TAPI UML Model

Version 2.5.0

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Document History

Version	Date	Description of Change
2.3	May 27, 2021	Model Dump *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).*
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 Equipment Model

TapiEquipment: This module contains TAPI Equipment Model definitions. Source: TapiEquipment.uml

1.1 Diagrams

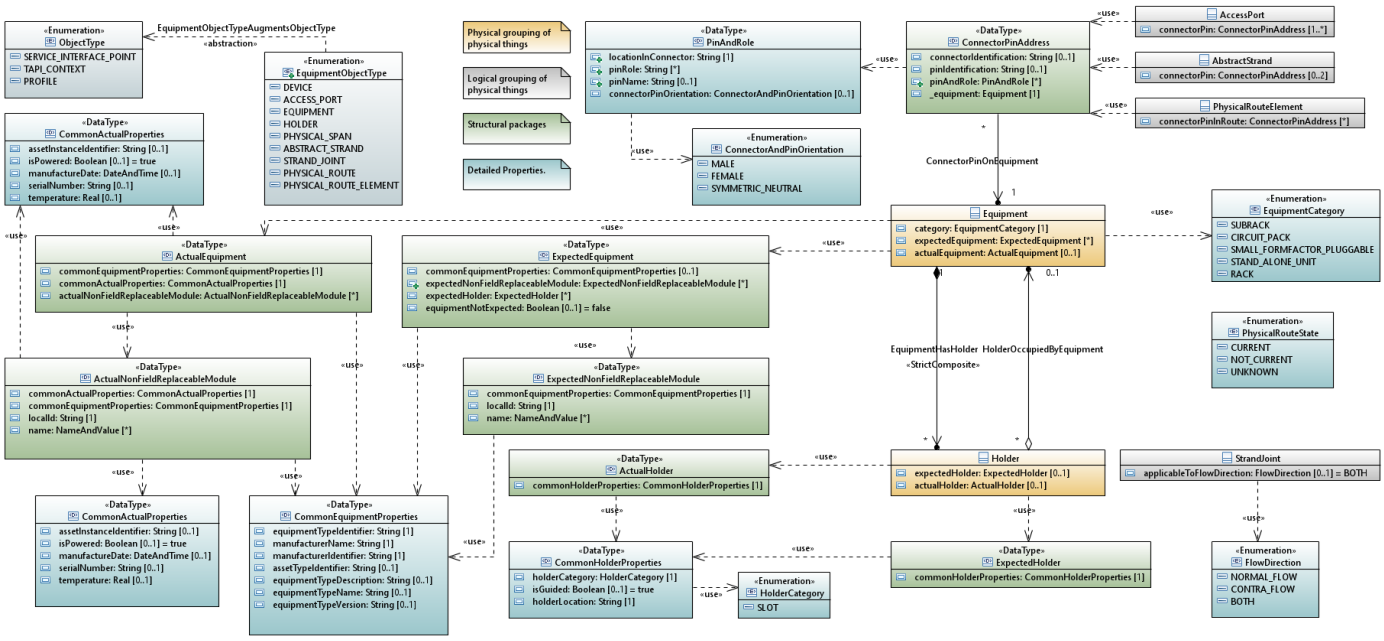

Figure 1 – Diagram *EquipmentDataTypes*

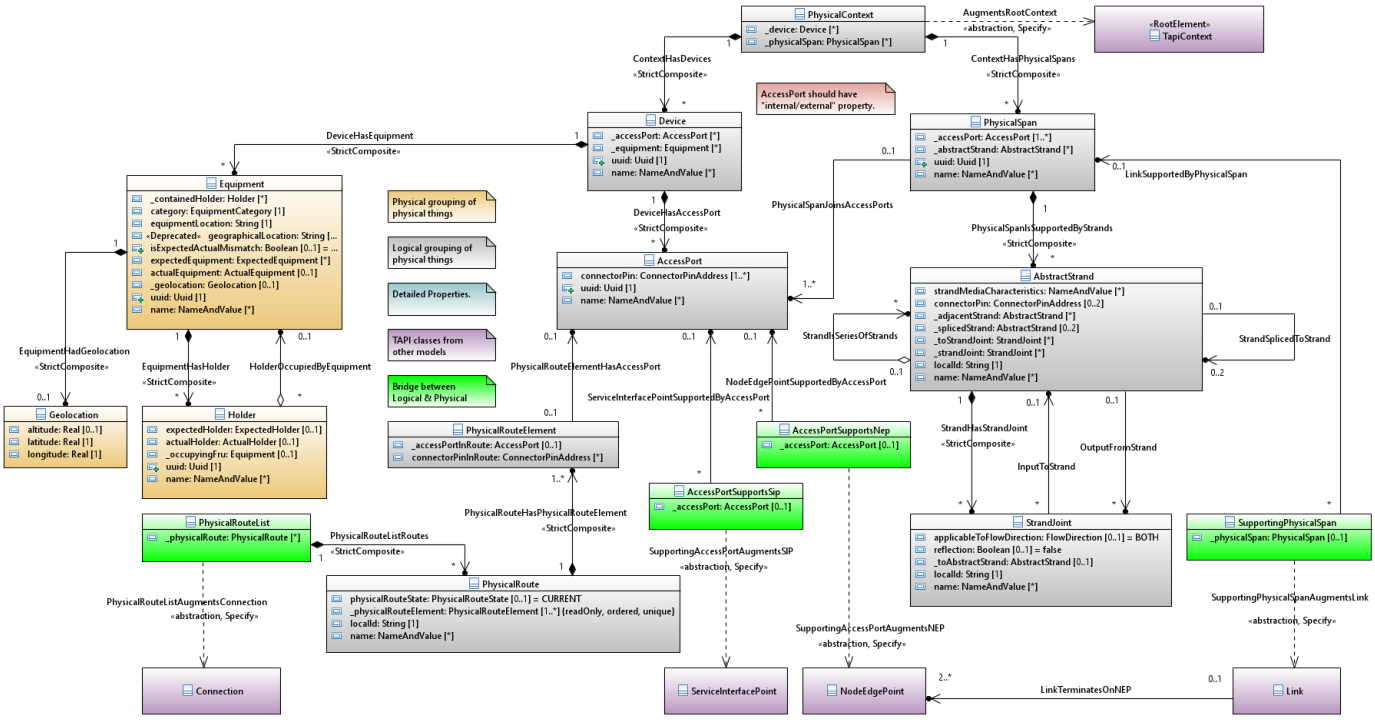

Figure 2 – Diagram *EquipmentModelDetail*

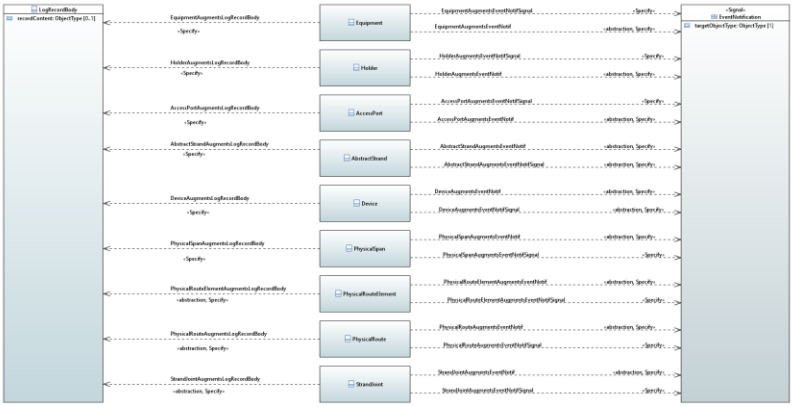

Figure 3 – Diagram *EquipmentNotifAndStream*

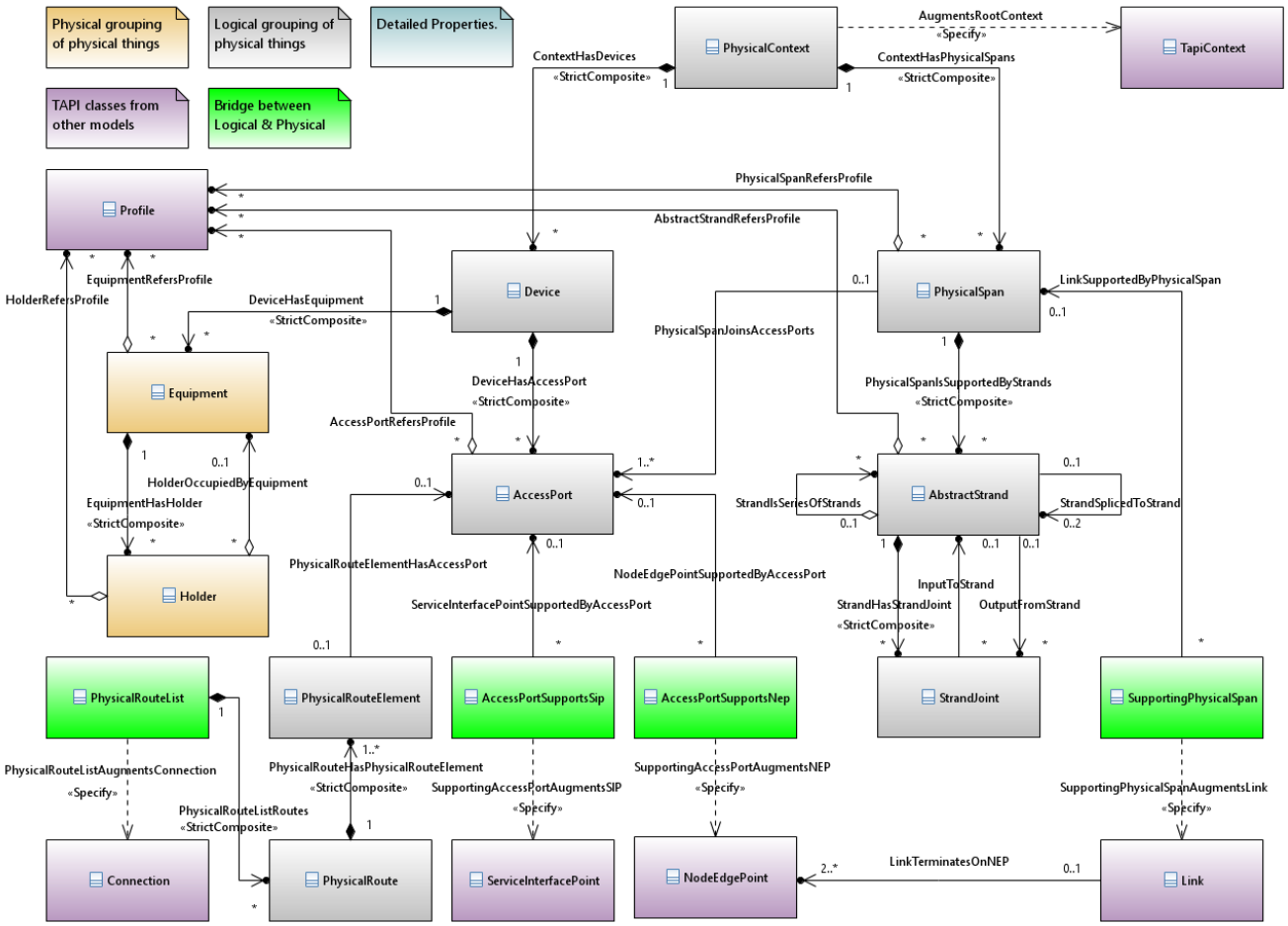

Figure 4 – Diagram *EquipmentPatternSkeleton*

1.2 Classes

1.2.1 AbstractStrand

Description:

- This object represents an abstraction of one or more strands in series that provides sufficient detail to enable appropriate engineering. A strand represents a continuous long, thin piece of a medium such as glass fiber or copper wire. In this model a Strand: - a strand has two ends - a splice can only be between 2 strands. - the end of a strand may have a splice, a connector or be hidden - only one end can be hidden in an equipment - where a cable has more than two end each strand only goes between two of the ends This model does NOT account for multiple copper strands being spliced.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
strandMediaCharacteristics	TapiCommon::TypeDefinitions::NameAndValue	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Relevant physical properties of the abstract strand. CONDITION: Mandatory where a simple form of strand characteristics is to be conveyed.			
connectorPin	ConnectorPinAddress	0..2	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: A strand can end on two or more Pins (usually 2 pins, but a strand may be spliced to split a signal). This model supports only 2 ended strands and hence splices must be represented explicitly. A abstract strand may be spliced at both ends and hence have no direct relationship to pins or may be connected to pins at one or both ends. In the essential model these Pins would be on connectors that plug in to connectors on Equipments. The AbstractStrand is extended to the pins of the AccessPort which are the Pins on the Connectors of the Equipment. In some cases it may not be relevant to represent the pin detail and hence the reference is to a connector alone. CONDITION: Mandatory where at least one connector pin detail is to be represented.			
