Content

[2 Classes 1](#_Toc99010682)

[2.1 CurrentPerformance 1](#_Toc99010683)

[2.2 HistoricalPerformance 2](#_Toc99010684)

[2.3 MacInterfaceCapability 3](#_Toc99010685)

[2.4 MacInterfaceConfiguration 7](#_Toc99010686)

[2.5 MacInterfaceCurrentPerformance 11](#_Toc99010687)

[2.6 MacInterfaceHistoricalPerformances 11](#_Toc99010688)

[2.7 MacInterfaceLpSpec 12](#_Toc99010689)

[2.8 MacInterfaceStatus 13](#_Toc99010690)

[2.9 MacInterface\_Pac 21](#_Toc99010691)

[3 Data Types 22](#_Toc99010692)

[3.1 MacInterfaceCurrentPerformanceType 22](#_Toc99010693)

[3.2 MacInterfaceHistoricalPerformanceType 23](#_Toc99010694)

[3.3 MacInterfacePerformanceType 23](#_Toc99010695)

[4 Enumeration Types 25](#_Toc99010696)

[4.1 FlowControlModeType 25](#_Toc99010697)

[4.2 FragmentationType 25](#_Toc99010698)

[4.3 FrameFormatType 25](#_Toc99010699)

[4.4 GranularityPeriodType 26](#_Toc99010700)

[4.5 InterfaceStatusType 26](#_Toc99010701)

[4.6 LayerProtocolNameType 27](#_Toc99010702)

[4.7 LoopBackType 27](#_Toc99010703)

[4.8 loopDetectionResultType 27](#_Toc99010704)

[5 Primitive Types 27](#_Toc99010705)

# Classes

## CurrentPerformance

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for CurrentPerformance

Table 1: Attributes for CurrentPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | The timestamp associated with when the current data was collected. |
| suspectIntervalFlag | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | This attribute is used to indicate that the performance data for the current period may not be reliable. Some reasons for this to occur are: – Suspect data were detected by the actual resource doing data collection. – Transition of the administrativeState attribute to/from the 'lock' state. – Transition of the operationalState to/from the 'disabled' state. – Scheduler setting that inhibits the collection function. – The performance counters were reset during the interval. – The currentData (or subclass) object instance was created during the monitoring period. |
| elapsedTime | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: s  • support: MANDATORY | Number of seconds that elapsed since the last reset of the counter. |
| scannerId | String  Scanner ID not defined. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Time period between reset of the underlying counter. |

## HistoricalPerformance

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for HistoricalPerformance

Table 1: Attributes for HistoricalPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| suspectIntervalFlag | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | This attribute indicates that the data collected during the interval is suspect. |
| historyDataId | String  History Data ID not defined. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Time period between reset of the underlying counter. |
| periodEndTime | DateTime  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 2  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Time when the counter values have been recorded and the counter reset. |

## MacInterfaceCapability

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceCapability

Table 1: Attributes for MacInterfaceCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| hardwareMacAddress | MacAddress  00:00:00:00:00:00 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Hardware MAC address of the interface. |
| macAddressConfigurationIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Device supports overwriting the hardware MAC address. |
| supportedMaximumFrameSizeList | Integer  -1 | 0..\* | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY | Must exclusively contain values, which are actually configurable at the hardware (except the default value -1, which has to be represented if maximum frame size cannot be configured at all). Might be all or just a subset of values actually configurable at the hardware. |
| supportedFrameFormatList | FrameFormatType  ./. | 1..\* | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | List of supported Ethernet frame formats |
| supportedFlowControlModeList | FlowControlModeType  ./. | 1..5 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | List of potential configurations of the Flow Control. |
| linkLossForwardingIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Sending a Link Loss message in case of link failure is supported by the device. |
| supportedLinkLossForwardingDelayList | Integer  -1 | 0..\* | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: 100ms  • support: MANDATORY | Must exclusively contain values, which are actually configurable at the hardware (except the default value -1, which has to be represented if link loss forwarding delay cannot be configured at all). Might be all or just a subset of values actually configurable at the hardware. |
| broadcastFrameSuppressionIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Interface is supporting limiting the maximum share of broadcast frames. |
| loopPortShutDownIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Device is supporting automated shut down of ports, which are affected by an Ethernet loop. |
| loopDetectionIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Device is supporting a feature for detecting Ethernet loops on this interface. |
| adminShutDownIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Manual switching on and off of the interface without deleting it (underlying OSI network layers are also not affected) is available. |
| supportedLoopBackKindList | LoopBackType  ./. | 1..3 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | List of supported kinds of looping back. |
| maintenanceTimerRange | String  Range of the maintenance timer not yet defined. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: s  • support: MANDATORY | Available time periods for maintenance configurations to be described. Concrete values shall be separated by commas (e.g. '10, 60, 360'). Ranges shall be expressed as two values separated by a minus (e.g. '10-360'). |
| statisticsIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Continuous statistics counters are available. |
| performanceMonitoringIsAvail | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Collection and aggregation of performance values is available. |

