

TAPI UML Model

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Open Networking Foundation
1000 El Camino Real, Suite 100, Menlo Park, CA 94025
www.opennetworking.org

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Document History

Version	Date	Description of Change
2.3	May 27, 2021	<p>Model Dump</p> <p><i>Gendoc generates documentation from Eclipse Modeling Framework (EMF) models using document templates in formats such as OpenOffice Writer (.odt), Microsoft Word (.docx), Microsoft Excel (.xlsx) and Microsoft Powerpoint (.pptx).</i></p>
2.4.0	December 2022	See high level diff document in Github
2.4.1	March 2023	See high level diff document in Github
2.5.0	October 2023	See high level diff document in Github

1 Photonic Model

Comments: All the other OTSi relevant parameters are provisioned either - by reference to an instance of Transceiver Profile (the reference (by name) is defined in the CSEP) or - by explicit parameters ("integrated" provisioning), which can be useful when there is not an Transceiver Profile instance matching the intent. The server controller may or may not instantiate the equivalent Transceiver Profile as provisioning result.

Comments: oms-general-optical-params configuration shall be allowed on NEP base?

Comments: It is assumed that MC CEP does not appear on transponder side, hence no reference from MC CEP to OtsiTerminationPac.

Comments: Amplification configuration shall be allowed on OMS CEP base. For further development.

Comments: OTSiMCG CSEP is provisioned also in case OTSiMC layer is not explicitly represented on Resource side

Comments: ITU-T G.sup39 2016/02: NRZ-DPSK RZ-DPSK NRZ-DQPSK RZ-DQPSK DP-QPSK PDM-BPSK PDM-16QAM

Comments: regen-metric can augment the OTSiMC NEP of transponders, meaningful in case the transponder node is used as 3R.

Comments: IETF model foresees a "list of optical impairments on a ROADM express/add/drop path for different frequency ranges". TAPI ConnectivityImpairmentProfile is defined per "frequency-range", because the functional model (of the ROADM) is not supported in TAPI.

Comments: IETF model foresees a single amplifier-params grouping listing the "parallel amplifier elements within an amplifier used to amplify different frequency ranges." TAPI Amplifier Profile is defined per "frequency-range", because the functional model (of the amplifier) is not supported in TAPI. Note that the OMS CEP defines a frequency range which could include more frequency sub-ranges separately amplified.

Comments: TapiDigitalOtn:OtsiaMep composed by OtuMep augmenting ConnectivityOamServicePoint. Define OtsiaMep also in TapiPhotonic, to directly augment ConnectivityOamServicePoint, and move the power thresholds there. This implies the import of TapiOam.

Comments: OtsiaConnectivityServiceEndPointSpec could augment a DSR CEP in case of direct photonic to DSR adaptation (i.e. no OTN layer network).

Comments: equalization-mode is defined in oms-general-optical-param. To be verified whether necessary or implicit in the choice of the PowerParams packages.

Comments: media-channel-groups / delta-power (Deviation from the reference carrier power defined for the OMS) could be added to MC CEP. Note that 10-types:flexi-grid-frequency-slot (RFC 9093) is equivalent to "central frequency + width".

Comments: CCAMP rfc9093-bis identity modulation: DPSK (Differential Phase Shift Keying) modulation QPSK (Quadrature Phase Shift Keying) modulation DP-QPSK (Dual Polarization Quadrature Phase Shift Keying) modulation QAM8 (8-State Quadrature Amplitude Modulation) DP-QAM8 (8 symbols Dual Polarization Quadrature Amplitude Modulation) DC-DP-QAM8 (8 symbols Dual Carrier Dual Polarization Quadrature Amplitude Modulation) QAM16 (16 symbols Quadrature Amplitude Modulation) DP-QAM16 (16 symbols Dual Polarization Quadrature Amplitude Modulation) DC-DP-QAM16 (16 symbols Dual Carrier Dual Polarization Quadrature Amplitude Modulation) QAM32 (32 symbols Quadrature Amplitude Modulation) DP-QAM32 (32 symbols Dual Polarization Quadrature Amplitude Modulation) QAM64 (64 symbols Quadrature Amplitude Modulation) DP-QAM64 (64 symbols Dual Polarization Quadrature Amplitude Modulation)

Comments: GNPy Transceiver data type includes the tx_osnr, which represents the transceiver SNR penalty, in analogy with the ROADM add/drop OSNR.

Comments: ietf-layer0-types-ext.yang grouping common-transceiver-configured-param { description "Capability of an optical transceiver"; leaf otsi-carrier-frequency { type frequency-thz; description "OTSi carrier frequency, equivalent to the actual configured transmitter frequency"; } leaf tx-channel-power { type dbm-t; description "The current channel transmit power"; } leaf rx-channel-power { type dbm-t; config false; description "The current channel received power "; } leaf rx-total-power { type dbm-t; config false; description "Current total received power"; } } // grouping for configured attributes out of mode

Comments: IETF model foresees a transponder grouping, which is the "list of transceiver related to a transponder". TAPI Transceiver Profile is defined to specify both the capabilities (PHOT/OTSi NEP) and the configuration/state (OTSi CSEP/CEP) of transceivers.

Comments: Note that also Booster/Preamplifier could be listed

Comments: IETF augments "/nw:networks/nw:network/nw:node" with - transponder list / transceiver list - regen-group, which is "List of 3R groups. Any 3R group represent a group of transponder in which an electrical connectivity is either in place or could be dynamically provided, to associated transponders used for 3R regeneration."

Comments: otsi-group is the "list of OTSi contained in 1 OTSiG", each one described by common-transceiver-configured-param: otsi-carrier-frequency, tx-channel-power, rx-channel-power, rx-total-power.

Comments: Shall we consider also the "fiber impairments" between ROADM and its Booster/Preampli?

Comments: min/max central freq. and freq. step shall be mapped to SIP/CSEP/CEP spectrum/central freq. Could we use the same datatype, i.e. SpectrumBand?

Comments: ITU-T G.694.1 For the flexible DWDM grid, the allowed frequency slots have a - nominal central frequency (in THz) defined by: $193.1 + n \times 0.00625$ where n is a positive or negative integer including 0 and 0.00625 is the nominal central frequency granularity in THz - and a slot width defined by: $12.5 \times m$ where m is a positive integer and 12.5 is the slot width granularity in GHz.

Comments: Evaluate adding "bit stuffing" to OtsiConfig. ietf-optical-impairment-topology.yang grouping 10-tunnel-attributes { description "Parameters for Layer0 (WSON or Flexi-Grid) Tunnels."; leaf fec-type { type identityref { base fec-type; } description "FEC type."; } leaf termination-type { type identityref { base term-type; } description "Termination type."; } leaf bit-stuffing { type boolean; description "Bit stuffing enabled/disabled."; } }

Comments: IETF foresees a choice based on equalization-mode enum {power-spectral-density; carrier-power}. TAPI could simplify with just the applicable packages, which package is present indicates the equalization mode.

Comments: Attribute which can be covered by termination type and node rule group

Comments: min-carrier-spacing has only the capability role, not provisionable.

TapiPhotonicMedia: This module contains TAPI Photonic Media Model definitions. Source: <https://github.com/tapiwg/tapi-photonicmedia>

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1.1 Diagrams

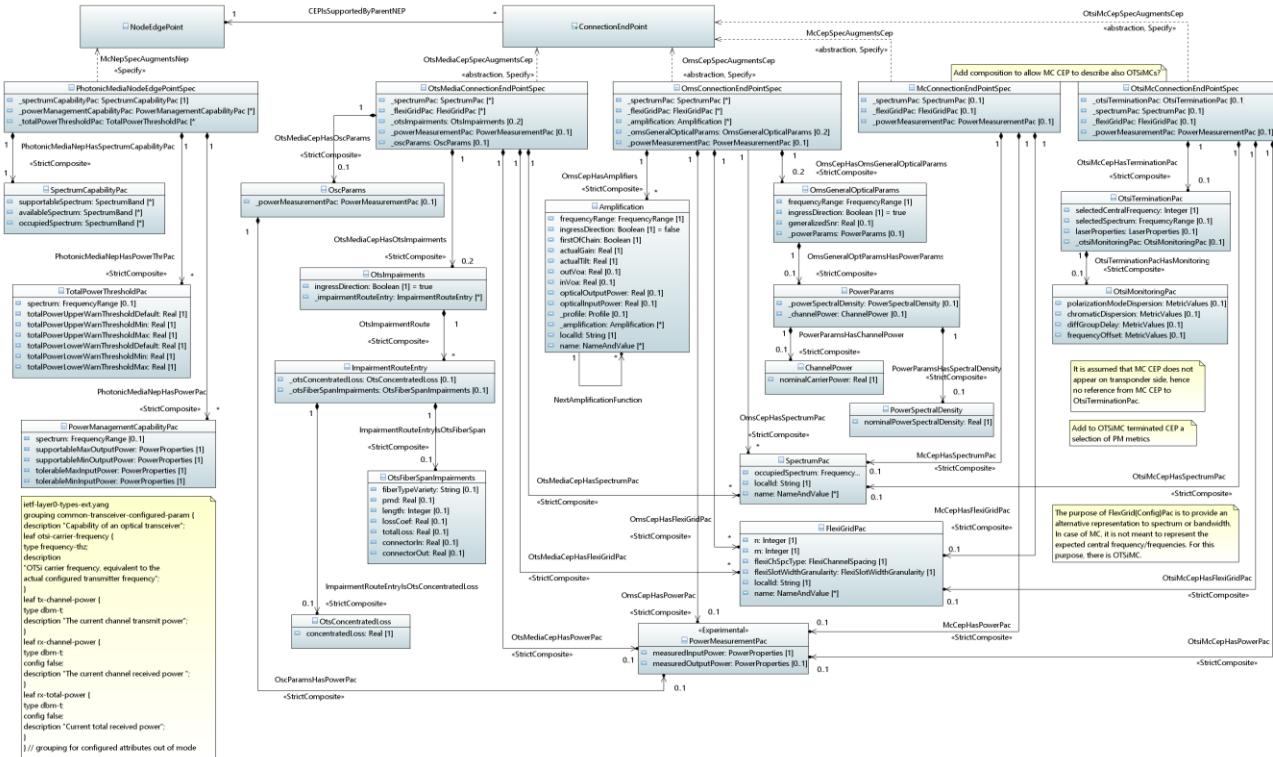
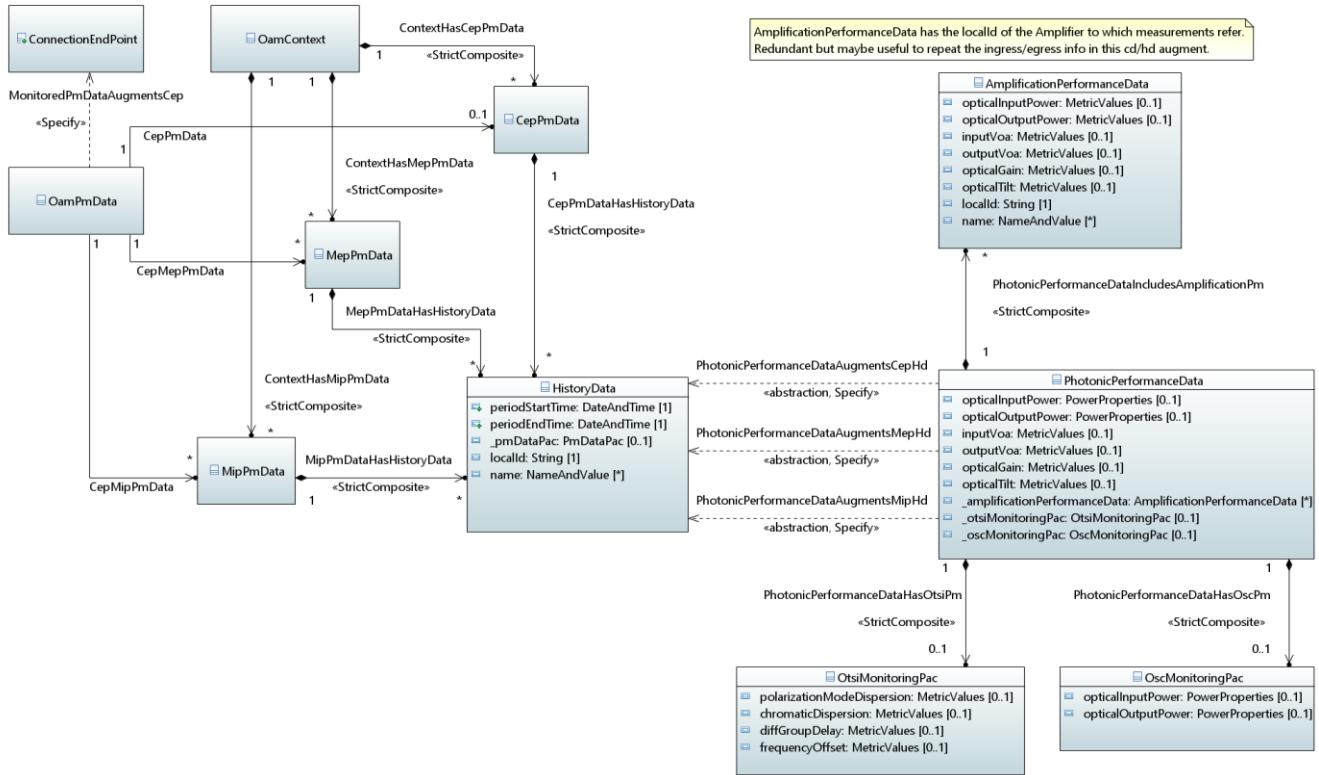


