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# 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 | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | The timestamp associated with when the current data was collected. |
| suspectIntervalFlag | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 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 | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Number of seconds that elapsed since the last reset of the counter. |
| scannerId | String  Scanner ID not defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 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 | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | This attribute indicates that the data collected during the interval is suspect. |
| historyDataId | String  History Data ID not defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time period between reset of the underlying counter. |
| periodEndTime | DateTime  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 2  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time when the counter values have been recorded and the counter reset. |

## PmdKind

Applied stereotypes:

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

Attributes for PmdKind

Table 1: Attributes for PmdKind

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| pmdName | String  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | To be chosen from the following list of PMD names according to IEEE 802.3 '10BASE5', 'FOIRL', '10BASE2', '10BROAD36', '10BASE-T', '10BASE-FP', '10BASE-FB', '10BASE-FL', '100BASE-T4', '100BASE-TX', '100BASE-BX10D', '100BASE-BX10U', '100BASE-FX', '100BASE-LX10', '100BASE-T2', '1000BASE-X', '1000BASE-BX10D', '1000BASE-BX10U', '1000BASE-LX', '1000BASE-LX10', '1000BASE-SX', '1000BASE-CX', '1000BASE-KX', '1000BASE-T', '2500BASE-X', '2500BASE-T', '10GBASE-X', '10GBASE-LX4', '10GBASE-KX4', '10GBASE-R', '10GBASE-ER', '10GBASE-LR', '10GBASE-SR', '10GBASE-LRM', '10GBASE-KR', '10GBASE-T', '10GBASE-PR-D1', '10GBASE-PR-D2', '10GBASE-PR-D3', '10GBASE-PR-D4', '10GBASE-PR-U1', '10GBASE-PR-U2', '10GBASE-PR-U3', '10GBASE-PR-U4', '40GBASE-R', '40GBASE-KR4', '40GBASE-CR4', '40GBASE-SR4', '4x10GBASE-SR', '40GBASE-LR4', '40GBASE-ER4', '40GBASE-FR', '100GBASE-R', '100GBASE-CR4', '100GBASE-KR4', '100GBASE-KP4', '100GBASE-CR10', '100GBASE-SR4', '100GBASE-SR10', '2x40GBASE-SR', '10x10GBASE-SR', '12x10GBASE-SR', '100GBASE-LR4', '100GBASE-ER4' and 'NOT\_YET\_DEFINED'. Some PMDs are distinguishing Full Duplex and Half Duplex. '\_FD' and '\_HD' are to be attached to the respective PMD name accordingly. |
| speed | String  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Line speed of the PMD. Value to be chosen from '2Mbit/s', '10Mbit/s', '100Mbit/s', '1000Mbit/s', '2500Mbit/s', '10Gbit/s', '40Gbit/s', '100Gbit/s' or 'NOT\_YET\_DEFINED'. This field is not for calculation purposes, but for supporting selection of the correct PMD on application layer. |
| duplex | DuplexType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | To be expressed, whether the PMD is full duplex or just half duplex. This field is not for configuration purposes, but for supporting selection of the correct PMD on application layer. |

## WireInterfaceCapability

Applied stereotypes:

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

Attributes for WireInterfaceCapability

Table 1: Attributes for WireInterfaceCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_supportedPmdKindList | PmdKind  ./. | 1..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | List of Physical Medium Dependent (PMD) that can be operated |
| autoPmdNegotiationIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = device is supporting auto-negotiation |
| autoNegotiationPmdSelectionIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = device is supporting restricting auto-negotiation on a pre-defined list of PMDs |
| supportedSignalOrderingKindList | SignalOrderingKindType  ./. | 1..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Describes the different (e.g. MDI, MDI-X) ways of ordering the signals on the physical medium |
| autoSignalOrderingIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = there is a mechanism for automatically crossing over tx and rx implemented |
| configurationOfRxSyncPreferenceIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Configuration of the behavior during the synchronization of transmitter and receiver is available. This attribute has nothing to do with clock signals. |
| miiKind | MiiKindType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Kind of Medium Independent Interface (MII) provided by this Medium Attachment Unit (MAU) (e.g. SFP, moldered port) |
| mdiKind | MdiKindType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Kind of Medium Dependent Interface (MDI) provided by this Medium Attachment Unit (MAU) |
| requiredMediumKind | MediumKindType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Kind of medium required for operating this Medium Attachment Unit (MAU), more like an information field |
| wavelengthMinList | Integer  -1 | 0..3 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: pm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Source: SFF-8690. Minimum laser wavelength in pico meter, -1 = not applicable, 0 = not known, if (wavelengthMin==wavelengthMax): wavelength cannot be configured; multiplicity=0..3 for 10GBASE-LX4 according to 802.3 53.5. Value to be read from the EPROM of the SFP. |
| wavelengthMaxList | Integer  -1 | 0..3 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: pm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Source: SFF-8690. Maximum laser wavelength in pico meter, -1 = not applicable, 0 = not known, if (wavelengthMax==wavelengthMin): wavelength cannot be configured; multiplicity=0..3 for 10GBASE-LX4 according to 802.3 53.5. Value to be read from the EPROM of the SFP. |
| wavelengthGridMin | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: pm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Source: SFF-8690. Minimum grid spacing supported by the transceiver, -1 = not applicable, 0 = not known |
| shortReachModeIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Indicates that Short Reach Mode for 10GBASE-T according to 802.3 45.2.1.64 is available |
| eeeIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Indicates that Energy-Efficient Ethernet (EEE) is available at the device. |
| unidirectionalOperationIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Source: 802.3. 1 = Medium Attachment Unit (MAU) able to transmit from Media Independent Interface (MII) regardless of whether the MAU has determined that a valid link has been established, 0 = MAU able to transmit from MII only when the MAU has determined that a valid link has been established |
| rxlevelLowThreshold | Integer  99 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: dBm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Threshold for alarming low RX levels. Value pre-defined by SFP manufacturer (SFF- 8472) |
| rxlevelHighThreshold | Integer  99 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: dBm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Threshold for alarming high RX levels. Value pre-defined by SFP manufacturer (SFF- 8472) |
| temperatureLowThreshold | Integer  -99 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Celsius  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Threshold for alarming low temperature values. Value pre-defined by SFP manufacturer (SFF- 8472)  Might move to somewhere in the Physical Segment of the Core IM |
| temperatureHighThreshold | Integer  -99 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Celsius  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Might move to somewhere in the Physical Segment of the Core IM  Threshold for alarming high temperature values. Value pre-defined by SFP manufacturer (SFF- 8472) |
| configurationOfNumberOfBipErrorsPerSesIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = SET operation on the Line SES threshold defined by aLineSESThreshold in 30.8.1.1.11 of 802.3-2015 is available. |
| adminShutDownIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Manual switching on and off of the interface without deleting it (underlying OSI network layers are also not affected) is available. |
| isolationIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Separation of the PHY from higher network layers is supported by the device. Maintenance feature. Source: 802.3. |
| supportedLoopBackKindList | LoopBackType  ./. | 1..5 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Source: 802.3 45.2.1.12.1 PMA remote loopback ability. List of supported kinds of looping back of header information to the remote site. |
| maintenanceTimerRange | String  Range of the maintenance timer not yet defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Available time periods for maintenance configurations (e.g. the loop back) 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'). |
| performanceMonitoringIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Collection and aggregation of performance values is available. |

## WireInterfaceConfiguration

Applied stereotypes:

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

Attributes for WireInterfaceConfiguration

Table 1: Attributes for WireInterfaceConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceName | String  Interface name not yet defined. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Description of the interface, could be a name, could be a number. Free text field to be filled by the operator. |
| interfaceIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: 802.3 according 30.3.2.2.1 acPhyAdminControl. 1 = Activation of the interface (it gets powered and can be managed even if the transceiver is not yet transmitting or receiving). In case there is no Medium Attachment Unit (MAU) (e.g. no SFP in the cage) SETting (interfaceIsOn=1) must be ignored and GETing must return (interfaceIsOn=0) |
| remoteWireInterfaceName | String  Remote wire interface name not yet defined. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Text field for defining the wire interface this one is connected with. Ideally used for entering unique numbers or names for unambiguously identifying the connection within the network |
| transceiverConfigurationList | TransceiverConfigurationType  ./. | 1..10 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Configuring the individual transceivers. |
| autoPmdNegotiationIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (autoPmdNegotiationIsAvail == 1). 1 = Auto-negotiation is switched on |
| \_fixedPmdKind | PmdKind  ./. | 1 | RW | PassedByReference  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | If (autoPmdNegotiationIsOn==0) : Configuration of the concrete kind of Physical Medium Dependent (PMD). If (autoNegotiationIsOn=1) value of this field becomes irrelevant |
| \_autoNegotiationPmdList | PmdKind  ./. | 0..\* | RW | PassedByReference  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | If (autoPmdNegotiationIsOn==1) AND (autoNegotiationPmdSelectionIsAvail==1), this list defines the selection of PMDs the automated negotiation process is allowed to choose from. If the device would not allow excluding PMDs, which are supported by the device, from the process of auto negotiation, the list shall be empty (which means that the attribute does not appear). If the device would allow excluding PMDs, all supported PMDs shall be listed as a default. (On the RESTCONF interface, this attribute has to be address by ?fields filter.) |
| autoSignalOrderingIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (autoSignalOrderingIsAvail == 1). 1 = e.g. auto-MDI-X is switched on |
| fixedSignalOrderingKind | SignalOrderingKindType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | If (autoSignalOrderingIsOn==0) configuration of the concrete kind of signal ordering on the media (e.g. MDI, or MDI-X). If (autoSignalOrderingIsOn=1) value of this field becomes irrelevant |
| rxSyncPreference | RxSyncPreferenceType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: 802.3. Only relevant if (configurationOfRxSyncPreferenceIsAvail == 1). Configuration of the behavior during the negotiation of the wire interface (master), which is sending a continuous stream of symbols for the remote site (slave) to synchronize its receiver on it. This attribute is for synchronizing transmitter and receiver and has nothing to do with clock signals. |
| shortReachModeIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (shortReachModeIsAvail == 1). Activation of the Short Reach Mode for 10GBASE-T according to 802.3 45.2.1.64 |
| eeeIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (eeeIsAvail == 1). 1 = Energy Efficient Ethernet is activated |
| unidirectionalOperationIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: 802.3. Only relevant if (unidirectionalOperationIsAvail == 1). 1 = Enable transmit from media independent interface regardless of whether the PHY has determined that a valid link has been established, 0 = Enable transmit from media independent interface only when the PHY has determined that a valid link has been established |
| numberOfBipErrorsPerSes | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: error/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_16\_BIT | Only relevant if (configurationOfNumberOfBipErrorsPerSesIsAvail == 1). SET operation on the Line SES threshold defined by aLineSESThreshold in 30.8.1.1.11 of 802.3-2015. This attribute configures the minimum number of BIP errors that have to occur in one second to count this second as a SES instead of an ES. According to 802.3, a value of 9835 should be the hardware default value, which should also apply after restarting the interface. |
| isolationIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Maintenance Feature. Only relevant if (isolationIsAvail == 1). Source: 802.3. 1 = Activation of the separation of the PHY from higher network layers. Maintenance feature. |
| loopBackKindOn | LoopBackType  NONE | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Maintenance Feature. Source:802.3 according 22.2.4.1.2 Loopback. The currently configured type of looping back of the wire interface header shall be expressed here. The received header is returned to the remote site. |
| maintenanceTimer | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_32\_BIT | Time of existence of any maintenance configuration (e.g. the loop back). Valid values are defined in WireInterface::WireInterfaceCapability::maintenanceTimerRange. In case the hardware would implement just a single timer for maintenance at all kinds and instances of interfaces, this attribute should affect this single timer. |
| performanceMonitoringIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (performanceMonitoringIsAvail==1). 1 = Collection and aggregation of performance values is switched on. |

## WireInterfaceCurrentPerformance

Aggregated performance information of the air interface at a particular moment.