## MacInterfaceConfiguration

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceConfiguration

Table 1: Attributes for MacInterfaceConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceName | String  Interface name not yet defined. | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Description of the interface, could be a name, could be a number. Free text field to be filled by the operator. |
| macAddressConfigurationIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Only relevant if (macAddressConfigurationIsAvail==1). 1 = Activates overwriting the hardware MAC address by MacInterfaceConfiguration::configuredMacAddress. |
| configuredMacAddress | MacAddress  00:00:00:00:00:00 | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Only relevant if (macAddressConfigurationIsAvail==1 AND macAddressConfigurationIsOn==1). Overwriting the hardware MAC address with the configured value. |
| maximumFrameSize | Integer  -1 | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_16\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY | This value describes the maximum size of the Ethernet frame (in Byte) before sending. Validation result shall reflect hardware characteristics, even if these are exceeding the values stated in MacInterfaceCapability::supportedMaximumFrameSizeList. If a value, which is not supported by the hardware, would be tried to be configured, the device-software or mediator-software might either respond with operation-failed tag and error message '...Configuration value out of range of hardware capabilities...' or it could map the sent configuration value on the closest value, which is actually supported by the hardware. Configuration attempts with values lower than the minimum value or higher than the maximum value of the 'supportedMaximumFrameSizeList' must be answered with operation-failed tag and the error message '...Configuration value out of range of hardware capabilities...'. |
| fragmentationAllowed | FragmentationType  NOT\_YET\_DEFINED | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY |  |
| transmittedFrameFormat | FrameFormatType  NOT\_YET\_DEFINED | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Configuration of the format of the transmitted Ethernet frames. |
| flowControlMode | FlowControlModeType  NOT\_YET\_DEFINED | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Configures the mode of operation of Flow Control according to IEEE 802.3x on this interface. |
| linkLossForwardingIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Sending a Link Loss message in case of link failure is activated. |
| linkLossForwardingDelay | Integer  -1 | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_8\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: 100ms  • support: MANDATORY | Delay (in 100ms steps) between a detected link failure and sending of a Link Loss message. In case of 1+1 hot stand by protection of a microwave, make sure configured value is higher than 5 (500ms). Validation result shall reflect hardware characteristics, even if these are exceeding the values stated in MacInterfaceCapability::supportedLinkLossForwardingDelayList. If a value, which is not supported by the hardware, would be tried to be configured, the device-software or mediator-software might either respond with operation-failed tag and error message '...Configuration value out of range of hardware capabilities...' or it could map the sent configuration value on the closest value, which is actually supported by the hardware. Configuration attempts with values lower than the minimum value or higher than the maximum value of the 'supportedLinkLossForwardingDelayList' must be answered with operation-failed tag and the error message '...Configuration value out of range of hardware capabilities...'. |
| broadcastFrameSuppressionIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Limiting the share of broadcast frames is activated. |
| maximumShareOfBroadcastFrames | Integer  -1 | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_8\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: %  • support: MANDATORY | Threshold for Broadcast frames becoming discarded in %. Value range from 0 to 100. |
| loopPortShutDownIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Feature for automated shut down in case of an Ethernet loop is activated on this interface. |
| loopDetectionIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Maintenance Feature. 1 = Checking for Ethernet loops on this interface is currently switched on. |
| loopBackKindOn | LoopBackType  NOT\_YET\_DEFINED | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Maintenance Feature. Configuration of a loop back of Ethernet frames on this interface. |
| maintenanceTimer | Integer  -1 | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: s  • support: MANDATORY | Time of existence of any maintenance configuration. 0 = maintenance timer is switched off. Valid values are defined in \*Capability::maintenanceTimerRange. |
| statisticsIsOn | Boolean  false | 1 | RW | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Only relevant if (statisticsIsAvail==1). 1 = Continuous statistics counters are switched on. |

