management (see
    wranIfSmOccupiedChannelSetChangeTrap,
    wranIfSmNghbrBackupChannelSetChangeTrap,
    wranIfSmLocalPrioritySet1ChangeTrap,
    wranIfSmLocalPrioritySet2ChangeTrap,
    wranIfSmLocalPrioritySet3ChangeTrap) and the current
    state of the SM (see
    wranIfSmCurrentStatusChangeTrap).
    wranIfSmNotificationSid set == 1..511 when dealing
    with traps for bulk measurement (see
    wranIfSmBlmReqChangeTrap, wranIfSmBlmRepChangeTrap)
    or CPE registration tracking (see
    wranIfSmRegTrackingChangeTrap)."
::= { wranIfSmNotificationObjectsEntry 2 }

wranIfSmNotificationBlmTransactionId     OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The transaction ID of the bulk measurement
    transaction. Only pertinent when
    wranIfSmBlmReqChangeTrap or wranIfSmBlmRepChangeTrap
    is enabled."
::= { wranIfSmNotificationObjectsEntry 3 }

wranIfSmNotificationSizeOccupiedChannelSet OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of the current/new WRAN Occupied Channel Set

```

```

        (only pertinent when
         wranIfSmOccupiedChannelSetChangeTrap is enabled)."
        ::= { wranIfSmNotificationObjectsEntry 4 }

wranIfSmNotificationOccupiedChannelSet      OBJECT-TYPE
SYNTAX
    STRING
        (SIZE(wranIfSmNotificationSizeOccupiedChannelSet))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The current/new contents of the WRAN Occupied
     Channel Set (only pertinent when
     wranIfSmOccupiedChannelSetChangeTrap is enabled)."
    ::= { wranIfSmNotificationObjectsEntry 5 }

wranIfSmNotificationSizeBackupChannelSet   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of the current/new Neighbor WRAN Backup Channel
     Set (only pertinent when
     wranIfSmNghbrBackupChannelSetChangeTrap is
     enabled)."
    ::= { wranIfSmNotificationObjectsEntry 6 }

wranIfSmNotificationBackupChannelSet       OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfSmNotificationSizeBackupChannelSet))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The current/new contents of the Neighbor WRAN Backup
     Channel Set (only pertinent when
     wranIfSmNghbrBackupChannelSetChangeTrap is
     enabled)."
    ::= { wranIfSmNotificationObjectsEntry 7 }

wranIfSmNotificationSizeLocalPrioritySet1 OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of the current/new Local Priority Set 1 (only
     pertinent when wranIfSmLocalPrioritySet1ChangeTrap
     is enabled)."
    ::= { wranIfSmNotificationObjectsEntry 8 }

wranIfSmNotificationLocalPrioritySet1      OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfSmNotificationSizeLocalPrioritySet1))
MAX-ACCESS  read-only
STATUS      current

```

```

DESCRIPTION
    "The current/new contents of the Local Priority Set 1
     (only pertinent when
      wranIfSmLocalPrioritySet1ChangeTrap is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 9 }

wranIfSmNotificationSizeLocalPrioritySet2 OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of the current/new Local Priority Set 2 (only
     pertinent when wranIfSmLocalPrioritySet2ChangeTrap
     is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 10 }

wranIfSmNotificationLocalPrioritySet2      OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfSmNotificationSizeLocalPrioritySet2))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The current/new contents of the Local Priority Set 2
     (only pertinent when
      wranIfSmLocalPrioritySet2ChangeTrap is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 11 }

wranIfSmNotificationSizeLocalPrioritySet3 OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of the current/new Local Priority Set 3 (only
     pertinent when wranIfSmLocalPrioritySet3ChangeTrap
     is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 12 }

wranIfSmNotificationLocalPrioritySet3      OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfSmNotificationSizeLocalPrioritySet3))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The current/new contents of the Local Priority Set 3
     (only pertinent when
      wranIfSmLocalPrioritySet3ChangeTrap is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 13 }

wranIfSmNotificationRecentAction      OBJECT-TYPE
SYNTAX      INTEGER (0..6)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Value of wranIfSmRecentAction that triggered

```

```

        transition to current state of SM (only pertinent
        when wranIfSmCurrentStatusChangeTrap is enabled)."
 ::= { wranIfSmNotificationObjectsEntry 14 }

wranIfSmPendingBmReqStatus   OBJECT-TYPE
    SYNTAX      INTEGER { blmRspUnicastReceived(0),
                           blmRspMulticastReceived(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates BLM-RSP pertaining to bulk measurement
         transaction (defined by
         wranIfSmNotificationBmTransactionId) was received
         from wranIfSmNotificationSid, if
         wranIfSmNotificationSid is a unicast SID, or if all
         BLM-RSP received from members of multicast group
         identified by wranIfSmNotificationSid."
 ::= { wranIfSmNotificationObjectsEntry 15 }

wranIfSmBmRepStatus   OBJECT-TYPE
    SYNTAX      INTEGER { blmRepAcknowledged(0),
                           blmRepUnAcknowledged(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates whether BLM-ACK has been sent,
         pertaining to BLM-REP received in bulk measurement
         transaction defined by
         wranIfSmNotificationBmTransactionId."
 ::= { wranIfSmNotificationObjectsEntry 16 }

wranIfSmOccupiedChannelSetStatus   OBJECT-TYPE
    SYNTAX      INTEGER { channelsAdded(0),
                           channelsRemoved(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication of whether channels have been
         added or removed when the WRAN Occupied Channel Set
         is modified."
 ::= { wranIfSmNotificationObjectsEntry 17 }

wranIfSmNghbrBackupChannelSetStatus OBJECT-TYPE
    SYNTAX      INTEGER { channelsAdded(0),
                           channelsRemoved(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indication of whether channels have been
         added or removed when the Neighbor WRAN Backup
         Channel Set is modified."
 ::= { wranIfSmNotificationObjectsEntry 18 }

wranIfSmLocalPrioritySet1Status   OBJECT-TYPE
    SYNTAX      INTEGER { channelsAdded(0),
                           channelsRemoved(1) }

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether channels have been
    added or removed when the Local Priority Set 1 is
    modified."
 ::= { wranIfSmNotificationObjectsEntry 19 }

wranIfSmLocalPrioritySet2Status      OBJECT-TYPE
SYNTAX      INTEGER { channelsAdded(0),
                      channelsRemoved(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether channels have been
    added or removed when the Local Priority Set 2 is
    modified."
 ::= { wranIfSmNotificationObjectsEntry 20 }

wranIfSmLocalPrioritySet3Status      OBJECT-TYPE
SYNTAX      INTEGER { channelsAdded(0),
                      channelsRemoved(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether channels have been
    added or removed when the Local Priority Set 3 is
    modified."
 ::= { wranIfSmNotificationObjectsEntry 21 }

wranIfSmCurrentStateStatus          OBJECT-TYPE
SYNTAX      BITS { initiateChannelMoveSet(0),
                  coexistenceModeSet(1),
                  currentOperatingChannelChange(2),
                  signalDetectionClassificationSuccess(3),
                  expirationT47(4),
                  expirationT46(5) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Bitmap indicating current value of
    Initiate_Channel_Move has bit set (bit 0); whether
    Self_Coexistence_Mode flag is set (bit 1);
    whether the operating channel assignment has
    changed (bit 2); whether recently detected signal
    was properly classified, e.g., signal type ==
    undetermined (bit 3); whether T47
    has expired (bit 4); whether T46 has expired
    (bit 5). Setting the bit to 0 makes the condition
    false, setting the bit to 1 makes the condition
    true."
 ::= { wranIfSmNotificationObjectsEntry 22 }

wranIfSmRegTrackingStatus          OBJECT-TYPE
SYNTAX      INTEGER { locationChanged(0),
                      locationNotChanged(1) }

```

```

MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether CPE location,
     pertaining to CPE SID identified by
     wranIfSmNotificationSid, has changed."
 ::= { wranIfSmNotificationObjectsEntry 23 }

-- wranIfSmMibGroups: this object helps define which MIB groups are
-- available within this module and which MIB objects are a part of
-- each group

wranIfSmMibGroups          OBJECT IDENTIFIER
                             ::= { wranIfSmMib 11 }
wranIfSmConfigGroup        OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 1 }
wranIfSmPendingBlmReqGroup OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 2 }
wranIfSmBlmRepGroup        OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 3 }
wranIfSmChClassificationGroup OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 4 }
wranIfSmChannelSetGroup    OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 5 }
wranIfSmCurrentStatusGroup OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 6 }
wranIfSmRegTrackingGroup   OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 7 }
wranIfSmTrapControlGroup   OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 8 }
wranIfSmNotificationsGroup  OBJECT IDENTIFIER
                             ::= { wranIfSmMibGroups 9 }

wranIfSmConfigGroup        OBJECT-GROUP
OBJECTS      { wranIfSmConfigIndex, wranIfSmT31,
               wranIfSmChAvailabilityCheckTime,
               wranIfSmNonOccupancyPeriod,
               wranIfSmChannelDetectionTime,
               wranIfSmChannelSetupTime,
               wranIfSmChannelOpeningTxTime,
               wranIfSmChannelMoveTime,
               wranIfSmChannelClosingTxTime,
               wranIfSmMicProtectionRadius,
               wranIfSmT41, wranIfSmT42,
               wranIfSmT43, wranIfSmT44,
               wranIfSmT45, wranIfSmT46, wranIfSmT59,
               wranIfSmT47, wranIfSmT48,
               wranIfSmT49, wranIfSmT50,
               wranIfSmT51, wranIfSmT53,
               wranIfSmT54, wranIfSmT55,
               wranIfSmT60 }
STATUS      current
DESCRIPTION
    "This group contains objects related to
     configuration of the Spectrum Manager."
 ::= { wranIfSmMibGroups 1 }

```

```

wranIfSmPendingBlmReqGroup          OBJECT-GROUP
    OBJECTS      { wranIfSmPendingBlmReqIndex,
                    wranIfSmPendingBlmReqTransactionId,
                    wranIfSmPendingBlmReqMsgSize,
                    wranIfSmPendingBlmReqMsg,
                    wranIfSmPendingBlmRspReceived,
                    wranIfSmPendingBlmRspMulticastReceived,
                    wranIfSmPendingBlmRepTimeout,
                    wranIfSmPendingBlmRepReceived,
                    wranIfSmPendingBlmRepMulticastReceived,
                    wranIfSmPendingBlmRepAck }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking pending BLM-REQs."
    ::= { wranIfSmMibGroups 2 }

wranIfSmBlmRepGroup          OBJECT-GROUP
    OBJECTS      { wranIfSmBlmRepIndex, wranIfSmBlmRepSid,
                    wranIfSmBlmRepTransactionId,
                    wranIfSmBlmRepMsgSize,
                    wranIfSmPendingBlmRspReceived,
                    wranIfSmBlmRepMsg }
    STATUS       current
    DESCRIPTION
        "This group contains objects related to
         tracking received BLM-REPs."
    ::= { wranIfSmMibGroups 3 }

wranIfSmChClassificationGroup      OBJECT-GROUP
    OBJECTS      { wranIfSmChClassificationStatusIndex,
                    wranIfSmManagedChannel,
                    wranIfSmManagedChannelStatus,
                    wranIfSmManagedChannelRecentEvent }
    STATUS       current
    DESCRIPTION
        "This group contains objects used to track how
         channels the SM is managing have been
         classified."
    ::= { wranIfSmMibGroups 4 }

wranIfSmChannelSetGroup          OBJECT-GROUP
    OBJECTS      { wranIfSmChannelSetIndex,
                    wranIfSmSizeWranOccupiedChannelSet,
                    wranIfSmWranOccupiedChannelSet,
                    wranIfSmSizeNghbrWranBackupChannelSet,
                    wranIfSmNghbrWranBackupChannelSet,
                    wranIfSmSizeLocalPrioritySet1,
                    wranIfSmLocalPrioritySet1,
                    wranIfSmSizeLocalPrioritySet2,
                    wranIfSmLocalPrioritySet2,
                    wranIfSmSizeLocalPrioritySet3,
                    wranIfSmLocalPrioritySet3 }
    STATUS       current
    DESCRIPTION

```

```

        "This group contains objects used to track the
        various channel sets with which the SM operates."
        ::= { wranIfSmMibGroups 5 }

wranIfSmCurrentStatusGroup          OBJECT-GROUP
OBJECTS      { wranIfSmCurrentStatusIndex,
                wranIfSmCurrentState, wranIfSmRecentEvent,
                wranIfSmRecentAction,
                wranIfSmInitiateChannelMove,
                wranIfSmSelfCoexistenceMode,
                wranIfSmCurrentOperatingChannel,
                wranIfSmRecentSignalType, wranIfSmCurrentT47,
                wranIfSmCurrentT46 }
STATUS       current
DESCRIPTION
        "This group contains objects used to track the
        current state of the SM."
        ::= { wranIfSmMibGroups 6 }

wranIfSmRegTrackingGroup          OBJECT-GROUP
OBJECTS      { wranIfSmRegTrackingIndex,
                wranIfSmRegTrackingCpeSid,
                wranIfSmRegTrackingCurrentT30,
                wranIfSmRegTrackingLocStringSize,
                wranIfSmRegTrackingLocString }
STATUS       current
DESCRIPTION
        "This group contains objects the SM uses to
        keep track of the location of registered
        CPEs."
        ::= { wranIfSmMibGroups 7 }

wranIfSmTrapControlGroup          OBJECT-GROUP
OBJECTS      { wranIfSmTrapControl }
STATUS       current
DESCRIPTION
        "This group contains objects related to
        enabling/disabling traps related to SM
        operation."
        ::= { wranIfSmMibGroups 8 }

wranIfSmNotificationsGroup         OBJECT-GROUP
OBJECTS      { wranIfSmBlmReqChangeTrap,
                wranIfSmBlmRepChangeTrap,
                wranIfSmOccupiedChannelSetChangeTrap,
                wranIfSmNghbrBackupChannelSetChangeTrap,
                wranIfSmLocalPrioritySet1ChangeTrap,
                wranIfSmLocalPrioritySet2ChangeTrap,
                wranIfSmLocalPrioritySet3ChangeTrap,
                wranIfSmCurrentStatusChangeTrap,
                wranIfSmRegTrackingChangeTrap,
                wranIfSmNotificationSid,
                wranIfSmNotificationBlmTransactionId,
                wranIfSmNotificationSizeOccupiedChannelSet,
                wranIfSmNotificationOccupiedChannelSet,
                wranIfSmNotificationSizeBackupChannelSet,

```

```
wranIfSmNotificationBackupChannelSet,
wranIfSmNotificationSizeLocalPrioritySet1,
wranIfSmNotificationLocalPrioritySet1,
wranIfSmNotificationSizeLocalPrioritySet2,
wranIfSmNotificationLocalPrioritySet2,
wranIfSmNotificationSizeLocalPrioritySet3,
wranIfSmNotificationLocalPrioritySet3,
wranIfSmNotificationRecentAction,
wranIfSmPendingBlmReqStatus,
wranIfSmBlmRepStatus,
wranIfSmOccupiedChannelSetStatus,
wranIfSmNghbrBackupChannelSetStatus,
wranIfSmLocalPrioritySet1Status,
wranIfSmLocalPrioritySet2Status,
wranIfSmLocalPrioritySet3Status,
wranIfSmCurrentStateStatus }

STATUS      current
DESCRIPTION
    "This group contains notification objects
     related to traps configured for the SM."
 ::= { wranIfSmMibGroups 9 }

wranIfSmMibCompliance   MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
    "MIB objects that are optional and mandatory for SM
     compliance."
MODULE      wranIfSmMib
MANDATORY-GROUPS  { wranIfSmConfigGroup, ,
                    wranIfSmChClassificationGroup,
                    wranIfSmChannelSetGroup,
                    wranIfSmCurrentStatusGroup,
                    wranIfSmRegTrackingGroup,
                    wranIfSmTrapControlGroup }
-- OPTIONAL-GROUPS      { wranIfSmPendingBlmReqGroup,
                         wranIfSmBlmRepGroup,
                         wranIfSmNotificationsGroup }
 ::= { wranIfSmMib 12 }

END
```

### **13.2.6 wranIfSsaMib**

```

IEEE802dot22-WRAN-IF-SSA-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32,
    Counter64
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPV2-CONF

wranIfSsaMib      MODULE-IDENTITY
    LAST-UPDATED      "201405300000Z"    -- May 30, 2014
    ORGANIZATION      "IEEE 802.22"
    CONTACT-INFO
        "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
         WG Chair: Apurva N. Mody
         E-mail: apurva.mody@ieee.org
        TGA Chair/Editor: Ranga Reddy
        E-mail: ranga.reddy@ieee.org"
    DESCRIPTION
        "This material is from IEEE Std 802.22a-2014
         Copyright (c) 2014. This MIB Module object is
         related to configuration, operation and monitoring
         of the Spectrum Sensing Automaton (SSA). Objects in
         this module are based on IEEE Std 802.22-2011 and is
         under iso(1).std(0).iso8802(8802).wran(22)
         .wranIfSsaMib(6)"
    REVISION          "201405300000Z"
    DESCRIPTION
        "The first version of IEEE802dot22-WRAN-IF-SSA-MIB."
        ::= {iso std(0) iso8802(8802) wran(22) 6}

wranIfSsaSensingCapTable      OBJECT IDENTIFIER
                                ::= {wranIfSsaMib 1}
wranIfSsaStatusTable          OBJECT IDENTIFIER
                                ::= {wranIfSsaMib 2}
wranIfSsaConfigTable          OBJECT IDENTIFIER
                                ::= {wranIfSsaMib 3}
wranIfSsaPendingBlmRepTable   OBJECT IDENTIFIER
                                ::= {wranIfSsaMib 4}
wranIfSsaSensingRecordTable   OBJECT IDENTIFIER

```

```

wranIfSsaSsfMode0OutputTable          ::= { wranIfSsaMib 5 }
OBJECT IDENTIFIER
wranIfSsaSsfMode1OutputTable          ::= { wranIfSsaMib 6 }
OBJECT IDENTIFIER
wranIfSsaSsfMode2OutputTable          ::= { wranIfSsaMib 7 }
OBJECT IDENTIFIER
wranIfSsaSsfWiMicMSFTable           ::= { wranIfSsaMib 8 }
OBJECT IDENTIFIER
wranIfSsaGeolocationTable           ::= { wranIfSsaMib 9 }
OBJECT IDENTIFIER
wranIfSsaTrapControl                ::= { wranIfSsaMib 10 }
OBJECT IDENTIFIER
wranIfSsaTrapDefinition              ::= { wranIfSsaMib 11 }
OBJECT IDENTIFIER
wranIfSsaNotificationObjectsTable    ::= { wranIfSsaMib 12 }
OBJECT IDENTIFIER
wranIfSsaMibGroups                  ::= { wranIfSsaMib 13 }
OBJECT IDENTIFIER
wranIfSsaMibCompliance              ::= { wranIfSsaMib 14 }
OBJECT IDENTIFIER
wranIfSsaSensingCapTable            ::= { wranIfSsaMib 15 }

wranIfSsaSensingCapTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSsaSensingCapEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object represents a table that stores the
     current sensing capabilities for a SSA under control
     of the SM. There is one entry in this table for a
     SSA, defined by wranIfSsaSensingCapEntry. This MIB
     is stored at the BS and CPE. These values are also
     stored in wranIfBsCpeRegCapabilityRspTable (see
     13.1.2.2.7) at the BS, in an entry specific to a
     particular CPE."
 ::= { wranIfSsaMib 1 }

wranIfSsaSensingCapEntry   OBJECT-TYPE
SYNTAX      wranIfSsaSensingCapEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfSsaSensingCapTable. The entry is identified by
     wranIfSsaSensingCapIndex."
INDEX { wranIfSsaSensingCapIndex }
 ::= { wranIfSsaSensingCapTable 1 }

wranIfSsaSensingCapEntry   ::= SEQUENCE {
    wranIfSsaSensingCapIndex          INTEGER,
    wranIfSsaSensingThreshold         INTEGER,
    wranIfSsaSensRecContigPeriodDuration Integer32,
    wranIfSsaSensRecNumPeriods        INTEGER,
    wranIfSsaSensRecPeriodInterval   Integer32 }

wranIfSsaSensingCapIndex   OBJECT-TYPE

```

```

SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table, defaults to 1."
 ::= { wranIfSsaSensingCapEntry 1 }

wranIfSsaSensingThreshold      OBJECT-TYPE
SYNTAX      INTEGER (1..255)
UNITS      "dBm"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "This object is the recommended sensing threshold
     that the CPE is capable of supporting. It is in
     units of dBm, encoded in a single, integer byte
     value that is assumed to be negative (e.g., 0x01 =
     -1 dBm, 0x72 = -114 dBm)."
 ::= { wranIfSsaSensingCapEntry 2 }

wranIfSsaSensRecContigPeriodDuration      OBJECT-TYPE
SYNTAX      Integer32 (0..1023)
UNITS      "symbols"
MAX-ACCESS  read- write
STATUS      current
DESCRIPTION
    "This object is the recommended contiguous sensing
     period duration that the CPE is capable of
     supporting. It is in integer, in units of symbols.
     This value ranges from 0 to 1023 and is encoded in
     a 2-octet length value."
 ::= { wranIfSsaSensingCapEntry 3 }

wranIfSsaSensRecNumPeriods      OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read- write
STATUS      current
DESCRIPTION
    "This object is the recommended number of sensing
     periods that a CPE can support. It is an integer
     value, encoded in 1-octet length value."
 ::= { wranIfSsaSensingCapEntry 4 }

wranIfSsaSensRecPeriodInterval      OBJECT-TYPE
SYNTAX      Integer32 (0..2047)
UNITS      "frames"
MAX-ACCESS  read- write
STATUS      current
DESCRIPTION
    "This object is the recommended interval between
     sensing periods that a CPE can support. It is an
     integer value, in units of frames. It is encoded in
     a 2-octet length value."
 ::= { wranIfSsaSensingCapEntry 5 }

wranIfSsaStatusTable      OBJECT-TYPE

```

```

SYNTAX      SEQUENCE OF wranIfSsaStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object represents a table that tracks what
     the current state the SSA is in. There is only one
     entry in this table, to define the current state of
     the SSA, as well as any parameters of interest for
     current SSA procedures. This entry is defined by
     wranIfSsaStatusEntry."
 ::= { wranIfSsaMib 2 }

wranIfSsaStatusEntry      OBJECT-TYPE
SYNTAX      wranIfSsaStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfSsaStatusTable. The entry is identified by
     wranIfSsaStatusIndex."
INDEX { wranIfSsaStatusIndex }
 ::= { wranIfSsaStatusTable 1 }

wranIfSsaStatusEntry      ::= SEQUENCE {
    wranIfSsaStatusIndex                      INTEGER,
    wranIfSsaCurrentState                     INTEGER,
    wranIfSsaRecentEvent                      INTEGER,
    wranIfSsaRecentAction                     INTEGER,
    wranIfSsaIpcUpdChannelsSize              INTEGER,
    wranIfSsaIpcUpdChannels                  OCTET STRING,
    wranIfSsaCurrentT48                       Integer32,
    wranIfSsaCurrentT49                       Integer32,
    wranIfSsaCurrentT50                       Integer32,
    wranIfSsaIntraFrameQpCycleLength         INTEGER,
    wranIfSsaIntraFrameQpCycleOffset          INTEGER,
    wranIfSsaIntraFrameQpCycleFrameBitmap    BITS,
    wranIfSsaIntraFrameQpDuration            INTEGER,
    wranIfSsaInterFrameQpDuration            INTEGER,
    wranIfSsaInterFrameQpOffset              Integer32 }

wranIfSsaStatusIndex      OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table, defaults to 1."
 ::= { wranIfSsaStatusEntry 1 }

wranIfSsaCurrentState     OBJECT-TYPE
SYNTAX      INTEGER { inBandSensing(0),
                      outOfBandSensing(1) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The current state of the SSA is in (see 10.3.1,
     Figure 173), either "SSA In-band Sensing" or "SSA
     Out-of-band Sensing"."
 ::= { wranIfSsaCurrentState 1 }

```

```

        Out-of-band Sensing."
 ::= { wranIfSsaStatusEntry 2 }

wranIfSsaRecentEvent      OBJECT-TYPE
SYNTAX
    INTEGER { blmReqInBandChannelMeasurements(0),
               quietPeriodEnds(1),
               quietPeriodCommences(2),
               ssaIdleTime(3),
               ssaInitialization(4),
               blmReqOutOfBandChannelMeasurements(5),
               lossOfContactWithSm(6) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The recent event that caused entry in the current
     state (see 10.3.1, Figure 173). "
 ::= { wranIfSsaStatusEntry 3 }

wranIfSsaRecentAction      OBJECT-TYPE
SYNTAX
    INTEGER { ssaBlmRepGeneration(0),
               ssaReportSensingResults(1),
               ssaInBandSensing(2),
               ssaIdleTime(3),
               ssaInitialization(4),
               lossOfContactWithSm(5) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The recent action, triggered by recent event, that
     was undertaken while entering into the current state
     (see 10.3.1, Figure 173)."
 ::= { wranIfSsaStatusEntry 4 }

wranIfSsaIpcUpdChannelsSize   OBJECT-TYPE
SYNTAX
    INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Number of channels in
     wranIfSsaIpcUpdChannels."
 ::= { wranIfSsaStatusEntry 5 }

wranIfSsaIpcUpdChannels   OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfSsaIpcUpdChannelsSize))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Contents of most recent IPC-UPD message received
     from SM."
 ::= { wranIfSsaStatusEntry 6 }

wranIfSsaCurrentT48      OBJECT-TYPE
SYNTAX
    Integer32 (1..600)

```

```

        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Current value of T48 in in 0.1 s increments from 0
             to 60 s."
        ::= { wranIfSsaStatusEntry 7 }

wranIfSsaCurrentT49      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS      "seconds"
    MAX-ACCESS read-write
    STATUS     current
    DESCRIPTION
        "Current value of T49 in in 0.1 s increments from 0
         to 60 s."
    ::= { wranIfSsaStatusEntry 8 }

wranIfSsaCurrentT50      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS      "seconds"
    MAX-ACCESS read-write
    STATUS     current
    DESCRIPTION
        "Current value of T50 in in 0.1 s increments from 0
         to 60 s."
    ::= { wranIfSsaStatusEntry 9 }

wranIfSsaIntraFrameQpCycleLength   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "superframes"
    MAX-ACCESS read-write
    STATUS     current
    DESCRIPTION
        "Obtained from CHQ-REQ or SCH. Specified in number of
         superframes, it indicates the spacing between the
         superframes for which the intra-frame quiet period
         specification is valid. For example, if this field
         is set 1, the Quiet Period Cycle repeats every
         superframe; if it is set to 2, the Quiet Period
         Cycle repeats every 2 superframes, etc. When = 0, no
         intra-frame quiet period is scheduled or the current
         intra-frame quiet period is canceled."
    ::= { wranIfSsaStatusEntry 10 }

wranIfSsaIntraFrameQpCycleOffset   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    UNITS      "superframes"
    MAX-ACCESS read-write
    STATUS     current
    DESCRIPTION
        "Obtained from CHQ-REQ or SCH. Valid only if intra-
         frame Sensing Cycle Length > 0. Used for in-band
         intra-frame sensing. Specified in number of
         superframes, it indicates the offset from this SCH
         transmission to the beginning of the first

```

```

        superframe in the current intra-frame sensing
        cycle."
 ::= { wranIfSsaStatusEntry 11 }

wranIfSsaIntraFrameQpCycleFrameBitmap OBJECT-TYPE
SYNTAX     BITS { frame1(1), frame2(2), frame3(3),
                  frame4(4), frame5(5), frame6(6),
                  frame7(7), frame8(8), frame9(9),
                  frame10(10), frame11(11), frame12(12),
                  frame13(13), frame14(14), frame15(15),
                  frame16(16) }
MAX-ACCESS read-write
STATUS      current
DESCRIPTION
    "Obtained from CHQ-REQ or SCH. Valid only if intra-
    frame Quiet Period Cycle Length > 0. Valid for each
    superframe identified by the Intra-frame Quiet
    Period Cycle Length, each bit in the bitmap
    corresponds to one frame within the superframe. If
    the bit is set to 0, no intra-frame quiet period
    shall be scheduled in the corresponding frame. If
    the bit is set to 1, an intra-frame quiet period
    shall be scheduled within the corresponding frame
    for the duration specified by Intra-frame Quiet
    period Duration."
 ::= { wranIfSsaStatusEntry 12 }

wranIfSsaIntraFrameQpDuration OBJECT-TYPE
SYNTAX      INTEGER (1..16)
UNITS       "symbols"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Obtained from CHQ-REQ or SCH. Valid only if Intra-
    frame Quiet Period Cycle Length > 0. If this field
    is set to a value different from 0 (zero): it
    indicates the number of symbols starting from the
    end of the frame during which no transmission shall
    take place."
 ::= { wranIfSsaStatusEntry 13 }

wranIfSsaInterFrameQpDuration OBJECT-TYPE
SYNTAX      INTEGER (1..16)
UNITS       "frames"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Obtained from CHQ-REQ or SCH. Used for in-band
    inter-frame sensing, it indicates the duration of
    the next scheduled quiet period. When > 0, it
    indicates the number of frames starting from Inter-
    frame Quiet Period Offset that shall be used to
    perform inter-frame sensing. When == 0, it cancels
    the next scheduled quiet period for inter-frame
    sensing or indicates that no inter-frame sensing are
    currently scheduled."

```

```

 ::= { wranIfSsaStatusEntry 14 }

wranIfSsaInterFrameQpOffset OBJECT-TYPE
    SYNTAX      Integer32 (0..4096)
    UNITS      "frames"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Obtained from CHQ-REQ or SCH. Used for in-band
         inter-frame sensing, it indicates the time span
         between the transmission of this information and the
         next scheduled quiet period for inter-frame sensing.
         Bit 31-12: set to 0. Bit 11-4: index the superframe
         number, Bit 3-0: index the frame number when the
         next scheduled quiet period for inter-frame sensing
         will start."
 ::= { wranIfSsaStatusEntry 15 }

wranIfSsaConfigTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSsaConfigEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This MIB object represents a table that tracks what
         the default configuration of SSA timers and
         constants. There is only one entry in this table, to
         define the default configuration of the SSA. This
         entry is defined by wranIfSsaConfigEntry."
 ::= { wranIfSsaMib 3 }

wranIfSsaConfigEntry OBJECT-TYPE
    SYNTAX      wranIfSsaConfigEntry
    MAX-ACCESS  not-accessible
    STATUS     current
    DESCRIPTION
        "This object defines an entry in
         wranIfSsaConfigTable. The entry is identified by
         wranIfSsaConfigIndex."
 INDEX { wranIfSsaConfigIndex }
 ::= { wranIfSsaConfigTable 1 }

wranIfSsaConfigEntry ::= SEQUENCE {
    wranIfSsaConfigIndex          INTEGER,
    wranIfSsaT19                  Integer32,
    wranIfSsaT29                  Integer32,
    wranIfSsaMaxBlmRepRetries    INTEGER,
    wranIfSsaChAvailabilityCheckTime  INTEGER,
    wranIfSsaNonOccupancyPeriod   Integer32,
    wranIfSsaChannelDetectionTime Integer32,
    wranIfSsaChannelSetupTime     Integer32,
    wranIfSsaChannelOpeningTxTime Integer32,
    wranIfSsaChannelMoveTime      Integer32,
    wranIfSsaChannelClosingTxTime Integer32,
    wranIfSsaMicProtectionRadius  Integer32,
    wranIfSsaT41                  INTEGER,
    wranIfSsaT42                  INTEGER,
}

```

```

wranIfSsaT43          INTEGER,
wranIfSsaT44          INTEGER,
wranIfSsaT45          Integer32,
wranIfSsaT59          Integer32,
wranIfSsaT47          Integer32,
wranIfSsaT48          Integer32,
wranIfSsaT49          Integer32,
wranIfSsaT50          Integer32,
wranIfSsaT51          Integer32,
wranIfSsaT53          Integer32,
wranIfSsaT54          Integer32,
wranIfSsaT55          INTEGER,
wranIfSsaT60          INTEGER }

wranIfSsaConfigIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table, defaults to 1."
    ::= { wranIfSsaConfigEntry 1 }

wranIfSsaT19          OBJECT-TYPE
    SYNTAX      Integer32 (30..86400)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Time DS-channel remains unusable."
    ::= { wranIfSsaConfigEntry 2 }

wranIfSsaT29          OBJECT-TYPE
    SYNTAX      Integer32 (10..300)
    UNITS      "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Wait for BLM-ACK timeout."
    ::= { wranIfSsaConfigEntry 3 }

wranIfSsaMaxBlmRepRetries   OBJECT-TYPE
    SYNTAX      INTEGER (3..16)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Maximum number of retry attempts allowed for sending
         BLM-REP."
    ::= { wranIfSsaConfigEntry 4 }

wranIfSsaChAvailabilityCheckTime   OBJECT-TYPE
    SYNTAX      INTEGER (30..255)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Time during which a TV channel shall be checked for

```