Figure 1 – Diagram *McResourceSpec*

Figure 2 – Diagram *PhotonicPm*

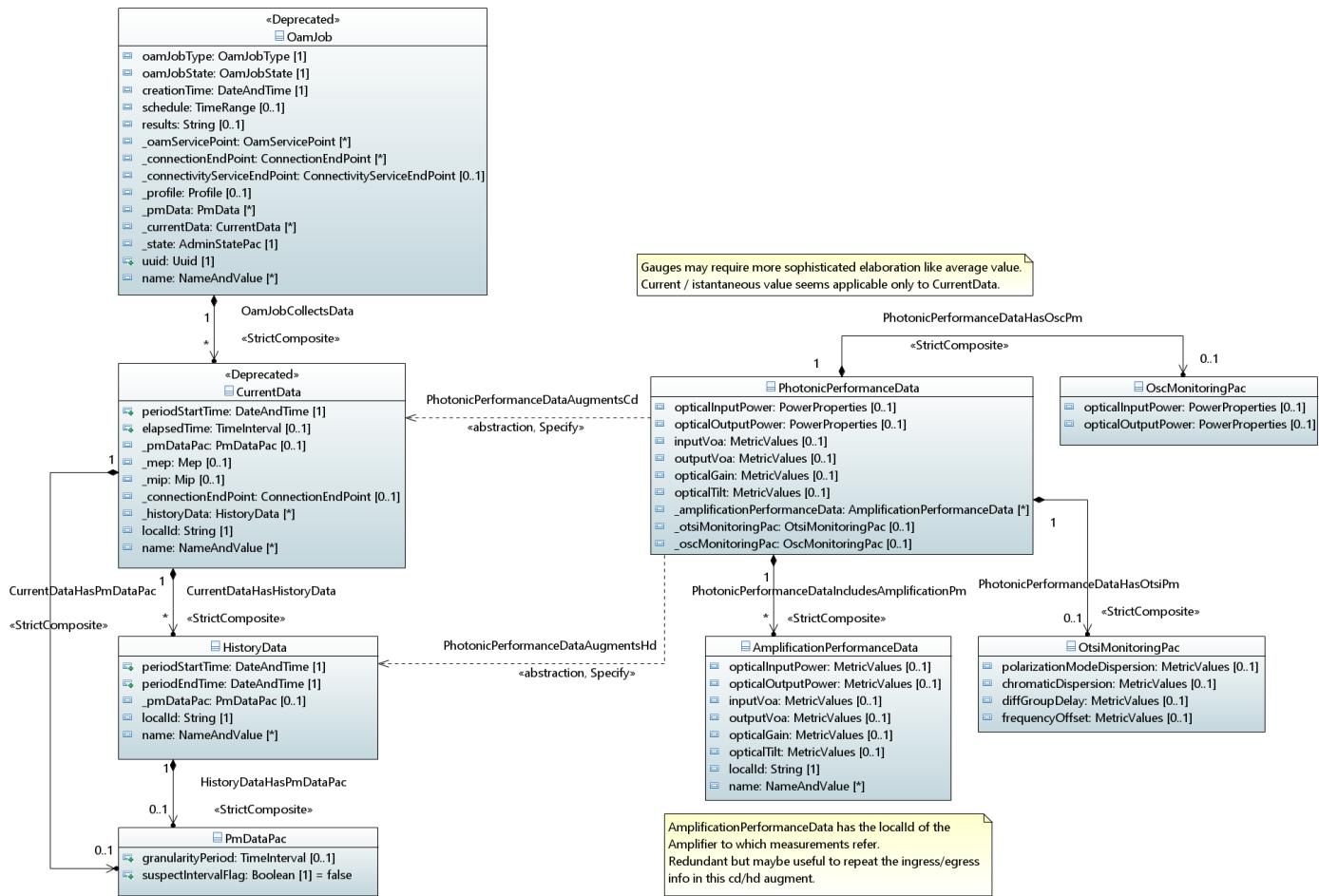


Figure 3 – Diagram *PhotonicPm_Deprecated*

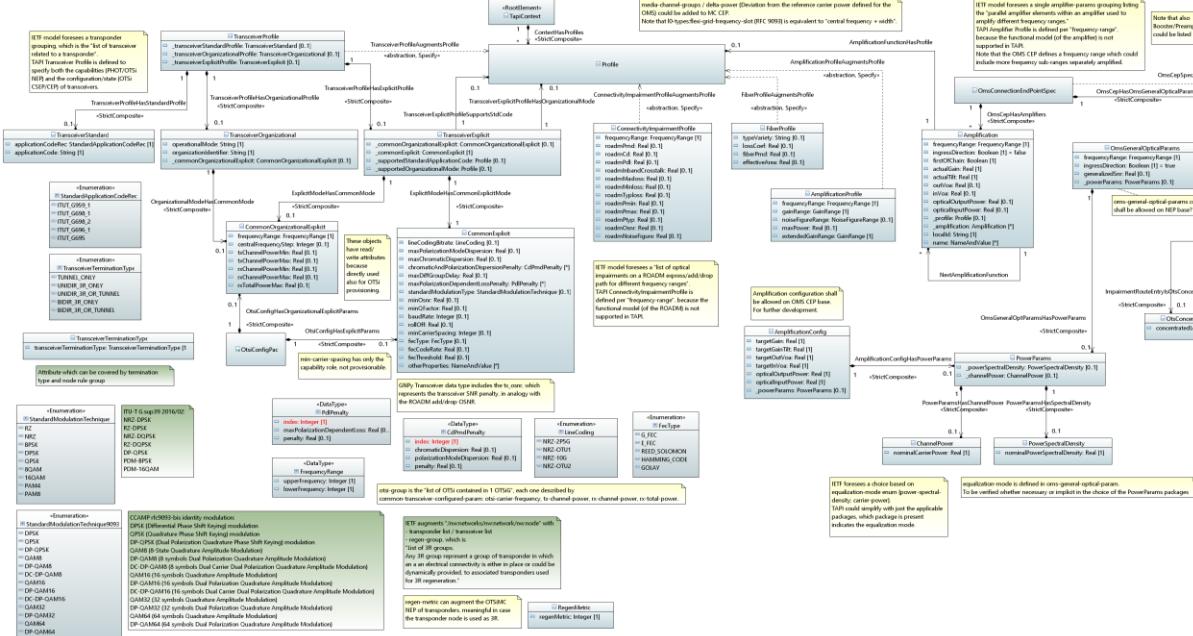


Figure 4 – Diagram *PhotonicProfiles*

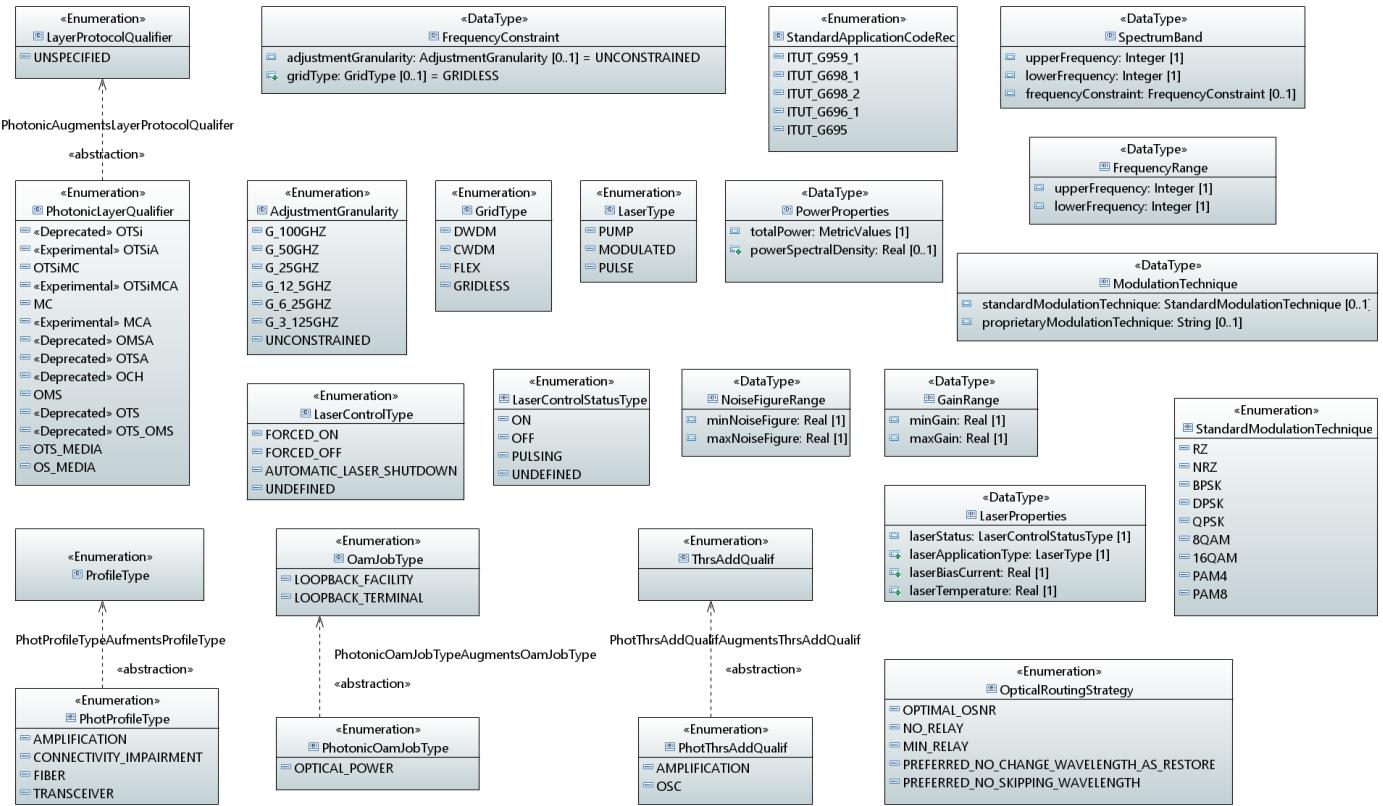


Figure 5 – Diagram *PhotonicTypes*

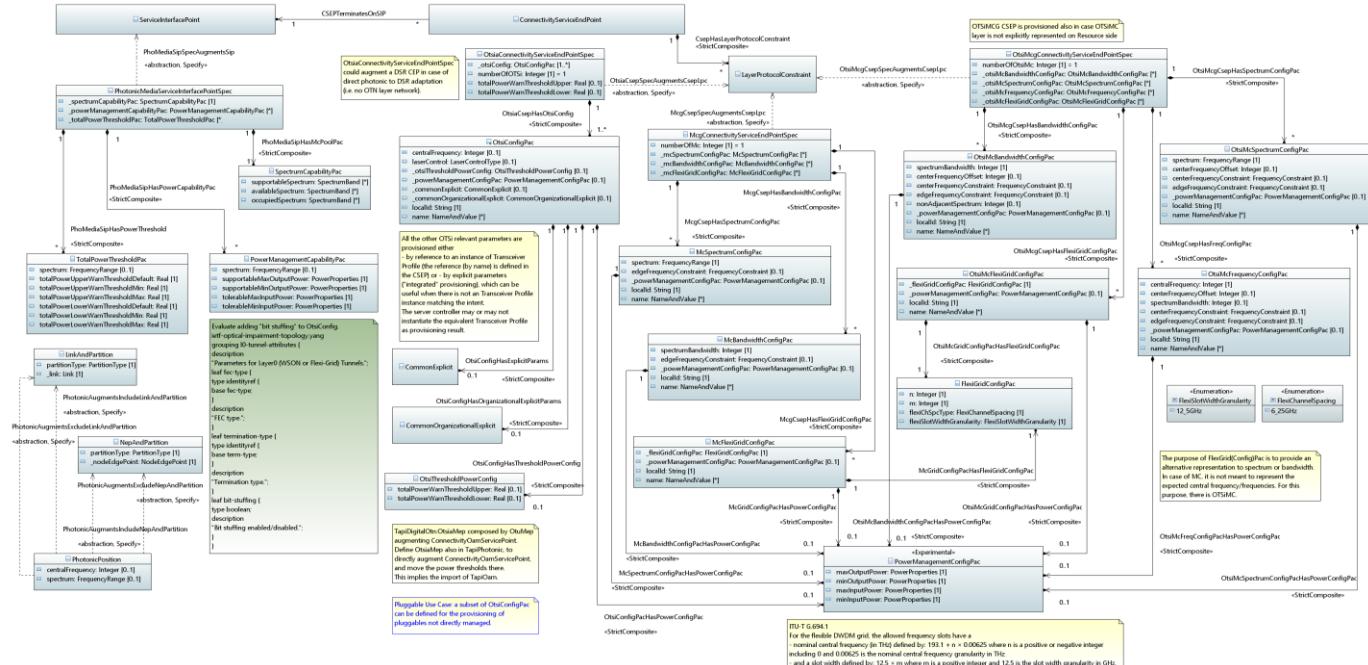


Figure 6 – Diagram *ServiceSpec*

1.2 Classes

1.2.1 Amplification

Description:

- The CEP which includes the Amplification impairments is the CEP which better approximates the output of the amplification function.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
frequencyRange	FrequencyRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description:				
ingressDirection	PrimitiveTypes::Boolean Default value: <i>false</i>	1	R	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description:				
firstOfChain	PrimitiveTypes::Boolean	1	R	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description:				
actualGain	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Actual gain in dB.			
actualTilt	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description: Actual tilt in dB.			
outVoa	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description: In dB.			
inVoa	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description: In dB.			
opticalOutputPower	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description: In dBm.			
opticalInputPower	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description: In dBm.			

Attribute Name	Type	Mult.	Access	Stereotypes
_profile <i>Navigable association end of: AmplificationFunctionHasProfile</i>	TapiCommon::ObjectClasses::Profile	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_amplification <i>Navigable association end of: NextAmplificationFunction</i>	Amplification	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				An identifier that is unique in the context of the GlobalClass from which it is inseparable.
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.

Table 1 – Attributes for class *Amplification*

1.2.2 AmplificationConfig

Description:

- This structure is for further development and is NOT used in this version.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
targetGain	PrimitiveTypes::Real	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
targetGainTilt	PrimitiveTypes::Real	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
targetOutVoa	PrimitiveTypes::Real	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
In dB.				
targetInVoa	PrimitiveTypes::Real	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
In dB.				
opticalOutputPower	PrimitiveTypes::Real	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
opticalInputPower	PrimitiveTypes::Real	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_powerParams <i>Navigable association end of: AmplificationConfigHasPowerParams</i>	<u>PowerParams</u>	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 2 – Attributes for class *AmplificationConfig*

1.2.3 AmplificationPerformanceData

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
opticalInputPower	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
opticalOutputPower	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
inputVoa	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
outputVoa	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
opticalGain	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
opticalTilt	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
An identifier that is unique in the context of the GlobalClass from which it is inseparable.				