Applied stereotypes:

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

Attributes for WireInterfaceCurrentPerformance

Table 1: Attributes for WireInterfaceCurrentPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| currentPerformanceDataList | WireInterfaceCurrentPerformanceType  ./. | 1..2 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | At least values of the counters, which are reset every 15 minutes, are to be provided. If available, the current values of the counters, which are reset every 24 hour, can be provided, too. |
| numberOfCurrentPerformanceSets | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Number of sets of current performance values, which are provided in the list. |

## WireInterfaceHistoricalPerformances

Aggregated performance information of the air interface for a pre-defined measurement interval.

Applied stereotypes:

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

Attributes for WireInterfaceHistoricalPerformances

Table 1: Attributes for WireInterfaceHistoricalPerformances

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| historicalPerformanceDataList | WireInterfaceHistoricalPerformanceType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| numberOfHistoricalPerformanceSets | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Number of sets of historical performance values, which are provided in the list. |
| timeOfLatestChange | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 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). |

## WireInterfaceLpSpec

Applied stereotypes:

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

Attributes for WireInterfaceLpSpec

Table 1: Attributes for WireInterfaceLpSpec

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

## WireInterfaceStatus

Applied stereotypes:

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

Attributes for WireInterfaceStatus

Table 1: Attributes for WireInterfaceStatus

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceStatus | InterfaceStatusType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: 802.3 according 30.3.2.1.7 aPhyAdminState. 1 = A Physical layer entity (PHY) exists (including Medium Attachment Unit (e.g. SFP) ) and it is powered and can be managed |
| receiverStatusList | ReceiverStatusType  ./. | 1..10 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | One or several receive signals in case of a multilane Medium Attachment Unit (MAU). |
| pmdNegotiationState | PmdNegotiationStateType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: 802.3. Status of the Physical Medium Dependent (PMD) negotiation process (auto-neg) |
| pmdIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Source: Inverse of 802.3 45.2.1.2.3 Fault (1.1.7). If (interfaceIsUp==1) BUT (pmdIsUp==0) : there is a fault in either transmit or receive path |
| \_pmdKindCur | PmdKind  ./. | 1 | R | PassedByReference  OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Indicates the kind of Physical Medium Dependent (PMD) currently operated at this interface |
| signalOrderingKindCur | SignalOrderingKindType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Reference on a SignalOrderingType for expressing the currently active way of ordering the signals on the physical medium. |
| rxSyncRole | RxSyncRoleType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Indicates the result of the negotiation of the wire interface (master), which is sending a continuous stream of symbols for the remote site (slave) synchronizing its receiver on it |
| eeeIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Energy Efficient Ethernet is supported at both ends of the link and it is activated |
| linkIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | If (transceiverIsUp==1) AND (linkIsUp==1) : communication is established to the remote site |
| linkIsIdle | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | If (linkIsUp==1) AND (eeeIsAvail==1) AND (eeeIsOn==1) AND (linkIsIdle==1) : link is currently in idle mode. If Energy Efficient Ethernet is not supported or switched off, this attribute must be 0. |
| loopBackKindUp | LoopBackType  NONE | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | The currently active (not just configured) type of looping back of the wire interface header shall be expressed here. The received header is returned to the remote site. |
| txLevelCur | Integer  99 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: dBm  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Current transmit power |
| rxCollisions | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: collision  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Number of counted collisions on the ingress. |
| performanceMonitoringIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Performance values are currently collected and aggregated. |

## WireInterface\_Pac

Applied stereotypes:

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

Attributes for WireInterface\_Pac

Table 1: Attributes for WireInterface\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_wireInterfaceCapability | WireInterfaceCapability  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_wireInterfaceConfiguration | WireInterfaceConfiguration  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_wireInterfaceStatus | WireInterfaceStatus  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_wireInterfaceCurrentPerformance | WireInterfaceCurrentPerformance  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_wireInterfaceHistoricalPerformances | WireInterfaceHistoricalPerformances  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |

# Data Types

## ReceiverStatusType

Applied Stereotypes:

Attributes for ReceiverStatusType

Table 1: Attributes for ReceiverStatusType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| receiverIndex | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT | Identification number of the receiver. |
| receiveSignalIsDetected | Boolean  false | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Source: 802.3 45.2.1.9 PMD receive signal detect. true = Receiver (e.g. laser) detects a signal. |
| rxLevelCur | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: dBm * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Current receive power; Also used for receive signal power measured at the Medium Dependent Interface (MDI) of 10GBASE-T during training as described in 802.3 55.4.3.1. |

## TransceiverConfigurationType

Applied Stereotypes:

Attributes for TransceiverConfigurationType

Table 1: Attributes for TransceiverConfigurationType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| transceiverIndex | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT | Identification number of the transceiver. |
| transceiverIsOn | Boolean  false | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Source: 802.3 45.2.1.8 PMD transmit disable register (Register 1.9). true = Activation of the individual transmitter and receiver (e.g. laser) of the PHY. |
| wavelength | Integer  -1 | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: pm * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_32\_BIT | Source: SFF-8690. Wavelength of the signal of laser in pico meter. |

## WireInterfaceCurrentPerformanceType

Turns performance information into current performance information by inheriting from OTN\_CurrentData.

Applied Stereotypes:

Attributes for WireInterfaceCurrentPerformanceType

Table 1: Attributes for WireInterfaceCurrentPerformanceType

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

## WireInterfaceHistoricalPerformanceType

Turns performance information into historical performance information by inheriting from OTN\_HistoryData.

Applied Stereotypes:

Attributes for WireInterfaceHistoricalPerformanceType

Table 1: Attributes for WireInterfaceHistoricalPerformanceType

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

## WireInterfacePerformanceType

Applied Stereotypes:

Attributes for WireInterfacePerformanceType

Table 1: Attributes for WireInterfacePerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| es | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: s * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Number of errored seconds according to 802.3 30.8.1.1.13 aLineESs |
| ses | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: s * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Number of severely errored seconds according to 802.3 30.8.1.1.12 aLineSESs |
| symbolErrorDuringCarrier | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: symbol * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Source: 802.3 according to 30.3.2.1.5 aSymbolErrorDuringCarrier. Number of times when valid carrier was present and an invalid data symbol occured. |
| lowPowerIdleTransmitterMs | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: ms * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Source: 802.3 similar to 30.3.2.1.8 aTransmitLPIMicroseconds. Number of milliseconds (original counter expresses microseconds), during which the transmitter was in power save mode |
| lowPowerIdleReceiverMs | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: ms * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Source: 802.3 similar to 30.3.2.1.9 aReceiveLPIMicroseconds. Number of milliseconds (original counter expresses microseconds), during which the receiver was in power save mode |
| rxCollisions | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: collision * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Number of counted collisions on the ingress. |

# Enumeration Types

## DuplexType

Contains Enumeration Literals:

* HALF\_DUPLEX:
* FULL\_DUPLEX:
* 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.
* 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\_WIRE\_LAYER:

## LoopBackType

Contains Enumeration Literals:

* NONE:
* EXTERNAL:
  + Parameter
  + If the internal loopback test succeeds but the external loopback fails, the Medium Attachment Unit (MAU) is faulty (e.g. SFP has to be replaced)
* INTERNAL:
  + Parameter
  + If the internal loopback test fails, the Data Terminal Equipment (DTE) is faulty (e.g. board has to be replaced)
* NOT\_YET\_DEFINED:

## MdiKindType

Contains Enumeration Literals:

* SC:
  + Subscriber Connector
* FIBRE\_CHANNEL\_STYLE\_1:
  + Copper connector
* FIBRE\_CHANNEL\_STYLE\_2:
  + Copper connector
* BNC\_TNC:
  + Bayonet/Threaded Neill-Concelman
* FC:
  + Fibre Channel coax headers
* FIBER\_JACK:
* LC:
  + Lucent Connector
* MT\_RJ:
  + Mechanical Transfer - Registered Jack
* MU:
  + Multiple Optical
* SG:
* OPTICAL\_PIGTAIL:
* MPO1x12:
  + Multifiber Parallel Optic
* MPO2x16:
  + Multifiber Parallel Optic
* HSSDC\_II:
  + High Speed Serial Data Connector
* COPPER\_PIGTAIL:
* RJ45:
  + 8P8C, according to Clause 3 and Figures 1 through 5 of IEC 60603-7
* NO\_SEPERABLE\_CONNECTOR:
* MXC2x16:
* ST:
  + according to IEC 60874-10:1992, also often called BFOC/2.5
* NOT\_YET\_DEFINED:

## MediumKindType

Contains Enumeration Literals:

* TP\_CAT3:
* TP\_CAT5:
* TP\_CAT6:
* TP\_CAT8:
* SINGLE\_MODE:
* MULTI\_MODE:
* NOT\_YET\_DEFINED:

## MiiKindType

Contains Enumeration Literals:

* GBIC:
* SOLDERED\_CONNECTOR:
* SFP\_SFP\_PLUS\_SFP28:
* XBI\_300\_PIN:
* XENPAK:
* XFP:
* XFP\_E:
* XPAK:
* X2:
* DWDM\_SFP\_SFP\_PLUS:
* QSFP:
* QSFP\_PLUS:
* CXP:
* SHIELDED\_MINI\_MULTILANE\_HD\_4X:
* SHIELDED\_MINI\_MULTILANE\_HD\_(X:
* QSFP28:
* CXP2:
* CDFP\_STYLE1\_STYLE2:
* SHIELDED\_MINI\_MULTILANE\_HD\_4X\_FAN\_OUT:
* SHIELDED\_MINI\_MULTILANE\_HD\_8X\_FAN\_OUT:
* CDFP\_STYLE3:
* QSFP\_MICRO:
* QSFP\_DD:
* QSFP\_PLUS\_RATE\_SELECT\_V1:
* QSFP\_PLUS\_RATE\_SELECT\_V2:
* NOT\_YET\_DEFINED:

## PmdNegotiationStateType

Contains Enumeration Literals:

* NONE:
  + Device does not support auto negotiation
* DISABLED:
  + Auto negotiation is disabled.
* ENABLED:
  + Auto negotiation is enabled, but currently nothing is connected
* IN\_PROGRESS:
  + The auto-negotiation protocol is running and negotiation is currently in-progress
* COMPLETE:
  + The auto-negotation protocol has completed successfully
* FAILED:
  + The auto-negotation protocol has failed
* NOT\_YET\_DEFINED:
  + Device supports autonegotiation, but state is currently unknown, e.g. because device just booted

## RxSyncPreferenceType

Contains Enumeration Literals:

* AUTO\_MULTIPORT\_DEVICE:
  + Master/Slave relation is determined by auto-negotiation and this device has a preference for being Master
* AUTO\_SINGLE\_PORT\_DEVICE:
  + Master/Slave relation is determined by auto-negotiation and this device has a preference for being Slave
* MANUAL\_MASTER:
  + Master/Slave relation is determined by manual configuration and this device shall be Master
* MANUAL\_SLAVE:
  + Master/Slave relation is determined by manual configuration and this device shall be Slave
* NOT\_YET\_DEFINED:

## RxSyncRoleType

Contains Enumeration Literals:

* MASTER:
* SLAVE:
* FAULT:
* NOT\_YET\_DEFINED:

## SignalOrderingKindType

Contains Enumeration Literals:

* MDI:
* MDI\_X:
* NOT\_YET\_DEFINED:

# Primitive Types