



Remote Management of MoCA Interfaces using SNMP MIB

Reference document

Approved DRAFT-DELIVERABLE-MoCA-MIB-V2.0-20180507



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1.1.1 Introduction

This memo defines an optional Multimedia over Coax Alliance Management Information Base (MOCA20-MIB) and a recommended way of using the MIB with Simple Network Management Protocol version 1, 2c or 3 (SNMPv1/v2c/v3) to remotely configure, monitor, and diagnose a device which supports one or more MoCA interfaces. A MoCA device may not be manageable by SNMP MIB because these devices do not have an SNMP agent and do not support the SNMP protocol. This MIB references IETF MIBs, but has been defined outside the IETF community. We may elect to have this MIB standardized in the IETF in the future. MOCA20-MIB must be used with the companion memo MoCA Enterprise Structure of Management Information (MOCA-SMI) [5].

This memo provides an overview of the organization of the managed objects used for managing MoCA network interfaces.

2 Data Model

The MoCA 2.0 data model conforms to the Structure of Management Information Version 2 (SMIv2) [2] [3] [4]. The model is a collection of managed objects termed a Management Information Base (MIB). The MoCA MIB is comprised of tabular objects (i.e., tables) for status reporting and configuration of the managed MoCA interfaces. In addition, Notifications are also defined to allow dynamic recording and/or reporting exceptional conditions or events that may warrant immediate action by the network Management System operators. The MIB objects defined in this document are intended to be used by MoCA interfaces that support MoCA Specification v2.0 [7].

3 Object Definitions

MoCA-MIB objects are organized into fifteen tables in the MIB module. Each table is at least indexed by the interface index (ifIndex).

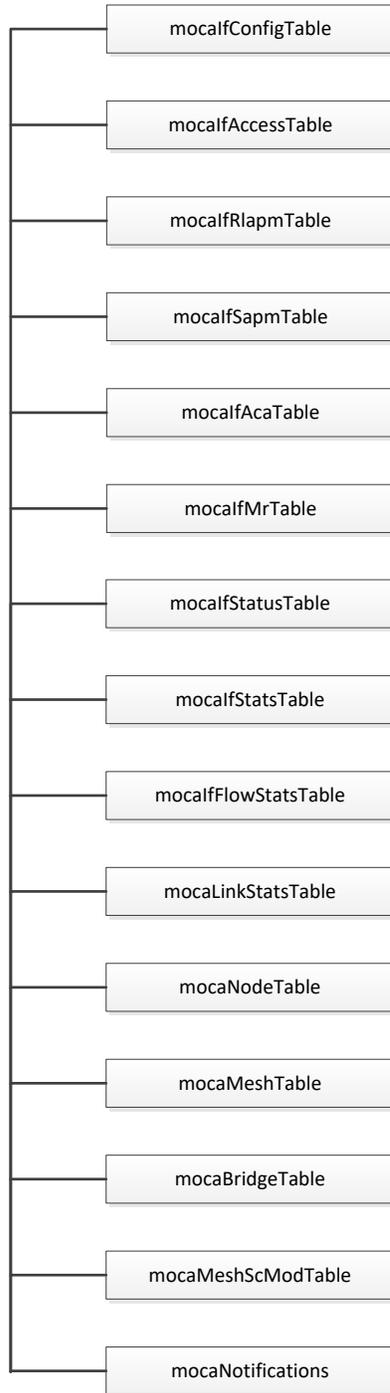


Figure 1 Relationship Diagram between MIB Module Tables

Since a MoCA device can have one or more MoCA interfaces, each MoCA interface is uniquely identified by the interface index (ifIndex). The MIB module also supports MoCA interface initiated notification events.

The first sixteen tables are organized into two main categories,

1. MIB objects specific to the managed MoCA Node only.
2. MIB objects related to the MoCA network which the managed MoCA Node is part of.

The final table contains the notification events.

This section uses object templates to provide an overview of the managed objects.

3.1 Object Template

There is one object template to tabulate each MIB table. There is an additional object template to tabulate all the notification events. Each object template has six columns, they are,

1. ID. This is the last digit before the instance indices in the MIB Object Identifier (OID).
2. Object Name. This is the name of the object as appears in the MIB module.
3. Type. The data types are defined in Table A1.

Table A1: Data Types

| Data Type | Description |
|---------------|--|
| INTEGER | Integer with enumerated values. |
| Integer32 | 32 bit signed integer (-2,147,483,648 to +2,147,483,647) |
| Unsigned32 | 32 bit unsigned integer (0 to 4,294,967,295) |
| Boolean | The allowed values are “0”, “1”, “true”, and “false”. The values “1” and “true” are considered interchangeable, where both equivalently represent the logical value <i>true</i> . Similarly, the values “0” and “false” are considered interchangeable, where both equivalently represent the logical value <i>false</i> . |
| BITS | String of named bits. |
| OCTET STRING | String of octets (eight-bit values) with no restrictions on the value of any octet. |
| MacAddress | An OCTET STRING of size six which represents an 802 MAC address. |
| Counter32 | 32 bit unsigned integer (0 to 4,294,967,295) |
| Counter64 | 64 bit unsigned integer (0 to 18,446,744,073,709,551,615) |
| DisplayString | String with only ASCII characters for display purposes. |

4. Req't. This defines one of the following two implementation requirements for the object,

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- M. This specifies implementation of this object is mandatory.
 - O. This specifies implementation of this object is optional.
5. Access. This defines the access type of the object,
 - N-ACC. This object is not accessible.
 - RW. This object is both readable and writable.
 - RO. This object is readable only.
 - RC. This object is readable and the table entry is dynamically created.
 - WO. This object is writable only.
 6. Comments. This provides a brief description of the object or additional information which is not part of the description in the MIB module.

3.2 Node Related Objects

There are ten tables which contain objects specific to the managed interface.

1. Interface Configuration Table
2. Interface Access Table
3. Interface Receive Level Added PHY Margin (RLAPM) Table
4. Interface Subcarrier Added PHY Margin (SAPM) Table
5. Interface Alternate Channel Assessment (ACA) Table
6. Interface MoCA Reset Table
7. Interface Status Table
8. Interface Statistics Table
9. Interface Flow Statistics Table
10. Interface Link Statistics Table

3.2.1 Interface Configuration Table

The Interface Configuration Table, or `mocaIfConfigTable`, supports the configuration of RF frequency, transmit power, link privacy, and traps related parameters in the managed MoCA Node. The managed MoCA Node is identified by the interface index (`ifIndex`).

The support of the configuration table is optional, and all of its objects are writable.

Table 1: mocaIfConfigTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|--------------------------------|-----------|-------|--------|---|
| | <code>ifIndex</code> | Integer32 | O | N-ACC | From IF-MIB |
| 1 | <code>mocaIfEnable</code> | Boolean | O | RW | Selection of whether MoCA interface is enabled or disable |
| 2 | <code>mocaIfChannelMask</code> | BITS | O | RW | List of RF center frequencies represented by a bitmask which this MoCA Node is allowed to form or join a MoCA network |
| 3 | <code>mocaIfTpcEnable</code> | Boolean | O | RW | Selection of whether TPC is enabled or disabled |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|------------------------------|---------------|-------|--------|--|
| 4 | mocaIfTxPowerLimit | Unsigned32 | O | RW | Controls the Maximum Transmit power in dB (BEACON_PWR _{BACKOFF}) |
| 5 | mocaIfBeaconPowerBackoff | Unsigned32 | O | RW | The value by which to reduce the setting of the transmit power of the Beacon from the maximum transmit power |
| 6 | mocaIfPowerControlTargetRate | Unsigned32 | O | RW | Controls the target PHY Rate for power control algorithm |
| 7 | mocaIfPrivacyEnable | Boolean | O | RW | Controls whether privacy is enabled or disabled |
| 8 | mocaIfPassword | DisplayString | O | RW | Value of the Password used by the MoCA Node |
| 9 | mocaIfPreferredNC | Boolean | O | RW | Selection of whether Preferred NC is enabled or disabled |
| 10 | mocaIfAccessEnable | Boolean | O | RW | MAC Address Control Enabled |
| 11 | mocaIfPhyThreshold | Unsigned32 | O | RW | Controls the minimum PHY Rate controlled by mocaIfPhyThresholdEnable |
| 12 | mocaIfPhyThresholdEnable | Boolean | O | RW | Used to enable 'mocaTrapBelowPhyThreshold' and 'mocaTrapAbovePhyThreshold' |
| 13 | mocaIfStatusChangeEnable | Boolean | O | RW | Used for status change trap |
| 14 | mocaIfNumNodesChangeEnable | Boolean | O | RW | Used for network change trap |
| 15 | mocaIfTpcTargetRateNper | Unsigned32 | O | RW | The Target PHY Rate of the MoCA Node when TPC is enabled and PER _{MODE} = NPER |
| 16 | mocaIfBand | Unsigned32 | O | RW | Configure the bands or sub-bands for the MoCA Node to operate in. |
| 17 | mocaIfLofUpdateEnable | Boolean | O | RW | Controls whether the LOF is updated when joining a network |
| 18 | mocaIfLof | Unsigned32 | O | RW | Initial value of LOF for each band and sub-band supported by the MoCA Node |
| 19 | mocaIfUpfRetransMode | Boolean | O | RW | Controls whether retransmission is enabled for all Unicast Prioritized Flows |
| 20 | mocaIfPerMode | Unsigned32 | O | RW | Controls which transmission PER mode the MoCA Node uses for MPDUs not belonging to PQoS Flows, nper (0), v _{lper} (1) |
| 21 | mocaIfTurboModeEnable | Boolean | O | RW | Controls whether the MoCA Node operates in point to point Turbo Mode or not |
| 22 | mocaIfPolicingEnable | Boolean | O | RW | Controls whether policing of PQoS Flows is enabled or disabled |
| 23 | mocaIfTlpMin | Unsigned32 | O | RW | The minimum time a MoCA Node is required to stay in the Listening Phase of the Network Search |
| 24 | mocaIfTlpMax | Unsigned32 | O | RW | The maximum time a MoCA Node is required to stay in the Listening Phase of the Network Search |
| 25 | mocaIfRlapmEnable | Boolean | O | RW | Controls whether the RLAPM (Receive Level Added PHY Margin) function is enabled |
| 26 | mocaIfRlapmProfileSelect | Unsigned32 | O | RW | Controls which RLAPM (Receive Level Added PHY Margin) profile is active |
| 27 | mocaIfSapmEnable | Boolean | O | RW | Controls whether the SAPM (Subcarrier Added PHY Margin) function is enabled |
| 28 | mocaIfSapmProfileSelect | Unsigned32 | O | RW | Controls which SAPM (Subcarrier Added PHY Margin) profile is active |

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------------|------------|-------|--------|--|
| 29 | mocaIfPowerStateRequest | INTEGER | O | RW | Carries a request to the MoCA Node to transition into a specified Power State. |
| 30 | mocaIfSeqNumMr | Unsigned32 | O | RW | The managed parameter SEQ_NUM _{MR} used by the MR Transaction |
| 31 | mocaIfPowerStateTrapEnable | Boolean | O | RW | Used for Power State message trap |
| 32 | mocaIfLmoTrapEnable | Boolean | O | RW | Used to enable 'mocaTrapLmoStatus' |

3.2.2 Interface Access Table

The Interface Access Table, or mocaIfAccessTable, is used for access control in the MoCA network based on the MAC address of the to-be-admitted MoCA Node. This table is relevant if the managed MoCA Node is or can be the Network Coordinator (NC), as only the NC decides whether another MoCA Node is allowed to join a MoCA network. The managed MoCA Node is identified by the interface index (ifIndex).

The support of this table is optional, and all of its objects are writable.

Table 2: mocaIfAccessTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|------------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaIfAccessIndex | Integer32 | O | N-ACC | This index is used to order the MoCA Node MAC access control table |
| 2 | mocaIfAccessMacAddress | MacAddress | O | RW | If 'mocaIfAccessEnable' is set to 'true', the MoCA Node with this MAC address is allowed to join the MoCA network. |
| 3 | mocaIfAccessStatus | Integer32 | O | RC | Control and reflect the status of a row in this table. Creation of a row can either be done with 'CreateAndWait' or 'CreateAndGo' |

3.2.3 Interface RLAPM Table

The Interface RLAPM Table, or mocaIfRlapmTable, supports the configuration of RLAPM (Receive Level Added PHY Margin) function parameters for the selected profile in the managed MoCA Node, identified by the interface index (ifIndex).

The support of this table is optional.

Table 3: mocaIfRlapmTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------|------------|-------|--------|--|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaIfRlapmProfile | Unsigned32 | O | N-ACC | RLAPM (Receive Level Added PHY Margin) profile number |
| 2 | mocaIfRlapmFrequency | Unsigned32 | O | N-ACC | MoCA frequency used for the RLAPM (Receive Level Added PHY Margin) table |
| 3 | mocaIfRlapmGarpl | Unsigned32 | O | RW | GARPL (Global Aggregated Receive Power Level). Integer in the range of 0 to 65 |
| 4 | mocaIfRlapmPhyMargin | Unsigned32 | O | RW | PHY Margin values of RLAPM (Receive Level Added PHY Margin). Integer in the range of 0 to 60 |
| 5 | mocaIfRlapmStatus | Boolean | O | RO | RLAPM (Receive Level Added PHY Margin) status |

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3.2.4 Interface SAPM Table

The Interface SAPM Table, or mocaIfSapmTable, supports the configuration of SAPM (Subcarrier Added PHY Margin) parameters for the selected profile in the managed MoCA Node, identified by the interface index (ifIndex).

The support of this table is optional.

Table 4: mocaIfSapmTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaIfSapmProfile | Unsigned32 | O | N-ACC | SAPM (Subcarrier Added PHY Margin) profile number |
| 2 | mocaIfSapmFrequency | Unsigned32 | O | N-ACC | SAPM (Subcarrier Added PHY Margin) function frequency |
| 3 | mocaIfSapmSubcarrier | Unsigned32 | O | N-ACC | Subcarrier index used for the SAPM (Subcarrier Added PHY Margin) table |
| 4 | mocaIfSapmPhyMargin | Unsigned32 | O | RW | PHY Margin values of SAPM (Subcarrier Added PHY Margin) function |
| 5 | mocaIfSapmARPLTHLD | Unsigned32 | O | RW | SAPM (Subcarrier Added PHY Margin) aggregate Received Power Level Threshold |
| 6 | mocaIfSapmStatus | Boolean | O | RO | SAPM (Subcarrier Added PHY Margin) status |

3.2.5 Interface ACA Table

The Interface mocaIfAcaTable, is used by the managed MoCA Node to initiate On Demand LMO. The managed MoCA Node is identified by the interface index (ifIndex).

The support of this table is optional.

Table 5: mocaIfAcaTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|-------------------------|------------|-------|--------|--|
| - | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaIfAcaNodeID | Unsigned32 | O | RW | The Source Node ID. |
| 2 | mocaIfAcaType | INTEGER | O | RW | The ACA (Alternate Channel Assessment) type is either "EVM" or "QUIET" |
| 3 | mocaIfAcaChannel | Unsigned32 | O | RW | The channel number under assessment, starting from 0 in increments of 25 MHz |
| 4 | mocaIfAcaReportNodeMask | BITS | O | RW | Specifies the MoCA Nodes that are requested to be part of the channel assessment: Setting bits corresponding to Node ID's of these MoCA Nodes to '1' (LSB corresponds to Node ID 0x0), |
| 5 | mocaIfAcaInitiate | Boolean | O | RW | An ACA (Alternate Channel Assessment) request is initiated when this parameter is written |
| 6 | mocaIfAcaStatus | INTEGER | O | RO | Status: "SUCCESS", "FAIL-BAD CHANNEL" , "FAIL-NO EVM PROBE", "FAIL", "IN-PROGRESS" |

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| | | | | | |
|---|------------------------------|--------------|---|----|---|
| 7 | mocalfAcaTotalRxPower | Integer32 | O | RO | dBm (-128 to +127 dBm) |
| 8 | mocalfAcaPowerProfile | OCTET STRING | O | RO | 1 Byte Hex array values with no delimiter |
| 9 | mocalfAcaStatusTrapCompleted | Boolean | O | RO | Indicated when Power Profile is ready |

3.2.6 Interface MoCA Reset Table

The Interface MoCA Reset Table, or mocalfMrTable is used by the managed MoCA Node to initiate MoCA Reset Transaction. The managed MoCA Node is identified by the interface index (ifIndex).

The support of this table is optional.

Table 6: mocalfMrTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocalfMrNodeMask | BITS | O | RW | Specifies the MoCA Nodes to send MR command to |
| 2 | mocalfMrStartTime | Unsigned32 | O | RW | Time in seconds after this parameter is written that a MoCA Node must initiate a MoCA Reset (MR). |
| 3 | mocalfMrStatusTrapEnable | Boolean | O | RW | Used to enable 'mocaTrapMrRstSuccess' and 'mocaTrapMrRstFail' |
| 4 | mocalfMrNetworkTrapEnable | Boolean | O | RW | Used to enable 'mocaTrapMrNetworkSuccess' and 'mocaTrapMrNetworkFail' |

3.2.7 Interface Status Table

The Interface Status Table, or 'mocalfStatusTable', provides status information related to the operation of the managed MoCA Node. The managed MoCA Node is identified by the interface index (ifIndex).

The support of this table is mandatory.

Table 7: mocalfStatusTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|-----------------------|--------------|-------|--------|--|
| | ifIndex | Integer32 | M | N-ACC | From IF-MIB |
| 1 | mocalfStatus | INTEGER | M | RO | Indicate the current status of the MoCA interface with value =1 is disable, 2 is no link, and 3 is link-up |
| 2 | mocalfLinkUpTime | Unsigned32 | M | RO | Time in seconds that the MoCA Node has been part of MoCA network |
| 3 | mocalfSoftwareVersion | OCTET_STRING | M | RO | Aligned to the Certificate information Up to 82 characters. May report additional vendor specific information (see 4.2) |
| 4 | mocalfMocaVersion | INTEGER | M | RO | MoCA version supported by this interface reported in the |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------------|---------------|-------|--------|--|
| | | | | | NODE_PROTOCOL_SUPPORT field of the Admission Request |
| 5 | mocaIfNetworkVersion | INTEGER | M | RO | MoCA version supported in this network as reported in the MOCA_VERSION field of the Beacon. |
| 6 | mocaIfMacAddress | MacAddress | M | RO | MAC address of the MoCA Node's MoCA interface |
| 7 | mocaIfNodeID | Unsigned32 | M | RO | Node ID of the MoCA Node |
| 8 | mocaIfName | DisplayString | M | RO | Same as if Name in IF-MIB |
| 9 | mocaIfNumNodes | Unsigned32 | M | RO | Number of MoCA Nodes in the network |
| 10 | mocaIfNC | Unsigned32 | M | RO | Network Coordinator Node ID |
| 11 | mocaIfBackupNC | Unsigned32 | M | RO | Backup NC Node ID |
| 12 | mocaIfRFChannel | Unsigned32 | M | RO | RF channel number of the MoCA Node. |
| 13 | mocaIfTabooChannelMask | BITS | M | RO | Taboo channels reported in the beacon |
| 14 | mocaIfNodeTabooChannelMask | BITS | M | RO | Taboo channels reported in the admission request frame. |
| 15 | mocaIfSupportedBands | BITS | M | RO | All the supported bands and sub-bands by the MoCA Node |
| 16 | mocaIfTxGcdPowerReduction | Unsigned32 | O | RO | Transmit power control backoff for broadcast transmissions by the MoCA Node |
| 17 | mocaIfPduNumber | Unsigned32 | M | RO | Maximum number of PDUs in one aggregate which can be received by the MoCA Node |
| 18 | mocaIfMaxIngressNodeThroughput | Unsigned32 | O | RO | Maximum throughput supported by this Ingress Node |
| 19 | mocaIfMaxEgressNodeThroughput | Unsigned32 | O | RO | Maximum throughput supported by this Egress Node |
| 20 | mocaIfTxGcdRate | Unsigned32 | M | RO | Tx GCD rate of the MoCA Node |
| 21 | mocaIfPasswordHash | DisplayString | O | RO | Specify the MoCA password HASH using an ASCII String. See Appendix B. Access is optional when used with SNMP v1 of SNMP v2c protocol |
| 22 | mocaIfChannelSupport | BITS | O | RO | Specify a list of RF center frequencies represented by a bitmask which this MoCA Node can support to form or join a MoCA network. |
| 23 | mocaIfAggregationSize | Unsigned32 | O | RO | Maximum number of bytes in one aggregate which can be received by the MoCA Node |
| 24 | mocaIfAeNumber | Unsigned32 | O | RO | Maximum number of allocation elements, excluding the TAUs and the Dummy DAUs, in one MAP the MoCA Node can process |
| 25 | mocaIfSupportedIngressPqosFlows | Unsigned32 | O | RO | Maximum number of supported Ingress PQoS Flows by the MoCA Node |
| 26 | mocaIfSupportedEgressPqosFlows | Unsigned32 | O | RO | Maximum number of supported Egress PQoS Flows by the MoCA Node. |
| 27 | mocaIfPowerStateCap | INTEGER | O | RO | Reports the Power State capabilities of the MoCA Node, i.e. which |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|------------------------------|---------------|-------|--------|---|
| | | | | | Power States it can transition to. Can change over time, e.g. when a MoCA 1 Node joins the network. |
| 28 | mocaIfAvbSupport | Boolean | O | RO | Node support for IEEE 802.1 Audio Video Bridge specification. |
| 29 | mocaIfResetCount | Counter32 | O | RO | Count of MoCA resets since the interface was enabled for this Node. |
| 30 | mocaIfLinkDownCount | Counter32 | O | RO | The number of times that this MoCA Node has lost link with the MoCA network since the interface was enabled. |
| 31 | mocaIfLmoNodeID | Unsigned32 | O | RO | The Node ID of the LMO Node. |
| 32 | mocaIfNetworkState | INTEGER | O | RO | Network state of the MoCA Node. |
| 33 | mocaIfPrimaryChannelOffset | Integer32 | O | RO | Primary channel offset of the MoCA Node. |
| 34 | mocaIfSecondaryChannelOffset | Integer32 | O | RO | Secondary channel offset of the MoCA Node. |
| 35 | mocaIfResetReason | DisplayString | O | RO | Provides a description for reset link, or MoCA Node join failure. |
| 36 | mocaIfNcVersion | INTEGER | M | RO | MoCA Version of the NC |
| 37 | mocaIfLinkState | OCTET_STRING | M | RO | This object is meaningful only after a Link Failure to indicate the state of the network at the time of the Link failure. (see 4.3) |

3.2.8 Interface Statistics Table

The Interface Statistics Table, or 'mocaIfStatsTable', provides statistics information on counters for transmission and reception of packets, and Parameterized Quality of Service (PQoS) flows in a managed MoCA Node. The managed MoCA Node is identified by the interface index (ifIndex).