```

        the presence of licensed incumbent signals having a
        level above the incumbent detection threshold prior
        to commencement of WRAN operation in the channel
        and, in the case of TV, a related channel at an EIRP
        level that can affect the measured TV channel."
 ::= { wranIfSsaConfigEntry 5 }

wranIfSsaNonOccupancyPeriod OBJECT-TYPE
    SYNTAX      INTEGER (10..1440)
    UNITS      "minutes"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The required period during which WRAN device
        transmissions SHALL NOT occur in a given TV channel
        because of the detected presence of an incumbent
        signal in that channel above the Incumbent detection
        threshold or, in the case of TV, above a given EIRP
        level."
 ::= { wranIfSsaConfigEntry 6 }

wranIfSsaChannelDetectionTime OBJECT-TYPE
    SYNTAX      INTEGER (2..255)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Maximum time taken by a WRAN device to detect a
        licensed incumbent signal above the Incumbent
        Detection Threshold within a given TV channel during
        normal WRAN operation."
 ::= { wranIfSsaConfigEntry 7 }

wranIfSsaChannelSetupTime OBJECT-TYPE
    SYNTAX      INTEGER (2..255)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The window of time that may be taken by a WRAN CPE
        to transmit control information to a WRAN base
        station in order to establish operation with that
        base station at the prescribed power or, in the case
        of TV, at or below the allowable EIRP within a given
        TV channel."
 ::= { wranIfSsaConfigEntry 8 }

wranIfSsaChannelOpeningTxTime OBJECT-TYPE
    SYNTAX      Integer32 (100..1000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The aggregate duration of control transmissions by
        WRAN devices during the Channel Setup Time, which
        starts at the end of the Channel Availability Check

```

```
Time."
 ::= { wranIfSsaConfigEntry 9 }

wranIfSsaChannelMoveTime      OBJECT-TYPE
    SYNTAX      INTEGER (2..255)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The time taken by WRAN system to cease all
         interfering transmissions on the current TV channel
         upon detection of a license incumbent signal above
         the relevant Incumbent Detection Threshold or, in
         the case of TV, to alternatively reduces its EIRP to
         which is allowable within a given TV channel upon
         detection of a TV signal in the same or a related
         channel."
 ::= { wranIfSsaConfigEntry 10 }

wranIfSsaChannelClosingTxTime OBJECT-TYPE
    SYNTAX      Integer32 (100..1000)
    UNITS      "milliseconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "The aggregate duration of control transmissions by
         the WRAN devices during the Channel Move/EIRP
         Reduction Time, which starts upon detection of a
         licensed incumbent signal above the relevant
         Incumbent Detection Threshold."
 ::= { wranIfSsaConfigEntry 11 }

wranIfSsaMicProtectionRadius  OBJECT-TYPE
    SYNTAX      Integer32 (100..100000)
    UNITS      "meters"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Radius of contour within which the WRAN system
         cannot operate due to potential interference with
         the microphone."
 ::= { wranIfSsaConfigEntry 12 }

wranIfSsaT41      OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    UNITS      "seconds"
    MAX-ACCESS  read-write
    STATUS     current
    DESCRIPTION
        "Maximum time interval allowed before sensing is
         performed on the candidate channel to ensure that no
         incumbents are detected."
 ::= { wranIfSsaConfigEntry 13 }

wranIfSsaT42      OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
```

```

        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Maximum time interval allowed before sensing is
             performed on the backup channel to ensure that no
             incumbents are detected."
        ::= { wranIfSsaConfigEntry 14 }

wranIfSsaT43      OBJECT-TYPE
        SYNTAX      INTEGER (1..100)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Minimum time duration without detection of any
             incumbent for a candidate channel to transition to
             the backup channel."
        ::= { wranIfSsaConfigEntry 15 }

wranIfSsaT44      OBJECT-TYPE
        SYNTAX      INTEGER (1..10)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Maximum time to ensure that the channel move
             information is successfully conveyed to all the
             associated CPEs and BS (self-coexistence mode)."
        ::= { wranIfSsaConfigEntry 16 }

wranIfSsaT45      OBJECT-TYPE
        SYNTAX      Integer32 (1..720)
        UNITS      "seconds"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Maximum WRAN operation time without access to the
             incumbent database service from 0.1 h to 72 h in
             0.1 h increments."
        ::= { wranIfSsaConfigEntry 17 }

wranIfSsaT59      OBJECT-TYPE
        SYNTAX      Integer32 (1..4096)
        UNITS      "frames"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "Waiting time before which the CPE moves to its
             backup channels if it no longer hears from its BS.
             This is used to make sure that the CPE waits long
             enough after UCS notification so that BS has had
             time to move to the backup channel, it decided to do
             so."
        ::= { wranIfSsaConfigEntry 18 }
    
```

```
wranIfSsaT47      OBJECT-TYPE
    SYNTAX      Integer32 (1..4096)
    UNITS       "hours"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The prescribed time by the WRAN operator to refresh
         the incumbent database service, from 0.1 h to 72
         h in 0.1 h increments."
    ::= { wranIfSsaConfigEntry 19 }

wranIfSsaT48      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Lapse timer keeps track of whether the Operating
         Channel N has been cleared using spectrum sensing,
         from 0.1 s to 60 s in 0.1 s increments."
    ::= { wranIfSsaConfigEntry 20 }

wranIfSsaT49      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Lapse timer keeps track of whether the Operating
         Channel N-1 has been cleared using spectrum sensing,
         from 0.1 s to 60 s in 0.1 s increments."
    ::= { wranIfSsaConfigEntry 21 }

wranIfSsaT50      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Lapse timer keeps track of whether the Operating
         Channel N+1 has been cleared using spectrum sensing,
         from 0.1 s to 60 s in 0.1 s increments."
    ::= { wranIfSsaConfigEntry 22 }

wranIfSsaT51      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Initiated when SSA loses contact with the SM, from
         0.1 s to 60 s in 0.1 s increments."
    ::= { wranIfSsaConfigEntry 23 }

wranIfSsaT53      OBJECT-TYPE
    SYNTAX      Integer32 (1..600)
```

```
UNITS      "seconds"
MAX-ACCESS read-write
STATUS     current
DESCRIPTION
    "The parameter TINsens is used to verify that in-band
     sensing has been done within the required In-service
     monitoring period. The TINsens parameter is driven
     by regulatory domain requirements (Annex A), from
     0.1 s to 60 s in 0.1 s increments."
 ::= { wranIfSsaConfigEntry 24 }

wranIfSsaT54      OBJECT-TYPE
SYNTAX      Integer32 (1..600)
UNITS      "seconds"
MAX-ACCESS read-write
STATUS     current
DESCRIPTION
    "The parameter TOUTsens is used to verify that out-
     of-band sensing has been done within the required
     "Acquiring a channel monitoring period" specified in
     Annex A. This value would be used to initialize
     a lapse timer for each channel in the backup
     candidate channel list at each CPE so that it
     compared to Tsens, from 0.1 s to 60 s in 0.1 s
     increments."
 ::= { wranIfSsaConfigEntry 25 }

wranIfSsaT55      OBJECT-TYPE
SYNTAX      INTEGER (1..160)
UNITS      "milliseconds"
MAX-ACCESS read-write
STATUS     current
DESCRIPTION
    "The T55 or Tsensin parameter corresponds to the
     maximum length of time required to carry out the in-
     band sensing process (see Figure 176). Manufacturers
     need to specify the sensing time required to detect
     the specified signals with required accuracy for in-
     band sensing."
 ::= { wranIfSsaConfigEntry 26 }

wranIfSsaT60      OBJECT-TYPE
SYNTAX      INTEGER (20..160)
UNITS      "milliseconds"
MAX-ACCESS read-write
STATUS     current
DESCRIPTION
    "The T60 or Tsensout parameter corresponds to the
     maximum length of time required to carry out the
     out-of-band sensing process (see Figure 178).
     Manufacturers need to specify the sensing time
     required to detect the specified signals with
     required accuracy for out-of-band sensing."
 ::= { wranIfSsaConfigEntry 27 }

wranIfSsaPendingBlmRepTable   OBJECT-TYPE
```

```

SYNTAX      SEQUENCE OF wranIfSsaPendingBlmRepEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB object represents a table that tracks the
     status of the execution of ongoing reporting (BLM-
     REP) in response to BLM-REQs. For each BLM-REQ there
     is a corresponding BLM-RSP to indicate that REQ
     message was received by the SSA. When an SSA is done
     with the sensing, it will send a BLM-REP to the SM.
     This table keeps track of any BLM-REP messages that
     are pending acknowledgement from the SM. When a
     report sent in a response is acknowledged, then the
     entry corresponding to the report and request will
     be cleared. This entry is defined by
     wranIfSsaPendingBlmRepEntry."
 ::= { wranIfSsaMib 4 }

wranIfSsaPendingBlmRepEntry   OBJECT-TYPE
SYNTAX      wranIfSsaPendingBlmRepEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfSsaPendingBlmRepTable. The entry is identified
     by wranIfSsaPendingBlmRepIndex."
INDEX { wranIfSsaPendingBlmRepIndex }
 ::= { wranIfSsaPendingBlmRepTable 1 }

wranIfSsaPendingBlmRepEntry  ::= SEQUENCE {
    wranIfSsaPendingBlmRepIndex          INTEGER,
    wranIfSsaPendingBlmReqTransactionId Integer32,
    wranIfSsaPendingBlmReqMsgSize        Integer32,
    wranIfSsaPendingBlmReqMsg           OCTET STRING,
    wranIfSsaPendingBlmRspSent         TruthValue,
    wranIfSsaPendingBlmRepGenerated    TruthValue,
    wranIfSsaPendingBlmRepMsgSize       Integer32,
    wranIfSsaPendingBlmRepMsg          OCTET STRING,
    wranIfSsaPendingBlmRepSent         TruthValue,
    wranIfSsaPendingBlmRepAck          TruthValue,
    wranIfSsaPendingBlmRepNumTx        INTEGER }

wranIfSsaPendingBlmRepIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..10)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfSsaPendingBlmRepEntry 1 }

wranIfSsaPendingBlmReqTransactionId OBJECT-TYPE
SYNTAX      Integer32 (0..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Transaction ID for pending BLM-REQ."

```

```

 ::= { wranIfSsaPendingBlmRepEntry 2 }

wranIfSsaPendingBlmReqMsgSize OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BLM-REQ message stored in
         wranIfSsaPendingBlmReqMsg."
 ::= { wranIfSsaPendingBlmRepEntry 3 }

wranIfSsaPendingBlmReqMsg      OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaPendingBlmReqMsgSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Contents of pending BLM-REQ message stored in
         wranIfSsaPendingBlmReqMsg."
 ::= { wranIfSsaPendingBlmRepEntry 4 }

wranIfSsaPendingBlmRspSent     OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-RSP pertaining to BLM-REQ has been sent."
 ::= { wranIfSsaPendingBlmRepEntry 5 }

wranIfSsaPendingBlmRepGenerated OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-REP corresponding to BLM-REQ has been generated,
         i.e., sensing has been executed."
 ::= { wranIfSsaPendingBlmRepEntry 6 }

wranIfSsaPendingBlmRepMsgSize OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BLM-REP message stored in
         wranIfSsaPendingBlmRepMsg."
 ::= { wranIfSsaPendingBlmRepEntry 7 }

wranIfSsaPendingBlmRepMsg      OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaPendingBlmRepMsgSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Contents of BLM-REP message that corresponds to the
         wranIfSsaPendingBlmRepMsg."

```

```

        BLM-REQ."
 ::= { wranIfSsaPendingBlmRepEntry 8 }

wranIfSsaPendingBlmRepSent      OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-REP pertaining to BLM-REQ has been sent. "
 ::= { wranIfSsaPendingBlmRepEntry 9 }

wranIfSsaPendingBlmRepAck      OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
         BLM-REP pertaining to BLM-REQ has been acknowledged
         (via BLM-ACK)."
 ::= { wranIfSsaPendingBlmRepEntry 10 }

wranIfSsaPendingBlmRepNumTx    OBJECT-TYPE
    SYNTAX      INTEGER (1..16)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Current number of times that BLM-REP has been
         resent."
 ::= { wranIfSsaPendingBlmRepEntry 11 }

wranIfSsaSensingRecordTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSsaSensingRecordEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object contains information the sensing status
         of each channel. It is made of multiple entries, one
         for each channel, as defined by
         wranIfSsaSensingRecordEntry."
 ::= { wranIfSsaMib 5 }

wranIfSsaSensingRecordEntry    OBJECT-TYPE
    SYNTAX      wranIfSsaSensingRecordEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfSsaSensingRecordTable. The entry is identified
         by wranIfSsaSensingRecordIndex."
 INDEX { wranIfSsaSensingRecordIndex }
 ::= { wranIfSsaSensingRecordTable 1 }

wranIfSsaSensingRecordEntry    ::= SEQUENCE {
    wranIfSsaSensingRecordIndex          INTEGER,
    wranIfSsaSensingChannel            INTEGER,

```

```

wranIfSsaTimeLastSensing          OBJECT-TYPE
    SYNTAX      DateAndTime,
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfSsaSensingRecordEntry 1 }

wranIfSsaSensingChannel          OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Channel that sensing has been conducted on, or not
         conducted on if in IPC-UPD."
    ::= { wranIfSsaSensingRecordEntry 2 }

wranIfSsaTimeLastSensing          OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Last time that this channel was sensed."
    ::= { wranIfSsaSensingRecordEntry 3 }

wranIfSsaTimeLastPositive         OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Last time that signal was positively confirmed on
         this channel."
    ::= { wranIfSsaSensingRecordEntry 4 }

wranIfSsaSensingPathRssi          OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "RSSI on sensing path, between -104 dBm to +23.5 dBm
         in 0.5 dB steps."
    ::= { wranIfSsaSensingRecordEntry 5 }

wranIfSsaWranPathRssi            OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write

```

```

        STATUS      current
        DESCRIPTION
            "RSSI on WRAN signal path., between -104 dBm to
             +23.5 dBm in 0.5 dB steps."
        ::= { wranIfSsaSensingRecordEntry 6 }

wranIfSsaSignalType      OBJECT-TYPE
    SYNTAX      INTEGER { undetermined(0),
                    ieee802dot22wran(1),
                    atsc(2),
                    dvbt(3),
                    isdbt(4),
                    ntsc(5),
                    pal(6),
                    secam(7),
                    wirelessMicrophone(8),
                    ieee802dot22dot1Sync(9),
                    ieee802dot22dot1Msf1(10),
                    ieee802dot22dot1Msf2(11),
                    ieee802dot22dot1Msf3(12) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Type of signal that was sensed on the channel."
    ::= { wranIfSsaSensingRecordEntry 7 }

wranIfSsaWranServiceAdvertisement   OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "If signal type was for WRAN, this indicates the BS
         ID of the captured SCH from neighbor WRAN."
    ::= { wranIfSsaSensingRecordEntry 8 }

wranIfSsaIdcUpdIndication      OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        " Indication if channel is on IPC-UPD."
    ::= { wranIfSsaSensingRecordEntry 9 }

wranIfSsaSsfMode0OutputTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfSsaSsfMode0OutputEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object contains the current output of SSF Mode
         0 sensing. It is made up of multiple entries, one
         for each signal type that was sensed. Each entry is
         defined by wranIfSsaSsfMode0OutputEntry."
    ::= { wranIfSsaMib 6 }

wranIfSsaSsfMode0OutputEntry   OBJECT-TYPE
    SYNTAX      wranIfSsaSsfMode0OutputEntry

```

```

MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
    wranIfSsaSsfMode0OutputTable. The entry is
    identified by wranIfSsaSsfMode0OutputIndex."
INDEX { wranIfSsaSsfMode0OutputIndex }
 ::= { wranIfSsaSsfMode0OutputTable 1 }

wranIfSsaSsfMode0OutputEntry ::= SEQUENCE {
    wranIfSsaSsfMode0OutputIndex          INTEGER,
    wranIfSsaSsfMode0SignalType          INTEGER,
    wranIfSsaSsfMode0SignalPresent      TruthValue }

wranIfSsaSsfMode0OutputIndex OBJECT-TYPE
SYNTAX      INTEGER (1..32)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfSsaSsfMode0OutputEntry 1 }

wranIfSsaSsfMode0SignalType   OBJECT-TYPE
SYNTAX      INTEGER { undetermined(0),
                      ieee802dot22wran(1),
                      atsc(2),
                      dvbt(3),
                      isdbt(4),
                      ntsc(5),
                      pal(6),
                      secam(7),
                      wirelessMicrophone(8),
                      ieee802dot22dot1Sync(9),
                      ieee802dot22dot1Msf1(10),
                      ieee802dot22dot1Msf2(11),
                      ieee802dot22dot1Msf3(12) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Type of signal that was sensed."
 ::= { wranIfSsaSsfMode0OutputEntry 2 }

wranIfSsaSsfMode0SignalPresent      OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether (Truth(1)) or not (Truth(0)) a
     signal of signal type was detected."
 ::= { wranIfSsaSsfMode0OutputEntry 3 }

wranIfSsaSsfMode1OutputTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSsaSsfMode1OutputEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION

```

```

        "This object contains the current output of SSF Mode
        1 sensing. It is made up of multiple entries, one
        for each signal type that was sensed. Each entry is
        defined by wranIfSsaSsfModelOutputEntry."
 ::= { wranIfSsaMib 7 }

wranIfSsaSsfModelOutputEntry OBJECT-TYPE
    SYNTAX      wranIfSsaSsfModelOutputEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
        wranIfSsaSsfModelOutputTable. The entry is
        identified by wranIfSsaSsfModelOutputIndex."
INDEX { wranIfSsaSsfModelOutputIndex }
 ::= { wranIfSsaSsfModelOutputTable 1 }

wranIfSsaSsfModelOutputEntry ::= SEQUENCE {
    wranIfSsaSsfModelOutputIndex      INTEGER,
    wranIfSsaSsfModelSignalType      INTEGER,
    wranIfSsaSsfModelSignalPresent   TruthValue,
    wranIfSsaSsfModelSignalConfidence INTEGER }

wranIfSsaSsfModelOutputIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..32)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
 ::= { wranIfSsaSsfModelOutputEntry 1 }

wranIfSsaSsfModelSignalType OBJECT-TYPE
    SYNTAX      INTEGER { undetermined(0),
                           ieee802dot22wran(1),
                           atsc(2),
                           dvbt(3),
                           isdbt(4),
                           ntsc(5),
                           pal(6),
                           secam(7),
                           wirelessMicrophone(8),
                           ieee802dot22dot1Sync(9),
                           ieee802dot22dot1Msf1(10),
                           ieee802dot22dot1Msf2(11),
                           ieee802dot22dot1Msf3(12) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Type of signal that was sensed."
 ::= { wranIfSsaSsfModelOutputEntry 2 }

wranIfSsaSsfModelSignalPresent OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

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```

        "Indication of whether (Truth(1)) or not (Truth(0)) a
        signal of signal type was detected."
 ::= { wranIfSsaSsfMode1OutputEntry 3 }

wranIfSsaSsfMode1SignalConfidence   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
        "Confidence level in signal present decision, where
        0x00 represents no confidence and 0xFF represents
        total confidence (see Table 241)."
 ::= { wranIfSsaSsfMode1OutputEntry 4 }

wranIfSsaSsfMode2OutputTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSsaSsfMode2OutputEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "This object contains the current output of SSF Mode
        2 sensing. It is made up of multiple entries, one
        for each signal type that was sensed. Each entry is
        defined by wranIfSsaSsfMode2OutputEntry."
 ::= { wranIfSsaMib 8 }

wranIfSsaSsfMode2OutputEntry   OBJECT-TYPE
SYNTAX      wranIfSsaSsfMode2OutputEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
        "This object defines an entry in
        wranIfSsaSsfMode2OutputTable. The entry is
        identified by wranIfSsaSsfMode2OutputIndex."
INDEX { wranIfSsaSsfMode2OutputIndex }
 ::= { wranIfSsaSsfMode2OutputTable 1 }

wranIfSsaSsfMode2OutputEntry  ::= SEQUENCE {
    wranIfSsaSsfMode2OutputIndex      INTEGER,
    wranIfSsaSsfMode2SignalType      INTEGER,
    wranIfSsaSsfMode2SignalRssiMean  INTEGER,
    wranIfSsaSsfMode2SignalStdDevRssi  INTEGER }

wranIfSsaSsfMode2OutputIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..32)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Index of entry in the table."
 ::= { wranIfSsaSsfMode2OutputEntry 1 }

wranIfSsaSsfMode2SignalType   OBJECT-TYPE
SYNTAX      INTEGER { undetermined(0),
                      ieee802dot22wran(1),
                      atsc(2),
                      dvbt(3),
                      isdbt(4),

```

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        ntsc(5),
        pal(6),
        secam(7),
        wirelessMicrophone(8),
        ieee802dot22dot1Sync(9),
        ieee802dot22dot1Msf1(10),
        ieee802dot22dot1Msf2(11),
        ieee802dot22dot1Msf3(12) }

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Type of signal that was sensed."
::= { wranIfSsaSsfMode2OutputEntry 2 }

wranIfSsaSsfMode2SignalRssiMean      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Mean of RSSI signal measurements, between -104 dBm
     to +23.5 dBm in 0.5 dB steps."
::= { wranIfSsaSsfMode2OutputEntry 3 }

wranIfSsaSsfMode2SignalStdDevRssi   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Standard Deviation of RSSI signal measurements,
     between -104 dBm to +23.5 dBm in 0.5 dB steps."
::= { wranIfSsaSsfMode2OutputEntry 4 }

wranIfSsaSsfWiMicMSFTable         OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSsaSsfWiMicMSFEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object contains the current output payload of
     MSF1, MSF1+MSF2, or MSF1+MSF2+MSF3 of IEEE Std
     802.22.1-2010 beacon on recently sensed channels. It
     is made up of multiple entries for each channel one
     or more MSFs have been sensed on. Each entry is
     defined by wranIfSsaSsfWiMicMSFEntry."
::= { wranIfSsaMib 9 }

wranIfSsaSsfWiMicMSFEntry        OBJECT-TYPE
SYNTAX      wranIfSsaSsfWiMicMSFEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfSsaSsfWiMicMSFTable. The entry is identified
     by wranIfSsaSsfWiMicMSFIndex."
INDEX { wranIfSsaSsfWiMicMSFIndex }
::= { wranIfSsaSsfWiMicMSFTable 1 }

```

```

wranIfSsaSsfWiMicMSFEntry ::= SEQUENCE {
    wranIfSsaSsfWiMicMSFIndex            INTEGER,
    wranIfSsaSsfWiMicMSFChannel          INTEGER,
    wranIfSsaSsfWiMicMSFPayloadSize     INTEGER,
    wranIfSsaSsfWiMicMSFPayload         OCTET STRING,
    wranIfSsaSsfWiMicMSFCrc1Status      TruthValue,
    wranIfSsaSsfWiMicMSFCrc2Status      TruthValue,
    wranIfSsaSsfWiMicMSFCrc3Status      TruthValue }

wranIfSsaSsfWiMicMSFIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfSsaSsfWiMicMSFEntry 1 }

wranIfSsaSsfWiMicMSFChannel    OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Type of signal that was sensed."
    ::= { wranIfSsaSsfWiMicMSFEntry 2 }

wranIfSsaSsfWiMicMSFPayloadSize OBJECT-TYPE
    SYNTAX      INTEGER { msf1(0), msf12(1), msf123(2) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of MSF payload stored in
        wranIfSsaSsfWiMicMSFPayload. Indicates whether MSF1
        by itself (15 octets), MSF1+MSF2 (64 octets), or
        MSF1+MSF2+MSF3 (95 octets) have been captured (see
        Figure 16, 7.2.1, 7.2.2, and 7.2.3 of IEEE
        Std 802.22.1-2010). This size does not include
        CRC1/CRC2/CRC3 from the MSFs."
    ::= { wranIfSsaSsfWiMicMSFEntry 3 }

wranIfSsaSsfWiMicMSFPayload    OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaSsfWiMicMSFPayloadSize))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Payload of MSF1, MSF1+MSF2, or MSF1+MSF2+MSF3, not
        including CRC1/CRC2/CRC3 fields (see 7.2.1, 7.2.2,
        7.2.3 of IEEE Std 802.22.1-2010)."
    ::= { wranIfSsaSsfWiMicMSFEntry 4 }

wranIfSsaSsfWiMicMSFCrc1Status OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of whether (Truth(1)) or not (Truth(0))
```

```

        MSF1 passed verification of CRC1."
 ::= { wranIfSsaSsfWiMicMSFEntry 5 }

wranIfSsaSsfWiMicMSFCrc2Status      OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether (Truth(1)) or not (Truth(0))
     MSF2 passed verification of CRC2."
 ::= { wranIfSsaSsfWiMicMSFEntry 6 }

wranIfSsaSsfWiMicMSFCrc3Status      OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Indication of whether (Truth(1)) or not (Truth(0))
     MSF3 passed verification of CRC3."
 ::= { wranIfSsaSsfWiMicMSFEntry 7 }

wranIfSsaGeolocationTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfSsaGeolocationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object contains the current parameters and
     calculations being used by the Geolocation component
     of the SSA. It is made up of one entry to contain
     current values being used/calculated in the BS-to-
     CPE fine-ranging, CPE-to-CPE fine ranging,
     geolocation calculation functions. It is made up of
     one entry, defined by wranIfSsaGeoLocationEntry. "
 ::= { wranIfSsaMib 10 }

wranIfSsaGeoLocationEntry      OBJECT-TYPE
SYNTAX      wranIfSsaGeoLocationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object defines an entry in
     wranIfSsaGeolocationTable. The entry is identified
     by wranIfSsaGeoLocationIndex."
INDEX { wranIfSsaGeoLocationIndex }
 ::= { wranIfSsaGeolocationTable 1 }

wranIfSsaGeoLocationEntry      ::= SEQUENCE {
wranIfSsaGeolocationIndex          INTEGER,
wranIfSsaGeolocationVernier1Size   Integer32,
wranIfSsaGeolocationVernier1       OCTET STRING
wranIfSsaGeoLocationVernier2Size   Integer32,
wranIfSsaGeoLocationVernier2       OCTET STRING,
wranIfSsaGeoLocationVernier3Size   Integer32,
wranIfSsaGeoLocationVernier3       OCTET STRING,
wranIfSsaGeolocationTRange1      Integer32,
wranIfSsaGeolocationTACbp        Integer32 }

```

```
wranIfSsaGeoLocationIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
    ::= { wranIfSsaGeoLocationEntry 1 }

wranIfSsaGeolocationVernier1Size   OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Vernier1 data recorded only at the CPE."
    ::= { wranIfSsaGeoLocationEntry 2 }

wranIfSsaGeolocationVernier1     OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaGeolocationVernier1Size))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Vernier1, recorded only at the CPE."
    ::= { wranIfSsaGeoLocationEntry 3 }

wranIfSsaGeolocationVernier2Size   OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Vernier2 data recorded only at the BS."
    ::= { wranIfSsaGeoLocationEntry 4 }

wranIfSsaGeolocationVernier2     OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaGeolocationVernier2Size))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Vernier2, recorded only at the BS."
    ::= { wranIfSsaGeoLocationEntry 5 }

wranIfSsaGeolocationVernier3Size   OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Vernier3 data recorded only at the CPE."
    ::= { wranIfSsaGeoLocationEntry 6 }

wranIfSsaGeolocationVernier3     OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfSsaGeolocationVernier3Size))
    MAX-ACCESS  read-write
    STATUS      current
```

```

DESCRIPTION
    "Vernier3, recorded only at the CPE."
 ::= { wranIfSsaGeoLocationEntry 7 }

wranIfSsaGeolocationTRangel    OBJECT-TYPE
SYNTAX      Integer32 (1..1000)
UNITS       "TU"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "TRangel1, also known as T52. Set by BS when
     downstream burst leaves the BS, i.e., at start of
     frame preamble."
 ::= { wranIfSsaGeoLocationEntry 5 }

wranIfSsaGeolocationTACbp      OBJECT-TYPE
SYNTAX      Integer32 (-1024..+1024)
UNITS       "TU"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "TACBP, Timing advance for CBP burst used in ranging
     calculations."
 ::= { wranIfSsaGeoLocationEntry 6 }

wranIfSsaTrapControl          OBJECT-TYPE
SYNTAX      BITS { wranIfSsaSensingCapChange(0),
                  wranIfSsaStatusChange(1),
                  wranIfSsaBlmRepChange(2),
                  wranIfSsaSensingRecordChange(3),
                  wranIfSsaSsfMode0Change(4),
                  wranIfSsaSsfMode1Change(5),
                  wranIfSsaSsfMode2Change(6),
                  wranIfSsaSsfWiMicMSFChange(7),
                  wranIfSsaGeolocationChange(9) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Defines control elements for traps related to
     interaction with the Spectrum Sensing Automaton.
     This is a 9-bit field that enables setting a trap
     for particular CPE events:
     wranIfSsaSensingCapChange, wranIfSsaStatusChange,
     wranIfSsaBlmRepChange, wranIfSsaSensingRecordChange,
     wranIfSsaSsfMode0Change, wranIfSsaSsfMode1Change,
     wranIfSsaSsfMode2Change, wranIfSsaSsfWiMicMSFChange,
     wranIfSsaGeolocationChange."
 ::= { wranIfSsaMib 11 }

wranIfSsaTrapDefinition        OBJECT IDENTIFIER
 ::= { wranIfSsaMib 12 }
wranIfSsaSensingCapChangeTrap  OBJECT IDENTIFIER
 ::= { wranIfSsaTrapDefinition 1 }
wranIfSsaStatusChangeTrap      OBJECT IDENTIFIER
 ::= { wranIfSsaTrapDefinition 2 }

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wranIfSsaBlmRepChangeTrap          OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 3 }

wranIfSsaSensingRecordChangeTrap   OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 4 }

wranIfSsaSsfMode0ChangeTrap       OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 5 }

wranIfSsaSsfMode1ChangeTrap       OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 6 }

wranIfSsaSsfMode2ChangeTrap       OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 7 }

wranIfSsaSsfWiMicMSFChangeTrap   OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 8 }

wranIfSsaGeolocationChangeTrap   OBJECT IDENTIFIER
                                    ::= { wranIfSsaTrapDefinition 9 }

wranIfSsaSensingCapChangeTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSensingCapibilityStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     configuration of SSA sensing capabilities."
 ::= { wranIfSsaTrapDefinition 1 }

wranIfSsaStatusChangeTrap        NOTIFICATION-TYPE
OBJECTS      { wranIfSsaCurrentState, wranIfSsaRecentEvent,
                wranIfSsaRecentAction, wranIfSsaStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     current state of the SSA."
 ::= { wranIfSsaTrapDefinition 2 }

wranIfSsaBlmRepChangeTrap        NOTIFICATION-TYPE
OBJECTS      { wranIfSsaPendingBlmRepIndex,
                wranIfSsaBlmRepStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     pending BLM transactions at the SSA."
 ::= { wranIfSsaTrapDefinition 3 }

wranIfSsaSensingRecordChangeTrap NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSensingRecordIndex,
                wranIfSsaSensingRecordStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     sensing records maintained by the SSA."
 ::= { wranIfSsaTrapDefinition 4 }

wranIfSsaSsfMode0ChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSsfMode0OutputIndex,
                wranIfSsaSsfMode0Status }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     
```

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        sensing output using Mode 0."
 ::= { wranIfSsaTrapDefinition 5 }

wranIfSsaSsfMode1ChangeTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSsfMode1OutputIndex,
                wranIfSsaSsfMode1SignalConfidence,
                wranIfSsaSsfMode1Status }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     sensing output using Mode 1."
 ::= { wranIfSsaTrapDefinition 6 }

wranIfSsaSsfMode2ChangeTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSsfMode2OutputIndex,
                wranIfSsaSsfMode2SignalRssiMean,
                wranIfSsaSsfMode2SignalStdDevRssi,
                wranIfSsaSsfMode2Status }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     sensing output using Mode 2."
 ::= { wranIfSsaTrapDefinition 7 }

wranIfSsaSsfWiMicMSFChangeTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfSsaSsfWiMicMSFIndex,
                wranIfSsaSsfWiMicMSFStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     sensing and capturing wireless microphone beacons
     (see IEEE Std 802.22.1-2010)."
 ::= { wranIfSsaTrapDefinition 8 }

wranIfSsaGeolocationChangeTrap    NOTIFICATION-TYPE
OBJECTS      { wranIfSsaGeolocationStatus }
STATUS       current
DESCRIPTION
    "This trap contains the information related to
     terrestrial geolocation."
 ::= { wranIfSsaTrapDefinition 9 }

wranIfSsaNotificationObjectsTable   OBJECT-TYPE
SYNTAX       SEQUENCE OF wranIfSsaNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS       current
DESCRIPTION
    "This MIB provides a table to track notification
     objects that have been reported by the traps related
     to operation of the SSA. It is made up of one entry,
     containing the objects related to the most recent
     trap/event. The entry is defined by
     wranIfSsaNotificationObjectsEntry."
 ::= { wranIfSsaMib 13 }

wranIfSsaNotificationObjectsEntry   OBJECT-TYPE

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SYNTAX      wranIfSsaNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Definition of an entry in
    wranIfSsaNotificationObjectsTable. Each entry is
    identified by wranIfSsaNotificationIndex."
INDEX { wranIfSsaNotificationIndex }
 ::= { wranIfSsaNotificationObjectsTable 1 }

wranIfSsaNotificationObjectsEntry ::= SEQUENCE {
    wranIfSsaNotificationIndex                      INTEGER,
    wranIfSsaNotificationCurrentState               INTEGER,
    wranIfSsaNotificationRecentEvent                INTEGER,
    wranIfSsaNotificationRecentAction              INTEGER,
    wranIfSsaNotificationPendingBlmRepIndex        INTEGER,
    wranIfSsaNotificationSensingRecordIndex        INTEGER,
    wranIfSsaSsfNotificationMode0OutputIndex       INTEGER,
    wranIfSsaSsfNotificationMode1OutputIndex       INTEGER,
    wranIfSsaSsfNotificationMode1Confidence        INTEGER,
    wranIfSsaSsfNotificationMode2OutputIndex       INTEGER,
    wranIfSsaSsfNotificationMode2RssiMean          INTEGER,
    wranIfSsaSsfNotificationMode2StdDevRssi        INTEGER,
    wranIfSsaSsfNotificationWiMicMSFIndex         INTEGER,
    wranIfSsaSensingCapibilityStatus              BITS,
    wranIfSsaStatus                                BITS,
    wranIfSsaBlmRepStatus                          INTEGER,
    wranIfSsaSensingRecordStatus                  BITS,
    wranIfSsaSsfMode0Status                       INTEGER,
    wranIfSsaSsfMode1Status                       INTEGER,
    wranIfSsaSsfMode2Status                       BITS,
    wranIfSsaSsfWiMicMSFStatus                  INTEGER,
    wranIfSsaGeolocationStatus                  INTEGER }

wranIfSsaNotificationIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
 ::= { wranIfSsaNotificationObjectsEntry 1 }

wranIfSsaNotificationCurrentState   OBJECT-TYPE
SYNTAX      INTEGER (0..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Current state that SSA is in as defined by current
     value of wranIfSsaCurrentState."
 ::= { wranIfSsaNotificationObjectsEntry 2 }

wranIfSsaNotificationRecentEvent   OBJECT-TYPE
SYNTAX      INTEGER (0..6)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