Attribute Name	Type	Mult.	Access	Stereotypes
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Table 3 – Attributes for class *AmplificationPerformanceData***1.2.4 AmplificationProfile**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
frequencyRange	FrequencyRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
gainRange	GainRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
noiseFigureRange	NoiseFigureRange	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
maxPower	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				Maximum output power. Measured in dBm.
extendedGainRange	GainRange	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 4 – Attributes for class *AmplificationProfile*

1.2.5 ChannelPower

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
nominalCarrierPower	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				Reference channel power. OMS power after the ROADM (input of the OMS) or after the out-voa of each amplifier. Measured in dBm.

Table 5 – Attributes for class *ChannelPower*

1.2.6 CommonExplicit

Description:

- Attributes capabilities related to explicit mode of an optical transceiver.

Applied stereotypes:

- OpenInterfaceModelClass

- objectCreationNotification: NA
- objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
lineCodingBitrate	LineCoding	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA
Description:				
	Bit rate/line coding of optical tributary signal.			
maxPolarizationModeDispersion	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA
Description:				
	Maximum acceptable accumulated polarization mode dispersion on the receiver. Measured in picoseconds per square root kilometer.			
maxChromaticDispersion	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA
Description:				
	Maximum acceptable accumulated chromatic dispersion on the receiver. Measured in ps/nm (picoseconds per nanometer).			
chromaticAndPolarizationDispersionPenalty	CdPmdPenalty	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA
Description:				
	Optional penalty associated with a given accumulated CD and PMD. This list of triplet cd, pmd, penalty can be used to sample the function $\text{penalty} = f(\text{CD}, \text{PMD})$.			
maxDiffGroupDelay	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Maximum Differential group delay of this mode for this lane. Measured in picoseconds.			
maxPolarizationDependentLossPenalty	PdlPenalty	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Optional penalty associated with the maximum acceptable accumulated polarization dependent loss. This list of pair pdl and penalty can be used to sample the function pdl = f(penalty).			
standardModulationType	StandardModulationTechnique	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Modulation type this transceiver profile can support.			
minOsnr	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Min OSNR: if received OSNR at minimum Rx-power is lower than MIN-OSNR, an increased level of bit-errors post-FEC needs to be expected. Measured in dB@0.1nm (over 0.1 nm resolution bandwidth).			
minQFactor	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Min Qfactor at FEC threshold. Measured in dB.			
baudRate	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Baud-rate the specific transceiver in the list can support. Baud-rate is the unit for symbol rate or modulation rate in symbols per second or pulses per second. It is the number of distinct symbol changes (signal events) made to the transmission medium per second in a digitally modulated signal or a line code. Measured in Bd.			
rollOff	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The roll-off factor (beta with values from 0 to 1) identifies how the real signal shape exceed the baud rate. If=0 it is exactly matching the baud rate. If=1 the signal exceeds the 50% of the baud rate at each side.			
minCarrierSpacing	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute specifies the minimum nominal difference between the carrier frequencies of two homogeneous OTSis (which have the same optical characteristics but the central frequencies) such that if they are placed next to each other the interference due to spectrum overlap between them can be considered negligible. In case of heterogeneous OTSi it is up to path computation engine to determine the minimum distance between the carrier frequency of the two adjacent OTSi. Measured in Hz.			
fecType	FecType	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Available FEC.			
fecCodeRate	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: FEC code rate.			

Attribute Name	Type	Mult.	Access	Stereotypes
fecThreshold	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
	Threshold on the BER, for which FEC is able to correct errors.			
otherProperties	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 6 – Attributes for class *CommonExplicit*

1.2.7 CommonOrganizationalExplicit

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
frequencyRange	FrequencyRange	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
	This parameter indicates the minimum and maximum frequency for the transmitter tuning range.			
centralFrequencyStep	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: This parameter indicates the transmitter tunability grid as the distance between two adjacent carrier frequencies of the transmitter tuning range. Measured in Hz.			
txChannelPowerMin	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The minimum output power. Measured in dBm.			
txChannelPowerMax	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The maximum output power. Measured in dBm.			
rxChannelPowerMin	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The minimum input power. Measured in dBm.			
rxChannelPowerMax	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The maximum input power. Measured in dBm.			
rxTotalPowerMax	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Maximum rx optical power for all the channels received at the interface. Measured in dBm.			

Table 7 – Attributes for class *CommonOrganizationalExplicit*

1.2.8 ConnectivityImpairmentProfile

Description:

- This profile centralizes all the parameters of CCAMP ROADM add/drop/express path impairment profiles.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
frequencyRange	FrequencyRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
roadmPmd	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
Polarization Mode Dispersion, in picoseconds per square root kilometer.				
roadmCd	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
Chromatic Dispersion in ps/nm (picoseconds per nanometer).				
roadmPdl	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
Polarization Dependent Loss, in dB.				

Attribute Name	Type	Mult.	Access	Stereotypes
roADMInbandCrosstalk	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
In-band crosstalk, or coherent crosstalk, can occur in components that can have multiple same wavelength inputs, with the inputs either routed to different output ports, or all but 1 blocked. In the case of drop path it is the total of the ingress to drop e.g. WSS and drop block crosstalk contributions. Measured in dB.				
roADMMaxloss	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
Add path / Sink direction: This is the maximum expected add path loss from the add/drop port input to the ROADM egress, assuming no additional add path loss is added. This is used to establish the minimum required transponder output power required to hit the ROADM egress target power levels and preventing to hit the WSS attenuation limits. If the add path contains an internal amplifier this loss value should be based on worst case expected amplifier gain due to ripple or gain uncertainty. Drop path / Source direction: The net loss from the ROADM input, to the output of the drop block. If ROADM ingress to drop path includes an amplifier, the amplifier gain reduces the net loss. This is before any additional drop path attenuation that may be required due to drop amplifier power constraints. The max value correspond to worst case expected loss, including amplifier gain ripple or uncertainty. It is the maximum output power of the drop amplifier. Measured in dB.				
roADMMinloss	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
The net loss from the ROADM input, to the output of the drop block. If this ROADM ingress to drop path includes an amplifier, the amplifier gain reduces the net loss. This is before any additional drop path attenuation that may be required due to drop amplifier power constraints. The min value correspond to best case expected loss, including amplifier gain ripple or uncertainty. Measured in dB.				
roADMTyploss	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
roadmPmin	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	<p>If the drop path has additional loss that is added, for example, to hit target power levels into a drop path amplifier, or simply, to reduce the power of a strong carrier (due to ripple, for example), then the use of the ROADM input power levels and the above drop losses is not appropriate. This parameter corresponds to the min per carrier power levels expected at the output of the drop block. Measured in dBm.</p>			
roadmPmax	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	<p>Add path / Sink direction: This is the maximum (per carrier) power level permitted at the add block input ports, that can be handled by the ROADM node. This may reflect either add amplifier power constraints or WSS adjustment limits. Higher power transponders would need to have their launch power reduced to this value or lower. Drop path / Source direction: If the drop path has additional loss that is added, for example, to hit target power levels into a drop path amplifier, or simply, to reduce the power of a strong carrier (due to ripple, for example), then the use of the ROADM input power levels and the above drop losses is not appropriate. This parameter corresponds to the best case per carrier power levels expected at the output of the drop block. Measured in dBm.</p>			
roadmPtyp	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	<p>If the drop path has additional loss that is added, for example, to hit target power levels into a drop path amplifier, or simply, to reduce the power of a strong carrier (due to ripple, for example), then the use of the ROADM input power levels and the above drop losses is not appropriate. This parameter corresponds to the typical case per carrier power levels expected at the output of the drop block. Measured in dBm.</p>			
roadmOsnr	PrimitiveTypes::Real	0..1	R	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes	
	Description: Optical Signal-to-Noise Ratio (OSNR). Add path / Sink direction: If the add path contains the ability to adjust the carrier power levels into an add path amplifier (if present) to a target value, this reflects the OSNR contribution of the add amplifier assuming this target value is obtained. The worst case OSNR based on the input power and NF calculation method, and this value, should be used (if both are defined). Drop path / Source direction: Expected OSNR contribution of the drop path amplifier (if present) for the case of additional drop path loss (before this amplifier) in order to hit a target power level (per carrier). If both, - the OSNR based on the ROADM input power level ($P_{carrier} = Pref + 10\log(carrier-baudrate/ref-baud) + \text{delta-power}$) and the input inferred NF(NF_{drop}), and - this OSNR value, are defined, the minimum value between these two should be used. Measured in dB@0.1nm (over 0.1 nm resolution bandwidth).				
roadmNoiseFigure	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA	
	Description: Add path / Sink direction: If the add path contains an amplifier, this is the noise figure of that amplifier inferred to the add port. This permits add path OSNR calculation based on the input power levels to the add block without knowing the ROADM path losses to the add amplifier. Drop path / Source direction: If the drop path contains an amplifier, this is the noise figure of that amplifier, inferred to the ROADM ingress port. This permits to determine amplifier OSNR contribution without having to specify the ROADM node's losses to that amplifier. This applies for the case of no additional drop path loss, before the amplifier, in order to reduce the power of the carriers to a target value. Measured in dB.				

Table 8 – Attributes for class *ConnectivityImpairmentProfile*

1.2.9 FiberProfile

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
typeVariety	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Attribute Name	Type	Mult.	Access	Stereotypes
lossCoef	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Loss coefficient of the fiber in dB/Km.			
fiberPmd	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Polarization Mode Dispersion, in picoseconds per square root kilometer.			
effectiveArea	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Effective area of the fiber, in square meters.			

Table 9 – Attributes for class *FiberProfile***1.2.10 FlexiGridConfigPac**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
n	PrimitiveTypes::Integer	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: RFC 9093: The given value 'N' is used to determine the nominal central frequency. The nominal central frequency, 'f', is defined by: - $f = 193100.000 \text{ GHz} + N \times \text{channel spacing}$ (measured in GHz), where 193100.000 GHz (193.10000 THz) is the ITU-T 'anchor frequency' for transmission over the DWDM grid, and where 'channel spacing' is defined by the flexi-ch-spc-type. Note that the term 'channel spacing' can be substituted by the term 'nominal central frequency granularity' defined in clause 8 of ITU-T G.694.1. Signed.			
m	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description: RFC 9093: The given value 'M' is used to determine the slot width. A slot width is defined by: - slot width = M x SWG (measured in GHz), where SWG (Slot Width Granularity) is defined by the flexi-slot-width-granularity.			
flexiChSpcType	FlexiChannelSpacing	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description:			
flexiSlotWidthGranularity	FlexiSlotWidthGranularity	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 10 – Attributes for class *FlexiGridConfigPac*

1.2.11 FlexiGridPac

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
n	PrimitiveTypes::Integer	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
				RFC 9093: The given value 'N' is used to determine the nominal central frequency. The nominal central frequency, 'f', is defined by: - $f = 193100.000 \text{ GHz} + N \times \text{channel spacing}$ (measured in GHz), where 193100.000 GHz (193.10000 THz) is the ITU-T 'anchor frequency' for transmission over the DWDM grid, and where 'channel spacing' is defined by the flexi-ch-spc-type. Note that the term 'channel spacing' can be substituted by the term 'nominal central frequency granularity' defined in clause 8 of ITU-T G.694.1. Signed.
m	PrimitiveTypes::Integer	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
				RFC 9093: The given value 'M' is used to determine the slot width. A slot width is defined by: - slot width = M x SWG (measured in GHz), where SWG (Slot Width Granularity) is defined by the flexi-slot-width-granularity.
flexiChSpcType	FlexiChannelSpacing	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
flexiSlotWidthGranularity	FlexiSlotWidthGranularity	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: An identifier that is unique in the context of the GlobalClass from which it is inseparable.			
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Table 11 – Attributes for class *FlexiGridPac*

1.2.12 ImpairmentRouteEntry

Description:

- An ImpairmentRouteEntry can be exclusively either an OtsConcentratedLoss or an OtsFiberSpanImpairments.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_otsConcentratedLoss Navigable association end of: <i>ImpairmentRouteEntryIsOtsConcentratedLoss</i>	OtsConcentratedLoss	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
_otsFiberSpanImpairments Navigable association end of: <i>ImpairmentRouteEntryIsOtsFiberSpan</i>	OtsFiberSpanImpairments	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Table 12 – Attributes for class *ImpairmentRouteEntry*

1.2.13 McBandwidthConfigPac

Description:

- MC configuration based on bandwidth, with the actual position in the spectrum is delegated to the server controller.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrumBandwidth	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
				Unidimensional in Hz.
edgeFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
_powerManagementConfigPac <i>Navigable association end of: McBandwidthConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
An identifier that is unique in the context of the GlobalClass from which it is inseparable.				

Attribute Name	Type	Mult.	Access	Stereotypes
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA

Table 13 – Attributes for class *McBandwidthConfigPac***1.2.14 McConnectionEndPointSpec**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumPac <i>Navigable association end of: McCepHasSpectrumPac</i>	SpectrumPac	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
_flexiGridPac <i>Navigable association end of: McCepHasFlexiGridPac</i>	FlexiGridPac	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
_powerMeasurementPac <i>Navigable association end of: McCepHasPowerPac</i>	PowerMeasurementPac	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA

Table 14 – Attributes for class *McConnectionEndPointSpec***1.2.15 McFlexiGridConfigPac****Description:**

- ITU-T G.694.1 Spectral grids for WDM applications: DWDM frequency grid. The flexi-grid-frequency-slot (RFC 9093) defines the nominal central frequency and its slot width in terms of N, M.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_flexiGridConfigPac <i>Navigable association end of: McGridConfigPacHasFlexiGridConfigPac</i>	FlexiGridConfigPac	1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> AVC: NA
	Description:			
_powerManagementConfigPac <i>Navigable association end of: McGridConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> AVC: NA
	Description:			
localId <i>Inherited: TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: yes – part: 1 isInvariant: true valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> AVC: NA
	Description:			
	An identifier that is unique in the context of the GlobalClass from which it is inseparable.			
name <i>Inherited: TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes	
	<p>Description:</p> <p>List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.</p>				

Table 15 – Attributes for class *McFlexiGridConfigPac***1.2.16 McSpectrumConfigPac****Description:**

- MC configuration based on spectrum specification.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrum	FrequencyRange	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
edgeFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
_powerManagementConfigPac <i>Navigable association end of: McSpectrumConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				An identifier that is unique in the context of the GlobalClass from which it is inseparable.
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.