_adjacentStrand *Navigable association end of:* *StrandIsSeriesOfStrands*	AbstractStrand	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Allows expression of an ordered list of abstract strands that support this broader span abstract strand where the specific interconnection is not relevant. CONDITION: Mandatory where the sequence of strands in a physical span a is to be expressed but when the specific interconnection is not relevant.			

Attribute Name	Type	Mult.	Access	Stereotypes
_splicedStrand *Navigable association end of:* *StrandSplicedToStrand*	AbstractStrand	0..2	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: References strands that are spliced to this strand where splice properties need not be represented. CONDITION: Mandatory where a simple representation of a splice between strands is required			
_toStrandJoint *Navigable association end of:* *OutputFromStrand*	StrandJoint	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The strand joint through which normal flow of light passes from this fiber. CONDITION: Mandatory where detailed strand joint characteristics related to the flow from the strand are to be expressed.			
_strandJoint *Navigable association end of:* *StrandHasStrandJoint*	StrandJoint	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Represents a flow opportunity through a joint. The strand joint is owned by this strand which is one of the two strands (or the strand) that this joint connects. CONDITION: Mandatory where details of properties of the joint need to be expressed.			
_profile *Navigable association end of:* *AbstractStrandRefersProfile*	TapiCommon::ObjectClasses::Profile	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			

Attribute Name	Type	Mult.	Access	Stereotypes
localId Inherited: *TapiCommon::ObjectClasses::LocalClass::localId*	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: *TapiCommon::ObjectClasses::LocalClass::name*	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 *AbstractStrand*

1.2.2 AccessPort

Description:

- A group of pins that together support a signal group where any one pin removed from the group will prevent all signals of the signal group from flowing successfully. In some cases the AccessPort may simply reference a single connector (e.g., where the pin-connector association is simple such that the AccessPort references all pins of one connector).

