IEEE8023-SNMP-REPEATER-MIB DEFINITIONS ::= BEGIN

 IMPORTS

 Counter32, Counter64, Integer32, Gauge32,

 OBJECT-TYPE, MODULE-IDENTITY, NOTIFICATION-TYPE, org

 FROM SNMPv2-SMI

 TimeStamp, MacAddress, TEXTUAL-CONVENTION,

 RowStatus, TestAndIncr

 FROM SNMPv2-TC

 OBJECT-GROUP, MODULE-COMPLIANCE, NOTIFICATION-GROUP

 FROM SNMPv2-CONF

 OwnerString

 FROM RFC1271-MIB;

 ieee8023snmpRptrMIB MODULE-IDENTITY

 LAST-UPDATED "202307310000Z" – July 31, 2023

 ORGANIZATION

 "IEEE 802.3 Working Group"

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 DESCRIPTION

 "Management information for IEEE 802.3 repeaters."

 REVISION "202307310000Z" – July 31, 2023

 DESCRIPTION

 "Revision, based on an earlier version in IEEE Std 802.3.1-2013

 addressing changes from IEEE Std 802.3 revisions 2012, 2015, 2018,

 and 2022."

 REVISION "201304110000Z" -- April 11, 2013

 DESCRIPTION

 "Revision, based on an earlier version in IEEE Std 802.3.1-2011."

 REVISION "201102020000Z" -- February 2, 2011

 DESCRIPTION

 "Initial revision, based on an earlier version in RFC 2108"

 ::= { org ieee(111) standards-association-numbers-series-standards(2)

 lan-man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 7 }

 ieee8023snmpDot3RptrMgt OBJECT IDENTIFIER ::= { ieee8023snmpRptrMIB 1}

 OptMacAddr ::= TEXTUAL-CONVENTION

 DISPLAY-HINT "1x:"

 STATUS current

 DESCRIPTION

 "Either a 6 octet address in the 'canonical'

 order defined by IEEE Std 802.1a, i.e., as if it

 were transmitted least significant bit first

 if a value is available or a zero length string."

 REFERENCE

 "See MacAddress in SNMPv2-TC. The only difference

 is that a zero length string is allowed as a value

 for OptMacAddr and not for MacAddress."

 SYNTAX OCTET STRING (SIZE (0 | 6))

 -- Basic information at the repeater, group, and port level.

 rptrBasicPackage

 OBJECT IDENTIFIER ::= { ieee8023snmpDot3RptrMgt 1 }

 rptrGroupInfo

 OBJECT IDENTIFIER ::= { rptrBasicPackage 1 }

 rptrPortInfo

 OBJECT IDENTIFIER ::= { rptrBasicPackage 2 }

 rptrAllRptrInfo

 OBJECT IDENTIFIER ::= { rptrBasicPackage 3 }

 -- Monitoring information at the repeater, group, and port level.

 rptrMonitorPackage

 OBJECT IDENTIFIER ::= { ieee8023snmpDot3RptrMgt 2 }

 rptrMonitorRptrInfo

 OBJECT IDENTIFIER ::= { rptrMonitorPackage 1 }

 rptrMonitorGroupInfo

 OBJECT IDENTIFIER ::= { rptrMonitorPackage 2 }

 rptrMonitorPortInfo

 OBJECT IDENTIFIER ::= { rptrMonitorPackage 3 }

 rptrMonitorAllRptrInfo

 OBJECT IDENTIFIER ::= { rptrMonitorPackage 4 }

 -- Address tracking information at the repeater, group,

 -- and port level.

 rptrAddrTrackPackage

 OBJECT IDENTIFIER ::= { ieee8023snmpDot3RptrMgt 3 }

 rptrAddrTrackRptrInfo

 OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 1 }

 rptrAddrTrackGroupInfo

 -- this subtree is currently unused

 OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 2 }

 rptrAddrTrackPortInfo

 OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 3 }

 -- TopN information.

 rptrTopNPackage

 OBJECT IDENTIFIER ::= { ieee8023snmpDot3RptrMgt 4 }

 rptrTopNRptrInfo

 -- this subtree is currently unused

 OBJECT IDENTIFIER ::= { rptrTopNPackage 1 }

 rptrTopNGroupInfo

 -- this subtree is currently unused

 OBJECT IDENTIFIER ::= { rptrTopNPackage 2 }

 rptrTopNPortInfo

 OBJECT IDENTIFIER ::= { rptrTopNPackage 3 }

 -- Basic information at the group level.

 --

 -- Configuration and status objects for each

 -- managed group in the repeater system, independent

 -- of whether there is one or more managed

 -- repeater-units in the repeater system.

 rptrGroupTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrGroupEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table of descriptive and status information about

 the groups of ports."

 ::= { rptrGroupInfo 1 }

 rptrGroupEntry OBJECT-TYPE

 SYNTAX RptrGroupEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing information

 about a single group of ports."

 INDEX { rptrGroupIndex }

 ::= { rptrGroupTable 1 }

 RptrGroupEntry ::=

 SEQUENCE {

 rptrGroupIndex

 Integer32,

 rptrGroupObjectID

 OBJECT IDENTIFIER,

 rptrGroupOperStatus

 INTEGER,

 rptrGroupPortCapacity

 Integer32

 }

 rptrGroupIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the group within the

 repeater system for which this entry contains

 information."

 REFERENCE

 "IEEE Std 802.3, 30.4.2.1.1"

 ::= { rptrGroupEntry 1 }

 rptrGroupObjectID OBJECT-TYPE

 SYNTAX OBJECT IDENTIFIER

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The vendor's authoritative identification of the

 group. This value may be allocated within the SMI

 enterprises subtree (1.3.6.1.4.1) and provides a

 straight-forward and unambiguous means for

 determining what kind of group is being managed.

 For example, this object could take the value

 1.3.6.1.4.1.4242.1.2.14 if vendor 'Flintstones,

 Inc.' was assigned the subtree 1.3.6.1.4.1.4242,

 and had assigned the identifier

 1.3.6.1.4.1.4242.1.2.14 to its 'Wilma Flintstone

 6-Port FOIRL Plug-in module.'"

 ::= { rptrGroupEntry 2 }

 rptrGroupOperStatus OBJECT-TYPE

 SYNTAX INTEGER {

 other(1),

 operational(2),

 malfunctioning(3),

 notPresent(4),

 underTest(5),

 resetInProgress(6)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "An object that indicates the operational status

 of the group.

 A status of notPresent(4) indicates that the group

 is temporarily or permanently physically and/or

 logically not a part of the repeater. It is an

 implementation-specific matter as to whether the

 agent effectively removes notPresent entries from

 the table.

 A status of operational(2) indicates that the

 group is functioning, and a status of

 malfunctioning(3) indicates that the group is

 malfunctioning in some way."

 ::= { rptrGroupEntry 3 }

 rptrGroupPortCapacity OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The rptrGroupPortCapacity is the number of ports

 that can be contained within the group. Valid

 range is 1-2147483647. Within each group, the

 ports are uniquely numbered in the range from 1 to

 rptrGroupPortCapacity.

 Some ports may not be present in the repeater system, in

 which case the actual number of ports present

 will be less than the value of rptrGroupPortCapacity.

 The number of ports present in the group will never

 be greater than the value of rptrGroupPortCapacity.

 Note: In practice, this will generally be the

 number of ports on a module, card, or board, and

 the port numbers will correspond to numbers marked

 on the physical embodiment."

 REFERENCE

 "IEEE Std 802.3, 30.4.2.1.2"

 ::= { rptrGroupEntry 4 }

 -- Basic information at the port level.

 --

 -- Configuration and status objects for

 -- each managed repeater port in the repeater system,

 -- independent of whether there is one or more

 -- managed repeater-units in the repeater system.

 rptrPortTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table of descriptive and status information about

 the repeater ports in the repeater system. The number of

 entries is independent of the number of repeaters

 in the managed repeater system."

 ::= { rptrPortInfo 1 }

 rptrPortEntry OBJECT-TYPE

 SYNTAX RptrPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing information

 about a single port."

 INDEX { rptrPortGroupIndex, rptrPortIndex }

 ::= { rptrPortTable 1 }

 RptrPortEntry ::=

 SEQUENCE {

 rptrPortGroupIndex

 Integer32,

 rptrPortIndex

 Integer32,

 rptrPortAdminStatus

 INTEGER,

 rptrPortAutoPartitionState

 INTEGER,

 rptrPortOperStatus

 INTEGER,

 rptrPortRptrId

 Integer32

 }

 rptrPortGroupIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the group containing the

 port for which this entry contains information."