Table 16 – Attributes for class *McSpectrumConfigPac*

1.2.17 McConnectivityServiceEndPointSpec

Description:

- MCG provisioning scenarios: 1) In case of MCG provisioning based on multiple SIPs (e.g. more add/drop ports each one potentially supporting a single OTSi), then a unique/top CSEP instance (not referring to any SIP, with a MC LPC including McConnectivityServiceEndPointSpec with specified only the number of MCs) refers to the CSEP instances (one per each MEDIA Link, each one referring to one SIP, each one with a MC LPC including McConnectivityServiceEndPointSpec composing only one MC config pac), through the CSEPHasAssembledCSEPs association. 2) In case of MCG provisioning based on single SIP, then the model is compacted into only one CSEP instance, with a MC LPC including McConnectivityServiceEndPointSpec, which composes one or more MC config pacs).

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
numberOfMc	PrimitiveTypes::Integer Default value: 1	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
_mcSpectrumConfigPac <i>Navigable association end of: McCsepHasSpectrumConfigPac</i>	McSpectrumConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_mcBandwidthConfigPac <i>Navigable association end of: McCsepHasBandwidthConfigPac</i>	McBandwidthConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_mcFlexiGridConfigPac <i>Navigable association end of: McCsepHasFlexiGridConfigPac</i>	McFlexiGridConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 17 – Attributes for class *McgConnectivityServiceEndPointSpec*

1.2.18 OmsConnectionEndPointSpec

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumPac <i>Navigable association end of: OmsCepHasSpectrumPac</i>	SpectrumPac	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
_flexiGridPac <i>Navigable association end of: OmsCepHasFlexiGridPac</i>	FlexiGridPac	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_amplification <i>Navigable association end of: OmsCepHasAmplifiers</i>	Amplification	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_omsGeneralOpticalParams <i>Navigable association end of: OmsCepHasOmsGeneralOpticalParams</i>	OmsGeneralOpticalParams	0..2	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_powerMeasurementPac <i>Navigable association end of: OmsCepHasPowerPac</i>	PowerMeasurementPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 18 – Attributes for class *OmsConnectionEndPointSpec*

1.2.19 OmsGeneralOpticalParams

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
frequencyRange	FrequencyRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
ingressDirection	PrimitiveTypes::Boolean Default value: <i>true</i>	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description: For unidirectional CEPs there may be at most one oms general optical params. The ingress direction is true for a SINK CEP and false for a SOURCE CEP. For bidirectional CEPs there may be at most two oms general optical parms. If there are two one must have the ingress direction set to true and the other must have the ingress direction set to false. If the ingress direction is true the params correspond to the SINK function of the CEP and if it is false they correspond to the SOURCE function of the CEP.				
generalizedSnr	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description: Generalized SNR. Measured in dB@0.1nm (over 0.1 nm resolution bandwidth).				
_powerParams Navigable association end of: OmsGeneralOptParamsHasPowerParams	PowerParams	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 19 – Attributes for class *OmsGeneralOpticalParams*

1.2.20 OscMonitoringPac

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass

- support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
opticalInputPower	PowerProperties	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
opticalOutputPower	PowerProperties	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 20 – Attributes for class *OscMonitoringPac*

1.2.21 OscParams

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_powerMeasurementPac <i>Navigable association end of: OscParamsHasPowerPac</i>	PowerMeasurementPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 21 – Attributes for class *OscParams*

1.2.22 OtsConcentratedLoss

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA

- objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
concentratedLoss	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA <p>Description: Concentrated loss, in dB.</p>

Table 22 – Attributes for class *OtsConcentratedLoss*

1.2.23 OtsFiberSpanImpairments

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
fiberTypeVariety	PrimitiveTypes::String	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA <p>Description: Fiber type.</p>
pmd	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY ● OpenInterfaceModelAttribute ● AVC: NA <p>Description:</p>

Attribute Name	Type	Mult.	Access	Stereotypes
length	PrimitiveTypes::Integer	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Length of the fiber in Km.			
lossCoef	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Loss coefficient of the fiber in dB/Km.			
totalLoss	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Includes all losses: Fiber loss and connector in and connector out losses, in dB.			
connectorIn	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Loss by the input connector, in dB.			
connectorOut	PrimitiveTypes::Real	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Loss by the output connector, in dB.			

Table 23 – Attributes for class *OtsFiberSpanImpairments***1.2.24 OtsImpairments**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
ingressDirection	PrimitiveTypes::Boolean Default value: <i>true</i>	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA Description: For unidirectional CEPs there may be at most one ots impairments. The ingress direction is true for a SINK CEP and false for a SOURCE CEP. For bidirectional CEPs there may be at most two ots impairments. If there are two one must have the ingress direction set to true and the other must have the ingress direction set to false. If the ingress direction is true the params correspond to the SINK function of the CEP and if it is false they correspond to the SOURCE function of the CEP.
_impairmentRouteEntry <i>Navigable association end of: OtsImpairmentRoute</i>	ImpairmentRouteEntry	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA Description:

Table 24 – Attributes for class *OtsImpairments***1.2.25 OtsMediaConnectionEndPointSpec**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumPac <i>Navigable association end of: OtsMediaCepHasSpectrumPac</i>	SpectrumPac	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
_flexiGridPac <i>Navigable association end of: OtsMediaCepHasFlexiGridPac</i>	FlexiGridPac	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_otsImpairments <i>Navigable association end of: OtsMediaCepHasOtsImpairments</i>	OtsImpairments	0..2	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_powerMeasurementPac <i>Navigable association end of: OtsMediaCepHasPowerPac</i>	PowerMeasurementPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_oscParams <i>Navigable association end of: OtsMediaCepHasOscParams</i>	OscParams	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 25 – Attributes for class *OtsMediaConnectionEndPointSpec*

1.2.26 OtsiConfigPac

Description:

- Configuration parameters regarding the single O/E/O transmission function.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA

- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
centralFrequency	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
The central frequency of the laser. It is the oscillation frequency of the corresponding electromagnetic wave. Measured in Hz.				
laserControl	LaserControlType	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_otsiThresholdPowerConfig <i>Navigable association end of: OtsiConfigHasThresholdPowerConfig</i>	OtsiThresholdPowerConfig	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_powerManagementConfigPac <i>Navigable association end of: OtsiConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_commonExplicit <i>Navigable association end of: OtsiConfigHasExplicitParams</i>	CommonExplicit	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
_commonOrganizationalExplicit <i>Navigable association end of: OtsiConfigHasOrganizationalExplicitParameters</i>	CommonOrganizationalExplicit	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: 			
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: An identifier that is unique in the context of the GlobalClass from which it is inseparable.			
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.			

Table 26 – Attributes for class *OtsiConfigPac*

1.2.27 OtsiMcBandwidthConfigPac

Description:

- OTSiMC configuration based on bandwidth, with the actual position in the spectrum is delegated to the server controller.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrumBandwidth	PrimitiveTypes::Integer	1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
				Unidimensional in Hz.
centerFrequencyOffset	PrimitiveTypes::Integer	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
				Offset where it is expected to find the signal in the MC. (unidimensional in Hz).
centerFrequencyConstraint	FrequencyConstraint	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
edgeFrequencyConstraint	FrequencyConstraint	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
nonAdjacentSpectrum	PrimitiveTypes::Integer	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
_powerManagementConfigPac <i>Navigable association end of: OtsiMcBandwidthConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
localId <i>Inherited: TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				An identifier that is unique in the context of the GlobalClass from which it is inseparable.
name <i>Inherited: TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.

Table 27 – Attributes for class *OtsiMcBandwidthConfigPac*

1.2.28 OtsiMcConnectionEndPointSpec

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_otsiTerminationPac <i>Navigable association end of: OtsiMcCepHasTerminationPac</i>	OtsiTerminationPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumPac <i>Navigable association end of: OtsiMcCepHasSpectrumPac</i>	SpectrumPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Mandatory if the CEP is not terminated, optional if terminated.			
_flexiGridPac <i>Navigable association end of: OtsiMcCepHasFlexiGridPac</i>	FlexiGridPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_powerMeasurementPac <i>Navigable association end of: OtsiMcCepHasPowerPac</i>	PowerMeasurementPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 28 – Attributes for class *OtsiMcConnectionEndPointSpec*

1.2.29 OtsiMcFlexiGridConfigPac

Description:

- ITU-T G.694.1 Spectral grids for WDM applications: DWDM frequency grid. The flexi-grid-frequency-slot (RFC 9093) defines the nominal central frequency and its slot width in terms of N, M.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_flexiGridConfigPac <i>Navigable association end of: OtsiMcGridConfigPacHasFlexiGridConfigPac</i>	FlexiGridConfigPac	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
<code>_powerManagementConfigPac</code> <i>Navigable association end of: OtsiMcGridConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description:
<code>localId</code> <i>Inherited: TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description: An identifier that is unique in the context of the GlobalClass from which it is inseparable.
<code>name</code> <i>Inherited: TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description: List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.

Table 29 – Attributes for class *OtsiMcFlexiGridConfigPac*

1.2.30 OtsiMcFrequencyConfigPac

Description:

- OTSiMC configuration based on central frequency specification.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
centralFrequency	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
centerFrequencyOffset	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
spectrumBandwidth	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
Unidimensional in Hz				
centerFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
edgeFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
_powerManagementConfigPac Navigable association end of: OtsiMcFreqConfigPacHasPowerConfigPac	PowerManagementConfigPac	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			An identifier that is unique in the context of the GlobalClass from which it is inseparable.
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			List of names. This value is unique in some namespace but may change during the life of the entity. A name carries no semantics with respect to the purpose of the entity.

Table 30 – Attributes for class *OtsiMcFrequencyConfigPac*

1.2.31 OtsiMcSpectrumConfigPac

Description:

- OTSiMC configuration based on spectrum specification.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrum	FrequencyRange	1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
centerFrequencyOffset	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Offset where it is expected to find the signal in the MC. (unidimensional in Hz).			
centerFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
edgeFrequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_powerManagementConfigPac <i>Navigable association end of: OtsiMcSpectrumConfigPacHasPowerConfigPac</i>	PowerManagementConfigPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
localId <i>Inherited: TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	An identifier that is unique in the context of the GlobalClass from which it is inseparable.			

Attribute Name	Type	Mult.	Access	Stereotypes
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Table 31 – Attributes for class *OtsiMcSpectrumConfigPac***1.2.32 OtsiMcConnectivityServiceEndPointSpec****Description:**

- OTSiMCG CSEP is provisioned also in case OTSiMC layer is not explicitly represented on Resource side, i.e. no OTSiMC Connections and CEPs are instantiated. OTSiMCG provisioning scenarios: are analogous to MCG provisioning scenarios. OtsiMcBandwidthConfigPac, OtsiMcSpectrumConfigPac and OtsiMcFrequencyConfigPac are mutually exclusive.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
numberOfOtsiMc	PrimitiveTypes::Integer Default value: 1	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
_otsiMcBandwidthConfigPac <i>Navigable association end of: OtsiMcCsepHasBandwidthConfigPac</i>	OtsiMcBandwidthConfigPac	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
_otsiMcSpectrumConfigPac <i>Navigable association end of: OtsiMcgCsepHasSpectrumConfigPac</i>	OtsiMcSpectrumConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_otsiMcFrequencyConfigPac <i>Navigable association end of: OtsiMcgCsepHasFreqConfigPac</i>	OtsiMcFrequencyConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
_otsiMcFlexiGridConfigPac <i>Navigable association end of: OtsiMcgCsepHasFlexiGridConfigPac</i>	OtsiMcFlexiGridConfigPac	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 32 – Attributes for class *OtsiMcgConnectivityServiceEndPointSpec*

1.2.33 OtsiMonitoringPac

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
polarizationModeDispersion	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Polarization mode dispersion on the receiver. Measured in picoseconds per square root kilometer.			

Attribute Name	Type	Mult.	Access	Stereotypes
chromaticDispersion	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Chromatic dispersion on the receiver. Measured in ps/nm (picoseconds per nanometer).			
diffGroupDelay	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Differential group delay of this mode for this lane. Measured in picoseconds.			
frequencyOffset	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Frequency offset measured in Hz.			

Table 33 – Attributes for class *OtsiMonitoringPac***1.2.34 OtsiRoutingSpec****Description:**

- This structure is for further development and is NOT used in this version.

Applied stereotypes:

- Experimental
- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
opticalRoutingStrategy	OpticalRoutingStrategy	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes	
	Description:				

Table 34 – Attributes for class *OtsiRoutingSpec***1.2.35 OtsiTerminationPac****Description:**

- Present in case of terminated OTSiMC CEP, i.e. including O/E/O function.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
selectedCentralFrequency	PrimitiveTypes::Integer	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
				The central frequency of the laser. It is the oscillation frequency of the corresponding electromagnetic wave. Measured in Hz.
selectedSpectrum	FrequencyRange	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
laserProperties	LaserProperties	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
				Laser properties.

Attribute Name	Type	Mult.	Access	Stereotypes
_otsiMonitoringPac <i>Navigable association end of: OtsiTerminationPacHasMonitoring</i>	OtsiMonitoringPac	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Table 35 – Attributes for class *OtsiTerminationPac***1.2.36 OtsiThresholdPowerConfig****Description:**

- This pac includes power management constraints.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
totalPowerWarnThresholdUpper	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
totalPowerWarnThresholdLower	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Table 36 – Attributes for class *OtsiThresholdPowerConfig***1.2.37 OtsiaConnectivityServiceEndPointSpec****Description:**

- OTU/OTSiG provisioning scenarios: 1) In case of ODU/OTU/OTSiG provisioning based on multiple SIPs (e.g. more line ports each one potentially supporting a single OTSi), then the unique/top CSEP instance (not referring to any SIP, with an OTSiMC LPC including OtsiaCsepTtpSpec with specified only the number of OTSis) refers to the CSEP instances (one per each MEDIA Link, each one referring to one SIP, each one with an OTSiMC LPC including OtsiaCsepTtpSpec composing only one OTSi config pac), through the CSEPHasAssembledCSEPs association. 2) In case of ODU/OTU/OTSiG provisioning based on single SIP, then the model is compacted into only one CSEP instance, with an OTSiMC LPC including OtsiaCsepTtpSpec which composes one or more OTSi config pacs).