The support of this table is mandatory.

Table 8: mocaIfStatsTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------|------------|-------|--------|--|
| | ifIndex | Integer32 | M | N-ACC | From IF-MIB |
| 1 | mocaIfTxPackets | Counter64 | M | RO | Provided in the IF MIB ifOutUcastPkts |
| 2 | mocaIfTxDrops | Counter32 | O | RO | Provided in the IF MIB ifOutDiscards. |
| 3 | mocaIfRxPackets | Counter64 | M | RO | Provided in the IF MIB ifInUcastPkts |
| 4 | mocaIfRxCorrectedErrors | Counter64 | O | RO | Provided in the IF MIB ifInErrors |
| 5 | mocaIfRxDrops | Counter32 | O | RO | Number of dropped packets by the receiver of this MoCA interface |
| 6 | mocaIfEgressNodeNumFlows | Unsigned32 | M | RO | Number of PQoS Flows in which this Node is an Egress Node |
| 7 | mocaIfIngressNodeNumFlows | Unsigned32 | M | RO | Number of PQoS Flows in which this Node is an Ingress Node |
| 8 | mocaIfTxBytes | Counter64 | O | RO | Provided in the IF MIB ifInOctets. Indicate the number of bytes transmitted by this MoCA interface. |
| 9 | mocaIfRxBytes | Counter64 | O | RO | Provided in the IF MIB ifOutOctets. Indicate the number of bytes received by this MoCA interface. |
| 10 | mocaIfTxUnicast | Counter64 | O | RO | Provided in the IF MIB ifInUcastPkts. Indicate the number of Unicast packets transmitted by this MoCA interface. |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|-------------------|-----------|-------|--------|--|
| 11 | mocalfRxUnicast | Counter64 | O | RO | Provided in the IF MIB ifOutUcastPkts. Indicate the number of Unicast packets received by this MoCA interface |
| 12 | mocalfTxMulticast | Counter64 | O | RO | Provided in the IF MIB ifInMulticastPkts. Indicate the number of Multicast packets transmitted by this MoCA interface. |
| 13 | mocalfRxMulticast | Counter64 | O | RO | Provided in the IF MIB ifOutMulticastPkts. Indicate the number of Multicast packets received by this MoCA interface. |
| 14 | mocalfTxBroadcast | Counter64 | O | RO | Provided in the IF MIB ifInBroadcastPkts. Indicate the number of Broadcast packets transmitted by this MoCA interface. |
| 15 | mocalfRxBroadcast | Counter64 | O | RO | Provided in the IF MIB ifOutBroadcastPkts. Indicate the number of Broadcast packets received by this MoCA interface. |

3.2.9 Interface Flow Statistics Table

The Interface Flow Statistics Table, or 'mocalfFlowStatsTable', provides statistics information for each Parameterized Quality of Service (PQoS) flow in which a managed MoCA Node is the Ingress Node. This table is indexed by the interface index (ifIndex) and the PQoS flow index (mocalfFlowIndex). This flow index is an arbitrary number assigned by the managed MoCA Node. For each MoCA interface, there is one entry for each PQoS flow in this table.

The support of this table is mandatory.

Table 9: mocalfFlowStatsTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------------|------------|-------|--------|--|
| | ifIndex | Integer32 | M | N-ACC | From IF-MIB |
| 1 | mocalfFlowIndex | Integer32 | M | N-ACC | Index of the supported PQoS Flow ID |
| 2 | mocalfFlowID | MacAddress | M | RO | Multicast Ethernet address that identifies a PQoS flow |
| 3 | mocalfPacketDA | MacAddress | M | RO | PACKET_DA of the supported PQoS Flow as identified by 'mocalfFlowID' |
| 4 | mocalfPeakDataRate | Unsigned32 | M | RO | T_PEAK_DATA_RATE of the supported PQoS Flow as identified by 'mocalfFlowID' |
| 5 | mocalfBurstSize | Unsigned32 | M | RO | T_BURST_SIZE of the supported PQoS flow as identified by 'mocalfFlowID' |
| 6 | mocalfLeaseTime | Unsigned32 | M | RO | T_LEASE_TIME of the supported PQoS flow as identified by 'mocalfFlowID' |
| 7 | mocalfFlowTag | Unsigned32 | M | RO | Application specific flow information |
| 8 | mocalfLeaseTimeLeft | Unsigned32 | O | RO | LEASE_TIME_LEFT of the supported PQoS flow as identified by 'mocalfFlowID' |
| 9 | mocalfTxPacketsFlow | Unsigned32 | O | RO | Total number of Ethernet packets transmitted by this MoCA interface on the PQoS flow as identified by 'mocalfFlowID' |
| 10 | mocalfFlowStatsIngressGuid | MacAddress | O | RO | The MAC address of the MoCA Node specified by the INGRESS_NODE_ID parameter of the flow |
| 11 | mocalfFlowStatsEgressGuid | MacAddress | O | RO | The MAC address of the MoCA Node specified by the EGRESS_NODE_ID parameter of the flow |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------------------|------------|-------|--------|--|
| 12 | mocalfFlowStatsMaximumLatency | Unsigned32 | O | RO | Maximum latency (in ms) of the PQoS flows by Node identified by 'mocalfFlowID' |
| 13 | mocalfFlowStatsShortTermAvgRatio | Unsigned32 | O | RO | Short Term Average Ratio parameter of the PQoS Flow as identified by 'mocalfFlowID' |
| 14 | mocalfFlowStatsMaxNumberRetry | Unsigned32 | O | RO | Maximum number of retransmission retries for the PQoS flow as identified by 'mocalfFlowID' |
| 15 | mocalfFlowStatsFlowPer | Unsigned32 | O | RO | PER of the PQoS flow by the MoCA Node |
| 16 | mocalfFlowStatsIngressClassify | INTEGER | O | RO | Indicates the INGRESS_CLASSIFICATION_RULE parameter of the PQoS flow as identified by 'mocalfFlowID' |
| 17 | mocalfFlowStatsVlanTag | Unsigned32 | O | RO | The VLAN tag parameter of the PQoS flow as identified by 'mocalfFlowID' |
| 18 | mocalfFlowStatsDscpMoca | Unsigned32 | O | RO | The DSCP parameter of the PQoS flow as identified by 'mocalfFlowID' |
| 19 | mocalfFlowStatsDfid | Unsigned32 | O | RO | The DFID parameter of the PQoS flow as identified by 'mocalfFlowID' |

3.2.10 Link Statistics Table

This table provides link statistics objects reported by the managed interface for the links to other MoCA Nodes in the MoCA network.

This table contains an entry for every MoCA Node in the MoCA network, excluding this MoCA interface. This table is indexed by 'ifIndex' and 'mocaLinkNodeIndex'. Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software.

The support of this table is optional.

Table 10: mocaLinkStatsTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|-----------------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaLinkNodeIndex | Unsigned32 | O | N-ACC | The Node ID is used as an index to the MoCA Node link statistics table. |
| 2 | mocaLinkTxPackets | Counter64 | O | RO | Provided in the IF MIB ifOutUcastPkts. Indicate the number of unicast Ethernet packets transmitted by this MoCA interface to the associated Node. |
| 3 | mocaLinkTxDrops | Counter64 | O | RO | Provided in the IF MIB ifOutDiscards. Indicate the number of unicast EPDUs received at the ECL, destined to the associated Node, and not transmitted by this MoCA interface. |
| 4 | mocaLinkEgressNodeNumFlows | Unsigned32 | O | RO | Number of PQoS Flows in which this Node is an Egress Node from the associated MoCA Node. Indicate the number of PQoS flows in which this MoCA interface is an Egress Node for these PQoS flows. |
| 5 | mocaLinkIngressNodeNumFlows | Unsigned32 | O | RO | Number of PQoS Flows in which this Node is an Ingress Node to the associated Node. Indicate the number of PQoS flows in which this MoCA interface is a Ingress Node for these PQoS flows. |
| 6 | mocaLinkStatsRetxFrames | Counter32 | O | RO | Number of Retransmission frames by the MoCA Node |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------|-----------|-------|--------|--|
| 7 | mocaLinkStatsRetxTimeouts | Counter32 | O | RO | Number of Retransmission timeouts by the MoCA Node |

3.3 Network Related Objects

There are four tables which contain objects reported by the managed interface for other moCA Nodes in the MoCA network. Note that the Mesh, Bridge, Link Modulation Tables contain entries for the managed MoCA Node as well.

1. Node Table
2. Mesh Table
3. Bridge Table
4. Link Modulation Table

3.3.1 Node Table

The MoCA Node Table, or 'mocaNodeTable', is used by the managed MoCA Node to report information about other MoCA Nodes in the MoCA network. This table is indexed by the interface index (ifIndex) and MoCA Node ID (mocaNodeIndex). The managed MoCA Node does not report itself, and hence the MoCA Node ID of the managed MoCA Node does not have an entry in this table. All other MoCA Nodes that the managed MoCA Node has both transmission and reception usable channels with (as indicated by CHANNEL_USABLE field of the Type 1 Probe Report) have an entry in this table.

The support of this table is mandatory.

Table 11: mocaNodeTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | M | N-ACC | From IF-MIB |
| 1 | mocaNodeIndex | Unsigned32 | M | N-ACC | The Node ID is used as an index to the MoCA Node table |
| 2 | mocaNodeMocaVersion | INTEGER | M | RO | Indicate the MoCA version supported by the MoCA Node identified by 'mocaNodeIndex' |
| 3 | mocaNodeMacAddress | MacAddress | M | RO | Indicate the MAC address of the MoCA Node identified by 'mocaNodeIndex' |
| 4 | mocaNodeTxGcdRate | Unsigned32 | M | RO | Indicate the PHY rate in Mbps for the transmit traffic broadcasted from this MoCA Node. |
| 5 | mocaNodeRxGcdPower | Unsigned32 | O | RO | Indicate the received GCD power by the MoCA Node identified by 'mocaNodeIndex' |
| 6 | mocaNodeTxPowerReduction | Unsigned32 | O | RO | Transmit Power Control back-off in dB used for unicast transmissions from the managed MoCA Node to a MoCA Node identified by 'mocaNodeIndex'. OBSELETE – Replaced by mocaMeshTxPowerReduction |
| 7 | mocaNodeRxPower | Unsigned32 | O | RO | The received power by the MoCA Node identified by 'mocaNodeIndex'. OBSELETE – Replaced by mocaMeshPower |
| 8 | mocaNodePreferredNC | Boolean | M | RO | Indicate the MoCA Node identified by 'mocaNodeIndex' is set as preferred NC if this value is 'true' |

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| | | | | | |
|----|-----------------------------------|------------|---|----|--|
| 9 | mocaNodeBondingCapable | Boolean | M | RO | Channel bonding capability of the MoCA Nodes in the network |
| 10 | mocaNodePduNumber | Unsigned32 | M | RO | Maximum number of PDUs in one aggregate which can be received by the MoCA Node |
| 11 | mocaNodeRxPackets | Counter64 | O | RO | Number of good Ethernet packets received by the managed MoCA Node from the MoCA Node identified by 'mocaNodeIndex', includes unicast, multicast, and broadcast packets |
| 12 | mocaNodeRxCorrected | Counter64 | O | RO | Number of received Ethernet packets that have errors and are corrected by the managed MoCA Node from the MoCA Node identified by 'mocaNodeIndex' |
| 13 | mocaNodeRxDrops | Counter32 | O | RO | The number of scheduled MoCA frames that are not detected or have uncorrectable errors and are dropped by the managed MoCA Node from the MoCA Node identified by 'mocaNodeIndex' |
| 14 | mocaNodeSNR | Unsigned32 | O | RO | SNR based on the EVM probe from the MoCA Node identified by 'mocaNodeIndex'. OBSELETE – Replaced by mocaMeshSNR |
| 15 | mocaNodeSupportedIngressPqosFlows | Unsigned32 | O | RO | Maximum number of supported Ingress PQoS Flows by the MoCA Node identified by 'mocaNodeIndex' |
| 16 | mocaNodeSupportedEgressPqosFlows | Unsigned32 | O | RO | Maximum number of supported Egress PQoS Flows by the MoCA Node identified by 'mocaNodeIndex'. |
| 17 | mocaNodeAggregationSize | Unsigned32 | O | RO | Maximum number of bytes in one aggregate which can be received by the MoCA Node identified by mocaNodeIndex |
| 18 | mocaNodeAeNumber | Unsigned32 | O | RO | Maximum number of allocation elements, excluding the TAUs and the Dummy DAUs, in one MAP the MoCA Node identify by the mocaNodeIndex can process |
| 19 | mocaNodePowerState | INTEGER | O | RO | Power State of the MoCA Node identify by the 'mocaNodeIndex' |
| 20 | mocaNodePowerStateCapability | Unsigned32 | O | RO | Power State capability of the MoCA Node identify by the 'mocaNodeIndex' |
| 21 | mocaNodePDelay | INTEGER | O | RO | Propagation delay measured in units of 10ns between the local Node and the Node identified by mocaNodeIndex |

3.3.2 Mesh Table

The Mesh Table, or 'mocaMeshTable', provides the PHY rates between any pair of MoCA Nodes in the MoCA network. Each PHY rate is associated with an interface index (ifIndex), transmit Node ID (mocaMeshTableTxNodeIndex) and receive Node ID (mocaMeshTableRxNodeIndex). PHY rate is the transmit data rate from the MoCA Node identified by the transmit Node ID, to the MoCA Node identified by the receive Node ID.

The support of this table is mandatory.

Table 12: mocaMeshTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|--------------------------|------------|-------|--------|-------------------------|
| | ifIndex | Integer32 | M | N-ACC | From IF-MIB |
| 1 | mocaMeshTableTxNodeIndex | Unsigned32 | M | N-ACC | Required for mesh table |
| 2 | mocaMeshTableRxNodeIndex | Unsigned32 | M | N-ACC | Required for mesh table |

| I D | Object Name | Type | Req't | Access | Comments |
|--------|------------------------|--------------|-------|--------|---|
| 3 | mocaMeshTxRate | Unsigned32 | M | RO | The transmit MoCA 1 PHY rate (in Mbps) from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified by 'mocaMeshTableRxNodeIndex' |
| 4 | mocaMeshTxRateNper | Unsigned32 | M | RO | Total Tx rate of Primary and Secondary channels |
| 5 | mocaMeshTxRateVlper | Unsigned32 | M | RO | Total Tx rate of Primary and Secondary channels |
| 6 | mocaMeshLinkType | INTEGER | O | RO | Indicates the type of link which exists from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified by 'mocaMeshTableRxNodeIndex'. The link types are: Primary and Bonded. |
| 7 | mocaMeshPower | OCTET_STRING | O | RO | Per channel list of Transmit or Receive power levels in dBm. If the MoCA Node identified by 'mocaMeshTableTxNodeIndex' is equal to 'mocaIfNodeID', then indicates the unicast transmit power in dBm from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified by 'mocaMeshTableRxNodeIndex', else indicates the unicast receive power in dBm from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' at the MoCA Node identified by 'mocaMeshTableRxNodeIndex'. (see 4.4) |
| 8 | mocaMeshPowerReduction | OCTET_STRING | O | RO | Per channel list of The Transmit Power Control (TPC) back-off in dB. If the MoCA Node identified by 'mocaMeshTableTxNodeIndex' is equal to 'mocaIfNodeID', then indicates the TPC in dB utilized to back-off transmission to the MoCA Node identified by 'mocaMeshTableRxNodeIndex', otherwise indicates the TPC in dB that MoCA Node identified by 'mocaMeshTableTxNodeIndex' utilized to back-off its transmission. (see 4.5) |
| 9 | mocaMeshRxSNR | OCTET_STRING | O | RO | Per channel list of average receive Signal to Noise Ratio (SNR) in dB. If the MoCA Node identified by 'mocaMeshRxNodeIndex' is not equal to 'mocaIfNodeID' or the MoCA Node identified by 'mocaMeshTxNodeIndex' is equal to 'mocaIfNodeID', then this object is not present, otherwise indicates the average receive SNR across all the available subcarriers based on the EVM probe from the MoCA node identified by 'mocaMeshTxNodeIndex'. (see 4.5) |

3.3.3 Bridge Table

The MoCA standard requires MoCA Nodes to report the Ethernet MAC addresses that are reachable from its Ethernet Convergence Layer (ECL) interface. The standard requires at least 64 unicast addresses to be learned by the managed device, but does allow more to be supported. The Bridge Table in the managed MoCA Node provides the list of Ethernet MAC addresses for each other MoCA Node on the MoCA network. The table is not limited and is indexed by the Node ID and the Ethernet MAC entry. The MAC entries can be ordered in any fashion. The support for additional attributes such as aging information has not been included, plus unicast

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and multicast Ethernet MAC addresses are allowed. The managed device contains a local table of MAC addresses for itself that it provides to other MoCA Nodes on the network. The following table includes these MAC addresses as well for the observer to collect.

The support of this table is optional.

Table 13: mocaBridgeTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------|------------|-------|--------|--|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaBridgeNodeIndex | Unsigned32 | O | N-ACC | The Node ID is used as an index to order the MAC entries in the MoCA bridge table |
| 2 | mocaBridgeMacIndex | Integer32 | O | N-ACC | This index is used to order the MAC entries for each Node in the MoCA bridge table |
| 3 | mocaBridgeMacAddress | MacAddress | O | RO | MAC address |

3.3.4 Link Modulation Table

This table provides the Sub-Carrier Modulation index for the link to and from the managed MoCA Node to the other MoCA Nodes in the MoCA network.

This table contains the Unicast transmit sub-carrier modulation between all pair of MoCA Nodes in the MoCA network. This table is indexed by 'ifIndex', 'mocaMeshTxNodeIndex', 'mocaMeshRxNodeIndex', 'mocaMeshScIndex' and 'mocaMeshChannelIndex'. Since 'mocaMeshScMod' is the sub-carrier modulation from 'mocaMeshTxNodeIndex' to 'mocaMeshRxNodeIndex', this table does not contain any entries with 'mocaMeshTxNodeIndex' equals 'mocaMeshRxNodeIndex'. In addition, a MoCA network can have less than 16 MoCA Nodes, hence some values of 'mocaMeshTxNodeIndex' and 'mocaMeshRxNodeIndex' in the range of 0 to 15 may not exist. Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software.

The support of this table is optional.

Table 14: mocaMeshScModTable

| ID | Object Name | Type | Req't | Access | Comments |
|----|----------------------|------------|-------|--------|---|
| | ifIndex | Integer32 | O | N-ACC | From IF-MIB |
| 1 | mocaMeshTxNodeIndex | Unsigned32 | O | N-ACC | Required for mesh table. The Node ID of the transmit MoCA Node is used as one of the index to order the mesh PHY rate table. |
| 2 | mocaMeshRxNodeIndex | Unsigned32 | O | N-ACC | Required for mesh table. The Node ID of the receive MoCA Node is used as one of the index to order the mesh sub-carrier modulation. |
| 3 | mocaMeshScIndex | Unsigned32 | O | N-ACC | Required for mesh table. The sub-carrier index of the receive MoCA Node is used as one of the index to order the mesh sub-carrier modulation. |
| 4 | mocaMeshChannelIndex | INTEGER | O | N-ACC | Indicate the Primary or Secondary channel for MoCA 2.0 Node used with 'mocaMeshScModNper' and 'mocaMeshScModVlper'. For MoCA 1 Node, the same as the Primary channel used with 'mocaMeshScMod'. |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|--------------------|------------|-------|--------|--|
| 5 | mocaMeshScMod | Unsigned32 | O | RO | Indicate the sub-carrier modulation from the MoCANode identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex'. |
| 6 | mocaMeshScModNper | Unsigned32 | O | RO | Indicate the sub-carrier modulation from the MoCA Node identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex' and 'mocaMeshChannelIndex' for the unicast NPER transmission PHY profile |
| 7 | mocaMeshScModVlper | Unsigned32 | O | RO | Indicate the sub-carrier modulation from the MoCA Node identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex' and 'mocaMeshChannelIndex' for the unicast VLPER transmission PHY profile |

3.4 Notification Events

The asynchronous notification events or traps defined in the following table may be sent from the MoCA device to the network management system (NMS). A trap can contain any number of variable bindings (VarBind) or MIB object-value pairs. The traps defined in this document must include the interface index (ifIndex) as one of the VarBind, or as part of the instance of the VarBind.

The support of this table is optional.