 ::= { rptrPortEntry 1 }

 rptrPortIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the port within the group

 for which this entry contains information. This

 identifies the port independently from the repeater

 to which it may be attached. The numbering scheme for

 ports is implementation specific; however, this

 value can never be greater than

 rptrGroupPortCapacity for the associated group."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.1"

 ::= { rptrPortEntry 2 }

 rptrPortAdminStatus OBJECT-TYPE

 SYNTAX INTEGER {

 enabled(1),

 disabled(2)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Setting this object to disabled(2) disables the

 port. A disabled port neither transmits nor

 receives. Once disabled, a port shall be

 explicitly enabled to restore operation. A port

 that is disabled when power is lost or when a

 reset is exerted shall remain disabled when normal

 operation resumes.

 The admin status takes precedence over auto-

 partition and functionally operates between the

 auto-partition mechanism and the AUI/PMA, PCS/PMA

 or GMII/PCS as applicable.

 Setting this object to enabled(1) enables the port

 and exerts a BEGIN on the port's auto-partition

 state machine.

 (In effect, when a port is disabled, the value of

 rptrPortAutoPartitionState for that port is frozen

 until the port is next enabled. When the port

 becomes enabled, the rptrPortAutoPartitionState

 becomes notAutoPartitioned(1), regardless of its

 pre-disabling state.)"

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.2 and 30.4.3.2.1"

 ::= { rptrPortEntry 3 }

 rptrPortAutoPartitionState OBJECT-TYPE

 SYNTAX INTEGER {

 notAutoPartitioned(1),

 autoPartitioned(2)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The autoPartitionState flag indicates whether the

 port is currently partitioned by the repeater's

 auto-partition protection.

 The conditions that cause port partitioning are

 specified in partition state machine in IEEE Std 802.3

 Clause 9 and Clause 27. They are not differentiated here.

 An IEEE Std 802.3, Clause 27 and Clause 41 repeater port

 partitions on entry to the PARTITION WAIT state of the

 partition state diagram (see IEEE Std 802.3, Figure 27–8

 and Figure 41–4)."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.3"

 ::= { rptrPortEntry 4 }

 rptrPortOperStatus OBJECT-TYPE

 SYNTAX INTEGER {

 operational(1),

 notOperational(2),

 notPresent(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object indicates the port's operational

 status. The notPresent(3) status indicates the

 port is physically removed (note this may or may

 not be possible depending on the type of port.)

 The operational(1) status indicates that the port

 is enabled (see rptrPortAdminStatus) and working,

 even though it might be auto-partitioned (see

 rptrPortAutoPartitionState).

 If this object has the value operational(1) and

 rptrPortAdminStatus is set to disabled(2), it is

 expected that this object's value will soon change

 to notOperational(2)."

 ::= { rptrPortEntry 5 }

 rptrPortRptrId OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object identifies the repeater to

 which this port belongs. The repeater

 identified by a particular value of this object

 is the same as that identified by the same

 value of rptrInfoId. A value of zero

 indicates that this port currently is not

 a member of any repeater."

 ::= { rptrPortEntry 6 }

 -- New version of basic information at the repeater level.

 --

 -- Configuration, status, and control objects for

 -- each managed repeater in the repeater system.

 rptrInfoTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrInfoEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of information about each

 non-trivial repeater. The number of entries

 depends on the physical configuration of the

 managed repeater system."

 ::= { rptrAllRptrInfo 1 }

 rptrInfoEntry OBJECT-TYPE

 SYNTAX RptrInfoEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing information

 about a single non-trivial repeater."

 INDEX { rptrInfoId }

 ::= { rptrInfoTable 1 }

 RptrInfoEntry ::=

 SEQUENCE {

 rptrInfoId

 Integer32,

 rptrInfoRptrType

 INTEGER,

 rptrInfoOperStatus

 INTEGER,

 rptrInfoReset

 INTEGER,

 rptrInfoPartitionedPorts

 Gauge32,

 rptrInfoLastChange

 TimeStamp

 }

 rptrInfoId OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the repeater for which

 this entry contains information."

 ::= { rptrInfoEntry 1 }

 rptrInfoRptrType OBJECT-TYPE

 SYNTAX INTEGER {

 other(1), -- undefined or unknown

 tenMb(2),

 onehundredMbClassI(3),

 onehundredMbClassII(4),

 onethousandMb(5)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The rptrInfoRptrType returns a value that identifies

 the CSMA/CD repeater type."

 REFERENCE

 "IEEE Std 802.3, 30.4.1.1.2"

 ::= { rptrInfoEntry 2 }

 rptrInfoOperStatus OBJECT-TYPE

 SYNTAX INTEGER {

 other(1),

 ok(2),

 failure(3),

 failureGroup(4),

 failurePort(5),

 failureGeneral(6)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The rptrInfoOperStatus object indicates the

 operational state of the repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.1.1.5"

 ::= { rptrInfoEntry 3 }

 rptrInfoReset OBJECT-TYPE

 SYNTAX INTEGER {

 noReset(1),

 reset(2)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "Setting this object to reset(2) causes a

 transition to the START state of see IEEE Std 802.3,

 Figure 9-2 for a 10 Mb/s repeater, and to the START

 state of see IEEE Std 802.3, Figure 27-2 for a

 100 Mb/s repeater.

 Setting this object to noReset(1) has no effect.

 The agent will return the value noReset(1)

 when this object is read.

 After receiving a request to set this variable to

 reset(2), the agent is allowed to delay the reset

 for a short period. For example, the implementor

 may choose to delay the reset long enough to allow

 the SNMP response to be transmitted. In any

 event, SNMP requires that a response be transmitted.

 This action does not reset the management counters

 defined in this document nor does it affect the

 portAdminStatus parameters. Included in this

 action is the execution of a disruptive Self-Test

 with the following characteristics: a) The nature

 of the tests is not specified. b) The test resets

 the repeater but without affecting management

 information about the repeater. c) The test does

 not inject packets onto any segment. d) Packets

 received during the test may or may not be

 transferred. e) The test does not interfere with

 management functions.

 After performing this self-test, the agent will

 update the repeater health information (including

 rptrInfoOperStatus), and send a rptrInfoResetEvent

 notification."

 REFERENCE

 "IEEE Std 802.3, 30.4.1.2.1"

 ::= { rptrInfoEntry 4 }

 rptrInfoPartitionedPorts OBJECT-TYPE

 SYNTAX Gauge32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object returns the total number of ports in

 the repeater whose current state meets all three

 of the following criteria: rptrPortOperStatus

 does not have the value notPresent(3),

 rptrPortAdminStatus is enabled(1), and

 rptrPortAutoPartitionState is autoPartitioned(2)."

 ::= { rptrInfoEntry 5 }

 rptrInfoLastChange OBJECT-TYPE

 SYNTAX TimeStamp

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The value of sysUpTime when any of the following

 conditions occurred:

 1) agent cold- or warm-started;

 2) this instance of repeater was created

 (such as when a device or module was

 added to the repeater system);

 3) a change in the value of rptrInfoOperStatus;

 4) ports were added or removed as members of

 the repeater; or

 5) any of the counters associated with this

 repeater had a discontinuity."

 ::= { rptrInfoEntry 6 }

 -- Statistics at the port level.

 --

 rptrMonitorPortTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrMonitorPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table of performance and error statistics for the

 ports. The number of entries is the same as that

 in the rptrPortTable.

 The columnar object rptrMonitorPortLastChange

 is used to indicate possible discontinuities

 of counter type columnar objects in the table."

 ::= { rptrMonitorPortInfo 1 }

 rptrMonitorPortEntry OBJECT-TYPE

 SYNTAX RptrMonitorPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing performance and

 error statistics for a single port."

 INDEX { rptrMonitorPortGroupIndex, rptrMonitorPortIndex }

 ::= { rptrMonitorPortTable 1 }

 RptrMonitorPortEntry ::=

 SEQUENCE {

 rptrMonitorPortGroupIndex

 Integer32,

 rptrMonitorPortIndex

 Integer32,

 rptrMonitorPortReadableFrames

 Counter32,

 rptrMonitorPortReadableOctets

 Counter32,

 rptrMonitorPortFCSErrors

 Counter32,

 rptrMonitorPortAlignmentErrors

 Counter32,

 rptrMonitorPortFrameTooLongs

 Counter32,

 rptrMonitorPortShortEvents

 Counter32,

 rptrMonitorPortRunts

 Counter32,

 rptrMonitorPortCollisions

 Counter32,

 rptrMonitorPortLateEvents

 Counter32,

 rptrMonitorPortVeryLongEvents

 Counter32,

 rptrMonitorPortDataRateMismatches

 Counter32,

 rptrMonitorPortAutoPartitions

 Counter32,

 rptrMonitorPortTotalErrors

 Counter32,

 rptrMonitorPortLastChange

 TimeStamp

 }

 rptrMonitorPortGroupIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the group containing the

 port for which this entry contains information."

 ::= { rptrMonitorPortEntry 1 }

 rptrMonitorPortIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the port within the group

 for which this entry contains information."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.1"

 ::= { rptrMonitorPortEntry 2 }

 rptrMonitorPortReadableFrames OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is the number of frames of valid

 frame length that have been received on this port.