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        "Recent event that occurred for SSA as defined by
        current value of wranIfSsaRecentEvent."
 ::= { wranIfSsaNotificationObjectsEntry 3 }

wranIfSsaNotificationRecentAction      OBJECT-TYPE
    SYNTAX      INTEGER (0..5)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Recent action SSA has taken as defined by current
        value of wranIfSsaRecentAction."
 ::= { wranIfSsaNotificationObjectsEntry 4 }

wranIfSsaNotificationPendingBlmRepIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..10)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfSsaPendingBlmRepTable that
        indicates the handling of which pending BLM-REP has
        triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 5 }

wranIfSsaNotificationSensingRecordIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfSsaSensingRecordTable that
        indicates the handling of which sensing record
        triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 6 }

wranIfSsaSsfNotificationMode0OutputIndex  OBJECT-TYPE
    SYNTAX      INTEGER (1..32)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfSsaSsfMode0OutputTable
        that indicates the handling of which signal type
        detected by Mode 0 triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 7 }

wranIfSsaSsfNotificationMode1OutputIndex  OBJECT-TYPE
    SYNTAX      INTEGER (1..32)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfSsaSsfMode1OutputTable
        that indicates the handling of which signal type
        detected by Mode 1 triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 8 }

wranIfSsaSsfNotificaionModelConfidence  OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only

```

```

        STATUS      current
DESCRIPTION
        "Confidence value of entry indexed by
        wranIfSsaSsfNotificationMode1OutputIndex in
        wranIfSsaSsfMode1OutputTable that indicates the
        handling of which signal type detected by Mode 1
        triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 9 }

wranIfSsaSsfNotificationMode2OutputIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..32)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Index of entry in wranIfSsaSsfMode2OutputTable
        that indicates the handling of which signal type
        detected by Mode 2 triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 10 }

wranIfSsaSsfNotificationMode2SignalRssiMean      OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
        "Current Mean of RSSI signal measurements, between
        -104 dBm to +23.5 dBm in 0.5 dB steps, for which
        trap was caught."
 ::= { wranIfSsaNotificationObjectsEntry 11 }

wranIfSsaSsfNotificationMode2SignalStdDevRssi   OBJECT-TYPE
SYNTAX      INTEGER (0..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
        "Current Standard Deviation of RSSI signal
        measurements, between -104 dBm to +23.5 dBm in
        0.5 dB steps, for which trap was caught."
 ::= { wranIfSsaNotificationObjectsEntry 12 }

wranIfSsaSsfNotificationWiMicMSFIndex          OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Index of entry in wranIfSsaSsfWiMicMSFTable that
        indicates which channel the capture of a wireless
        microphone beacon MSF has triggered a trap."
 ::= { wranIfSsaNotificationObjectsEntry 13 }

wranIfSsaSensingCapibilityStatus   OBJECT-TYPE
SYNTAX      BITS { thresholdIncrease(0),
                  thresholdDecrease(1),
                  recContigPeriodDurationIncrease(2),
                  recContigPeriodDurationDecrease(3),
                  recNumPeriodsIncrease(4),
                  recNumPeriodsDecrease(5),

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                recPeriodIntervalIncrease(6),
                recPeriodIntervalDecrease(7) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "8-bit bitmap that indicates the following changes to
     the sensing capabilities defined in
     wranIfSsaSensingCapTable: Sensing Threshold Increase
     (Bit0), Sensing Threshold Decrease (Bit1),
     Contiguous Recording Period Duration Increase
     (Bit2), Contiguous Recording Period Duration
     Decrease (Bit3), Number of Recording Periods
     Increase (Bit4), Number f Recording Periods Decrease
     (Bit5) Recording Period Interval Increase (Bit6),
     Recording Interval Period Decrease (Bit7). More than
     one bit can be set simultaneously. However, if Bit0
     is set, Bit1 cannot be set. Same goes for the
     relationship between Bit2/Bit3, Bit4/Bit5, and
     Bit6/Bit7."
 ::= { wranIfSsaNotificationObjectsEntry 14 }

wranIfSsaStatus   OBJECT-TYPE
SYNTAX           BITS { t48expired(0),
                      t49expired(1),
                      t50expired(2),
                      intraFrameQpCycleLengthChanged(3),
                      intraFrameQpCycleOffsetChanged(4),
                      intraFramQpCycleFrameBitmapChanged(5),
                      intraFrameQpDurationChanged(6),
                      interFrameQpDurationChanged(7)
                      interFrameQpOffsetChanged(8)
                      incProhibitedChannelsChanged(9) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Concerning the current state of the SSA, this 10-bit
     bitmap indicates whether T48/T49/T50 have
     expired, whether any of the Quiet Period
     parameters have been affected, or whether the
     prohibited channel list has been updated. More than
     one bit in this bitmap can be set at the same time."
 ::= { wranIfSsaNotificationObjectsEntry 15 }

wranIfSsaBlmRepStatus   OBJECT-TYPE
SYNTAX           INTEGER { blmRspSent(0),
                           blmRepGenerated(1),
                           blmRepSent(2),
                           blmRepAckReceived(3),
                           blmNumTxInc(4)
                           blmNumTxExpired(5) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Concerning the current state of pending BLM-REQ
     messages, this object indicates how far along the
     sensing and report generation process is the SSA.

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```

When == 5, that indicates that the BLM-REP that
corresponds to entry in wranIfSsaPendingBlmRepTable
indexed by wranIfSsaNotificationPendingBlmRepIndex
has been transmitted to the SM == to the maximum
number of retries as indicated by
wranIfSsaMaxBlmRepRetries."
 ::= { wranIfSsaNotificationObjectsEntry 16 }

wranIfSsaSensingRecordStatus OBJECT-TYPE
    SYNTAX      BITS { timeLastSensedUpdate(0),
                      timeLastPositiveUpdate(1),
                      sensingPathRssiUpdate(2),
                      wranPathRssiUpdate(3),
                      signalTypeUpdate(4) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "5-bit bitmap concerning the update of an entry in
         wranIfSsaSensingRecordTable as indexed by
         wranIfSsaNotificationSensingRecordIndex. More than
         one bit can set simultaneously."
 ::= { wranIfSsaNotificationObjectsEntry 17 }

wranIfSsaSsfMode0Status OBJECT-TYPE
    SYNTAX      INTEGER { signalNotPresent(0),
                      signalPresent(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfSsaSsfNotificationMode0OutputIndex indexes an
         entry in wranIfSsaSsfMode0OutputTable that has been
         updated. For the signal type in that entry
         (=wranIfSsaSsfNotificationMode0OutputIndex-1), this
         status indicates whether a signal is
         present."
 ::= { wranIfSsaNotificationObjectsEntry 18 }

wranIfSsaSsfMode1Status OBJECT-TYPE
    SYNTAX      INTEGER { signalNotPresent(0),
                      signalPresent(1) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "wranIfSsaSsfNotificationMode1OutputIndex indexes an
         entry in wranIfSsaSsfMode1OutputTable that has been
         updated. For the signal type in that entry
         (=wranIfSsaSsfNotificationMode1OutputIndex-1), this
         status indicates whether a signal is
         present."
 ::= { wranIfSsaNotificationObjectsEntry 19 }

wranIfSsaSsfMode2Status OBJECT-TYPE
    SYNTAX      BITS { meanRssiIncrease(0),
                      meanRssiDecrease(1),
                      stdDevRssiIncrease(2),
                      stdDevRssiDecrease(3) }

```

```

        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "4-bit bitmap that indicates what changes to Mean
             RSSI or Standard Deviation of RSSI for a detected
             signal whose entry in wranIfSsaSsfMode2OutputTable
             is indexed by
             wranIfSsaSsfNotificationMode2OutputIndex. More than
             one bit can be set simultaneously. However if Bit0
             is set, Bit1 cannot be set. Same relationship goes
             for Bit2 and Bit3."
        ::= { wranIfSsaNotificationObjectsEntry 20 }

wranIfSsaSsfWiMicMSFStatus      OBJECT-TYPE
    SYNTAX      INTEGER { crc1OnlyPassed(0),
                           crc1And2Passed(1),
                           crc1And2And3Passed(2) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Given entry in wranIfSsaSsfWiMicMSFTable as indexed
         by wranIfSsaSsfNotificationWiMicMSFIndex, this
         status details how much of the microphone beacon has
         been captured and whether all relevant MSF
         CRC verifications have passed. "
    ::= { wranIfSsaNotificationObjectsEntry 21 }

wranIfSsaGeolocationStatus      OBJECT-TYPE
    SYNTAX      BITS { vernier1Updated(0),
                           vernier2Updated(1),
                           vernier3Updated(2),
                           tRange1Updated(3),
                           taCBPUpdated(4) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "5-bit bitmap indicating which aspects of the
         Geolocation measurement have been updated. More than
         one bit in this bitmap can be set simultaneously.
         However, if bit1 (Vernier2 indicator) is set, than
         Bit0 (Vernier1 indicator) and Bit1 (Vernier3
         indicator) cannot be set.
    ::= { wranIfSsaNotificationObjectsEntry 22 }

-- wranIfSsaMibGroups: this object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

        wranIfSsaMibGroups          OBJECT IDENTIFIER
                                    ::= { wranIfSsaMib 14 }
        wranIfSsaSensingCapGroup   OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 1 }
        wranIfSsaStatusGroup       OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 2 }
        wranIfSsaConfigGroup       OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 3 }

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wranIfSsaPendingBlmRepGroup      OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 4 }

wranIfSsaSensingRecordGroup      OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 5 }

wranIfSsaSsfMode0OutputGroup     OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 6 }

wranIfSsaSsfMode1OutputGroup     OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 7 }

wranIfSsaSsfMode2OutputGroup     OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 8 }

wranIfSsaSsfWiMicMSFGroup       OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 9 }

wranIfSsaGeolocationGroup       OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 10 }

wranIfSsaTrapControlGroup        OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 11 }

wranIfSsaNotificationsGroup      OBJECT IDENTIFIER
                                    ::= { wranIfSsaMibGroups 12 }

wranIfSsaSensingCapGroup         OBJECT-GROUP
OBJECTS   { wranIfSsaSensingCapIndex,
            wranIfSsaSensingThreshold,
            wranIfSsaSensRecContigPeriodDuration,
            wranIfSsaSensRecNumPeriods,
            wranIfSsaSensRecPeriodInterval }

STATUS    current
DESCRIPTION
        "This group represents objects related to the
        sensing capabilities supported by the SSA."
::= { wranIfSsaMibGroups 1 }

wranIfSsaStatusGroup             OBJECT-GROUP
OBJECTS   { wranIfSsaStatusIndex, wranIfSsaCurrentState,
            wranIfSsaRecentEvent, wranIfSsaRecentAction,
            wranIfSsaIpcUpdChannelsSize,
            wranIfSsaIpcUpdChannels, wranIfSsaCurrentT48,
            wranIfSsaCurrentT49, wranIfSsaCurrentT50,
            wranIfSsaIntraFrameQpCycleLength,
            wranIfSsaIntraFrameQpCycleOffset,
            wranIfSsaIntraFrameQpCycleFrameBitmap,
            wranIfSsaIntraFrameQpDuration,
            wranIfSsaInterFrameQpDuration,
            wranIfSsaInterFrameQpOffset }

STATUS    current
DESCRIPTION
        "This group represents objects related to the
        current state of the SSA."
::= { wranIfSsaMibGroups 2 }

wranIfSsaConfigGroup              OBJECT-GROUP
OBJECTS   { wranIfSsaConfigIndex, wranIfSsaT19,
            wranIfSsaT29, wranIfSsaMaxBlmRepRetries,
            wranIfSsaChAvailabilityCheckTime,
            wranIfSsmSsaNonOccupancyPeriod,
            wranIfSsaChannelDetectionTime,
            wranIfSsaChannelSetupTime,

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        wranIfSsaChannelOpeningTxTime,
        wranIfSsaChannelMoveTime,
        wranIfSsaChannelClosingTxTime,
        wranIfSsaMicProtectionRadius, wranIfSsaT41,
        wranIfSsaT42, wranIfSsaT43, wranIfSsaT44,
        wranIfSsaT45, wranIfSsaT59, wranIfSsaT47,
        wranIfSsaT48, wranIfSsaT49, wranIfSsaT50,
        wranIfSsaT51, wranIfSsaT53, wranIfSsaT54,
        wranIfSsaT55 , wranIfSsaT60 }

STATUS      current
DESCRIPTION
    "This group represents objects related to the
     configuration of the SSA."
::= { wranIfSsaMibGroups 3 }

wranIfSsaPendingBlmRepGroup      OBJECT-GROUP
OBJECTS      { wranIfSsaPendingBlmRepIndex,
                wranIfSsaPendingBlmReqTransactionId,
                wranIfSsaPendingBlmReqMsgSize,
                wranIfSsaPendingBlmReqMsg,
                wranIfSsaPendingBlmRspSent,
                wranIfSsaPendingBlmRepGenerated,
                wranIfSsaPendingBlmRepMsgSize,
                wranIfSsaPendingBlmRepMsg,
                wranIfSsaPendingBlmRepSent,
                wranIfSsaPendingBlmRepAck,
                wranIfSsaPendingBlmRepNumTx }

STATUS      current
DESCRIPTION
    "This group represents objects related to the
     pending BLM transactions and sensing reports
     (BLM-REP) that are to be generated."
::= { wranIfSsaMibGroups 4 }

wranIfSsaSensingRecordGroup      OBJECT-GROUP
OBJECTS      { wranIfSsaSensingRecordIndex,
                wranIfSsaSensingChannel,
                wranIfSsaTimeLastSensing,
                wranIfSsaTimeLastPositive,
                wranIfSsaSensingPathRssi,
                wranIfSsaWranPathRssi,
                wranIfSsaSignalType,
                wranIfSsaWranServiceAdvertisement,
                wranIfSsaIdcUpdIndication }

STATUS      current
DESCRIPTION
    "This group represents objects related to the
     sensing status of each channel."
::= { wranIfSsaMibGroups 5 }

wranIfSsaSsfMode0OutputGroup      OBJECT-GROUP
OBJECTS      { wranIfSsaSsfMode0OutputIndex,
                wranIfSsaSsfMode0SignalType,
                wranIfSsaSsfMode0SignalPresent }

STATUS      current
DESCRIPTION

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        "This group represents objects related to
        output of Mode 0 sensing."
        ::= { wranIfSsaMibGroups 6 }

wranIfSsaSsfMode1OutputGroup          OBJECT-GROUP
OBJECTS      { wranIfSsaSsfMode1OutputIndex,
                wranIfSsaSsfMode1SignalType,
                wranIfSsaSsfMode1SignalPresent,
                wranIfSsaSsfSignalConfidence }
STATUS       current
DESCRIPTION
        "This group represents objects related to
        output of Mode 1 sensing."
        ::= { wranIfSsaMibGroups 7 }

wranIfSsaSsfMode2OutputGroup          OBJECT-GROUP
OBJECTS      { wranIfSsaSsfMode2OutputIndex,
                wranIfSsaSsfMode2SignalType,
                wranIfSsaSsfMode2SignalRssiMean,
                wranIfSsaSsfMode2SignalStdDevRssi }
STATUS       current
DESCRIPTION
        "This group represents objects related to
        output of Mode 2 sensing."
        ::= { wranIfSsaMibGroups 8 }

wranIfSsaSsfWiMicMSFGroup           OBJECT-GROUP
OBJECTS      { wranIfSsaSsfWiMicMSFIndex,
                wranIfSsaSsfWiMicMSFChannel,
                wranIfSsaSsfWiMicMSFPayloadSize,
                wranIfSsaSsfWiMicMSFPayload,
                wranIfSsaSsfWiMicMSFCrc1Status,
                wranIfSsaSsfWiMicMSFCrc2Status,
                wranIfSsaSsfWiMicMSFCrc3Status }
STATUS       current
DESCRIPTION
        "This groups contains objects related to the
        detection of wireless microphone beacons as
        defined by IEEE Std 802.22.1-2010."
        ::= { wranIfSsaMibGroups 9 }

wranIfSsaSsfGeolocationGroup         OBJECT-GROUP
OBJECTS      { wranIfSsaGeolocationIndex,
                wranIfSsaGeolocationVernier1Size,
                wranIfSsaGeolocationVernier1,
                wranIfSsaGeoLocationVernier2Size,
                wranIfSsaGeoLocationVernier2,
                wranIfSsaGeoLocationVernier3Size,
                wranIfSsaGeoLocationVernier3,
                wranIfSsaGeolocationTRange1,
                wranIfSsaGeolocationTACbp }
STATUS       current
DESCRIPTION
        "This groups contains objects related to the
        geolocation function of the SSA."
        ::= { wranIfSsaMibGroups 10 }

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```

wranIfSsaTrapControlGroup          OBJECT-GROUP
    OBJECTS      { wranIfSsaTrapControl }
    STATUS       current
    DESCRIPTION
        "This groups contains objects related to
         enabling/disabling traps on the SSA."
    ::= { wranIfSsaMibGroups 11 }

wranIfSsaNotificationsGroup       OBJECT-GROUP
    OBJECTS      { wranIfSsaSensingCapChangeTrap,
                    wranIfSsaStatusChangeTrap,
                    wranIfSsaB1mRepChangeTrap,
                    wranIfSsaSensingRecordChangeTrap,
                    wranIfSsaSsfMode0ChangeTrap,
                    wranIfSsaSsfMode1ChangeTrap,
                    wranIfSsaSsfMode2ChangeTrap,
                    wranIfSsaSsfWiMicMSFChangeTrap,
                    wranIfSsaGeolocationChangeTrap,
                    wranIfSsaNotificationIndex,
                    wranIfSsaNotificationCurrentState,
                    wranIfSsaNotificationRecentEvent,
                    wranIfSsaNotificationRecentAction,
                    wranIfSsaNotificationPendingB1mRepIndex,
                    wranIfSsaNotificationSensingRecordIndex,
                    wranIfSsaSsfNotificationMode0OutputIndex,
                    wranIfSsaSsfNotificationMode1OutputIndex,
                    wranIfSsaSsfNotificationMode1Confidence,
                    wranIfSsaSsfNotificationMode2OutputIndex,
                    wranIfSsaSsfNotificationMode2RssiMean,
                    wranIfSsaSsfNotificationMode2StdDevRssi,
                    wranIfSsaSsfNotificationWiMicMSFIndex,
                    wranIfSsaSensingCapibilityStatus,
                    wranIfSsaStatus, wranIfSsaB1mRepStatus,
                    wranIfSsaSensingRecordStatus,
                    wranIfSsaSsfMode0Status,
                    wranIfSsaSsfMode1Status,
                    wranIfSsaSsfMode2Status,
                    wranIfSsaSsfWiMicMSFStatus,
                    wranIfSsaGeolocationStatus }
    STATUS       current
    DESCRIPTION
        "This groups contains objects related to traps
         that are configured for the SSA."
    ::= { wranIfSsaMibGroups 12 }

wranIfSsaMibCompliance   MODULE-COMPLIANCE
    STATUS       current
    DESCRIPTION
        "MIB objects that are optional and mandatory for SSA
         compliance."
    MODULE      wranIfSsaMib
    MANDATORY-GROUPS { wranIfSsaSensingCapGroup,
                        wranIfSsaStatusGroup,
                        wranIfSsaConfigGroup,
                        wranIfSsaSsfWiMicGroup,

```

```
wranIfSsaGeolocationGroup,  
wranIfSsaTrapControlGroup }  
-- OPTIONAL-GROUPS { wranIfSsaPendingBlmRepGroup,  
wranIfSsaSsfSensingRecordGroup,  
wranIfSsaSsfMode0Group,  
wranIfSsaSsfMode1Group,  
wranIfSsaSsfMode2Group,  
wranIfSsaNotificationsGroup }  
 ::= { wranIfSsaMib 15 }
```

END

### 13.2.7 wranIfDatabaseServiceMib

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IEEE802dot22-WRAN-IF-DATABASESERVICE-MIB ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Unsigned32, Integer32, Counter32,
    Counter64
        FROM SNMPv2-SMI
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    TEXTUAL-CONVENTION,
    MacAddress, RowStatus, TruthValue,
    TimeStamp, DateAndTime
        FROM SNMPv2-TC
    InetAddressType, InetAddress
        FROM INET-ADDRESS-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP
        FROM SNMPV2-CONF

wranIfDatabaseServiceMib      MODULE-IDENTITY
    LAST-UPDATED      "201405300000Z"    -- May 30, 2014
    ORGANIZATION      "IEEE 802.22"
    CONTACT-INFO
        "WG E-mail: STDS-802-22@LISTSERV.IEEE.ORG
         WG Chair: Apurva N. Mody
         E-mail: apurva.mody@ieee.org
        TGA Chair/Editor: Ranga Reddy
        E-mail: ranga.reddy@ieee.org"
    DESCRIPTION
        "This material is from IEEE Std 802.22a-2014
         Copyright (c) 2014. This MIB Module defines managed
         objects related to the configuration of access to,
         as well as interaction with the database service.
         Objects in this module are based on IEEE Std 802.22-
         2011 and is under iso(1).std(0).iso8802(8802)
         .wran(22).wranIfDatabaseServiceMib(7)"
    REVISION          "201405300000Z"
    DESCRIPTION
        "The first version of IEEE802dot22-WRAN-IF-
         DATABASESERVICE-MIB, that contains objects related
         to management of the interface with the database
         service."
 ::= {iso std(0) iso8802(8802) wran(22) 7}

wranIfBsMgmtInfoTable          OBJECT IDENTIFIER
 ::= { wranIfDatabaseServiceMib 1 }
wranIfBsDeviceEnlistmentTable   OBJECT IDENTIFIER
 ::= { wranIfDatabaseServiceMib 2 }
wranIfDbsChannelIndicationTable OBJECT IDENTIFIER
 ::= { wranIfDatabaseServiceMib 3 }

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wranIfDbsAccessTable          OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 4 }
wranIfDbsTrapControl          OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 5 }
wranIfDbsTrapDefinition       OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 6 }
wranIfDbsNotificationObjectsTable OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 7 }
wranIfDbsMibGroups            OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 8 }
wranIfDbsMibCompliance        OBJECT IDENTIFIER
                                ::= { wranIfDatabaseServiceMib 9 }

wranIfBsMgmtInfoTable         OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfBsMgmtInfoEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object stores information regarding information
        on the BS management interface the DBS can access.
        It is made up of one entry, defined by
        wranIfBsMgmtInfoEntry."
    ::= { wranIfDatabaseServiceMib 1 }

wranIfBsMgmtInfoEntry         OBJECT-TYPE
    SYNTAX      wranIfBsMgmtInfoEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
        wranIfBsMgmtInfoTable. Each entry is identified by
        wranIfBsMgmtInfoIndex."
    INDEX { wranIfBsMgmtInfoIndex }
    ::= { wranIfBsMgmtInfoTable 1 }

wranIfBsMgmtInfoEntry ::= SEQUENCE {
    wranIfBsMgmtInfoIndex          INTEGER,
    wranIfBsSizeMgmtUrl           INTEGER,
    wranIfBsMgmtUrl               OCTET STRING,
    wranIfBsSizeMgmtDeviceId       INTEGER,
    wranIfBsMgmtDeviceId          OCTET STRING,
    wranIfBsSizeMgmtSn             INTEGER,
    wranIfBsMgmtSn                OCTET STRING,
    wranIfBsSizeMgmtLocation       INTEGER,
    wranIfBsMgmtLocation          OCTET STRING,
    wranIfBsMgmtAntennaHeight     INTEGER,
    wranIfBsSizeMgmtContactName   INTEGER,
    wranIfBsMgmtContactName        OCTET STRING,
    wranIfBsSizeMgmtContactPhysAddress INTEGER,
    wranIfBsMgmtContactPhysAddress OCTET STRING,
    wranIfBsSizeMgmtEmailAddress  INTEGER,
    wranIfBsMgmtEmailAddress       OCTET STRING,
    wranIfBsSizeMgmtPhoneNumber    INTEGER,
    wranIfBsMgmtPhoneNumber        OCTET STRING,
    wranIfBsSizeAccessUrl          INTEGER,
    wranIfBsAccessUrl              OCTET STRING }

```

```
wranIfBsMgmtInfoIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..1)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table, defaults to 1."
    ::= { wranIfBsMgmtInfoEntry 1 }

wranIfBsSizeMgmtUrl       OBJECT-TYPE
    SYNTAX      INTEGER (2..512)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Base Station Management URL, see 14.2.1.3"
    ::= { wranIfBsMgmtInfoEntry 2 }

wranIfBsMgmtUrl          OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsSizeMgmtUrl))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Base Station Management URL, see 14.2.1.3"
    ::= { wranIfBsMgmtInfoEntry 3 }

wranIfBsSizeMgmtDeviceId   OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BS FCC Device ID (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 4 }

wranIfBsMgmtDeviceId      OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsSizeMgmtDeviceId))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "BS FCC Device ID (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 5 }

wranIfBsSizeMgmtSn         OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of BS serial number (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 5 }

wranIfBsMgmtSn            OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsSizeMgmtSn))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "BS serial number (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 6 }
```

```
wranIfBsSizeMgmtLocation      OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "BS Location data string of BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 7 }

wranIfBsMgmtLocation      OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsSizeMgmtLocation))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "BS Location data string of BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 8 }

wranIfBsMgmtAntennaHeight   OBJECT-TYPE
    SYNTAX      INTEGER (0..100)
    UNITS      "meters"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Antenna height at the BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 9 }

wranIfBsSizeMgmtContactName OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Contact Name for person(s) who has ownership
         of the BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 10 }

wranIfBsMgmtContactName    OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfBsSizeMgmtContactName))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Contact Name for person(s) who has ownership of the
         BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 11 }

wranIfBsSizeMgmtContactPhysAddress OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Physical address for contacting the owner of
         the BS (see 14.2.1.3)."
    ::= { wranIfBsMgmtInfoEntry 12 }

wranIfBsMgmtContactPhysAddress   OBJECT-TYPE
    SYNTAX
```

```
        OCTET STRING
                (SIZE(wranIfBsSizeMgmtContactPhysAddress))
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Physical address for contacting the owner of the BS
                 (see 14.2.1.3)."
        ::= { wranIfBsMgmtInfoEntry 13 }

wranIfBsSizeMgmtEmailAddress OBJECT-TYPE
        SYNTAX      INTEGER (2..256)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Size of E-mail address for contacting the owner of
                 the BS (see 14.2.1.3)."
        ::= { wranIfBsMgmtInfoEntry 14 }

wranIfBsMgmtEmailAddress OBJECT-TYPE
        SYNTAX
                OCTET STRING (SIZE(wranIfBsSizeMgmtEmailAddress))
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "E-mail address for contacting the owner of the BS
                 (see 14.2.1.3)."
        ::= { wranIfBsMgmtInfoEntry 15 }

wranIfBsSizeMgmtPhoneNumber OBJECT-TYPE
        SYNTAX      INTEGER (2..128)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Size of Telephone # for contacting the owner of the
                 BS (see 14.2.1.3)."
        ::= { wranIfBsMgmtInfoEntry 16 }

wranIfBsMgmtPhoneNumber OBJECT-TYPE
        SYNTAX
                OCTET STRING (SIZE(wranIfBsSizeMgmtPhoneNumber))
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Telephone # for contacting the owner of the BS (see
                 14.2.1.3)."
        ::= { wranIfBsMgmtInfoEntry 17 }

wranIfBsSizeAccessUrl OBJECT-TYPE
        SYNTAX      INTEGER (2..512)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Size of Base Station Database Access Service URL,
                 see 14.2.1.3"
        ::= { wranIfBsMgmtInfoEntry 18 }
```

```

wranIfBsAccessUrl OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfBsSizeAccessUrl))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Base Station Database Access Service URL, see
         14.2.1.3"
    ::= { wranIfBsMgmtInfoEntry 19 }

wranIfDbsDeviceEnlistmentTable      OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfDbsDeviceEnlistmentEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object stores information regarding information
         on devices entering the network that the BS has
         attempted to enlist/register with the database
         service. It is made up of multiple values, defined
         by wranIfDbsDeviceEnlistmentEntry"
    ::= { wranIfDatabaseServiceMib 2 }

wranIfDbsDeviceEnlistmentEntry      OBJECT-TYPE
    SYNTAX      wranIfDbsDeviceEnlistmentEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfDbsDeviceEnlistmentTable. Each entry is
         identified by wranIfDbsDeviceEnlistmentIndex."
    INDEX { wranIfDbsDeviceEnlistmentIndex }
    ::= { wranIfDbsDeviceEnlistmentTable 1 }

wranIfBsDeviceEnlistmentEntry ::= SEQUENCE {
    wranIfDbsDeviceEnlistmentIndex          INTEGER,
    wranIfDbsDeviceEnlistmentConfirmed      TruthValue,
    wranIfDbsConfirmedDeviceType           INTEGER,
    wranIfDbsSizeConfirmedDevceID          INTEGER,
    wranIfDbsConfirmedDeviceId             OCTET STRING,
    wranIfDbsSizeConfirmedDeviceSn         INTEGER,
    wranIfDbsConfirmedDeviceSn             OCTET STRING,
    wranIfDbsSizeConfirmedDeviceLocation   INTEGER,
    wranIfDbsConfirmedDeviceLocation       OCTET STRING,
    wranIfDbsSizeProxyDeviceId            INTEGER,
    wranIfDbsProxyDeviceId                OCTET STRING,
    wranIfDbsSizeProxySn                 INTEGER,
    wranIfDbsProxySn                     OCTET STRING,
    wranIfDbsSizeRespPartyName           INTEGER,
    wranIfDbsRespPartyName               OCTET STRING,
    wranIfDbsConfirmedDeviceAntennaHeight INTEGER,
    wranIfDbsSizeConfirmedDeviceContactName INTEGER,
    wranIfDbsConfirmedDeviceContactName   OCTET STRING,
    wranIfDbsSizeConfirmedDeviceContactPhysAddress INTEGER,
    wranIfDbsConfirmedDeviceContactPhysAddress OCTET STRING,
    wranIfDbsSizeConfirmedDeviceEmailAddress INTEGER,
    wranIfDbsConfirmedDeviceEmailAddress  OCTET STRING,
    wranIfDbsSizeConfirmedDeviceEmailAddress INTEGER,
    wranIfDbsConfirmedDevicePhoneNumber   INTEGER,

```

```

wranIfDbsConfirmedDevicePhoneNumber          OCTET STRING,
wranIfDbsConfirmedDeviceAntennaInformation OCTET STRING,
wranIfDbsConfirmedDeviceAntennaAzimuth     INTEGER,
wranIfDbsDeviceConfirmationMsgTime        DateAndTime }

wranIfDbsDeviceEnlistmentIndex      OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in the table."
::= { wranIfDbsDeviceEnlistmentEntry 1 }

wranIfDbsDeviceEnlistmentConfirmed   OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Truth(1) indicates this enlistment been confirmed
     via receipt of M-DB-ENLISTMENT-CONFIRMATION (see
     14.2.1.3.4) from the database service."
::= { wranIfDbsDeviceEnlistmentEntry 2 }

wranIfDbsConfirmedDeviceType        OBJECT-TYPE
SYNTAX      INTEGER { fixedBS(0),
                     fixedCpe(1),
                     personalPortable(2) }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Type of device being registered, fixed BS(0), fixed
     CPE(1), personal/portable(2) (see 14.2.1.3.4). 3-255
     are reserved."
::= { wranIfDbsDeviceEnlistmentEntry 3 }

wranIfDbsSizeConfirmedDeviceId      OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Device ID for the device that is being
     enlisted/registered with the database service."
::= { wranIfDbsDeviceEnlistmentEntry 4 }

wranIfDbsConfirmedDeviceId         OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeConfirmedDeviceId))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Device ID for the device that is being
     enlisted/registered with the database service."
::= { wranIfDbsDeviceEnlistmentEntry 5 }

wranIfDbsSizeConfirmedDeviceSn      OBJECT-TYPE
SYNTAX      INTEGER (2..256)