Table 15: mocaNotifications

| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------|------------|-------|--------|---|
| 1 | mocaTrapBelowPhyThreshold | Unsigned32 | O | RO | Contain 1 VarBind for 'mocaMeshTxRateNper' or 'mocaMeshTxRateVlper' |
| 2 | mocaTrapAbovePhyThreshold | Unsigned32 | O | RO | Contain 1 VarBind for ifIndex |
| 3 | mocaTrapIfStatusChange | Unsigned32 | O | RO | Contain 1 Varbind for 'mocaIfStatus' |
| 4 | mocaTrapIfNumNodesChange | Unsigned32 | O | RO | Contain 1 VarBind for 'mocaIfNumNodes' |
| 5 | mocaTrapMrRstSuccess | Unsigned32 | O | RO | An MR Entry Node reports that the network got reset successfully. |
| 6 | mocaTrapMrRstFail | Unsigned32 | O | RO | An MR Entry Node reports that the network reset did not complete successfully. |
| 7 | mocaTrapMrNetworkSuccess | Unsigned32 | O | RO | An MR Entry Node reports that the network got reformed successfully following the MR transaction. |
| 8 | mocaTrapMrNetworkFail | Unsigned32 | O | RO | An MR Entry Node reports that the MR transaction failed . |
| 9 | mocaTrapPowerStateBestRec | Unsigned32 | O | RO | When the MoCA Node is in Power State M1 or M2, reports that the MoCA Node has received a Broadcast data MSDU, which is available at the data interface. |

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| ID | Object Name | Type | Req't | Access | Comments |
|----|---------------------------|------------|-------|--------|--|
| 10 | mocaTrapPowerStateM0Nc | Unsigned32 | O | RO | When a MoCA Node is in Power State M1 reports that it is going to move to Power State M0 due to the NC's instruction. |
| 11 | mocaTrapPowerStateNc1x | Unsigned32 | O | RO | When the MoCA Node is in Power State M1/M2/M3, reports that MoCA 1Node is the NC. |
| 12 | mocaTrapPowerStateNetVer | Unsigned32 | O | RO | When the MoCA Node is in Power State M2 or M3, reports that the network MoCA version is changed. |
| 13 | mocaTrapPowerStateResp | Unsigned32 | O | RO | Carries the response of the MoCA Node to a request (through POWER_STATE _{REQ}) to transition into a desired Power State. |
| 14 | mocaTrapPowerStateUcstPen | Unsigned32 | O | RO | When the MoCA Node is in Power State M2, reports that a Unicast data MSDU destined to the MoCA Node is pending. |
| 15 | mocaTrapPowerStateTrnsReq | Unsigned32 | O | RO | When a MoCA Node is in Power State M1 or M2, requests to transition to Power State M0 |
| 16 | mocaTrapPowerStateWupUr | Unsigned32 | O | RO | When the MoCA Node is in Power State M2, reports that a wakeup request from NC due to unspecified reasons. |
| 17 | mocaTrapLmoStatus | Unsigned32 | O | RO | Reports when the MoCA Node is starting LMO. |
| 18 | mocaLinkFailure | Unsigned32 | O | RO | Indicate a link failure. If the failure was an Admission or LMO failure, 'mocaIfLinkState' indicates when the link was dropped within the sequence." |

| | | | | | | | | | | |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 70 | -25 dB | -25 dB | -24 dB | -24 dB | -24 dB | -25 dB | -25 dB | -24 dB | -25 dB | -24 dB |
| 80 | -25 dB | -26 dB | -24 dB | -24 dB | -25 dB | -24 dB |
| 90 | -25 dB | -24 dB | -24 dB | -24 dB | -25 dB | -23 dB | -24 dB | -23 dB | -24 dB | -24 dB |
| 100 | -24 dB | -24 dB | -24 dB | -24 dB | -23 dB | -24 dB | -25 dB | -24 dB | -24 dB | -24 dB |
| 110 | -24 dB | -33 dB | -33 dB | -38 dB | -33 dB |
| 120 | -40 dB | -34 dB | -41 dB | -37 dB | -42 dB | -42 dB | -44 dB | -36 dB | -45 dB | -39 dB |
| 130 | -46 dB | -49 dB | -50 dB | -50 dB | -51 dB | -51 dB | -50 dB | -51 dB | -52 dB | -52 dB |
| 140 | -52 dB | -53 dB | -53 dB | -53 dB | -52 dB | -53 dB |
| 150 | -53 dB | -52 dB | -53 dB | -53 dB | -53 dB | -54 dB | -53 dB | -54 dB | -53 dB | -54 dB |
| 160 | -55 dB | -53 dB | -53 dB | -54 dB | -54 dB | -55 dB | -55 dB | -55 dB | -54 dB | -54 dB |
| 170 | -54 dB | -54 dB | -54 dB | -55 dB | -55 dB | -55 dB | -55 dB | -54 dB | -55 dB | -55 dB |
| 180 | -55 dB | -55 dB | -55 dB | -54 dB | -56 dB | -55 dB | -56 dB | -55 dB | -55 dB | -55 dB |
| 190 | -55 dB | -55 dB | -55 dB | -55 dB | -56 dB | -54 dB | -56 dB | -55 dB | -56 dB | -55 dB |
| 200 | -55 dB | -56 dB | -54 dB | -55 dB | -55 dB | -56 dB | -56 dB | -55 dB | -55 dB | -56 dB |
| 210 | -56 dB | -54 dB | -56 dB | -55 dB | -55 dB |
| 220 | -56 dB | -55 dB | -55 dB | -56 dB | -55 dB | -55 dB | -55 dB | -55 dB | -56 dB | -55 dB |
| 230 | -55 dB | -55 dB | -55 dB | -56 dB | -56 dB | -56 dB | -55 dB | -55 dB | -55 dB | -55 dB |
| 240 | -55 dB | -55 dB | -55 dB | -56 dB | -55 dB | -55 dB | -55 dB | -56 dB | -57 dB | -56 dB |
| 250 | -55 dB | -57 dB | -56 dB | -55 dB | -56 dB |
| 260 | -56 dB | -57 dB | -56 dB | -55 dB | -55 dB | -55 dB | -56 dB | -56 dB | -55 dB | -56 dB |
| 270 | -56 dB | -55 dB | -56 dB | -55 dB | -55 dB | -56 dB | -55 dB | -56 dB | -55 dB | -55 dB |
| 280 | -56 dB | -55 dB | -54 dB | -55 dB | -55 dB | -56 dB | -56 dB | -55 dB | -56 dB | -55 dB |
| 290 | -56 dB | -54 dB | -56 dB | -56 dB | -55 dB | -56 dB | -56 dB | -55 dB | -55 dB | -54 dB |
| 300 | -56 dB | -55 dB | -55 dB | -54 dB | -54 dB | -54 dB | -55 dB | -55 dB | -55 dB | -55 dB |
| 310 | -54 dB | -55 dB | -53 dB | -55 dB | -55 dB |
| 320 | -55 dB | -54 dB | -55 dB |
| 330 | -53 dB | -54 dB | -53 dB | -54 dB | -54 dB | -54 dB |
| 340 | -53 dB |

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| | | | | | | | | | | |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 350 | -53 dB | -52 dB | -52 dB | -52 dB | -51 dB |
| 360 | -52 dB | -52 dB | -52 dB | -52 dB | -51 dB | -51 dB | -51 dB | -50 dB | -51 dB | -51 dB |
| 370 | -51 dB | -50 dB | -49 dB | -48 dB |
| 380 | -48 dB | -47 dB | -46 dB | -39 dB | -44 dB | -36 dB | -43 dB | -43 dB | -41 dB | -37 dB |
| 390 | -41 dB | -34 dB | -38 dB | -33 dB | -37 dB | -33 dB | -32 dB | -24 dB | -24 dB | -24 dB |
| 400 | -23 dB | -24 dB | -23 dB | -23 dB | -24 dB | -23 dB | -24 dB | -24 dB | -23 dB | -24 dB |
| 410 | -23 dB | -23 dB | -23 dB | -24 dB | -23 dB | -24 dB | -22 dB | -23 dB | -24 dB | -23 dB |
| 420 | -23 dB | -24 dB | -23 dB | -23 dB | -24 dB | -23 dB | -23 dB | -23 dB | -23 dB | -24 dB |
| 430 | -23 dB | -23 dB | -24 dB | -23 dB | -24 dB | -24 dB | -24 dB | -23 dB | -24 dB | -23 dB |
| 440 | -25 dB | -24 dB | -24 dB | -24 dB | -23 dB | -23 dB | -24 dB | -23 dB | -24 dB | -23 dB |
| 450 | -24 dB | -23 dB | -23 dB | -23 dB |
| 460 | -23 dB | -24 dB | -24 dB | -23 dB | -23 dB | -24 dB | -25 dB | -24 dB | -23 dB | -24 dB |
| 470 | -23 dB | -24 dB | -23 dB | -24 dB | -24 dB | -24 dB | -25 dB | -24 dB | -23 dB | -24 dB |
| 480 | -24 dB | -24 dB | -24 dB | -23 dB | -25 dB | -23 dB | -25 dB | -24 dB | -24 dB | -23 dB |
| 490 | -24 dB | -23 dB | -25 dB | -24 dB | -25 dB | -25 dB |
| 500 | -24 dB | -23 dB | -23 dB | -25 dB | -27 dB | -32 dB |
| 510 | -38 dB | -38 dB | | | | | | | | |

4.2 Software Version

- Object: mocaIfSoftwareVersion
- Data Type: mocaSoftwareVersion

Encoding for the Data Type mocaSoftwareVersion:
 OCTET STRING of MoCA_VendorID and Information field

| | | |
|----------------|----------|--|
| MoCA Vendor ID | 2 bytes | MoCA Vendor ID (allocated by the MoCA Alliance) (see [10]) |
| Information | 80 bytes | Up to 80 characters. |

4.3 Link State

- Object: mocaIfLinkState
- Data Type: mocaLinkState

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Encoding for the Data Type mocaLinkState:

Link State, OCTET STRING of ACF_TYPE and ADD_ACF_TYPE.

| | | |
|--------------|--------|---|
| LINK_STATE | 1 Byte | LINK_STATE_II from the transmitted / received MAP at the time of the Link Failure. |
| ACF_TYPE | 1 Byte | ACF_TYPE from the transmitted/received Beacon at the time of the Link Failure. |
| ADD_ACF_TYPE | 1 Byte | ADDITIONAL_ACF_TYPE from the transmitted / received Beacon at the time of the Link Failure. |

4.4 Node Power

- Object: mocaMeshPower
- Data Type: mocaPower

Encoding for the Data Type mocaPower:

OCTET STRING of per channel list of Tx or Rx Power levels

| | | |
|----------------|--------|--|
| NUM_VALUES | 1 Byte | Function of mocaMeshLinkType: Primary – 1 Bonded – 2 |
| { | | |
| POWER | 1 Byte | Transmit or Receive Power Level in dBm depending on direction of Link. |
| } [NUM_VALUES] | | |

4.5 Node Power Reduction

- Object: mocaMeshPowerReduction
- Data Type: mocaPowerReduction

Encoding for the Data Type mocaPowerReduction:

OCTET STRING of per channel list of Transmit Power Control levels

| | | |
|----------------|--------|--|
| NUM_VALUES | 1 Byte | Function of mocaMeshLinkType: Primary – 1 Bonded – 2 |
| { | | |
| TPC | 1 Byte | Transmit Power Control in dB used for this Link |
| } [NUM_VALUES] | | |

4.6 Rx SNR

- Object: mocaMeshRxSNR
- Data Type: mocaRxSNR

Encoding for the Data Type mocaSNR:

OCTET STRING of per channel list of SNR

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| | | |
|----------------|--------|---|
| NUM_VALUES | 1 Byte | Function of mocaMeshLinkType: Primary – 1 Bonded – 2 |
| { | | |
| RX_SNR | 1 Byte | Average Receive SNR in dB across all the available subcarriers from last EVM probe. |
| } [NUM_VALUES] | | |

5 Appendix B

5.1 Algorithm to calculate MoCA Password Hash

MoCA password Hash is a 16-bit value determined by performing SHA-1 on a 0-extended password concatenated with a SALT value. First, if the password is less than 17 digits, the password bytes are prepended with ASCII '0' in order to create a 17 digit value. Second, the 17-digit result is concatenated with the static SALT string 'MocaPasswordHash' to create the SHA input. The SHA-1 algorithm is performed on the SHA input to create a 160-bit output. The 16-LSBs of the SHA-1 output are extracted as the password hash.

```
uint16 CalcMoCAHash (void)
{
    uint8 passWrd[MOCA_MAX_PASSWORD_LENGTH];
    uint8 shaInput[MOCA_MAX_PASSWORD_LENGTH+CONCAT_STRING_LENGTH];
    uint16 PWD_SHA1[10];

    memset(passWrd, 0x30, sizeof(passWrd));
                                                // pre-fill with 0x30
    GetPassword ((void *)passWrd, MOCA_MAX_PASSWORD_LENGTH);
                                                // stuff password into passWrd array
                                                // (preserving 0x30 in MS bytes
                                                // if password is smaller than 17 digits)
    memcpy( shaInput, passWrd, MOCA_MAX_PASSWORD_LENGTH );
                                                // copy password into SHA input
    memcpy( &shaInput[MOCA_MAX_PASSWORD_LENGTH], "MoCAMibPasswordHash",
        CONCAT_STRING_LENGTH ); // concatenate string
    PWD_SHA1 = SHA1( shaInput ); // pointer to 160-bit SHA-1 output
    return ( PWD_SHA1[0] ); // return lower 16 bits
}
```

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5.2 Example

Table 16: MoCA Password Hash Example

| Parameter | Result |
|------------------------|---|
| Password | "677266114935272" |
| Zero Extended Password | "00677266114935272" |
| SHA-1 Input | "00677266114935272MocaPasswordHash" |
| SHA-1 Result | "431387da75609ef742d25e2bf0cdef810af26a4" |
| mocalfPasswordHash | "26a4" |

6 MoCA 2.0-MIB Definition

```
--
-- *****
-- MOCA 2.0-MIB.my: MoCA 2.0 Device MIB.
--
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--
-- These MIBs must be used with the companion memo
-- "MoCA Enterprise Structure of Management Information",
-- MOCA-SMI-V1.3-20171122, November 22, 2017.
-- *****
--
```

```
MOCA 2.0-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    MODULE-IDENTITY,
    OBJECT-TYPE,
    NOTIFICATION-TYPE,
    Integer32,
    Unsigned32,
    Counter32,
    Counter64
    FROM SNMPv2-SMI
    MODULE-COMPLIANCE,
    OBJECT-GROUP,
    NOTIFICATION-GROUP
    FROM SNMPv2-CONF
    TEXTUAL-CONVENTION,
    DisplayString,
    MacAddress,
    RowStatus,
    TruthValue
    FROM SNMPv2-TC
    ifIndex
    FROM IF-MIB
    mocaMIBs
    FROM MOCA-SMI;
```

```
moca20 MODULE-IDENTITY
```

```
    LAST-UPDATED "201805070000Z" -- May 07, 2018 00:00 AM
    ORGANIZATION "Multimedia over Coax Alliance (MoCA) Technical
        Working Group."
    CONTACT-INFO "www.mocalliance.org"
```

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Postal: Multimedia over Coax Alliance
 2400 Camino Ramon
 Suite 375
 San Ramon, CA 94583
 USA

Tel: +1 925 275-6606

Email: help@mocalliance.org"

DESCRIPTION

"Initial version of this MIB module. It defines the objects used to remote configure, monitor, and diagnose the Multimedia over Coax Alliance (MoCA) network. The following Specifications are referenced in this MIB definition,
 1. MoCA MAC/PHY Specification v2.0, November 21, 2013.
 2. MoCA MAC/PHY Specification v1.1, June 27, 2011.
 3. MoCA MAC/PHY Specification v1.0, July 1, 2009.
 The key changes from the MoCA 1.1 MIB in this revision are,
 a. Updated the mocaConfigTable and associated objects.
 b. Added the mocaRlapmTable and associated objects.
 c. Added the mocaSapmTable and associated objects.
 d. Added the mocaAcaTable and associated objects.
 e. Added the mocaMrTable and associated objects.
 f. Updated the mocaStatusTable and associated objects.
 g. Updated the mocaStatsTable and associated objects.
 h. Updated the mocaFlowStatsTable and associated objects.
 i. Updated the mocaLinkStatsTable and associated objects.
 j. Updated the mocaNodeTable and associated objects.
 k. Added mocaMeshTxRateNper and mocaMeshTxRateVlper objects in mocaMeshTable.
 l. Updated mocaMeshScModTable and associated objects.
 m. Updated mocaNotifications and associated objects."

REVISION "201805070000Z"

DESCRIPTION "Original"

::= { mocaMIBs 4 }

--

-- Textual Conventions

--

MocaVersion ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents the MoCA Specification version.
 mocal0 represents MoCA Specification 1.0.
 mocal1 represents MoCA Specification 1.1.
 mocal20 represents MoCA Specification 2.0."

SYNTAX INTEGER {
 mocaldot0 (10),
 mocaldot1 (11),
 mocaldot1ProTem (12),

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```
moca2dot0 (20)}
```

```
MocaNodeID ::= TEXTUAL-CONVENTION
```

```
  DISPLAY-HINT "d"
```

```
  STATUS current
```

```
  DESCRIPTION
```

```
    "Represents a MoCA Node ID. MoCA 1.0 network can have a maximum
    of 8 MoCA Nodes, so Node ID is 0 to 7. MoCA 1.1 or 2.0 network
    can have a maximum of 16 MoCA Nodes, so Node ID is 0 to 15. MoCA 2.0
    network can have a maximum of 16 MoCA Nodes, so Node ID is 0 to 15."
```

```
  SYNTAX Unsigned32 (0..15)
```

```
MocaNodeMask ::= TEXTUAL-CONVENTION
```

```
  STATUS current
```

```
  DESCRIPTION
```

```
    "Bit mask which identifies the Node IDs of a set of MoCA Nodes"
```

```
  REFERENCE "MoCA MAC/PHY Specification 2.0, section 6.2.1."
```

```
  SYNTAX BITS {
```

```
    mocaNodeID0 (0),
```

```
    mocaNodeID1 (1),
```

```
    mocaNodeID2 (2),
```

```
    mocaNodeID3 (3),
```

```
    mocaNodeID4 (4),
```

```
    mocaNodeID5 (5),
```

```
    mocaNodeID6 (6),
```

```
    mocaNodeID7 (7),
```

```
    mocaNodeID8 (8),
```

```
    mocaNodeID9 (9),
```

```
    mocaNodeID10 (10),
```

```
    mocaNodeID11 (11),
```

```
    mocaNodeID12 (12),
```

```
    mocaNodeID13 (13),
```

```
    mocaNodeID14 (14),
```

```
    mocaNodeID15 (15)
```

```
  }
```

```
MocaBand ::= TEXTUAL-CONVENTION
```

```
  STATUS current
```

```
  DESCRIPTION
```

```
    "Represents the MoCA Bands and Subbands the device is configured to
    operate
```

```
    in or that the device supports."
```

```
  REFERENCE "MoCA MAC/PHY Specification 2.0, section 15."
```

```
  SYNTAX BITS {
```

```
    noBand (0),
```

```
    mocaBandDL (1),
```

```
    mocaBandDH (2),
```

```
    mocaBandExD (3),
```

```
    mocaBandE (4),
```

```
    mocaBandFSAT (5),
```

```
    mocaBandFCBL (6),
```

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```

        mocareserved7 (7)
    }

```

MocaChannel ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents the RF center frequency of a MoCA channel in MHz.

```

EE1 center frequency at 450 MHz
EE2 center frequency at 475 MHz
E1 center frequency at 500 MHz
E2 center frequency at 525 MHz
E3 center frequency at 550 MHz
E4 center frequency at 575 MHz
E5 center frequency at 600 MHz
EE3 center frequency at 625 MHz
EE4 center frequency at 650 MHz
F1 center frequency at 675 MHz
F2 center frequency at 700 MHz
F3 center frequency at 725 MHz
F4 center frequency at 750 MHz
F5 center frequency at 775 MHz
F6 center frequency at 800 MHz
F7 center frequency at 825 MHz
F8 center frequency at 850 MHz
D1 center frequency at 1150 MHz
D1a center frequency at 1175 MHz
D2 center frequency at 1200 MHz
D2a center frequency at 1225 MHz
D3 center frequency at 1250 MHz
D3a center frequency at 1275 MHz
D4 center frequency at 1300 MHz
D4a center frequency at 1325 MHz
D5 center frequency at 1350 MHz
D5a center frequency at 1375 MHz
D6 center frequency at 1400 MHz
D6a center frequency at 1425 MHz
D7 center frequency at 1450 MHz
D7a center frequency at 1475 MHz
D8 center frequency at 1500 MHz
D8a center frequency at 1525 MHz
D9 center frequency at 1550 MHz
D9a center frequency at 1575 MHz
D10 center frequency at 1600 MHz
D10a center frequency at 1625 MHz"

```

REFERENCE "MoCA MAC/PHY Specification 2.0, section 15."

```

SYNTAX INTEGER {
    unknown(0),
    chanEE1 (450),
    chanEE2 (475),
    chanE1 (500),

```

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```

chanE2 (525),
chanE3 (550),
chanE4 (575),
chanE5 (600),
chanEE3 (625),
chanEE4 (650),
chanF1 (675),
chanF2 (700),
chanF3 (725),
chanF4 (750),
chanF5 (775),
chanF6 (800),
chanF7 (825),
chanF8 (850),
chanD1 (1150),
chanD1a (1175),
chanD2 (1200),
chanD2a (1225),
chanD3 (1250),
chanD3a (1275),
chanD4 (1300),
chanD4a (1325),
chanD5 (1350),
chanD5a (1375),
chanD6 (1400),
chanD6a (1425),
chanD7 (1450),
chanD7a (1475),
chanD8 (1500),
chanD8a (1525),
chanD9 (1550),
chanD9a (1575),
chanD10 (1600),
chanD10a(1625)}

```

MocaChannelMask ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents one or more RF center frequency of MoCA channels using a bitmask. Bit 63 is the most significant bit, and bit 0 is the least significant bit. Not all bits are valid MoCA channels.