 This counter is incremented by one for each frame

 received on this port whose OctetCount is greater

 than or equal to minFrameSize and less than or

 equal to maxFrameSize (Ref: IEEE 802.3 Std,

 4.4.2.1) and for which the FCSError and

 CollisionEvent signals are not asserted.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 This statistic provides one of the parameters

 necessary for obtaining the packet error ratio.

 The approximate minimum time for rollover of this

 counter is 80 hours at 10 Mb/s."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.4"

 ::= { rptrMonitorPortEntry 3 }

 rptrMonitorPortReadableOctets OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is the number of octets contained in

 valid frames that have been received on this port.

 This counter is incremented by OctetCount for each

 frame received on this port that has been

 determined to be a readable frame (i.e., including

 FCS octets but excluding framing bits and dribble

 bits).

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 This statistic provides an indicator of the total

 data transferred. The approximate minimum time

 for rollover of this counter in a 10 Mb/s repeater

 is 58 minutes.

 For ports receiving traffic at a maximum rate in

 a 100 Mb/s repeater, this counter can roll over

 in less than 6 minutes. Since that amount of time

 could be less than a management station's poll cycle

 time, in order to avoid a loss of information a

 management station is advised to also poll the

 rptrMonitorPortUpper32Octets object, or to use the

 64-bit counter defined by

 rptrMonitorPortHCReadableOctets instead of the

 two 32-bit counters."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.5"

 ::= { rptrMonitorPortEntry 4 }

 rptrMonitorPortFCSErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each frame

 received on this port with the FCSError signal

 asserted and the FramingError and CollisionEvent

 signals deasserted and whose OctetCount is greater

 than or equal to minFrameSize and less than or

 equal to maxFrameSizeLimit (See IEEE Std 802.3, 4.2.7.1).

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 80 hours at 10 Mb/s."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.6"

 ::= { rptrMonitorPortEntry 5 }

 rptrMonitorPortAlignmentErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each frame

 received on this port with the FCSError and

 FramingError signals asserted and CollisionEvent

 signal deasserted and whose OctetCount is greater

 than or equal to minFrameSize and less than or

 equal to maxFrameSizeLimit (See IEEE Std 802.3, 4.2.7.1).

 If rptrMonitorPortAlignmentErrors is

 incremented then the rptrMonitorPortFCSErrors

 Counter shall not be incremented for the same

 frame.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 80 hours at 10 Mb/s."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.7"

 ::= { rptrMonitorPortEntry 6 }

 rptrMonitorPortFrameTooLongs OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each frame

 received on this port whose OctetCount is greater

 than maxFrameSizeLimit (See IEEE Std 802.3, 4.2.7.1).

 If rptrMonitorPortFrameTooLongs is incremented

 then neither the rptrMonitorPortAlignmentErrors

 nor the rptrMonitorPortFCSErrors counter shall be

 incremented for the frame.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 61 days in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.8"

 ::= { rptrMonitorPortEntry 7 }

 rptrMonitorPortShortEvents OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each

 CarrierEvent on this port with ActivityDuration

 less than ShortEventMaxTime. ShortEventMaxTime is

 greater than 74 bit times and less than 82 bit

 times. ShortEventMaxTime has tolerances included

 to provide for circuit losses between a

 conformance test point at the AUI and the

 measurement point within the state machine.

 Notes:

 ShortEvents may indicate externally

 generated noise hits that will cause the repeater

 to transmit Runts to its other ports, or propagate

 a collision (which may be late) back to the

 transmitting DTE and damaged frames to the rest of

 the network.

 Implementors may wish to consider selecting the

 ShortEventMaxTime towards the lower end of the

 allowed tolerance range to accommodate bit losses

 suffered through physical channel devices not

 budgeted for within this standard.

 The significance of this attribute is different

 in 10 and 100 Mb/s collision domains. IEEE Std 802.3,

 Clause 9 repeaters perform fragment extension of short

 events which would be counted as runts on the

 interconnect ports of other repeaters. IEEE Std 802.3,

 Clause 27 repeaters do not perform fragment extension.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 16 hours in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.9"

 ::= { rptrMonitorPortEntry 8 }

 rptrMonitorPortRunts OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each

 CarrierEvent on this port that meets one of the

 following two conditions. Only one test need be

 made. a) The ActivityDuration is greater than

 ShortEventMaxTime and less than ValidPacketMinTime

 and the CollisionEvent signal is deasserted. b)

 The OctetCount is less than 64, the

 ActivityDuration is greater than ShortEventMaxTime

 and the CollisionEvent signal is deasserted.

 ValidPacketMinTime is greater than or equal to 552

 bit times and less than 565 bit times.

 An event whose length is greater than 74 bit times

 but less than 82 bit times shall increment either

 the shortEvents counter or the runts counter but

 not both. A CarrierEvent greater than or equal to

 552 bit times but less than 565 bit times may or

 may not be counted as a runt.

 ValidPacketMinTime has tolerances included to

 provide for circuit losses between a conformance

 test point at the AUI and the measurement point

 within the state machine.

 Runts usually indicate collision fragments, a

 normal network event. In certain situations

 associated with large diameter networks a

 percentage of collision fragments may exceed

 ValidPacketMinTime.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 16 hours in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.10"

 ::= { rptrMonitorPortEntry 9 }

 rptrMonitorPortCollisions OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For an IEEE Std 802.3, Clause 9 repeater, this

 counter is incremented by one for any CarrierEvent

 signal on any port for which the CollisionEvent signal

 on this port is asserted. For an IEEE Std 802.3,

 Clause 27 repeater port the counter increments on

 entering the Collision Count Increment state of the

 partition state diagram (see IEEE Std 802.3,

 Figure 27-8).

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 16 hours in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.11"

 ::= { rptrMonitorPortEntry 10 }

 rptrMonitorPortLateEvents OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For am IEEE Std 802.3, Clause 9 repeater port,

 this counter is incremented by one for each

 CarrierEvent on this port in which the CollIn(X)

 variable transitions to the value SQE (see

 IEEE Std 802.3, 9.6.6.2) while the

 ActivityDuration is greater than the

 LateEventThreshold. For an IEEE Std 802.3, Clause 27

 repeater port, this counter is incremented by one on

 entering the Collision Count Increment state

 of the partition state diagram (see IEEE Std 802.3,

 Figure 27-8) while the ActivityDuration is greater

 Than the LateEvent- Threshold. Such a CarrierEvent

 is counted twice, as both a collision and as a

 lateEvent.

 The LateEventThreshold is greater than 480 bit

 times and less than 565 bit times.

 LateEventThreshold has tolerances included to

 permit an implementation to build a single

 threshold to serve as both the LateEventThreshold

 and ValidPacketMinTime threshold.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 81 hours in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.12"

 ::= { rptrMonitorPortEntry 11 }

 rptrMonitorPortVeryLongEvents OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For an IEEE Std 802.3, Clause 9 repeater port,

 this counter is incremented by one for each

 CarrierEvent whose ActivityDuration is greater than

 the MAU Jabber Lockup Protection timer TW3

 (see IEEE Std 802.3 9.6.1 and 9.6.5).

 For an IEEE Std 802.3, Clause 27 repeater port,

 this counter is incremented by one on entry to the

 Rx Jabber state of the receiver timer state

 diagram (see IEEE Std 802.3, Figure 27-7).

 Other counters may be incremented as appropriate.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.13"

 ::= { rptrMonitorPortEntry 12 }

 rptrMonitorPortDataRateMismatches OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each

 frame received by this port that meets all

 of the conditions required by only one of the

 following two measurement methods:

 Measurement method A: 1) The CollisionEvent

 signal is not asserted (10 Mb/s operation) or

 the Collision Count Increment state of the

 partition state diagram (see IEEE Std 802.3,

 Figure 27-8) has not been entered

 (100 Mb/s operation). 2) The ActivityDuration

 is greater than ValidPacketMinTime. 3) The

 frequency (data rate) is detectably mismatched

 from the local transmit frequency.

 Measurement method B: 1) The CollisionEvent

 signal is not asserted (10 Mb/s operation)

 or the Collision Count Increment state of the

 partition state diagram (see IEEE Std 802.3,

 Figure 27-8) has not been entered

 (100 Mb/s operation). 2) The OctetCount is

 greater than 63. 3) The frequency (data

 rate) is detectably mismatched from the local

 transmit frequency. The exact degree of

 mismatch is vendor specific and is to be

 defined by the vendor for conformance testing.

 When this event occurs, other counters whose

 increment conditions were satisfied may or may not

 also be incremented, at the implementor's

 discretion. Whether or not the repeater was able

 to maintain data integrity is beyond the scope of

 this standard.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.14"

 ::= { rptrMonitorPortEntry 13 }

 rptrMonitorPortAutoPartitions OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for

 each time the repeater has automatically

 partitioned this port.