```

```
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Serial number of the device that is being
     enlisted/registered with the database service. "
 ::= { wranIfDbsDeviceEnlistmentEntry 6 }

wranIfDbsConfirmedDeviceSn      OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfDbsSizeConfirmedDeviceSn))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Serial number of the device that is being
     enlisted/registered with the database service. "
 ::= { wranIfDbsDeviceEnlistmentEntry 7 }

wranIfDbsSizeConfirmedDeviceLocation      OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Location string of the device requesting
     enlistment."
 ::= { wranIfDbsDeviceEnlistmentEntry 8 }

wranIfDbsConfirmedDeviceLocation      OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfDbsSizeConfirmedDeviceLocation))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Location string of the device requesting
     enlistment."
 ::= { wranIfDbsDeviceEnlistmentEntry 9 }

wranIfDbsSizeProxyDeviceId      OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Device ID of proxy device BS may use to send
     queries to the database. "
 ::= { wranIfDbsDeviceEnlistmentEntry 10 }

wranIfDbsProxyDeviceId      OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeProxyDeviceId))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Device ID of proxy device BS may use to send queries
     to the database. "
 ::= { wranIfDbsDeviceEnlistmentEntry 11 }

wranIfDbsSizeProxySn      OBJECT-TYPE
```

```

SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Serial number of proxy device BS may use to
     send queries to the database "
 ::= { wranIfDbsDeviceEnlistmentEntry 12 }

wranIfDbsProxySn  OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(2..256))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Serial number of proxy device BS may use to send
     queries to the database "
 ::= { wranIfDbsDeviceEnlistmentEntry 13 }

wranIfDbsSizeRespPartyName   OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Name of the party responsible for the device
     enlistment/registration"
 ::= { wranIfDbsDeviceEnlistmentEntry 14 }

wranIfDbsRespPartyName   OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeRespPartyName))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Name of the party responsible for the device
     enlistment/registration"
 ::= { wranIfDbsDeviceEnlistmentEntry 15 }

wranIfDbsConfirmedDeviceAntennaHeight      OBJECT-TYPE
SYNTAX      INTEGER (0..100)
UNITS      "meters"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    " Antenna height of the device being enlisted."
 ::= { wranIfDbsDeviceEnlistmentEntry 16 }

wranIfDbsSizeConfirmedDeviceContactName   OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Contact Name for person(s) who has ownership
     of device, only pertinent if device type is fixed BS
     or CPE."
 ::= { wranIfDbsDeviceEnlistmentEntry 17 }

wranIfDbsConfirmedDeviceContactName OBJECT-TYPE
SYNTAX

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```
        OCTET STRING
                (SIZE(wranIfDbsSizeConfirmedDeviceContactName))
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Contact Name for person(s) who has ownership of
                 device, only pertinent if device type is fixed BS or
                 CPE."
        ::= { wranIfDbsDeviceEnlistmentEntry 18 }

wranIfDbsSizeConfirmedDeviceContactPhysAddress OBJECT-TYPE
        SYNTAX      INTEGER (2..256)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Size of Physical address for contacting the owner of
                 the BS; the only pertinent device types are fixed BS
                 and fixed CPE."
        ::= { wranIfDbsDeviceEnlistmentEntry 19 }

wranIfDbsConfirmedDeviceContactPhysAddress          OBJECT-TYPE
        SYNTAX
                OCTET STRING
                SIZE(wranIfDbsSizeConfirmedDeviceContactPhysAddress)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Physical address for contacting the owner of the BS;
                 the only pertinent device types are fixed BS and
                 fixed CPE."
        ::= { wranIfDbsDeviceEnlistmentEntry 20 }

wranIfDbsSizeConfirmedDeviceEmailAddress   OBJECT-TYPE
        SYNTAX      INTEGER (2..256)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "Size of E-mail address for contacting the owner of
                 the BS; the only pertinent device types are fixed BS
                 and fixed CPE."
        ::= { wranIfDbsDeviceEnlistmentEntry 21 }

wranIfDbsConfirmedDeviceEmailAddress        OBJECT-TYPE
        SYNTAX
                OCTET STRING
                (SIZE(wranIfDbsSizeConfirmedDeviceEmailAddress))
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "E-mail address for contacting the owner of the BS;
                 the only pertinent device types are fixed BS and
                 fixed CPE."
        ::= { wranIfDbsDeviceEnlistmentEntry 22 }

wranIfDbsSizeConfirmedDevicePhoneNumber    OBJECT-TYPE
        SYNTAX      INTEGER (2..128)
```

```

MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of Telephone number for contacting the owner of
     the BS; the only pertinent device types are fixed BS
     and fixed CPE."
 ::= { wranIfDbsDeviceEnlistmentEntry 23 }

wranIfDbsConfirmedDevicePhoneNumber OBJECT-TYPE
SYNTAX
    OCTET STRING
        (SIZE(wranIfDbsSizeConfirmedDevicePhoneNumber))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Telephone number for contacting the owner of the BS;
     the only pertinent device types are fixed BS and
     fixed CPE."
 ::= { wranIfDbsDeviceEnlistmentEntry 24 }

wranIfDbsConfirmedDeviceAntennaInformation      OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(72))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Antenna information of device; only applicable if
     transmission of antenna information is supported by
     the database service."
 ::= { wranIfDbsDeviceEnlistmentEntry 25 }

wranIfDbsConfirmedDeviceAntennaAzimuth      OBJECT-TYPE
SYNTAX      INTEGER (0..360)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Antenna azimuth of device; only applicable if
     transmission of antenna information is supported by
     the database service."
 ::= { wranIfDbsDeviceEnlistmentEntry 26 }

wranIfDbsDeviceConfirmationMsgTime   OBJECT-TYPE
SYNTAX      DateAndTime
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Timestamp of transmission for M-DB-ENLISTMENT-
     REQUEST"
 ::= { wranIfDbsDeviceEnlistmentEntry 27 }

wranIfDbsChannelIndicationTable      OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfDbsChannelIndicationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object stores information what channels have
     been indicated (upon receipt of M-DB-AVAILABLE-
```

```

        CHANNEL-INDICATION) as available and their EIRP
        limit at a given location for a particular device.
        It is made up of multiple entries, one each for the
        tuple of location||channel||EIRP||DeviceID. Each
        entry is defined by
        wranIfDbsChannelIndicationEntry."
 ::= { wranIfDatabaseServiceMib 3 }

wranIfDbsChannelIndicationEntry      OBJECT-TYPE
    SYNTAX      wranIfDbsChannelIndicationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
        wranIfDbsChannelIndicationTable. Each entry is
        identified by wranIfDbsChannelIndicationIndex."
INDEX { wranIfDbsChannelIndicationIndex }
 ::= { wranIfDbsChannelIndicationTable 1 }

wranIfDbsChannelIndicationEntry      ::= SEQUENCE {
    wranIfDbsChannelIndicationIndex      INTEGER,
    wranIfDbsSizeDeviceId                INTEGER,
    wranIfDbsDeviceId                  OCTET STRING,
    wranIfDbsSizeDeviceSn              INTEGER,
    wranIfDbsDeviceSn                  OCTET STRING,
    wranIfDbsDeviceChannelNumber       INTEGER,
    wranIfDbsDeviceMaxAllowedEirp     INTEGER,
    wranIfDbsSizeDeviceLocation       INTEGER,
    wranIfDbsDeviceLocation           OCTET STRING,
    wranIfDbsDeviceDbsIndex          INTEGER }

wranIfDbsChannelIndicationIndex      OBJECT-TYPE
    SYNTAX      INTEGER (1..10000)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."
 ::= { wranIfDbsChannelIndicationEntry 1 }

wranIfDbsSizeDeviceId      OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Device ID of device for which the channel is
        indicated as available."
 ::= { wranIfDbsChannelIndicationEntry 2 }

wranIfDbsDeviceId      OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeDeviceId))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Device ID of device for which the channel is
        indicated as available."
 ::= { wranIfDbsChannelIndicationEntry 3 }

```

```

wranIfDbsSizeDeviceSn   OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Serial number of device for which the channel is
         indicated as available."
    ::= { wranIfDbsChannelIndicationEntry 4 }

wranIfDbsDeviceSn   OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeDeviceSn))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Serial number of device for which the channel is
         indicated as available."
    ::= { wranIfDbsChannelIndicationEntry 5 }

wranIfDbsDeviceChannelNumber   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Channel number for which availability is indicated."
    ::= { wranIfDbsChannelIndicationEntry 6 }

wranIfDbsDeviceMaxAllowedEirp   OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    UNITS      "dBm"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Maximum allowed EIRP on the channel. (between -64
         dBm to +63.5 dBm in 0.5 dB steps)."
    ::= { wranIfDbsChannelIndicationEntry 7 }

wranIfDbsSizeDeviceLocation   OBJECT-TYPE
    SYNTAX      INTEGER (2..256)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Location string of the device requesting
         enlistment."
    ::= { wranIfBsDeviceEnlistmentEntry 8 }

wranIfDbsDeviceLocation   OBJECT-TYPE
    SYNTAX
        OCTET STRING (SIZE(wranIfDbsSizeDeviceLocation))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Location string of the device requesting
         enlistment."
    ::= { wranIfBsDeviceEnlistmentEntry 9 }

```

```

wranIfDbsDeviceDbsIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..20)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Index of entry in wranIfDbsAccessTable (denoted by
         wranIfDbsAccessEntryIndex) that corresponds to the
         database service that provided this channel
         indication."
    ::= { wranIfDbsChannelIndicationEntry 10 }

wranIfDbsAccessTable   OBJECT-TYPE
    SYNTAX      SEQUENCE OF wranIfDbsAccessEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object stores information regarding access
         information for accessing a database service. There
         is more than one entry in this table, one for each
         database service that is available. Each entry is
         defined by wranIfDbsAccessEntry."
    ::= { wranIfDatabaseServiceMib 4 }

wranIfDbsAccessEntry   OBJECT-TYPE
    SYNTAX      wranIfDbsAccessEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object defines an entry in
         wranIfDbsAccessTable. Each entry is identified by
         wranIfDbsAccessEntryIndex."
    INDEX { wranIfDbsAccessEntryIndex }
    ::= { wranIfDbsAccessTable 1 }

wranIfDbsAccessEntry       ::= SEQUENCE {
    wranIfDbsAccessEntryIndex           INTEGER,
    wranIfDbsSizeAccessUrl             INTEGER,
    wranIfDbsAccessUrl                OCTET STRING,
    wranIfDbsAccessCredentialType     INTEGER,
    wranIfDbsSizeAccessCertCredential Integer32,
    wranIfDbsAccessCertCredential     OCTET STRING,
    wranIfDbsSizeAccessUserID          INTEGER,
    wranIfDbsAccessUserID              OCTET STRING,
    wranIfDbsSizeAccessPassword       INTEGER,
    wranIfDbsAccessPassword           OCTET STRING,
    wranIfDbsAccessLastTxTime         DateAndTime,
    wranIfDbsAccessLastRxTime         DateAndTime,
    wranIfDbsAccessAntennaInfoRequired TruthValue,
    wranIfDbsAccessPriority           INTEGER }

wranIfDbsAccessEntryIndex   OBJECT-TYPE
    SYNTAX      INTEGER (1..20)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Index of entry in the table."

```

```

 ::= { wranIfDbsAccessEntry 1 }

wranIfDbsSizeAccessUrl OBJECT-TYPE
    SYNTAX      INTEGER (2..512)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "URL used to access database service. "
    ::= { wranIfDbsAccessEntry 2 }

wranIfDbsAccessUrl      OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeAccessUrl))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "URL used to access database service."
    ::= { wranIfDbsAccessEntry 3 }

wranIfDbsAccessCredentialType OBJECT-TYPE
    SYNTAX      INTEGER { useridAndpassword(0),
                           certificate(1) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indication of the type of credential to be used when
         authenticating access and transfer of information to
         the database service (0x00=userIdAndpassword,
         0x01=certificate, 0x02-0xFF=reserved"
    ::= { wranIfDbsAccessEntry 4 }

wranIfDbsSizeAccessCertCredential   OBJECT-TYPE
    SYNTAX      Integer32 (2..10000)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Size of Certificate Credential BS or proxy device
         used to authenticate access to the database service,
         e.g., password, certificate. Only pertinent when
         wranIfDbsAccessCredentialType set to 0x01."
    ::= { wranIfDbsAccessEntry 5 }

wranIfDbsAccessCertCredential OBJECT-TYPE
    SYNTAX
        OCTET STRING
            (SIZE(wranIfDbsSizeAccessCertCredential))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Certificate Credential BS or proxy device used to
         authenticate access to the database service, e.g.,
         password, certificate. Only pertinent when
         wranIfDbsAccessCredentialType set to 0x01."
    ::= { wranIfDbsAccessEntry 6 }

wranIfDbsSizeAccessUserID      OBJECT-TYPE
    SYNTAX      INTEGER (2..100)

```

```
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of login User ID used for accessing database
     service. Only pertinent when
     wranIfDbsAccessCredentialType set to 0x00."
 ::= { wranIfDbsAccessEntry 7 }

wranIfDbsAccessUserID   OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(wranIfDbsSizeAccessUserID))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Login User ID used for accessing database service.
     Only pertinent when wranIfDbsAccessCredentialType
     set to 0x00."
 ::= { wranIfDbsAccessEntry 8 }

wranIfDbsSizeAccessPassword   OBJECT-TYPE
SYNTAX      INTEGER (6..512)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Size of login password (or hash of password) used
     for accessing database service. Only pertinent when
     wranIfDbsAccessCredentialType set to 0x00."
 ::= { wranIfDbsAccessEntry 9 }

wranIfDbsAccessPassword OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfDbsSizeAccessPassword))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Login password (or hash of password) used for
     accessing database service. Only pertinent when
     wranIfDbsAccessCredentialType set to 0x00."
 ::= { wranIfDbsAccessEntry 10 }

wranIfDbsAccessLastTxTime   OBJECT-TYPE
SYNTAX      DateAndTime
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Time indication of the last transmission of a
     message to the database service."
 ::= { wranIfDbsAccessEntry 11 }

wranIfDbsAccessLastRxTime   OBJECT-TYPE
SYNTAX      DateAndTime
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Time indication of the last reception of a message
     from the database service."
 ::= { wranIfDbsAccessEntry 12 }
```

```

wranIfDbsAccessAntennaInfoRequired OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Truth(1), indication of whether antenna info
         is required to be transmitted to database service. "
    ::= { wranIfDbsAccessEntry 13 }

wranIfDbsAccessPriority OBJECT-TYPE
    SYNTAX      INTEGER (1..100)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Priority of database service. Higher priority means
         that a particular database service will be preferred
         when device enlistment and channel indication
         requests need to be made."
    ::= { wranIfDbsAccessEntry 14 }

wranIfDbsTrapControl     OBJECT-TYPE
    SYNTAX      BITS { wranIfDbsAvailabilityChange(0),
                      wranIfDbsEnlistmentChange(1),
                      wranIfDbsChannelIndicationChange(2) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Defines control elements for traps related to
         interaction with the database service. This is a
         3-bit field that enables setting a trap for
         particular CPE events: wranIfDbsAvailabilityChange,
         wranIfDbsEnlistmentChange, and
         wranIfDbsChannelIndicationChange."
    ::= { wranIfDatabaseServiceMib 5 }

wranIfDbsTrapDefinition          OBJECT IDENTIFIER
    ::= { wranIfDatabaseServiceMib 6 }
wranIfDbsAvailabilityChangeTrap   OBJECT IDENTIFIER
    ::= { wranIfDbsTrapDefinition 1 }
wranIfDbsEnlistmentChangeTrap    OBJECT IDENTIFIER
    ::= { wranIfDbsTrapDefinition 2 }
wranIfDbsChannelIndicationTrap  OBJECT IDENTIFIER
    ::= { wranIfDbsTrapDefinition 3 }

wranIfDbsAvailabilityChangeTrap  NOTIFICATION-TYPE
    OBJECTS   { wranIfDbsSizeAccessUrl, wranIfDbsAccessUrl,
                wranIfDbsAccessStatus }
    STATUS    current
    DESCRIPTION
        "This trap contains the information related to the
         last time a particular database service was
         accessed."
    ::= { wranIfDbsTrapDefinition 1 }

wranIfDbsEnlistmentChangeTrap   NOTIFICATION-TYPE

```

```

OBJECTS      { wranIfDbsSizeConfirmedDeviceId,
               wranIfDbsConfirmedDeviceId,
               wranIfDbsSizeConfirmedDeviceSn,
               wranIfDbsConfirmedDeviceSn,
               wranIfDbsConfirmedDeviceStatus }
STATUS       current
DESCRIPTION
    "This trap contains information regarding the status
     of enlistment confirmation for a particular device
     in the network."
 ::= { wranIfDbsTrapDefinition 2 }

wranIfDbsChannelIndicationChangeTrap      NOTIFICATION-TYPE
OBJECTS      { wranIfDbsSizeDeviceId, wranIfDbsDeviceId,
               wranIfDbsSizeDeviceSn, wranIfDbsSizeDeviceSn,
               wranIfDbsChannelIndicationStatus }
STATUS       current
DESCRIPTION
    "This trap contains information regarding the status
     of channel indication responses from the database
     service."
 ::= { wranIfDbsTrapDefinition 3 }

wranIfDbsNotificationObjectsTable   OBJECT-TYPE
SYNTAX      SEQUENCE OF wranIfDbsNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This MIB provides a table to track notification
     objects that have been reported by the traps related
     to access to the database. It is made up of one
     entry, containing the objects related to the most
     recent trap/event. The entry is defined by
     wranIfDbsNotificationObjectsEntry."
 ::= { wranIfDatabaseServiceMib 7 }

wranIfDbsNotificationObjectsEntry   OBJECT-TYPE
SYNTAX      wranIfDbsNotificationObjectsEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Definition of an entry in
     wranIfDbsNotificationObjectsTable. Each entry is
     identified by wranIfNotificationDeviceId."
INDEX { wranIfNotificationDeviceId }
 ::= { wranIfDbsNotificationObjectsTable 1 }

wranIfDbsNotificationObjectsEntry  ::= SEQUENCE {
    wranIfDbsNotificationObjectsEntryIndex      INTEGER,
    wranIfDbsNotificationSizeDeviceId          INTEGER,
    wranIfDbsNotificationDeviceId             OCTET STRING,
    wranIfDbsNotificationSizeDeviceSn         INTEGER,
    wranIfDbsNotificationDeviceSn            OCTET STRING,
    wranIfDbsNotificationDbsSizeAccessUrl    INTEGER,
    wranIfDbsNotificationDbsAccessUrl        OCTEGT STRING,
    wranIfDbsAccessStatus                   INTEGER,
}

```

```

wranIfDbsConfirmedDeviceStatus          INTEGER,
wranIfDbsChannelIndicationStatus      INTEGER }

wranIfDbsNotificationObjectsEntryIndex   OBJECT-TYPE
SYNTAX      INTEGER (1..1)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Index of entry in this table, defaults to 1."
::= { wranIfDbsNotificationObjectsEntry 1 }

wranDbsIfNotificationSizeDeviceId     OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of Device ID of device generating the trap."
::= { wranIfDbsNotificationObjectsEntry 2 }

wranDbsIfNotificationDeviceId        OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfNotificationSizeDeviceId))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Device ID of device generating the trap."
::= { wranIfDbsNotificationObjectsEntry 3 }

wranDbsIfNotificationSizeDeviceSn    OBJECT-TYPE
SYNTAX      INTEGER (2..256)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Size of Serial number of the device generating the
     trap."
::= { wranIfDbsNotificationObjectsEntry 4 }

wranIfDbsNotificationDeviceSn        OBJECT-TYPE
SYNTAX
    OCTET STRING (SIZE(wranIfNotificationSizeDeviceSn))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Serial number of the device generating the trap."
::= { wranIfDbsNotificationObjectsEntry 5 }

wranIfDbsNotificationDbsSizeAccessUrl   OBJECT-TYPE
SYNTAX      INTEGER (2..512)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "URL of database service whose connectivity update
     was captured by the trap."
::= { wranIfDbsNotificationObjectsEntry 6 }

wranIfDbsNotificationDbsAccessUrl      OBJECT-TYPE

```

```

SYNTAX
    OCTET STRING
        (SIZE(wranIfNotificationDbsSizeAccessUrl))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "URL of database service whose connectivity update
     was captured by the trap."
 ::= { wranIfDbsNotificationObjectsEntry 7 }

wranIfDbsAccessStatus   OBJECT-TYPE
    SYNTAX      INTEGER { messageRxFromDatabase(0),
                           messageTxToDatabase (1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether a message is
     transmitted or received from database service."
 ::= { wranIfDbsNotificationObjectsEntry 8 }

wranIfDbsConfirmedDeviceStatus   OBJECT-TYPE
    SYNTAX      INTEGER { deviceNotConfirmed(0),
                           deviceConfirmed(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether the enlistment of the
     device has been successfully completed."
 ::= { wranIfDbsNotificationObjectsEntry 9 }

wranIfDbsChannelIndicationStatus   OBJECT-TYPE
    SYNTAX      INTEGER { channelsNotAvailable(0),
                           channelsAvailable(1) }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indication of whether channels have been indicated
     as available for the device in question."
 ::= { wranIfDbsNotificationObjectsEntry 10 }

-- wranIfDbsMibGroups: this object helps define which MIB groups are
-- available within this module and which MIB objects are part of each
-- group.

wranIfDbsMibGroups          OBJECT IDENTIFIER
 ::= { wranIfDatabaseServiceMib 8 }
wranIfDbsMgmtGroup          OBJECT IDENTIFIER
 ::= { wranIfDbsMibGroups 1 }
wranIfDbsEnlistmentGroup    OBJECT IDENTIFIER
 ::= { wranIfDbsMibGroups 2 }
wranIfDbsChannelIndicationGroup OBJECT IDENTIFIER
 ::= { wranIfDbsMibGroups 3 }
wranIfDbsAccessGroup         OBJECT IDENTIFIER
 ::= { wranIfDbsMibGroups 4 }
wranIfDbsTrapControlGroup   OBJECT IDENTIFIER
 ::= { wranIfDbsMibGroups 5 }

```

```
wranIfDbsNotificationsGroup          OBJECT IDENTIFIER
                                         ::= { wranIfDbsMibGroups 6 }

wranIfDbsMgmtGroup                  OBJECT-GROUP
OBJECTS    { wranIfBsMgmtInfoIndex, wranIfBsSizeMgmtUrl,
             wranIfBsMgmtUrl, wranIfBsSizeMgmtDeviceId,
             wranIfBsMgmtDeviceId, wranIfBsSizeMgmtSn,
             wranIfBsMgmtSn, wranIfBsSizeMgmtLocation,
             wranIfBsMgmtLocation,
             wranIfBsMgmtAntennaHeight,
             wranIfBsSizeMgmtContactName,
             wranIfBsMgmtContactName,
             wranIfBsSizeMgmtContactPhysAddress,
             wranIfBsMgmtContactPhysAddress,
             wranIfBsSizeMgmtEmailAddress,
             wranIfBsMgmtEmailAddress,
             wranIfBsSizeMgmtPhoneNumber,
             wranIfBsMgmtPhoneNumber,
             wranIfBsSizeAccessUrl, wranIfBsAccessUrl }
STATUS      current
DESCRIPTION
    "This group contains configuration objects
     related to the management interface on the BS
     that DBS can access."
 ::= { wranIfDbsMibGroups 1 }

wranIfDbsEnlistmentGroup           OBJECT-GROUP
OBJECTS    { wranIfDbsDeviceEnlistmentIndex,
             wranIfDbsDeviceEnlistmentConfirmed,
             wranIfDbsConfirmedDeviceType,
             wranIfDbsSizeConfirmedDeviceID,
             wranIfDbsConfirmedDeviceId,
             wranIfDbsSizeConfirmedDeviceSn,
             wranIfDbsConfirmedDeviceSn,
             wranIfDbsSizeConfirmedDeviceLocation,
             wranIfDbsConfirmedDeviceLocation,
             wranIfDbsSizeProxyDeviceId,
             wranIfDbsProxyDeviceId,
             wranIfDbsSizeProxySn, wranIfDbsProxySn,
             wranIfDbsSizeRespPartyName,
             wranIfDbsRespPartyName,
             wranIfDbsConfirmedDeviceAntennaHeight,
             wranIfDbsSizeConfirmedDeviceContactName,
             wranIfDbsConfirmedDeviceContactName,
             wranIfDbsSizeConfirmedDeviceContactPhysAddress,
             wranIfDbsConfirmedDeviceContactPhysAddress,
             wranIfDbsSizeConfirmedDeviceEmailAddress,
             wranIfDbsConfirmedDeviceEmailAddress,
             wranIfDbsSizeConfirmedDevicePhoneNumber,
             wranIfDbsConfirmedDevicePhoneNumber,
             wranIfDbsConfirmedDeviceAntennaInformation,
             wranIfDbsConfirmedDeviceAntennaAzimuth,
             wranIfDbsDeviceConfirmationMsgTime }

STATUS      current
DESCRIPTION
    "This group contains configuration objects
```

```
        related to enlistment of devices."  
 ::= { wranIfDbsMibGroups 2 }  
  
wranIfDbsChannelIndicationGroup          OBJECT-GROUP  
OBJECTS      { wranIfDbsChannelIndicationIndex,  
               wranIfDbsSizeDeviceId,  
               wranIfDbsDeviceId, wranIfDbsSizeDeviceSn,  
               wranIfDbsDeviceSn,  
               wranIfDbsDeviceChannelNumber,  
               wranIfDbsDeviceMaxAllowedEirp,  
               wranIfDbsSizeDeviceLocation,  
               wranIfDbsDeviceLocation,  
               wranIfDbsDeviceDbsIndex }  
STATUS       current  
DESCRIPTION  
    "This group contains configuration objects  
     related to indication of available channels."  
 ::= { wranIfDbsMibGroups 3 }  
  
wranIfDbsAccessGroup          OBJECT-GROUP  
OBJECTS      { wranIfDbsAvailabilityChangeTrap,  
               wranIfDbsEnlistmentChangeTrap,  
               wranIfDbsChannelIndicationChangeTrap,  
               wranIfDbsAccessEntryIndex,  
               wranIfDbsSizeAccessUrl,  
               wranIfDbsAccessUrl,  
               wranIfDbsAccessCredentialType,  
               wranIfDbsSizeAccessCertCredential,  
               wranIfDbsAccessCertCredential,  
               wranIfDbsSizeAccessUserID,  
               wranIfDbsAccessUserID,  
               wranIfDbsSizeAccessPassword,  
               wranIfDbsAccessPassword,  
               wranIfDbsAccessLastTxTime,  
               wranIfDbsAccessLastRxTime,  
               wranIfDbsAccessAntennaInfoRequired,  
               wranIfDbsAccessPriority }  
STATUS       current  
DESCRIPTION  
    "This group contains configuration objects  
     related to current accessibility of the  
     database service."  
 ::= { wranIfDbsMibGroups 4 }  
  
wranIfDbsTrapControlGroup          OBJECT-GROUP  
OBJECTS      { wranIfDbsTrapControl }  
STATUS       current  
DESCRIPTION  
    "This group contains configuration objects  
     related to enabling/disabling traps related to  
     the accessibility of the database service."  
 ::= { wranIfDbsMibGroups 5 }  
  
wranIfDbsNotificationsGroup      OBJECT-GROUP  
OBJECTS      { wranIfDbsAvailabilityChangeTrap,  
               wranIfDbsEnlistmentChangeTrap,
```

```
wranIfDbsChannelIndicationChangeTrap }  
STATUS      current  
DESCRIPTION  
    "This group contains notification objects  
     related to traps configured for access to the  
     database service."  
 ::= { wranIfDbsMibGroups 6 }  
  
wranIfDbsMibCompliance MODULE-COMPLIANCE  
STATUS      current  
DESCRIPTION  
    "MIB objects that are optional and mandatory for  
     database service access compliance."  
MODULE      wranIfDatabaseServiceMib  
MANDATORY-GROUPS { wranIfDbsMgmtGroup,  
                  wranIfDbsEnlistmentGroup,  
                  wranIfDbsChannelIndicationGroup,  
                  wranIfDbsAccessGroup,  
                  wranIfDbsTrapControlGroup }  
-- OPTIONAL-GROUPS { wranIfDbsNotificationsGroup }  
 ::= { wranIfDatabaseServiceMib 9 }  
  
END
```

*Insert the new Clause 14 after Clause 13:*

## 14 Management plane interfaces and procedures

### 14.1 Primitive format

In this clause, the components that make up each primitive are defined.

#### 14.1.1 Purpose

Text describing the function that this primitive services.

#### 14.1.2 SAP type

Type of SAP, either M-SAP or C-SAP, over which this primitive operates.

#### 14.1.3 Operation type

Specification of the operation type of the primitive, i.e., what kind of transaction the primitive is executing. The operation type can be one of the following:

- Information Request (REQUEST)
- Event Indication
- Information Confirmation (CONFIRM)

#### 14.1.4 Destination

Entity that is receiving the primitive, e.g., BS, CPE, NCMS/AAA.

#### 14.1.5 Data

A set of one or more information elements that carry information that is pertinent to the servicing of the primitive. For each information element, data type and size of data are provided.

##### 14.1.5.1 Handling timestamp fields in primitives

Primitives with data fields that represent a time value or timestamp shall be defined in terms of UTC time. The format of the string is pulled from IETF RFC 3339. The following format shall be used: “YYYY-MM-DDThh:mm:ssZ”; where YYYY is the 4-digit year, MM is the 2-digit month (1..12), DD is the 2-digit day (01..31), hh is the 2-digit hour (00..23), mm is the 2-digit minute (00..59), and ss is the 2-digit minute (00..59).

##### 14.1.5.2 Handling channel number fields in primitives

Primitives with data fields that represent a TV channel define that channel in terms of the start frequency and end frequency in Hz. The frequency value in these fields are represented by a 64-bit integer. The 64-bit resolution covers a large range of frequencies, allowing for future expansion of the standard into other frequency bands. The 64-bit resolution of the start and end frequency values does not imply any restrictions or requirements regarding the (resolution of) tuning capabilities for IEEE 802.22-based devices. Devices that can tune to frequencies with sufficient resolution to allow for proper receiving and transmitting of IEEE 802.22 PHY waveform (as defined in Clause 9) will be considered compliant with this standard.

The start and end frequencies represent the frequencies of the lower and upper band edges. All primitives, except antenna primitives (see 14.2.5.6), shall use this formatting of TV channel numbers. When forming MAC management messages from C-SAP, SM-SSF-SAP, and SM-GL-SAP, the start frequency and end frequency shall be translated to an 8-bit channel number using the tables in A.5.

#### **14.1.6 When generated**

Description of one or more events/instances that cause primitive to be generated.

#### **14.1.7 Effect of receipt**

Description of actions that are undertaken when primitive is received; one effect is provided for each item in the associated “When generated” subclause (see 14.1.6).

### **14.2 Primitive definitions**

Primitives for both SAPs are defined in this subclause. Definitions for Management SAP (M-SAP) and Control SAP (C-SAP) primitives are provided for in 14.2.1 and 14.2.2, respectively. M-SAP primitives cover system configuration, monitoring statistics, notifications/triggers, sensing/geolocation reporting, and communication with the database service. C-SAP primitives cover CPE management, session management, security context management, radio resource management, and AAA service signaling.

#### **14.2.1 Management SAP (M-SAP)**

##### **14.2.1.1 Accounting management primitives**

Accounting management pertains to monitoring and managing information regarding CPE data transmission usage. Accounting records are updated whenever a CPE starts registration (REG-REQ) upon entry, is provisioned/configured for a new service flow (DSA-REQ/RSP), has a service flow configuration altered (DSC-REQ/RSP), and/or requests de-registration (DREG-REQ).

There are three accounting management primitives: M-ACCOUNTING-REQUEST, M-ACCOUNTING-CONFIRMATION, and M-ACCOUNTING-INDICATION.

###### **14.2.1.1.1 M-ACCOUNTING-REQUEST**

###### **14.2.1.1.1.1 Purpose**

To request accounting records for CPEs from BS.

###### **14.2.1.1.1.2 SAP type**

M-SAP

###### **14.2.1.1.1.3 Operation type**

Information Request

###### **14.2.1.1.1.4 Destination**

BS

#### **14.2.1.1.5 Data**

**Table 282—M-ACCOUNTING-REQUEST parameters**

Name	Type	Length	Description
Record Index	Integer	11 bits	Index into <code>wranIfBsOtaUsageDataRecordTable</code> that contains record for CPE.
Station ID	Integer	9 bits	Station ID assigned to CPE.
Flow ID	Integer	3 bits	Flow ID to which traffic is mapped.
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
Session ID	Integer	32 bits	Session ID of session to which record pertains.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-ACCOUNTING-INDICATION. Time format defined in 14.1.5.
Padding		1 bit	Set to 0.

See `wranIfBsOtaUsageDataRecordTable` (in `wranIfBsAm`) for further explanation on accounting record information.

#### **14.2.1.1.6 When generated**

NCMS generates this primitive when it requires an accounting record data from the BS.

#### **14.2.1.1.7 Effect of receipt**

BS pulls relevant data from accounting record table (`wranIfBsOtaUsageDataRecordTable`) and sends the data in the M-ACCOUNTING-CONFIRMATION primitive.

### **14.2.1.2 M-ACCOUNTING-CONFIRMATION**

#### **14.2.1.2.1 Purpose**

BS uses this primitive to provide accounting data requested in M-ACCOUNTING-REQUEST.

#### **14.2.1.2.2 SAP type**

M-SAP

#### **14.2.1.2.3 Operation type**

Information Confirmation

#### **14.2.1.2.4 Destination**

NCMS

#### **14.2.1.1.2.5 Data**

**Table 283—M-ACCOUNTING-CONFIRMATION parameters**

Name	Type	Length	Description
Record Index	Integer	11 bits	Index into <code>wranIfBsOtaUsageDataRecordTable</code> that contains record for CPE.
Station ID	Integer	9 bits	Station ID assigned to CPE.
Flow ID	Integer	3 bits	Flow ID to which traffic is mapped.
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
Session ID	Integer	32 bits	Session ID of session to which record pertains.
MAC SDU Count	Integer	32 bits	Count of # of MAC SDUs transmitted on given Flow ID.
MAC PDU Count	Integer	32 bits	Count of # of PDUs transmitted.
Start Time	Character String	20 characters	String denoting Start Time of session. Time format defined in 14.1.5.
End Time	Character String	20 characters	String denoting End Time of session. Time format defined in 14.1.5.
# of Service Flows	Integer	8 bits	Number of service flows listed.
Service Flow List	Octet String	# of Service Flows × 32 bits	String of octets, where by each set of 4 octets is a Service Flow ID.
# of QoS Profile Sets	Integer	8 bits	Number of QoS Profile Sets listed.
QoS Profile List	Octet String	# of QoS Profile Sets × 16 bits	List of indexes into <code>wranIfBsScTable</code> , that point to the definition of the QoS Parameter set of each service flow listed in Service Flow List.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-ACCOUNTING-REQUEST. Time format defined in 14.1.5.
Padding		1 bit	Set to 0.