```

bit 0 center frequency at 400 MHz
bit 1 center frequency at 425 MHz
bit 2 center frequency at 450 MHz
bit 3 center frequency at 475 MHz
bit 4 center frequency at 500 MHz
bit 5 center frequency at 525 MHz
bit 6 center frequency at 550 MHz

```

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bit 7 center frequency at 575 MHz
bit 8 center frequency at 600 MHz
bit 9 center frequency at 625 MHz
bit 10 center frequency at 650 MHz
bit 11 center frequency at 675 MHz
bit 12 center frequency at 700 MHz
bit 13 center frequency at 725 MHz
bit 14 center frequency at 750 MHz
bit 15 center frequency at 775 MHz
bit 16 center frequency at 800 MHz
bit 17 center frequency at 825 MHz
bit 18 center frequency at 850 MHz
bit 19 center frequency at 875 MHz
bit 20 center frequency at 900 MHz
bit 21 center frequency at 925 MHz
bit 22 center frequency at 950 MHz
bit 23 center frequency at 975 MHz
bit 24 center frequency at 1000 MHz
bit 25 center frequency at 1025 MHz
bit 26 center frequency at 1050 MHz
bit 27 center frequency at 1075 MHz
bit 28 center frequency at 1100 MHz
bit 29 center frequency at 1125 MHz
bit 30 center frequency at 1150 MHz
bit 31 center frequency at 1175 MHz
bit 32 center frequency at 1200 MHz
bit 33 center frequency at 1225 MHz
bit 34 center frequency at 1250 MHz
bit 35 center frequency at 1275 MHz
bit 36 center frequency at 1300 MHz
bit 37 center frequency at 1325 MHz
bit 38 center frequency at 1350 MHz
bit 39 center frequency at 1375 MHz
bit 40 center frequency at 1400 MHz
bit 41 center frequency at 1425 MHz
bit 42 center frequency at 1450 MHz
bit 43 center frequency at 1475 MHz
bit 44 center frequency at 1500 MHz
bit 45 center frequency at 1525 MHz
bit 46 center frequency at 1550 MHz
bit 47 center frequency at 1575 MHz
bit 48 center frequency at 1600 MHz
bit 49 center frequency at 1625 MHz
bit 50 center frequency at 1650 MHz
bit 51 center frequency at 1675 MHz
bit 52 center frequency at 1700 MHz
bit 53 center frequency at 1725 MHz
bit 54 center frequency at 1750 MHz
bit 55 center frequency at 1775 MHz
bit 56 center frequency at 1800 MHz

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```

bit 57 center frequency at 1825 MHz
bit 58 center frequency at 1850 MHz
bit 59 center frequency at 1875 MHz
bit 60 center frequency at 1900 MHz
bit 61 center frequency at 1925 MHz
bit 62 center frequency at 1950 MHz
bit 63 center frequency at 1975 MHz"
SYNTAX BITS {
freq400MHz (0),
freq425MHz (1),
freq450MHz (2),
freq475MHz (3),
freq500MHz (4),
freq525MHz (5),
freq550MHz (6),
freq575MHz (7),
freq600MHz (8),
freq625MHz (9),
freq650MHz (10),
freq675MHz (11),
freq700MHz (12),
freq725MHz (13),
freq750MHz (14),
freq775MHz (15),
freq800MHz (16),
freq825MHz (17),
freq850MHz (18),
freq875MHz (19),
freq900MHz (20),
freq925MHz (21),
freq950MHz (22),
freq975MHz (23),
freq1000MHz (24),
freq1025MHz (25),
freq1050MHz (26),
freq1075MHz (27),
freq1100MHz (28),
freq1125MHz (29),
freq1150MHz (30),
freq1175MHz (31),
freq1200MHz (32),
freq1225MHz (33),
freq1250MHz (34),
freq1275MHz (35),
freq1300MHz (36),
freq1325MHz (37),
freq1350MHz (38),
freq1375MHz (39),
freq1400MHz (40),
freq1425MHz (41),

```

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```

freq1450MHz (42),
freq1475MHz (43),
freq1500MHz (44),
freq1525MHz (45),
freq1550MHz (46),
freq1575MHz (47),
freq1600MHz (48),
freq1625MHz (49),
freq1650MHz (50),
freq1675MHz (51),
freq1700MHz (52),
freq1725MHz (53),
freq1750MHz (54),
freq1775MHz (55),
freq1800MHz (56),
freq1825MHz (57),
freq1850MHz (58),
freq1875MHz (59),
freq1900MHz (60),
freq1925MHz (61),
freq1950MHz (62),
freq1975MHz (63)
}

```

```

MocaPhyRate ::= TEXTUAL-CONVENTION
  DISPLAY-HINT "d"
  STATUS current
  DESCRIPTION
    "Represents the transmit PHY rate in Mbps."
  SYNTAX Unsigned32 (0..2048)

```

```

MocaMacRate ::= TEXTUAL-CONVENTION
  DISPLAY-HINT "d"
  STATUS current
  DESCRIPTION
    "Represents the MAC throughput in Kbps."
  SYNTAX Unsigned32

```

```

MocaDB ::= TEXTUAL-CONVENTION
  DISPLAY-HINT "d"
  STATUS current
  DESCRIPTION
    "Represents one decibel or 1 dB."
  SYNTAX Unsigned32

```

```

MocaDBm ::= TEXTUAL-CONVENTION
  DISPLAY-HINT "d"
  STATUS current
  DESCRIPTION
    "Represents a measure of power in mW expressed in decibels, and

```

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calculated as follows: $\text{power} = 10 \cdot \log_{10}(\text{Vrms}^2 / R \cdot 1000)$
 where Vrms is the root-mean-square Voltage of the received
 waveform and R is 75 ohms."

SYNTAX Integer32

MocaScMod ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents the sub-carrier modulation"

REFERENCE "MoCA MAC/PHY Specification 2.0, section 14.3.6.3 "

SYNTAX INTEGER {
 unused (0),
 bsk (1),
 qpsk (2),
 qam8 (3),
 qam16 (4),
 qam32 (5),
 qam64 (6),
 qam128 (7),
 qam256 (8),
 qam512 (9),
 qam1024 (10)
 }

MocaPerMode ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents the packet error rate mode in use by the MoCA Node.
 The value used defines either NPER or VLPER"

REFERENCE "MoCA MAC/PHY Specification 2.0, Section 7.2.5, Table
 17.2."

SYNTAX INTEGER {
 nper (0),
 vlper(1) }

MocaPowerState ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Represents the Power State defined by the MoCA2.0 specification
 the different Power States are:

Power State M0: Active

Power State M1: Low Power Idle

Power State M2: Standby

Power State M3: Sleep"

REFERENCE "MoCA MAC/PHY Specification 2.0, section 12 "

SYNTAX INTEGER {
 m0Active (0),
 m1LowPowerIdle (1),

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```

        m2Standby      (2),
        m3Sleep        (3)
    }

```

```

MocaAcaStatus ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Represents the status of the last ACA (Alternate
         Channel Assessment) probe"
    SYNTAX INTEGER {
        success      (0),
        failBADCHANNEL (1),
        failNOEVMPROBE (2),
        fail          (3),
        inPROGRESS    (4)
    }

```

```

MocaFlowIngrClassRule ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Represents the MoCA 2.0 PQOS Ingress Classification Rule."
    SYNTAX INTEGER {
        ruleDAVLANTag4or5      (0),
        ruleDAonly              (4),
        ruleDAandDSCPnoVLAN    (5),
        ruleDAandVLANignoreDSCP (6),
        ruleDAandVLANorDSCP    (7)
    }

```

```

MocaChannelIndex ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "Represents the MoCA 2.0 primary or secondary channel."
    SYNTAX      INTEGER {
        primary      (1),
        secondary    (2)
    }

```

```

mocaNotifications OBJECT IDENTIFIER ::= { moca20 0 }
mocaObjects        OBJECT IDENTIFIER ::= { moca20 1 }
mocaConformance    OBJECT IDENTIFIER ::= { moca20 2 }

```

```

--
-- MoCA Objects
--

```

```

mocaIfConfigTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF MocaIfConfigEntry
    MAX-ACCESS  not-accessible

```

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STATUS current
 DESCRIPTION
 "MoCA interface configuration table. This table supports the configuration of RF frequency, transmit power, link privacy, and traps related parameters.

This table is indexed by ifIndex.

Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

::= { mocaObjects 1 }

mocaIfConfigEntry OBJECT-TYPE

SYNTAX MocaIfConfigEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA interface configuration table. Each device can have one or more MoCA interfaces. Each interface has a unique MAC address.

There is a one to one relationship between a MoCA interface and an interface defined in other IETF MIB. The same 'ifIndex' can be used to identify MoCA objects as well as other IETF MIB objects."

INDEX { ifIndex }

::= { mocaIfConfigTable 1 }

MocaIfConfigEntry ::= SEQUENCE {
 mocaIfEnable TruthValue,
 mocaIfChannelMask MocaChannelMask,
 mocaIfTpcEnable TruthValue,
 mocaIfTxPowerLimit MocaDB,
 mocaIfBeaconPowerBackoff MocaDB,
 mocaIfPowerControlTargetRate MocaPhyRate,
 mocaIfPrivacyEnable TruthValue,
 mocaIfPassword DisplayString,
 mocaIfPreferredNC TruthValue,
 mocaIfAccessEnable TruthValue,
 mocaIfPhyThreshold MocaPhyRate,
 mocaIfPhyThresholdEnable TruthValue,
 mocaIfStatusChangeEnable TruthValue,
 mocaIfNumNodesChangeEnable TruthValue,
 mocaIfTpcTargetRateNper MocaPhyRate,
 mocaIfBand MocaBand,
 mocaIfLofUpdateEnable TruthValue,
 mocaIfLof Unsigned32,
 mocaIfUpfRetransMode TruthValue,
 mocaIfPerMode MocaPerMode,

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```

mocaIfTurboModeEnable      TruthValue,
mocaIfPolicingEnable       TruthValue,
mocaIfTlpMin               Unsigned32,
mocaIfTlpMax               Unsigned32,
mocaIfRlapmEnable          TruthValue,
mocaIfRlapmProfileSelect   Unsigned32,
mocaIfSapmEnable           TruthValue,
mocaIfSapmProfileSelect    Unsigned32,
mocaIfPowerStateRequest    MocaPowerState,
mocaIfSeqNumMr             Unsigned32,
mocaIfPowerStateTrapEnable TruthValue,
mocaIfLmoTrapEnable        TruthValue
}

```

mocaIfEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Enable the MoCA interface if this value is 'true'. Disable the MoCA interface if this value is 'false'.

If this managed object is disabled, it may not be possible to enable this object via the SNMP protocol. The mechanism to re-enable this object is out of the scope of this MIB definition draft."

DEFVAL { true }

::= { mocaIfConfigEntry 1 }

mocaIfChannelMask OBJECT-TYPE

SYNTAX MocaChannelMask

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specify a list of RF center frequencies represented by a bitmask which this MoCA Node is allowed to form or join a MoCA network. If the new list of frequencies does not contain the frequency this MoCA Node is tuned to, this MoCA Node must drop from the network.

If this managed object is changed, it may not be possible to change this object again via the SNMP protocol. The mechanism to change this object again is out of the scope of this MIB definition draft."

REFERENCE "MoCA MAC/PHY Specification 2.0, section 7.1.4."

```

DEFVAL { { freq1150MHz,
           freq1200MHz,
           freq1250MHz,
           freq1300MHz,
           freq1350MHz,

```

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```

        freq1400MHz,
        freq1450MHz,
        freq1500MHz,
        freq1550MHz,
        freq1600MHz } }
 ::= { mocaIfConfigEntry 2 }

mocaIfTpcEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Enable automatic power control if this value is 'true'. Use a fixed
        transmit power level if this value is 'false'."
    DEFVAL      { true }
    ::= { mocaIfConfigEntry 3 }

mocaIfTxPowerLimit OBJECT-TYPE
    SYNTAX      MocaDB
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specify the transmit power BACKOFF in dB. The transmit power
        SHALL only be changed when the device mocaIfStatus object is
        not linkUp, which means the interface is not part of a MoCA
        network. If changed, the parameter may not take effect until
        the MoCA interface is restarted."
    DEFVAL      { 0 }
    ::= { mocaIfConfigEntry 4 }

mocaIfBeaconPowerBackoff OBJECT-TYPE
    SYNTAX      MocaDB
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specify the beacon transmit power BACKOFF in dB. The beacon
        transmit power SHALL only be changed when the device
        mocaIfStatus object is not linkUp, which means the
        interface is not part of a MoCA network. If changed, the
        parameter may not take effect until the MoCA interface is
        restarted."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, Sections 7.1.1 and 17,
        Table 17-1."
    DEFVAL      { 0 }
    ::= { mocaIfConfigEntry 5 }

mocaIfPowerControlTargetRate OBJECT-TYPE
    SYNTAX      MocaPhyRate
    MAX-ACCESS  read-write
    STATUS      current

```

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DESCRIPTION

"Specify the target transmit PHY rate in Mbps for the power control algorithm. This change should be used in the next maintenance cycle in the MoCA network."

REFERENCE "MoCA MAC/PHY Specification 2.0, section 16.3.10."

DEFVAL { 630 }

::= { mocaIfConfigEntry 6 }

mocaIfPrivacyEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Enable link privacy if this value is 'true', and use the mocaIfPassword to generate the MAC management key and initial privacy management key. Disable link privacy and do not perform link encryption if this value is 'false'.

This MoCA Node will drop from the network if this value changes.

If this managed object is disabled, it may not be possible to enable this object via the SNMP protocol. The mechanism to re-enable this object is out of the scope of this MIB definition draft."

REFERENCE "MoCA MAC/PHY Specification 2.0, section 14.3.2."

DEFVAL { false }

::= { mocaIfConfigEntry 7 }

mocaIfPassword OBJECT-TYPE

SYNTAX DisplayString (SIZE (0..17))

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specify the MoCA password using an ASCII numeric string.

This value must be 12 to 17 decimal digits long. Access is only allowed when used with SNMPv3 protocol, but not allowed when used with SNMPv1 or SNMPv2c protocol.

If this value changes, this MoCA Node will drop from the network if mocaIfPrivacyEnable is 'true'. If this managed object is changed, it may not be possible to change this object again via the SNMP protocol. The mechanism to change this object again is out of the scope of this MIB definition."

REFERENCE "MoCA MAC/PHY Specification 1.1, section 6.3."

DEFVAL { "" }

::= { mocaIfConfigEntry 8 }

mocaIfPreferredNC OBJECT-TYPE

SYNTAX TruthValue

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```

MAX-ACCESS read-write
STATUS current
DESCRIPTION
  "Set this MoCA Node as preferred NC if this value is 'true'. Do not
  set this MoCA Node as preferred NC if this value is 'false'.
  This value can be ignored by this MoCA interface when operating
  in a MoCA 1.0 network."
DEFVAL { false }
 ::= { mocaIfConfigEntry 9 }

mocaIfAccessEnable OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-write
STATUS current
DESCRIPTION
  "Enable MAC address access control on the MoCA interface if this
  value is 'true'. Disable MAC address access control on the MoCA
  interface if this value is 'false'.

  Access control applies to subsequent MoCA Node admission."
DEFVAL { false }
 ::= { mocaIfConfigEntry 10 }

mocaIfPhyThreshold OBJECT-TYPE
SYNTAX MocaPhyRate
MAX-ACCESS read-write
STATUS current
DESCRIPTION
  "Specify a minimum PHY rate.

  If transmit PHY rate between all pairs of MoCA Nodes are greater
  than or equal to this value, and subsequently the transmit PHY
  rate of one pair of MoCA Nodes is less than this value, send
  mocaTrapBelowPhyThreshold if mocaIfPhyThresholdEnable is
  'true'.

  If transmit PHY rate between one or more pairs of MoCA Nodes are
  less than this value, and subsequently the transmit PHY rate
  between all pairs of MoCA Nodes are greater than or equal to
  this value, send mocaTrapAbovePhyThreshold if
mocaIfPhyThresholdEnable
  is 'true'."
REFERENCE "MoCA MAC/PHY Specification 2.0, Section 3, see Unusable
Link definition."
DEFVAL { 123 }
 ::= { mocaIfConfigEntry 11 }

mocaIfPhyThresholdEnable OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-write

```

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```

STATUS    current
DESCRIPTION
    "If transmit PHY rate between all pairs of MoCA Nodes are
    greater than or equal to mocaIfPhyThreshold, and subsequently the
    transmit PHY rate of one pair of MoCA Node is less than
    mocaIfPhyThreshold, send mocaTrapBelowPhyThreshold if this
    value is 'true', do not send mocaTrapBelowPhyThreshold if this
    value is 'false'.

    If transmit PHY rate between one or more pairs of MoCA Nodes are
    less than mocaIfPhyThreshold, and subsequently the transmit
    PHY rate between all pairs of MoCA Nodes are greater than or equal
to
    mocaIfPhyThreshold, send mocaTrapAbovePhyThreshold if this
    value is 'true', do not send mocaTrapAbovePhyThreshold if this
    value is 'false'.

    Only one MoCA Node in the MoCA network should set
    'mocaIfPhyThresholdEnable' to 'true'."
DEFVAL    { false }
 ::= { mocaIfConfigEntry 12 }

```

```

mocaIfStatusChangeEnable OBJECT-TYPE
SYNTAX    TruthValue
MAX-ACCESS read-write
STATUS    current
DESCRIPTION
    "If 'mocaIfStatusChangeEnable' is 'true' and 'mocaIfStatus'
    changes, then the trap 'mocaTrapIfStatusChange' is sent."
DEFVAL    { false }
 ::= { mocaIfConfigEntry 13 }

```

```

mocaIfNumNodesChangeEnable OBJECT-TYPE
SYNTAX    TruthValue
MAX-ACCESS read-write
STATUS    current
DESCRIPTION
    "If 'mocaIfNumNodesChangeEnable' is 'true' and 'mocaIfNumNodes'
    changes, then the trap 'mocaTrapIfNumNodesChange' is sent.

    Only one MoCA Node in the MoCA network should set
'mocaIfNumNodesChangeEnable'
    to 'true'."
DEFVAL    { false }
 ::= { mocaIfConfigEntry 14 }

```

```

mocaIfTpcTargetRateNper OBJECT-TYPE
SYNTAX    MocaPhyRate
MAX-ACCESS read-write
STATUS    current

```

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DESCRIPTION

"The Target PHY Rate of the receiving MoCA 2.0 Node in order to optimize the long-term PHY rate and transmit power level between the transmitting and receiving MoCA Nodes when TPC is enabled and PERMODE = NPER"

```
::= { mocaIfConfigEntry 15 }
```

mocaIfBand OBJECT-TYPE

SYNTAX MocaBand

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Configure the band or sub-band for the MoCA Node to operate in."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 15."

```
::= { mocaIfConfigEntry 16 }
```

mocaIfLofUpdateEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Controls whether the LOF is updated when joining a network"

REFERENCE "MoCA MAC/PHY Specification v2.0, section 8.1.1, and Table 17-1."

```
::= { mocaIfConfigEntry 17 }
```

mocaIfLof OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Indicate the MoCA channel in MHz this interface is tuned to when it was last in the 'linkUp' state.

If this interface is never part of a MoCA network, report the factory default Last Operational Frequency (LOF)."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 8.1.1, and Table 17-1."

```
::= { mocaIfConfigEntry 18 }
```

mocaIfUpfRetransMode OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Controls whether retransmission is enabled for Unicast Prioritized Flows and whether for all the Unicast Prioritized Flows or only a list of Unicast Prioritized Flows."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.6.2 and Table 17-1."

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```
::= { mocaIfConfigEntry 19 }
```

mocaIfPerMode OBJECT-TYPE

```
SYNTAX      MocaPerMode
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

"Controls which transmission PER mode the MoCA Node uses for MPDUs not belonging to PQoS Flows. By default PER mode is set to VLPER in band E, while it is set to NPER for all other bands."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 8.2 and Table 17-2."

```
::= { mocaIfConfigEntry 20 }
```

mocaIfTurboModeEnable OBJECT-TYPE

```
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

"Controls whether the MoCA Node operates in point-to-point Turbo Mode or not.

When set to 'true' the turbo mode is enabled; when set to 'false' the turbo mode is disabled."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 10 and Table 17-1."

```
DEFVAL      { false }
::= { mocaIfConfigEntry 21 }
```

mocaIfPolicingEnable OBJECT-TYPE

```
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

"Controls whether policing of PQoS Flows is enabled or disabled when 'false' the policy is disabled when 'true' the policy is enabled."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 8.8 and Table 17-1."

```
DEFVAL      { false }
::= { mocaIfConfigEntry 22 }
```

mocaIfTlpMin OBJECT-TYPE

```
SYNTAX      Unsigned32
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

"The minimum time (in milliseconds) a MoCA Node is required to stay in the Listening Phase of the Network Search."

```
REFERENCE "MoCA MAC/PHY Specification v2.0, Table 17.2."
DEFVAL      { 0 }
```

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```
 ::= { mocaIfConfigEntry 23 }

mocaIfTlpMax OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The maximum time (in milliseconds) a MoCA Node is required to stay in
        the Listening Phase of the Network Search. Default value of
        'mocaIfTlpMax' depends from the band configuration as follows:
        20 seconds for band E
        35 seconds for band F
        95 seconds for Band ExD
        10 seconds for Band D-Low
        55 seconds for Band D-High"
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 8.1"
    ::= { mocaIfConfigEntry 24 }

mocaIfRlapmEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Controls whether the RLAPM (Receive Level Added PHY Margin)
        function is enabled and the MoCA Node needs to apply it, or disabled
        and the MoCA Node needs to ignore it. RLAPM function is enabled
        when set to 'true'. RLAPM function is disabled when set to 'false'."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 7.16 and Table 17-
    1."
    ::= { mocaIfConfigEntry 25 }

mocaIfRlapmProfileSelect OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Controls which RLAPM (Receive Level Added PHY Margin)profile is
        active."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 7.16.2 and Table
    17-1."
    ::= { mocaIfConfigEntry 26 }

mocaIfSapmEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Controls whether the SAPM (Subcarrier Added PHY Margin)function is
        enabled and the MoCA Node needs to apply it, or disabled and the
```

```

    MoCA Node needs to ignore it
    When set to 'true' the SAPM function is enabled.
    When set to 'false' the SAPM function is disabled."
    REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.16.1 and Table
17-1."
    ::= { mocaIfConfigEntry 27 }

mocaIfSapmProfileSelect OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Controls which SAPM (Subcarrier Added PHY Margin)profile is
        active."
    REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.16.1 and Table
17-1."
    ::= { mocaIfConfigEntry 28 }

mocaIfPowerStateRequest OBJECT-TYPE
    SYNTAX      MocaPowerState
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Carries a request to the MoCA Node to transition into a specified
        Power State"
    REFERENCE "MoCA MAC/PHY Specification v2.0, section 12."
    DEFVAL     { m0Active }
    ::= { mocaIfConfigEntry 29 }

mocaIfSeqNumMr OBJECT-TYPE
    SYNTAX      Unsigned32 (0..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Sequence Number used by the MR Transaction Integer value between
        0 and 65535; default value is 0."
    REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.15 and Table 17-
1."
    DEFVAL     { 0 }
    ::= { mocaIfConfigEntry 30 }

mocaIfPowerStateTrapEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Used for Power State message trap
        - When set to 'true' it allows the MoCA Node to report a trap
          on each Power State transition
        - When set to 'false' no trap report is generated when the MoCA Node

```

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```

    Power State changes
    - Default value is 'false'."
REFERENCE "MoCA MAC/PHY Specification v2.0, section 12."
DEFVAL { false }
 ::= { mocaIfConfigEntry 31 }

```

mocaIfLmoTrapEnable OBJECT-TYPE

```

SYNTAX TruthValue
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "Used for LMO message trap
    - When set to 'true' it allows the MoCA Node to report a trap on
      transitioning to LMO
    - When set to 'false' no trap report the MoCA Node is
      nottransitioning to LMO
    - Default value is 'false'"
REFERENCE "MoCA MAC/PHY Specification v2.0, section 12."
DEFVAL { false }
 ::= { mocaIfConfigEntry 32 }

```

mocaIfAccessTable OBJECT-TYPE

```

SYNTAX SEQUENCE OF MocaIfAccessEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
    "MoCA interface MAC access control table. This table contains a
    list of MAC addresses that are allowed to connect to the MoCA
    network. In addition to being in this access control list, a
    MoCA Node must have the proper 'mocaIfChannelMask',
    'mocaIfPrivacyEnable', and 'mocaIfPassword' before the MoCA Node can
    form or join a MoCA network.