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
connectorPin	ConnectorPinAddress	1..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The list of Pins that support the AccessPort.			

Attribute Name	Type	Mult.	Access	Stereotypes
_profile *Navigable association end of:* *AccessPortRefersProfile*	TapiCommon::ObjectClasses::Profile	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
uuid Inherited: *TapiCommon::ObjectClasses::GlobalClass::uuid*	TapiCommon::TypeDefinitions::Uuid	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: UUID: An identifier that is universally unique within an identifier space, where the identifier space is itself globally unique, and immutable. An UUID carries no semantics with respect to the purpose or state of the entity. UUID here uses string representation as defined in RFC 4122. The canonical representation uses lowercase characters. Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-' + '[0-9a-fA-F]{4}-[0-9a-fA-F]{12} Example of a UUID in string representation: f81d4fae-7dec-11d0-a765-00a0c91e6bf6			
name Inherited: *TapiCommon::ObjectClasses::GlobalClass::name*	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 2 – Attributes for class *AccessPort*

1.2.3 AccessPortSupportsNep

Description:

- The AccessPort supporting this NEP. More NEPs can be supported by the same AccessPort. This augment allows NEP to refer to its AccessPort despite TapiTopology model does not import TapiEquipment model.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_accessPort *Navigable association end of:* *NodeEdgePointSupportedByAccessPort*	AccessPort	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Reference to the AccessPort. CONDITION: Mandatory where the NEP is directly supported by an access port.			

Table 3 – Attributes for class *AccessPortSupportsNep*

1.2.4 AccessPortSupportsSip

Description:

- The AccessPort supporting this SIP. More SIPs can be supported by the same AccessPort. This augment allows SIP to refer to its AccessPort despite TapiTopology model does not import TapiEquipment model.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_accessPort *Navigable association end of:* *ServiceInterfacePointSupportedByAccessPort*	AccessPort	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Reference to the AccessPort. CONDITION: Mandatory where the SIP is directly supported by an access port.			

Table 4 – Attributes for class *AccessPortSupportsSip*

1.2.5 Device

Description:

- A logical grouping of Equipments and AccessPorts that are closely located and form a support a coherent system of related functions.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_equipment *Navigable association end of:* *DeviceHasEquipment*	Equipment	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Equipments of the device. CONDITION: Mandatory where the device has equipment.			
_accessPort *Navigable association end of:* *DeviceHasAccessPort*	AccessPort	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Access ports of the device. CONDITION: Mandatory where access ports are present.			
uuid Inherited: *TapiCommon::ObjectClasses::GlobalClass::uuid*	TapiCommon::TypeDefinitions::Uuid	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: UUID: An identifier that is universally unique within an identifier space, where the identifier space is itself globally unique, and immutable. An UUID carries no semantics with respect to the purpose or state of the entity. UUID here uses string representation as defined in RFC 4122. The canonical representation uses lowercase characters. Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-' + '[0-9a-fA-F]{4}-[0-9a-fA-F]{12} Example of a UUID in string representation: f81d4fae-7dec-11d0-a765-00a0c91e6bf6			
name Inherited: *TapiCommon::ObjectClasses::GlobalClass::name*	TapiCommon::TypeDefinitions::NameAndValue	0..*	RW	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	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 5 – Attributes for class *Device*

1.2.6 Equipment

Description:

- Represents any relevant physical thing. May be only expectation, only actual or both expectation and actual. Represents a field replaceable unit. May include non-field-replaceable details.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_containedHolder *Navigable association end of:* *EquipmentHasHolder*	Holder	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: References the Holder in an Equipment that is available to take other Equipments. For example: - Slot in a sub-rack - Slot in a Field Replaceable Unit that can take a small form-factor pluggable. CONDITION: Mandatory where the equipment has holders.			
category	EquipmentCategory	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute provides the identifier for the form of equipments regarded as having particular shared characteristics.			
equipmentLocation	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Provides details of the location of the equipment within the context of containing equipments.			
geographicalLocation	PrimitiveTypes::String	0..1	R	Deprecated OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The location of the equipment in a georgraphical context (e.g., lat long). This property is deprecated. CONDITION: Mandatory where there is a relevant geographical location and formal geolocation is not being used (only for equipments not in holders).			
isExpectedActualMismatch	PrimitiveTypes::Boolean Default value: *false*	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Indicates where the expectation does not match the actual. This is false where there is no expectation. CONDITION: Mandatory where there is potential for expectation and hence the property may sometimes be not default.			
expectedEquipment	ExpectedEquipment	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Provides details of expected equipment at the stated location and/or within the containing holder within the device. CONDITION: Mandatory where there is expectation to be stated.			
actualEquipment	ActualEquipment	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Provides details of a real equipment present at the stated location and/or within the containing holder within the device. CONDITION: Mandatory where a real equipment is to be represented.			
_geolocation *Navigable association end of:* *EquipmentHadGeolocation*	Geolocation	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The location of the equipment in a georgraphical context using formal coordinates. CONDITION: Mandatory where there is a relevant geographical location using formal coordiantes (only for equipments not in holders).			
_profile *Navigable association end of:* *EquipmentRefersProfile*	TapiCommon::ObjectClasses::Profile	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
uuid Inherited: *TapiCommon::ObjectClasses::GlobalClass::uuid*	TapiCommon::TypeDefinitions::Uuid	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: UUID: An identifier that is universally unique within an identifier space, where the identifier space is itself globally unique, and immutable. An UUID carries no semantics with respect to the purpose or state of the entity. UUID here uses string representation as defined in RFC 4122. The canonical representation uses lowercase characters. Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-' + '[0-9a-fA-F]{4}-[0-9a-fA-F]{12} Example of a UUID in string representation: f81d4fae-7dec-11d0-a765-00a0c91e6bf6			
name Inherited: *TapiCommon::ObjectClasses::GlobalClass::name*	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 6 – Attributes for class *Equipment*

1.2.7 Geolocation

Description:

- GPS location.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
altitude	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Distance above sea level. Measured in millimeters. CONDITION: Mandatory where altitude information is relevant and available.			
latitude	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Relative position north or south on the Earth's surface, in decimal degree (DD) used to express latitude and longitude geographic coordinates. Range: "-90..90"			
longitude	PrimitiveTypes::Real	1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Angular distance east or west on the Earth's surface in decimal degree (DD) used to express latitude and longitude geographic coordinates. Range: "-180..180"			

Table 7 – Attributes for class *Geolocation*

1.2.8 Holder

Description:

- Represents a space in an equipment in which another equipment can be fitted in the field. It must have at least one of actual holder or expected holder (and may have both).

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
expectedHolder	ExpectedHolder	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Details of the contained holder as stated for the expected equipment. CONDITION: Mandatory where an expected holder is to be stated.			
actualHolder	ActualHolder	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Details of the contained holder as stated for the actual equipment. CONDITION: Mandatory where an actual holder is to be stated.			
_occupyingFru *Navigable association end of:* *HolderOccupiedByEquipment*	Equipment	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The field replaceable unit (FRU) that is occupying the holder. The occupying FRU may be only expectation, only actual or both. A holder may be unoccupied. An FRU may occupy more than one holder (using or blocking are intentionally not distinguished here). CONDITION: Mandatory where an occupying FRU is to be stated.			