## MacInterfaceCurrentPerformance

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceCurrentPerformance

Table 1: Attributes for MacInterfaceCurrentPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| currentPerformanceDataList | MacInterfaceCurrentPerformanceType  ./. | 1..2 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY |  |
| numberOfCurrentPerformanceSets | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Number of sets of current performance values, which are provided in the list. |

## MacInterfaceHistoricalPerformances

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceHistoricalPerformances

Table 1: Attributes for MacInterfaceHistoricalPerformances

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| historicalPerformanceDataList | MacInterfaceHistoricalPerformanceType  ./. | 0..\* | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY |  |
| numberOfHistoricalPerformanceSets | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Number of sets of historical performance values, which are provided in the list. |
| timeOfLatestChange | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Date and time when the list of sets of historical performance values has been changed for the last time (e.g. new one added or existing one deleted). |

## MacInterfaceLpSpec

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: YES
* objectDeletionNotification: YES
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceLpSpec

Table 1: Attributes for MacInterfaceLpSpec

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_macInterface\_Pac | MacInterface\_Pac  ./. | 1 | RW | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |

## MacInterfaceStatus

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterfaceStatus

Table 1: Attributes for MacInterfaceStatus

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceStatus | InterfaceStatusType  NOT\_YET\_DEFINED | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Operational status of the interface. |
| macAddressCur | MacAddress  00:00:00:00:00:00 | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | If (macAddressConfigurationIsAvail==0), maxAddressCur = MacInterfaceCapability::hardwareMacAddress. If (macAddressConfigurationIsAvail==1 AND macAddressConfigurationIsOn==1), maxAddressCur = MacInterfaceConfiguration::configuredMacAddress. |
| receivedEthernetFrameFormatCur | FrameFormatType  NOT\_YET\_DEFINED | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Ethernet frame format of the currently received frames. |
| flowControlModeCur | FlowControlModeType  NOT\_YET\_DEFINED | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Currently operative mode (none, send, receive, both) of operation of the Flow Control according to IEEE 802.3x on this interface. |
| loopDetectionResult | loopDetectionResultType  NOT\_YET\_DEFINED | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | Result of the Ethernet loop detection feature. |
| loopBackKindUp | LoopBackType  NOT\_YET\_DEFINED | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | The currently active (not just configured) type of loop back. |
| statisticsIsUp | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Statistics are currently collected and aggregated. |
| performanceMonitoringIsUp | Boolean  false | 1 | R | OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | 1 = Performance values are currently collected and aggregated. |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | The timestamp associated with when the statistic values were read/retrieved. |
| last10SecFrameInputRate | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame/s  • support: MANDATORY | Frame receive rate at this MAC interface over the last 10 second interval. |
| last10SecFrameOutputRate | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame/s  • support: MANDATORY | Frame transmit rate at this MAC interface over the last 10 second interval. |
| totalFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The total number of Ethernet frames received at this MAC interface, including those received in error |
| totalFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The total number of Ethernet frames sent from this MAC interface. |
| forwardedFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of input frames, for which the device was not their final destination and for which the device attempted to find a route to forward them to that final destination. |
| forwardedFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of frames, for which the device was not their final destination and for which it was successful in finding a path to their final destination. |
| unicastFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received unicast frames. |
| unicastFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of sent unicast frames. |
| multicastFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received multicast frames. |
| multicastFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of sent multicast frames. |
| broadcastFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received broadcast frames. |
| broadcastFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of sent broadcast frames. |
| fragmentedFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received fragmented frames. |
| erroredFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received errored frames. |
| erroredFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of Ethernet frames, which were locally generated and discarded due to errors, including no route found to the destination. |
| droppedFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of Ethernet frames dropped at the receiver. The number of input Ethernet frames, for which no problems were encountered to prevent their continued processing, but were discarded (e.g., for lack of buffer space). |
| droppedFramesOutput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The number of output Ethernet frames, for which no problem was encountered to prevent their transmission to their destination, but were discarded (e.g., for lack of buffer space). |
| oversizedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The total number of frames received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed. |
| undersizedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The total number of frames received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed. |
| jabberFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of jabber frames received on the interface. Jabber frames are typically defined as oversize frames which also have a bad CRC. Implementations may use slightly different definitions of what constitutes a jabber frame. Often indicative of a NIC hardware problem. |
| fragmentedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | The total number of frames received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). |
| unknownProtocolFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Total number of received frames that were transporting an unknown protocol. |
| framesOf64Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of packets (including bad packets) received that were 64 bytes in length (excluding framing bits but including FCS bytes). |
| framesOf65To127Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of good and bad packets received that were between 65 and 127 bytes in length (excluding framing bits but including FCS bytes). |
| framesOf128To255Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of good and bad packets received that were between 128 and 255 bytes in length inclusive (excluding framing bits but including FCS bytes). |
| framesOf256To511Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of good and bad packets received that were between 256 and 511 bytes in length inclusive (excluding framing bits but including FCS bytes). |
| framesOf512To1023Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of good and bad packets received that were between 512 and 1023 bytes in length inclusive (excluding framing bits but including FCS bytes). |
| framesOf1024To1518Byte | Integer  -1 | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: frame  • support: MANDATORY | Number of good and bad packets received that were between 1024 and 1518 bytes in length inclusive (excluding framing bits but including FCS bytes). |

## MacInterface\_Pac

Applied stereotypes:

* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO
* OpenModelClass
* support: MANDATORY

Attributes for MacInterface\_Pac

Table 1: Attributes for MacInterface\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_macInterfaceCapability | MacInterfaceCapability  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |
| \_macInterfaceConfiguration | MacInterfaceConfiguration  ./. | 1 | RW | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |
| \_macInterfaceStatus | MacInterfaceStatus  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |
| \_macInterfaceCurrentPerformance | MacInterfaceCurrentPerformance  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |
| \_macInterfaceHistoricalPerformances | MacInterfaceHistoricalPerformances  ./. | 1 | R | OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY | See referenced class |

# Data Types

## MacInterfaceCurrentPerformanceType

Applied Stereotypes:

Attributes for MacInterfaceCurrentPerformanceType

Table 1: Attributes for MacInterfaceCurrentPerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| performanceData | MacInterfacePerformanceType  ./. | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY |  |

## MacInterfaceHistoricalPerformanceType

Applied Stereotypes:

Attributes for MacInterfaceHistoricalPerformanceType

Table 1: Attributes for MacInterfaceHistoricalPerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| performanceData | MacInterfacePerformanceType  ./. | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY |  |

## MacInterfacePerformanceType

Applied Stereotypes:

Attributes for MacInterfacePerformanceType

Table 1: Attributes for MacInterfacePerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| oversizedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: frame * support: MANDATORY | The total number of frames received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed. |
| undersizedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: frame * support: MANDATORY | The total number of frames received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed. |
| jabberFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: frame * support: MANDATORY | Number of jabber frames received on the interface. Jabber frames are typically defined as oversize frames which also have a bad CRC. Implementations may use slightly different definitions of what constitutes a jabber frame. Often indicative of a NIC hardware problem. |
| fragmentedFramesIngress | Integer  -1 | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_64\_BIT   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: frame * support: MANDATORY | The total number of frames received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). |
| unknownProtocolFramesInput | Integer  -1 | 1 | R | OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT   OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: frame * support: MANDATORY | Total number of received frames that were transporting an unknown protocol. |