    This table is indexed by 'ifIndex' and 'mocaIfAccessIndex'."
 ::= { mocaObjects 2 }

```

mocaIfAccessEntry OBJECT-TYPE

```

SYNTAX MocaIfAccessEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
    "An entry in the MoCA interface MAC access control table."
INDEX { ifIndex,
        mocaIfAccessIndex }
 ::= { mocaIfAccessTable 1 }

```

MocaIfAccessEntry ::= SEQUENCE {

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```

    mocaIfAccessIndex      Unsigned32,
    mocaIfAccessMacAddress MacAddress,
    mocaIfAccessStatus     RowStatus
}

mocaIfAccessIndex OBJECT-TYPE
    SYNTAX      Unsigned32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This index is used to reference the MoCA interface MAC access
        control table."
    ::= { mocaIfAccessEntry 1 }

mocaIfAccessMacAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "If 'mocaIfAccessEnable' is set to 'true', MoCA Node with this
        MAC address is allowed to join the MoCA network. It is not
        guaranteed that the MoCA Node with this MAC address can form or
        join a network."
    ::= { mocaIfAccessEntry 2 }

mocaIfAccessStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Control and reflect the status of a row in this table.
        Creation of a row can either be done with 'CreateAndWait' or
        'CreateAndGo'."
    ::= { mocaIfAccessEntry 3 }

mocaIfRlapmTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF MocaIfRlapmEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Sequence of Rlapm entry"
    ::= { mocaObjects 3 }

mocaIfRlapmEntry OBJECT-TYPE
    SYNTAX      MocaIfRlapmEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Rlapm entry table"
    INDEX      { ifIndex,

```

```

        mocaIfRlapmProfile,
        mocaIfRlapmFrequency
    }
 ::= { mocaIfRlapmTable 1 }

MocaIfRlapmEntry ::= SEQUENCE {
    mocaIfRlapmProfile      Unsigned32,
    mocaIfRlapmFrequency   Unsigned32,
    mocaIfRlapmGarpl       Unsigned32,
    mocaIfRlapmPhyMargin   Unsigned32,
    mocaIfRlapmStatus      TruthValue
}
mocaIfRlapmProfile OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Profile index used for the RLAPM (Receive Level Added PHY Margin)
table."
    ::= { mocaIfRlapmEntry 1 }

mocaIfRlapmFrequency OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Frequency (band) index used for the RLAPM (Receive Level Added PHY
Margin) table."
    ::= { mocaIfRlapmEntry 2 }

mocaIfRlapmGarpl OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Global Aggregated Receive Power Level (GARPL). GARPLi = -Ni dBm
where 'Ni' = Unsigned32 in the range of 0 to 65 and 'i' spans 61
values."
    ::= { mocaIfRlapmEntry 3 }

mocaIfRlapmPhyMargin OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Receive Level Added Phy Margin(RLAPM). RLAPMi = 0.5*ni dB where
'ni' = Unsigned32 in the range of 0 to 60 and 'i' spans 61 values."
    ::= { mocaIfRlapmEntry 4 }

```

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mocaIfRlapmStatus OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"'True' if all of the following are 'true': 'mocaIfRlapmEnable' is enabled, 'mocaIfRlapmProfileSelect' is equal to 'mocaIfRlapmProfile', and 'mocaIfRlapmFrequency' corresponds to either the primary or secondary frequency of operation."

::= { mocaIfRlapmEntry 5 }

mocaIfSapmTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaIfSapmEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Sequence of Sapm entry"

::= { mocaObjects 4 }

mocaIfSapmEntry OBJECT-TYPE

SYNTAX MocaIfSapmEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Sapm table entry"

INDEX {
 ifIndex,
 mocaIfSapmProfile,
 mocaIfSapmFrequency,
 mocaIfSapmSubcarrier
 }

::= { mocaIfSapmTable 1 }

MocaIfSapmEntry ::= SEQUENCE {

 mocaIfSapmProfile Unsigned32,

 mocaIfSapmFrequency Unsigned32,

 mocaIfSapmSubcarrier Unsigned32,

 mocaIfSapmPhyMargin Unsigned32,

 mocaIfSapmARPLTHLD Unsigned32,

 mocaIfSapmStatus TruthValue

}

mocaIfSapmProfile OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Profile index used for the SAPM (Subcarrier Added PHY Margin)table."

::= { mocaIfSapmEntry 1 }

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```

mocaIfSapmFrequency OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Frequency (band) index used for the SAPM (Subcarrier Added PHY
        Margin)table."
    ::= { mocaIfSapmEntry 2 }

mocaIfSapmSubcarrier OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "subcarrier index used for the SAPM (Subcarrier Added PHY
        Margin)table."
    ::= { mocaIfSapmEntry 3 }

mocaIfSapmPhyMargin OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "A SAPM (Subcarrier Added PHY Margin)value (in dB) for each OFDM
        subcarrier in the range 0 dB to 60.0 dB in 0.5 dB steps.  For each
        available subcarrier 'ni', a value of 0.5*ni dB where 'ni' =
        Unsigned32 in the range of 0 to 120."
    ::= { mocaIfSapmEntry 4 }

mocaIfSapmARPLTHLD OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "An Aggregate Received Power Level Threshold (ARPL_THLD) from 0 to
        65 (representing dBm) in steps of 1 dB."
    ::= { mocaIfSapmEntry 5 }

mocaIfSapmStatus OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "'True' if all of the following are 'true': 'mocaIfSapmEnable' is
        enabled, 'mocaIfSapmProfileSelect' is equal to 'mocaIfSapmProfile',
        and 'mocaIfSapmFrequency' corresponds to either the primary or
        secondary frequency of operation."
    ::= { mocaIfSapmEntry 6 }

```

```

mocaIfAcaTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF MocaIfAcaEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The Interface mocaIfAcaTable,
         is used by the managed MoCA Node to initiate On Demand LMO.
         The managed MoCA Node is identified by the interface index
         (ifIndex)."
```

```

 ::= { mocaObjects 5 }
```

```

mocaIfAcaEntry OBJECT-TYPE
    SYNTAX      MocaIfAcaEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry in the MoCA ACA (Alternate Channel Assessment)Table."
```

```

INDEX          {
                ifIndex
            }
 ::= { mocaIfAcaTable 1 }
```

```

MocaIfAcaEntry ::= SEQUENCE {
    mocaIfAcaNodeID      MocaNodeID,
    mocaIfAcaType        INTEGER,
    mocaIfAcaChannel     Unsigned32,
    mocaIfAcaReportNodeMask MocaNodeMask,
    mocaIfAcaInitiate    TruthValue,
    mocaIfAcaStatus      MocaAcaStatus,
    mocaIfAcaTotalRxPower MocaDBm,
    mocaIfAcaPowerProfile OCTET STRING,
    mocaIfAcaStatusTrapCompleted TruthValue
}
```

```

mocaIfAcaNodeID OBJECT-TYPE
    SYNTAX      MocaNodeID
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The Source Node id."
 ::= { mocaIfAcaEntry 1 }
```

```

mocaIfAcaType OBJECT-TYPE
    SYNTAX      INTEGER {
        quiet (0),
        evm (1)
    }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
```

"The ACA (Alternate Channel Assessment)type is either 'EVM' or 'QUIET' "
 ::= { mocaIfAcaEntry 2 }

mocaIfAcaChannel OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The channel number under assessment, starting from 0 in increments of 25 MHz"

::= { mocaIfAcaEntry 3 }

mocaIfAcaReportNodeMask OBJECT-TYPE

SYNTAX MocaNodeMask

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specifies the MoCA Nodes that are requested to be part of the channel assessment:

Setting bits corresponding to Node IDs of these MoCA Nodes to 1 (LSB corresponds to Node ID 0x0)"

::= { mocaIfAcaEntry 4 }

mocaIfAcaInitiate OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"An ACA (Alternate Channel Assessment)request is initiated when this parameter is written"

::= { mocaIfAcaEntry 5 }

mocaIfAcaStatus OBJECT-TYPE

SYNTAX MocaAcaStatus

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Status of the previous ACA (Alternate Channel Assessment) probe"

::= { mocaIfAcaEntry 6 }

mocaIfAcaTotalRxPower OBJECT-TYPE

SYNTAX MocaDBm

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"dBm (-128 to +127 dBm)"

::= { mocaIfAcaEntry 7 }

mocaIfAcaPowerProfile OBJECT-TYPE

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```

SYNTAX      OCTET STRING
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Binary string array with 1 byte for each subcarrier.
    See Appendix A for the encoding of this object."
 ::= { mocaIfAcaEntry 8 }

```

mocaIfAcaStatusTrapCompleted OBJECT-TYPE

```

SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicated when Power Profile is ready."
 ::= { mocaIfAcaEntry 9 }

```

mocaIfMrTable OBJECT-TYPE

```

SYNTAX      SEQUENCE OF MocaIfMrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "mocaIfMrTable is used by the managed MoCA Node to initiate MoCA
    Reset Transaction."
 ::= { mocaObjects 6 }

```

mocaIfMrEntry OBJECT-TYPE

```

SYNTAX      MocaIfMrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "An entry in the MoCA Reset table."
INDEX       {
            ifIndex
            }
 ::= { mocaIfMrTable 1 }

```

```

MocaIfMrEntry ::= SEQUENCE {
    mocaIfMrNodeMask      MocaNodeMask,
    mocaIfMrStartTime     Unsigned32,
    mocaIfMrStatusTrapEnable TruthValue,
    mocaIfMrNetworkTrapEnable TruthValue
}

```

mocaIfMrNodeMask OBJECT-TYPE

```

SYNTAX      MocaNodeMask
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the MoCA Nodes that must respond to the MR transaction
    L2ME request sent by the NC except for the MR Entry Node."

```

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```
::= { mocaIfMrEntry 1 }
```

```
mocaIfMrStartTime OBJECT-TYPE
```

```
SYNTAX Unsigned32
```

```
MAX-ACCESS read-write
```

```
STATUS current
```

```
DESCRIPTION
```

"Time in seconds after this parameter is written that a MoCA Node must initiate a MoCA Reset (MR). This parameter does not count down the time till the MoCA Reset."

```
REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.15."
```

```
::= { mocaIfMrEntry 2 }
```

```
mocaIfMrStatusTrapEnable OBJECT-TYPE
```

```
SYNTAX TruthValue
```

```
MAX-ACCESS read-write
```

```
STATUS current
```

```
DESCRIPTION
```

"Used to enable mocaTrapMrRstSuccess and mocaTrapMrRstFail that the network reset was completed successfully or failed for MR transaction status trap."

```
::= { mocaIfMrEntry 3 }
```

```
mocaIfMrNetworkTrapEnable OBJECT-TYPE
```

```
SYNTAX TruthValue
```

```
MAX-ACCESS read-write
```

```
STATUS current
```

```
DESCRIPTION
```

"Used to enable mocaTrapMrNetworkSuccess and mocaTrapMrNetworkFail that the network was reformed or not reformed successfully following the MR transaction."

```
::= { mocaIfMrEntry 4 }
```

```
mocaIfStatusTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF MocaIfStatusEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

"MoCA interface status information table. This table provides features supported and operation parameters of the MoCA interface.

This table is indexed by ifIndex.

Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

```
::= { mocaObjects 7 }
```

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```

mocaIfStatusEntry OBJECT-TYPE
    SYNTAX      MocaIfStatusEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry in the MoCA interface status information table."
    INDEX       { ifIndex }
    ::= { mocaIfStatusTable 1 }

```

```

MocaIfStatusEntry ::= SEQUENCE {
    mocaIfStatus          INTEGER,
    mocaIfLinkUpTime     Unsigned32,
    mocaIfSoftwareVersion OCTET STRING,
    mocaIfMocaVersion    MocaVersion,
    mocaIfNetworkVersion MocaVersion,
    mocaIfMacAddress     MacAddress,
    mocaIfNodeID        MocaNodeID,
    mocaIfName           DisplayString,
    mocaIfNumNodes      Unsigned32,
    mocaIfNC             MocaNodeID,
    mocaIfBackupNC      MocaNodeID,
    mocaIfRFChannel     MocaChannel,
    mocaIfTabooChannelMask MocaChannelMask,
    mocaIfNodeTabooChannelMask MocaChannelMask,
    mocaIfSupportedBands MocaBand,
    mocaIfTxGcdPowerReduction MocaDB,
    mocaIfPduNumber     Unsigned32,
    mocaIfMaxIngressNodeThroughput MocaMacRate,
    mocaIfMaxEgressNodeThroughput MocaMacRate,
    mocaIfTxGcdRate     MocaPhyRate,
    mocaIfPasswordHash  DisplayString,
    mocaIfChannelSupport MocaChannelMask,
    mocaIfAggregationSize Unsigned32,
    mocaIfAeNumber      Unsigned32,
    mocaIfSupportedIngressPqosFlows Unsigned32,
    mocaIfSupportedEgressPqosFlows Unsigned32,
    mocaIfPowerStateCap MocaPowerState,
    mocaIfAvbSupport    TruthValue,
    mocaIfResetCount   Counter32,
    mocaIfLinkDownCount Counter32,
    mocaIfLmoNodeID    MocaNodeID,
    mocaIfNetworkState  INTEGER,
    mocaIfPrimaryChannelOffset Integer32,
    mocaIfSecondaryChannelOffset Integer32,
    mocaIfResetReason  DisplayString,
    mocaIfNcVersion    INTEGER,
    mocaIfLinkState    OCTET STRING
}

```

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mocaIfStatus OBJECT-TYPE

```
SYNTAX    INTEGER {
    disabled (1),
    noLink   (2),
    linkUp   (3) }
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the current status of the MoCA interface.

'disabled' indicates interface is disabled. It will not be possible to read the 'disabled' status of the MoCA interface if this managed MoCA Node does not have another local port (e.g. Ethernet) where SNMP objects can be accessed.

'noLink' indicates interface is enabled but not part of a network.

'linkUp' indicates interface is enabled and in a network."

```
::= { mocaIfStatusEntry 1 }
```

mocaIfLinkUpTime OBJECT-TYPE

```
SYNTAX    Unsigned32
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the total number of seconds that this interface has been a part of a MoCA network.

This may be used with 'sysUpTime' to determine the link availability in the MoCA interface. Note that 'sysUpTime' is in 10 milliseconds and 'mocaIfLinkUpTime' is in seconds."

```
::= { mocaIfStatusEntry 2 }
```

mocaIfSoftwareVersion OBJECT-TYPE

```
SYNTAX    OCTET STRING (SIZE (2..82))
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the software version of the MoCA device and other Vendor Specific information. This should be the same as the product software version in the MoCA certificate.

```
struct mocaSoftwareVersion {
    short  VendorId;           // 2 octets (MoCA Vendor ID)
    char   Information[80];    // 0-80 bytes of Vendor Specific Information
};"
```

```
::= { mocaIfStatusEntry 3 }
```

mocaIfMocaVersion OBJECT-TYPE

```
SYNTAX    MocaVersion
```

MAX-ACCESS read-only

STATUS current

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DESCRIPTION

"Indicate the MoCA version supported by this MoCA interface reported in the NODE_PROTOCOL_SUPPORT field of the Admission Request."

::= { mocaIfStatusEntry 4 }

mocaIfNetworkVersion OBJECT-TYPE

SYNTAX MocaVersion

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the MoCA version supported in this MoCA network as reported in the MOCA_VERSION field of the Beacon. If this interface is not part of a MoCA network, report 'mocaIfMocaVersion'.

This value uses the MOCA_VERSION obtained from the Beacon Frame which can be 0x10, 0x11, or 0x20 which respectively represent a MoCA 1.0, MoCA 1.1, or MoCA 2.0 network version. However, a network version reported by a MOCA_VERSION of 0x11 can include MoCA Nodes which are MoCA 1.1 Pro Tem Nodes which requires further distinguishing from a MoCA 1.1 network or mocaldot1. A MOCA_VERSION of 0x11 requires determining if a MoCA 1.1 Pro Tem Node is included in the network and subsequently reporting it as a MoCA 1.1 Pro Tem network or mocaldot1ProTem."

REFERENCE "MoCA MAC/PHY Specification v1.1, section 3.3.6."

::= { mocaIfStatusEntry 5 }

mocaIfMacAddress OBJECT-TYPE

SYNTAX MacAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the MAC address of this MoCA interface. This MAC address is encoded in the first six bytes of the Globally Unique Identifier (GUID).

For example, MoCA interface with MAC address aa:bb:cc:dd:ee:ff will have a GUID of aa:bb:cc:dd:ee:ff:00:00."

::= { mocaIfStatusEntry 6 }

mocaIfNodeID OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the Node ID of this MoCA interface. If this interface is not part of a MoCA network, report a value of '0'."

::= { mocaIfStatusEntry 7 }

mocaIfName OBJECT-TYPE

SYNTAX DisplayString (SIZE (0..64))

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```

MAX-ACCESS read-only
STATUS current
DESCRIPTION
  "Indicate the textual name of this MoCA interface. The value of
  this object should be the name of the interface as assigned by
  the MoCA device.

```

Since MoCA has an Ethernet convergence layer, this name may be 'ethN' where 'N' is the port number."

```
 ::= { mocaIfStatusEntry 8 }
```

```

mocaIfNumNodes OBJECT-TYPE
SYNTAX Unsigned32 (0..16)
MAX-ACCESS read-only
STATUS current
DESCRIPTION

```

"Indicate the numbers of 1's in the GCD_BITMASK field reported in Type I Probe Reports. This value corresponds to the number of MoCA Nodes that this MoCA Node communicates to in the MoCA network.

This value may be smaller than the number of MoCA Nodes reported by the NC Node."

```

REFERENCE "MoCA MAC/PHY Specification v1.1, section 3.6.3.2."
 ::= { mocaIfStatusEntry 9 }

```

```

mocaIfNC OBJECT-TYPE
SYNTAX MocaNodeID
MAX-ACCESS read-only
STATUS current
DESCRIPTION

```

"Indicate the Node ID of the Network Coordinator. If this interface is not part of a MoCA network, report a value of '0'."

```
 ::= { mocaIfStatusEntry 10 }
```

```

mocaIfBackupNC OBJECT-TYPE
SYNTAX MocaNodeID
MAX-ACCESS read-only
STATUS current
DESCRIPTION

```

"Indicate the Node ID of the Backup Network Coordinator. If this interface is not part of a MoCA network, report a value of '0'."

```
 ::= { mocaIfStatusEntry 11 }
```

```

mocaIfRFChannel OBJECT-TYPE
SYNTAX MocaChannel
MAX-ACCESS read-only
STATUS current
DESCRIPTION

```

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"Indicates the MoCA channel this interface is tuned to when part of a MoCA network. When not part of a MoCA network this value may not reflect the actual tuned channel. If 'mocaIfEnable' is 'false', report a value of 'unknown'."

```
::= { mocaIfStatusEntry 12 }
```

mocaIfTabooChannelMask OBJECT-TYPE

SYNTAX MocaChannelMask

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the list of taboo channels in this MoCA network represented as a bitmask.

This value is derived from TABOO_MASK_START and TABOO_CHANNEL_MASK in the beacon, but has a different data representation. E.g. If taboo channels consists of 1300, 1350 and 1400 MHz, TABOO_MASK_START is 52, TABOO_CHANNEL_MASK is 'A800000'h, and 'mocaIfTabooChannelMask' is '015000000000'h.

Note that in 'mocaIfTabooChannelMask', the lowest represented frequency of 400 MHz is represented in bit 0, and increasing bit position represents increasingly higher frequency. While in TABOO_CHANNEL_MASK, the taboo channel with the lowest frequency is represented in bit 31, and decreasing bit position represents increasingly higher frequency.

If this interface is not sending or receiving beacon, or there is no taboo channel in this MoCA network, report a value of '0'."

REFERENCE "MoCA MAC/PHY Specification v1.1, section 3.3.4."

```
::= { mocaIfStatusEntry 13 }
```

mocaIfNodeTabooChannelMask OBJECT-TYPE

SYNTAX MocaChannelMask

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the list of taboo channels for this MoCA Node as reported in the TABOO_MASK_START and TABOO_CHANNEL_MASK fields in this MoCA Node's Admission Request frame."

REFERENCE "MoCA MAC/PHY Specification v1.1, section 3.6.1.1."

```
::= { mocaIfStatusEntry 14 }
```

mocaIfSupportedBands OBJECT-TYPE

SYNTAX MocaBand

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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"Lists all the supported bands and sub-bands by this device. MoCA reserve the assignment of the first 8 bits positions (left to right) as follows:

```
Bit 0: No Band
Bit 1: Band DL
Bit 2: Band DH
Bit 3: Band ExD
Bit 4: Band E
Bit 5: Band FSAT
Bit 6: Band FCBL
Bit 7 position is reserved"
 ::= { mocaIfStatusEntry 15 }
```

mocaIfTxGcdPowerReduction OBJECT-TYPE

SYNTAX MocaDB

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The Transmit Power Control back-off used for broadcast transmissions from this MoCA Node. 'mocaIfTxGcdPowerReduction' is identical to the TPC back-off utilized for transmission and determined from the TPC backoff parameters TPC_BACKOFF_MAJOR and TPC_BACKOFF_MINOR as follows:

$$\text{mocaIfTxGcdPowerReduction} = \text{TPC_BACKOFF_MAJOR} * 3 + \text{TPC_BACKOFF_MINOR}$$

```
::= { mocaIfStatusEntry 16 }
```

mocaIfPduNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Represents the maximum number of Ethernet packets aggregated in a MoCA frame that can be received by this MoCA interface."

```
::= { mocaIfStatusEntry 17 }
```

mocaIfMaxIngressNodeThroughput OBJECT-TYPE

SYNTAX MocaMacRate

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the maximum throughput available on this MoCA interface in Kbps for admission of flows if this MoCA Node is an Ingress Node.

This value may be obtained from the REM_NODE_CAPACITY field in the Response L2ME Frame. For example, when the MoCA Node is trying to Create an extremely large flow, resulting in a failed

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```
    flow creation."
REFERENCE  "MoCA MAC/PHY Specification v1.1, section 3.17.2.2.2."
 ::= { mocaIfStatusEntry 18 }

mocaIfMaxEgressNodeThroughput OBJECT-TYPE
SYNTAX    MocaMacRate
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
    "Indicates the maximum throughput available on this MoCA interface
    in Kbps for admission of flows if this MoCA Node is an Egress Node.
    This value may be obtained from the REM_NODE_CAPACITY field in the
    Response L2ME Frame. For example, when the MoCA Node is trying to
    Create an extremely large flow, resulting in a failed
    flow creation."
REFERENCE  "MoCA MAC/PHY Specification v1.1, section 3.17.2.2.2."
 ::= { mocaIfStatusEntry 19 }

mocaIfTxGcdRate OBJECT-TYPE
SYNTAX    MocaPhyRate
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
    "Indicate the PHY rate in Mbps for the transmit traffic
    broadcast from this MoCA Node. In a MoCA 2.0 or mixed mode network,
    this object reports the PHY rate of the profile (NPER
    or VLPER) determined by the PERmode parameter."
 ::= { mocaIfStatusEntry 20 }

mocaIfPasswordHash OBJECT-TYPE
SYNTAX    DisplayString (SIZE (4))
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
    "Specify the MoCA password HASH using an ASCII
    String. The Hash is the two LSBs of a SHA1.
    This value must be 4 hexadecimal digits long. Access
    is optional when used with SNMP v1 of SNMP v2c protocol."
 ::= { mocaIfStatusEntry 21 }

mocaIfChannelSupport OBJECT-TYPE
SYNTAX    MocaChannelMask
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
    "Specify a list of RF center frequencies represented by a
    bitmask which this MoCA Node can support to form or join a MoCA
    network."
 ::= { mocaIfStatusEntry 22 }
```

```
mocaIfAggregationSize OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Specifies the maximum number of bytes in one aggregate which can
         be received by the MoCA Node."
    ::= { mocaIfStatusEntry 23 }

mocaIfAeNumber OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum number of allocation elements, excluding the TAUs and the
         Dummy DAUs, in one MAP the MoCA Node can process."
    ::= { mocaIfStatusEntry 24 }

mocaIfSupportedIngressPqosFlows OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum number of Ingress PQoS Flows supported by the MoCA Node."
    ::= { mocaIfStatusEntry 25 }

mocaIfSupportedEgressPqosFlows OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Maximum number of Egress PQoS Flows supported by the MoCA Node."
    ::= { mocaIfStatusEntry 26 }

mocaIfPowerStateCap OBJECT-TYPE
    SYNTAX      MocaPowerState
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Reports the Power State capabilities of the MoCA Node (e.g., which
         Power States it can transition to). This value can change over time
         (e.g. when a MoCA 1 Node joins the network)."
    ::= { mocaIfStatusEntry 27 }

mocaIfAvbSupport OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Specifies the support of the MoCA Node for the IEEE 802.1
```

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Audio Video Bridge specification. AVB is supported if this value
Is 'true'. AVB is not supported if this value is 'false'
 ::= { mocaIfStatusEntry 28 }

mocaIfResetCount OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of MoCA resets since the interface was enabled for this
MoCA Node."