Attribute Name	Type	Mult.	Access	Stereotypes
_profile *Navigable association end of:* *HolderRefersProfile*	TapiCommon::ObjectClasses::Profile	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
uuid Inherited: *TapiCommon::ObjectClasses::GlobalClass::uuid*	TapiCommon::TypeDefinitions::Uuid	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: UUID: An identifier that is universally unique within an identifier space, where the identifier space is itself globally unique, and immutable. An UUID carries no semantics with respect to the purpose or state of the entity. UUID here uses string representation as defined in RFC 4122. The canonical representation uses lowercase characters. Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-' + '[0-9a-fA-F]{4}-[0-9a-fA-F]{12} Example of a UUID in string representation: f81d4fae-7dec-11d0-a765-00a0c91e6bf6			
name Inherited: *TapiCommon::ObjectClasses::GlobalClass::name*	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 8 – Attributes for class *Holder*

1.2.9 PhysicalContext

Description:

- The collection of all physical things to be described.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_device *Navigable association end of:* *ContextHasDevices*	Device	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The list of all devices in the context. CONDITION: Mandatory where devices are present and to be listed.			
_physicalSpan *Navigable association end of:* *ContextHasPhysicalSpans*	PhysicalSpan	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: A list of all physical spans in the context. CONDITION: Mandatory where physical spans are present and to be listed.			

Table 9 – Attributes for class *PhysicalContext*

1.2.10 PhysicalRoute

Description:

- The physical route of a connection is modeled as an ordered sequence of physical route element instances. The physical route is a description dedicated to the connection.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_physicalRouteElement *Navigable association end of:* *PhysicalRouteHasPhysicalRouteElement*	PhysicalRouteElement	1..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: A point in the PhysicalRoute. A PhysicalRoute must have at least one point.			

Attribute Name	Type	Mult.	Access	Stereotypes
physicalRouteState	PhysicalRouteState Default value: *CURRENT*	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Provides optional resilience and state attributes to the PhysicalRoute. CONDITION: Mandatory where not always default.			
localId Inherited: *TapiCommon::ObjectClasses::LocalClass::localId*	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: *TapiCommon::ObjectClasses::LocalClass::name*	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 10 – Attributes for class *PhysicalRoute*

1.2.11 PhysicalRouteElement

Description:

- A PhysicalRouteElement describes equipment, connectors on those equipments and pins of those connectors that are involved in the physical route of the connection. The description may be in terms of access port or connector pin in route (at least one of access port or connector pin in route must be provided) or both. Where access port is provided alone, this may be because all pins in the connectors of the access port are used, because the connector pin detail id not known the and to its subset of connectorPins which are involved in the physical route. An access port may include connectorPins of more Equipments, e.g., in case of bidirectional access port shared by two "unidirectional"; Equipments. Connector pin details may be provided alone without an access port where there are no access ports modelled.

Applied stereotypes:

- OpenInterfaceModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA

- OpenModelClass
  - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_accessPortInRoute *Navigable association end of:* *PhysicalRouteElementHasAccessPort*	AccessPort	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The AccessPort included in the physical route. CONDITION: Mandatory where AccessPort is used to define physical route.			
connectorPinInRoute	ConnectorPinAddress	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The connectors and pins defining this point in the route where the access port alone is not sufficient or the access port is not provided. CONDITION: Mandatory where AccessPort is not used to define PhysicalRoute or where AccessPort requires clarification as it includes more connectorPins than are used in the route.			

Table 11 – Attributes for class *PhysicalRouteElement*

1.2.12 PhysicalRouteList

Description:

- The list of the PhysicalRoutes of a Connection.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_physicalRoute *Navigable association end of:* *PhysicalRouteListRoutes*	PhysicalRoute	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: List of PhysicalRoutes composing the physical route of the Connection. CONDITION: Mandatory where a physical route is to be conveyed.			

Table 12 – Attributes for class *PhysicalRouteList*

1.2.13 PhysicalSpan

Description:

- An adjacency between AccessPorts. The adjacency is supported by a group of strands between pins of the AccessPorts. This is a physical abstraction.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_accessPort *Navigable association end of:* *PhysicalSpanJoinsAccessPorts*	AccessPort	1..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The access ports that bound the physical span. This allows for simple point to point cases as well as multi-point cases and cases where the physical span has only one fully defined end.			
_abstractStrand *Navigable association end of:* *PhysicalSpanIsSupportedByStrands*	AbstractStrand	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Both the serial segments that form an end-end strand and the parallel end-end strands. CONDITION: Mandatory where abstract strands are to be stated.			
_profile *Navigable association end of:* PhysicalSpanRefersProfile	TapiCommon::ObjectClasses::Profile	0..*	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description:			
uuid Inherited: *TapiCommon::ObjectClasses::GlobalClass::uuid*	TapiCommon::TypeDefinitions::Uuid	1	RW	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: true • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: UUID: An identifier that is universally unique within an identifier space, where the identifier space is itself globally unique, and immutable. An UUID carries no semantics with respect to the purpose or state of the entity. UUID here uses string representation as defined in RFC 4122. The canonical representation uses lowercase characters. Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-' + '[0-9a-fA-F]{4}-[0-9a-fA-F]{12} Example of a UUID in string representation: f81d4fae-7dec-11d0-a765-00a0c91e6bf6			
name Inherited: *TapiCommon::ObjectClasses::GlobalClass::name*	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 13 – Attributes for class *PhysicalSpan*

1.2.14 StrandJoint

Description:

- Represents a flow opportunity through a joint. Can represent flow opportunity through: - a connector - a splice - etc. Allows augmentation with impairments and other properties of the joint. Can be used: - as a single instance alone to represent properties that apply equally to each direction of flow - in combinations of multiple instances to represent impairments that are different for normal flow, reverse flow and reflections.

Applied stereotypes:

- OpenInterfaceModelClass
  - objectCreationNotification: NA

- objectDeletionNotification: NA
- OpenModelClass
  - support: MANDATORY

Attribute Name	Type	Mult.	Access	Stereotypes
_toAbstractStrand *Navigable association end of:* *InputToStrand*	AbstractStrand	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The strand to which the light from the StrandJoint is fed. There may be no reference where the strand joint is at: - visibility boundary - the connector that feeds the transponder. CONDITION: Mandatory where strand joint is not at far end.			
applicableToFlowDirection	FlowDirection Default value: *BOTH*	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The flow(s) to which the stated properties of this strand joint apply to. CONDITION: Mandatory where not default			
reflection	PrimitiveTypes::Boolean Default value: *false*	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Indicates that this strand joint states properties of a reflection. A reflection may be: - normal flow where the light passes from a strand (to strand joint) and then back to the same strand - contra flow where the light passes from the strand referenced in to abstract strand back to the same stand (that references the strand joint via to strand joint. The strand referenced in to abstract strand is the same strand that referenced the strand joint. The properties of the strand joint may apply to BOTH directions of reflection for the abstract strand. CONDITION: Mandatory where not default			

Attribute Name	Type	Mult.	Access	Stereotypes
localId Inherited: *TapiCommon::ObjectClasses::LocalClass::localId*	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: *TapiCommon::ObjectClasses::LocalClass::name*	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 14 – Attributes for class *StrandJoint*

1.2.15 SupportingPhysicalSpan

Description:

- The PhysicalSpan supporting this Link. More Links can be supported by the same PhysicalSpan. This augment allows Link to refer to its PhysicalSpans despite TapiTopology model does not import TapiEquipment model.