See `wranIfBsOtaUsageDataRecordTable` (in `wranIfBsAm`) for further explanation on accounting record information.

#### **14.2.1.1.2.6 When generated**

Sent by BS when BS receives a M-ACCOUNTING-REQUEST from NCMS.

#### **14.2.1.1.2.7 Effect of receipt**

NCMS will unpackage the Data item of received primitive and submit it using whatever process NCMS/Operator uses for accounting.

### **14.2.1.1.3 M-ACCOUNTING-INDICATION**

#### **14.2.1.1.3.1 Purpose**

BS uses this primitive to indicate to the NCMS that accounting records have been updated at the BS. Accounting records get started/manipulated/deleted/processed during the following events: a BS receives a REG-REQ from a CPE during registration, a CPE requests de-registration (DREG-REQ), a new service

flow has been activated on CPE via DSA-REQ/RSP, an existing service flow has been modified on the CPE via DSC-REQ/RSP, or a service flow has been deleted via DSD-REQ/RSP.

#### **14.2.1.1.3.2 SAP type**

M-SAP

#### **14.2.1.1.3.3 Operation type**

Event Indication

#### **14.2.1.1.3.4 Destination**

NCMS

#### **14.2.1.1.3.5 Data**

**Table 284—M-ACCOUNTING-INDICATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
# of Service Flows	Integer	8 bits	Number of service flows listed.
Service Flow List	Octet String	# of Service Flows × 32 bits	String of octets, where by each set of 4 octets is a Service Flow ID.
Account Event	Integer	3 bits	Indicates events that trigger manipulation of accounting records. Can take on the following values: 000: REG 001: DSA 010: DSC 011: DREG 100–111: Reserved
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.
Padding		5 bits	Set to 00000.

#### **14.2.1.1.3.6 When generated**

BS generates this event when one of the following events has occurred: a BS receives a REG-REQ from a CPE during registration, a CPE requests de-registration (DREG-REQ), a new service flow has been activated on CPE via DSA-REQ/RSP, an existing service flow has been modified on the CPE via DSC-REQ/RSP, or a service flow has been deleted via DSD-REQ/RSP.

#### **14.2.1.1.3.7 Effect of receipt**

NCMS will take information in Data item and generate the appropriate M-ACCOUNTING-REQUEST primitive to send to the BS to retrieve accounting records.

### **14.2.1.2 Internet Protocol (IP) management primitives**

IP management pertains to executing primitives related to establishing IP connections using the secondary management connection during CPE initialization (see 7.14.2.13).

There are four IP management primitives: M-DHCP-DISCOVER-REQUEST, M-DHCP-OFFER-CONFIRMATION, M-DHCP-SETUP-REQUEST, and M-DHCP-SETUP-CONFIRMATION.

#### **14.2.1.2.1 M-DHCP-DISCOVER-REQUEST**

##### **14.2.1.2.1.1 Purpose**

Encapsulates DHCPDISCOVER message (see IETF RFC 2131), created by CPE DHCP client, to NCMS to discover whether a DHCP server can provide IP management/setup.

##### **14.2.1.2.1.2 SAP type**

M-SAP

##### **14.2.1.2.1.3 Operation type**

Information Request

##### **14.2.1.2.1.4 Destination**

NCMS/DHCP

##### **14.2.1.2.1.5 Data**

**Table 285—M-DHCP-DISCOVER-REQUEST parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
DHCPDISCOVER message size	Integer	16 bits	Size of DHCPDISCOVER message in octets.
DHCPDISCOVER message	Octet String	DHCPDISCOVER message size × 8 bits	Contents of DHCPDISCOVER message.
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

##### **14.2.1.2.1.6 When generated**

CPE generates this primitive during the initialization procedure if it requires allocation of an IP address.

##### **14.2.1.2.1.7 Effect of receipt**

NCMS forwards DHCPDISCOVER message to DHCP server (or servers) in the operator network.

#### **14.2.1.2.2 M-DHCP-OFFER-CONFIRMATION**

##### **14.2.1.2.2.1 Purpose**

NCMS/DHCP server uses this primitive to provide DHCP server information to a CPE.

#### **14.2.1.2.2.2 SAP type**

M-SAP

#### **14.2.1.2.2.3 Operation type**

Information Confirmation

#### **14.2.1.2.2.4 Destination**

CPE

#### **14.2.1.2.2.5 Data**

**Table 286—M-DHCP-OFFER-CONFIRMATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
DHCPOFFER message size	Integer	16 bits	Size of DHCPOFFER message in octets.
DHCPOFFER message	Octet String	DHCPOFFER message size × 8 bits	Contents of DHCPOFFER message.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-DHCP-DISCOVER-REQUEST. Time format defined in 14.1.5.

#### **14.2.1.2.2.6 When generated**

Sent by NCMS/DHCP server when NCMS/DHCP server receives a M-DHCP-DISCOVER-REQUEST from CPE. If more than one DHCP server exists within NCMS, then one copy of this primitive is generated and sent for each DHCP server.

#### **14.2.1.2.2.7 Effect of receipt**

CPE will unpackage the DHCPOFFER message and pass it to DHCP client on CPE.

### **14.2.1.2.3 M-DHCP-SETUP-REQUEST**

#### **14.2.1.2.3.1 Purpose**

Encapsulates DHCPREQUEST message (see IETF RFC 2131), created by CPE DHCP client, to NCMS to request parameters and/or IP address offered in DHCPOFFER message sent by DHCP server.

#### **14.2.1.2.3.2 SAP type**

M-SAP

#### **14.2.1.2.3.3 Operation type**

Information Request

#### **14.2.1.2.3.4 Destination**

NCMS/DHCP

#### **14.2.1.2.3.5 Data**

**Table 287—M-DHCP-SETUP-REQUEST parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
DHCPREQUEST message size	Integer	16 bits	Size of DHCPREQUEST message in octets.
DHCPREQUEST message	Octet String	DHCPREQUEST message size × 8 bits	Contents of DHCPREQUEST message.
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined 14.1.5.

#### **14.2.1.2.3.6 When generated**

CPE generates this primitive during the initialization procedure once it has received the M-DHCP-OFFER-CONFIRMATION primitive containing a DHCPOFFER message from a DHCP server.

#### **14.2.1.2.3.7 Effect of receipt**

NCMS forwards DHCPDISCOVER message to DHCP server the CPE has selected within the operator network.

### **14.2.1.2.4 M-DHCP-SETUP-CONFIRMATION**

#### **14.2.1.2.4.1 Purpose**

NCMS/DHCP server uses this primitive to provide DHCP configuration parameters and length of DHCP lease to CPE.

#### **14.2.1.2.4.2 SAP type**

M-SAP

#### **14.2.1.2.4.3 Operation type**

Information Confirmation

#### **14.2.1.2.4.4 Destination**

CPE

#### **14.2.1.2.4.5 Data**

**Table 288—M-DHCP-SETUP-CONFIRMATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
DHCPACK message size	Integer	16 bits	Size of DHCPACK message in octets.
DHCPACK message	Octet String	DHCPACK message size × 8 bits	Contents of DHCPACK message.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-DHCP-SETUP-REQUEST. Time format defined in 14.1.5.

#### **14.2.1.2.4.6 When generated**

Sent by NCMS/DHCP server when NCMS/DHCP server receives a M-DHCP-STEUP-REQUEST from CPE.

#### **14.2.1.2.4.7 Effect of receipt**

CPE will unpackage the DHCPACK message and use the contained information to configure IP connection on the CPE.

### **14.2.1.3 Database service primitives**

The following list of messages, present in the IEEE Std 802.22, defines the necessary messaging to support access to the database service by the BS. The format described in the following subclauses shall be used for the messages sent directly to the database service as well as those received directly from the database service. Some parameters in the following primitives are variable-length character strings. The length of these parameters is given in terms of the number of characters in those strings. The total size of those parameters is the number of characters (the length) multiplied by the size of each character. For ASCII character sets, each character is 1 octet. For Unicode character sets, each character is 2 octets. Note that all variable-length character strings shall be null terminated.

#### **14.2.1.3.1 M-DB-AVAILABLE-REQUEST**

##### **14.2.1.3.1.1 Purpose**

Allows the BS to verify that it is connected to the database service in order to receive channel availability and maximum allowed EIRP updates.

##### **14.2.1.3.1.2 SAP type**

M-SAP

##### **14.2.1.3.1.3 Operation type**

Information Request

##### **14.2.1.3.1.4 Destination**

Database Service Provider

#### **14.2.1.3.1.5 Data**

**Table 289—M-DB-AVAILABLE-REQUEST parameters**

Name	Type	Length	Description
Base station-ID Length	Integer	2 bytes	Length of Base station-ID field (# of characters).
Base station-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Character String	Variable	
Database Service URL Length	Integer	2 bytes	Length of database service URL field (# of characters). This is used to set the Locator for the Database service.
Database Service URL	Character String	Variable	A fully qualified URL starting with http:// or https://.
Base Station Database Service Access URL Length	Integer	2 bytes	Length of Base Station Database Service URL filed (# of characters).
Base Station Database Service Access URL	Character String	Variable	A fully qualified URL. This is used to set the Locator for the Base Station Access by the database service.
Base Station Management URL Length	Integer	2 bytes	Length of Base Station Management URL field (# of characters).
Base Station Management URL	Character String	Variable	A fully qualified URL. This is used to set the Locator for the BS Management Service.
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined 14.1.5.

#### **14.2.1.3.1.6 When generated**

When BS needs to confirm connectivity to a database service provider (see 10.2.6.5).

#### **14.2.1.3.1.7 Effect of receipt**

Database service receives primitive, processes it, and responds with M-DB-AVAILABLE-CONFIRMATION to confirm that the BS that sent the primitive has connectivity with the database service provider.

### **14.2.1.3.2 M-DB-AVAILABLE-CONFIRMATION**

#### **14.2.1.3.2.1 Purpose**

Allows the database service to confirm that the BS is still connected to the database service.

#### **14.2.1.3.2.2 SAP type**

M-SAP

#### **14.2.1.3.2.3 Operation type**

Information Confirmation

#### **14.2.1.3.2.4 Destination**

BS

#### **14.2.1.3.2.5 Data**

**Table 290—M-DB-AVAILABLE-CONFIRMATION parameters**

Name	Type	Length	Description
Base station-ID Length	Integer	2 bytes	Length of Base station-ID field (# of characters).
Base station-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Character String	Variable	
Timestamp	Character String	20 characters	Copied from the timestamp in the M-DB-AVAILABLE-REQUEST. Time format defined in 14.1.5.

#### **14.2.1.3.2.6 When generated**

When database service receives M-DB-AVAILABLE-REQUEST from a BS.

#### **14.2.1.3.2.7 Effect of receipt**

BS will process received primitive and proceed to “Update location specific list of available channels from the database service – Reset Timer T45” stage of the SM\_Database\_Update procedure as defined in 10.2.6.5. If BS does not receive primitive before T45 expires, it will execute Policy 1e (see Table 234).

### **14.2.1.3.3 M-DB-ENLISTMENT-REQUEST**

#### **14.2.1.3.3.1 Purpose**

Allows the BS to enlist with the database service a device that has joined its WRAN.<sup>30</sup>

#### **14.2.1.3.3.2 SAP type**

M-SAP

#### **14.2.1.3.3.3 Operation type**

Information Request

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<sup>30</sup> Note that this interface allows enlistment of TVBD devices (beyond IEEE 802.22 BS and CPE) that may not need to be formally “registered” as required by the FCC R&O 08-260 for potential broader capability and applicability of the database service.

#### **14.2.1.3.3.4 Destination**

Database Service Provider

#### **14.2.1.3.3.5 Data**

**Table 291—M-DB-ENLISTMENT-REQUEST parameters**

Name	Type	Length	Description
Device Type	Integer	1 byte	The value identifies the type of device obtained as part of its process to associate: 0x00 = Fixed base station 0x01 = Fixed CPE 0x02 = Personal/portable mode 0x03–0xFF = Reserved
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Proxy Device-ID Length	Integer	2 bytes	Length of Proxy Device-ID field (# of characters).
Proxy Device-ID	Character String	Variable	This element is the device ID for the device (most likely the controlling BS) that is acting as the proxy to the database service. (In US, this is the FCC-ID.)
Proxy Serial Number Length	Integer	2 bytes	Length of Proxy Serial Number field (# of characters).
Proxy Serial Number	Character String	Variable	This element is the serial number for the device (most likely the controlling BS) that is acting as the proxy to the database service.
Location Data String Length	Integer	2 bytes	Length of Location Data String field (# of characters).
Location Data String	Character String	NMEA 0183	The value identifies the location of the device (latitude, longitude).
Responsible Party Name Length	Integer	2 bytes	Length of Responsible Party Name field (# of characters).
Responsible Party Name	Character String	Variable	
Antenna height	Integer	1 byte	Antenna height above ground level in meters.

Name	Type	Length	Description
Antenna Operation Type	Integer	1 bytes	Indicates where (e.g., the environment) this antenna is positioned: 0x00 = outdoor 0x01 = indoor 0x02–0xFF = Reserved
If (Device Type = 0x00 or 0x01) {			
Contact Name Length	Integer	2 bytes	Length of Contact Name field (# of characters).
Contact Name	Character String	Variable	
Contact Physical Address Length	Integer	2 bytes	Length of Contact Physical Address field (# of characters).
Contact Physical Address	Character String	Variable	
Contact Email Address Length	Integer	2 bytes	Length of Contact Email Address field (# of characters).
Contact Email Address	Character String	Variable	
Contact Telephone Number Length	Integer	2 bytes	Length of Contact Telephone Number field (# of characters).
Contact Telephone Number	Character String	Variable	
}			
If (Device Type = 0x00) {			
Access Type	Integer	1 byte	The value identifies the type of access being used for communication to the database service: 0x00 = URL 0x01 = IPv4 IP address 0x02 = IPv6 IP address 0x03–0xFF = Reserved
Base Station Network Address {			
If (Access Type = 0x00)			
Database Service URL Length	Integer	2 bytes	Length of Database Service URL field (# of characters).
Database Service URL	Character String	Variable	A fully qualified URL starting with http:// or https://.
Else If (Access Type = 0x01)			
Database Service IPv4 Address	Integer	4 bytes	IPv4 network address for database service.
Else if (Access Type = 0x02)			
Database Service IPv6 Address	Integer	16 bytes	IPv6 network address for database service.
}			
Base station port number	Integer	2 bytes	Port number of the internet connection.
If (wranIfDatabaseServiceBSAntennaInformationSupportedMib) {			

Name	Type	Length	Description
Antenna information	Character String	72 bytes	Antenna directionality information of the device in dB relative to the main lobe maximum gain for every 5 degree azimuth clockwise starting from the direction of the maximum antenna gain expressed in units of 0.25 dB over the range -63.75 dB (encoded 0x00) to 0 dB (0xFF). (to allow the database calculation of the channel availability and the maximum allowed EIRP values at the registering location <sup>31</sup> )
Antenna azimuth	Integer	2 bytes	Antenna azimuth in degrees, clockwise from true North.
Antenna Polarization	Integer	1 bytes	Antenna Polarization type: 0x00 = Elliptical 0x01 = Horizontal 0x02 = Left-hand circular 0x03 = Right-hand circular 0x04 = Vertical circular 0x05–0xFF = Reserved
}			
}			
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

#### 14.2.1.3.3.6 When generated

When BS needs to enlist or register a device under its control (including itself) with the database service provider.

#### 14.2.1.3.7 Effect of receipt

Database service receives primitive, processes it, and responds with M-DB-ENLISTMENT-CONFIRMATION to confirm that the requested device was successfully enlisted with the database service provider.

### 14.2.1.3.4 M-DB-ENLISTMENT-CONFIRMATION

#### 14.2.1.3.4.1 Purpose

Allows the database service to confirm to the BS that the new device has been successfully registered.

#### 14.2.1.3.4.2 SAP type

M-SAP

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<sup>31</sup> Antenna directionality will represent the antenna gain pattern in the horizontal plane in dB referred to the gain of its main lobe and it is assumed that the database service will use its knowledge of the geolocation of the base station and the device being enlisted to calculate the azimuth of the device antenna main lobe for interference calculations in the case of base station and CPE operation. Omni directional antennas shall be assumed as the default.

#### **14.2.1.3.4.3 Operation type**

Information Confirmation

#### **14.2.1.3.4.4 Destination**

BS

#### **14.2.1.3.4.5 Data**

**Table 292—M-DB-ENLISTMENT-CONFIRMATION parameters**

Name	Type	Length	Description
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Status/Error Code	Integer	2 bytes	Error/status code returned by database service. Values defined in Section 5.13 in IETF PAWS protocol.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-DB-ENLISTMENT-REQUEST. Time format defined in 14.1.5.

#### **14.2.1.3.4.6 When generated**

When database service receives M-DB-ENLISTMENT-REQUEST from a BS.

#### **14.2.1.3.4.7 Effect of receipt**

BS will process received primitive and continue to enlist and delist (see M-DB-DELIST-REQUEST/CONFIRMATION) as devices enter and/or leave the network.

### **14.2.1.3.5 M-DB-AVAILABLE-CHANNEL-REQUEST**

#### **14.2.1.3.5.1 Purpose**

Allows the BS to request a list of available channels and maximum EIRP per channel from the database service for the specified type of device at a particular location.

#### **14.2.1.3.5.2 SAP type**

M-SAP

#### **14.2.1.3.5.3 Operation type**

Information Request

#### 14.2.1.3.5.4 Destination

Database Service Provider

#### 14.2.1.3.5.5 Data

**Table 293—M-DB-AVAILABLE-CHANNEL-REQUEST parameters**

Name	Type	Length	Description
Device Type	Integer	1 byte	The value identifies the type of device at the geolocation registering: 0x00 = Fixed base station 0x01 = Fixed CPE 0x02 = Personal/portable mode 0x03–0xFF = Reserved
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Location Data Type	Integer	1 byte	Location data type identifier: 0x00 – Single Point Location 0x01 – Polygon for Geographic area 0x02 – Batch request for multiple points
if(Location Data Type == 0x00) {			
Single Point Location Data Length	Integer	2 bytes	length of Single Point Location Data String in octets.
Single Point Location Data String	Character String	NMEA 0183 Character String	String that identifies location of the device (latitude, longitude).
}			
elseif(Location Data Type == 0x01 or 0x02) {			
Number of points	Integer	1 byte	# of location data points that represents either vertices of a polygon representing the area being queried for (Location Data Type == 0x01) or a set of points representing a batch request (Location Data Type == 0x02).
for(i=0;i<Number of vertices;i++) {			
Point String Length	Integer	2 bytes	length of Point Data String in octets.
Point Data String	Character String	NMEA 0183 Character String	String that identifies location of a vertex of a polygon that defines the area being queried.
}			

Name	Type	Length	Description
}			
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

#### **14.2.1.3.5.6 When generated**

When BS needs to request a list of available channels for devices operating under its control.

#### **14.2.1.3.5.7 Effect of receipt**

Database service receives primitive, processes it, and responds with M-DB-AVAILABLE-CHANNEL-CONFIRMATION to confirm that the BS that sent the primitive has connectivity with to the database service.

### **14.2.1.3.6 M-DB-AVAILABLE-CHANNEL-CONFIRMATION**

#### **14.2.1.3.6.1 Purpose**

Allows the database service to confirm that the BS is still connected to the database service.

#### **14.2.1.3.6.2 SAP type**

M-SAP

#### **14.2.1.3.6.3 Operation type**

Information Confirmation

#### **14.2.1.3.6.4 Destination**

BS

#### **14.2.1.3.6.5 Data**

**Table 294—M-DB-AVAILABLE-CHANNEL-CONFIRMATION parameters**

Name	Type	Length	Description
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Location Data Type	Integer	1 byte	Location data type identifier: 0x00 – Single Point Location 0x01 – Polygon for Geographic area 0x02 – Batch request for multiple points

Name	Type	Length	Description
if (Location Data Type == 0x00 or 0x01) {			
Number of Location Data Type 0/1 Channels Available	Integer	1 byte	
if (Number of Location Data Type 0/1 Channels Available > 0) {			If the number of channels is equal to 0, this means that the device cannot operate.
for (i=0;i< Number of Location Data Type 0/1 Channels Available; i++) {			
Channel Start Frequency	Integer	8 bytes	Frequency for start of channel in Hz.
Channel End Frequency	Integer	8 bytes	Frequency for end of channel in Hz.
Max_Allowed_EIRP	Integer	1 bytes	Maximum allowed EIRP expressed in dBm over the range -64 dBm (encoded 0x00) to +63.5 dBm (encoded 0xFF).
Channel Availability Start Time	Character String	20 octets	String representing timestamp for when channel availability starts. Time format defined in 14.1.5.
Channel Availability End Time	Character String	20 octets	String representing timestamp for when channel availability ends. Time format defined in 14.1.5.
}			
}			
}			
if (Location Data Type == 0x02) {			
Number of Location in Batch Request			
for(x=0;x<Number of Location in Batch Request; x++) {			
Batch Location String Length	Integer	2 bytes	Length of location string.
Batch Location String	Character String	NMEA 0183 Character String	String that identifies location in a set of batch locations.
Number of Location Data Type 2 Channels available			
if (Number of Location Data Type 2 Channels Available > 0) {			If the number of channels is equal to 0, this means that the device cannot operate.
for (y=0;y< Number of Location Data Type 0/1 Channels Available; y++) {			

Name	Type	Length	Description
Channel Start Frequency	Integer	8 bytes	Frequency for start of channel in Hz.
Channel End Frequency	Integer	8 bytes	Frequency for end of channel in Hz.
Max_Allowed_EIRP	Integer	1 bytes	Maximum allowed EIRP expressed in dBm over the range -64 dBm (encoded 0x00) to +63.5 dBm (encoded 0xFF).
Channel Availability Start Time	Character String	20 octets	String representing timestamp for when channel availability starts. Time format defined in 14.1.5.
Channel Availability End Time	Character String	20 octets	String representing timestamp for when channel availability ends. Time format defined in 14.1.5.
}			
}			
}			
}			
Status/Error Code	Integer	2 bytes	Error code as defined by IETF PAWS protocol, Section 5.13.
Timestamp	Character String	20 octets	Timestamp as copied from the M-DB-AVAILABLE-CHANNEL-REQUEST. Time format is defined in 14.1.5.

#### **14.2.1.3.6.6 When generated**

When database service receives M-DB-AVAILABLE-CHANNEL-REQUEST from a BS.

#### **14.2.1.3.6.7 Effect of receipt**

BS will process received primitive and then proceed to execute the SM\_Database\_Update procedure as defined in 10.2.6.5, following the “Is the current operating channel available for the BS and all the associated CPEs?” stage.

#### **14.2.1.3.7 M-DB-DELIST-REQUEST**

##### **14.2.1.3.7.1 Purpose**

Allow the BS to request the database service to remove the enlistment of a device that was associated with that BS.

##### **14.2.1.3.7.2 SAP type**

M-SAP

##### **14.2.1.3.7.3 Operation type**

Information Request

##### **14.2.1.3.7.4 Destination**

Database Service Provider

#### **14.2.1.3.7.5 Data**

**Table 295—M-DB-DELIST-REQUEST parameters**

Name	Type	Length	Description
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial Number	Characters String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Responsible Party Name Length	Integer	2 bytes	Length of Responsible Party Name field (# of characters).
Responsible Party Name	Character String	Variable	
Location Data String Length	Integer	2 bytes	Length of Location Data String.
Location Data String	Char	NMEA 0183 Character string	The value identifies the location of the device (latitude, longitude).
Timestamp	Character String	20 octets	String representing timestamp for when message was sent. Time format is defined in 14.1.5.

#### **14.2.1.3.7.6 When generated**

When BS needs to delist/de-register a device under its control that has been previously (successfully) enlisted with the database service provider.

#### **14.2.1.3.7.7 Effect of receipt**

Database service receives primitive, processes it, and responds with M-DB-DELIST-CONFIRMATION to confirm that the BS that requested device was successfully delisted.

### **14.2.1.3.8 M-DB-DELIST-CONFIRMATION**

#### **14.2.1.3.8.1 Purpose**

Allows the database service to inform the BS of whether its request to remove the enlistment of a device that was associated with that BS was successfully received and executed by the database service.

#### **14.2.1.3.8.2 SAP type**

M-SAP

#### **14.2.1.3.8.3 Operation type**

Information Confirmation

#### **14.2.1.3.8.4 Destination**

BS

#### **14.2.1.3.8.5 Data**

**Table 296—M-DB-DELIST-CONFIRMATION parameters**

Name	Type	Length	Description
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device-ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Responsible Party Name Length	Integer	2 bytes	Length of Responsible Party Name field (# of characters).
Responsible Party Name	Character String	Variable	
Location Data String Length	Integer	2 bytes	Length of Location Data String.
Location Data String	Char	NMEA 0183 Character string	The value identifies the location of the device (latitude, longitude).
Status/Error Code	Integer	2 bytes	Error code as defined by IETF PAWS protocol, Section 5.13.
Timestamp	Character String	20 octets	Timestamp as copied from the M-DB-DELIST-REQUEST. Time format is defined in 14.1.5.

#### **14.2.1.3.8.6 When generated**

When database service receives M-DB-DELIST-REQUEST from a BS.

#### **14.2.1.3.8.7 Effect of receipt**

BS will process received primitive. It then may delete the enlistment information for the device that has been recently delisted or may keep that information in case the device needs to be re-enlisted in the future.

#### **14.2.1.3.9 M-DB-OPERATING-TV-CH-SELECTION-CONFIRMATION**

##### **14.2.1.3.9.1 Purpose**

Allows the SM to inform the database service when it has selected a new operating channel.

##### **14.2.1.3.9.2 SAP type**

M-SAP

#### **14.2.1.3.9.3 Operation type**

Information Confirmation

#### **14.2.1.3.9.4 Destination**

Database Service

#### **14.2.1.3.9.5 Data**

**Table 297—M-DB-OPERATING-TV-CH-SELECTION-CONFIRMATION parameters**

Name	Type	Length	Description
Device-ID Length	Integer	2 bytes	Length of Device-ID field (# of characters).
Device- ID	Character String	Variable	In US, this is FCC-ID.
Serial Number Length	Integer	2 bytes	Length of Serial Number field (# of characters).
Serial number	Character String	Variable	
Technology Identifier Length	Integer	2 bytes	Length of Technology Identifier field (# of characters).
Technology Identifier	Character String	Variable	Technology Identifier string that identifies the type of technology being used (e.g., “IEEE_802.22”).
Channel Frequency Start (Hz)	Integer	8 bytes	Start of channel, frequency in Hz.
Channel Frequency End (Hz)	Integer	8 bytes	End of channel, frequency.
Location Data String Length	Integer	2 bytes	Length of Location Data String.
Location Data String	Char	NMEA 0183 Character string	The value identifies the location of the device (latitude, longitude).
Timestamp	Character String	20 octets	String representing timestamp for when message was sent. Time format is defined in 14.1.5.

#### **14.2.1.3.9.6 When generated**

When SM selects a new operating channel.

#### **14.2.1.3.9.7 Effect of receipt**

Database service will process received primitive and update its records regarding operating TV channel usage. If the primitive is successfully received, the database service will respond with M-DB-OPERATING-TV-CH-SELECTION-INDICATION to inform the SM that the M-DB-OPEARTING-TV-CH-SELECTION-CONFIRMATION primitive was received. If any error codes come up as a result, e.g., device making the request is not registered, it is operating outside of an area where channels are available; the database service will indicate the error in M-DB-OPERATING-TV-CH-SELECTION-INDICATION.

#### **14.2.1.3.10 M-DB-OPERATING-TV-CH-SELECTION-INDICATION**

##### **14.2.1.3.10.1 Purpose**

Allows the database service to inform SM that it successfully received a operating channel update.

#### **14.2.1.3.10.2 SAP type**

M-SAP

#### **14.2.1.3.10.3 Operation type**

Event Indication

#### **14.2.1.3.10.4 Destination**

SM

#### **14.2.1.3.10.5 Data**

**Table 298—M-DB-OPERATING-TV-CH-SELECTION-INDICATION parameters**

Name	Type	Length	Description
Status/Error Code	Integer	2 bytes	Error code as defined by IETF PAWS protocol, Section 5.13.
Timestamp	Character String	20 octets	Timestamp as copied from the M-DB-OPERATING_TV-CH-SELECTION-CONFIRMATION that was received by database service. Time format is defined in 14.1.5.

#### **14.2.1.3.10.6 When generated**

When SM selects a new operating channel.

#### **14.2.1.3.10.7 Effect of receipt**

Database service will process received primitive and update its records regarding operating TV channel usage. If the primitive is successfully received, the database service will respond with M-DB-OPERATING-TV-CH-SELECTION-INDICATION to inform the SM that the M-DB-OPEARTING-TV-CH-SELECTION-CONFIRMATION primitive was received.

#### **14.2.1.4 BS configuration and monitoring primitives**

The BS SM occasionally sends the available channel list to its higher layers for additional channel classification. The available channel list can be presented to its higher layers to have channels classified as disallowed. The classification of an operating channel by the BS is also performed by its higher layers. The M-SAP is an interface that provides a means of exchanging information between the SM and the higher layers in the BS. Table 299 summarizes the primitives supported by the SM to pass the available channel list and to receive disallowed channel classifications and the selected operating channel through the M-SAP interface. The primitives are discussed in the subclauses referenced in the table.

**Table 299—BS configuration and monitoring primitives supported by the M-SAP**

Name	Request	Indication	Confirm
M-AVAIL-TV-CH-REPORT	14.2.1.4.1	14.2.1.4.2	
M-DISALLOWED-TV-CHS			14.2.1.4.3
M-OPERATING-TV-CH			14.2.1.4.4

#### **14.2.1.4.1 M-AVAIL-TV-CH-REPORT-REQUEST**

##### **14.2.1.4.1.1 Purpose**

Sent by the BS SM to request the higher layers for a selection of an operating channel based on the available channel list information provided this primitive. Table 300 specifies the parameters for the M-AVAIL-TV-CH-REPORT-REQUEST primitive.

##### **14.2.1.4.1.2 SAP type**

M-SAP

##### **14.2.1.4.1.3 Operation type**

Information Request

##### **14.2.1.4.1.4 Destination**

BS Higher Layer (see 5.1, Figure 3)

##### **14.2.1.4.1.5 Data**

**Table 300—M-AVAIL-TV-CH-REPORT-REQUEST parameters**

Name	Type	Length	Description
Number of Available Channels	Integer	1 byte	Number of channels provided.
For(i=0; i<Number of Available Channels; i++) {			
Channel Start Frequency	Integer	8 bytes	Channel start frequency in Hz.
Channel End Frequency	Integer	8 bytes	Channel end frequency in Hz.
Maximum Allowed EIRP	Integer	1 byte	Maximum allowed EIRP on channel “TV Channel Number”, defined on the range –64 dBm to +63.5 dBm in 0.5 dB steps.
}			
Mode	Integer	1 byte	The expected response from the higher layers: 0x00 = Test 0x01 = Request for disallowed channel classification 0x02 = Request for selection of operating channel 0x03–0xFF = Reserved
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

##### **14.2.1.4.1.6 When generated**

The M-AVAIL-TV-CH-REPORT-REQUEST primitive is generated by the BS SM and issued to the higher layers (depending on the mode) to request either disallowed channel classification or the selection of an operating channel during BS initialization as described in 7.14.1.

#### **14.2.1.4.1.7 Effect of receipt**

When the higher layers receive the M-AVAIL-TV-CH-REPORT-REQUEST primitive, they generate an M-AVAIL-TV-CH-REPORT-INDICATION primitive to notify the SM whether the request was successfully received.

#### **14.2.1.4.2 M-AVAIL-TV-CH-REPORT-INDICATION**

##### **14.2.1.4.2.1 Purpose**

The M-WRAN-SERVICE-REPORT-INDICATION primitive allows the higher layers to inform the SM whether the receipt of the available channel list was successful. Table 301 specifies the parameters for the M-AVAIL-TV-CH-REPORT-INDICATION primitive.

##### **14.2.1.4.2.2 SAP type**

M-SAP

##### **14.2.1.4.2.3 Operation type**

Event Indication

##### **14.2.1.4.2.4 Destination**

BS SM

##### **14.2.1.4.2.5 Data**

**Table 301—M-AVAIL-TV-CH-REPORT-INDICATION parameters**

Name	Type	Length	Description
Status	Integer	1 byte	The value indicates whether the request to select operating channel or disallowed channel classification was successfully generated: 0x00 = SUCCESS 0x01 = INVALID_REQUEST 0x02–0xFF = Reserved
Timestamp	Character String	20 characters	Copied from the timestamp in the M-AVAIL-TV-CH-REPORT-REQUEST. Time format defined in 14.1.5.

##### **14.2.1.4.2.6 When generated**

The M-AVAIL-TV-CH-REPORT-INDICATION primitive is generated by the higher layers and issued to its MIB when an M-AVAIL-TV-CH-REPORT-REQUEST primitive is received to indicate whether the available channel list was successfully generated.

##### **14.2.1.4.2.7 Effect of receipt**

When the SM of a CPE receives the M-AVAIL-TV-CH-REPORT-INDICATION primitive, it expects, depending on the mode, the higher layers to return nothing, an M-DISALLOWED-TV-CHS-CONFIRMATION primitive with classified disallowed channels, or an M-OPERATING-TV-CH-CONFIRMATION with the selected channel.

#### **14.2.1.4.3 M-DISALLOWED-TV-CHS-CONFIRMATION**

##### **14.2.1.4.3.1 Purpose**

The M-DISALLOWED-TV-CHS-CONFIRMATION primitive is used by the higher layers to return the disallowed channels on the available channel list to the SM per its request. Table 302 specifies the parameters for the M-DISALLOWED-TV-CHS-CONFIRMATION primitive.

