Project	**IEEE 802.20 Working Group on Mobile Broadband Wireless Access <http://grouper.ieee.org/groups/802/20/>**	
Title	IEEE 802.20 MIB Enhancements	
Date Submitted	**2008-05-12**	
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Re:	C802.20-08-06: IEEE 802.20 MIB Concepts	
Abstract	This document proposes text for the 802.20 MIB Enhancemnts document to address requests for IETF-specific enhancements.	
Purpose	To assist 802.20 in producing a MIB Enhancements update.	
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Patent Policy	The contributor is familiar with IEEE patent policy, as outlined in Section 6.3 of the IEEE-SA Standards Board Operations Manual <http://standards.ieee.org/guides/opman/sect6.html#6.3> and in *Understanding Patent Issues During IEEE Standards Development* <http://standards.ieee.org/board/pat/guide.html>.	

Motivation

- Comment #70 from the March 20 meeting in Orlando suggested MIB enhancements:

407 190 002 3	70	Parsons, Glenn	Abstain - Other	General	17	Many of my MIB comments were implemented. But the significant ones were not. Specifically the MIBs do not have: - references embedded in the SMI code - detailed summary on the MIB structure - security considerations - relationships to other MIBs The response is that these are not needed. I disagree. Other 802 standards include this information in the MIB clauses.	No	These updates are required. I would prefer to see it in this version of 802.20. However given the 802.20 delays, and that this may take some effort to generate, it may be acceptable to add this in an amendment.	Principle	The WG concurs that the MIBs should be enhanced to incorporate the most recent enhancements defined by the IETF. The WG appreciates the commentors willingness to allow this to be done as an amendment. The WG is committed to such an amendment and such a PAR is being developed for approval..

Summary of Changes Requested

- REFERENCES clauses embedded in the SMI code
  - An update to the MIB can be provided at the July 802.20 meeting.
    - The purpose is for documentation / ease of use.
    - Every MIB Storage Object will receive a REFERENCE clause,
      - e.g. REFERENCE "IEEE Std 802.20-2008, 7.3.1.7"
- Detailed summary of the MIB structure
  - We failed to locate an 802 Standard with a MIB structure summary.
    - We respectfully ask for clarification on what is a "MIB Structure Summary" ?
    - Will a simple informative paragraph description suffice?
- Security considerations
  - See paragraphs later in this contribution.
    - Intent is to add a discussion of what trouble a malicious attacker could create?
- Relationships to other MIBs
  - See paragraphs later in this contribution.
    - There are no relationships (e.g. typedef usage) to other MIBs.

The IETF MIB Requirements

IETF MIB Requirements Checklist (from: ftp://ftp.rfc-editor.org/in-notes/rfc4181.txt)		
No.	Requirement	Disposition
1	Internet-Draft Boilerplate text must be included	Does not apply (IEEE conventions override this requirement)
2	The Abstract must not have references The Abstract must not have a section number.	Check
3	Include the standard MIB boiler plate for SMIv2 access techniques for the MIB.	Check (New Section 17.1)[1]
4	Include Security and Privacy considerations, in case a MIB is compromised.	Check (New Section 17.3)[1]
5	Tell IANA what must be done to manage new enumeration type allocations	Check (New Section 17.4)[1]

[1] Presented on pages 6-9 of this contribution.

The IETF MIB Requirements - 2

IETF MIB Requirements Checklist - Continued (from: ftp://ftp.rfc-editor.org/in-notes/rfc4181.txt)		
No.	Requirement	Disposition
6	Follow conventions for References section of document	Does not apply (IEEE conventions override this requirement)
7	Include a Copyright MODULE-IDENTITY / DESCRIPTION field	May not apply (IEEE Copyright likely overrides this requirement)
8	IPR Notice must follow IETF Rules	Does not apply (IEEE conventions override this requirement)
9	Other issues for Internet-Draft documents	Check †
10	Technical (Syntactic) Correctness is machine-verified	Check ‡

† Applies only to documents known as "Internet-Drafts".

‡ The 802.20 MIB was machine-generated with a tool known as "MIB Smithy".

Satisfying IETF Requirement # 3

Propose to update Subclause 17.1 with the following text :

17.1. The Internet-Standard Management Framework

This chapter defines a Management Information Base (MIB) module for managing the MAC and PHY. For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to Section 7 of IETF RFC 3410.

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIv2, which is described in IETF STD 58, RFC 2578; IETFC STD 58, RFC 2579; and IETF STD 58, RFC 2580.

Satisfying IETF Requirement # 4

Propose to insert the following text into the specification as Subclause 17.3 renumbering the existing subclauses beginning at 17.4

17.3. Security Considerations

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this section are to be interpreted as described in BCP 14, RFC 2119 [RFC2119].

This MIB relates to a system which will provide mobile broadband wireless access. As such, improper manipulation of the objects represented by this MIB may result in denial of service to a large number of end-users.

The MIB objects in the Dot20AnChannelBandsEntry SEQUENCE contain 8 objects used to set the frequency band of the transmitting base station. An administrator should take great care to include only authorized, licensed channel bands in the table. Failure to take these measures might cause a base station to violate local regulatory laws (e.g. FCC licensing in the USA) by transmitting power into unauthorized channels in the country where the base station is deployed.

The Dot20AnTransmitPower OBJECT sets the power for the base station in dBm. Unauthorized access to this object may allow an attacker to boost power and violate local regulatory laws (e.g. FCC licensing in the USA) by transmitting excessive power into a licensed band. This may also lead to excessive sideband emissions in adjacent bands.

Satisfying IETF Requirement # 4
(continued)

The Dot20AnNeighborListEntry SEQUENCE defines information about adjacent sectors that is broadcast by the overhead channels of a base station. Terminals functioning in any sector may read the overhead channels from other sectors, including those whose MIB may have become compromised or corrupted due to unauthorized access. Such terminals may therefore incorporate incorrect handoff information into their databases of potential sectors for handoff. Thus, unauthorized access of the MIB in one sector, can affect the performance and handoff characteristics of terminals operating correctly in adjacent sectors.

There are no MIB objects that could allow a user to increase their access rights to system service levels. None of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered capable of revealing sensitive or vulnerable personal information. This MIB is not capable of revealing user information that could violate privacy laws.

There are no MIB objects that could be used to turn off or change the security parameter configuration of an 802.20 access node. The presence or absence of security (encryption, authentication) is controlled by the session state record for each individual user, and cannot be modified by an attacker accessing the MIB.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPsec), there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB module.

Satisfying IETF Requirement # 4
(continued)

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [RFC3410], section 8), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

Satisfying IETF Requirement # 5

Propose to add a new Section 17.4, renumbering any remaining sections starting at 17.5:

17.4 IANA Considerations

No IANA actions are required by this document.

Summary

- 3 sections can be developed to satisfy the IETF checklist.
- REFERENCE clauses are for further study
  - These can be contributed in July to enhance the MIB
  - Requires stable section numbers
- Is there a definition of "MIB Structure Summary" ?
  - Other IEEE 802 specifications do not include this
  - Can a simple paragraph description suffice?
- Any Other MIB Enhancements to Consider?
  - Any WG inputs ??