# Enumeration Types

## FlowControlModeType

Contains Enumeration Literals:

* NONE:
  + Flow Control is switched off.
* SEND\_ONLY:
  + Only sending of pause frames according to IEEE 802.3x (Ethernet Flow Control).
* RECEIVE\_ONLY:
  + Only listening for incoming pause frames according to IEEE 802.3x (Ethernet Flow Control).
* SEND\_AND\_RECEIVE:
  + Sending and listening for pause frames according to IEEE 802.3x (Ethernet Flow Control).
* AUTO\_NEGOTIATION:
* NOT\_YET\_DEFINED:

## FragmentationType

Contains Enumeration Literals:

* DISABLE:
* ENABLE\_256\_BYTE:
* ENABLE\_512\_BYTE:
* NOT\_YET\_DEFINED:

## FrameFormatType

Contains Enumeration Literals:

* ETHERNET\_2:
* 802.2\_SNAP:
* 802.2\_LLC:
* 802.3:
* NOT\_YET\_DEFINED:

## GranularityPeriodType

The enumeration with the options for granularity period of the performance data.

Contains Enumeration Literals:

* UNKNOWN:
* PERIOD-15-MIN:
* PERIOD-24-HOURS:
* NOT\_YET\_DEFINED:

## InterfaceStatusType

Current Interface Status

Contains Enumeration Literals:

* UP:
  + Ready to pass packets. It is expected that the LogicalTerminationPoint::operationalState attribute is expressing this logical layer being available for use (means: ENABLED), while this value occurs.
* DOWN:
  + The interface does not pass any packets. It is expected that the LogicalTerminationPoint::operationalState attribute is expressing this logical layer being NOT available for use (means: DISABLED), while this value occurs.
* SHUT\_DUE\_LOOP:
  + Only relevant if (loopPortShutDownIsAvail==1) AND (loopPortShutDownIsOn==1). 1 = port has been automatically shut down, because an Ethernet loop has been detected on this interface.
* TESTING:
  + In some test mode. No operational packets can be passed. It is expected that the LogicalTerminationPoint::operationalState attribute is expressing this logical layer being NOT available for use (means: DISABLED), while this value occurs.
* UNKNOWN:
  + Status cannot be determined for some reason. While this value occurs, the LogicalTerminationPoint::operationalState attribute, which is expressing the availability of the logical layer for being used, might have either ENABLED or DISABLED as value.
* DORMANT:
  + Waiting for some external event. It is expected that the LogicalTerminationPoint::operationalState attribute is expressing this logical layer being available for use (means: ENABLED), while this value occurs.
* NOT\_PRESENT:
  + Some component (typically hardware) is missing. It is expected that the LogicalTerminationPoint::operationalState attribute is expressing this logical layer being NOT available for use (means: DISABLED), while this value occurs.
* NOT\_YET\_DEFINED:
  + While this value occurs, the LogicalTerminationPoint::operationalState attribute, which is expressing the availability of the logical layer for being used, might have either ENABLED or DISABLED as value.

## LayerProtocolNameType

A controlled list of LayerProtocol names.

Contains Enumeration Literals:

* LAYER\_PROTOCOL\_NAME\_TYPE\_MAC\_LAYER:

## LoopBackType

Contains Enumeration Literals:

* NONE:
* BACK\_TO\_LOCAL:
  + Returning Ethernet frames of the local site on the Ethernet MAC interface back to the local site.
* BACK\_TO\_REMOTE:
  + Returning Ethernet frames of the remote site on the Ethernet MAC interface back to the remote site.
* NOT\_YET\_DEFINED:

## loopDetectionResultType

Contains Enumeration Literals:

* LOOP\_DETECTED:
* NO\_LOOP\_DETECTED:
* DETECTION\_SWITCHED\_OFF:
* NOT\_YET\_DEFINED:

# Primitive Types