##### **14.2.1.4.3.2 SAP type**

M-SAP

##### **14.2.1.4.3.3 Operation type**

Information Confirmation

##### **14.2.1.4.3.4 Destination**

BS SM

##### **14.2.1.4.3.5 Data**

**Table 302—M-DISALLOWED-TV-CHS-CONFIRMATION parameters**

Name	Type	Length	Description
Number of Disallowed Channels	Integer	1 byte	Number of disallowed channels provided.
For(i=0; i<Number of Disallowed Channels; i++) {			
Channel Start Frequency	Integer	8 bytes	Channel start frequency in Hz.
Channel End Frequency	Integer	8 bytes	Channel end frequency in Hz.
}			
Timestamp	Character String	20 characters	Copied from the timestamp in the M-AVAIL-TV-CH-REPORT-REQUEST. Time format defined in 14.1.5.

##### **14.2.1.4.3.6 When generated**

The M-DISALLOWED-TV-CHS-CONFIRMATION primitive is generated by the higher layers and issued to the MIB to indicate the disallowed channels from the available channel list.

##### **14.2.1.4.3.7 Effect of receipt**

When the SM receives the M-DISALLOWED-TV-CHS-CONFIRMATION, it will identify whether the response to its request for the higher layers to classify channels as disallowed from the available channel list was successfully received by the higher layers. If the response is successful, the SM will obtain the classified disallowed channels, and the BS will continue to the following steps of initialization and perform detection, described in 7.14.1.6. If the response is not successful, the SM may decide to issue another request.

#### **14.2.1.4.4 M-OPERATING-TV-CH-CONFIRMATION**

##### **14.2.1.4.4.1 Purpose**

The M-OPERATING-TV-CH-CONFIRMATION primitive is used by the higher layers to return the selected operating channel on the available channel list to the SM per its request. Table 303 specifies the parameters for the M-OPERATING-TV-CH-CONFIRMATION primitive.

##### **14.2.1.4.4.2 SAP type**

M-SAP

##### **14.2.1.4.4.3 Operation type**

Information Confirmation

##### **14.2.1.4.4.4 Destination**

BS SM

##### **14.2.1.4.4.5 Data**

**Table 303—M-OPERATING-TV-CH-CONFIRMATION parameters**

Name	Type	Length	Description
Channel Start Frequency	Integer	8 bytes	Channel start frequency in Hz.
Channel End Frequency	Integer	8 bytes	Channel end frequency in Hz.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-AVAIL-TV-CH-REPORT-REQUEST. Time format defined in 14.1.5.

##### **14.2.1.4.4.6 When generated**

The M-OPERATING-TV-CH-CONFIRMATION primitive is generated by the higher layers and issued to the BS SM to indicate the selected operating channel from the available channel list.

##### **14.2.1.4.4.7 Effect of receipt**

When the SM receives the M-OPERATING-TV-CH-CONFIRMATION, it will identify whether the response to its request for the higher layers to select the operating channel from the available channel list was successfully received by the higher layers. If the response was successful, the SM will obtain the selected operating channel, and the BS will continue to commence operation on the selected channel. If the response is not successful, the SM may decide to issue another request.

#### **14.2.1.5 CPE reports the resulting available WRAN services list**

The selection of WRAN service by the CPE is performed by its higher layers. The M-SAP is an interface that provides a means of exchanging information between the SA and the higher layers. Table 304 summarizes the primitives supported by the SM to pass the available WRAN services list and the selected WRAN service through the M-SAP interface. The primitives are discussed in the subclauses referenced in the table.

**Table 304—Available WRAN services list primitives supported by the M-SAP**

Name	Request	Indication	Confirm
M-WRAN-SERVICE-REPORT	14.2.1.5.1		14.2.1.5.3
M-WRAN-SERVICE-INDICATION		14.2.1.5.2	

#### **14.2.1.5.1 M-WRAN-SERVICE-REPORT-REQUEST**

##### **14.2.1.5.1.1 Purpose**

The M-WRAN-SERVICE-REPORT-REQUEST primitive is sent by the CPE SA to request the higher layers for a selection of a WRAN service based on the available WRAN service list information provided this primitive. Table 305 specifies the parameters for the M-WRAN-SERVICE-REPORT-REQUEST primitive.

##### **14.2.1.5.1.2 SAP type**

M-SAP

##### **14.2.1.5.1.3 Operation type**

Information Request

##### **14.2.1.5.1.4 Destination**

CPE Higher Layer (see 5.1, Figure 4)

##### **14.2.1.5.1.5 Data**

**Table 305—M-WRAN-SERVICE-REPORT-REQUEST parameters**

Name	Type	Length	Description
Number of Available Channels	Integer	1 byte	Number of channels provided.
For( $i=0; i < \text{Number of Available Channels}; i++$ ) {			
Channel Start Frequency	Integer	8 bytes	Channel start frequency in Hz.
Channel End Frequency	Integer	8 bytes	Channel end frequency in Hz.
RSSI on Channel	Integer	1 byte	Received signal strength on channel “TV Channel Number”, defined on the range –104 dBm to +23.5 dBm in 0.5 dB steps.
}			
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

#### **14.2.1.5.1.6 When generated**

The M-WRAN-SERVICE-REPORT-REQUEST primitive is generated by the CPE SA and issued to the higher layers to request a selection of a WRAN service during CPE initialization as described in 7.14.2.5.

#### **14.2.1.5.1.7 Effect of receipt**

When the higher layers receive the M-WRAN-SERVICE-REPORT-REQUEST primitive, they generate a M-WRAN-SERVICE-INDICATION primitive to notify the CPE SA whether the request was successfully received. If successful, the higher layers will then send a M-WRAN-SERVICE-REPORT-RESPONSE primitive containing a selected channel.

### **14.2.1.5.2 M-WRAN-SERVICE-INDICATION**

#### **14.2.1.5.2.1 Purpose**

The M-WRAN-SERVICE-INDICATION primitive allows the higher layers to inform the SA if the request to select an available WRAN service was successful. Table 306 specifies the parameters for the M-WRAN-SERVICE-INDICATION primitive.

#### **14.2.1.5.2.2 SAP type**

M-SAP

#### **14.2.1.5.2.3 Operation type**

Event Indication

#### **14.2.1.5.2.4 Destination**

CPE SA

#### **14.2.1.5.2.5 Data**

**Table 306—M-WRAN-SERVICE-INDICATION parameters**

Name	Type	Length	Description
Status	Integer	1 byte	The value indicates whether the request to select operating channel or disallowed channel classification was successfully generated: 0x00 = SUCCESS 0x01 = INVALID_REQUEST 0x02–0xFF = Reserved
Timestamp	Character String	20 characters	Copied from the timestamp in the M-WRAN-SERVICE-REPORT-REQUEST. Time format defined in 14.1.5.

#### **14.2.1.5.2.6 When generated**

The M-WRAN-SERVICE-INDICATION primitive is generated by the higher layers and issued to the CPE SA when an M-WRAN-SERVICE-REPORT-REQUEST primitive is received to indicate whether the request to select a WRAN service was successfully generated.

#### **14.2.1.5.2.7 Effect of receipt**

When the CPE SA receives the M-WRAN-SERVICE-INDICATION primitive with a successful status, then it shall await a M-WRAN-SERVICE-REPORT-CONFIRMATION containing a selected channel. If the CPE receives the M-WRAN-SERVICE-REPORT-CONFIRMATION with a failure status, it may stop or send another M-WRAN\_SERVICE-REPORT REQUEST to request service of a new channel.

#### **14.2.1.5.3 M-WRAN-SERVICE-REPORT-CONFIRMATION**

##### **14.2.1.5.3.1 Purpose**

The M-WRAN-SERVICE-REPORT-CONFIRMATION primitive is used by the higher layers to return a selected WRAN channel from the available WRAN service list to the SA per its request. Table 307 specifies the parameters for the M-WRAN-SERVICE- REPORT-CONFIRMATION primitive.

##### **14.2.1.5.3.2 SAP type**

M-SAP

##### **14.2.1.5.3.3 Operation type**

Information Confirmation

##### **14.2.1.5.3.4 Destination**

CPE SA

##### **14.2.1.5.3.5 Data**

**Table 307—M-WRAN-SERVICE-REPORT-CONFIRMATION parameters**

Name	Type	Length	Description
Channel Start Frequency	Integer	8 bytes	Channel start frequency in Hz.
Channel End Frequency	Integer	8 bytes	Channel end frequency in Hz.
Timestamp	Character String	20 characters	Copied from the timestamp in the M-WRAN-SERVICE-REPORT-REQUEST. Time format defined in 14.1.5.

##### **14.2.1.5.3.6 When generated**

The M-WRAN-SERVICE-REPORT-CONFIRMATION primitive is generated by the higher layers and issued to the CPE SA to indicate the selected channel from the available WRAN service list.

##### **14.2.1.5.3.7 Effect of receipt**

When the SA receives the M-WRAN-SERVICE-REPORT-CONFIRMATION, it will identify whether the response to its request for the higher layers to select a channel from the available WRAN service list was successfully received by the higher layers. If the response was successful, the SA will obtain the selected channel, and CPE will continue to the following steps of initialization. If the response is not successful, the SA may decide to issue another query.

### **14.2.1.6 Antenna primitives**

Essential antenna information is provided to the MAC by the antenna through the M-SAP. The M-SAP is an interface that provides a means of exchanging information between the SM at the BS MAC and the SSA at the CPE MAC and their respective antenna. Table 308 summarizes the primitives supported by the MAC to access antenna information through the M-SAP interface. The primitives are discussed in the subclauses referenced in the table.

**Table 308—Available WRAN services list primitives supported by the M-SAP**

Name	Request	Indication	Confirm
M-ANTENNA-INTEGRATED	14.2.1.6.1		14.2.1.6.2
M-ANTENNA-INFOMRATION	14.2.1.6.3		14.2.1.6.4

#### **14.2.1.6.1 M-ANTENNA-INTEGRATED-REQUEST**

##### **14.2.1.6.1.1 Purpose**

The M-ANTENNA-INTEGRATED-REQUEST primitive allows the MAC to identify whether the device's antenna is integrated or non-integrated through the M-SAP in order to know whether it is required to get antenna gain information for calculation of EIRP. The M-ANTENNA-INTEGRATED-REQUEST primitive has no attributes.

##### **14.2.1.6.1.2 SAP type**

M-SAP

##### **14.2.1.6.1.3 Operation type**

Information Request

##### **14.2.1.6.1.4 Destination**

Antenna Interface (see 9.12.2)

##### **14.2.1.6.1.5 Data**

There are no attributes for this primitive.

##### **14.2.1.6.1.6 When generated**

The M-ANTENNA-INTEGRATED-REQUEST primitive shall be generated by the MAC and issued to its antenna to identify whether its antenna is integrated or non-integrated.

##### **14.2.1.6.1.7 Effect of receipt**

When the antenna receives the M-ANTENNA-INTEGRATED-REQUEST primitive, the antenna shall generate an M-ANTENNA-INTEGRATED-CONFIRMATION primitive to indicate whether the antenna is integrated or non-integrated.

### **14.2.1.6.2 M-ANTENNA-INTEGRATED-CONFIRMATION**

#### **14.2.1.6.2.1 Purpose**

The M-ANTENNA-INTEGRATED-CONFIRMATION primitive allows the antenna to inform the MAC whether it is integrated or non-integrated through the M-SAP. Table 309 specifies the parameters for the M-ANTENNA-INTEGRATED-CONFIRMATION primitive.

#### **14.2.1.6.2.2 SAP type**

M-SAP

#### **14.2.1.6.2.3 Operation type**

Information Confirmation

#### **14.2.1.6.2.4 Destination**

CPE, BS

#### **14.2.1.6.2.5 Data**

**Table 309—M-ANTENNA-INTEGRATED-CONFIRMATION parameters**

Name	Type	Length	Description
Antenna Type	Integer	1 byte	The value indicates whether the antenna is integrated or non-integrated: 0x00 = integrated antenna 0x01 = non-integrated antenna 0x02–0xFF = Reserved

#### **14.2.1.6.2.6 When generated**

The M-ANTENNA-INTEGRATED-CONFIRMATION primitive shall be generated by the antenna and issued to its MAC when an M-ANTENNA-INTEGRATED-REQUEST primitive is received to indicate whether the antenna is integrated or non-integrated through the M-SAP.

#### **14.2.1.6.2.7 Effect of receipt**

When the MAC receives the M-ANTENNA-INTEGRATED-CONFIRMATION primitive, the SM at the BS and the SSA at the CPE shall identify whether the antenna is integrated or non-integrated.

### **14.2.1.6.3 M-ANTENNA-INFORMATION-REQUEST**

#### **14.2.1.6.3.1 Purpose**

The M-ANTENNA-INFORMATION-REQUEST primitive allows the MAC to request antenna information from the antenna. The M-ANTENNA-INFORMATION-REQUEST primitive has no attributes.

#### **14.2.1.6.3.2 SAP type**

M-SAP

#### **14.2.1.6.3.3 Operation type**

Information Request

#### **14.2.1.6.3.4 Destination**

Antenna Interface (see 9.12.2)

#### **14.2.1.6.3.5 Data**

This primitive has no attributes.

#### **14.2.1.6.3.6 When generated**

The M-ANTENNA-INFORMATION-REQUEST primitive shall be generated by the SM of a BS or the SSA of the CPE and issued to their respective antenna for antenna information.

#### **14.2.1.6.3.7 Effect of receipt**

When the antenna receives the M-ANTENNA-INFORMATION-REQUEST primitive, the antenna shall generate an M-ANTENNA-INFORMATION-CONFIRMATION containing information that describes the attributes of the antenna.

### **14.2.1.6.4 M-ANTENNA-INFORMATION-CONFIRMATION**

#### **14.2.1.6.4.1 Purpose**

The M-ANTENNA-INFORMATION-CONFIRMATION primitive is used to respond to the MAC request with antenna information. Table 310 specifies the parameters for the M-ANTENNA-INFORMATION-CONFIRMATION primitive.

#### **14.2.1.6.4.2 SAP type**

M-SAP

#### **14.2.1.6.4.3 Operation type**

Information Confirmation

#### **14.2.1.6.4.4 Destination**

CPE, BS

#### **14.2.1.6.4.5 Data**

**Table 310—M-ANTENNA-INFORMATION-CONFIRMATION parameters**

Name	Type	Length	Description
Number of channels	Integer	1 byte	This indicates the number of channels for which gain information is provided.
For(i=0; i<Number of Available Channels; i++) {			

Name	Type	Length	Description
Channel_Number	Integer	1 byte	TV Channel Number.
Maximum Gain	Integer	1 byte	Maximum Gain on “TV Channel Number”, defined on the range –63.75 dBi to 0 dBi in 0.25 dB steps.
}			

#### 14.2.1.6.4.6 When generated

The M-ANTENNA-INFORMATION-CONFIRMATION primitive shall be generated by the antenna and issued to the MAC to respond with information about the antenna.

#### 14.2.1.6.4.7 Effect of receipt

When the MAC receives the M-ANTENNA-INFORMATION-CONFIRMATION, MAC shall store the maximum gain (dBi) for each channel so that the device can convert from transmit power to EIRP.

### 14.2.2 Spectrum Manager-Spectrum Sensing Function SAP (SM-SSF-SAP)

#### 14.2.2.1 Spectrum sensing function primitives

The IEEE 802.22 PHY layer shall provide local spectrum sensing services through its SSF accessed through the SM-SSF-SAP. Table 311 summarizes the spectrum sensing primitives supported through the SM-SSF-SAP interface. The primitives are discussed in the subclauses referenced in the table.

**Table 311—Spectrum sensing primitives supported by the SM-SSF-SAP**

Name	Request	Indication	Confirm
SM-SSF-SAP-CHANNEL-SENSING	14.2.2.1.1	14.2.2.1.2	
SM-SSF-SAP-SENSING-RESULTS			14.2.2.1.3

#### 14.2.2.1.1 SM-SSF-SAP-CHANNEL-SENSING-REQUEST

##### 14.2.2.1.1.1 Purpose

The SM-SSF-SAP-CHANNEL-SENSING-REQUEST primitive allows the SM to request the PHY SSF unit (in either the local SSA or remote SSA at a CPE) to perform spectrum sensing. Table 312 specifies the parameters for the SM-SSF-SAP-CHANNEL-SENSING-REQUEST primitive.

##### 14.2.2.1.1.2 SAP type

SM-SSF-SAP

##### 14.2.2.1.1.3 Operation type

Information Request

##### 14.2.2.1.1.4 Destination

SSA SSF

#### 14.2.2.1.5 Data

**Table 312—SM-SSF-SAP-CHANNEL-SENSING-REQUEST parameters**

Name	Type	Length	Description
IETF Country Code	Character String	16 bits	See Annex A.
Channel Start Frequency	Integer	64 bits	Frequency for start of channel to be sensed by the SSF, in Hz.
Channel End Frequency	Integer	64 bits	Frequency for end of channel to be sensed by the SSF, in Hz.
Channel Bandwidth	Integer	4 bits	The bandwidth of the channel to be sensed by the SSF. Values as specified in Table 236.
Sensing Mode	Integer	2 bits	The sensing mode specifies which SSF outputs are valid as specified in Table 239.
Signal Type Array	Array	32 bits	An array indicating which signal types the SSF is to sense for as specified in Table 237.
Sensing Window Specification Array	Array	$N \times 32$ bits	$N$ is the number of signal types enumerated (that are equal to 1) in the Signal Type Array. Sensing window specifications as given in Table 245 and Table 246. Each element in the Sensing Window Specification consists of NumSensingPeriods, SensingPeriodDuration, SensingPeriodInterval.
Maximum Probability of False Alarm Array	Array	$N \times 8$ bits	$N$ is the number of signal types enumerated (that are equal to 1) in the Signal Type Array. This value is valid only for sensing modes 0 and 1. Each element specifies the maximum probability of false alarm for the corresponding signal type decision in the sensing present Array. Maximum Probability of False Alarm: 0x00 = 0 0x01 = 0.001 0xFF = 0.255 (see Table 236)
Timestamp	Character String	20 characters	String representing timestamp for when message was sent. Time format is defined in 14.1.5.
Padding		2 bits	Set to 00.

#### 14.2.2.1.6 When generated

The SM-SSF-SAP-CHANNEL-SENSING-REQUEST primitive is generated by the SM and issued to the SSF to request the SSF to perform spectrum sensing.

#### 14.2.2.1.7 Effect of receipt

When the SSA receives the SM-SSF-SAP-CHANNEL-SENSING-REQUEST primitive, it requests the SSF to perform spectrum sensing. If the sensing request can be serviced, the SSA replies by sending the SM-SSF-SAP-CHANNEL-SENSING-INDICATION to indicate to SM it can perform sensing, executes sensing, and then sends sensing results back to SM in SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION. If the sensing request cannot be serviced, the SSA will send back a failure code in the SM-SSF-SAP-CHANNEL-SENSING-INDICATION.

### **14.2.2.1.2 SM-SSF-SAP-CHANNEL-SENSING-INDICATION**

#### **14.2.2.1.2.1 Purpose**

The SM-SSF-SAP-CHANNEL-SENSING-INDICATION primitive is used to inform the SM whether its request to the local PHY SSF or remote SSF at a CPE was successfully generated by the SM. Table 313 specifies the parameters for the SM-SSF-SAP-CHANNEL-SENSING-INDICATION primitive.

#### **14.2.2.1.2.2 SAP type**

SM-SSF-SAP

#### **14.2.2.1.2.3 Operation type**

Event Indication

#### **14.2.2.1.2.4 Destination**

SM

#### **14.2.2.1.2.5 Data**

**Table 313—SM-SSF-SAP-CHANNEL-SENSING-INDICATION parameters**

Name	Type	Length	Description
IETF Country Code	ASCII	16 bits	See Annex A.
Channel Start Frequency	Integer	64 bits	Frequency for start of channel to be sensed by the SSF, in Hz.
Channel End Frequency	Integer	64 bits	Frequency for end of channel to be sensed by the SSF, in Hz.
Sensing Mode	Integer	2 bits	The sensing mode specifies which SSF outputs are valid as specified in Table 239.
Status	Enumeration	2 bits	00: INVALID_REQUEST 01: INVALID_SIGNAL_TYPES 10: Reserved 11: SUCCESS The value indicates whether the sensing request was successfully generated.
Invalid Signal Type Array	Array	32 bits	An array indicating which signal types the SSF will not be able to sense as specified in Table 237. This attribute is valid only if the Status = INVALID_SIGNAL_TYPES.
Timestamp	Character String	20 characters	Copied from the timestamp in the SM-SSF-SAP-CHANNEL-SENSING-REQUEST. Time format is defined in 14.1.5.
Padding		4 bits	Set to 0000.

#### **14.2.2.1.2.6 When generated**

The SM-SSF-SAP-CHANNEL-SENSING-INDICATION primitive is generated by the SSF and issued to its SM to indicate whether the received SM-SSF-SAP-CHANNEL-SENSING-REQUEST was valid and whether the SSF is able to perform sensing for the signal types as requested. If the SSF is able to perform

the sensing in the requested sensing mode and with the requested probability of false alarm for all types of signals requested, the Status Code shall be set to SUCCESS. If the SSF does not support the requested sensing mode, the Status Code value should be INVALID\_REQUEST. If one or more of the signal types in the request are not valid or the SSF does not have the capability of sensing a requested signal type, the status code should be set to INVALID\_SIGNAL\_TYPE, and the corresponding invalid signal types shall be indicated in the Invalid Signal Type Array.

#### **14.2.2.1.2.7 Effect of receipt**

When the SM receives the SM-SSF-SAP-CHANNEL-SENSING-INDICATION primitive, it will identify whether its request to the SSF was successfully received by the SSF. The status parameter indicates the appropriate error code from 7.7.24 in case the request is invalid.

#### **14.2.2.1.3 SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION**

##### **14.2.2.1.3.1 Purpose**

The SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION primitive is used to inform the SM when the results of a previously issued request to the SSF were successfully generated by the SSF. Table 314 specifies the parameters for the SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION primitive.

##### **14.2.2.1.3.2 SAP type**

SM-SSF-SAP

##### **14.2.2.1.3.3 Operation type**

Information Confirmation

##### **14.2.2.1.3.4 Destination**

SM

##### **14.2.2.1.3.5 Data**

**Table 314—SM—SSF-SAP-SENSING-RESULTS-CONFIRMATION parameters**

Name	Type	Length	Description
IETF Country Code	ASCII	16 bits	See Annex A.
Channel Start Frequency	Integer	64 bits	Frequency for start of channel to be sensed by the SSF, in Hz.
Channel End Frequency	Integer	64 bits	Frequency for end of channel to be sensed by the SSF, in Hz.
Sensing Mode	Integer	2 bits	The sensing mode specifies which SSF outputs are valid as specified in Table 239.
Signal Type Array	Array	32 bits	An Array indicating which signal types the SSF is to sense as specified in Table 237.
Signal Present Array	Array	$N \times 2$	N is the number of signal types enumerated (that are equal to 1) in the Signal Type Array. Each element in the Array is a signal present decision. Each decision can take on three possible values, as given in Table 240.

Name	Type	Length	Description
Confidence Array	Array	$N \times 8$	Confidence array is only valid for Sensing Mode 2. Each element in the confidence Array is a confidence metric for the sensing result for the corresponding signal type as defined in Table 240: 0x00: No confidence 0x01–0xFE: Reserved 0xFF: Full confidence
If(Sensing Mode == 3) {			
RSSI Measurements	Integer	$N \times 8$ bits	N is the number of signal types enumerated (that are equal to 1) in the Signal Type Array. RSSI Measurement is only valid for Sensing Mode 3.  Each RSSI measurement result is a signed integer number encoded with 8 bits (see Table 240). BS can ask the CPE for up to 255 measurements of the RSSI. In such case, each RSSI measurement will represent the mean of the multiple measurement results, ranging –104 dBm to +23.5 dBm in 0.5 dB steps.
RSSI Standard Deviation	Integer	$N \times 8$ bits	N is the number of signal types enumerated (that are equal to 1) in the Signal Type Array. RSSI Measurement is only valid for Sensing Mode 3. BS can ask the CPE for up to 255 measurements of the RSSI. In such case, this parameter represents the result of the standard deviation calculation done on these multiple RSSI measurements results, ranging –104 dBm to +23.5 dBm in 0.5 dB steps.
}			
Timestamp	Character String	20 characters	Copied from the timestamp in the SM-SSF-SAP-CHANNEL-SENSING-REQUEST. Time format is defined in 14.1.5.
Padding		6 bit	Set to 000000.

#### 14.2.2.1.3.6 When generated

The SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION primitive is generated by the SSF and issued to the SM to indicate the results of a previously issued request to the SSF have been generated.

#### 14.2.2.1.3.7 Effect of receipt

When the SM receives the SM-SSF-SAP-SENSING-RESULTS-CONFIRMATION, it will obtain the sensing results to its request to the SSF.

### 14.2.3 Spectrum Manager-Geolocation SAP (SM-GL-SAP)

#### 14.2.3.1 Geolocation primitives

The PHY layer provides local geolocation services through its satellite-based location acquisition unit to the SM/SSA through the SM-GL-SAP. Table 315 summarizes the geolocation primitives supported through the SM-GL-SAP interface. The primitives are discussed in the subclauses referenced in the table.

**Table 315—Geolocation primitives supported by the SM-GL-SAP**

Name	Request	Indication	Confirm
SM-GL-SAP-GEOLOCATION	14.2.3.1.1	14.2.3.1.2	
SM-GL-SAP-GEOLOCATION-RESULTS			14.2.3.1.3

### **14.2.3.1.1 SM-GL-SAP-GEOLOCATION-REQUEST**

#### **14.2.3.1.1.1 Purpose**

The SM-GL-SAP-GEOLOCATION-REQUEST primitive allows the SM to request the local PHY geolocation unit or the one at a CPE to perform geolocation. Table 316 specifies the parameters for the SM-GL-SAP-GEOLOCATION-REQUEST primitive.

#### **14.2.3.1.1.2 SAP type**

SM-GL-SAP

#### **14.2.3.1.1.3 Operation type**

Information Request

#### **14.2.3.1.1.4 Destination**

SSA GL

#### **14.2.3.1.1.5 Data**

**Table 316—SM-GL-SAP-GEOLOCATION-REQUEST parameters**

Name	Type	Length	Description
NMEA Sentence Request	Character String	6 octets	NMEA 0183, in ASCII, string type (e.g., GPGGA).
Timestamp	Character String	20 characters	String representing timestamp for when message was sent. Time format is defined in 14.1.5.

#### **14.2.3.1.1.6 When generated**

The SM-GL-SAP-GEOLOCATION-REQUEST primitive is generated by the SM and issued to an SSA (either its own or remote at a CPE) GL to request the geolocation service to perform geolocation.

#### **14.2.3.1.1.7 Effect of receipt**

When the SSA GL receives the SM-GL-SAP-GEOLOCATION-REQUEST primitive, it attempts execution of the geolocation service to perform geolocation. If the geolocation request can be satisfied, it sends a SM-GL-SAP-GEOLOCATION-INDICATION with a successful status, executes the geolocation, and returns the result in SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION. If the geolocation request cannot be satisfied, it sends a SM-GL-SAP-GEOLOCATION-INDICATION with a failure status.

### **14.2.3.1.2 SM-GL-SAP-GEOLOCATON-INDICATION**

#### **14.2.3.1.2.1 Purpose**

The SM-GL-SAP-GEOLOCATION-INDICATION primitive is used to inform the SM whether its request to the PHY geolocation service was successfully generated by the Geolocation function of the SSA. Table 317 specifies the parameters for the SM-GL-SAP-GEOLOCATION-INDICATION primitive.

#### **14.2.3.1.2.2 SAP type**

SM-GL-SAP

#### **14.2.3.1.2.3 Operation type**

Event Indication

#### **14.2.3.1.2.4 Destination**

SM

#### **14.2.3.1.2.5 Data**

**Table 317—SM-GL-SAP-GEOLOCATION-INDICATION parameters**

Name	Type	Length	Description
Status	Integer	8 bits	The value indicates whether the requested query was successfully generated: 0x00 = Success 0x01 = Failure 0x02–0xFF = Reserved
Timestamp	Character String	20 characters	Copied from the timestamp in the SM-GL-SAP-GEOLOCATION-REQUEST. Time format is defined in 14.1.5.

#### **14.2.3.1.2.6 When generated**

The SM-GL-SAP-GEOLOCATION-INDICATION primitive is generated by the SSA GL and issued to its SM to indicate whether the received SM-GL-SAP-GEOLOCATION-REQUEST was valid. If the request is valid, the SSA GL acquires the requested NMEA sentence from the geolocation service.

#### **14.2.3.1.2.7 Effect of receipt**

When the SM receives the SM-GL-SAP-GEOLOCATION-INDICATION primitive, it will identify whether its request to the geolocation service was successfully received by the SSA GL. The status parameter indicates the appropriate error code from 7.7.24 in case the geolocation service was not available.

### **14.2.3.1.3 SM-GL-SAP-RESULTS-CONFIRMATION**

#### **14.2.3.1.3.1 Purpose**

The SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION primitive is used to inform the SM when a response to a previously issued request to the geolocation service was successfully received by the

SSA GL. Table 318 specifies the parameters for the SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION primitive.

#### **14.2.3.1.3.2 SAP type**

SM-GL-SAP

#### **14.2.3.1.3.3 Operation type**

Information Confirmation

#### **14.2.3.1.3.4 Destination**

SM

#### **14.2.3.1.3.5 Data**

**Table 318—SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION parameters**

Name	Type	Length	Description
Location Data Length	Integer	8 bits	Length of location data string in octets (0–128 characters).
Location Data String	Character String	N octets	Where N is the Location Data Length in octets.
Timestamp	Character String	20 characters	Copied from the timestamp in the SM-GL-SAP-GEOLOCATION-REQUEST. Time format is defined in 14.1.5.

#### **14.2.3.1.3.6 When generated**

The SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION primitive shall be generated by the SSA GL and issued to the SM to indicate the reception of a response to a query previously issued to the geolocation service.

#### **14.2.3.1.3.7 Effect of receipt**

When the SM receives the SM-GL-SAP-GEOLOCATION-RESULTS-CONFIRMATION, it shall identify whether the response to its request to the geolocation service was successfully received by the SSA GL. If the response was successful, the SM will obtain NMEA string containing the latitude and longitude information. If the response is not successful, the SM may decide to issue another request.

### **14.2.4 Control SAP (C-SAP)**

#### **14.2.4.1 Security management primitives**

Security management pertain to monitoring and managing information regarding the CPE (i.e., Supplicant) and the AAA/NCMS (i.e., Authenticator) exchanging security credentials in order to mutually authenticate each other and establish an AK at the CPE and BS. The SCM authentication protocol uses of EAP and is described in 8.2.2. The primitives described are related to the exchange of EAP messages between the Supplicant and the Authenticator.

There are two security management primitives: C-EAP-START-INDICATION and C-EAP-TRANSFER-INDICATION. There are no REQUEST or CONFIRM security primitives, as the execution of the EAP process for a particular EAP method is out of the scope of this standard (see Figure 113).

#### **14.2.4.1.1 C-EAP-START-INDICATION**

##### **14.2.4.1.1.1 Purpose**

To indicate to the BS, and subsequently the AAA/NCMS, that a CPE is attempting initial authentication.

##### **14.2.4.1.1.2 SAP type**

C-SAP

##### **14.2.4.1.1.3 Operation type**

Event Indication

##### **14.2.4.1.1.4 Destination**

BS, AAA/NCMS

##### **14.2.4.1.1.5 Data**

**Table 319—C-EAP-START-INDICATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
Station ID	Integer	9 bits	Station ID assigned to CPE.
Timestamp	Character String	20 Characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.
Padding		7 bits	Set to 0000000.

##### **14.2.4.1.1.6 When generated**

CPE generates this primitive when it wishes to start initial authentication. An SCM EAP-Start MAC management message is sent to the BS.

##### **14.2.4.1.1.7 Effect of receipt**

BS forwards SCM EAP-Start message to the AAA/NCMS to start EAP authentication.

#### **14.2.4.1.2 C-EAP-TRANSFER-INDICATION**

##### **14.2.4.1.2.1 Purpose**

To carry EAP messages between the CPE and the AAA/NCMS to establish authentication. When a CPE is authenticated, the MSK is delivered to the CPE and BS so they can both derive the AK.

##### **14.2.4.1.2.2 SAP type**

C-SAP

##### **14.2.4.1.2.3 Operation type**

Event Indication

#### **14.2.4.1.2.4 Destination**

CPE, BS, AAA/NCMS

#### **14.2.4.1.2.5 Data**

**Table 320—C-EAP-TRANSFER-INDICATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
EAP Payload Size	Integer	16 bits	Size of EAP Payload in octets.
EAP Payload	Octet String	EAP Payload Size × 8 bits	String of octets containing payload of EAP message.
EAP State	Integer	1 bit	Current state of EAP process: 0 – Initial Authentication 1 – Re-authentication
If(EAP State == 1) {			
Key Sequence Number	Integer	4 bits	4-bit AK sequence #.
Padding		3 bits	Set to 000.
} else {			
Padding		7 bits	Set to 0000000.
}			
Timestamp	Character String	20 characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

“Key Sequence Number” is present only during EAP-Transfer messages exchanged during reauthentication. See definition of SCM EAP-Transfer message defined in 7.7.21.2.

#### **14.2.4.1.2.6 When generated**

- a) CPE generates an EAP message to send to the AAA/NCMS via an SCM EAP-Transfer MAC Management message.
- b) BS receives an EAP message from the AAA/NCMS to forward to the CPE.
- c) AAA/NCMS generates an EAP message to send to the CPE as part of the EAP exchange.
- d) AAA/NCMS generates an EAP message to send to the CPE and BS that contains the MSK that can be used to derive the AK, when CPE is successfully authenticated.