 The conditions that cause an IEEE Std 802.3,

 Clause 9 repeater port to partition are specified in

 the partition state diagram in IEEE Std 802.3,

 Clause 9. They are not differentiated

 here. An IEEE Std 802.3, Clause 27 repeater port

 partitions on entry to the Partition Wait state of the

 partition state diagram (see IEEE Std 802.3,

 Figure 27-8).

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.15"

 ::= { rptrMonitorPortEntry 14 }

 rptrMonitorPortTotalErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The total number of errors which have occurred on

 this port. This counter is the summation of the

 values of other error counters (for the same

 port), namely:

 rptrMonitorPortFCSErrors,

 rptrMonitorPortAlignmentErrors,

 rptrMonitorPortFrameTooLongs,

 rptrMonitorPortShortEvents,

 rptrMonitorPortLateEvents,

 rptrMonitorPortVeryLongEvents,

 rptrMonitorPortDataRateMismatches, and

 rptrMonitorPortSymbolErrors.

 This counter is redundant in the sense that it is

 the summation of information already available

 through other objects. However, it is included

 specifically because the regular retrieval of this

 object as a means of tracking the health of a port

 provides a considerable optimization of network

 management traffic over the otherwise necessary

 retrieval of the summed counters.

 Note that rptrMonitorPortRunts is not included

 in this total; this is because runts usually

 indicate collision fragments, a normal network

 event.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 ::= { rptrMonitorPortEntry 15 }

 rptrMonitorPortLastChange OBJECT-TYPE

 SYNTAX TimeStamp

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The value of sysUpTime when the last of

 the following occurred:

 1) the agent cold- or warm-started;

 2) the row for the port was created

 (such as when a device or module was added

 to the repeater system); or

 3) any condition that would cause one of

 the counters for the row to experience

 a discontinuity."

 ::= { rptrMonitorPortEntry 16 }

 rptrMonitor100PortTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrMonitor100PortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table of additional performance and error

 statistics for 100 Mb/s ports, above and

 beyond those parameters that apply to both

 10 and 100 Mb/s ports. Entries exist only for

 ports attached to 100 Mb/s repeaters.

 The columnar object rptrMonitorPortLastChange

 is used to indicate possible discontinuities

 of counter type columnar objects in this table."

 ::= { rptrMonitorPortInfo 2 }

 rptrMonitor100PortEntry OBJECT-TYPE

 SYNTAX RptrMonitor100PortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing performance

 and error statistics for a single 100 Mb/s port."

 INDEX { rptrMonitorPortGroupIndex, rptrMonitorPortIndex }

 ::= { rptrMonitor100PortTable 1 }

 RptrMonitor100PortEntry ::=

 SEQUENCE {

 rptrMonitorPortIsolates

 Counter32,

 rptrMonitorPortSymbolErrors

 Counter32,

 rptrMonitorPortUpper32Octets

 Counter32,

 rptrMonitorPortHCReadableOctets

 Counter64

 }

 rptrMonitorPortIsolates OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one each time that

 the repeater port automatically isolates as a

 consequence of false carrier events. The conditions

 which cause a port to automatically isolate are

 defined by the transition from the False Carrier

 state to the Link Unstable state of the carrier

 integrity state diagram (see IEEE Std 802.3,

 Figure 27-9).

 Note: Isolates do not affect the value of

 the PortOperStatus object.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.16"

 ::= { rptrMonitor100PortEntry 1 }

 rptrMonitorPortSymbolErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one each time when

 valid length packet was received at the port and

 there was at least one occurrence of an invalid

 data symbol. This can increment only once per valid

 carrier event. A collision presence at any port of

 the repeater containing port N, will not cause this

 attribute to increment.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 7.4 hours at 100 Mb/s."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.17"

 ::= { rptrMonitor100PortEntry 2 }

 rptrMonitorPortUpper32Octets OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is the number of octets contained in

 valid frames that have been received on this port,

 modulo 2\*\*32. That is, it contains the upper 32

 bits of a 64-bit octets counter, of which the

 lower 32 bits are contained in the

 rptrMonitorPortReadableOctets object.

 This two-counter mechanism is provided for those

 network management protocols that do not support

 64-bit counters (e.g. SNMP V1) and are used to

 manage a repeater type of 100 Mb/s.

 Conformance clauses for this MIB are defined such

 that implementation of this object is not required

 in a repeater system which does not support 100 Mb/s.

 However, repeater systems with mixed 10 and 100 Mb/s ports

 may implement this object across all ports,

 including 10 Mb/s. If this object is implemented, the

 value shall be a valid count as defined

 in the first paragraph of this description.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 ::= { rptrMonitor100PortEntry 3 }

 rptrMonitorPortHCReadableOctets OBJECT-TYPE

 SYNTAX Counter64

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is the number of octets contained in

 valid frames that have been received on this port.

 This counter is incremented by OctetCount for each

 frame received on this port which has been

 determined to be a readable frame (i.e., including

 FCS octets but excluding framing bits and dribble

 bits).

 This statistic provides an indicator of the total

 data transferred.

 This counter is a 64-bit version of rptrMonitor-

 PortReadableOctets. It should be used by network

 management protocols which suppport 64-bit counters

 (e.g., SNMPv2).

 Conformance clauses for this MIB are defined such

 that implementation of this object is not required

 in a repeater system which does not support 100 Mb/s.

 However, repeater systems with mixed 10 and 100 Mb/s ports

 may implement this object across all ports,

 including 10 Mb/s. If this object is implemented, the

 value shall be a valid count as defined

 in the first paragraph of this description.

 A discontinuity may occur in the value

 when the value of object

 rptrMonitorPortLastChange changes."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.5"

 ::= { rptrMonitor100PortEntry 4 }

 -- New version of statistics at the repeater level.

 --

 -- Statistics objects for each managed repeater

 -- in the repeater system.

 rptrMonTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrMonEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of information about each

 non-trivial repeater. The number of entries

 in this table is the same as the number of

 entries in the rptrInfoTable.

 The columnar object rptrInfoLastChange is

 used to indicate possible discontinuities of

 counter type columnar objects in this table."

 ::= { rptrMonitorAllRptrInfo 1 }

 rptrMonEntry OBJECT-TYPE

 SYNTAX RptrMonEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing information

 about a single non-trivial repeater."

 INDEX { rptrInfoId }

 ::= { rptrMonTable 1 }

 RptrMonEntry ::=

 SEQUENCE {

 rptrMonTxCollisions

 Counter32,

 rptrMonTotalFrames

 Counter32,

 rptrMonTotalErrors

 Counter32,

 rptrMonTotalOctets

 Counter32

 }

 rptrMonTxCollisions OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "For an IEEE Std 802.3, Clause 9 (10 Mb/s) repeater,

 this counter is incremented every time the repeater

 state machine enters the TRANSMIT COLLISION state

 from any state other than ONE PORT LEFT

 (see IEEE Std 802.3, Figure 9-2).

 For an IEEE Std 802.3, Clause 27 repeater, this counter

 Is incremented every time the repeater core state

 diagram enters the Jam state as a result of

 Activity(ALL) > 1 (see IEEE Std 802.3, Figure 27-2).

 The approximate minimum time for rollover of this

 counter is 16 hours in a 10 Mb/s repeater and 1.6

 hours in a 100 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.1.1.8"

 ::= { rptrMonEntry 1 }

 rptrMonTotalFrames OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of frames of valid frame length

 that have been received on the ports in this repeater

 and for which the FCSError and CollisionEvent

 signals were not asserted. If an implementation

 can not obtain a count of frames as seen by

 the repeater itself, this counter may be

 implemented as the summation of the values of the

 rptrMonitorPortReadableFrames counters for all of

 the ports in the repeater.

 This statistic provides one of the parameters

 necessary for obtaining the packet error ratio.

 The approximate minimum time for rollover of this

 counter is 80 hours in a 10 Mb/s repeater."

 ::= { rptrMonEntry 3 }

 rptrMonTotalErrors OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The total number of errors which have occurred on

 all of the ports in this repeater. The errors

 included in this count are the same as those listed

 for the rptrMonitorPortTotalErrors counter. If an

 implementation can not obtain a count of these

 errors as seen by the repeater itself, this counter

 may be implemented as the summation of the values of

 the rptrMonitorPortTotalErrors counters for all of

 the ports in the repeater."

 ::= { rptrMonEntry 4 }

 rptrMonTotalOctets OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The total number of octets contained in the valid

 frames that have been received on the ports in

 this group. If an implementation can not obtain

 a count of octets as seen by the repeater itself,

 this counter may be the summation of the

 values of the rptrMonitorPortReadableOctets

 counters for all of the ports in the group.

 This statistic provides an indicator of the total

 data transferred. The approximate minimum time

 for rollover of this counter in a 10 Mb/s repeater

 is 58 minutes divided by the number of ports in

 the repeater.

 For 100 Mb/s repeaters processing traffic at a

 maximum rate, this counter can roll over in less

 than 6 minutes divided by the number of ports in

 the repeater. Since that amount of time could

 be less than a management station's poll cycle

 time, in order to avoid a loss of information a

 management station is advised to also poll the

 rptrMonUpper32TotalOctets object, or to use the

 64-bit counter defined by rptrMonHCTotalOctets

 instead of the two 32-bit counters."