Applied stereotypes:

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

Attribute Name	Type	Mult.	Access	Stereotypes
_physicalSpan *Navigable association end of:* *LinkSupportedByPhysicalSpan*	PhysicalSpan	0..1	R	OpenModelAttribute • isKey: No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Reference to the PhysicalSpan. CONDITION: Mandatory where the link is supported by a physical span.			

Table 15 – Attributes for class *SupportingPhysicalSpan*

1.3 Signals

1.4 Associations

1.4.1 AbstractStrandRefersProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	shared	Yes	TapiCommon::ObjectClasses::Profile	0..*
abstractstrand	none	No	AbstractStrand	0..*

Table 16 – Member ends for association *AbstractStrandRefersProfile*

1.4.2 AccessPortRefersProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	shared	Yes	TapiCommon::ObjectClasses::Profile	0..*
accessport	none	No	AccessPort	0..*

Table 17 – Member ends for association *AccessPortRefersProfile*

1.4.3 ConnectorPinOnEquipment

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_equipment	none	Yes	Equipment	1
connectorpinaddress	none	No	ConnectorPinAddress	0..*

Table 18 – Member ends for association *ConnectorPinOnEquipment*

1.4.4 ContextHasDevices

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_device	composite	Yes	Device	0..*
tapiphysicalcontext	none	No	PhysicalContext	1

Table 19 – Member ends for association *ContextHasDevices*

1.4.5 ContextHasPhysicalSpans

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_physicalSpan	composite	Yes	PhysicalSpan	0..*
tapiphysicalcontext	none	No	PhysicalContext	1

Table 20 – Member ends for association *ContextHasPhysicalSpans*

1.4.6 DeviceHasAccessPort

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_accessPort	composite	Yes	AccessPort	0..*
device	none	No	Device	1

Table 21 – Member ends for association *DeviceHasAccessPort*

1.4.7 DeviceHasEquipment

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_equipment	composite	Yes	Equipment	0..*
device	none	No	Device	1

Table 22 – Member ends for association *DeviceHasEquipment*

1.4.8 EquipmentHadGeolocation

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_geolocation	composite	Yes	Geolocation	0..1
equipment	none	No	Equipment	1

Table 23 – Member ends for association *EquipmentHadGeolocation*

1.4.9 EquipmentHasHolder

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_containedHolder	composite	Yes	Holder	0..*
equipment	none	No	Equipment	1

Table 24 – Member ends for association *EquipmentHasHolder*

1.4.10 EquipmentRefersProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	shared	Yes	TapiCommon::ObjectClasses::Profile	0..*
equipment	none	No	Equipment	0..*

Table 25 – Member ends for association *EquipmentRefersProfile*

1.4.11 HolderOccupiedByEquipment

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_occupyingFru	shared	Yes	Equipment	0..1
occupiedHolder	none	No	Holder	0..*

Table 26 – Member ends for association *HolderOccupiedByEquipment*

1.4.12 HolderRefersProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	shared	Yes	TapiCommon::ObjectClasses::Profile	0..*
holder	none	No	Holder	0..*

Table 27 – Member ends for association *HolderRefersProfile*

1.4.13 InputToStrand

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_toAbstractStrand	none	Yes	AbstractStrand	0..1
strandjoint	none	No	StrandJoint	0..*

Table 28 – Member ends for association *InputToStrand*

1.4.14 LinkSupportedByPhysicalSpan

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_physicalSpan	none	Yes	PhysicalSpan	0..1
supportingphysicalspan	none	No	SupportingPhysicalSpan	0..*

Table 29 – Member ends for association *LinkSupportedByPhysicalSpan*

1.4.15 NodeEdgePointSupportedByAccessPort

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_accessPort	none	Yes	AccessPort	0..1
supportingaccessport	none	No	AccessPortSupportsNep	0..*

Table 30 – Member ends for association *NodeEdgePointSupportedByAccessPort*

1.4.16 OutputFromStrand

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_toStrandJoint	none	Yes	StrandJoint	0..*
abstractstrand	none	No	AbstractStrand	0..1

Table 31 – Member ends for association *OutputFromStrand*

1.4.17 PhysicalRouteElementHasAccessPort

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
accessPortInRoute	none	Yes	AccessPort	0..1
physicalrouteelement	none	No	PhysicalRouteElement	0..1

Table 32 – Member ends for association *PhysicalRouteElementHasAccessPort*

1.4.18 PhysicalRouteHasPhysicalRouteElement

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_physicalRouteElement	composite	Yes	PhysicalRouteElement	1..*
physicalroute	none	No	PhysicalRoute	1

Table 33 – Member ends for association *PhysicalRouteHasPhysicalRouteElement*

1.4.19 PhysicalRouteListRoutes

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_physicalRoute	composite	Yes	PhysicalRoute	0..*
physicalroute1	none	No	PhysicalRouteList	1

Table 34 – Member ends for association *PhysicalRouteListRoutes*

1.4.20 PhysicalSpanIsSupportedByStrands

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_abstractStrand	composite	Yes	AbstractStrand	0..*
physicalspan	none	No	PhysicalSpan	1

Table 35 – Member ends for association *PhysicalSpanIsSupportedByStrands*

1.4.21 PhysicalSpanJoinsAccessPorts

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_accessPort	none	Yes	AccessPort	1..*
parallelstrandspan	none	No	PhysicalSpan	0..1

Table 36 – Member ends for association *PhysicalSpanJoinsAccessPorts*

1.4.22 PhysicalSpanRefersProfile

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_profile	shared	Yes	TapiCommon::ObjectClasses::Profile	0..*
physicalspan	none	No	PhysicalSpan	0..*

Table 37 – Member ends for association *PhysicalSpanRefersProfile*

1.4.23 ServiceInterfacePointSupportedByAccessPort

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_accessPort	none	Yes	AccessPort	0..1
sipsupportingaccessport	none	No	AccessPortSupportsSip	0..*

Table 38 – Member ends for association *ServiceInterfacePointSupportedByAccessPort*

1.4.24 StrandHasStrandJoint

Applied stereotype:

- StrictComposite

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_strandJoint	composite	Yes	StrandJoint	0..*
abstractstrand	none	No	AbstractStrand	1

Table 39 – Member ends for association *StrandHasStrandJoint*

1.4.25 StrandIsSeriesOfStrands

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_adjacentStrand	shared	Yes	AbstractStrand	0..*
abstractstrand	none	No	AbstractStrand	0..1

Table 40 – Member ends for association *StrandIsSeriesOfStrands*

1.4.26 StrandSplicedToStrand

Association end role name	Aggreg. type	Navigable	Target Class	Mult.
_splicedStrand	none	Yes	AbstractStrand	0..2
abstractstrand	none	No	AbstractStrand	0..1

Table 41 – Member ends for association *StrandSplicedToStrand*

1.5 Abstractions

1.5.1 AbstractStrandAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
AbstractStrand	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 42 – Member ends for class abstraction *AbstractStrandAugmentsEventNotif*