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_otsiConfig <i>Navigable association end of: OtsiaCsepHasOtsiConfig</i>	OtsiConfigPac	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA Description:
numberOfOTSi	PrimitiveTypes::Integer Default value: 1	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA Description:
totalPowerWarnThresholdUpper	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA Description: <p>Allows to configure the upper power threshold on whole Assembly scope.</p>

Attribute Name	Type	Mult.	Access	Stereotypes
totalPowerWarnThresholdLower	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				Allows to configure the lower power threshold on whole Assembly scope.

Table 37 – Attributes for class *OtsiaConnectivityServiceEndPointSpec*

1.2.38 PhotonicMediaNodeEdgePointSpec

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: CONDITIONAL_MANDATORY
 - condition: OTSiA

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumCapabilityPac <i>Navigable association end of: PhotonicMediaNepHasSpectrumCapabilityPac</i>	SpectrumCapabilityPac	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_powerManagementCapabilityPac <i>Navigable association end of: PhotonicMediaNepHasPowerPac</i>	PowerManagementCapabilityPac	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_totalPowerThresholdPac <i>Navigable association end of: PhotonicMediaNepHasPowerThrPac</i>	TotalPowerThresholdPac	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes	
	Description:				

Table 38 – Attributes for class *PhotonicMediaNodeEdgePointSpec***1.2.39 PhotonicMediaServiceInterfacePointSpec**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_spectrumCapabilityPac <i>Navigable association end of: PhoMediaSipHasMcPoolPac</i>	SpectrumCapabilityPac	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
_powerManagementCapabilityPac <i>Navigable association end of: PhoMediaSipHasPowerCapabilityPac</i>	PowerManagementCapabilityPac	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
_totalPowerThresholdPac <i>Navigable association end of: PhoMediaSipHasPowerThreshold</i>	TotalPowerThresholdPac	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 39 – Attributes for class *PhotonicMediaServiceInterfacePointSpec***1.2.40 PhotonicPerformanceData**

Applied stereotypes:

- OpenInterfaceModelClass

- objectCreationNotification: NA
- objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
opticalInputPower	PowerProperties	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute ● AVC: NA
Description:				
opticalOutputPower	PowerProperties	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute ● AVC: NA
Description:				
inputVoa	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute ● AVC: NA
Description:				
outputVoa	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute ● AVC: NA
Description:				
opticalGain	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute ● AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
opticalTilt	TapiCommon::TypeDefinitions::MetricValues	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • AVC: NA
	Description:			
_amplificationPerformanceData <i>Navigable association end of: PhotonicPerformanceDataIncludesAmplificationPm</i>	AmplificationPerformanceData	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description:			
_otsiMonitoringPac <i>Navigable association end of: PhotonicPerformanceDataHasOtsiPm</i>	OtsiMonitoringPac	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description:			
_oscMonitoringPac <i>Navigable association end of: PhotonicPerformanceDataHasOscPm</i>	OscMonitoringPac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 40 – Attributes for class *PhotonicPerformanceData*

1.2.41 PhotonicPosition

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelAttribute
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
centralFrequency	PrimitiveTypes::Integer	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
spectrum	FrequencyRange	0..1	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 41 – Attributes for class *PhotonicPosition*

1.2.42 PowerManagementCapabilityPac

Description:

- This pac includes power management capabilities.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrum	FrequencyRange	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
supportableMaxOutputPower	PowerProperties	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: This parameter exposes the maximum output power supported.			
supportableMinOutputPower	PowerProperties	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description: This parameter exposes the minimum output power supported.
tolerableMaxInputPower	PowerProperties	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description: This parameter exposes the maximum input power tolerated.
tolerableMinInputPower	PowerProperties	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
				Description: This parameter exposes the minimum input power tolerated.

Table 42 – Attributes for class *PowerManagementCapabilityPac*

1.2.43 PowerManagementConfigPac

Description:

- This pac includes power management constraints.

Applied stereotypes:

- Experimental
- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
maxOutputPower	PowerProperties	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Add/drop ROADM port: This parameter shall be used to specify the maximum power to be delivered to the local transceiver i.e., after the signal has crossed the amplification/attenuation of the optical line system. This specifies constraints related to power that the OLS should guarantee. Transceiver: the transceiver max launch (TX) power. This specifies constraints related to power that the transceiver should guarantee.			
minOutputPower	PowerProperties	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Add/drop ROADM port: This parameter shall be used to specify the minimum power to be delivered to the local transceiver i.e., after the signal has crossed the amplification/attenuation of the optical line system. This specifies constraints related to power that the OLS should guarantee. Transceiver: the transceiver min launch (TX) power. This specifies constraints related to power that the transceiver should guarantee.			
maxInputPower	PowerProperties	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Add/drop ROADM port: This parameter shall be used to specify the maximum power to be delivered to the local transceiver i.e., after the signal has crossed the amplification/attenuation of the optical line system. This specifies constraints related to power that the OLS should guarantee. Transceiver: the transceiver max launch (TX) power. This specifies constraints related to power that the transceiver should guarantee. This parameter conveys the attached transceiver max launch (TX) power (expected from the transceiver). This specifies constraints related to power tolerance at the input.			
minInputPower	PowerProperties	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Add/drop ROADM port: This parameter shall be used to specify the minimum power to be delivered to the local transceiver i.e., after the signal has crossed the amplification/attenuation of the optical line system. This specifies constraints related to power that the OLS should guarantee. Transceiver: the transceiver min launch (TX) power. This specifies constraints related to power that the transceiver should guarantee. This parameter conveys the attached transceiver min launch (TX) power (expected from the transceiver). This specifies constraints related to power tolerance at the input.			

Table 43 – Attributes for class *PowerManagementConfigPac***1.2.44 PowerMeasurementPac**

Applied stereotypes:

- Experimental
- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
measuredInputPower	PowerProperties	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				
measuredOutputPower	PowerProperties	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
Description:				

Table 44 – Attributes for class *PowerMeasurementPac***1.2.45 PowerParams**

Description:

- Optical power or PSD after the ROADM or after the out-voa.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA

- objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_powerSpectralDensity <i>Navigable association end of: PowerParamsHasSpectralDensity</i>	PowerSpectralDensity	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> ● AVC: NA
	Description:			
_channelPower <i>Navigable association end of: PowerParamsHasChannelPower</i>	ChannelPower	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> ● AVC: NA
	Description:			

Table 45 – Attributes for class *PowerParams*

1.2.46 PowerSpectralDensity

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
nominalPowerSpectralDensity	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> ● isKey: No ● isInvariant: false ● valueRange: no range constraint ● support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> ● AVC: NA
	Description:			
	Reference power spectral density after the ROADM or after the out-voa. Typical value : 3.9 E-14, resolution 0.1nW/MHz Measured in W/Hz.			

Table 46 – Attributes for class *PowerSpectralDensity*

1.2.47 RegenMetric

Description:

- This structure is for further development and is NOT used in this version.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
regenMetric	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Table 47 – Attributes for class *RegenMetric*

1.2.48 SpectrumCapabilityPac

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
supportableSpectrum	SpectrumBand	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
availableSpectrum	SpectrumBand	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
occupiedSpectrum	SpectrumBand	0..*	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Table 48 – Attributes for class *SpectrumCapabilityPac***1.2.49 SpectrumPac**

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
occupiedSpectrum	FrequencyRange	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
localId Inherited: <i>TapiCommon::ObjectClasses::LocalClass::localId</i>	PrimitiveTypes::String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA
name Inherited: <i>TapiCommon::ObjectClasses::LocalClass::name</i>	<i>TapiCommon::TypeDefinitions::NameAndValue</i>	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> • AVC: NA

Table 49 – Attributes for class *SpectrumPac***1.2.50 TotalPowerThresholdPac****Description:**

- Indication with severity warning raised when a total power value measured is above the threshold.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
spectrum	FrequencyRange	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
totalPowerUpperWarnThresholdDefault	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the default threshold that was set				
totalPowerUpperWarnThresholdMin	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the lower threshold that was set				
totalPowerUpperWarnThresholdMax	PrimitiveTypes::Real	1	R	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY • OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the upper threshold that was set				

Attribute Name	Type	Mult.	Access	Stereotypes
totalPowerLowerWarnThresholdDefault	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the default threshold that was set				
totalPowerLowerWarnThresholdMin	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the lower threshold that was set				
totalPowerLowerWarnThresholdMax	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
Can read the value of the upper threshold that was set				

Table 50 – Attributes for class *TotalPowerThresholdPac*

1.2.51 TransceiverExplicit

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_commonOrganizationalExplicit <i>Navigable association end of: ExplicitModeHasCommonMode</i>	CommonOrganizationalExplicit	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
_commonExplicit <i>Navigable association end of: ExplicitModeHasCommonExplicitMode</i>	CommonExplicit	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_supportedStandardApplicationCode <i>Navigable association end of: TransceiverExplicitProfileSupportsStdCode</i>	TapiCommon::ObjectClasses::Profile	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_supportedOrganizationalMode <i>Navigable association end of: TransceiverExplicitProfileHasOrganizationMode</i>	TapiCommon::ObjectClasses::Profile	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 51 – Attributes for class *TransceiverExplicit*

1.2.52 TransceiverOrganizational

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
operationalMode	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				Organization/vendor specific mode that guarantees interoperability, reference ITU-T G.698.2 (11/2018).

Attribute Name	Type	Mult.	Access	Stereotypes
organizationIdentifier	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
				Vendor/organization identifier that uses a private mode out of already defined in G.698.2 ITU-T application-code (RFC 7581).
_commonOrganizationalExplicit <i>Navigable association end of: OrganizationalModeHasCommonMode</i>	CommonOrganizationalExplicit	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 52 – Attributes for class *TransceiverOrganizational*

1.2.53 TransceiverProfile

Description:

- The referenced specific profiles are mutually exclusive.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_transceiverStandardProfile <i>Navigable association end of: TransceiverProfileHasStandardProfile</i>	TransceiverStandard	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
_transceiverOrganizationalProfile <i>Navigable association end of: TransceiverProfileHasOrganizationalProfile</i>	TransceiverOrganizational	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
_transceiverExplicitProfile <i>Navigable association end of: TransceiverProfileHasExplicitProfile</i>	TransceiverExplicit	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Table 53 – Attributes for class *TransceiverProfile***1.2.54 TransceiverStandard****Description:**

- The standard application identifier.

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
applicationCodeRec	StandardApplicationCodeRec	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	The ITU-T recommendation which defines the application code format.			
applicationCode	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	The standard application code as defined in the ITU-T Recommendation referenced in application code rec.			

Table 54 – Attributes for class *TransceiverStandard*

1.2.55 TransceiverTerminationType

Description:

- Describes whether the transponder can be used in an Optical Tunnel termination configuration or in a 3R configuration (or both).

Applied stereotypes:

- OpenInterfaceModelClass
 - objectCreationNotification: NA
 - objectDeletionNotification: NA
- OpenModelClass
 - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
transceiverTerminationType	TransceiverTerminationType	1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute <ul style="list-style-type: none"> AVC: NA

Table 55 – Attributes for class *TransceiverTerminationType*

1.3 Signals

1.4 Associations

1.4.1 AmplificationConfigHasPowerParams

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerParams	composite	Yes	PowerParams	0..1
amplificationconfig	none	No	AmplificationConfig	1

Table 56 – Member ends for association *AmplificationConfigHasPowerParams*

1.4.2 AmplificationFunctionHasProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	none	Yes	TapiCommon::ObjectClasses::Profile	0..1
amplification	none	No	Amplification	1

Table 57 – Member ends for association *AmplificationFunctionHasProfile*

1.4.3 ExplicitModeHasCommonExplicitMode

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_commonExplicit	composite	Yes	CommonExplicit	1
explicitmode	none	No	TransceiverExplicit	1

Table 58 – Member ends for association *ExplicitModeHasCommonExplicitMode*

1.4.4 ExplicitModeHasCommonMode

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_commonOrganizationalExplicit	composite	Yes	CommonOrganizationalExplicit	0..1
explicitmode	none	No	TransceiverExplicit	1

Table 59 – Member ends for association *ExplicitModeHasCommonMode*

1.4.5 ImpairmentRouteEntryIsOtsConcentratedLoss

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsConcentratedLoss	composite	Yes	OtsConcentratedLoss	0..1
impairmentcontribution	none	No	ImpairmentRouteEntry	1

Table 60 – Member ends for association *ImpairmentRouteEntryIsOtsConcentratedLoss*

1.4.6 ImpairmentRouteEntryIsOtsFiberSpan

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsFiberSpanImpairments	composite	Yes	OtsFiberSpanImpairments	0..1
impairmentrouteentry	none	No	ImpairmentRouteEntry	1

Table 61 – Member ends for association *ImpairmentRouteEntryIsOtsFiberSpan*

1.4.7 McBandwidthConfigPacHasPowerConfigPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
mediachannelbwconfigpac	none	No	McBandwidthConfigPac	1

Table 62 – Member ends for association *McBandwidthConfigPacHasPowerConfigPac*

1.4.8 McCepHasFlexiGridPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridPac	composite	Yes	FlexiGridPac	0..1
mcconnectionendpointspec	none	No	McConnectionEndPointSpec	1

Table 63 – Member ends for association *McCepHasFlexiGridPac*

1.4.9 McCepHasPowerPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerMeasurementPac	composite	Yes	PowerMeasurementPac	0..1
mcconnectionendpointspec	none	No	McConnectionEndPointSpec	1

Table 64 – Member ends for association *McCepHasPowerPac*

1.4.10 McCepHasSpectrumPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumPac	composite	Yes	SpectrumPac	0..1
mcconnectionendpointspec	none	No	McConnectionEndPointSpec	1

Table 65 – Member ends for association *McCepHasSpectrumPac*

1.4.11 McGidConfigPacHasFlexiGridConfigPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridConfigPac	composite	Yes	FlexiGridConfigPac	1
mcgridconfigpac	none	No	McFlexiGridConfigPac	1