 ::= { rptrMonEntry 5 }

 rptrMon100Table OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrMon100Entry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of additional information about each

 100 Mb/s repeater, augmenting the entries in

 the rptrMonTable. Entries exist in this table

 only for 100 Mb/s repeaters.

 The columnar object rptrInfoLastChange is

 used to indicate possible discontinuities of

 counter type columnar objects in this table."

 ::= { rptrMonitorAllRptrInfo 2 }

 rptrMon100Entry OBJECT-TYPE

 SYNTAX RptrMon100Entry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing information

 about a single 100 Mb/s repeater."

 INDEX { rptrInfoId }

 ::= { rptrMon100Table 1 }

 RptrMon100Entry ::=

 SEQUENCE {

 rptrMonUpper32TotalOctets

 Counter32,

 rptrMonHCTotalOctets

 Counter64

 }

 rptrMonUpper32TotalOctets OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The total number of octets contained in the valid

 frames that have been received on the ports in

 this repeater, modulo 2\*\*32. That is, it contains

 the upper 32 bits of a 64-bit counter, of which

 the lower 32 bits are contained in the

 rptrMonTotalOctets object. If an implementation

 can not obtain a count of octets as seen

 by the repeater itself, the 64-bit value

 may be the summation of the values of the

 rptrMonitorPortReadableOctets counters combined

 with the corresponding rptrMonitorPortUpper32Octets

 counters for all of the ports in the repeater.

 This statistic provides an indicator of the total

 data transferred within the repeater.

 This two-counter mechanism is provided for those

 network management protocols that do not support

 64-bit counters (e.g., SNMP v1) and are used to

 manage a repeater type of 100 Mb/s.

 Conformance clauses for this MIB are defined such

 that implementation of this object is not required

 in a repeater system which does not support 100 Mb/s.

 However, repeater systems with mixed 10 and 100 Mb/s ports

 may implement this object across all ports,

 including 10 Mb/s. If this object is implemented, the

 value shall be a valid count as defined

 in the first paragraph of this description."

 ::= { rptrMon100Entry 1 }

 rptrMonHCTotalOctets OBJECT-TYPE

 SYNTAX Counter64

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The total number of octets contained in the valid

 frames that have been received on the ports in

 this group. If a implementation can not obtain

 a count of octets as seen by the repeater itself,

 this counter may be the summation of the

 values of the rptrMonitorPortReadableOctets

 counters for all of the ports in the group.

 This statistic provides an indicator of the total

 data transferred.

 This counter is a 64-bit (high-capacity) version

 of rptrMonUpper32TotalOctets and rptrMonTotalOctets.

 It should be used by network management protocols

 which support 64-bit counters (e.g. SNMPv2).

 Conformance clauses for this MIB are defined such

 that implementation of this object is not required

 in a repeater system which does not support 100 Mb/s.

 However, repeater systems with mixed 10 and 100 Mb/s ports

 may implement this object across all ports,

 including 10 Mb/s. If this object is implemented, the

 value shall be a valid count as defined

 in the first paragraph of this description."

 ::= { rptrMon100Entry 2 }

 --

 -- The Repeater Address Search Table

 --

 -- This table provides an active address tracking

 -- capability which can be also used to collect the

 -- necessary information for mapping the topology

 -- of a network. Note that an NMS is required to have

 -- read-write access to the table in order to access

 -- this function. Section 4 "Topology Mapping" of

 -- IETF RFC 2108 [B19] contains a description of an

 -- algorithm that can make use of this table,

 -- in combination with the forwarding databases

 -- of managed bridges/switches in the network,

 -- to map network topology. Devices may also

 -- use the protocol and a set of managed

 -- objects defined in IEEE Std 802.1AB Station

 -- and Media Access Control Connectivity

 -- Discovery to discover the physical topology

 -- from adjacent stations.

 --

 rptrAddrSearchTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrAddrSearchEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This table contains one entry per repeater in the

 repeater system. It defines objects that allow a network

 management application to instruct an agent to watch

 for a given MAC address and report which port it

 was seen on. Only one address search can be in

 progress on each repeater at any one time. Before

 starting an address search, a management application

 should obtain 'ownership' of the entry in

 rptrAddrSearchTable for the repeater that is to

 perform the search. This is accomplished with the

 rptrAddrSearchLock and rptrAddrSearchStatus as

 follows:

 try\_again:

 get(rptrAddrSearchLock, rptrAddrSearchStatus)

 while (rptrAddrSearchStatus != notInUse)

 {

 /\* Loop waiting for objects to be available\*/

 short delay

 get(rptrAddrSearchLock, rptrAddrSearchStatus)

 }

 /\* Try to claim map objects \*/

 lock\_value = rptrAddrSearchLock

 if ( set(rptrAddrSearchLock = lock\_value,

 rptrAddrSearchStatus = inUse,

 rptrAddrSearchOwner = 'my-IP-address)

 == FAILURE)

 /\* Another manager got the lock \*/

 goto try\_again

 /\* I have the lock \*/

 set (rptrAddrSearchAddress = <search target>)

 wait for rptrAddrSearchState to change from none

 if (rptrAddrSearchState == single)

 get (rptrAddrSearchGroup, rptrAddrSearchPort)

 /\* release the lock, making sure not to overwrite

 anyone else's lock \*/

 set (rptrAddrSearchLock = lock\_value+1,

 rptrAddrSearchStatus = notInUse,

 rptrAddrSearchOwner = '')

 A management station first retrieves the values of

 the appropriate instances of the rptrAddrSearchLock

 and rptrAddrSearchStatus objects, periodically

 repeating the retrieval if necessary, until the value

 of rptrAddrSearchStatus is 'notInUse'. The

 management station then tries to set the same

 instance of the rptrAddrSearchLock object to the

 value it just retrieved, the same instance of the

 rptrAddrSearchStatus object to 'inUse', and the

 corresponding instance of rptrAddrSearchOwner to a

 value indicating itself. If the set operation

 succeeds, then the management station has obtained

 ownership of the rptrAddrSearchEntry, and the value

 of rptrAddrSearchLock is incremented by the agent (as

 per the semantics of TestAndIncr). Failure of the

 set operation indicates that some other manager has

 obtained ownership of the rptrAddrSearchEntry.

 Once ownership is obtained, the management station

 can proceed with the search operation. Note that the

 agent will reset rptrAddrSearchStatus to 'notInUse'

 if it has been in the 'inUse' state for an abnormally

 long period of time, to prevent a misbehaving manager

 from permanently locking the entry. It is suggested

 that this timeout period be between one and five

 minutes.

 When the management station has completed its search

 operation, it should free the entry by setting

 the instance of the rptrAddrSearchLock object to the

 previous value + 1, the instance of the

 rptrAddrSearchStatus to 'notInUse', and the instance

 of rptrAddrSearchOwner to a zero length string. This

 is done to prevent overwriting another station's

 lock."

 ::= { rptrAddrTrackRptrInfo 1 }

 rptrAddrSearchEntry OBJECT-TYPE

 SYNTAX RptrAddrSearchEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry containing objects for invoking an address

 search on a repeater."

 INDEX { rptrInfoId }

 ::= { rptrAddrSearchTable 1 }

 RptrAddrSearchEntry ::=

 SEQUENCE {

 rptrAddrSearchLock TestAndIncr,

 rptrAddrSearchStatus INTEGER,

 rptrAddrSearchAddress MacAddress,

 rptrAddrSearchState INTEGER,

 rptrAddrSearchGroup Integer32,

 rptrAddrSearchPort Integer32,

 rptrAddrSearchOwner OwnerString

 }

 rptrAddrSearchLock OBJECT-TYPE

 SYNTAX TestAndIncr

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used by a management station as an

 advisory lock for this rptrAddrSearchEntry."

 ::= { rptrAddrSearchEntry 1 }

 rptrAddrSearchStatus OBJECT-TYPE

 SYNTAX INTEGER {

 notInUse(1),

 inUse(2)

 }

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used to indicate that some management

 station is currently using this rptrAddrSearchEntry.

 Cooperating managers should set this object to

 'notInUse' when they are finished using this entry.

 The agent will automatically set the value of this

 object to 'notInUse' if it has been set to 'inUse'

 for an unusually long period of time."

 ::= { rptrAddrSearchEntry 2 }

 rptrAddrSearchAddress OBJECT-TYPE

 SYNTAX MacAddress

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "This object is used to search for a specified MAC

 address. When this object is set, an address search

 begins. This automatically sets the corresponding

 instance of the rptrAddrSearchState object to 'none'

 and the corresponding instances of the

 rptrAddrSearchGroup and rptrAddrSearchPort objects to

 0.