#### **14.2.4.1.2.7 Effect of receipt**

- a) BS receives SCM EAP-Transfer message from CPE, extracts EAP Payload, and forwards it to AAA/NCMS as part of EAP authentication exchange.
- b) BS extracts EAP payload and sends it to CPE in SCM EAP-Transfer Message.
- c) AAA/NCMS sends an EAP payload to BS containing information related to authentication exchange for BS to forward to CPE.

- d) BS and CPE extract MSK and use it to derive AK. Once CPE has derived AK, it will start “Authentication Grace Timer” and start TEK state machine.

#### **14.2.4.2 Multicast management primitives**

Multicast management primitives pertain to monitoring and managing information regarding setting up multicast groups for CPEs. Multicast groups can be used for DS data traffic or MAC management messages (e.g., BLM-REQ).

There are three multicast management primitives: C-MULTICAST-GROUP-JOIN-REQUEST, C-MULTICAST-GROUP-LEAVE-REQUEST, and C-MULTICAST-GROUP-CONFIRMATION.

##### **14.2.4.2.1 C-MULTICAST-GROUP-JOIN-REQUEST**

###### **14.2.4.2.1.1 Purpose**

Add a CPE to a multicast group to prepare it to receive downstream data traffic or MAC management messages.

###### **14.2.4.2.1.2 SAP type**

C-SAP

###### **14.2.4.2.1.3 Operation type**

Information Request

###### **14.2.4.2.1.4 Destination**

CPE

###### **14.2.4.2.1.5 Data**

**Table 321—C-MULTICAST-GROUP-JOIN-REQUEST parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE’s 48-bit IEEE MAC address.
Transaction ID	Integer	16 bits	Identifier of Multicast group setup transaction, selected by the BS.
Station ID	Integer	9 bits	9-bit multicast SID (see 12.2) assigned to multicast group.
Assignment	Integer	8 bits	Set to 0x01, this announces request to Join group identified by Station ID.
Multicast Group Type	Integer	8 bits	One or more purposes can be assigned to a given group at the same time (see Table 103).
If(Multicast Group Type == 0x02, 0x04, 0x05, 0x06) {			
Periodic Allocation Parameters	Bitmap	32 bits	See Table 103.
}			
Padding		7 bits	Set to 0000000.

#### **14.2.4.2.1.6 When generated**

- a) BS sends this primitive when multiple CPEs are assigned to the same provisioned service flow (via NCMS) and the BS needs to configure multicast group prior to configuring service flow on those CPEs via DSA-REQ. One copy of this primitive is sent to each CPE it wants to add to the multicast group SID.
- b) BS sends this primitive when multiple CPEs are assigned to the dynamically created service flow and the BS needs to configure multicast group prior to configuring service flow on those CPEs via DSA-REQ. One copy of this primitive is sent to each CPE it wants to add to the multicast group SID.
- c) SM/BS sends this primitive when it wants to configure multiple CPEs for active SCW monitoring (transmission of CBP MAC PDUs) or passive SCW monitoring (recover CBP MAC PDUs transmitted by neighbor WRANs) and needs to configure multicast group prior to sending US-MAP IEs with UIUC=0 or -1. One copy of this primitive is sent to each CPE it wants to add to the multicast group SID.
- d) SM/BS sends this primitive when it wants to configure multiple CPEs to be able to receive channel quiet (CHQ-REQ/RSP), prohibited channel update (IPC-UPD), bulk measurement request (BLM-REQ), or CBP relay (CBP-RLY) messages. One copy of this primitive is sent to each CPE it wants to add to the multicast group SID.

Information in this primitive is carried to the CPE or CPEs in question via the MCA-REQ message defined in 7.7.9.

#### **14.2.4.2.1.7 Effect of receipt**

When CPE receives this primitive (via the MCA-REQ MAC management message), it takes the contents and configures multicast group membership as defined by the procedure in Figure 55 in 7.17.1. If configuration successfully processed, the CPE sends a C-MULTICAST-GROUP-CONFIRMATION back to BS/SM with the Confirmation Code = 0x00. If configuration was not successfully processed, the CPE sends a C-MULTICAST-GROUP-CONFIRMATION back to BS/SM with the relevant Confirmation Code set to indicate the cause of the failure.

### **14.2.4.2.2 C-MULTICAST-GROUP-LEAVE-REQUEST**

#### **14.2.4.2.2.1 Purpose**

Remove a CPE to a multicast group to prepare it to receive downstream data traffic or MAC management messages.

#### **14.2.4.2.2.2 SAP type**

C-SAP

#### **14.2.4.2.2.3 Operation type**

Information Request

#### **14.2.4.2.2.4 Destination**

CPE

#### **14.2.4.2.2.5 Data**

**Table 322—C-MULTICAST-GROUP-LEAVE-REQUEST parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
Transaction ID	Integer	16 bits	Identifier of Multicast group setup transaction, selected by the BS.
Station ID	Integer	9 bits	9-bit multicast SID (see 12.2) assigned to multicast group.
Assignment	Integer	8 bits	Set to 0x00, this announces request to ask CPE to leave group identified by Station ID.
Multicast Group Type	Integer	8 bits	One or more purposes can be assigned to a given group at the same time (see Table 103).
Padding		7 bits	Set to 0000000.

#### **14.2.4.2.2.6 When generated**

- a) BS sends this primitive when it wants to remove a CPE from a multicast group SID that has an active service flow mapped to the multicast SID. BS should also delete said service flow (via DSD-REQ/RSP) on CPEs that it is removing from the multicast group. One copy of this primitive is sent to each CPE that the BS wants to remove from the multicast group SID.
- b) SM/BS sends this primitive when it no longer wants to configure multiple CPEs for active SCW monitoring (transmission of CBP MAC PDUs) or passive SCW monitoring (recover CBP MAC PDUs transmitted by neighbor WRANs) and needs to configure multicast group prior to sending US-MAP IEs with UIUC=0 or -1. One copy of this primitive is sent to each CPE that the BS wants to remove from the multicast group SID. SM/BS can continue to configure SCW usage on CPEs by unicasting them the US-MAP IE with UIUC=0 or 1 to each CPE it wants to configure.
- c) SM/BS sends this primitive when it no longer wants to configure multiple CPEs to be able to receive channel quiet (CHQ-REQ/RSP), prohibited channel update (IPC-UPD), bulk measurement request (BLM-REQ), or CBP relay (CBP-RLY) messages. One copy of this primitive is sent to each CPE that the BS wants to remove from the multicast group SID. SM/BS can configure individual CPEs to receive and process those messages by unicasting those messages to each CPE.

Information in this primitive is carried to the CPE or CPEs in question via the MCA-REQ message defined in 7.7.9.

#### **14.2.4.2.2.7 Effect of receipt**

When CPE receives this primitive (via the MCA-REQ MAC management message), it takes the contents and deletes the configuration multicast group membership as defined by the procedure in Figure 55 in 7.17.1. If configuration successfully processed, the CPE sends a C-MULTICAST-GROUP-CONFIRMATION back to BS/SM with the Confirmation Code = 0x00. If configuration was not successfully processed, the CPE sends a C-MULTICAST-GROUP-CONFIRMATION back to BS/SM with the relevant Confirmation Code set to indicate the cause of the failure.

### **14.2.4.2.3 C-MULTICAST-GROUP-CONFIRMATION**

#### **14.2.4.2.3.1 Purpose**

CPE uses this to indicate to the BS/SM whether it has successfully configured the multicast group SID and relevant parameters indicated in C-MULTICAST-GROUP-JOIN-REQUEST of C-MULTICAST-GROUP-LEAVE-REQUEST.

#### **14.2.4.2.3.2 SAP type**

C-SAP

#### **14.2.4.2.3.3 Operation type**

Information Confirmation

#### **14.2.4.2.3.4 Destination**

BS, SM

#### **14.2.4.2.3.5 Data**

**Table 323—C-MULTICAST-GROUP-CONFIRMATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	CPE's 48-bit IEEE MAC address.
Transaction ID	Integer	16 bits	Identifier of Multicast group setup transaction, selected by the BS. Should be set to same value of Transaction ID field in C-MULTICAST-GROUP-JOIN-REQUEST or C-MULTICAST-GROUP-LEAVE-REQUEST to which this primitive is being sent in response.
Confirmation Code	Integer	8 bits	Confirmation code reflecting status of processing C-MULTICAST-GROUP-JOIN-REQUEST of C-MULTICAST-GROUP-LEAVE-REQUEST (see 7.7.24).

#### **14.2.4.2.3.6 When generated**

Sent by CPE server when C-MULTICAST-GROUP-JOIN-REQUEST or C-MULTICAST-GROUP-LEAVE-REQUEST has been received and processed. If processing was successful, this primitive is sent back with the Confirmation Code set to 0x00. If processing was unsuccessful, this primitive is sent back with the Confirmation Code set to the relevant value (see 7.7.24) that describes the cause of the error.

Information in this primitive is carried to the destination via the MCA-RSP MAC management message (see 7.7.10).

#### **14.2.4.2.3.7 Effect of receipt**

- a) If received with Confirmation Code = 0x00, BS will be able to map CPE to any multicast DS transport service flows via DSA-REQ, set up multiple CPEs for SCW monitoring simultaneously via multicasting US-MAP IE with UIUC=0 or =1 to those CPEs, or configure various CPEs simultaneously for MAC management processes via multicast said MAC management messages [see item d) in 14.2.4.2.1.6 and item c) in 14.2.4.2.2.6].

- b) If received with Confirmation Code other than 0x00, BS will not be able to map CPE to any multicast DS transport service flows via DSA-REQ, set up multiple CPEs for SCW monitoring simultaneously via multicasting US-MAP IE with UIUC=0 or =1 to those CPEs, or configure various CPEs simultaneously for MAC management processes via multicast said MAC management messages [see item d) in 14.2.4.2.1.6 and item c) in 14.2.4.2.2.6].

#### **14.2.4.3 Network entry management primitives**

The initialization and network entry procedures for the CPE are described in 7.14.2. The network entry management primitives pertain to monitoring and managing information regarding each step of the CPE initialization procedure.

There are network entry management primitives that handle the ranging (RNG-REQ/CMD), basic capability negotiation (CBC-REQ/RSP), and registration (REG-REQ/RSP) portions of the network entry process: C-NET-ENTRY-RANGING-REQUEST, C-NET-ENTRY-RANGING-CONFIRMATION, C-NET-ENTRY-BASIC-REQUEST, C-NET-ENTRY-BASIC-CONFIRMATION, C-NET-ENTRY-REGISTRATION-REQUEST, and C-NET-ENTRY-REGISTRATION-CONFIRMATION.

##### **14.2.4.3.1 C-NET-ENTRY-RANGING-REQUEST**

###### **14.2.4.3.1.1 Purpose**

To indicate to the BS that this particular CPE is attempting ranging with it.

###### **14.2.4.3.1.2 SAP type**

C-SAP

###### **14.2.4.3.1.3 Operation type**

Information Request

###### **14.2.4.3.1.4 Destination**

BS

###### **14.2.4.3.1.5 Data**

**Table 324—C-NET-ENTRY-RANGING-REQUEST parameters**

Name	Type	Length	Description
Downstream Burst Profile	Integer	6 bits	Burst Profile that can be received by the CPE for the RNG-CMD.
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
If(!initial_ranging_req) {			
MMP_PN	Integer	24 bits	MMP_PN of MMP Key associated with active authorization key (AK) context installed on CPE (see 8.2.4.6). Only applicable if CPE previously completed network entry and authentication.
Ciphertext ICV	Integer	64 bits	Ciphertext ICV calculated over the RNG-REQ message excluding the MMP_PN IE (see 8.2.4.6). Only applicable if CPE previously completed network entry and authentication.

Name	Type	Length	Description
}			
Ranging Anomalies	Bits	3 bits	A parameter indicating a potential error condition detected by CPE during the ranging process. Setting the bit associated with a condition indicates that the condition exists at the CPE: Bit 0 – CPE already at maximum EIRP Bit 1 – CPE already at minimum EIRP Bit 2 – Timing advance too large
Padding		7 bits	Set to 0000000.

#### 14.2.4.3.1.6 When generated

CPE generates this primitive when it wishes to attempt ranging (either initial or periodic) with the BS. The contents of this primitive are encapsulated in a RNG-REQ MAC management message and sent to the BS.

#### 14.2.4.3.1.7 Effect of receipt

BS processes the received RNG-REQ, determines the status of the CPE's ranging attempt, and then sends a C-NET-ENTRY-RANGING-CONFIRMATION primitive back to the CPE with further instructions.

### 14.2.4.3.2 C-NET-ENTRY-RANGING-CONFIRMATION

#### 14.2.4.3.2.1 Purpose

To indicate to the CPE the status of the CPE's ranging attempt and to provide the CPE with information on how to proceed.

#### 14.2.4.3.2.2 SAP type

C-SAP

#### 14.2.4.3.2.3 Operation type

Information Confirmation

#### 14.2.4.3.2.4 Destination

CPE

#### 14.2.4.3.2.5 Data

**Table 325—C-NET-ENTRY-RANGING-CONFIRMATION parameters**

Name	Type	Length	Description
Timing Advance	Integer	16 bits	Timing advance of CPE in number of TU (see Table 44, 7.7.6).
EIRP per subcarrier	Integer	8 bits	Prange: EIRP per transmitted subcarrier (see 9.9.4.2). Range from -104 to +23.5 dBm in 0.5 dB steps.
Offset Frequency Adjust	Integer	16 bits	Signed number in hertz.

Name	Type	Length	Description
Ranging Status	Bits	3 bits	000: Continue 001: Abort 010: Success 011: Re-range 100: Reauthenticate 101: Re-range and Re-register 110–111: Reserved
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
Action Superframe Number	Integer	8 bits	The superframe number (modulo 256) at which Channel Action shall be performed.
Action Frame Number	Integer	4 bits	Integer value $\geq 0$ that indicates the starting frame number, w/in the Action Superframe Number, at which the Channel Action shall be performed by all CPEs.
CDMA Code	Integer	8 bits	A unique CDMA code assigned to the CPE, to be used for dedicated ranging. Code is from initial ranging codeset.
Transmission Opportunity Offset	Integer	8 bits	A unique transmission opportunity offset assigned to the CPE, to be used for dedicated ranging, in units of symbol durations.
If(initial_ranging_response) {			
Station ID	Integer	9 bits	Required parameter when RNG-CMD is sent in response to initial ranging.
} else if (!initial_ranging_response) {			
Padding		1 bits	Set to 0.
}			

#### 14.2.4.3.2.6 When generated

- a) BS generates this primitive when it has received C-NET-ENTRY-RANGING-REQUEST (in the form of a RNG-REQ MAC management message). It sets the fields of this primitive according to how the C-NET-ENTRY-RANGING-REQUEST was handled and how it wishes to reconfigure the CPE's ranging (if that is necessary).
- b) BS sends this primitive to CPE, unsolicited when it wants to trigger verification of registration and location status, with Ranging Status set to "Re-range and Re-register" (see 7.14.2.11).

#### 14.2.4.3.2.7 Effect of receipt

- a) CPE processes the primitive. If Ranging Status == Success, it takes parameters, adjusts its own transmission and synchronization, and then proceeds on to next stage of network entry. If Ranging Status != Success and != Re-range and Re-register, it adjusts its own transmission and resends C-NET-ENTRY-RANGING-REQUEST.
- b) CPE processes the primitive. If Ranging Status == Re-range and Re-register, the CPE sends the C-NET-ENTRY-REGISTRATION-REQUEST, with only the CPE NMEA Location String and Manufacture-specific Antenna Model IEs set, to the BS.

### **14.2.4.3.3 C-NET-ENTRY-BASIC-REQUEST**

#### **14.2.4.3.3.1 Purpose**

To indicate to the BS that this particular CPE is attempting basic capability configuration with it.

#### **14.2.4.3.3.2 SAP type**

C-SAP

#### **14.2.4.3.3.3 Operation type**

Information Request

#### **14.2.4.3.3.4 Destination**

BS

#### **14.2.4.3.3.5 Data**

**Table 326—C-NET-ENTRY-BASIC-REQUEST parameters**

Name	Type	Length	Description
Capabilities for MAC PDUs	Bits	8 bits	Bit 0: enable/disable ability to receive requests piggybacked with data Bit 1–7: <i>Reserved</i>
Maximum CPE Transmit EIRP	Integer	8 bits	Max Transmit EIRP ranging from –64 to +63.5 dBm in 0.5 dB steps.
CPE Demodulator	Bits	64 bits	Bitmap indicating which DIUCs the CPE supports.
CPE Modulator	Bits	64 bits	Bitmap indicating which UIUCs the CPE supports.
SCM Version support	Integer	8 bits	0x00: SCM Version 1 (SCMv1) 0x01–0xFF: <i>Reserved</i>
PN Window Size	Integer	16 bits	Size of PN_WINDOW parameter (see 8.4).
SCM Flow Control	Integer	8 bits	0x00: No Limit 0x01–0xFF: Maximum # of ongoing SCM transactions

#### **14.2.4.3.3.6 When generated**

CPE generates this primitive when it wishes to attempt basic capability configuration with the BS. The contents of this primitive are encapsulated in a CBC-REQ MAC management message and sent to the BS.

#### **14.2.4.3.3.7 Effect of receipt**

BS processes the received CBC-REQ, determines what the CPE's basic capability configuration will be, and then sends the CPE's basic capability configuration to the CPE in C-NET-ENTRY-BASIC-CONFIRMATION.

#### **14.2.4.3.4 C-NET-ENTRY-BASIC-CONFIRMATION**

##### **14.2.4.3.4.1 Purpose**

To indicate to the CPE the basic capability configuration the CPE shall use going forward.

##### **14.2.4.3.4.2 SAP type**

C-SAP

##### **14.2.4.3.4.3 Operation type**

Information Confirmation

##### **14.2.4.3.4.4 Destination**

CPE

##### **14.2.4.3.4.5 Data**

**Table 327—C-NET-ENTRY-BASIC-CONFIRMATON parameters**

Name	Type	Length	Description
Capabilities for MAC PDUs	Bits	8 bits	Bit 0: enable/disable ability to receive requests piggybacked with data Bit 1–7: <i>Reserved</i>
CPE Demodulator	Bits	64 bits	Bitmap indicating which DIUCs the CPE supports.
CPE Modulator	Bits	64 bits	Bitmap indicating which UIUCs the CPE supports.
SCM Version support	Integer	8 bits	0x00: SCM Version 1 (SCMv1) 0x01–0xFF: <i>Reserved</i>
PN Window Size	Integer	16 bits	Size of PN_WINDOW parameter (see 8.4).
SCM Flow Control	Integer	8 bits	0x00: No Limit 0x01–0xFF: Maximum # of ongoing SCM transactions

##### **14.2.4.3.4.6 When generated**

BS generates this primitive when it has received C-NET-ENTRY-BASIC-REQUEST (in the form of a CBC-REQ MAC management message). It sets the fields of this primitive according to how it wants to configure the basic capabilities of the CPE and sends this primitive to the CPE. The contents of this primitive are encapsulated in a CBC-RSP MAC management message when sent to the CPE.

##### **14.2.4.3.4.7 Effect of receipt**

CPE processes the primitive. It takes the values of parameters in this primitive and configures its own basic capabilities before moving on to the next stage of network entry.

#### **14.2.4.3.5 C-NET-ENTRY-REGISTRATION-REQUEST**

##### **14.2.4.3.5.1 Purpose**

CPE uses this primitive to request registration with a BS.

##### **14.2.4.3.5.2 SAP type**

C-SAP

##### **14.2.4.3.5.3 Operation type**

Information Request

##### **14.2.4.3.5.4 Destination**

BS

##### **14.2.4.3.5.5 Data**

**Table 328—C-NET-ENTRY-REGISTRATION-REQUEST parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
NMEA Location String Size	Integer	32 bits	Size of Location String.
NMEA Location String	Octet String	8 bits × NMEA Location String Size	Contents of NMEA Location String.
Convergence Sublayer Config	Integer	8 bits	Which convergence sublayer is support (e.g., Ethernet or IP).
IP Version	Integer	8 bits	Indication of IPv4 (0) or IPv6 (1) support.
IP ROHC Support	Integer	8 bits	Indication of whether IP ROHC is supported. (0) for disabled, (1) for enabled.
ARQ Support	Integer	8 bits	Indication of whether ARQ is supported at all (0), supported only on 2ndary management flow (1), supported on transport flows only (2), or supported on Transport and 2ndary management flows (3).
If(ARQ Support == 0    == 2) {			
2ndary Management ARQ Window Size	Integer	32 bits	ARQ Window Size on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqWindowSize</code> ).
2ndary Management ARQ Retry Tx Delay	Integer	16 bits	Transmitter delay component of ARQ retry timeout for 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRetryTxDelay</code> ).
2ndary Management ARQ Retry Rx Delay	Integer	16 bits	Receiver delay component of ARQ retry timeout for 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRetryRxDelay</code> ).

Name	Type	Length	Description
2ndary Management ARQ Block Lifetime	Integer	16 bits	Lifetime of ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqBlockLifetime</code> ).
2ndary Management ARQ Sync Loss Timeout	Integer	16 bits	Timeout of ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqSyncLossTimeout</code> ).
2ndary Management ARQ Sync Loss Timeout	Integer	8 bits	Indication of whether (1) or not (0) that ARQ blocks are delivered in order on secondary management flow.
2ndary Management ARQ Sync Loss Timeout	Integer	8 bits	Indication of whether (1) or not (0) that ARQ blocks are delivered in order on secondary management flow.
2ndary Management ARQ Rx Purge Timeout	Integer	16 bits	Purge timeout for ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRxPurgeTimeout</code> ).
2ndary Management ARQ Block Size	Integer	11 bits	Block size for ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqBlocksSize</code> ).
Padding	Bits	5 bits	Set to 00000.
}			
DSx Flow Control	Integer	8 bits	# of concurrent DSx Transactions allowed. =0, no limit; 1-255 indication of maximum # of transactions allowed.
MCA Flow Control	Integer	8 bits	# of concurrent MCA Transactions allowed. =0, no limit; 1-255 indication of maximum # of transactions allowed.
Max # of Multicast Groups	Integer	8 bits	Maximum # of multicast groups that can be supported.
Sensing Mode Support Array	Bits	8 bits	Bitmap defining which sensing mode the CPE supports. If a bit is set, it indicates that sensing mode is supported. Bits 4–7 are reserved: Bit 0 – no sensing Bit 1 – mode 0 Bit 2 – mode 1 Bit 3 – mode 2
If(Bit 0 of Sensing Mode Support Array NOT SET) {			
Signal Type Array	Bits	32 bits	Bitmap indicating which signal types are supported (see Table 56).
For(i=0;i<n;i++) {			Where n == # of bits set in Signal Type Array.
Threshold	Integer	9 bits	Sensitivity threshold from -127.5 to +128 dBm in 0.5 dB steps.
Probability of Detection	Integer	8 bits	Probability of detection from 0 to 1 in increments of 0.004.
Probability of False Alarm	Integer	8 bits	Probability of False Alarm from 0 to 0.255 in increments in 0.001.

Name	Type	Length	Description
Recommended # of Sensing Periods	Integer	8 bits	Recommended # of sensing periods (see Table 238).
Recommended Sensing Period Duration	Integer	10 bits	Recommended duration of sensing periods in units of symbols (see Table 238).
Recommended Sensing Period Interval	Integer	11 bits	Recommended length of sensing periods interval in units of frames (see Table 238).
}			
Padding	Bits	2 bits	Set to 00.
}			
Antenna Model Info Size	Integer	16 bits	Size of antenna model information octet string.
Antenna Model Info	Octet String	8 bits × Antenna Model Info Size	Manufacturer-specific antenna model information (see <code>wranIfRegCapabilityAntennaModel</code> ).
For(i=0;i<# of channels;i++) {			
TV Channel Frequency Start	Integer	64 bits	Frequency for start of TV Channel in Hz.
TV Channel Frequency End	Integer	64 bits	Frequency for end of TV Channel in Hz.
On-Axis Gain	Integer	8 bits	On axis gains from –22 dBi to 41 dBi in 0.25 dB increments.
}			
CPE Residual Delay	Integer	32 bits	Residual delay of CPE in nanoseconds (see <code>wranIfRegCapabilityCpeResidualDelay</code> ).
2ndary Management Flow IP Allocation Method	Bits	8 bits	Bitmap defining which IP allocation methods the CPE supports. If a bit is set, it indicates that IP allocation method is supported. If only Static IP addresses are used then Bits 4 and 5 can only be set. Bits 6–7 are reserved: Bit 0 – DHCPv4 Bit 1 – MIPv4 Bit 2 – DHCPv6 Bit 3 – v6 Stateless Autoconfiguration Bit 4 – Static IPv4 addresses, DHCPv4/MIPv4 Disabled Bit 5 – Static IPv6 addresses, DHCPv6/v6 Stateless Autoconfiguration disable
}			
CPE Operational Capability	Integer	8 bits	Whether CPE is fixed, or portable.
CPE Registration Timer	Integer	16 bits	CPE registration time is used to set T30, from 0x0000 to 0xFFFF, representing units in blocks of 160 ms.

#### **14.2.4.3.5.6 When generated**

CPE generates this primitive when it wishes to attempt registration with the BS. The contents of this primitive are encapsulated in a REG-REQ MAC management message and sent to the BS. Registration is attempted during initial network entry, during network re-entry, and in response to receiving C-NET-ENTRY-RANGING-CONFIRMATION with Ranging Status set to “Re-range and Re-register”.

Also note that, if the “2ndary Management Flow IP Allocation Method” bitmap has Bit 4 and/or Bit 5 set, no DHCP method will be used by the CPE during the “Establish IP Connectivity” stage of CPE initialization (see 7.14.2.13). This also implies that, if Bit 4 and/or Bit 5 is set, the CPE will not use IP management primitives defined in 14.2.1.2.

#### **14.2.4.3.5.7 Effect of receipt**

BS processes the received REG-REQ, determines the status of the CPE’s registration attempt, and then sends a C-NET-ENTRY-REGISTRATION-CONFIRMATION primitive back to the CPE with the configuration of registered capabilities it wants the CPE to use.

Also note that, if the “2ndary Management Flow IP Allocation Method” bitmap has Bit 4 and/or Bit 5 set, no DHCP method will be serviced/supported by the BS during the “Establish IP Connectivity” stage of CPE initialization (see 7.14.2.13). This also implies that, if Bit 4 and/or Bit 5 is set, the CPE will not use IP management primitives defined in 14.2.1.2.

### **14.2.4.3.6 C-NET-ENTRY-REGISTRATION-CONFIRMATION**

#### **14.2.4.3.6.1 Purpose**

To indicate to the CPE the status of the CPE’s registration attempt and to provide the CPE with configuration of registered capabilities.

#### **14.2.4.3.6.2 SAP type**

C-SAP

#### **14.2.4.3.6.3 Operation type**

Information Confirmation

#### **14.2.4.3.6.4 Destination**

CPE

#### **14.2.4.3.6.5 Data**

**Table 329—C-NET-ENTRY-REGISTRATION-CONFIRMATION parameters**

Name	Type	Length	Description
CPE MAC Address	MAC Address	48 bits	IEEE 48-bit MAC address identifying CPE.
Convergence Sublayer Config	Integer	8 bits	Which convergence sublayer is support (e.g., Ethernet or IP).
IP Version	Integer	8 bits	Indication of IPv4 (0) or IPv6 (1) support.

Name	Type	Length	Description
IP ROHC Support	Integer	8 bits	Indication of whether IP ROHC is supported. (0) for disabled, (1) for enabled.
ARQ Support	Integer	8 bits	Indication of whether ARQ is supported at all (0), supported only on 2ndary management flow (1), supported on transport flows only (2), or supported on Transport and 2ndary management flows (3).
If(ARQ Support == 0    == 2) {			
2ndary Management ARQ Window Size	Integer	32 bits	ARQ Window Size on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqWindowSize</code> ).
2ndary Management ARQ Retry Tx Delay	Integer	16 bits	Transmitter delay component of ARQ retry timeout for 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRetryTxDelay</code> ).
2ndary Management ARQ Retry Rx Delay	Integer	16 bits	Receiver delay component of ARQ retry timeout for 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRetryRxDelay</code> ).
2ndary Management ARQ Block Lifetime	Integer	16 bits	Lifetime of ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqBlockLifetime</code> ).
2ndary Management ARQ Sync Loss Timeout	Integer	16 bits	Timeout of ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqSyncLossTimeout</code> ).
2ndary Management ARQ Sync Loss Timeout	Integer	8 bits	Indication of whether (1) or not (0) that ARQ blocks are delivered in order on secondary management flow.
2ndary Management ARQ Sync Loss Timeout	Integer	8 bits	Indication of whether (1) or not (0) that ARQ blocks are delivered in order on secondary management flow.
2ndary Management ARQ Rx Purge Timeout	Integer	16 bits	Purge timeout for ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqRxPurgeTimeout</code> ).
2ndary Management ARQ Block Size	Integer	11 bits	Block size for ARQ blocks on 2ndary management flow (see <code>wranIfRegCapability2ndMgmtArqBlockSize</code> ).
Padding	Bits	5 bits	Set to 00000.
}			
DSx Flow Control	Integer	8 bits	# of concurrent DSx Transactions allowed. =0, no limit; 1-255 indication of maximum # of transactions allowed.
MCA Flow Control	Integer	8 bits	# of concurrent MCA Transactions allowed. =0, no limit; 1-255 indication of maximum # of transactions allowed.
Max # of Multicast Groups	Integer	8 bits	Maximum # of multicast groups that can be supported.

Name	Type	Length	Description
Sensing Mode Support Array	Bits	8 bits	Bitmap defining which sensing mode the CPE supports. If a bit is set, it indicates that sensing mode is supported. Bits 4–7 are reserved: Bit 0 – no sensing Bit 1 – mode 0 Bit 2 – mode 1 Bit 3 – mode 2
If(Bit 0 of Sensing Mode Support Array NOT SET) {			
Signal Type Array	Bits	32 bits	Bitmap indicating which signal types are supported (see Table 56).
For(i=0;i<n;i++) {			Where n == # of bits set in Signal Type Array.
Threshold	Integer	9 bits	Sensitivity threshold from –127.5 to +128 dBm in 0.5 dB steps.
Probability of Detection	Integer	8 bits	Probability of detection from 0 to 1 in increments of 0.004.
Probability of False Alarm	Integer	8 bits	Probability of False Alarm from 0 to 0.255 in increments of 0.001.
Recommended # of Sensing Periods	Integer	8 bits	Recommended # of sensing periods (see Table 238).
Recommended Sensing Period Duration	Integer	10 bits	Recommended duration of sensing periods in units of symbols (see Table 238).
Recommended Sensing Period Interval	Integer	11 bits	Recommended length of sensing periods interval in units of frames (see Table 238).
}			
Padding	Bits	2 bits	Set to 00.
}			
CPE Residual Delay	Integer	32 bits	Residual delay of CPE in nanoseconds (see wranIfRegCapabilityCpeResidualDelay).
2ndary Management Flow IP Allocation Method	Bits	8 bits	Bitmap defining which IP allocation methods the CPE supports. If a bit is set, it indicates that IP allocation method is supported. If only Static IP addresses are used then Bits 4 and 5 can only be set. Bits 6–7 are reserved: Bit 0 – DHCPv4 Bit 1 – MIPv4 Bit 2 – DHCPv6 Bit 3 – v6 Stateless Autoconfiguration Bit 4 – Static IPv4 addresses, DHCPv4/MIPv4 Disabled Bit 5 – Static IPv6 addresses, DHCPv6/v6 Stateless Autoconfiguration disable
CPE Operational Capability	Integer	8 bits	Whether CPE is fixed, or portable.
CPE Registration Timer	Integer	16 bits	CPE registration time is used to set T30, from 0x0000 to 0xFFFF, representing units in blocks of 160 ms.
If(CPE Privacy Enabled) {			CPE Privacy (see 8.7).

Name	Type	Length	Description
Permanent Station ID	Integer	9 bits	Permanent SID assigned to CPE if CPE Privacy (see 8.7) is enabled.
Padding	Bits	7 bits	Set to 0000000.
}			

#### 14.2.4.3.6.6 When generated

BS generates this primitive when it has received C-NET-ENTRY-REGISTRATION-REQUEST (in the form of a REG-REQ MAC management message) during initial network entry, or during network re-entry, or when the CPE has sent C-NET-ENTRY-REGISTRATION-REQUEST in response to C-NET-ENTRY-RANGING-CONFIRMATION with Ranging Status set to “Re-range and Re-register”. It sets the fields of this primitive according to how it wishes to configure the CPE’s registered capabilities. The primitive is delivered to the CPE in the form of the REG-RSP MAC management message.

Also note that, if the “2ndary Management Flow IP Allocation Method” bitmap has Bit 4 and/or Bit 5 set, no DHCP method will be used by the CPE during the “Establish IP Connectivity” stage of CPE initialization (see 7.14.2.13). This also implies that, if Bit 4 and/or Bit 5 is set, the CPE will not use IP management primitives defined in 14.2.1.2.

#### 14.2.4.3.6.7 Effect of receipt

CPE processes the primitive, as contained in the REG-RSP MAC management message. It adjusts its configuration of registered capabilities to the settings specified in the received primitive. If it cannot support the configuration, it will re-attempt registration until maximum number of registration attempts are used. If this limit is reached, the CPE will be de-registered.

Also note that, if the “2ndary Management Flow IP Allocation Method” bitmap has Bit 4 and/or Bit 5 set, no DHCP method will be serviced/supported by the BS during the “Establish IP Connectivity” stage of CPE initialization (see 7.14.2.13). This also implies that, if Bit 4 and/or Bit 5 is set, the CPE will not use IP management primitives defined in 14.2.1.2.