1.5.2 AbstractStrandAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
AbstractStrand	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 43 – Member ends for class abstraction *AbstractStrandAugmentsEventNotifSignal*

1.5.3 AbstractStrandAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
AbstractStrand	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 44 – Member ends for class abstraction *AbstractStrandAugmentsLogRecordBody*

1.5.4 AccessPortAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
AccessPort	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 45 – Member ends for class abstraction *AccessPortAugmentsEventNotif*

1.5.5 AccessPortAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
AccessPort	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 46 – Member ends for class abstraction *AccessPortAugmentsEventNotifSignal*

1.5.6 AccessPortAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
AccessPort	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 47 – Member ends for class abstraction *AccessPortAugmentsLogRecordBody*

1.5.7 AugmentsRootContext

Augmenting Class	Augmented Class	Comment
PhysicalContext	TapiCommon::ObjectClasses::TapiContext	Augments the base TAPI Context with PhysicalContext model.
target: "/TapiCommon:TapiContext:_context"		

Table 48 – Member ends for class abstraction *AugmentsRootContext*

1.5.8 DeviceAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
Device	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 49 – Member ends for class abstraction *DeviceAugmentsEventNotif*

1.5.9 DeviceAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
Device	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 50 – Member ends for class abstraction *DeviceAugmentsEventNotifSignal*

1.5.10 DeviceAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
Device	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 51 – Member ends for class abstraction *DeviceAugmentsLogRecordBody*

1.5.11 EquipmentAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
Equipment	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 52 – Member ends for class abstraction *EquipmentAugmentsEventNotif*

1.5.12 EquipmentAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
Equipment	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 53 – Member ends for class abstraction *EquipmentAugmentsEventNotifSignal*

1.5.13 EquipmentAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
Equipment	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 54 – Member ends for class abstraction *EquipmentAugmentsLogRecordBody*

1.5.14 EquipmentObjectTypeAugmentsObjectType

Augmenting Enumeration	Augmented Enumeration
EquipmentObjectType - ABSTRACT_STRAND - ACCESS_PORT - DEVICE - EQUIPMENT - HOLDER - PHYSICAL_ROUTE - PHYSICAL_ROUTE_ELEMENT - PHYSICAL_SPAN - STRAND_JOINT	TAPI_CONTEXT
Comment Enumeration Augment.	

Table 55 – Member ends for enum abstraction *EquipmentObjectTypeAugmentsObjectType*

1.5.15 HolderAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
Holder	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 56 – Member ends for class abstraction *HolderAugmentsEventNotif*

1.5.16 HolderAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
Holder	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 57 – Member ends for class abstraction *HolderAugmentsEventNotifSignal*

1.5.17 HolderAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
Holder	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 58 – Member ends for class abstraction *HolderAugmentsLogRecordBody*

1.5.18 PhysicalRouteAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
PhysicalRoute	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 59 – Member ends for class abstraction *PhysicalRouteAugmentsEventNotif*

1.5.19 PhysicalRouteAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
PhysicalRoute	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 60 – Member ends for class abstraction *PhysicalRouteAugmentsEventNotifSignal*

1.5.20 PhysicalRouteAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
PhysicalRoute	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord: streamRecord/TapiStreaming:StreamRecord: logRecord/TapiStreaming:LogRecord: logRecordBody"		

Table 61 – Member ends for class abstraction *PhysicalRouteAugmentsLogRecordBody*

1.5.21 PhysicalRouteElementAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
PhysicalRouteElement	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 62 – Member ends for class abstraction *PhysicalRouteElementAugmentsEventNotif*

1.5.22 PhysicalRouteElementAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
PhysicalRouteElement	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 63 – Member ends for class abstraction *PhysicalRouteElementAugmentsEventNotifSignal*

1.5.23 PhysicalRouteElementAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
PhysicalRouteElement	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 64 – Member ends for class abstraction *PhysicalRouteElementAugmentsLogRecordBody*

1.5.24 PhysicalRouteListAugmentsConnection

Augmenting Class	Augmented Class	Comment
PhysicalRouteList	TapiConnectivity::ObjectClasses::Connection	This augment allows Connection to describe its physical route(s) by listing all involved AccessPorts, despite TapiConnectivity model does not import TapiEquipment model.
target: "/TapiCommon:Context:_context/TapiConnectivity:ConnectivityContext:_connectivityContext/TapiConnectivity:ConnectivityContext:_connection"		

Table 65 – Member ends for class abstraction *PhysicalRouteListAugmentsConnection*

1.5.25 PhysicalSpanAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
PhysicalSpan	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 66 – Member ends for class abstraction *PhysicalSpanAugmentsEventNotif*

1.5.26 PhysicalSpanAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
PhysicalSpan	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 67 – Member ends for class abstraction *PhysicalSpanAugmentsEventNotifSignal*

1.5.27 PhysicalSpanAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
PhysicalSpan	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 68 – Member ends for class abstraction *PhysicalSpanAugmentsLogRecordBody*

1.5.28 StrandJointAugmentsEventNotif

Augmenting Class	Augmented Class	Comment
StrandJoint	TapiNotification::Notifications::EventNotification	
target: "/TapiCommon:Context:_context/TapiNotification:NotificationContext:_notificationContext/TapiNotification:NotificationContext:_eventNotification"		

Table 69 – Member ends for class abstraction *StrandJointAugmentsEventNotif*

1.5.29 StrandJointAugmentsEventNotifSignal

Augmenting Class	Augmented Class	Comment
StrandJoint	TapiNotification::Notifications::EventNotification	
target: "/TapiNotification:Notifications:EventNotification"		

Table 70 – Member ends for class abstraction *StrandJointAugmentsEventNotifSignal*

1.5.30 StrandJointAugmentsLogRecordBody

Augmenting Class	Augmented Class	Comment
StrandJoint	TapiStreaming::ObjectClasses::LogRecordBody	
target: "/TapiStreaming:StreamRecord:_streamRecord/TapiStreaming:StreamRecord:_logRecord/TapiStreaming:LogRecord:_logRecordBody"		

Table 71 – Member ends for class abstraction *StrandJointAugmentsLogRecordBody*

1.5.31 SupportingAccessPortAugmentsNEP

Augmenting Class	Augmented Class	Comment
AccessPortSupportsNep	TapiTopology::ObjectClasses::NodeEdgePoint	This augment allows NEP to refer to its AccessPorts despite TapiTopology model does not import TapiEquipment model.
target: "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_node/TapiTopology:Node:_ownedNodeEdgePoint"		

Table 72 – Member ends for class abstraction *SupportingAccessPortAugmentsNEP*

1.5.32 SupportingAccessPortAugmentsSIP

Augmenting Class	Augmented Class	Comment
AccessPortSupportsSip	TapiCommon::ObjectClasses::ServiceInterfacePoint	
target: "/TapiCommon:Context:_context/TapiCommon:Context:_serviceInterfacePoint"		

Table 73 – Member ends for class abstraction *SupportingAccessPortAugmentsSIP*

1.5.33 SupportingPhysicalSpanAugmentsLink

Augmenting Class	Augmented Class	Comment
SupportingPhysicalSpan	TapiEquipment::Diagrams	This augment allows Link to refer to its PhysicalSpans despite TapiTopology model does not import TapiEquipment model.
target: "/TapiCommon:Context:_context/TapiTopology:TopologyContext:_topologyContext/TapiTopology:TopologyContext:_topology/TapiTopology:Topology:_link"		

Table 74 – Member ends for class abstraction *SupportingPhysicalSpanAugmentsLink*

1.6 Data Types

1.6.1 ActualEquipment

Description:

- The equipment that is actually present in the physical network. It will expose all dynamic properties and some critical static properties.