 When a valid frame is received by this repeater with

 a source MAC address that matches the current value

 of rptrAddrSearchAddress, the agent will update the

 corresponding instances of rptrAddrSearchState,

 rptrAddrSearchGroup and rptrAddrSearchPort to reflect

 the current status of the search, and the group and

 port on which the frame was seen."

 ::= { rptrAddrSearchEntry 3 }

 rptrAddrSearchState OBJECT-TYPE

 SYNTAX INTEGER {

 none(1),

 single(2),

 multiple(3)

 }

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The current state of the MAC address search on this

 repeater. This object is initialized to 'none' when

 the corresponding instance of rptrAddrSearchAddress

 is set. If the agent detects the address on exactly

 one port, it will set this object to 'single', and

 set the corresponding instances of

 rptrAddrSearchGroup and rptrAddrSearchPort to reflect

 the group and port on which the address was heard.

 If the agent detects the address on more than one

 port, it will set this object to 'multiple'."

 ::= { rptrAddrSearchEntry 4 }

 rptrAddrSearchGroup OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The group from which an error-free frame whose

 source address is equal to the corresponding instance

 of rptrAddrSearchAddress has been received. The

 value of this object is undefined when the

 corresponding instance of rptrAddrSearchState is

 equal to 'none' or 'multiple'."

 ::= { rptrAddrSearchEntry 5 }

 rptrAddrSearchPort OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The port from which an error-free frame whose

 source address is equal to the corresponding instance

 of rptrAddrSearchAddress has been received. The

 value of this object is undefined when the

 corresponding instance of rptrAddrSearchState is

 equal to 'none' or 'multiple'."

 ::= { rptrAddrSearchEntry 6 }

 rptrAddrSearchOwner OBJECT-TYPE

 SYNTAX OwnerString

 MAX-ACCESS read-write

 STATUS current

 DESCRIPTION

 "The entity that currently has 'ownership' of this

 rptrAddrSearchEntry."

 ::= { rptrAddrSearchEntry 7 }

 --

 -- The Port Address Tracking Table

 --

 -- This table provides a way for a network management

 -- application to passively gather information (using

 -- read-only privileges) about which network addresses

 -- are connected to which ports of a repeater.

 --

 rptrAddrTrackTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrAddrTrackEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "Table of address mapping information about the

 ports."

 ::= { rptrAddrTrackPortInfo 1 }

 rptrAddrTrackEntry OBJECT-TYPE

 SYNTAX RptrAddrTrackEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An entry in the table, containing address mapping

 information about a single port."

 INDEX { rptrAddrTrackGroupIndex, rptrAddrTrackPortIndex }

 ::= { rptrAddrTrackTable 1 }

 RptrAddrTrackEntry ::=

 SEQUENCE {

 rptrAddrTrackGroupIndex

 INTEGER,

 rptrAddrTrackPortIndex

 INTEGER,

 rptrAddrTrackSourceAddrChanges

 Counter32,

 rptrAddrTrackNewLastSrcAddress

 OptMacAddr,

 rptrAddrTrackCapacity

 Integer32

 }

 rptrAddrTrackGroupIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the group containing the

 port for which this entry contains information."

 ::= { rptrAddrTrackEntry 1 }

 rptrAddrTrackPortIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "This object identifies the port within the group

 for which this entry contains information."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.1"

 ::= { rptrAddrTrackEntry 2 }

 rptrAddrTrackSourceAddrChanges OBJECT-TYPE

 SYNTAX Counter32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This counter is incremented by one for each time

 that the rptrAddrTrackNewLastSrcAddress attribute

 for this port has changed.

 This may indicate whether a link is connected to a

 single DTE or another multi-user segment.

 A discontinuity may occur in the value when the

 value of object rptrMonitorPortLastChange changes.

 The approximate minimum time for rollover of this

 counter is 81 hours in a 10 Mb/s repeater."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.19"

 ::= { rptrAddrTrackEntry 3 }

 rptrAddrTrackNewLastSrcAddress OBJECT-TYPE

 SYNTAX OptMacAddr

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object is the SourceAddress of the last

 readable frame (i.e., counted by

 rptrMonitorPortReadableFrames) received by this

 port. If no frames have been received by this

 port since the agent began monitoring the port

 activity, the agent shall return a string of

 length zero."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.18"

 ::= { rptrAddrTrackEntry 4 }

 rptrAddrTrackCapacity OBJECT-TYPE

 SYNTAX Integer32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The maximum number of addresses that can be

 detected on this port. This value indicates

 to the maximum number of entries in the

 rptrExtAddrTrackTable relative to this port.

 If this object has the value of 1, the agent

 implements only the LastSourceAddress mechanism

 described by IETF RFC 1368 or IETF RFC 1516."

 ::= { rptrAddrTrackEntry 5 }

 -- Table for multiple addresses per port

 rptrExtAddrTrackTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrExtAddrTrackEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table to extend the address tracking table (i.e.,

 rptrAddrTrackTable) with a list of source MAC

 addresses that were recently received on each port.

 The number of ports is the same as the number

 of entries in table rptrPortTable. The number of

 entries in this table depends on the agent/repeater

 implementation and the number of different

 addresses received on each port.

 The first entry for each port contains

 the same MAC address that is given by the

 rptrAddrTrackNewLastSrcAddress for that port.

 Entries in this table for a particular port are

 retained when that port is switched from one

 repeater to another.

 The ordering of MAC addresses listed for a

 particular port is implementation dependent."

 ::= { rptrAddrTrackPortInfo 2 }

 rptrExtAddrTrackEntry OBJECT-TYPE

 SYNTAX RptrExtAddrTrackEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A row in the table of extended address tracking

 information for ports. Entries cannot be directly

 created or deleted via SNMP operations."

 INDEX { rptrAddrTrackGroupIndex,

 rptrAddrTrackPortIndex,

 rptrExtAddrTrackMacIndex }

 ::= { rptrExtAddrTrackTable 1 }

 RptrExtAddrTrackEntry ::= SEQUENCE {

 rptrExtAddrTrackMacIndex Integer32,

 rptrExtAddrTrackSourceAddress MacAddress

 }

 rptrExtAddrTrackMacIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "The index of a source MAC address seen on

 the port.

 The ordering of MAC addresses listed for a

 particular port is implementation dependent.

 There is no implied relationship between a

 particular index and a particular MAC

 address. The index for a particular MAC

 address may change without notice."

 ::= { rptrExtAddrTrackEntry 1 }

 rptrExtAddrTrackSourceAddress OBJECT-TYPE

 SYNTAX MacAddress

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The source MAC address from a readable frame

 (i.e., counted by rptrMonitorPortReadableFrames)

 recently received by the port."

 REFERENCE

 "IEEE Std 802.3, 30.4.3.1.18"

 ::= { rptrExtAddrTrackEntry 2 }

 -- The Repeater Top "N" Port Group

 -- The Repeater Top N Port group is used to prepare reports that

 -- describe a list of ports ordered by one of the statistics in the

 -- Repeater Monitor Port Table. The statistic chosen by the

 -- management station is sampled over a management

 -- station-specified time interval, making the report rate based.

 -- The management station also specifies the number of ports that

 -- are reported.

 --

 -- The rptrTopNPortControlTable is used to initiate the generation

 -- of a report. The management station may select the parameters

 -- of such a report, such as which repeater, which statistic, how

 -- many ports, and the start and stop times of the sampling. When

 -- the report is prepared, entries are created in the

 -- rptrTopNPortTable associated with the relevent

 -- rptrTopNControlEntry. These entries are static for

 -- each report after it has been prepared.

 -- Note that counter discontinuities may appear in some

 -- implementations if ports' assignment to repeaters changes

 -- during the collection of data for a Top "N" report.

 -- A management application could read the corresponding

 -- rptrMonitorPortLastChange timestamp in order to check

 -- whether a discontinuity occurred.

 rptrTopNPortControlTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrTopNPortControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of control records for reports on the top 'N'

 ports for the rate of a selected counter. The number

 of entries depends on the configuration of the agent.

 The maximum number of entries is implementation

 dependent."

 ::= { rptrTopNPortInfo 1 }

 rptrTopNPortControlEntry OBJECT-TYPE

 SYNTAX RptrTopNPortControlEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A set of parameters that control the creation of a

 report of the top N ports according to several metrics."

 INDEX { rptrTopNPortControlIndex }

 ::= { rptrTopNPortControlTable 1 }

 RptrTopNPortControlEntry ::= SEQUENCE {

 rptrTopNPortControlIndex

 Integer32,

 rptrTopNPortRepeaterId

 Integer32,

 rptrTopNPortRateBase

 INTEGER,

 rptrTopNPortTimeRemaining

 Integer32,

 rptrTopNPortDuration

 Integer32,

 rptrTopNPortRequestedSize

 Integer32,

 rptrTopNPortGrantedSize

 Integer32,

 rptrTopNPortStartTime

 TimeStamp,

 rptrTopNPortOwner

 OwnerString,

 rptrTopNPortRowStatus

 RowStatus

 }

 rptrTopNPortControlIndex OBJECT-TYPE

 SYNTAX Integer32 (1 .. 65535)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An index that uniquely identifies an entry in the

 rptrTopNPortControl table. Each such entry defines

 one top N report prepared for a repeater or repeater system."