Table 66 – Member ends for association *McGridConfigPacHasFlexiGridConfigPac***1.4.12 McGridConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
mcgridconfigpac	none	No	McFlexiGridConfigPac	1

Table 67 – Member ends for association *McGridConfigPacHasPowerConfigPac***1.4.13 McSpectrumConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
mediachannelconfigpac	none	No	McSpectrumConfigPac	1

Table 68 – Member ends for association *McSpectrumConfigPacHasPowerConfigPac***1.4.14 McgCsepHasBandwidthConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_mcBandwidthConfigPac	composite	Yes	McBandwidthConfigPac	0..*
mcgconnectivityserviceendpointspec	none	No	McgConnectivityServiceEndPointSpec	1

Table 69 – Member ends for association *McgCsepHasBandwidthConfigPac***1.4.15 McgCsepHasFlexiGridConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_mcFlexiGridConfigPac	composite	Yes	McFlexiGridConfigPac	0..*
mcconnectivityserviceendpointspec	none	No	McgConnectivityServiceEndPointSpec	1

Table 70 – Member ends for association *McgCsepHasFlexiGridConfigPac***1.4.16 McgCsepHasSpectrumConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_mcSpectrumConfigPac	composite	Yes	McSpectrumConfigPac	0..*
mcconnectivityserviceendpointspec	none	No	McgConnectivityServiceEndPointSpec	1

Table 71 – Member ends for association *McgCsepHasSpectrumConfigPac***1.4.17 NextAmplificationFunction**

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_amplification	none	Yes	Amplification	0..*
amplification	none	No	Amplification	1

Table 72 – Member ends for association *NextAmplificationFunction***1.4.18 OmsCepHasAmplifiers**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_amplification	composite	Yes	Amplification	0..*
omsconnectionendpointspec	none	No	OmsConnectionEndPointSpec	1

Table 73 – Member ends for association *OmsCepHasAmplifiers***1.4.19 OmsCepHasFlexiGridPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridPac	composite	Yes	FlexiGridPac	0..*
omsconnectionendpointspec	none	No	OmsConnectionEndPointSpec	1

Table 74 – Member ends for association *OmsCepHasFlexiGridPac***1.4.20 OmsCepHasOmsGeneralOpticalParams**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_omsGeneralOpticalParams	composite	Yes	OmsGeneralOpticalParams	0..2
omsconnectionendpointspec	none	No	OmsConnectionEndPointSpec	1

Table 75 – Member ends for association *OmsCepHasOmsGeneralOpticalParams***1.4.21 OmsCepHasPowerPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerMeasurementPac	composite	Yes	PowerMeasurementPac	0..1
omsconnectionendpointspec	none	No	OmsConnectionEndPointSpec	1

Table 76 – Member ends for association *OmsCepHasPowerPac***1.4.22 OmsCepHasSpectrumPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumPac	none	Yes	SpectrumPac	0..*
omsconnectionendpointspec	none	No	OmsConnectionEndPointSpec	1

Table 77 – Member ends for association *OmsCepHasSpectrumPac***1.4.23 OmsGeneralOptParamsHasPowerParams**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerParams	composite	Yes	PowerParams	0..1
omsgeneralopticalparams	none	No	OmsGeneralOpticalParams	1

Table 78 – Member ends for association *OmsGeneralOptParamsHasPowerParams*

1.4.24 OrganizationalModeHasCommonMode

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_commonOrganizationalExplicit	composite	Yes	CommonOrganizationalExplicit	0..1
organizationalmode	none	No	TransceiverOrganizational	1

Table 79 – Member ends for association *OrganizationalModeHasCommonMode*

1.4.25 OscParamsHasPowerPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerMeasurementPac	composite	Yes	PowerMeasurementPac	0..1
oscparams	none	No	OscParams	1

Table 80 – Member ends for association *OscParamsHasPowerPac*

1.4.26 OtsImpairmentRoute

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_impairmentRouteEntry	composite	Yes	ImpairmentRouteEntry	0..*
otsimpairments	none	No	OtsImpairments	1

Table 81 – Member ends for association *OtsImpairmentRoute*

1.4.27 OtsMediaCepHasFlexiGridPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridPac	composite	Yes	FlexiGridPac	0..*
otsmediaconnectionendpointspec	none	No	OtsMediaConnectionEndPointSpec	1

Table 82 – Member ends for association *OtsMediaCepHasFlexiGridPac*

1.4.28 OtsMediaCepHasOscParams

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_oscParams	composite	Yes	OscParams	0..1
otsmediaconnectionendpointspec	none	No	OtsMediaConnectionEndPointSpec	1

Table 83 – Member ends for association *OtsMediaCepHasOscParams*

1.4.29 OtsMediaCepHasOtsImpairments

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsImpairments	composite	Yes	OtsImpairments	0..2
otsmediaconnectionendpointspec	none	No	OtsMediaConnectionEndPointSpec	1

Table 84 – Member ends for association *OtsMediaCepHasOtsImpairments*

1.4.30 OtsMediaCepHasPowerPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerMeasurementPac	composite	Yes	PowerMeasurementPac	0..1
otsmediaconnectionendpointspec	none	No	OtsMediaConnectionEndPointSpec	1

Table 85 – Member ends for association *OtsMediaCepHasPowerPac*

1.4.31 OtsMediaCepHasSpectrumPac

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumPac	composite	Yes	SpectrumPac	0..*
otsmediaconnectionendpointspec	none	No	OtsMediaConnectionEndPointSpec	1

Table 86 – Member ends for association *OtsMediaCepHasSpectrumPac*

1.4.32 OtsiConfigHasExplicitParams

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_commonExplicit	composite	Yes	CommonExplicit	0..1
otsiconfigpac	none	No	OtsiConfigPac	1

Table 87 – Member ends for association *OtsiConfigHasExplicitParams***1.4.33 OtsiConfigHasOrganizationalExplicitParams**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_commonOrganizationalExplicit	composite	Yes	CommonOrganizationalExplicit	0..1
otsiconfigpac	none	No	OtsiConfigPac	1

Table 88 – Member ends for association *OtsiConfigHasOrganizationalExplicitParams***1.4.34 OtsiConfigHasThresholdPowerConfig**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiThresholdPowerConfig	composite	Yes	OtsiThresholdPowerConfig	0..1
otsiconfig	none	No	OtsiConfigPac	1

Table 89 – Member ends for association *OtsiConfigHasThresholdPowerConfig***1.4.35 OtsiConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
otsiconfigpac	none	No	OtsiConfigPac	1

Table 90 – Member ends for association *OtsiConfigPacHasPowerConfigPac***1.4.36 OtsiMcBandwidthConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
otsimcbwconfigpac	none	No	OtsiMcBandwidthConfigPac	1

Table 91 – Member ends for association *OtsiMcBandwidthConfigPacHasPowerConfigPac***1.4.37 OtsiMcCepHasFlexiGridPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridPac	composite	Yes	FlexiGridPac	0..1
otsimcconnectionendpointspec	none	No	OtsiMcConnectionEndPointSpec	1

Table 92 – Member ends for association *OtsiMcCepHasFlexiGridPac***1.4.38 OtsiMcCepHasPowerPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerMeasurementPac	composite	Yes	PowerMeasurementPac	0..1
otsimcconnectionendpointspec	none	No	OtsiMcConnectionEndPointSpec	1

Table 93 – Member ends for association *OtsiMcCepHasPowerPac***1.4.39 OtsiMcCepHasSpectrumPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumPac	composite	Yes	SpectrumPac	0..1
otsimcconnectionendpointspec	none	No	OtsiMcConnectionEndPointSpec	1

Table 94 – Member ends for association *OtsiMcCepHasSpectrumPac***1.4.40 OtsiMcCepHasTerminationPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiTerminationPac	composite	Yes	OtsiTerminationPac	0..1
otsimcconnectionendpointspec	none	No	OtsiMcConnectionEndPointSpec	1

Table 95 – Member ends for association *OtsiMcCepHasTerminationPac***1.4.41 OtsiMcFreqConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
otsimcfreqconfigpac	none	No	OtsiMcFrequencyConfigPac	1

Table 96 – Member ends for association *OtsiMcFreqConfigPacHasPowerConfigPac***1.4.42 OtsiMcGridConfigPacHasFlexiGridConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_flexiGridConfigPac	composite	Yes	FlexiGridConfigPac	1
otsimcgridconfigpac	none	No	OtsiMcFlexiGridConfigPac	1

Table 97 – Member ends for association *OtsiMcGridConfigPacHasFlexiGridConfigPac***1.4.43 OtsiMcGridConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
otsimcgridconfigpac	none	No	OtsiMcFlexiGridConfigPac	1

Table 98 – Member ends for association *OtsiMcGridConfigPacHasPowerConfigPac***1.4.44 OtsiMcSpectrumConfigPacHasPowerConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementConfigPac	composite	Yes	PowerManagementConfigPac	0..1
otsimcconfigpac	none	No	OtsiMcSpectrumConfigPac	1

Table 99 – Member ends for association *OtsiMcSpectrumConfigPacHasPowerConfigPac***1.4.45 OtsiMcGcsepHasBandwidthConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMcBandwidthConfigPac	composite	Yes	OtsiMcBandwidthConfigPac	0..*
otsimcgconnectivityserviceendpointspec	none	No	OtsiMcgConnectivityServiceEndPointSpec	1

Table 100 – Member ends for association *OtsiMcGcsepHasBandwidthConfigPac***1.4.46 OtsiMcGcsepHasFlexiGridConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMcFlexiGridConfigPac	composite	Yes	OtsiMcFlexiGridConfigPac	0..*
otsimcgconnectivityserviceendpointspec	none	No	OtsiMcgConnectivityServiceEndPointSpec	1

Table 101 – Member ends for association *OtsiMcGcsepHasFlexiGridConfigPac***1.4.47 OtsiMcGcsepHasFreqConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMcFrequencyConfigPac	composite	Yes	OtsiMcFrequencyConfigPac	0..*
otsimcgconnectivityserviceendpointspec	none	No	OtsiMcgConnectivityServiceEndPointSpec	1

Table 102 – Member ends for association *OtsiMcGcsepHasFreqConfigPac***1.4.48 OtsiMcGcsepHasSpectrumConfigPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMcSpectrumConfigPac	composite	Yes	OtsiMcSpectrumConfigPac	0..*
otsimcgconnectivityserviceendpointspec	none	No	OtsiMcgConnectivityServiceEndPointSpec	1

Table 103 – Member ends for association *OtsiMcgCsepHasSpectrumConfigPac***1.4.49 OtsiTerminationPacHasMonitoring**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMonitoringPac	composite	Yes	OtsiMonitoringPac	0..1
otsiterminationpac	none	No	OtsiTerminationPac	1

Table 104 – Member ends for association *OtsiTerminationPacHasMonitoring***1.4.50 OtsiaCsepHasOtsiConfig**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiConfig	composite	Yes	OtsiConfigPac	1..*
otsiacseptpppac	none	No	OtsiaConnectivityServiceEndPointSpec	1

Table 105 – Member ends for association *OtsiaCsepHasOtsiConfig***1.4.51 PhoMediaSipHasMcPoolPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumCapabilityPac	composite	Yes	SpectrumCapabilityPac	1
smcbserviceinterfacepoint	none	No	PhotonicMediaServiceInterfacePointSpec	1

Table 106 – Member ends for association *PhoMediaSipHasMcPoolPac***1.4.52 PhoMediaSipHasPowerCapabilityPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementCapabilityPac	composite	Yes	PowerManagementCapabilityPac	0..*
mediachannelpoolcapabilitypac	none	No	PhotonicMediaServiceInterfacePointSpec	1

Table 107 – Member ends for association *PhoMediaSipHasPowerCapabilityPac***1.4.53 PhoMediaSipHasPowerThreshold**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_totalPowerThresholdPac	composite	Yes	TotalPowerThresholdPac	0..*
photonicmediaserviceinterfacepointspec	none	No	PhotonicMediaServiceInterfacePointSpec	1

Table 108 – Member ends for association *PhoMediaSipHasPowerThreshold***1.4.54 PhotonicMediaNepHasPowerPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerManagementCapabilityPac	composite	Yes	PowerManagementCapabilityPac	0..*
photonicmedianodeedgepointspec	none	No	PhotonicMediaNodeEdgePointSpec	1

Table 109 – Member ends for association *PhotonicMediaNepHasPowerPac***1.4.55 PhotonicMediaNepHasPowerThrPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_totalPowerThresholdPac	composite	Yes	TotalPowerThresholdPac	0..*
photonicmedianodeedgepointspec	none	No	PhotonicMediaNodeEdgePointSpec	1

Table 110 – Member ends for association *PhotonicMediaNepHasPowerThrPac***1.4.56 PhotonicMediaNepHasSpectrumCapabilityPac**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_spectrumCapabilityPac	composite	Yes	SpectrumCapabilityPac	1
photonicmedianodeedgepointspec	none	No	PhotonicMediaNodeEdgePointSpec	1

Table 111 – Member ends for association *PhotonicMediaNepHasSpectrumCapabilityPac***1.4.57 PhotonicPerformanceDataHasOscPm**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_oscMonitoringPac	composite	Yes	OscMonitoringPac	0..1
photonicperformancedata	none	No	PhotonicPerformanceData	1

Table 112 – Member ends for association *PhotonicPerformanceDataHasOscPm***1.4.58 PhotonicPerformanceDataHasOtsiPm**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_otsiMonitoringPac	composite	Yes	OtsiMonitoringPac	0..1
photonicperformancedata	none	No	PhotonicPerformanceData	1

Table 113 – Member ends for association *PhotonicPerformanceDataHasOtsiPm***1.4.59 PhotonicPerformanceDataIncludesAmplificationPm**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_amplificationPerformanceData	composite	Yes	AmplificationPerformanceData	0..*
photonicperformancedata	none	No	PhotonicPerformanceData	1

Table 114 – Member ends for association *PhotonicPerformanceDataIncludesAmplificationPm***1.4.60 PowerParamsHasChannelPower**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_channelPower	composite	Yes	ChannelPower	0..1
powerparams	none	No	PowerParams	1