Attribute Name	Type	Mult.	Access	Stereotypes
commonEquipmentProperties	CommonEquipmentProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties related to equipment type.			
commonActualProperties	CommonActualProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties related to equipment instance.			
actualNonFieldReplaceableModule	ActualNonFieldReplaceableModule	0..*	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Details of non-field-replaceable modules. CONDITION: Mandatory where there are non-field-replaceable modules.			

Table 75 – Attributes for data type *ActualEquipment*

1.6.2 ActualHolder

Description:

- A holder in the ActualEquipment.

Attribute Name	Type	Mult.	Access	Stereotypes
commonHolderProperties	CommonHolderProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties related to the holder type.			

Table 76 – Attributes for data type *ActualHolder*

1.6.3 ActualNonFieldReplaceableModule

Description:

- A structure that represents an actual equipment that cannot be replaced in the field. Is simply a subordinate part of an ActualEquipment (FRU). Does not have any exposed holders (any associated holders are assumed to belong to the containing FRU). Does not have any connectors (any associated connectors are assumed to belong to the containing FRU).

Attribute Name	Type	Mult.	Access	Stereotypes
commonActualProperties	CommonActualProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties related to equipment instance.			
commonEquipmentProperties	CommonEquipmentProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties related to equipment type.			

Attribute Name	Type	Mult.	Access	Stereotypes
localId Inherited: *TapiCommon::ObjectClasses::LocalClass::localId*	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: *TapiCommon::ObjectClasses::LocalClass::name*	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 77 – Attributes for data type *ActualNonFieldReplaceableModule*

1.6.4 CommonActualProperties

Description:

- Properties common to actual Equipment instance.

Attribute Name	Type	Mult.	Access	Stereotypes
assetInstanceIdentifier	PrimitiveTypes::String	0..1	RW	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute represents the asset identifier of this instance allocated by the owner/operator. May be an empty string where no value has been allocated. May be not present when not supported. The value may be provided written per instance. CONDITION: Mandatory where there is an opportunity to allocate an identifier on an instance basis and where an identifier has been allocated.			

Attribute Name	Type	Mult.	Access	Stereotypes
isPowered	PrimitiveTypes::Boolean Default value: *true*	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The state of the power being supplied to the equipment. Note that this attribute summarizes the power state. Full details on the actual power system would be provided from a number of Power function (e.g. different voltage supplies). CONDITION: Mandatory where not default and the power state of the hardware is known.			
manufactureDate	TapiCommon::TypeDefinitions::DateAndTime	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The date on which this instance is manufactured (as provided by the actual hardware). CONDITION: Mandatory where the manufacture date is provided by the actual hardware.			
serialNumber	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: The serial number of this (as provided by the actual hardware). CONDITION: Mandatory where the serial number is provided by the actual hardware.			
temperature	PrimitiveTypes::Real	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: The measured temperature of the Equipment (stated in Celsius). If the temperature is supported but temporarily not available then this may be represented by max real number. CONDITION: Mandatory where the equipment provides a temperature measurement.			

Table 78 – Attributes for data type *CommonActualProperties*

1.6.5 CommonEquipmentProperties

Description:

- Properties common to all equipments.

Attribute Name	Type	Mult.	Access	Stereotypes
assetTypeIdentifier	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Represents the invariant properties of the equipment asset allocated by the owner/operator that define and characterize the type of equipment. CONDITION: Mandatory where a operator/user asset identifier is available to the controller.			
equipmentTypeDescription	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Text describing the type of Equipment. CONDITION: Mandatory where a description is available.			
equipmentTypeIdentifier	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: false • valueRange: no range constraint • support: MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute identifies the part type of the equipment.			

Attribute Name	Type	Mult.	Access	Stereotypes
equipmentTypeName	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute identifies the type of the equipment. CONDITION: Mandatory where there is a name in addition to the equipment type identifier.			
equipmentTypeVersion	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute identifies the version of the equipment. CONDITION: Mandatory where there is a known version of the type.			
manufacturerIdentifier	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The formal unique identifier of the manufacturer.			
manufacturerName	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The formal name of the manufacturer of the Equipment.			

Table 79 – Attributes for data type *CommonEquipmentProperties*

1.6.6 CommonHolderProperties

Description:

- Properties common to all holders.

Attribute Name	Type	Mult.	Access	Stereotypes
holderCategory	HolderCategory	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The type of holder.			
isGuided	PrimitiveTypes::Boolean Default value: *true*	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: This attribute indicates whether the holder has guides that constrain the position of the equipment in the holder or not. CONDITION: Mandatory where not default.			
holderLocation	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The relative position of the holder in the context of its containing equipment along with the position of that containing Equipment (and further recursion).			

Table 80 – Attributes for data type *CommonHolderProperties*

1.6.7 ConnectorPinAddress

Description:

- The identification of the location of the Connector and/or Pin.

Attribute Name	Type	Mult.	Access	Stereotypes
connectorIdentification	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey: yes – part: 2 • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Identification of the Connector in the context of the referenced Equipment. CONDITION: Mandatory where there is more than one connector on the equipment.			
pinIdentification	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey: yes – part: 3 • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Where relevant, identification of the Pin in the context of the connector. Where the whole connector is used, then individual Pins need not be identified. Simple alternative to pinAndRole. CONDITION: Mandatory where the pin and role is not being used but there is a need to simply identify the relevant pin.			
pinAndRole	PinAndRole	0..*	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: If there is more than one pin used in a connector and/or there is a need to identify the role of one or more pins, then this property can be used. For simple cases pinIdentification can be used instead. CONDITION: Mandatory where there is more than one pin and/or a need to identify pin role.			
_equipment	Equipment	1	R	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The Equipment instance supporting the Connector/Pin.			

Table 81 – Attributes for data type *ConnectorPinAddress*

1.6.8 ExpectedEquipment

Description:

- A definition of the restrictions on the equipment that is expected to be present in the physical network at a particular "place". The expected equipment will state the type and may constrain any other invariant properties. It may also provide desired ranges for dynamic properties.

Attribute Name	Type	Mult.	Access	Stereotypes
commonEquipmentProperties	CommonEquipmentProperties	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Properties common to all aspects of Equipment. CONDITION: Mandatory where not equipment not expected.			
expectedNonFieldReplaceableModule	ExpectedNonFieldReplaceableModule	0..*	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Details of modules attached to the expected equipment where those modules are essentially part of the equipment and are not replaceable in the field. Note that there may be modules reported by the actual equipment that are not declared in the expectation detail. Note that mismatch may not account for this detail. CONDITION: Mandatory where expected equipment has known non-field-replaceble modules.			
expectedHolder	ExpectedHolder	0..*	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: A definition of a holder expected in the ActualEquipment (i.e., an ActualHolder) as part of the constraints provided by the ExpectedEquipment. CONDITION: Mandatory where expected equipment has known holders.			
equipmentNotExpected	PrimitiveTypes::Boolean Default value: *false*	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA

Attribute Name	Type	Mult.	Access	Stereotypes
	Description: Indicates that it is expected that there be no equipment in the holder. This may be set when there is an intended blanking plate (covering the empty holder) that is not detectable or when the holder is intended to be completely empty. CONDITION: Mandatory where not default.			