 ::= { rptrTopNPortControlEntry 1 }

 rptrTopNPortRepeaterId OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "Identifies the repeater for which a top N report will

 be prepared (see rptrInfoId). If the value of this

 object is positive, only ports assigned to this repeater

 will be used to form the list in which to order the

 Top N table. If this value is zero, all ports will be

 eligible for inclusion on the list.

 The value of this object may not be modified if the

 associated rptrTopNPortRowStatus object is equal to

 active(1).

 If, for a particular row in this table, the repeater

 specified by the value of this object goes away (is

 removed from the rptrInfoTable) while the associated

 rptrTopNPortRowStatus object is equal to active(1),

 the row in this table is preserved by the agent but

 the value of rptrTopNPortRowStatus is changed to

 notInService(2), and the agent may time out the row

 if appropriate. If the specified repeater comes

 back (reappears in the rptrInfoTable) before the row

 has been timed out, the management station sets

 the value of the rptrTopNPortRowStatus object back

 to active(1) if desired (the agent doesn't do this

 automatically)."

 ::= { rptrTopNPortControlEntry 2 }

 rptrTopNPortRateBase OBJECT-TYPE

 SYNTAX INTEGER {

 readableFrames(1),

 readableOctets(2),

 fcsErrors(3),

 alignmentErrors(4),

 frameTooLongs(5),

 shortEvents(6),

 runts(7),

 collisions(8),

 lateEvents(9),

 veryLongEvents(10),

 dataRateMismatches(11),

 autoPartitions(12),

 totalErrors(13),

 isolates(14),

 symbolErrors(15)

 }

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The monitored variable, which the rptrTopNPortRate

 variable is based upon.

 The value of this object may not be modified if

 the associated rptrTopNPortRowStatus object has

 a value of active(1)."

 ::= { rptrTopNPortControlEntry 3 }

 rptrTopNPortTimeRemaining OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The number of seconds left in the report

 currently being collected. When this object

 is modified by the management station, a new

 collection is started, possibly aborting a

 currently running report. The new value is

 used as the requested duration of this report,

 which is loaded into the associated

 rptrTopNPortDuration object.

 When this object is set to a non-zero value,

 any associated rptrTopNPortEntries shall be

 made inaccessible by the agent. While the value

 of this object is non-zero, it decrements by one

 per second until it reaches zero. During this

 time, all associated rptrTopNPortEntries shall

 remain inaccessible. At the time that this object

 decrements to zero, the report is made accessible

 in the rptrTopNPortTable. Thus, the rptrTopNPort

 table needs to be created only at the end of the

 collection interval.

 If the value of this object is set to zero

 while the associated report is running, the

 running report is aborted and no associated

 rptrTopNPortEntries are created."

 DEFVAL { 0 }

 ::= { rptrTopNPortControlEntry 4 }

 rptrTopNPortDuration OBJECT-TYPE

 SYNTAX Integer32 (0..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The number of seconds that this report has

 collected during the last sampling interval,

 or if this report is currently being collected,

 the number of seconds that this report is being

 collected during this sampling interval.

 When the associated rptrTopNPortTimeRemaining

 object is set, this object shall be set by the

 agent to the same value and shall not be modified

 until the next time the rptrTopNPortTimeRemaining

 is set.

 This value shall be zero if no reports have been

 requested for this rptrTopNPortControlEntry."

 ::= { rptrTopNPortControlEntry 5 }

 rptrTopNPortRequestedSize OBJECT-TYPE

 SYNTAX Integer32

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The maximum number of repeater ports requested

 for the Top N Table.

 When this object is created or modified, the

 agent should set rptrTopNPortGrantedSize as close

 to this object as is possible for the particular

 implementation and available resources."

 DEFVAL { 10 }

 ::= { rptrTopNPortControlEntry 6 }

 rptrTopNPortGrantedSize OBJECT-TYPE

 SYNTAX Integer32 (0..65535)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The maximum number of repeater ports in the

 top N table.

 When the associated rptrTopNPortRequestedSize object is

 created or modified, the agent should set this object as

 closely to the requested value as is possible for the

 particular implementation and available resources. The

 agent shall not lower this value except as a result of a

 set to the associated rptrTopNPortRequestedSize object."

 ::= { rptrTopNPortControlEntry 7 }

 rptrTopNPortStartTime OBJECT-TYPE

 SYNTAX TimeStamp

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The value of sysUpTime when this top N report was

 last started. In other words, this is the time that

 the associated rptrTopNPortTimeRemaining object was

 modified to start the requested report.

 If the report has not yet been started, the value

 of this object is zero."

 ::= { rptrTopNPortControlEntry 8 }

 rptrTopNPortOwner OBJECT-TYPE

 SYNTAX OwnerString

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The entity that configured this entry and is

 using the resources assigned to it."

 ::= { rptrTopNPortControlEntry 9 }

 rptrTopNPortRowStatus OBJECT-TYPE

 SYNTAX RowStatus

 MAX-ACCESS read-create

 STATUS current

 DESCRIPTION

 "The status of this row.

 If the value of this object is not equal to

 active(1), all associated entries in the

 rptrTopNPortTable shall be deleted by the

 agent."

 ::= { rptrTopNPortControlEntry 10 }

 -- Top "N" reports

 rptrTopNPortTable OBJECT-TYPE

 SYNTAX SEQUENCE OF RptrTopNPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A table of reports for the top 'N' ports based on

 setting of associated control table entries. The

 maximum number of entries depends on the number

 of entries in table rptrTopNPortControlTable and

 the value of object rptrTopNPortGrantedSize for

 each entry.

 For each entry in the rptrTopNPortControlTable,

 repeater ports with the highest value of

 rptrTopNPortRate shall be placed in this table

 in decreasing order of that rate until there is

 no more room or until there are no more ports."

 ::= { rptrTopNPortInfo 2 }

 rptrTopNPortEntry OBJECT-TYPE

 SYNTAX RptrTopNPortEntry

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "A set of statistics for a repeater port that is

 part of a top N report."

 INDEX { rptrTopNPortControlIndex,

 rptrTopNPortIndex }

 ::= { rptrTopNPortTable 1 }

 RptrTopNPortEntry ::= SEQUENCE {

 rptrTopNPortIndex

 Integer32,

 rptrTopNPortGroupIndex

 Integer32,

 rptrTopNPortPortIndex

 Integer32,

 rptrTopNPortRate

 Gauge32

 }

 rptrTopNPortIndex OBJECT-TYPE

 SYNTAX Integer32 (1..65535)

 MAX-ACCESS not-accessible

 STATUS current

 DESCRIPTION

 "An index that uniquely identifies an entry in

 the rptrTopNPort table among those in the same

 report. This index is between 1 and N, where N

 is the number of entries in this report. Increasing

 values of rptrTopNPortIndex shall be assigned to

 entries with decreasing values of rptrTopNPortRate

 until index N is assigned to the entry with the

 lowest value of rptrTopNPortRate or there are no

 more rptrTopNPortEntries.

 No ports are included in a report where their

 value of rptrTopNPortRate would be zero."

 ::= { rptrTopNPortEntry 1 }

 rptrTopNPortGroupIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "This object identifes the group containing

 the port for this entry. (See also object

 type rptrGroupIndex.)"

 ::= { rptrTopNPortEntry 2 }

 rptrTopNPortPortIndex OBJECT-TYPE

 SYNTAX Integer32 (1..2147483647)

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The index of the repeater port.

 (See object type rptrPortIndex.)"

 ::= { rptrTopNPortEntry 3 }

 rptrTopNPortRate OBJECT-TYPE

 SYNTAX Gauge32

 MAX-ACCESS read-only

 STATUS current

 DESCRIPTION

 "The amount of change in the selected variable

 during this sampling interval for the identified

 port. The selected variable is that port's

 instance of the object selected by

 rptrTopNPortRateBase."

 ::= { rptrTopNPortEntry 4 }

 -- Notifications for use by Repeaters

 -- Notifications for repeaters in a multiple-repeater implementation.

 -- An implementation may send either the single-repeater OR

 -- multiple-repeater version of these notifications (1 or 4; 2 or 5)

 -- but not both.

 ieee8023snmpDot3RptrNotifications OBJECT IDENTIFIER

 ::= {ieee8023snmpDot3RptrMgt 0}

 rptrInfoHealth NOTIFICATION-TYPE

 OBJECTS { rptrInfoOperStatus }

 STATUS current

 DESCRIPTION

 "In a repeater system containing multiple managed repeaters,

 the rptrInfoHealth notification conveys information

 related to the operational status of a repeater.

 It is sent either when the value of rptrInfoOperStatus

 changes, or upon completion of a non-disruptive test.