### 14.2.4.4 CPE state management primitives

CPE state management primitives relate to managing the active (registration) state of the CPE. The active (registration) state of the CPE is manipulated in accordance with SM policies (see 10.2.5), and during the registration process (see 7.14.2.11) during network entry/re-entry. CPE power management can be supported by properly scheduling execution CPE state management primitives.

There are two CPE state management primitives that manage the active (registration) state of the CPE: C-STATE-MANAGEMENT-CONFIRMATION and C-STATE-MANAGEMENT-REQUEST.

#### 14.2.4.4.1 C-STATE-MANAGEMENT-CONFIRMATION

##### 14.2.4.4.1.1 Purpose

To indicate to the CPE that it is being de-registered and what action it should take upon de-registration.

##### 14.2.4.4.1.2 SAP type

C-SAP

#### **14.2.4.4.1.3 Operation type**

Information Confirmation

#### **14.2.4.4.1.4 Destination**

CPE

#### **14.2.4.4.1.5 Data**

**Table 330—C-STATE-MANAGEMENT-CONFIRMATION parameters**

Name	Type	Length	Description
Action Code	Integer	8 bits	Action Code defining behavior CPE should take upon receiving primitive (see Table 115).
If(Action Code == 0    == 4) {			
Next Channel Frequency Start	Integer	64 bits	Start frequency of Channel CPE should tune to if Action Code == 0 or 4, in Hz.
Next Channel Frequency End	Integer	64 bits	End frequency of Channel CPE should tune to if Action Code == 0 or 4, in Hz.
}			

#### **14.2.4.4.1.6 When generated**

The contents of this primitives are encapsulated in the DREG-CMD MAC management message and are generated under the following conditions:

- a) BS generates this primitive according to a policy as specified by the Spectrum Manager Policies (see 10.2.5).
- b) BS generates this primitive in accordance with the CPE registration/location tracking procedure defined in 7.14.2.11.
- c) BS generates this primitive whenever a CPE fails registration or re-registration.

#### **14.2.4.4.1.7 Effect of receipt**

CPE processes the received primitive (contained within the DREG-CMD) and executes the behavior according the value of the Action Code.

### **14.2.4.4.2 C-STATE-MANAGEMENT-REQUEST**

#### **14.2.4.4.2.1 Purpose**

To indicate to the BS that CPE requests de-registration. The BS then responds with the appropriate action that the CPE should take.

#### **14.2.4.4.2.2 SAP type**

C-SAP

#### **14.2.4.4.2.3 Operation type**

Information Request

#### **14.2.4.4.2.4 Destination**

BS

#### **14.2.4.4.2.5 Data**

**Table 331—C-STATE-MANAGEMENT-REQUEST parameters**

Name	Type	Length	Description
Action Code	Integer	8 bits	Action Code defining behavior CPE should take upon receiving primitive (see Table 115).
If(Action Code == 0    == 4) {			
Next Channel Frequency Start	Integer	64 bits	Start frequency of Channel CPE should tune to if Action Code == 0 or 4, in Hz.
Next Channel Frequency End	Integer	64 bits	End frequency of Channel CPE should tune to if Action Code == 0 or 4, in Hz.
}			

#### **14.2.4.4.2.6 When generated**

The contents of this primitives are encapsulated in the DREG-REQ MAC management message and are generated under the following conditions:

- a) CPE generates this primitive when it has failed to complete the transfer of operational parameters stage of network entry (see 7.14.2.15).
- b) CPE generates this primitive when it has no active sessions and wishes to quiet down, (e.g., either send DREG-REQ with Action Code == 2 or == 4 or == 5).

#### **14.2.4.4.2.7 Effect of receipt**

The BS shall process the primitive as received in the DREG-REQ. It shall generate a C-STATE-MANAGEMENT-CONFIRMATION in response.

- a) If the CPE can no longer be supported in the current operating channel and there are other channels available, the Action Code field shall be set to 0, and a channel to which to tune shall be provided in the Next Channel Number field in the C-STATE-MANAGEMENT-CONFIRMATION that is sent to CPE in response.
- b) If the CPE can no longer be supported in the current operating channel and there are no other channels available, the Action Code field shall be set to 4 in the C-STATE-MANAGEMENT-CONFIRMATION that is sent to CPE in response.
- c) If there is a problem with CPE registration and/or if the transfer of operational parameters stage of network entry (see 7.14.2.15) has failed, Action Code field shall be set to 5 in the C-STATE-MANAGEMENT-CONFIRMATION that is sent to CPE in response.

#### **14.2.4.5 Radio resource management primitives**

Radio resource management primitives allow the NCMS to monitor usage of radio resources in the DS and US at a particular BS. There are two types of reports that can be retrieved: percentage of resources allocated in the DS/US and amount of slots allocated in a DS/US region.

There are four radio resource management primitives: C-RRM-RESOURCE-USAGE-REQUEST, C-RRM-RESOURCE-USAGE-CONFIRMATION, C-RRM-REGION-INFO-REQUEST, and C-RRM-REGION-INFO-REQUEST.

##### **14.2.4.5.1 C-RRM-RESOURCE-USAGE-REQUEST**

###### **14.2.4.5.1.1 Purpose**

To request information on the resource usage in the DS/US in the current operating channel.

###### **14.2.4.5.1.2 SAP type**

C-SAP

###### **14.2.4.5.1.3 Operation type**

Information Request

###### **14.2.4.5.1.4 Destination**

BS

###### **14.2.4.5.1.5 Data**

**Table 332—C-RRM-RESOURCE-USAGE-REQUEST parameters**

Name	Type	Length	Description
BS MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS.
Operating Channel Frequency Start	Integer	64 bits	Start frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Operating Channel Frequency End	Integer	64 bits	End frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Usage Request Type	Integer	8 bits	Type of request: 0x00 = DS only 0x01 = US only 0x02 = DS & US
Timestamp	Character String	20 Characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

###### **14.2.4.5.1.6 When generated**

This primitive is generated when the NCMS requests a report on the resource usage in the current operating channel of the BS.

#### **14.2.4.5.1.7 Effect of receipt**

The BS shall process the received primitive, generate the report data, and then send C-RRM-RESOURCE-USAGE-CONFIRMATION in response to the NCMS. The DS usage data comes from `wranIfBsOfdmaDsRadioResource` and `wranIfBsOfdmaUsRadioResource` MIB objects stored in `wranIfBsOfdmaPhyDsChannelTable` and `wranIfBsOfdmaPhyUsChannelTable`, respectively.

#### **14.2.4.5.2 C-RRM-RESOURCE-USAGE-CONFIRMATION**

##### **14.2.4.5.2.1 Purpose**

To provide DS/US resource usage information in the current operating channel.

##### **14.2.4.5.2.2 SAP type**

C-SAP

##### **14.2.4.5.2.3 Operation type**

Information Confirmation

##### **14.2.4.5.2.4 Destination**

NCMS

##### **14.2.4.5.2.5 Data**

**Table 333—C-RRM-RESOUCE-USAGE-CONFIRMATION parameters**

Name	Type	Length	Description
BS MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS.
Operating Channel Frequency Start	Integer	64 bits	Start frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Operating Channel Frequency End	Integer	64 bits	End frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Usage Request Type	Integer	8 bits	Type of request: 0x00 = DS only 0x01 = US only 0x02 = DS & US
If(Usage Request Type == 0x00    == 0x02){			
DS Resource Usage Information	Integer	8 bits	Average percentage (ratio) of non-assigned DS radio resources to total usable DS radio resources (see <code>wranIfBsOfdmaDsRadioResource</code> in <code>wranIfBsOfdmaPhyDsChannelTable</code> ).
}			
If(Usage Request Type == 0x01    == 0x02){			
US Resource Usage Information			Average percentage (ratio) of non-assigned US radio resources to total usable US radio resources (see <code>wranIfBsOfdmaUsRadioResource</code> in <code>wranIfBsOfdmaPhyUsChannelTable</code> ).

Name	Type	Length	Description
}			
Timestamp	Character String	20 Characters	Value of Timestamp field as copied from received C-RRM-RESOURCE-USAGE-REQUEST. Time format defined in 14.1.5.

#### 14.2.4.5.2.6 When generated

This primitive is generated when the BS receives a C-RRM-RESOURCE-USAGE-REQUEST primitive from the NCMS.

#### 14.2.4.5.2.7 Effect of receipt

The NCMS shall process the received primitive and present the data in the report to the operator.

### 14.2.4.5.3 C-RRM-REGION-INFO-REQUEST

#### 14.2.4.5.3.1 Purpose

To request information on the assignment of slots in the DS and/or US region of the current operating channel.

#### 14.2.4.5.3.2 SAP type

C-SAP

#### 14.2.4.5.3.3 Operation type

Information Request

#### 14.2.4.5.3.4 Destination

BS

#### 14.2.4.5.3.5 Data

**Table 334—C-RRM-REGION-INFO-REQUEST parameters**

Name	Type	Length	Description
BS MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS.
Operating Channel Frequency Start	Integer	64 bits	Start frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Operating Channel Frequency End	Integer	64 bits	End frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Region Info Request Type	Integer	8 bits	Type of request: 0x00 = DS only 0x01 = US only 0x02 = DS & US
If(Region Info Request Type == 0x00    == 0x02){			

Name	Type	Length	Description
Number of DS Region Reports Requested	Integer	8 bits	# of DS regions for which slot assignments are being requested.
For (i=0;i<Number of DS Region Reports Requested;i++) {			
DS Region Index	Integer	16 bits	Index of region (ranging from 1 to 512) in DS for which slot assignment is being asked.
}			
}			
If(Request Info Request Type == 0x01    == 0x02){			
Number of US Region Reports Requested	Integer	8 bits	# of US regions for which slot assignments are being requested.
For (i=0;i<Number of US Region Reports Requested;i++) {			
US Region Index	Integer	16 bits	Index of region (ranging from 1 to 512) in US for which slot assignment is being asked.
}			
}			
Timestamp	Character String	20 Characters	Timestamp of the present request at time of transmission. Time format defined in 14.1.5.

#### 14.2.4.5.3.6 When generated

This primitive is generated when the NCMS requests a report on the slot assignments in the DS and/or upstream.

#### 14.2.4.5.3.7 Effect of receipt

The BS shall process the received primitive, generate the report data, and then send C-RRM-REGION-INFO-CONFIRMATION in response to the NCMS. The DS region data comes from `wranIfBsOfdmaDsRegionTable` and `wranIfBsOfdmaUsRegionTable` MIB.

### 14.2.4.5.4 C-RRM-REGION-INFO-CONFIRMATION

#### 14.2.4.5.4.1 Purpose

To provide slot assignment information in DS and/or US regions of the current operating channel.

#### 14.2.4.5.4.2 SAP type

C-SAP

#### **14.2.4.5.4.3 Operation type**

Information Confirmation

#### **14.2.4.5.4.4 Destination**

NCMS

#### **14.2.4.5.4.5 Data**

**Table 335—C-RRM-REGION-INFO-CONFIRMATION parameters**

Name	Type	Length	Description
BS MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS.
Operating Channel Frequency Start	Integer	64 bits	Start frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Operating Channel Frequency End	Integer	64 bits	End frequency (in Hz) of Current operating Channel to which DS/US usage request pertains.
Region Info Request Type	Integer	8 bits	Type of request: 0x00 = DS only 0x01 = US only 0x02 = DS & US
If(Region Info Request Type == 0x00    == 0x02){			
Number of DS Region Reports Requested	Integer	8 bits	# of DS regions for which slot assignments are being requested.
For (i=0;i<Number of DS Region Reports Requested;i++) {			
DS Region Index	Integer	16 bits	Index of region (ranging from 1 to 512) in DS for which slot assignment is being asked.
DS Region Duration	Integer	16 bits	# of slots assigned to DS Region.
}			
}			
If(Region Info Request Type == 0x01    == 0x02){			
Number of US Region Reports Requested	Integer	8 bits	# of US regions for which slot assignments are being requested.
For (i=0;i<Number of US Region Reports Requested;i++) {			
US Region Index	Integer	16 bits	Index of region (ranging from 1 to 512) in US for which slot assignment is being asked.
US Region Duration	Integer	16 bits	# of slots assigned to US Region.
}			
}			
Timestamp	Character String	20 Characters	Value of Timestamp field from received C-RRM-REGION-INFO-REQUEST primitive. Time format defined in 14.1.5.

#### **14.2.4.5.4.6 When generated**

This primitive is generated when the BS receives a C-RRM-REGION-INFO-REQUEST primitive from the NCMS.

#### **14.2.4.5.4.7 Effect of receipt**

The NCMS shall process the received primitive and present the data in the report to the operator.

### **14.2.4.6 Service flow management primitives**

Service flow management primitives allow the NCMS to maintain configuration of services flows on CPEs. There are two types of reports that can be retrieved: percentage of resources allocated in the DS/US and amount of slots allocated in a DS/US region.

There are six service flow management primitives related to configuration, modification, and deletion of service flows: C-SERVICE-FLOW-ADD-REQUEST, C-SERVICE-FLOW-ADD-CONFIRMATION, C-SERVICE-FLOW-CHANGE-REQUEST, C-SERVICE-FLOW-CHANGE-CONFIRMATION, C-SERVICE-FLOW-DELETE-REQUEST, and C-SERVICE-FLOW-DELETE-CONFIRMATION. There are two service flow management primitives related to provided indication that a confirmation primitive was received: C-SERVICE-FLOW-ADD-INDICATION and C-SERVICE-FLOW-CHANGE-INDICATION.

#### **14.2.4.6.1 C-SERVICE-FLOW-ADD-REQUEST**

##### **14.2.4.6.1.1 Purpose**

To request configuration of a new service flow. Configuration of a new service flow can be initiated by the NCMS or CPE.

##### **14.2.4.6.1.2 SAP type**

C-SAP

##### **14.2.4.6.1.3 Operation type**

Information Request

##### **14.2.4.6.1.4 Destination**

CPE, NCMS

##### **14.2.4.6.1.5 Data**

**Table 336—C-SERVICE-FLOW-ADD-REQUEST parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used to keep track of ongoing service flow configuration operations.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.

Name	Type	Length	Description
Service Flow Direction	Integer	8 bits	Direction of Service Flow: 0x00 = DS 0x01 = US 0x02–0xFF = Reserved
Target SAID	Integer	32 bits	ID of Security Association to which service flow is mapped.
Station ID	Integer	9 bits	Station ID of CPE.
Service Flow Status	Integer	2 bits	Current state of service flow: 00 – Inactive 01 – provisioned 10 – admitted 11 – active
Service Flow Parameter Data Size	Integer	32 bits	
Service Flow Parameter Data	Octet String	Service Flow Parameter Data Size × 8 bits	An octet string containing the serialized form of service flow parameters. The order and formatting of service flow parameters is given in the definition of an entry in <code>wranIfBsScTable</code> .
Number of Classifier Rules	Integer	8 bits	Number classifier rules that will be used for service flow.
for(i=0;i<Number of Classifier Rules;i++){			
Classifier Rule Parameter Data Size	Integer	32 bits	
Classifier Rule Parameter Data	Octet String	Classifier Rule Parameter Data Size × 8 bits	An octet string containing the serialized form of one set of classifier rule parameters for a service flow. The order and formatting of a set of classifier rule parameters is given in the definition of an entry in <code>wranIfBsProvClassifierRuleTable</code> or <code>wranIfBsClassifierRuleTable</code> .
}			
Padding		5 bits	Set to 00000.

#### 14.2.4.6.1.6 When generated

This primitive is generated under the following conditions:

- a) When NCMS wants to configure a service flow on a CPE: It sends this primitive to the BS, unpacks it, and uses it to form a DSA-REQ message to send to the CPE to start configuration of the service flow on the CPE.
- b) When the CPE wants to configure a service flow: It packages the information in a DSA-REQ, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to start configuration of the service flow.

#### 14.2.4.6.1.7 Effect of receipt

This primitive is handled differently, based on the intended destination:

- a) When NCMS receives this primitive, it checks to see whether the requested configuration can be supported. If the configuration is accepted, it is stored in the appropriate MIB (see `wranIfBsSfMgmtMib`), and a response is sent in the form of the C-SERVICE-FLOW-ADD-CONFIRMATION. If the configuration is not supported, the transmission of C-SERVICE-FLOW-ADD-CONFIRMATION indicates the most appropriate error code.
- b) When CPE receives this primitive, it checks to see whether the requested configuration can be supported. If the configuration is accepted, it is stored in the appropriate MIB (see `wranIfBsSfMgmtMib`), and a response is sent in the form of the C-SERVICE-FLOW-ADD-CONFIRMATION. If the configuration is not supported, the transmission of C-SERVICE-FLOW-ADD-CONFIRMATION indicates the most appropriate error code.

#### **14.2.4.6.2 C-SERVICE-FLOW-ADD-CONFIRMATION**

##### **14.2.4.6.2.1 Purpose**

To respond to a service flow configuration addition request.

##### **14.2.4.6.2.2 SAP type**

C-SAP

##### **14.2.4.6.2.3 Operation type**

Information Confirmation

##### **14.2.4.6.2.4 Destination**

CPE, NCMS

##### **14.2.4.6.2.5 Data**

**Table 337—C-SERVICE-FLOW-ADD-CONFIRMATION parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used C-SERVICE-FLOW-ADD-REQUEST to identify this particular service flow configuration transactions.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.
Service Flow Direction	Integer	8 bits	Direction of Service Flow: 0x00 = DS 0x01 = US 0x02–0xFF = Reserved
Target SAID	Integer	32 bits	ID of Security Association to which service flow is mapped.
Station ID	Integer	9 bits	Station ID of CPE.

Name	Type	Length	Description
Service Flow Status	Integer	2 bits	Current state of service flow: 00 – Inactive 01 – provisioned 10 – admitted 11 – active
Service Flow Parameter Data Size	Integer	32 bits	
Service Flow Parameter Data	Octet String	Service Flow Parameter Data Size × 8 bits	An octet string containing the serialized form of service flow parameters. The order and formatting of service flow parameters is given in the definition of an entry in <code>wranIfBsScTable</code> .
Number of Classifier Rules	Integer	8 bits	Number classifier rules that will be used for service flow.
for(i=0;i<Number of Classifier Rules;i++){			
Classifier Rule Parameter Data Size	Integer	32 bits	
Classifier Rule Parameter Data	Octet String	Classifier Rule Parameter Data Size × 8 bits	An octet string containing the serialized form of one set of classifier rule parameters for a service flow. The order and formatting of a set of classifier rule parameters is given in the definition of an entry in <code>wranIfBsProvClassifierRuleTable</code> or <code>wranIfBsClassifierRuleTable</code> .
}			
Confirmation Code	Integer	8 bits	Confirmation Code indicating status of service flow configuration (see 7.7.24).
Padding		5 bits	Set to 00000.

#### 14.2.4.6.2.6 When generated

This primitive is generated under the following conditions:

- a) When NCMS wants to respond to C-SERVICE-FLOW-ADD-REQUEST to indicate to a CPE whether the requested configuration has been accepted, was accepted and modified, or was not accepted: It sends this primitive to the BS, which unpacks it and uses it to form a DSA-RSP message to send to the CPE to complete configuration of the service flow on the CPE.
- b) When the CPE wants to respond to C-SERVICE-FLOW-ADD-REQUEST to indicate to the NCMS whether the service flow configuration can be supported: The CPE packages the information in a DSA-RSP, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to complete service flow configuration.

#### 14.2.4.6.2.7 Effect of receipt

- a) When NCMS receives a C-SERVICE-FLOW-ADD-CONFIRMATION, it sends a C-SERVICE-FLOW-ADD-INDICATION to indicate to the CPE that it has received the C-SERVICE-FLOW-ADD-CONFIRMATION and the transaction to configure the service has concluded.
- b) When CPE receives a C-SERVICE-FLOW-ADD-CONFIRMATION, it sends a C-SERVICE-FLOW-ADD-INDICATION to indicate to the NCMS that it has received the C-SERVICE-FLOW-ADD-CONFIRMATION and the transaction to configure the service has concluded.

### **14.2.4.6.3 C-SERVICE-FLOW-ADD-INDICATION**

#### **14.2.4.6.3.1 Purpose**

To indicate to originator of service flow configuration transaction that service flow configuration transaction has concluded.

#### **14.2.4.6.3.2 SAP type**

C-SAP

#### **14.2.4.6.3.3 Operation type**

Event Indication

#### **14.2.4.6.3.4 Destination**

CPE, NCMS

#### **14.2.4.6.3.5 Data**

**Table 338—C-SERVICE-FLOW-ADD-INDICATION parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used to keep track of ongoing service flow configuration operations.
Confirmation Code	Integer	8 bits	Confirmation Code indicating status of service flow configuration (see 7.7.24); this value is pulled from the received C-SERVICE-FLOW-ADD-CONFIRMATION.

#### **14.2.4.6.3.6 When generated**

This primitive is generated under the following conditions:

- a) When a NCMS wants to indicate to CPE that service flow configuration transaction has ended and that it has received C-SERVICE-FLOW-ADD-CONFIRMATION from CPE.
- b) When a CPE wants to indicate to NCMS that service flow configuration transaction has ended and that it has received C-SERVICE-FLOW-ADD-CONFIRMATION from NCMS

#### **14.2.4.6.3.7 Effect of receipt**

This primitive is handled under the following condition:

- a) When CPE has received this primitive, it begins to use transmit/receive data on the service flow.
- b) When the NCMS has received this primitive, it knows the service flow has been configured and it can begin using accounting management primitives (see 14.2.1.1) to monitor CPE data usage.

#### **14.2.4.6.4 C-SERVICE-FLOW-CHANGE-REQUEST**

##### **14.2.4.6.4.1 Purpose**

To request a change in the configuration of an existing service flow. A configuration change can be initiated by the NCMS or CPE.

##### **14.2.4.6.4.2 SAP type**

C-SAP

##### **14.2.4.6.4.3 Operation type**

Information Request

##### **14.2.4.6.4.4 Destination**

CPE, NCMS

##### **14.2.4.6.4.5 Data**

**Table 339—C-SERVICE-FLOW-CHANGE-REQUEST parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used to keep track of ongoing service flow configuration operations.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.
Service Flow Direction	Integer	8 bits	Direction of Service Flow: 0x00 = DS 0x01 = US 0x02–0xFF = Reserved
Target SAID	Integer	32 bits	ID of Security Association to which service flow is mapped.
Station ID	Integer	9 bits	Station ID of CPE.
Service Flow Status	Integer	2 bits	Current state of service flow: 00 – Inactive 01 – provisioned 10 – admitted 11 – active
Service Flow Parameter Data Size	Integer	32 bits	
Service Flow Parameter Data	Octet String	Service Flow Parameter Data Size × 8 bits	An octet string containing the serialized form of service flow parameters. The order and formatting of service flow parameters is given in the definition of an entry in wranIfBssCtTable.
Number of Classifier Rules	Integer	8 bits	Number classifier rules that will be used for service flow.
for(i=0;i<Number of Classifier Rules;i++){			

Name	Type	Length	Description
Classifier Rule Parameter Data Size	Integer	32 bits	
Classifier Rule Parameter Data	Octet String	Classifier Rule Parameter Data Size × 8 bits	An octet string containing the serialized form of one set of classifier rule parameters for a service flow. The order and formatting of a set of classifier rule parameters is given in the definition of an entry in <code>wranIfBsProvClassifierRuleTable</code> or <code>wranIfBsClassifierRuleTable</code> .
}			
Padding		5 bits	Set to 00000.

#### 14.2.4.6.4.6 When generated

This primitive is generated under the following conditions:

- a) When NCMS wants to change the configuration of a service flow on a CPE: It sends this primitive to the BS, which unpacks it and uses it to form a DSC-REQ message to send to the CPE to change the configuration of the service flow on the CPE.
- b) When the CPE wants to change the configuration of a service flow: It packages the information in a DSC-REQ, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to start changing the configuration of the service flow.

#### 14.2.4.6.4.7 Effect of receipt

This primitive is handled differently, based on the intended destination:

- a) When NCMS receives this primitive, it checks to see whether the requested configuration changes can be supported. If the configuration changes are accepted, they are stored in the appropriate MIB (see `wranIfBsSfMgmtMib`), and a response is sent in the form of the C-SERVICE-FLOW-CHANGE-CONFIRMATION. If the configuration is not supported, the transmission of C-SERVICE-FLOW-CHANGE-CONFIRMATION indicates the most appropriate error code.
- b) When CPE receives this primitive, it checks to see whether the requested configuration changes can be supported. If the configuration changes are accepted, they are stored in the appropriate MIB (see `wranIfBsSfMgmtMib`), and a response is sent in the form of the C-SERVICE-FLOW-CHANGE-CONFIRMATION. If the configuration is not supported, the transmission of C-SERVICE-FLOW-CHANGE-CONFIRMATION indicates the most appropriate error code.

### 14.2.4.6.5 C-SERVICE-FLOW-CHANGE-CONFIRMATION

#### 14.2.4.6.5.1 Purpose

To respond to a service flow configuration change request.

#### 14.2.4.6.5.2 SAP type

C-SAP

#### **14.2.4.6.5.3 Operation type**

Information Confirmation

#### **14.2.4.6.5.4 Destination**

CPE, NCMS

#### **14.2.4.6.5.5 Data**

**Table 340—C-SERVICE-FLOW-CHANGE-CONFIRMATION parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used C-SERVICE-FLOW-ADD-REQUEST to identify this particular service flow configuration transactions.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.
Service Flow Direction	Integer	8 bits	Direction of Service Flow: 0x00 = DS 0x01 = US 0x02–0xFF = Reserved
Target SAID	Integer	32 bits	ID of Security Association to which service flow is mapped.
Station ID	Integer	9 bits	Station ID of CPE.
Service Flow Status	Integer	2 bits	Current state of service flow: 00 – Inactive 01 – provisioned 10 – admitted 11 – active
Service Flow Parameter Data Size	Integer	32 bits	
Service Flow Parameter Data	Octet String	Service Flow Parameter Data Size × 8 bits	An octet string containing the serialized form of service flow parameters. The order and formatting of service flow parameters is given in the definition of an entry in <code>wranIfBsScTable</code> .
Number of Classifier Rules	Integer	8 bits	Number classifier rules that will be used for service flow.
for(i=0;i<Number of Classifier Rules;j++){			
Classifier Rule Parameter Data Size	Integer	32 bits	
Classifier Rule Parameter Data	Octet String	Classifier Rule Parameter Data Size × 8 bits	An octet string containing the serialized form of one set of classifier rule parameters for a service flow. The order and formatting of a set of classifier rule parameters is given in the definition of an entry in <code>wranIfBsProvClassifierRuleTable</code> or <code>wranIfBsClassifierRuleTable</code> .
}			

Name	Type	Length	Description
Confirmation Code	Integer	8 bits	Confirmation Code indicating status of service flow configuration (see 7.7.24).
Padding		5 bits	Set to 00000.

#### **14.2.4.6.5.6 When generated**

This primitive is generated under the following conditions:

- a) When NCMS wants to respond to C-SERVICE-FLOW-CHANGE-REQUEST to indicate to a CPE whether the requested configuration change has been accepted, was accepted and modified, or was not accepted: It sends this primitive to the BS, which unpacks it and uses it to form a DSC-RSP message to send to the CPE to complete configuration change of the service flow on the CPE.
- b) When the CPE wants to respond to C-SERVICE-FLOW-CHANGE-REQUEST to indicate to the NCMS whether the service flow configuration change can be supported: The CPE packages the information in a DSC-RSP, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to complete service flow configuration change.

#### **14.2.4.6.5.7 Effect of receipt**

- a) When NCMS receives a C-SERVICE-FLOW-CHANGE-CONFIRMATION, it sends a C-SERVICE-FLOW-CHANGE-INDICATION to indicate to the CPE that it has received the C-SERVICE-FLOW-CHANGE-CONFIRMATION and the transaction to change the configuration of the service flow has concluded.
- b) When CPE receives a C-SERVICE-FLOW-CHANGE-CONFIRMATION, it sends a C-SERVICE-FLOW-CHANGE-INDICATION to indicate to the NCMS that it has received the C-SERVICE-FLOW-CHANGE-CONFIRMATION and the transaction to change configuration of the service flow has concluded.

### **14.2.4.6.6 C-SERVICE-FLOW-CHANGE-INDICATION**

#### **14.2.4.6.6.1 Purpose**

To indicate to originator of service flow configuration change transaction that service flow configuration change transaction has concluded.

#### **14.2.4.6.6.2 SAP type**

C-SAP

#### **14.2.4.6.6.3 Operation type**

Event Indication

#### **14.2.4.6.6.4 Destination**

CPE, NCMS

#### **14.2.4.6.6.5 Data**

**Table 341—C-SERVICE-FLOW-CHANGE-INDICATION parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used to keep track of ongoing service flow configuration operations.
Confirmation Code	Integer	8 bits	Confirmation Code indicating status of service flow configuration (see 7.7.24); this value is pulled from the received C-SERVICE-FLOW-CHANGE-CONFIRMATION.

#### **14.2.4.6.6.6 When generated**

This primitive is generated under the following conditions:

- a) When the NCMS wants to indicate to CPE that service flow configuration change transaction has ended and that it has received C-SERVICE-FLOW-CHANGE-CONFIRMATION from CPE.
- b) When a CPE wants to indicate to NCMS that service flow configuration change transaction has ended and that it has received C-SERVICE-FLOW-CHANGE-CONFIRMATION from NCMS.

#### **14.2.4.6.6.7 Effect of receipt**

This primitive is handled under the following condition:

- a) When CPE receives this primitive, it begins to continues transmit/receive data on the service flow, using the new service flow parameters.
- b) When the NCMS receives this primitive, it knows the service flow configuration has been changed. NCMS can continue using current accounting record or create a new accounting record to monitor CPE data usage (see 14.2.1.1).

### **14.2.4.6.7 C-SERVICE-FLOW-DELETE-REQUEST**

#### **14.2.4.6.7.1 Purpose**

To request a deletion of a an existing service flow.

#### **14.2.4.6.7.2 SAP type**

C-SAP

#### **14.2.4.6.7.3 Operation type**

Information Request

#### **14.2.4.6.7.4 Destination**

CPE, NCMS

#### **14.2.4.6.7.5 Data**

**Table 342—C-SERVICE-FLOW-DELETE-REQUEST parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used to keep track of ongoing service flow configuration operations.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.
Station ID	Integer	9 bits	Station ID of CPE.
Padding		7 bits	Set to 0000000.

#### **14.2.4.6.7.6 When generated**

This primitive is generated under the following conditions:

- a) When NCMS wants to delete the configuration of a service flow on a CPE: It sends this primitive to the BS, which unpacks it and uses it to form a DSD-REQ message to send to the CPE to start deletion of the service flow on the CPE.
- b) When the CPE wants to delete the configuration of a service flow: It packages the information in a DSD-REQ, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to start deletion of the service flow.

#### **14.2.4.6.7.7 Effect of receipt**

This primitive is handled differently, based on the intended destination:

- a) When NCMS receives this primitive, it checks to see whether the requested service flow is currently configured on the CPE. If it is, the NCMS deletes the service flow and sends a response in the form of the C-SERVICE-FLOW-DELETE-CONFIRMATION with the Confirmation Code set to Success to the CPE. If the configuration does not exist, the transmission of C-SERVICE-FLOW-DELETE-CONFIRMATION indicates the most appropriate error code.
- b) When CPE receives this primitive, it checks to see whether the requested service flow is currently configured on the CPE. If it is, the CPE deletes the service flow and sends a response in the form of the C-SERVICE-FLOW-DELETE-CONFIRMATION with the Confirmation Code set to Success to the NCMS. If the configuration does not exist, the transmission of C-SERVICE-FLOW-DELETE-CONFIRMATION indicates the most appropriate error code.

#### **14.2.4.6.8 C-SERVICE-FLOW-DELETE-CONFIRMATION**

##### **14.2.4.6.8.1 Purpose**

To respond to a service flow deletion request.

##### **14.2.4.6.8.2 SAP type**

C-SAP

#### **14.2.4.6.8.3 Operation type**

Information Confirmation

#### **14.2.4.6.8.4 Destination**

CPE, NCMS

#### **14.2.4.6.8.5 Data**

**Table 343—C-SERVICE-FLOW-DELETE-CONFIRMATION parameters**

Name	Type	Length	Description
Transaction ID	Integer	16 bits	16-bit Transaction identifier used C-SERVICE-FLOW-ADD-REQUEST to identify this particular service flow configuration transactions.
IEEE 802.22 Node MAC Address	MAC Address	48 bits	IEEE 48-bit MAC Address of the BS or CPE for which a service flow is configured.
Service Flow ID	Integer	32 bits	Unique identifier for service flow that is being configured.
Station ID	Integer	9 bits	Station ID of CPE.
Confirmation Code	Integer	8 bits	Confirmation Code indicating status of service flow configuration (see 7.7.24).
Padding		7 bits	Set to 0000000.

#### **14.2.4.6.8.6 When generated**

This primitive is generated under the following conditions:

- a) When NCMS wants to respond to C-SERVICE-FLOW-DELETE-REQUEST to indicate to a CPE whether the requested deletion of service flow has been accepted or was not accepted: It sends this primitive to the BS, which unpacks it and uses it to form a DSD-RSP message to send to the CPE to complete deletion change of the service flow on the CPE.
- b) When the CPE wants to respond to C-SERVICE-FLOW-DELETE-REQUEST to indicate to the NCMS whether the service flow deletion can be supported: The CPE packages the information in a DSD-RSP, which is sent to the BS. The BS unpacks the information and forwards this primitive to the NCMS to complete service flow deletion.

#### **14.2.4.6.8.7 Effect of receipt**

- a) When NCMS receives a C-SERVICE-FLOW-DELETE-CONFIRMATION, it deletes the service flow.
- b) When CPE receives a C-SERVICE-FLOW-DELETE-CONFIRMATION, it deletes the service flow.