Table 82 – Attributes for data type *ExpectedEquipment*

1.6.9 ExpectedHolder

Description:

- A definition of a holder expected in the ActualEquipment (i.e., an ActualHolder) as part of the constraints provided by the ExpectedEquipment.

Attribute Name	Type	Mult.	Access	Stereotypes
commonHolderProperties	CommonHolderProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties common to all holders.			

Table 83 – Attributes for data type *ExpectedHolder*

1.6.10 ExpectedNonFieldReplaceableModule

Description:

- A structure that represents an expected equipment that cannot be replaced in the field. Is simply a subordinate part of an ExpectedEquipment (FRU). Does not have any exposed holders (any associated holders are assumed to belong to the containing FRU). Does not have any connectors (any associated connectors are assumed to belong to the containing FRU).

Attribute Name	Type	Mult.	Access	Stereotypes
commonEquipmentProperties	CommonEquipmentProperties	1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: Properties common to all equipments.			
localId Inherited: *TapiCommon::ObjectClasses::LocalClass::localId*	PrimitiveTypes::String	1	RW	OpenModelAttribute • 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: *TapiCommon::ObjectClasses::LocalClass::name*	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 84 – Attributes for data type *ExpectedNonFieldReplaceableModule*

1.6.11 PinAndRole

Description:

- Provides an opportunity, for a pin, to give the location of the pin and the role of the pin.

Attribute Name	Type	Mult.	Access	Stereotypes
locationInConnector	PrimitiveTypes::String	1	R	OpenModelAttribute • isKey: yes – part: 1 • isInvariant: false • valueRange: no range constraint • support: MANDATORY OpenInterfaceModelAttribute • AVC: NA
	Description: The named location of the pin in the context of the connector. This is likely to be the normal numbering/naming for the type of connector, e.g. "7", "6-GND", "Common" etc.			
pinRole	PrimitiveTypes::String	0..*	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: It is not always necessary to specify a role (or list of roles) as the connector locationInConnector may be sufficient (as these are sometimes clearly role based. Each entry represents a role in the context of the specific access port. Each entry ties the pin to a functional element in the associated NEP(s) etc. For example: - a pin might carry several distinct signals where each signal is identified in the list - a pin may carry a signal and power - a signal carried by a pin may be the receive flow (INPUT) to a bidirectional NEP or the transmit flow (OUTPUT) or indeed both (BIDIRECTIONAL). CONDITION: Mandatory where pin role is to be stated.			

Attribute Name	Type	Mult.	Access	Stereotypes
pinName	PrimitiveTypes::String	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: Where the pin has a distinct location identifier and a distinct name this field can be used for the name. For example: - locationInConnector = 6, pinName = GND CONDITION: Mandatory where pin name is relevant as the description is at pin grnaularity.			
connectorPinOrientation	ConnectorAndPinOrientation	0..1	R	OpenModelAttribute • isKey:No • isInvariant: false • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: OpenInterfaceModelAttribute • AVC: NA
	Description: States the orientations of the pin/connector. Most connector schemes are asymmetric such that there are two orientations of the connector where a mating is only possible between two connectors of different orientations. A multi-pin connector may have a mix of pin orientations. In this case, it is expected that the dominant orientation of pin is chosen for the connector orientation. CONDITION: Mandatory where connector/pin orientation is known and to be stated.			

Table 85 – Attributes for data type *PinAndRole*

1.7 Enumerations

1.7.1 ConnectorAndPinOrientation

Description:

- Most connector schemes are asymmetric such that there are two orientations of the connector where a mating is only possible between two connectors of different orientations. A multi-pin connector may have a mix of pin orientations. In this case, it is expected that the dominant orientation of pin is chosen for the connector orientation.

Contains Enumeration Literals:

- MALE
  - The connecting elements are dominantly protrusions.
- FEMALE
  - The connecting elements are dominantly indentations.
- SYMMETRIC_NEUTRAL
  - The pin (and housing) orientation combination is such that it is symmetric so a connector is compatible with itself. The connecting element may be a surface rather than protrusions or indentations.

1.7.2 EquipmentCategory

Description:

- The form of equipment.

Contains Enumeration Literals:

- SUBRACK
  - An assembly with holders designed to accommodate CIRCUIT_PACKs. The assembly is designed to be mounted in a RACK.
- CIRCUIT_PACK
  - An assembly with connectors compatible with those in a holder. The assembly is designed to be mounted in a holder (SLOT) of a SUBRACK. May also support holders (SLOTs) for SMALL_FORMFACTOR_PLUGGABLEs.
- SMALL_FORMFACTOR_PLUGGABLE
  - A small assembly (compared to a CIRCUIT_PACK) with connectors compatible with those in a holder. The assembly is designed to be mounted in a holder (SLOT) of a CIRCUIT_PACK or STAND_ALONE_UNIT.
- STAND_ALONE_UNIT
  - An assembly with connectors for cabling and potentially with holders. The assembly is designed to be mounted in a freeform environment (on a table or simple mechanical cabinet). May support holders (SLOTs) for CIRCUIT_PACKs or for SMALL_FORMFACTOR_PLUGGABLEs.
- RACK
  - A mechanical assembly with cabling and predefined mounting points for particular SUBRACK types. The assembly is designed to be mounted on the floor in a row with other RACKs.

1.7.3 EquipmentObjectType

Description:

- The list of TAPI Equipment Object types/classes.

Contains Enumeration Literals:

- DEVICE
- ACCESS_PORT
- EQUIPMENT
- HOLDER
- PHYSICAL_SPAN
- ABSTRACT_STRAND
- STRAND_JOINT
- PHYSICAL_ROUTE
- PHYSICAL_ROUTE_ELEMENT

1.7.4 FlowDirection

Description:

- The direction of flow.

Contains Enumeration Literals:

- NORMAL_FLOW
  - Applies to the normal flow of light through the strand joint as expressed via the "to strand joint" statement of a strand.
- CONTRA_FLOW
  - The reverse of the NORMAL_FLOW. The light flows to the strand that references the strand joint with "to strand joint".
- BOTH
  - The strand joint statement applies to both normal and contra flow.

1.7.5 HolderCategory

Description:

- The form of holder.

Contains Enumeration Literals:

- SLOT
  - A guided holder with fixed connectors. The guided holder is designed to take a particular form of CIRCUIT_PACK or SMALL_FORMFACTOR_PLUGGABLE

1.7.6 PhysicalRouteState

Description:

- Potential PhysicalRoute states concerning the service support.

Contains Enumeration Literals:

- CURRENT
  - The PhysicalRoute instance identified is the current PhysicalRoute, i.e., is the one that is active and selected to support service.
- NOT_CURRENT
  - The PhysicalRoute instance is not the one supporting the service.
- UNKNOWN
  - The PhysicalRoute state is unknown.

1.8 Primitives