Table 115 – Member ends for association *PowerParamsHasChannelPower***1.4.61 PowerParamsHasSpectralDensity**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_powerSpectralDensity	composite	Yes	PowerSpectralDensity	0..1
powerparams	none	No	PowerParams	1

Table 116 – Member ends for association *PowerParamsHasSpectralDensity***1.4.62 TransceiverExplicitProfileHasOrganizationalMode**

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_supportedOrganizationalMode	none	Yes	TapiCommon::ObjectClasses::Profile	0..1
transceiverexplicitprofile	none	No	TransceiverExplicit	1

Table 117 – Member ends for association *TransceiverExplicitProfileHasOrganizationalMode***1.4.63 TransceiverExplicitProfileSupportsStdCode**

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_supportedStandardApplicationCode	none	Yes	TapiCommon::ObjectClasses::Profile	0..1
transceiverexplicitprofile	none	No	TransceiverExplicit	1

Table 118 – Member ends for association *TransceiverExplicitProfileSupportsStdCode***1.4.64 TransceiverProfileHasExplicitProfile**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_transceiverExplicitProfile	composite	Yes	TransceiverExplicit	0..1
transceiverprofile	none	No	TransceiverProfile	1

Table 119 – Member ends for association *TransceiverProfileHasExplicitProfile***1.4.65 TransceiverProfileHasOrganizationalProfile**

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_transceiverOrganizationalProfile	composite	Yes	TransceiverOrganizational	0..1
transceiverprofile	none	No	TransceiverProfile	1

Table 120 – Member ends for association *TransceiverProfileHasOrganizationalProfile*

1.4.66 TransceiverProfileHasStandardProfile

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_transceiverStandardProfile	composite	Yes	TransceiverStandard	0..1
transceiverprofile	none	No	TransceiverProfile	1

Table 121 – Member ends for association *TransceiverProfileHasStandardProfile*

1.5 Abstractions

1.5.1 AmplificationProfileAugmentsProfile

Augmenting Class	Augmented Class	Comment
AmplificationProfile	TapiCommon::ObjectClasses::Profile	
target: "/TapiCommon:Context:_context/TapiCommon:Context:_profile"		

Table 122 – Member ends for class abstraction *AmplificationProfileAugmentsProfile*

1.5.2 ConnectivityImpairmentProfileAugmentsProfile

Augmenting Class	Augmented Class	Comment
ConnectivityImpairmentProfile	TapiCommon::ObjectClasses::Profile	
target: "/TapiCommon:Context: context/TapiCommon:Context: profile"		

Table 123 – Member ends for class abstraction *ConnectivityImpairmentProfileAugmentsProfile*

1.5.3 FiberProfileAugmentsProfile

Augmenting Class	Augmented Class	Comment
FiberProfile	TapiCommon::ObjectClasses::Profile	
target: "/TapiCommon:Context:_context/TapiCommon:Context:_profile"		

Table 124 – Member ends for class abstraction *FiberProfileAugmentsProfile*

1.5.4 McCepSpecAugmentsCep

Augmenting Class	Augmented Class	Comment
McConnectionEndPointSpec	TapiConnectivity::ObjectClasses::ConnectionEndPoint	<p>target: "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_node/TapiTopology:Node:_ownedNodeEdgePoint/TapiConnectivity:CepList:_cepList/TapiConnectivity:CepList:_connectionEndPoint"</p>

Table 125 – Member ends for class abstraction *McCepSpecAugmentsCep*

1.5.5 McNepSpecAugmentsNep

Augmenting Class	Augmented Class	Comment
PhotonicMediaNodeEdgePointSpec	TapiTopology::ObjectClasses::NodeEdgePoint	Augments the base NEP with MC specific information.

Table 126 – Member ends for class abstraction *McNepSpecAugmentsNep*

1.5.6 McgCsepSpecAugmentsCsepLpc

Augmenting Class	Augmented Class	Comment
McgConnectivityServiceEndPointSpec	TapiConnectivity::ObjectClasses::LayerProtocolConstraint	<p>target: "/TapiCommon:Context:_context/TapiConnectivity:ConnectivityContext:_connectivityContext/TapiConnectivity:ConnectivityContext:_connectivityService/TapiConnectivity:ConnectivityService:_endPoint/TapiConnectivity:ConnectivityServiceEndPoint:_layerProtocolConstraint"</p>

Table 127 – Member ends for class abstraction *McgCsepSpecAugmentsCsepLpc*

1.5.7 OmsCepSpecAugmentsCep

Augmenting Class	Augmented Class	Comment
OmsConnectionEndPointSpec	TapiConnectivity::ObjectClasses::ConnectionEndPoint	<p>target: "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_node/TapiTopology:Node:_ownedNodeEdgePoint/TapiConnectivity:CepList:_cepList/TapiConnectivity:CepList:_connectionEndPoint"</p>

Table 128 – Member ends for class abstraction *OmsCepSpecAugmentsCep*

1.5.8 OtsMediaCepSpecAugmentsCep

Augmenting Class	Augmented Class	Comment
OtsMediaConnectionEndPointSpec	TapiConnectivity::ObjectClasses::ConnectionEndPoint	

target:
 "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_node/TapiTopology:Node:_ownedNodeEdgePoint/TapiConnectivity:CepList:_cepList/TapiConnectivity:CepList:_connecti onEndPoint"

Table 129 – Member ends for class abstraction *OtsMediaCepSpecAugmentsCep***1.5.9 OtsiMcCepSpecAugmentsCep**

Augmenting Class	Augmented Class	Comment
OtsiMcConnectionEndPointSpec	TapiConnectivity::ObjectClasses::ConnectionEndPoint	Augments the base CEP with OTSiMC specific information.

target:
 "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_node/TapiTopology:Node:_ownedNodeEdgePoint/TapiConnectivity:CepList:_cepList/TapiConnectivity:CepList:_connecti onEndPoint"

Table 130 – Member ends for class abstraction *OtsiMcCepSpecAugmentsCep***1.5.10 OtsiMcgCsepSpecAugmentsCsepLpc**

Augmenting Class	Augmented Class	Comment
OtsiMcgConnectivityServiceEndPointSpec	TapiConnectivity::ObjectClasses::LayerProtocolConstraint	

target:
 "/TapiCommon:Context:_context/TapiConnectivity:ConnectivityContext:_connectivityContext/TapiConnectivity:ConnectivityContext:_conne ctivityService/TapiConnectivity:ConnectivityService:_endPoint/TapiConnectivity:ConnectivityServiceEndPoint:_layerProtocolConstraint "

Table 131 – Member ends for class abstraction *OtsiMcgCsepSpecAugmentsCsepLpc***1.5.11 OtsiaCsepSpecAugmentsCsepLpc**

Augmenting Class	Augmented Class	Comment
OtsiaConnectivityServiceEndPointSpec	TapiConnectivity::ObjectClasses::LayerProtocolConstraint	

target:
 "/TapiCommon:Context:_context/TapiConnectivity:ConnectivityContext:_connectivityContext/TapiConnectivity:ConnectivityContext:_con ne ctivityService/TapiConnectivity:ConnectivityService:_endPoint/TapiConnectivity:ConnectivityServiceEndPoint:_layerProtocolConstraint "

Table 132 – Member ends for class abstraction *OtsiaCsepSpecAugmentsCsepLpc***1.5.12 PhoMediaSipSpecAugmentsSip**

Augmenting Class	Augmented Class	Comment
PhotonicMediaServiceInterfacePointSpec	TapiCommon::ObjectClasses::ServiceInterfacePoint	

target: "/TapiCommon:Context:_context/TapiCommon:Context:_serviceInterfacePoint"

Table 133 – Member ends for class abstraction *PhoMediaSipSpecAugmentsSip*

1.5.13 PhotProfileTypeAufmentsProfileType

Augmenting Enumeration	Augmented Enumeration
PhotProfileType - AMPLIFICATION - CONNECTIVITY IMPAIRMENT - FIBER - TRANSCEIVER	ProfileType
Comment	
Enumeration Augment.	

Table 134 – Member ends for enum abstraction *PhotProfileTypeAufmentsProfileType*

1.5.14 PhotThrsAddQualifAufgmentsThrsAddQualif

Augmenting Enumeration	Augmented Enumeration
PhotThrsAddQualif - AMPLIFICATION - OSC	ThrsAddQualif
Comment	
Enumeration Augment.	

Table 135 – Member ends for enum abstraction *PhotThrsAddQualifAufgmentsThrsAddQualif*

1.5.15 PhotonicAugmentsExcludeLinkAndPartition

Augmenting Class	Augmented Class	Comment
<u>PhotonicPosition</u>	TapiPathComputation::ObjectClasses::LinkAndPartition	
target: "/TapiCommon:Context:_context/TapiPathComputation:PathComputationContext:_pathComputationContext/TapiPathComputation:PathComputationContext:_pathCompService/TapiPathComputation:PathComputationService:_topologyConstraint/TapiPathComputation:TopologyConstraint:_excludeLinkAndPartition"		

Table 136 – Member ends for class abstraction *PhotonicAugmentsExcludeLinkAndPartition*

1.5.16 PhotonicAugmentsExcludeNepAndPartition

Augmenting Class	Augmented Class	Comment
<u>PhotonicPosition</u>	TapiPathComputation::ObjectClasses::NepAndPartition	
target: "/TapiCommon:Context:_context/TapiPathComputation:PathComputationContext:_pathComputationContext/TapiPathComputation:PathComputationContext:_pathCompService/TapiPathComputation:PathComputationService:_topologyConstraint/TapiPathComputation:TopologyConstraint:_excludeNepAndPartition"		

Table 137 – Member ends for class abstraction *PhotonicAugmentsExcludeNepAndPartition*

1.5.17 PhotonicAugmentsIncludeLinkAndPartition

Augmenting Class	Augmented Class	Comment
Diagrams	TapiPathComputation::ObjectClasses::LinkAndPartition	<p>target: "/TapiCommon:Context:_context/TapiPathComputation:PathComputationContext:_pathComputationContext/TapiPathComputation:PathComputationContext:_pathCompService/TapiPathComputation:PathComputationService:_topologyConstraint/TapiPathComputation:TopologyConstraint:_includeLinkAndPartition"</p>

Table 138 – Member ends for class abstraction *PhotonicAugmentsIncludeLinkAndPartition***1.5.18 PhotonicAugmentsIncludeNepAndPartition**

Augmenting Class	Augmented Class	Comment
PhotonicPosition	TapiPathComputation::ObjectClasses::NepAndPartition	<p>target: "/TapiCommon:Context:_context/TapiPathComputation:PathComputationContext:_pathComputationContext/TapiPathComputation:PathComputationContext:_pathCompService/TapiPathComputation:PathComputationService:_topologyConstraint/TapiPathComputation:TopologyConstraint:_includeNepAndPartition"</p>

Table 139 – Member ends for class abstraction *PhotonicAugmentsIncludeNepAndPartition***1.5.19 PhotonicAugmentsLayerProtocolQualifer**

Augmenting Enumeration	Augmented Enumeration
PhotonicLayerQualifier - MC - MCA - OCH - OMS - OMSA - OS_MEDIA - OTS - OTSA - OTS_MEDIA - OTS_OMS - OTSi - OTSiA - OTSiMC - OTSiMCA	LayerProtocolQualifier - UNSPECIFIED
Comment	
Enumeration Augment.	

Table 140 – Member ends for enum abstraction *PhotonicAugmentsLayerProtocolQualifer***1.5.20 PhotonicOamJobTypeAugmentsOamJobType**

Augmenting Enumeration	Augmented Enumeration
PhotonicOamJobType - OPTICAL_POWER	OamJobType - LOOPBACK_FACILITY - LOOPBACK_TERMINAL
Comment	
Enumeration Augment.	

Table 141 – Member ends for enum abstraction *PhotonicOamJobTypeAugmentsOamJobType***1.5.21 PhotonicPerformanceDataAugmentsCd**

Augmenting Class	Augmented Class	Comment
PhotonicPerformanceData	TapiOam::ObjectClasses::CurrentData	
target: "/TapiCommon:Context:_context/TapiOam:OamContext:_oamContext/TapiOam:OamContext:_oamJob/TapiOam:OamJob:_currentData"		

Table 142 – Member ends for class abstraction *PhotonicPerformanceDataAugmentsCd***1.5.22 PhotonicPerformanceDataAugmentsCepHd**

Augmenting Class	Augmented Class	Comment
PhotonicPerformanceData	TapiOam::ObjectClasses::HistoryData	
target: "/TapiCommon:Context:_context/TapiOam:OamContext:_oamContext/TapiOam:OamContext:_cepPmData/TapiOam:CepPmData:_historyData"		

Table 143 – Member ends for class abstraction *PhotonicPerformanceDataAugmentsCepHd***1.5.23 PhotonicPerformanceDataAugmentsHd**

Augmenting Class	Augmented Class	Comment
PhotonicPerformanceData	TapiOam::ObjectClasses::HistoryData	
target: "/TapiCommon:Context:_context/TapiOam:OamContext:_oamContext/TapiOam:OamContext:_oamJob/TapiOam:OamJob:_currentData/TapiOam:CurrentData:_historyData"		

Table 144 – Member ends for class abstraction *PhotonicPerformanceDataAugmentsHd***1.5.24 PhotonicPerformanceDataAugmentsMepHd**

Augmenting Class	Augmented Class	Comment
PhotonicPerformanceData	TapiOam::ObjectClasses::HistoryData	
target: "/TapiCommon:Context:_context/TapiOam:OamContext:_oamContext/TapiOam:OamContext:_mepPmData/TapiOam:MepPmData:_historyData"		

Table 145 – Member ends for class abstraction *PhotonicPerformanceDataAugmentsMepHd***1.5.25 PhotonicPerformanceDataAugmentsMipHd**

Augmenting Class	Augmented Class	Comment
PhotonicPerformanceData	TapiOam::ObjectClasses::HistoryData	
target: "/TapiCommon:Context:_context/TapiOam:OamContext:_oamContext/TapiOam:OamContext:_mipPmData/TapiOam:MipPmData:_historyData"		

Table 146 – Member ends for class abstraction *PhotonicPerformanceDataAugmentsMipHd*

1.5.26 TransceiverProfileAugmentsProfile

Augmenting Class	Augmented Class	Comment
TransceiverProfile	TapiCommon::ObjectClasses::Profile	
target: "/TapiCommon:Context:_context/TapiCommon:Context:_profile"		

Table 147 – Member ends for class abstraction *TransceiverProfileAugmentsProfile*

1.6 Data Types

1.6.1 CdPmdPenalty

Description:

- Entries of table; triplet chromatic dispersion, polarization mode dispersion and associated penalty.