::= { mocaIfStatusEntry 29 }

mocaIfLinkDownCount OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of times that this MoCA Node has lost link with the
MoCA network since the interface was enabled."

::= { mocaIfStatusEntry 30 }

mocaIfLmoNodeID OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Specifies the ID of the MoCA Node currently undergoing LMO."

::= { mocaIfStatusEntry 31 }

mocaIfNetworkState OBJECT-TYPE

SYNTAX INTEGER {
beginNodeAdmissionState (1),
newNodeTypeOneProbeTxState (2),
newNodeTypeOneProbeRxState (3),
newGcdDistributionState (4),
beginPhyProfileState (5),
steadyState (6),
typeThreeProbeState (7),
lmoTypeOneProbeState (8),
lmoNodeGcdDistributionState (9),
beginLmoPhyProfileState (10),
lmoGcdTypeOneProbeLinkState (11),
alternateChannelQuietLineState (12),
alternateChannelEvmProbeState (13),
unsolicitedProbeReportState (14),
beginUnsolicitedPhyProfileState (15),
rxDeterminedProbeState (16),
calibrationState (17)
}

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```
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Specifies the current MoCA network state of the MoCA Node."
REFERENCE "MoCA MAC/PHY Specification v2.0, section 8.3.1."
 ::= { mocaIfStatusEntry 32 }
```

```
mocaIfPrimaryChannelOffset OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Specifies the offset in MHz of the primary channel
    relative to the beacon channel. This value is typically
    -25, 0, or +25."
 ::= { mocaIfStatusEntry 33 }
```

```
mocaIfSecondaryChannelOffset OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Specifies the offset in MHz of the secondary channel
    relative to the beacon channel. This value is typically
    -125 or +125. A value of 0 indicates that there is no
    secondary channel."
 ::= { mocaIfStatusEntry 34 }
```

```
mocaIfResetReason OBJECT-TYPE
SYNTAX DisplayString (SIZE (0..80))
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Describes the reason for a MoCA link reset or failure to join
    a network."
 ::= { mocaIfStatusEntry 35 }
```

```
mocaIfNcVersion OBJECT-TYPE
SYNTAX MocaVersion
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Indicate the MoCA version of the NC."
 ::= { mocaIfStatusEntry 36 }
```

```
mocaIfLinkState OBJECT-TYPE
SYNTAX OCTET STRING
MAX-ACCESS read-only
STATUS current
DESCRIPTION
```

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"This object is meaningful only after a Link Failure to indicate the state of the network the at the time of the Link failure.

```
struct mocaLinkState {
    char LINK_STATE;      // LINK_STATE_II from the Tx/Rx MAP at the
                        // time of the Link Failure
    char ACF_TYPE;       // ACF_TYPE from the Tx/Rx BEACON
                        // at the time of the Link Failure
    char ADD_ACF_TYPE;   // ADDITIONAL_ACF_TYPE from the Tx/Rx
                        // BEACON at the time of the Link Failure
};"
 ::= { mocaIfStatusEntry 37 }
```

mocaIfStatsTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaIfStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"MoCA interface statistics table. This table provides statistics of the MoCA interface. This table is indexed by 'ifIndex'. Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

::= { mocaObjects 8 }

mocaIfStatsEntry OBJECT-TYPE

SYNTAX MocaIfStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA interface statistics table."

INDEX { ifIndex }

::= { mocaIfStatsTable 1 }

MocaIfStatsEntry ::= SEQUENCE {

```
mocaIfTxPackets      Counter64,
mocaIfTxDrops        Counter32,
mocaIfRxPackets      Counter64,
mocaIfRxCorrectedErrors Counter64,
mocaIfRxDrops        Counter32,
mocaIfEgressNodeNumFlows Unsigned32,
mocaIfIngressNodeNumFlows Unsigned32,
mocaIfTxBytes        Counter64,
mocaIfRxBytes        Counter64,
mocaIfTxUnicast      Counter64,
mocaIfRxUnicast      Counter64,
mocaIfTxMulticast    Counter64,
mocaIfRxMulticast    Counter64,
mocaIfTxBroadcast    Counter64,
mocaIfRxBroadcast    Counter64
```

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```
}

mocaIfTxPackets OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of Ethernet packets transmitted by this
        MoCA interface."
    ::= { mocaIfStatsEntry 1 }

mocaIfTxDrops OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of EPDUs received at the ECL and not
        transmitted by this MoCA interface, including drops due to required
        throttling as required by the specification (see REFERENCE)."
```

```
mocaIfEgressNodeNumFlows OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of PQoS flows in which this MoCA interface is
        an Egress Node for these PQoS flows."
    ::= { mocaIfStatsEntry 6 }

mocaIfIngressNodeNumFlows OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of PQoS flows in which this MoCA interface is
        an Ingress Node for these PQoS flows."
    ::= { mocaIfStatsEntry 7 }

mocaIfTxBytes OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of bytes transmitted by this MoCA interface in
        EPDUs."
    ::= { mocaIfStatsEntry 8 }

mocaIfRxBytes OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of bytes received by this MoCA interface in
        EPDUs."
    ::= { mocaIfStatsEntry 9 }

mocaIfTxUnicast OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the number of Unicast packets transmitted by this MoCA
        interface."
    ::= { mocaIfStatsEntry 10 }

mocaIfRxUnicast OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

```
"Indicate the number of Unicast Ethernet packets received by this
MoCA interface."
 ::= { mocaIfStatsEntry 11 }

mocaIfTxMulticast OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicate the number of Multicast Ethernet packets transmitted by
 this MoCA interface."
 ::= { mocaIfStatsEntry 12 }

mocaIfRxMulticast OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicate the number of Multicast Ethernet packets received by
 this MoCA interface."
 ::= { mocaIfStatsEntry 13 }

mocaIfTxBroadcast OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicate the number of Broadcast Ethernet packets transmitted by
 this MoCA interface."
 ::= { mocaIfStatsEntry 14 }

mocaIfRxBroadcast OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicate the number of Broadcast Ethernet packets received by
 this MoCA interface."
 ::= { mocaIfStatsEntry 15 }

mocaIfFlowStatsTable OBJECT-TYPE
SYNTAX SEQUENCE OF MocaIfFlowStatsEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
 "MoCA interface flow statistics table. This table provides
 statistics of ingress PQoS flow in the MoCA interface. This table is
 indexed by 'ifIndex' and 'mocaIfFlowIndex'. Entries in this table
 cannot be created or deleted by the network management system. All
```

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```

    entries are created or deleted by the device software."
 ::= { mocaObjects 9 }

```

```
mocaIfFlowStatsEntry OBJECT-TYPE
```

```
SYNTAX MocaIfFlowStatsEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```

    "An entry in the MoCA interface flow statistics table. These
    counters do not wrap in less than an hour with only 32 bits.
    Therefore 32 instead of 64 bits counters are used."

```

```

INDEX      {
            ifIndex,
            mocaIfFlowIndex
          }

```

```
 ::= { mocaIfFlowStatsTable 1 }
```

```
MocaIfFlowStatsEntry ::= SEQUENCE {
```

```

    mocaIfFlowIndex      Integer32,
    mocaIfFlowID         MacAddress,
    mocaIfPacketDA       MacAddress,
    mocaIfPeakDataRate   Unsigned32,
    mocaIfBurstSize      Unsigned32,
    mocaIfLeaseTime      Unsigned32,
    mocaIfFlowTag        Unsigned32,
    mocaIfLeaseTimeLeft  Unsigned32,
    mocaIfTxPacketsFlow  Unsigned32,
    mocaIfFlowStatsIngressGuid MacAddress,
    mocaIfFlowStatsEgressGuid MacAddress,
    mocaIfFlowStatsMaximumLatency Unsigned32,
    mocaIfFlowStatsShortTermAvgRatio Unsigned32,
    mocaIfFlowStatsMaxNumberRetry Unsigned32,
    mocaIfFlowStatsFlowPer Unsigned32,
    mocaIfFlowStatsIngressClassify INTEGER,
    mocaIfFlowStatsVlanTag Unsigned32,
    mocaIfFlowStatsDscpMoca Unsigned32,
    mocaIfFlowStatsDfid  Unsigned32

```

```
}
```

```
mocaIfFlowIndex OBJECT-TYPE
```

```
SYNTAX Integer32 (0..2147483647)
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```

    "This index is used to order the MoCA interface flow statistics
    table."

```

```
 ::= { mocaIfFlowStatsEntry 1 }
```

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mocaIfFlowID OBJECT-TYPE

SYNTAX MacAddress
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicate the flow ID of a PQoS flow. The flow ID is a valid multicast Ethernet MAC address that uniquely identifies a PQoS flow in a MoCA network.

The recommended rules for generation of the flow ID are specified in MoCA Spec v2.0."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 7.8."

::= { mocaIfFlowStatsEntry 2 }

mocaIfPacketDA OBJECT-TYPE

SYNTAX MacAddress
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicate the Destination Address (DA) of Ethernet packets of the PQoS Flow for which this MoCA Node is the Ingress Node as specified in Section 4.2.1 of MoCA specification v1.1 extensions."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.4."

::= { mocaIfFlowStatsEntry 3 }

mocaIfPeakDataRate OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicate the T_PEAK_DATA_RATE of the PQoS flow identified by 'mocaIfFlowID' in which this MoCA interface is an Ingress Node for the PQoS flow."

REFERENCE "MoCA MAC/PHY Specification 1.1, section 3.17.2.1."

::= { mocaIfFlowStatsEntry 4 }

mocaIfBurstSize OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicate the T_BURST_SIZE of the PQoS flow identified by 'mocaIfFlowID' in which this MoCA interface is an Ingress Node for this PQoS flow."

REFERENCE "MoCA MAC/PHY Specification 1.1, section 3.17.2.1."

::= { mocaIfFlowStatsEntry 5 }

mocaIfLeaseTime OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current

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DESCRIPTION

"Indicate the T_LEASE_TIME of the PQoS flow identified by 'mocaIfFlowID' in which this MoCA interface is an Ingress Node for this PQoS flow."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
 ::= { mocaIfFlowStatsEntry 6 }

mocaIfFlowTag OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the FLOW_TAG of the PQoS flow identified by 'mocaIfFlowID' in which this MoCA interface is an Ingress Node for this PQoS flow. The FLOW_TAG carries application specific content of this PQoS flow."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
 ::= { mocaIfFlowStatsEntry 7 }

mocaIfLeaseTimeLeft OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the LEASE_TIME_LEFT of the PQoS flow identified by 'mocaIfFlowID' in which this MoCA interface is an Ingress Node for this PQoS flow."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.4."
 ::= { mocaIfFlowStatsEntry 8 }

mocaIfTxPacketsFlow OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the total number of Ethernet packets transmitted by this MoCA interface on the PQoS flow identified by 'mocaIfFlowID'."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
 ::= { mocaIfFlowStatsEntry 9 }

mocaIfFlowStatsIngressGuid OBJECT-TYPE

SYNTAX MacAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the MAC address of the MoCA Node specified by the INGRESS_NODE_ID parameter of the flow."

REFERENCE "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."

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```
::= { mocaIfFlowStatsEntry 10 }
```

```
mocaIfFlowStatsEgressGuid OBJECT-TYPE
```

```
SYNTAX      MacAddress
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Indicates the MAC address of the MoCA Node specified by the  
    EGRESS_NODE_ID parameter of the flow."
```

```
REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
```

```
::= { mocaIfFlowStatsEntry 11 }
```

```
mocaIfFlowStatsMaximumLatency OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Indicates the MAXIMUM_LATENCY parameter of the flow in units  
    of milliseconds. A value of 0 indicates no value available."
```

```
REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
```

```
::= { mocaIfFlowStatsEntry 12 }
```

```
mocaIfFlowStatsShortTermAvgRatio OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Indicates the SHORT_TERM_AVERAGE_RATIO parameter of the flow."
```

```
REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
```

```
::= { mocaIfFlowStatsEntry 13 }
```

```
mocaIfFlowStatsMaxNumberRetry OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Indicates the maximum number of retransmission attempts for  
    each MSDU of the PQoS Flow. The range is 0-3."
```

```
REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
```

```
::= { mocaIfFlowStatsEntry 14 }
```

```
mocaIfFlowStatsFlowPer OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Indicates the FLOW_PER parameter of this flow, where a  
    value of 0 indicates NPER and 1 indicates VLPER."
```

```
REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
```

```
::= { mocaIfFlowStatsEntry 15 }
```

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```
mocaIfFlowStatsIngressClassify OBJECT-TYPE
    SYNTAX      MocaFlowIngrClassRule
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates the INGRESS_CLASSIFICATION_RULE parameter of the
         flow."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
    ::= { mocaIfFlowStatsEntry 16 }

mocaIfFlowStatsVlanTag OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates the VLAN_TAG parameter of the flow."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
    ::= { mocaIfFlowStatsEntry 17 }

mocaIfFlowStatsDscpMoca OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates the DSCP_MOCA parameter of the flow."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 6.3.13.1."
    ::= { mocaIfFlowStatsEntry 18 }

mocaIfFlowStatsDfid OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The destination flow ID of the flow assigned by the Ingress
         Node."
    REFERENCE   "MoCA MAC/PHY Specification v2.0, section 7.8.1.2."
    ::= { mocaIfFlowStatsEntry 19 }

mocaLinkStatsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF MocaLinkStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "MoCA Link Statistics table. This table contains an
         entry for every MoCA Node in the MoCA network, excluding this MoCA
         interface.

         This table is indexed by 'ifIndex' and 'mocaLinkNodeIndex'.
```

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Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

```
::= { mocaObjects 10 }
```

mocaLinkStatsEntry OBJECT-TYPE

SYNTAX MocaLinkStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA link statistics table."

```
INDEX {
    ifIndex,
    mocaLinkNodeIndex
}
```

```
::= { mocaLinkStatsTable 1 }
```

MocaLinkStatsEntry ::= SEQUENCE {

mocaLinkNodeIndex MocaNodeID,

mocaLinkTxPackets Counter64,

mocaLinkTxDrops Counter64,

mocaLinkEgressNodeNumFlows Unsigned32,

mocaLinkIngressNodeNumFlows Unsigned32,

mocaLinkStatsRetxFrames Counter32,

mocaLinkStatsRetxTimeouts Counter32

```
}
```

mocaLinkNodeIndex OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Node ID is used as an index to the MoCA Node Link Statistics table."

```
::= { mocaLinkStatsEntry 1 }
```

mocaLinkTxPackets OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the number of Unicast Ethernet packets transmitted by this MoCA interface to the associated MoCA Node."

```
::= { mocaLinkStatsEntry 2 }
```

mocaLinkTxDrops OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

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DESCRIPTION

"Indicate the number of Unicast EPDUs received at the ECL, destined to the associated MoCA Node, and not transmitted by this MoCA interface."

::= { mocaLinkStatsEntry 3 }

mocaLinkEgressNodeNumFlows OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the number of PqoS flows in which this MoCA interface is an Egress Node for these PqoS flows."

::= { mocaLinkStatsEntry 4 }

mocaLinkIngressNodeNumFlows OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the number of PqoS flows in which this MoCA interface is an Ingress Node for these PqoS flows."

::= { mocaLinkStatsEntry 5 }

mocaLinkStatsRetxFrames OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of Retransmission frames by the MoCA Node"

::= { mocaLinkStatsEntry 6 }

mocaLinkStatsRetxTimeouts OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of Retransmission timeouts by the MoCA Node"

::= { mocaLinkStatsEntry 7 }

mocaNodeEntry OBJECT-TYPE

SYNTAX MocaNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA Node Status information table."

INDEX {
 ifIndex,

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```

        mocaNodeIndex
    }
 ::= { mocaNodeTable 1 }

```

```

MocaNodeEntry ::= SEQUENCE {
    mocaNodeIndex          MocaNodeID,
    mocaNodeMocaVersion    MocaVersion,
    mocaNodeMacAddress     MacAddress,
    mocaNodeTxGcdRate      MocaPhyRate,
    mocaNodeRxGcdPower     MocaDBm,
    mocaNodeTxPowerReduction MocaDB,
    mocaNodeRxPower        MocaDBm,
    mocaNodePreferredNC    TruthValue,
    mocaNodeBondingCapable TruthValue,
    mocaNodePduNumber      Unsigned32,
    mocaNodeRxPackets      Counter64,
    mocaNodeRxCorrected    Counter64,
    mocaNodeRxDrops        Counter32,
    mocaNodeSNR            MocaDB,
    mocaNodeSupportedIngressPqosFlows Unsigned32,
    mocaNodeSupportedEgressPqosFlows Unsigned32,
    mocaNodeAggregationSize Unsigned32,
    mocaNodeAeNumber       Unsigned32,
    mocaNodePowerState     MocaPowerState,
    mocaNodePowerStateCapability MocaPowerState,
    mocaNodePDelay         Integer32
}

```

```

mocaNodeIndex OBJECT-TYPE
    SYNTAX      MocaNodeID
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The Node ID is used as an index to reference the MoCA Node Status
        information table."
    ::= { mocaNodeEntry 1 }

```

```

mocaNodeMocaVersion OBJECT-TYPE
    SYNTAX      MocaVersion
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicate the MoCA version supported by the MoCA Node identified
        by 'mocaNodeIndex'."
    ::= { mocaNodeEntry 2 }

```

```

mocaNodeMacAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current

```

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DESCRIPTION

"Indicate the MAC address of the MoCA Node identified by 'mocaNodeIndex'. This MAC address is encoded in the first six bytes of the Globally Unique Identifier (GUID).

For example, MoCA Node with MAC address aa:bb:cc:dd:ee:ff will have a GUID of aa:bb:cc:dd:ee:ff:00:00."

```
::= { mocaNodeEntry 3 }
```

mocaNodeTxGcdRate OBJECT-TYPE

SYNTAX MocaPhyRate

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the PHY rate in Mbps for the transmit traffic broadcasted from this MoCA interface.

This value is the broadcast PHY rate from this MoCA interface to the MoCA Node identified by 'mocaNodeIndex'."

```
::= { mocaNodeEntry 4 }
```

mocaNodeRxGcdPower OBJECT-TYPE

SYNTAX MocaDBm

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The received power for broadcast transmission by this MoCA Node. The power measurement should cover the preamble and/or at least a symbol time. The averaging method employed for this measurement is implementation specific and not specified. It is recommended but not required to utilize the LMO power control probes for this measurement."

```
::= { mocaNodeEntry 5 }
```

mocaNodeTxPowerReduction OBJECT-TYPE

SYNTAX MocaDB

MAX-ACCESS read-only

STATUS **obsolete**

DESCRIPTION

"The Transmit Power Control back-off in dB used for unicast transmissions from the managed MoCA Node to a MoCA Node identified

by

'mocaNodeIndex'. 'mocaNodeTxPowerReduction' is identical to the TPC back-off utilized for transmission and determined from the TPC backoff parameters TPC_BACKOFF_MAJOR and TPC_BACKOFF_MINOR as follows:

```
mocaNodeTxPowerReduction = TPC_BACKOFF_MAJOR * 3 +
                             TPC_BACKOFF_MINOR"
```

```
::= { mocaNodeEntry 6 }
```

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mocaNodeRxPower OBJECT-TYPE

SYNTAX MocaDBm

MAX-ACCESS read-only

STATUS **obsolete**

DESCRIPTION

"The received power by this MoCA Node. The power measurement should cover the preamble and/or at least a symbol time. The averaging method employed for this measurement is implementation specific and not specified. It is recommended but not required to utilize the LMO power control probes for this measurement."

::= { mocaNodeEntry 7 }

mocaNodePreferredNC OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the MoCA Node identified by 'mocaNodeIndex' is set as preferred NC if this value is 'true'. Indicate the MoCA Node identified by 'mocaNodeIndex' is not set as preferred NC if this value is 'false'."

::= { mocaNodeEntry 8 }

mocaNodeBondingCapable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the MoCA Node identified by 'mocaNodeIndex' supports Bonding if the value is 'true'. Indicate the MoCA Node identified by 'mocaNodeIndex' does not support Bonding if this value is 'false'."

::= { mocaNodeEntry 9 }

mocaNodePduNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Represents the maximum number of Ethernet packets aggregated in a MoCA frame that this MoCA Node supports."

::= { mocaNodeEntry 10 }

mocaNodeRxPackets OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the number of good Ethernet packets received by this

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```

    MoCA interface from the MoCA Node identified by
    'mocaNodeIndex'."
 ::= { mocaNodeEntry 11 }

```

mocaNodeRxCorrected OBJECT-TYPE

```

SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicate the number of Ethernet packets received by this MoCA
    interface that have errors and are corrected from the MoCA Node
    identified by 'mocaNodeIndex'."
 ::= { mocaNodeEntry 12 }

```

mocaNodeRxDrops OBJECT-TYPE

```

SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicate the number of scheduled MoCA frames that are not
    detected or have uncorrectable errors and are dropped by this
    MoCA interface from the MoCA Node identified by
    'mocaNodeIndex'."
 ::= { mocaNodeEntry 13 }

```

mocaNodeSNR OBJECT-TYPE

```

SYNTAX      MocaDB
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
    "A dB measure of the Signal to Noise Ratio (SNR) based on the
    Type 1 (EVM) probe from a MoCA Node identified by 'mocaNodeIndex'."
REFERENCE  "MoCA MAC/PHY Specification 2.0, section 5.2."
 ::= { mocaNodeEntry 14 }

```

mocaNodeSupportedIngressPqosFlows OBJECT-TYPE

```

SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicate the number of Ingress PQoS Flows supported by this
    MoCA interface from the MoCA Node identified by
    'mocaNodeIndex'."
 ::= { mocaNodeEntry 15 }

```

mocaNodeSupportedEgressPqosFlows OBJECT-TYPE

```

SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION

```

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```

    "Indicate the number of Egress PQoS Flows supported by this
    MoCA interface from the MoCA Node identified by
    'mocaNodeIndex'."
 ::= { mocaNodeEntry 16 }

```

mocaNodeAggregationSize OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Represents the maximum number of bytes that can be aggregated in
a MoCA frame that this MoCA Node supports."