 The agent shall limit the generation of

 consecutive rptrInfoHealth notifications for

 the same repeater so that there is at least

 a five-second gap between notifications of this type.

 When notifications are throttled, they are dropped,

 not queued for sending at a future time. (Note

 that 'generating' a notification means sending

 to all configured recipients.)"

 REFERENCE

 "IEEE Std 802.3, 30.4.1.3.1

 notification."

 ::= { ieee8023snmpDot3RptrNotifications 4 }

 rptrInfoResetEvent NOTIFICATION-TYPE

 OBJECTS { rptrInfoOperStatus }

 STATUS current

 DESCRIPTION

 "In a repeater system containing multiple managed

 repeaters, the rptrInfoResetEvent notification

 conveys information related to the operational

 status of a repeater. This notification is sent

 on completion of a repeater reset action. A

 repeater reset action is defined as a transition

 to the START state of IEEE Std 802.3, Figure 9-2,

 when triggered by a management command

 (e.g., an SNMP Set on the rptrInfoReset object).

 The agent shall limit the generation of

 consecutive rptrInfoResetEvent notifications for

 a single repeater so that there is at least

 a five-second gap between notifications of

 this type. When notifications are throttled,

 they are dropped, not queued for sending at

 a future time. (Note that 'generating' a

 notification means sending to all configured

 recipients.)

 The rptrInfoResetEvent is not sent when the

 agent restarts and sends an SNMP coldStart or

 warmStart trap. However, it is recommended that

 a repeater agent send the rptrInfoOperStatus

 object as an optional object with its coldStart

 and warmStart trap PDUs."

 REFERENCE

 "IEEE Std 802.3, 30.4.1.3.2"

 ::= { ieee8023snmpDot3RptrNotifications 5 }

 -- Conformance statements

 snmpRptrModConf

 OBJECT IDENTIFIER ::= { ieee8023snmpRptrMIB 2 }

 snmpRptrModCompls

 OBJECT IDENTIFIER ::= { snmpRptrModConf 1 }

 snmpRptrModObjGrps

 OBJECT IDENTIFIER ::= { snmpRptrModConf 2 }

 snmpRptrModNotGrps

 OBJECT IDENTIFIER ::= { snmpRptrModConf 3 }

 -- Object groups

 snmpRptrGrpBasic OBJECT-GROUP

 OBJECTS { rptrGroupObjectID,

 rptrGroupOperStatus,

 rptrGroupPortCapacity,

 rptrPortAdminStatus,

 rptrPortAutoPartitionState,

 rptrPortOperStatus,

 rptrPortRptrId,

 rptrInfoRptrType,

 rptrInfoOperStatus,

 rptrInfoReset,

 rptrInfoPartitionedPorts,

 rptrInfoLastChange }

 STATUS current

 DESCRIPTION

 "Basic group for a repeater system with one or more

 repeater-units in multisegment (post-RFC 1516)

 version of the MIB module."

 ::= { snmpRptrModObjGrps 1 }

 snmpRptrGrpMonitor OBJECT-GROUP

 OBJECTS { rptrMonitorPortReadableFrames,

 rptrMonitorPortReadableOctets,

 rptrMonitorPortFCSErrors,

 rptrMonitorPortAlignmentErrors,

 rptrMonitorPortFrameTooLongs,

 rptrMonitorPortShortEvents,

 rptrMonitorPortRunts,

 rptrMonitorPortCollisions,

 rptrMonitorPortLateEvents,

 rptrMonitorPortVeryLongEvents,

 rptrMonitorPortDataRateMismatches,

 rptrMonitorPortAutoPartitions,

 rptrMonitorPortTotalErrors,

 rptrMonitorPortLastChange,

 rptrMonTxCollisions,

 rptrMonTotalFrames,

 rptrMonTotalErrors,

 rptrMonTotalOctets }

 STATUS current

 DESCRIPTION

 "Monitor group for a repeater system with one or more

 repeater-units in multisegment (post-RFC 1516)

 version of the MIB module."

 ::= { snmpRptrModObjGrps 2 }

 snmpRptrGrpMonitor100 OBJECT-GROUP

 OBJECTS { rptrMonitorPortIsolates,

 rptrMonitorPortSymbolErrors,

 rptrMonitorPortUpper32Octets,

 rptrMonUpper32TotalOctets }

 STATUS current

 DESCRIPTION

 "Monitor group for 100 Mb/s ports and repeaters

 in a repeater system with one or more repeater-units in

 multisegment (post-RFC 1516) version of the MIB

 module. Repeater systems which support Counter64 should

 also implement snmpRptrGrpMonitor100w64."

 ::= { snmpRptrModObjGrps 3 }

 snmpRptrGrpMonitor100w64 OBJECT-GROUP

 OBJECTS { rptrMonitorPortHCReadableOctets,

 rptrMonHCTotalOctets }

 STATUS current

 DESCRIPTION

 "Monitor group for 100 Mb/s ports and repeaters in a

 repeater system with one or more repeater-units and support

 for Counter64."

 ::= { snmpRptrModObjGrps 4 }

 snmpRptrGrpAddrTrack OBJECT-GROUP

 OBJECTS { rptrAddrTrackSourceAddrChanges,

 rptrAddrTrackNewLastSrcAddress,

 rptrAddrTrackCapacity }

 STATUS current

 DESCRIPTION

 "Passive address tracking group for post-RFC 1516

 version of the MIB module."

 ::= { snmpRptrModObjGrps 5 }

 snmpRptrGrpExtAddrTrack OBJECT-GROUP

 OBJECTS { rptrExtAddrTrackSourceAddress }

 STATUS current

 DESCRIPTION

 "Extended passive address tracking group for

 a repeater system with one or more repeater-units in

 post-RFC 1516 version of the MIB module."

 ::= { snmpRptrModObjGrps 6 }

 snmpRptrGrpRptrAddrSearch OBJECT-GROUP

 OBJECTS { rptrAddrSearchLock,

 rptrAddrSearchStatus,

 rptrAddrSearchAddress,

 rptrAddrSearchState,

 rptrAddrSearchGroup,

 rptrAddrSearchPort,

 rptrAddrSearchOwner }

 STATUS current

 DESCRIPTION

 "Active MAC address search group and topology

 mapping support for repeaters."

 ::= { snmpRptrModObjGrps 7 }

 snmpRptrGrpTopNPort OBJECT-GROUP

 OBJECTS { rptrTopNPortRepeaterId,

 rptrTopNPortRateBase,

 rptrTopNPortTimeRemaining,

 rptrTopNPortDuration,

 rptrTopNPortRequestedSize,

 rptrTopNPortGrantedSize,

 rptrTopNPortStartTime,

 rptrTopNPortOwner,

 rptrTopNPortRowStatus,

 rptrTopNPortGroupIndex,

 rptrTopNPortPortIndex,

 rptrTopNPortRate }

 STATUS current

 DESCRIPTION

 "Top 'N' group for repeater ports."

 ::= { snmpRptrModObjGrps 8 }

 ieee8023snmpDot3RptrNotGroup NOTIFICATION-GROUP

 NOTIFICATIONS { rptrInfoHealth,

 rptrInfoResetEvent }

 STATUS current

 DESCRIPTION

 "Conformance Group for repeater notifications.

 Formerly an empty group."

 ::= {snmpRptrModNotGrps 1}

 -- Compliance statements

 snmpRptrModCompl MODULE-COMPLIANCE

 STATUS current

 DESCRIPTION

 "Compliance for the multisegment version of the

 MIB module for a repeater system with one or more

 repeater-units."

 MODULE -- this module

 MANDATORY-GROUPS { snmpRptrGrpBasic,

 snmpRptrGrpMonitor,

 snmpRptrGrpAddrTrack }

 GROUP snmpRptrGrpMonitor100

 DESCRIPTION

 "Implementation of this group is

 mandatory for managed repeater systems that

 contain 100 Mb/s repeaters."

 GROUP snmpRptrGrpMonitor100w64

 DESCRIPTION

 "Implementation of this group is

 mandatory for managed repeater systems that

 contain 100 Mb/s repeaters and that

 can support Counter64."

 GROUP snmpRptrGrpExtAddrTrack

 DESCRIPTION

 "Implementation of this group is

 recommended for repeater systems that have

 the necessary instrumentation to track

 MAC addresses of multiple DTEs attached

 to a single repeater port."

 GROUP snmpRptrGrpRptrAddrSearch

 DESCRIPTION

 "Implementation of this group is

 recommended for repeater systems that allow

 read-write access and that have

 the necessary instrumentation to

 search all incoming data streams

 for a particular MAC address."

 GROUP snmpRptrGrpTopNPort

 DESCRIPTION

 "Implementation of this group is

 recommended for repeater systems that have

 the necessary resources to support

 TopN statistics reporting."

 GROUP ieee8023snmpDot3RptrNotGroup

 DESCRIPTION

 "Implementation of this group is

 recommended for repeaters that

 support notifications."

 ::= { snmpRptrModCompls 1 }

 END