Attribute Name	Type	Mult.	Access	Stereotypes
index	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: yes – part: 1 isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description:				
chromaticDispersion	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description: Chromatic dispersion. Measured in ps/nm (picoseconds per nanometer).				
polarizationModeDispersion	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA
Description: Polarization mode dispersion. Measured in picoseconds per square root kilometer.				
penalty	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> isKey: No isInvariant: false valueRange: no range constraint support: MANDATORY OpenInterfaceModelAttribute AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes	
	<p>Description:</p> <p>Associated penalty on the receiver. Measured in dB.</p>				

Table 148 – Attributes for data type *CdPmdPenalty*

1.6.2 FrequencyConstraint

Description:

- This data-type holds the frequency constraint information in terms of GridType (FIXED grid (DWDM or CWDM) or FLEX grid) and AdjustmentGranularity.

Attribute Name	Type	Mult.	Access	Stereotypes
adjustmentGranularity	<p>AdjustmentGranularity</p> <p>Default value: <i>UNCONSTRAINED</i></p>	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
<p>Description:</p> <p>Adjustment granularity in Gigahertz. As per ITU-T G.694.1, it is used to calculate nominal central frequency (in THz)</p>				
gridType	<p>GridType</p> <p>Default value: <i>GRIDLESS</i></p>	0..1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
<p>Description:</p> <p>Specifies the frequency grid standard used to determine the nominal central frequency and frequency slot width</p>				

Table 149 – Attributes for data type *FrequencyConstraint*

1.6.3 FrequencyRange

Attribute Name	Type	Mult.	Access	Stereotypes
upperFrequency	PrimitiveTypes::Integer	1	RW	<p>OpenModelAttribute</p> <ul style="list-style-type: none"> • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
<p>Description:</p> <p>The upper frequency bound of the frequency range specified in Hz.</p>				

Attribute Name	Type	Mult.	Access	Stereotypes
lowerFrequency	PrimitiveTypes::Integer	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				The lower frequency bound of the frequency range specified in Hz.

Table 150 – Attributes for data type *FrequencyRange***1.6.4 GainRange**

Attribute Name	Type	Mult.	Access	Stereotypes
minGain	PrimitiveTypes::Real	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				In dB.
maxGain	PrimitiveTypes::Real	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				In dB.

Table 151 – Attributes for data type *GainRange***1.6.5 LaserProperties**

Attribute Name	Type	Mult.	Access	Stereotypes
laserStatus	LaserControlStatusType	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
laserApplicationType	LaserType	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
The type of laser, its operational wavelengths, and its applications. String size 255.				
laserBiasCurrent	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
The Bias current of the laser that is the medium polarization current of the laser.				
laserTemperature	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
The temperature of the laser				

Table 152 – Attributes for data type *LaserProperties*

1.6.6 ModulationTechnique

Description:

- The standardModulationTechnique and proprietaryModulationTechnique attributes are mutually exclusive.

Attribute Name	Type	Mult.	Access	Stereotypes
standardModulationTechnique	StandardModulationTechnique	0..1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Attribute Name	Type	Mult.	Access	Stereotypes
proprietaryModulationTechnique	PrimitiveTypes::String	0..1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 153 – Attributes for data type *ModulationTechnique***1.6.7 NoiseFigureRange**

Attribute Name	Type	Mult.	Access	Stereotypes
minNoiseFigure	PrimitiveTypes::Real	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
maxNoiseFigure	PrimitiveTypes::Real	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				

Table 154 – Attributes for data type *NoiseFigureRange***1.6.8 PdlPenalty****Description:**

- Entries of table; pair of values polarization dependent loss and associated penalty.

Attribute Name	Type	Mult.	Access	Stereotypes
index	PrimitiveTypes::Integer	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description:			
maxPolarizationDependentLoss	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Maximum acceptable accumulate polarization dependent loss. Measured in dB.			
penalty	PrimitiveTypes::Real	0..1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	Associated penalty on the receiver. Measured in dB.			

Table 155 – Attributes for data type *PdlPenalty*

1.6.9 PowerProperties

Attribute Name	Type	Mult.	Access	Stereotypes
totalPower	TapiCommon::TypeDefinitions::MetricValues	1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	The total power at any point in a channel specified in dBm.			
powerSpectralDensity	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
	This describes how power of a signal is distributed over frequency specified in nW/MHz. Note that this parameter is not configurable.			

Table 156 – Attributes for data type *PowerProperties*

1.6.10 SpectrumBand

Description:

- This data-type holds the spectrum information in terms of upper/lower frequency and optionally the information of frequency constraints.

Attribute Name	Type	Mult.	Access	Stereotypes
upperFrequency	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 1 • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
	The upper frequency bound of the spectrum specified in Hz.			
lowerFrequency	PrimitiveTypes::Integer	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: yes – part: 2 • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
	The lower frequency bound of the spectrum specified in Hz.			
frequencyConstraint	FrequencyConstraint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
Description:				
	The combination of adjustment granularity and grid type informs about either ITU-T fixed or flexible grid capability. E.g. if grid type = DWDM then the adjustment granularity informs about the fixed slot width. E.g. if grid type = FLEX then the adjustment granularity informs about the minimum slot width (two times the adjustment granularity value).			

Table 157 – Attributes for data type *SpectrumBand*

1.7 Enumerations

1.7.1 AdjustmentGranularity

Description:

- Adjustment granularity in Gigahertz. As per ITU-T G.694.1, it is used to calculate nominal central frequency

Contains Enumeration Literals:

- G_100GHZ
 - 100000 MHz
- G_50GHZ
 - 50000 MHz
- G_25GHZ
 - 25000 MHz

- G_12_5GHZ
 - 12500 MHz
- G_6_25GHZ
 - 6250 MHz
- G_3_125GHZ
 - 3125 MHz
- UNCONSTRAINED

1.7.2 FecType

Contains Enumeration Literals:

- G_FEC
 - Generic FEC.
- E_FEC
 - Enhanced FEC.
- REED_SOLOMON
 - Reed-Solomon error correction.
- HAMMING_CODE
 - Hamming Code error correction.
- GOLAY
 - Golay error correction.

1.7.3 FlexiChannelSpacing

Contains Enumeration Literals:

- 6_25GHz

1.7.4 FlexiSlotWidthGranularity

Contains Enumeration Literals:

- 12_5GHz

1.7.5 GridType

Description:

- The frequency grid standard that specify reference set of frequencies used to denote allowed nominal central frequencies that may be used for defining applications.

Contains Enumeration Literals:

- DWDM
 - Fixed frequency grid in C & L bands as specified in ITU-T G.694.1
- CWDM
 - Fixed frequency grid as specified in ITU-T G.694.2
- FLEX
 - Flexible frequency grid as specified in ITU-T G.694.1. In this case, - the allowed frequency slots have a nominal central frequency (in THz) defined by: $193.1 + n \times 0.00625$ where n is a positive or negative integer including 0 and 0.00625 is the nominal central frequency

granularity in THz - and a slot width defined by: $12.5 \times m$ where m is a positive integer and 12.5 is the slot width granularity in GHz. Any combination of frequency slots is allowed as long as no two frequency slots overlap.

- GRIDLESS

1.7.6 LaserControlStatusType

Contains Enumeration Literals:

- ON
- OFF
- PULSING
- UNDEFINED

1.7.7 LaserControlType

Contains Enumeration Literals:

- FORCED_ON
- FORCED_OFF
- AUTOMATIC_LASER_SHUTDOWN
- UNDEFINED

1.7.8 LaserType

Contains Enumeration Literals:

- PUMP
- MODULATED
- PULSE

1.7.9 LineCoding

Description:

- ITU-T G.698.2-201811 section 7.

Contains Enumeration Literals:

- NRZ-2P5G
 - ITU-T G.698.2-201811 section 7 table 8-1
- NRZ-OTU1
 - ITU-T G.698.2-201811 section 7 table 8-2
- NRZ-10G
 - ITU-T G.698.2-201811 section 7 table 8-3/8-5
- NRZ-OTU2
 - ITU-T G.698.2-201811 section 7 table 8-4/8-6

1.7.10 OpticalRoutingStrategy

Contains Enumeration Literals:

- OPTIMAL_OSNR
- NO_RELAY
- MIN_RELAY
- PREFERRED_NO_CHANGE_WAVELENGTH_AS_RESTORE
- PREFERRED_NO_SKIPPING_WAVELENGTH

1.7.11 PhotProfileType

Contains Enumeration Literals:

- AMPLIFICATION
- CONNECTIVITY_IMPAIRMENT
- FIBER
- TRANSCEIVER

1.7.12 PhotThrsAddQualif

Contains Enumeration Literals:

- AMPLIFICATION
- OSC

1.7.13 PhotonicLayerQualifier

Contains Enumeration Literals:

- OTSi
 - Applied stereotype:
 - Deprecated
- OTSiA
 - Applied stereotype:
 - Experimental
- OTSiMC
 - OTSiMC represents the bw portion dedicated to an OTSi.
- OTSiMCA
 - OTSiMCA is the set of OTSiMC supporting an OTSiA.
- MC
 - The continuous optical spectrum between end points in the photonic layer obtained through optical filter configurations where it is expected one (or more – super channel case) OTSi(s).
- MCA
 - Media Channel Assembly: the set of one or more MCs supporting one (or more) OTSiA(s).
- OMSA
 - Applied stereotype:
 - Experimental

- Applied stereotype:
 - Deprecated
- OTSA
 - Applied stereotype:
 - Deprecated
- OCH
 - Applied stereotype:
 - Deprecated
- OMS
- OTS
 - Applied stereotype:
 - Deprecated
- OTS_OMS
 - Applied stereotype:
 - Deprecated
- OTS_MEDIA
- OS_MEDIA

1.7.14 PhotonicOamJobType

Contains Enumeration Literals:

- OPTICAL_POWER

1.7.15 StandardApplicationCodeRec

Description:

- The list of ITU-T Recommendations etc. that define application code format.

Contains Enumeration Literals:

- ITUT_G959_1
 - G959.1 Optical transport network physical layer interfaces Application code notation [PnWx-ytz] This Recommendation provides physical layer inter-domain interface (IrDI) specifications for optical networks that may employ wavelength division multiplexing (WDM). The IrDI may be realized as either a single-channel interface or a multichannel interface.
- ITUT_G698_1
 - G698.1 Multichannel DWDM applications with single-channel optical interfaces Application code notation [DScW-ytz(v)] This Recommendation defines and provides values for single-channel optical interface parameters of physical point-to-point and ring DWDM applications (with transmission distance in the range of about 30 km to about 80 km) on single-mode optical fibres through the use of the "black link" approach.
- ITUT_G698_2
 - G698.2 Amplified multichannel DWDM applications with single channel optical interfaces Application code notation [DScW-ytz(v)] This Recommendation defines and provides values for single-channel optical interface parameters of physical point-to-point and ring DWDM

applications on single-mode optical fibres through the use of the 'black link' approach. The black links covered by this Recommendation may contain optical amplifiers.

- ITUT_G696_1
 - G696.1 Longitudinally compatible intra-domain DWDM applications Application code notation [n.B-xWF(s)] This Recommendation provides physical layer specifications for intra-domain (IaD) DWDM optical networking applications. These specifications are provided for point-to-point, multichannel line systems with or without line amplifiers.
- ITUT_G695
 - G695 Optical interfaces for coarse wavelength division multiplexing applications Application code notation [CnWx-ytz] This Recommendation applies to optical interfaces for coarse wavelength division multiplexing (CWDM) optical line systems for network applications using single-mode optical fibres.

1.7.16 StandardModulationTechnique

Contains Enumeration Literals:

- RZ
- NRZ
- BPSK
- DPSK
- QPSK
- 8QAM
- 16QAM
- PAM4
- PAM8

1.7.17 StandardModulationTechnique9093

Contains Enumeration Literals:

- DPSK
 - DPSK (Differential Phase Shift Keying) modulation.
- QPSK
 - QPSK (Quadrature Phase Shift Keying) modulation.
- DP-QPSK
 - DP-QPSK (Dual Polarization Quadrature Phase Shift Keying) modulation.
- QAM8
 - QAM8 (8-State Quadrature Amplitude Modulation).
- DP-QAM8
 - DP-QAM8 (8 symbols Dual Polarization Quadrature Amplitude Modulation).
- DC-DP-QAM8
 - DC-DP-QAM8 (8 symbols Dual Carrier Dual Polarization Quadrature Amplitude Modulation).
- QAM16
 - QAM16 (16 symbols Quadrature Amplitude Modulation).
- DP-QAM16
 - DP-QAM16 (16 symbols Dual Polarization Quadrature Amplitude Modulation).
- DC-DP-QAM16

- DC-DP-QAM16 (16 symbols Dual Carrier Dual Polarization Quadrature Amplitude Modulation).
- QAM32
 - QAM32 (32 symbols Quadrature Amplitude Modulation).
- DP-QAM32
 - DP-QAM32 (32 symbols Dual Polarization Quadrature Amplitude Modulation).
- QAM64
 - QAM64 (64 symbols Quadrature Amplitude Modulation).
- DP-QAM64
 - DP-QAM64 (64 symbols Dual Polarization Quadrature Amplitude Modulation).

1.7.18 TransceiverTerminationType

Contains Enumeration Literals:

- TUNNEL_ONLY
 - The transponder can only be used in an Optical Tunnel termination configuration.
- UNIDIR_3R_ONLY
 - The transponder can only be used in a 3R configuration, unidirectional.
- UNIDIR_3R_OR_TUNNEL
 - The transponder can be configured to be used either in an Optical Tunnel termination configuration or in a 3R configuration, unidirectional.
- BIDIR_3R_ONLY
 - The transponder can only be used in a 3R configuration, bidirectional.
- BIDIR_3R_OR_TUNNEL
 - The transponder can be configured to be used either in an Optical Tunnel termination configuration or in a 3R configuration, bidirectional.

1.8 Primitives