```
 ::= { mocaNodeEntry 17 }
```

mocaNodeAeNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Represents the maximum number of allocation elements, excluding the
TAUs and the Dummy DAUs, in one MAP
that this MoCA Node supports."

```
 ::= { mocaNodeEntry 18 }
```

mocaNodePowerState OBJECT-TYPE

SYNTAX MocaPowerState

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Power State of the MoCA Node identified by the 'mocaNodeIndex'"

```
 ::= { mocaNodeEntry 19 }
```

mocaNodePowerStateCapability OBJECT-TYPE

SYNTAX MocaPowerState

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Power State capability of the MoCA Node identified by the
'mocaNodeIndex'"

```
 ::= { mocaNodeEntry 20 }
```

mocaNodePDelay OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Propagation delay measured in units of 10ns between the local Node
and

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```
Node identified by 'mocaNodeIndex'."
 ::= { mocaNodeEntry 21 }
```

mocaNodeTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"MoCA Node Status information table. This table contains an entry for every MoCA Node in the MoCA network, excluding this MoCA interface.

This table is indexed by 'ifIndex' and 'mocaNodeIndex'.

Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software.

Since this table is indexed by the MoCA Node ID, parameters in this table are only valid when the MoCA link is up.

Values will be reset when the MoCA link is down."

```
::= { mocaObjects 11 }
```

mocaMeshTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaMeshEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"MoCA mesh PHY rate table. This table contains the unicast transmit PHY rate between all pair of MoCA Nodes in the MoCA network.

This table is indexed by 'ifIndex', 'mocaMeshTableTxNodeIndex', and 'mocaMeshTableRxNodeIndex'.

Since 'mocaMeshTxRate' is the transmit PHY rate from 'mocaMeshTableTxNodeIndex' to 'mocaMeshTableRxNodeIndex', this table does not contain any entries with 'mocaMeshTableTxNodeIndex' equals 'mocaMeshTableRxNodeIndex'. In addition, a MoCA network can have less than 16 MoCA Nodes, hence some values of 'mocaMeshTableTxNodeIndex' and 'mocaMeshTableRxNodeIndex' in the range of 0 to 15 may not exist.

For example, in a three-MoCA-Node MoCA 1.1 network with Node ID 2, 4 and 6, the 'mocaMeshTable' for MoCA interface with 'ifIndex' 1 contains only six entries, mocaMeshTxRate.1.2.4 in which

```
'ifIndex' = 1
```

```
'mocaMeshTableTxNodeIndex' = 2
```

```
'mocaMeshTableRxNodeIndex' = 4
```

```
mocaMeshTxRate.1.2.6
```

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```

mocaMeshTxRate.1.4.2
mocaMeshTxRate.1.4.6
mocaMeshTxRate.1.6.2
mocaMeshTxRate.1.6.4

```

In a three-MoCA-Node MoCA 1.0 network with Node ID 2, 4 and 6, the 'mocaMeshTable' for MoCA interface with 'ifIndex' 1 and Node ID 2 contains only four entries,

```

mocaMeshTxRate.1.2.4
mocaMeshTxRate.1.2.6
mocaMeshTxRate.1.4.2
mocaMeshTxRate.1.6.2

```

Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

```
 ::= { mocaObjects 12 }
```

mocaMeshEntry OBJECT-TYPE

SYNTAX MocaMeshEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA mesh PHY rate table."

```

INDEX {
    ifIndex,
    mocaMeshTableTxNodeIndex,
    mocaMeshTableRxNodeIndex
}

```

```
 ::= { mocaMeshTable 1 }
```

MocaMeshEntry ::= SEQUENCE {

| | |
|--------------------------|---------------|
| mocaMeshTableTxNodeIndex | MocaNodeID, |
| mocaMeshTableRxNodeIndex | MocaNodeID, |
| mocaMeshTxRate | MocaPhyRate, |
| mocaMeshTxRateNper | MocaPhyRate, |
| mocaMeshTxRateVlper | MocaPhyRate, |
| mocaMeshLinkType | INTEGER, |
| mocaMeshPower | OCTET STRING, |
| mocaMeshPowerReduction | OCTET STRING, |
| mocaMeshRxSNR | OCTET STRING |

}

mocaMeshTableTxNodeIndex OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Node ID of the transmit MoCA Node is used as one of the index to order the mesh PHY rate table."

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```
::= { mocaMeshEntry 1 }
```

```
mocaMeshTableRxNodeIndex OBJECT-TYPE
```

```
SYNTAX MocaNodeID
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"The Node ID of the receive MoCA Node is used as one of the
index to order the mesh PHY rate table."
```

```
::= { mocaMeshEntry 2 }
```

```
mocaMeshTxRate OBJECT-TYPE
```

```
SYNTAX MocaPhyRate
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Indicate the transmit MoCA 1 PHY rate in Mbps from the MoCA Node
identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified
by 'mocaMeshTableRxNodeIndex'."
```

```
::= { mocaMeshEntry 3 }
```

```
mocaMeshTxRateNper OBJECT-TYPE
```

```
SYNTAX MocaPhyRate
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Indicate the transmit normal packet error PHY Rate from the MoCA
Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node
identified by 'mocaMeshTableRxNodeIndex'."
```

```
::= { mocaMeshEntry 4 }
```

```
mocaMeshTxRateVlper OBJECT-TYPE
```

```
SYNTAX MocaPhyRate
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Indicate the transmit very low packet error PHY Rate from the MoCA
Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node
identified by 'mocaMeshTableRxNodeIndex'."
```

```
::= { mocaMeshEntry 5 }
```

```
mocaMeshLinkType OBJECT-TYPE
```

```
SYNTAX INTEGER {
    primary (0),
    bonded (1)
}
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Indicates the type of link which exists from the MoCA Node
```

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identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified by 'mocaMeshTableRxNodeIndex'.

The link types are:

- Primary ('mocaScModList' 512 Octets),
- Bonded ('mocaScModList' 1024 Octets)."

```
::= { mocaMeshEntry 6 }
```

mocaMeshPower OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(2..6))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Per channel list of Transmit or Receive power levels in dBm.

If the MoCA Node identified by 'mocaMeshTableTxNodeIndex' is equal to 'mocaIfNodeID', then indicates the unicast transmit power in dBm from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' to the MoCA Node identified by 'mocaMeshTableRxNodeIndex', else indicates the unicast receive power in dBm from the MoCA Node identified by 'mocaMeshTableTxNodeIndex' at the MoCA Node identified by 'mocaMeshTableRxNodeIndex'.

For transmit power, the power should be max power for the channel less the Transmit Power Control. For received power, the power measurement should cover the preamble and/or at least a symbol time. The averaging method employed for this measurement is implementation specific and not specified. It is recommended but not required to utilize the LMO EVM probes for this measurement.

The field numValues is a function of 'mocaMeshLinkType':

- Primary - 1
- Bonded - 2

```
struct mocaPower {
    char numValues; // 1 octet (Number of Values to follow)
    {
        char power; // 1 octet (Tx or Rx Power Level in dB)
    } [numValues];
};"
```

```
::= { mocaMeshEntry 7 }
```

mocaMeshPowerReduction OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(2..6))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Per channel list of The Transmit Power Control (TPC) back-off in dB. If the MoCA Node identified by 'mocaMeshTableTxNodeIndex' is equal to 'mocaIfNodeID', then indicates the TPC in dB utilized to back-off transmission to the MoCA Node identified by 'mocaMeshTableRxNodeIndex' otherwise indicates the TPC in dB that MoCA Node identified by 'mocaMeshTableTxNodeIndex' utilized to back-off its transmission.

'mocaMeshPowerReduction' is identical to the TPC back-off utilized

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for transmission and determined from the TPC backoff parameter TPC_BACKOFF_MAJOR and TPC_BACKOFF_MINOR as follows:
 $mocaMeshPowerReduction = TPC_BACKOFF_MAJOR * 3 + TPC_BACKOFF_MINOR.$
 The field numValues is a function of 'mocaMeshLinkType':

```

    Primary      - 1
    Bonded       - 2
  struct mocaPowerReduction {
    char  numValues;  // 1 octet  (Number of Values to follow)
    {
      char  tpc;      // 1 octet  (TPC in dB)
    } [numValues];
  };
 ::= { mocaMeshEntry 8 }

```

mocaMeshRxSNR OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(2..6))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Per channel list of average received Signal to Noise Ratio (SNR) in dB. If the MoCA Node identified by 'mocaMeshRxNodeIndex' is not equal to 'mocaIfNodeID' or the MoCA Node identified by 'mocaMeshTxNodeIndex' is equal to 'mocaIfNodeID', then this object is not present, otherwise indicates the average received SNR across all the available carriers based on the EVM probe from the MoCA node identified by 'mocaMeshTxNodeIndex'.

The field numValues is a function of 'mocaMeshLinkType':

```

    Primary      - 1
    Bonded       - 2
  struct mocaRxSNR {
    char  numValues;  // 1 octet  (Number of Values to follow)
    {
      char  rx_snr;  // 1 octet  (Rx SNR in dB)
    } [numValues];
  };
 ::= { mocaMeshEntry 9 }

```

mocaBridgeTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaBridgeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"MoCA bridge Ethernet MAC address table. This table contains an entry for every MoCA Node in the MoCA network.

This table is indexed by 'ifIndex', 'mocaBridgeNodeIndex' and 'mocaBridgeMacIndex'.

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Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

```
 ::= { mocaObjects 13 }
```

mocaBridgeEntry OBJECT-TYPE
 SYNTAX MocaBridgeEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "An entry in the MoCA bridge table."
 INDEX {
 ifIndex,
 mocaBridgeNodeIndex,
 mocaBridgeMacIndex
 }
 ::= { mocaBridgeTable 1 }

MocaBridgeEntry ::= SEQUENCE {
 mocaBridgeNodeIndex MocaNodeID,
 mocaBridgeMacIndex Integer32,
 mocaBridgeMacAddress MacAddress
}

mocaBridgeNodeIndex OBJECT-TYPE
 SYNTAX MocaNodeID
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "The Node ID is used as an index to order the MAC entries in the MoCA bridge table."
 ::= { mocaBridgeEntry 1 }

mocaBridgeMacIndex OBJECT-TYPE
 SYNTAX Integer32 (1..2147483647)
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "This index is used to reference the MAC entries for each MoCA Node in
 the MoCA bridge table."
 ::= { mocaBridgeEntry 2 }

mocaBridgeMacAddress OBJECT-TYPE
 SYNTAX MacAddress
 MAX-ACCESS read-only
 STATUS current
 DESCRIPTION
 "The Ethernet MAC address identified by the Node ID and MAC

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```

    index."
 ::= { mocaBridgeEntry 3 }

```

mocaMeshScModTable OBJECT-TYPE

SYNTAX SEQUENCE OF MocaMeshScModEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"MoCA mesh Sub-Carrier Modulation table. This table contains the Unicast transmit sub-carrier modulation between all pair of MoCA Nodes

in the MoCA network. This table is indexed by 'ifIndex', 'mocaMeshTxNodeIndex', 'mocaMeshRxNodeIndex', and 'mocaMeshScIndex', and 'mocaMeshChannelIndex'.

Since 'mocaMeshScMod' is the sub-carrier modulation from 'mocaMeshTxNodeIndex' to 'mocaMeshRxNodeIndex', this table does not contain any entries with 'mocaMeshTxNodeIndex' equals 'mocaMeshRxNodeIndex'. In addition, a MoCA network can have less than 16 MoCA Nodes, hence some values of 'mocaMeshTxNodeIndex' and 'mocaMeshRxNodeIndex' in the range of 0 to 15 may not exist. The 'mocaMeshChannelIndex' index is used to differentiate between the primary and secondary channels in a bonded channel network. The primary channel index is always present, the secondary channel index may not always be present.

Entries in this table cannot be created or deleted by the network management system. All entries are created or deleted by the device software."

```

 ::= { mocaObjects 14 }

```

mocaMeshScModEntry OBJECT-TYPE

SYNTAX MocaMeshScModEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the MoCA mesh sub-carrier modulation table."

```

INDEX {
    ifIndex,
    mocaMeshTxNodeIndex,
    mocaMeshRxNodeIndex,
    mocaMeshScIndex,
    mocaMeshChannelIndex
}

```

```

 ::= { mocaMeshScModTable 1 }

```

MocaMeshScModEntry ::= SEQUENCE {

mocaMeshTxNodeIndex MocaNodeID,

mocaMeshRxNodeIndex MocaNodeID,

mocaMeshScIndex Unsigned32,

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```

mocaMeshChannelIndex      MocaChannelIndex,
mocaMeshScMod             MocaScMod,
mocaMeshScModNper        MocaScMod,
mocaMeshScModVlper       MocaScMod}

```

mocaMeshTxNodeIndex OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Node ID of the transmit MoCA Node is used as one of the index to order the mesh PHY rate table."

::= { mocaMeshScModEntry 1 }

mocaMeshRxNodeIndex OBJECT-TYPE

SYNTAX MocaNodeID

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The Node ID of the receive MoCA Node is used as one of the index to order the mesh sub-carrier modulation."

::= { mocaMeshScModEntry 2 }

mocaMeshScIndex OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The sub-carrier index of the receive MoCA Node is used as one of the

index to order the mesh sub-carrier modulation."

::= { mocaMeshScModEntry 3 }

mocaMeshChannelIndex OBJECT-TYPE

SYNTAX MocaChannelIndex

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Indicate the Primary or Secondary channel for MoCA 2.0 Node associated with 'mocaMeshScModNper' and 'mocaMeshScModVlper'. For MoCA 1 Node, the same as the Primary channel associated with 'mocaMeshScMod'. In a bonded MoCA 2.0 network, the primary and secondary channels each have their own sub-carrier modulation data."

::= { mocaMeshScModEntry 4 }

mocaMeshScMod OBJECT-TYPE

SYNTAX MocaScMod

MAX-ACCESS read-only

STATUS current

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DESCRIPTION

"Indicate the sub-carrier modulation from the MoCA Node identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex' and 'mocaMeshChannelIndex' for the MoCA 1 Unicast transmission PHY profile."

```
::= { mocaMeshScModEntry 5 }
```

mocaMeshScModNper OBJECT-TYPE

SYNTAX MocaScMod

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the sub-carrier modulation from the MoCA Node identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex' and 'mocaMeshChannelIndex' for the MoCA 2.0 Unicast NPER transmission PHY profile."

```
::= { mocaMeshScModEntry 6 }
```

mocaMeshScModVlper OBJECT-TYPE

SYNTAX MocaScMod

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicate the sub-carrier modulation from the MoCA Node identified by 'mocaMeshTxNodeIndex' to the MoCA Node identified by 'mocaMeshRxNodeIndex' for the associated 'mocaMeshScIndex' and 'mocaMeshChannelIndex' for the MoCA 2.0 unicast VLPER transmission PHY profile."

```
::= { mocaMeshScModEntry 7 }
```

--

-- MoCA Notifications

--

mocaTrapBelowPhyThreshold NOTIFICATION-TYPE

OBJECTS { mocaMeshTxRate }

STATUS current

DESCRIPTION

"If transmit PHY rate between all pairs of MoCA Nodes are greater than or equal to 'mocaIfPhyThreshold', and subsequently the transmit PHY rate of one pair of MoCA Nodes drops below 'mocaIfPhyThreshold', send this notification if 'mocaIfPhyThresholdEnable' is 'true'.

This notification sends the lowest PHY rate in the MoCA network, of 'mocaMeshTxRate', which is the transmit PHY rate from the MoCA Node specified with 'mocaMeshTableTxNodeIndex', to the MoCA

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Node specified with 'mocaMeshTableRxNodeIndex'.

If multiple links have the same lowest PHY rate, sends the PHY rate for the link with the lowest 'mocaMeshTableTxNodeIndex'. If multiple links with the same 'mocaMeshTableTxNodeIndex' have the same lowest PHY rate, sends the PHY rate for the link with the lowest 'mocaMeshTableRxNodeIndex'.

Network management system should access 'mocaMeshTable' to find if there are additional links below the threshold bandwidth.

For example, MoCA 2.0 interface with 'ifIndex' 1 detects transmit PHY rate from 'mocaMeshTableTxNodeIndex' 2 to 'mocaMeshTableRxNodeIndex' 4 is 300 Mbps, and this link is the first link to drop below the 'mocaIfPhyThreshold', then this trap contains one variable binding of mocaMeshTxRate.1.2.4 = 300"

```
::= { mocaNotifications 1 }
```

mocaTrapAbovePhyThreshold NOTIFICATION-TYPE

OBJECTS { ifIndex }

STATUS current

DESCRIPTION

"If transmit PHY rate between one or more pairs of MoCA Nodes are less than 'mocaIfPhyThreshold', and subsequently the transmit PHY rate between all pairs of MoCA Nodes goes above or is equal to 'mocaIfPhyThreshold', send this notification if 'mocaIfPhyThresholdEnable' is 'true'."

```
::= { mocaNotifications 2 }
```

mocaTrapIfStatusChange NOTIFICATION-TYPE

OBJECTS { mocaIfStatus }

STATUS current

DESCRIPTION

"This trap is sent when mocaIfStatusChangeEnable is 'true' and mocaIfStatus changes value."

```
::= { mocaNotifications 3 }
```

mocaTrapIfNumNodesChange NOTIFICATION-TYPE

OBJECTS { mocaIfNumNodes }

STATUS current

DESCRIPTION

"This trap is sent when mocaIfNumNodesChangeEnable is 'true' and mocaIfNumNodes changes value."

```
::= { mocaNotifications 4 }
```

mocaTrapMrRstSuccess NOTIFICATION-TYPE

OBJECTS { ifIndex }

STATUS current

DESCRIPTION

"An MR Entry Node reports that the network got reset successfully."

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```
 ::= { mocaNotifications 5 }

mocaTrapMrRstFail NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "An MR Entry Node reports that the network reset did not complete
  successfully."
 ::= { mocaNotifications 6 }

mocaTrapMrNetworkSuccess NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "An MR Entry Node reports that the network got reformed successfully
  following the MR transaction."
 ::= { mocaNotifications 7 }

mocaTrapMrNetworkFail NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "An MR Entry Node reports that the MR transaction failed, and the
  network did not get reformed."
 ::= { mocaNotifications 8 }

mocaTrapPowerStateBcstRec NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "When the MoCA Node is in Power State M1 or M2, reports that the
  MoCA Node has received a Broadcast data MSDU, which is available at
  the data interface."
 ::= { mocaNotifications 9 }

mocaTrapPowerStateM0Nc NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "When a Node is in Power State M1 reports that it is going to move
  to Power State M0 due to the NCs instruction."
 ::= { mocaNotifications 10 }

mocaTrapPowerStateNclx NOTIFICATION-TYPE
OBJECTS { ifIndex }
STATUS current
DESCRIPTION
  "When the MoCA Node is in Power State M1/M2/M3, reports that MoCA 1
  Node is the NC."
 ::= { mocaNotifications 11 }
```

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```
mocaTrapPowerStateNetVer NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "When the MoCA Node is in Power State M2 or M3, reports that the
    network MoCA version is changed."
    ::= { mocaNotifications 12 }
```

```
mocaTrapPowerStateResp NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "Carries the response of the MoCA Node to a request (through
    POWER_STATEREQ) to transition into a desired Power State."
    ::= { mocaNotifications 13 }
```

```
mocaTrapPowerStateUcstPen NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "When the MoCA Node is in Power State M2, reports that a Unicast
    data MSDU destined to the MoCA Node is pending."
    ::= { mocaNotifications 14 }
```

```
mocaTrapPowerStateTrnsReq NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "When the MoCA Node is in Power State M1 or M2, requests to
    transition to Power State M0"
    ::= { mocaNotifications 15 }
```

```
mocaTrapPowerStateWupUr NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "When the MoCA Node is in Power State M2, this reports a wakeup
    request from NC due to unspecified reasons."
    ::= { mocaNotifications 16 }
```

```
mocaTrapLmoStatus NOTIFICATION-TYPE
  OBJECTS { ifIndex }
  STATUS current
  DESCRIPTION
    "When mocaIfLmoTrapEnable is enabled, reports that the MoCA Node is
    starting LMO"
    ::= { mocaNotifications 17 }
```

```
mocaTrapLinkFailure NOTIFICATION-TYPE
```

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```

OBJECTS    { ifIndex }
STATUS     current
DESCRIPTION
    "Indicates a link failure.  If the failure was an Admission or LMO
    failure, 'mocaIfLinkState' indicates when the link was dropped
    within the sequence."
 ::= { mocaNotifications 18 }

---
--- MoCA Conformance
---

mocaMIBCompliances OBJECT IDENTIFIER ::= { mocaConformance 1 }
mocaMIBGroups      OBJECT IDENTIFIER ::= { mocaConformance 2 }

---
--- Compliance Statements
---

mocaMIBCompliance MODULE-COMPLIANCE
    STATUS     current
    DESCRIPTION
        "The compliance statement for the mandatory and
        optional groups."
    MODULE
        MANDATORY-GROUPS {
            mocaIfStatusGroup,
            mocaIfStatsGroup,
            mocaIfFlowStatsGroup,
            mocaNodeGroup,
            mocaMeshGroup
        }

    GROUP     mocaIfConfigOptionalGroup
    DESCRIPTION
        "Implementation of remote configuration of the MoCA
        interface is optional. MoCA interface should be
        operational using vendor specified default
        parameters."

    OBJECT     mocaIfPrivacyEnable
    MIN-ACCESS read-only
    DESCRIPTION
        "Write access is not required for SNMPv1 and SNMPv2c."

    OBJECT     mocaIfPassword
    MIN-ACCESS read-only
    DESCRIPTION
        "Access is not required for SNMPv1 and SNMPv2c."

```

```
GROUP      mocaIfAccessOptionalGroup
DESCRIPTION
  "Implementation of MAC address access control
  is optional."

GROUP      mocaIfRlapmOptionalGroup
DESCRIPTION
  "Implementation of RLAPM (Receive Level Added PHY Margin)control
is optional."

GROUP      mocaIfSapmOptionalGroup
DESCRIPTION
  "Implementation of SAPM (Subcarrier Added PHY Margin)control
  is optional."

GROUP      mocaIfAcaOptionalGroup
DESCRIPTION
  "Implementation of ACA (Alternate Channel Assessment)control
  is optional."

GROUP      mocaIfMrOptionalGroup
DESCRIPTION
  "Implementation of MoCA Reset control is optional."

GROUP      mocaIfStatusOptionalGroup
DESCRIPTION
  "Implementation of MoCA Node Bandwidth is optional."

GROUP      mocaIfStatsOptionalGroup
DESCRIPTION
  "Implementation of Drop Counters is optional."

GROUP      mocaIfFlowStatsOptionalGroup
DESCRIPTION
  "Implementation of Aggregation Counters is
  optional."

GROUP      mocaLinkStatsOptionalGroup
DESCRIPTION
  "Implementation of the Link Status table is optional."

GROUP      mocaNodeOptionalGroup
DESCRIPTION
  "Implementation of Power Level is optional."

GROUP      mocaBridgeOptionalGroup
DESCRIPTION
  "Implementation of the Bridge table is optional."
```

```

GROUP      mocaMeshOptionalGroup
DESCRIPTION
    "Implementation of the Mesh Sub-carrier table is optional."

GROUP      mocaTrapOptionalGroup
DESCRIPTION
    "Implementation of bandwidth alarm for link that
    drops below a specified PHY rate threshold is optional."

 ::= { mocaMIBCompliances 1 }

---
--- Units of Conformance
---
mocaIfConfigOptionalGroup OBJECT-GROUP
OBJECTS    {
    mocaIfEnable,
    mocaIfChannelMask,
    mocaIfTpcEnable,
    mocaIfTxPowerLimit,
    mocaIfBeaconPowerBackoff,
    mocaIfPowerControlTargetRate,
    mocaIfPrivacyEnable,
    mocaIfPassword,
    mocaIfPreferredNC,
    mocaIfAccessEnable,
    mocaIfPhyThreshold,
    mocaIfPhyThresholdEnable,
    mocaIfStatusChangeEnable,
    mocaIfNumNodesChangeEnable,
    mocaIfTpcTargetRateNper,
    mocaIfBand,
    mocaIfLofUpdateEnable,
    mocaIfLof,
    mocaIfUpfRetransMode,
    mocaIfPerMode,
    mocaIfTurboModeEnable,
    mocaIfPolicingEnable,
    mocaIfTlpMin,
    mocaIfTlpMax,
    mocaIfRlapmEnable,
    mocaIfRlapmProfileSelect,
    mocaIfSapmEnable,
    mocaIfSapmProfileSelect,
    mocaIfPowerStateRequest,
    mocaIfSeqNumMr,
    mocaIfPowerStateTrapEnable,
    mocaIfLmoTrapEnable
}
STATUS    current

```

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DESCRIPTION

"Parameters to configure the MoCA interface."
 ::= { mocaMIBGroups 1 }

mocaIfAccessOptionalGroup OBJECT-GROUP

OBJECTS {
 mocaIfAccessMacAddress,
 mocaIfAccessStatus
 }

STATUS current

DESCRIPTION

"Parameters to configure the MAC address access control list for the MoCA interface."
 ::= { mocaMIBGroups 2 }

mocaIfRlapmOptionalGroup OBJECT-GROUP

OBJECTS {
 mocaIfRlapmGarpl,
 mocaIfRlapmPhyMargin,
 mocaIfRlapmStatus }
 }

STATUS current

DESCRIPTION

"Parameters to configure RLAPM (Receive Level Added PHY Margin) for the MoCA interface."
 ::= { mocaMIBGroups 3 }

mocaIfSapmOptionalGroup OBJECT-GROUP

OBJECTS {
 mocaIfSapmPhyMargin,
 mocaIfSapmARPLTHLD,
 mocaIfSapmStatus }
 }

STATUS current

DESCRIPTION

"Parameters to configure SAPM (Subcarrier Added PHY Margin) for the MoCA interface."
 ::= { mocaMIBGroups 4 }

mocaIfAcaOptionalGroup OBJECT-GROUP

OBJECTS {
 mocaIfAcaNodeID,
 mocaIfAcaType,
 mocaIfAcaChannel,
 mocaIfAcaReportNodeMask,
 mocaIfAcaInitiate,
 mocaIfAcaStatus,
 mocaIfAcaTotalRxPower,
 mocaIfAcaPowerProfile,
 mocaIfAcaStatusTrapCompleted }
 }

STATUS current

DESCRIPTION

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"Parameters to control ACA (Alternate Channel Assessment) for the MoCA interface."

```
::= { mocaMIBGroups 5 }
```

mocaIfMrOptionalGroup OBJECT-GROUP

```
OBJECTS {
    mocaIfMrNodeMask,
    mocaIfMrStartTime,
    mocaIfMrStatusTrapEnable,
    mocaIfMrNetworkTrapEnable }
```

STATUS current

DESCRIPTION

"Parameters to control Moca Reset for the MoCA interface."

```
::= { mocaMIBGroups 6 }
```

mocaIfStatusGroup OBJECT-GROUP

```
OBJECTS {
    mocaIfStatus,
    mocaIfLinkUpTime,
    mocaIfSoftwareVersion,
    mocaIfMocaVersion,
    mocaIfNetworkVersion,
    mocaIfMacAddress,
    mocaIfNodeID,
    mocaIfName,
    mocaIfNumNodes,
    mocaIfNC,
    mocaIfBackupNC,
    mocaIfRFChannel,
    mocaIfTabooChannelMask,
    mocaIfNodeTabooChannelMask,
    mocaIfSupportedBands,
    mocaIfPduNumber,
    mocaIfTxGcdRate,
    mocaIfNcVersion,
    mocaIfLinkState
}
```

STATUS current

DESCRIPTION

"Parameters to monitor the status of the MoCA interface."

```
::= { mocaMIBGroups 7 }
```

mocaIfStatusOptionalGroup OBJECT-GROUP

```
OBJECTS {
    mocaIfTxGcdPowerReduction,
    mocaIfMaxIngressNodeThroughput,
    mocaIfMaxEgressNodeThroughput,
    mocaIfPasswordHash,
```

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```

        mocaIfChannelSupport,
        mocaIfAggregationSize,
        mocaIfAeNumber,
        mocaIfSupportedIngressPqosFlows,
        mocaIfSupportedEgressPqosFlows,
        mocaIfPowerStateCap,
        mocaIfAvbSupport,
        mocaIfResetCount,
        mocaIfLinkDownCount,
        mocaIfLmoNodeID,
        mocaIfNetworkState,
        mocaIfPrimaryChannelOffset,
        mocaIfSecondaryChannelOffset,
        mocaIfResetReason
    }
STATUS    current
DESCRIPTION
    "Parameters to monitor the bandwidth of the MoCA interface."
 ::= { mocaMIBGroups 8 }

mocaIfStatsGroup OBJECT-GROUP
OBJECTS   {
    mocaIfTxPackets,
    mocaIfRxPackets,
    mocaIfEgressNodeNumFlows,
    mocaIfIngressNodeNumFlows
}
STATUS    current
DESCRIPTION
    "Parameters to monitor the packet statistics and the
    number of flows in the MoCA interface."
 ::= { mocaMIBGroups 9 }

mocaIfStatsOptionalGroup OBJECT-GROUP
OBJECTS   {
    mocaIfTxDrops,
    mocaIfRxCorrectedErrors,
    mocaIfRxDrops,
    mocaIfTxBytes,
    mocaIfRxBytes,
    mocaIfTxUnicast,
    mocaIfRxUnicast,
    mocaIfTxMulticast,
    mocaIfRxMulticast,
    mocaIfTxBroadcast,
    mocaIfRxBroadcast
}
STATUS    current
DESCRIPTION
    "Parameters to monitor the packet drop statistics of
    the MoCA interface."

```

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```
::= { mocaMIBGroups 10 }
```

```
mocaIfFlowStatsGroup OBJECT-GROUP
```

```
OBJECTS {
    mocaIfFlowID,
    mocaIfPacketDA,
    mocaIfPeakDataRate,
    mocaIfBurstSize,
    mocaIfLeaseTime,
    mocaIfFlowTag
}
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Parameters to monitor the PQoS flow information of
the MoCA interface."
```

```
::= { mocaMIBGroups 11 }
```

```
mocaIfFlowStatsOptionalGroup OBJECT-GROUP
```

```
OBJECTS {
    mocaIfLeaseTimeLeft,
    mocaIfTxPacketsFlow,
    mocaIfFlowStatsIngressGuid,
    mocaIfFlowStatsEgressGuid,
    mocaIfFlowStatsMaximumLatency,
    mocaIfFlowStatsShortTermAvgRatio,
    mocaIfFlowStatsMaxNumberRetry,
    mocaIfFlowStatsFlowPer,
    mocaIfFlowStatsIngressClassify,
    mocaIfFlowStatsVlanTag,
    mocaIfFlowStatsDscpMoca,
    mocaIfFlowStatsDfid
}
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Parameters to monitor the PQoS flow statistics of
the MoCA interface."
```

```
::= { mocaMIBGroups 12 }
```

```
mocaLinkStatsOptionalGroup OBJECT-GROUP
```

```
OBJECTS {
    mocaLinkTxPackets,
    mocaLinkTxDrops,
    mocaLinkEgressNodeNumFlows,
    mocaLinkIngressNodeNumFlows,
    mocaLinkStatsRetxFrames,
    mocaLinkStatsRetxTimeouts
}
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Parameter to monitor the packet drop statistics per link of
```

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```

    the MoCA interface."
 ::= { mocaMIBGroups 13 }

```

```

mocaNodeGroup OBJECT-GROUP

```

```

OBJECTS {
    mocaNodeMocaVersion,
    mocaNodeMacAddress,
    mocaNodeTxGcdRate,
    mocaNodePreferredNC,
    mocaNodeBondingCapable,
    mocaNodePduNumber
}

```

```

STATUS current

```

```

DESCRIPTION

```

```

    "Parameters to monitor the status of other MoCA Nodes
    in the MoCA network."

```

```

 ::= { mocaMIBGroups 14 }

```

```

mocaNodeOptionalGroup OBJECT-GROUP

```

```

OBJECTS {
    mocaNodeRxGcdPower,

    mocaNodeRxPackets,
    mocaNodeRxCorrected,
    mocaNodeRxDrops,

    mocaNodeSupportedIngressPqosFlows,
    mocaNodeSupportedEgressPqosFlows,
    mocaNodeAggregationSize,
    mocaNodeAeNumber,
    mocaNodePowerState,
    mocaNodePowerStateCapability,
    mocaNodePDelay
}

```

```

STATUS current

```

```

DESCRIPTION

```

```

    "Parameters to monitor power level to or from MoCA Nodes
    in the MoCA network."

```

```

 ::= { mocaMIBGroups 15 }

```

```

mocaMeshGroup OBJECT-GROUP

```

```

OBJECTS {
    mocaMeshTxRate,
    mocaMeshTxRateNper,
    mocaMeshTxRateVlper,
    mocaMeshLinkType,
    mocaMeshPower,
    mocaMeshPowerReduction,
    mocaMeshRxSNR
}

```

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```

STATUS    current
DESCRIPTION
    "Parameters to monitor the PHY rate of each link in the
    MoCA network."
 ::= { mocaMIBGroups 16 }

mocaBridgeOptionalGroup OBJECT-GROUP
OBJECTS   {
    mocaBridgeMacAddress
}
STATUS    current
DESCRIPTION
    "Parameters to monitor the bridge table of each MoCA Node
    in the MoCA network."
 ::= { mocaMIBGroups 17 }

mocaMeshOptionalGroup OBJECT-GROUP
OBJECTS   {
    mocaMeshScMod,
    mocaMeshScModNper,
    mocaMeshScModVlper
}
STATUS    current
DESCRIPTION
    "Parameters to monitor the modulation of every sub-carrier
    for each link in the MoCA network."
 ::= { mocaMIBGroups 18 }

mocaTrapOptionalGroup NOTIFICATION-GROUP
NOTIFICATIONS {
    mocaTrapBelowPhyThreshold,
    mocaTrapAbovePhyThreshold,
    mocaTrapIfStatusChange,
    mocaTrapIfNumNodesChange,
    mocaTrapMrRstSuccess,
    mocaTrapMrRstFail,
    mocaTrapMrNetworkSuccess,
    mocaTrapMrNetworkFail,
    mocaTrapPowerStateBcstRec,
    mocaTrapPowerStateM0Nc,
    mocaTrapPowerStateNclx,
    mocaTrapPowerStateNetVer,
    mocaTrapPowerStateResp,
    mocaTrapPowerStateUcstPen,
    mocaTrapPowerStateTrnsReq,
    mocaTrapPowerStateWupUr,
    mocaTrapLmoStatus,
    mocaTrapLinkFailure
}
STATUS    current

```

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DESCRIPTION

```
"Notifications for bandwidth threshold in the MoCA
network."
 ::= { mocamIBGroups 19 }
```

END

7 Acknowledgements

This document has been produced by the Multimedia over Coax Alliance (MoCA) Technical Working Group.

The MoCA MIB Subcommittee of the MoCA Technical Working Group has been chaired by Shlomo Ovadia, edited by Shlomo Ovadia, and participated by Pascal Moniot, Rob Thomson, Ron Lee, Saju Palayur, Scott Walley, and Tim Jones.

8 References

- [1] Bradner S., "Key words for use in RFCs to Indicate Requirement Levels", March 1997.
<http://www.ietf.org/rfc/rfc2119.txt>
- [2] McCloghrie, K., Perkins, D., Schoenwaelder, J., "Conformance Statements for SMIV2", RFC2580, April, 1999. <http://www.rfc-editor.org/rfc/rfc2580.txt> .
- [3] McCloghrie, K., Perkins, D., Schoenwaelder, J., "Structure of Management Information Version 2 (SMIV2)", RFC2579, April, 1999. <http://www.rfc-editor.org/rfc/rfc2579.txt>.
- [4] McCloghrie, K., Perkins, D., Schoenwaelder, J., "Textual Convention for SMIV2", RFC2578, April, 1999. <http://www.rfc-editor.org/rfc/rfc2578.txt>
- [5] "MoCA Enterprise Structure of Management Information", MOCA-SMI-V1.2-20151105, November 5, 2015.
- [6] "MoCA MAC/PHY Specification v1.1", MoCA-M/P-SPEC-V1.1-06272011, June 27, 2011.
- [7] "MoCA MAC/PHY Specification v2.0", MoCA-M/P-SPEC-V2.0-20131121, November 21, 2013.
- [8] "TR-181 Device Data Model for TR-069", Issue 2 Amendment 8, Broadband Forum September 2014.
- [9] TR-069 Amendment 5, CPE Management Protocol, Broadband Forum, November 5, 2013.
- [10] "MoCA VENDOR ID TABLE v1.1", MoCA-VID-TABLE-V1.1-20180329, March 29, 2018.



MoCA Enterprise Structure of Management Information

MoCA-SMI-V1.3-20171122

Document Status Sheet

| | |
|--------------------------|---|
| Document Control Number: | MoCA-SMI-V1.3-20171122 |
| Document Title: | MoCA Enterprise Structure of Management Information |
| Revision History: | November 22, 2017 |
| Status | Final |

Status of this Memo

This document proposes the MoCA Enterprise Structure of Management Information, and requests discussion and suggestions for improvements. Distribution of this memo is limited to the MoCA membership and further distribution is subject to the MoCA copyright policy.

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Abstract

This document specifies the structure of the Simple Network Management Protocol (SNMP) Management Information Base (MIB) sub-tree under the MoCA enterprise number 31621 assigned by IANA [2].

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1 Introduction

Multimedia over Coax Alliance (MoCA) was assigned enterprise number 31621 by IANA [2]. MoCA Alliance owns this enterprise number and may assign any Management Information Base (MIB) Object Identifier (OID) under the MoCA Enterprise OID.

iso.org.dod.internet.private.enterprises.moca (1.3.6.1.4.1.31621)

The assignment of OID under MoCA Enterprise is defined in a MIB definition file.

1.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in RFC 2119 [1].

2 OID Assignments

The following table summarizes the Object Identifier (OID) assigned under the MoCA Enterprise sub-tree. Only two levels of OID are documented here,

- First sub level is the OID under iso.org.dod.internet.private.enterprises.moca (1.3.6.1.4.1.31621)
- Second sub level is the OID under iso.org.dod.internet.private.enterprises.moca.N (1.3.6.1.4.1.31621.N), which N is the first sub level OID.

Table 1: OID Assignments

| First Sub Level OID | Second Sub Level OID | Object Name | Descriptions |
|---------------------|----------------------|--------------|--|
| 1 | | mocaMIBs | SNMP MIBs for managed objects in MoCA devices. |
| 1 | 1 | moca11 | SNMP MIB for managed objects for MoCA devices that support MoCA 1.1 |
| 1 | 2 | moca20 | SNMP MIB for managed objects for MoCA devices that support MoCA 2.0. |
| 1 | 3 | moca25 | SNMP MIB for managed objects for MoCA devices that support MoCA 2.5 |
| 1 | 4 | mocaAccess25 | SNMP MIB for managed objects for MoCA devices that support MoCA Access 2.5 |
| 2 | | | |
| 3 | | | |
| 4 | | | |

3 MIB Definition

```
-- *****
-- MoCA-SMI.my: MoCA Enterprise Structure of Management Information
--
-- Copyright (c) 2008 by Multimedia over Coax Alliance
-- All rights reserved.
--
-- *****
--
```

```
MOCA-SMI DEFINITIONS ::= BEGIN
```

```
IMPORTS
    MODULE-IDENTITY,
    OBJECT-IDENTITY,
    enterprises
    FROM SNMPv2-SMI;
```

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MoCA Enterprise Structure of Management Information_20171122

```
moca MODULE-IDENTITY
  LAST-UPDATED      "200809220000Z" -- September 22, 2008 00:00 AM
  ORGANIZATION      "Multimedia over Coax Alliance (MoCA) Technical
                    Working Group."
  CONTACT-INFO      "www.mocalliance.org

                    Postal:      Multimedia over Coax Alliance
                               2400 Camino Ramon
                               Suite 375
                               San Ramon, CA 94583
                               USA
                    Tel:         +1 925 275-6606
                    Email:      help@mocalliance.org"
  DESCRIPTION        "The Structure of Management Information (SMI) for
                    Multimedia over Coax Alliance (MoCA) enterprise."

  REVISION          "200809220000Z" -- September 22, 2008 00:00 AM
  DESCRIPTION        "Initial version of this MIB module."
  ::= { enterprises 31621 } -- assigned by IANA

mocaMIBs OBJECT-IDENTITY
  STATUS            current
  DESCRIPTION        "mocaMIBs is the root of the MoCA Alliance assigned
                    OID subtree for assignment to MIB modules describing
                    managed objects implemented in MoCA devices that support
                    MoCA MAC/PHY Specification."
  ::= { moca 1 }

END
```

4 Acknowledgements

This document has been produced by the Multimedia over Coax Alliance (MoCA®) Technical Work Group.

5 References

- [1] Bradner S., "Key words for use in RFCs to Indicate Requirement Levels", March 1997. <<http://www.ietf.org/rfc/rfc2119.txt>>
- [2] IANA, "Private Enterprise Numbers". <<http://www.iana.org/assignments/enterprise-numbers>>.

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MoCA VENDOR ID TABLE v1.1

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Document Status Sheet

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|-----------------------------------|---|------------------|--------|
| Document Control Number: | MoCA-VID-TABLE-V1.1-20180329 | | |
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| Date: | Mar 29, 2018 | | |
| Status: | Work in Progress | Draft | Issued |
| Distribution Restrictions: | MoCA members | | |

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Key to Document Status Codes:

- Work in Progress** An incomplete document, designed to guide discussion and generate feedback, that may include several alternative requirements for consideration.
- Draft** A document in specification format considered largely complete, but lacking review by Members and vendors. Drafts are susceptible to substantial change during the review process.
- Issued** A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing.

1 Introduction & Scope

2
3 VENDOR_ID is a 16-bit field present in some MoCA messages to indicate the inclusion of vendor-specific
4 information. The definition of Vendor ID and how it can be used to send vendor-specific information can be
5 found in the MoCA specifications. This document captures the most up to date Vendor ID values assigned
6 by the MoCA Spec Working Group (SWG).
7
8 If a MoCA member requires a Vendor ID, the member should send an official request to the SWG reflector
9 at moca-kavi-swg@members.mocalliance.org. SWG will process the request and update this document
10 accordingly.
11

1 2 References

- 2
3 [1] MoCA-VID-TABLE-V1.0-10172013

3 Vendor ID Assignments

The current VENDOR_ID assignments are shown in Table 3-1. Future VENDOR_ID values will be assigned from the reserved range.

Table 3-1: Vendor ID Assignments

| VENDOR_ID Range | Vendor |
|-----------------|-------------------------|
| 0x0000 | MoCA |
| 0x0001 | MaxLinear, Inc. |
| 0x0002 – 0x000F | MoCA |
| 0x0010 – 0x001F | MaxLinear, Inc. |
| 0x0020 – 0x002F | Broadcom Inc. |
| 0x0030 – 0x003F | Not Available [1] |
| 0x0040 – 0x004F | Not Available [1] |
| 0x0050 – 0x005F | ARRIS |
| 0x0060 – 0x006F | Not Available [1] |
| 0x0070 – 0x007F | Intel Corporation |
| 0x0080 – 0x008F | DIRECTV |
| 0x0090 | IEEE Std 802.1 AS |
| 0x0091 – 0x009F | Reserved for Future Use |
| 0x00A0 – 0x00AF | ARRIS |
| 0x00B0 – 0x00BF | Complex IQ, Inc. |
| 0x00C0 – 0x00CF | DISH Technologies, LLC |
| 0x00D0 – 0x00DF | InCoax Networks AB |
| 0x00E0 – 0x00EF | Verizon Services Corp. |
| 0x00F0 – 0x00FF | MSTAR Semiconductor |
| 0x0100 – 0x010F | Comcast Corp. |
| 0x0110 – 0x011F | LUSTER, Inc. |
| 0x0120– 0xFFFF | Reserved for Future Use |