



Core Information Model (CoreModel)

TR-512.DD

Data Dictionary

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Open Networking Foundation
1000 El Camino Real, Suite 100, Menlo Park, CA 94025
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Important note

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List of Figures

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Document History

Version	Date	Description of Change
1.0	March 30, 2015	Initial version of the base document of the "Core Information Model" fragment of the ONF Common Information Model (ONF-CIM).
1.1	November 24, 2015	Version 1.1
1.2	September 20, 2016	Version 1.2 [Note Version 1.1 was a single document whereas 1.2 is broken into a number of separate parts]
1.3	September 2017	Document name changed. Was TR-512.8 in Version 1.2. [Published via wiki only]
1.3.1	January 2018	Addition of text related to approval status.
1.4	November 2018	Aligned with 1.4 model content.

1 Introduction

This document is an addendum to the TR-512 ONF Core Information Model and forms part of the description of the ONF-CIM. For general overview material and references to the other parts refer to [TR-512.1](#).

1.1 References

For a full list of references see [TR-512.1](#).

1.2 Definitions

For a full list of definition see [TR-512.1](#).

1.3 Conventions

See [TR-512.1](#) for an explanation of:

- UML conventions
- Lifecycle Stereotypes
- Diagram symbol set

1.4 Viewing UML diagrams

Some of the UML diagrams are very dense. To view them either zoom (sometimes to 400%), open the associated image file (and zoom appropriately) or open the corresponding UML diagram via Papyrus (for each figure with a UML diagram the UML model diagram name is provided under the figure or within the figure).

1.5 Understanding the figures

Figures showing fragments of the model using standard UML symbols as well as figures illustrating application of the model are provided throughout this document. Many of the application-oriented figures also provide UML class diagrams for the corresponding model fragments (see [TR-512.1](#) for diagram symbol sets). All UML diagrams depict a subset of the relationships between the classes, such as inheritance (i.e. specialization), association relationships (such as aggregation and composition), and conditional features or capabilities. Some UML diagrams also show further details of the individual classes, such as their attributes and the data types used by the attributes.

2 Data Dictionary

The data dictionary provides details of all classes, attributes and types in the model. The data dictionary is divided up into sections based upon the division of the CoreModel and maturity of work.

- Section 2.1 Core Network Model data dictionary: includes Forwarding, Termination, Topology and Resilience (see [TR-512.2](#), [TR-512.4](#) and [TR-512.5](#))
- Section 2.2 Core Foundation Model data dictionary: includes naming, identification and states (see [TR-512.3](#))
- Section 2.3 Core Physical Model data dictionary: includes including Equipment and Connector (see [TR-512.6](#))
- Section 2.4 Core Specification Model data dictionary: covers specification (see [TR-512.7](#))
- Section 2.5 General Processing Model data dictionary: covers the generalized representation of processing capability (see [TR-512.11](#))
- Section 2.6 General Control Model data dictionary covers the generalized representation of control functionality (see [TR-512.8](#))
- Section 2.7 Core Interactions Model data dictionary covers the generalized, outcome oriented, operations pattern (see [TR-512.10](#))
- Section 2.8 Core Software Model data dictionary: covers the software model (see [TR-512.12](#))
- Section 2.9 Model Patterns data dictionary (see [TR-512.A.2](#))

2.1 Core Network Model data dictionary

This section provides the model details for Forwarding, Termination, Topology and Protection.

2.1.1 Classes

2.1.1.1 CascPort

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::CascPort

A port of a C&SC that can be used where there is significant asymmetry to be represented.

This can represent any combination of:

- the conveying of messaging to/from the C&SC
- the conveying of control action
- the providing of indications of state etc.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 1: Attributes for CascPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
portRole	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The role of the port of a C&SC. The interpretation of the role is provided by the C&SC spec. The C&SC spec will set out the role in the context of C&SC functions. The role will indicate how the port relates to the associated entity, e.g. is conveying messages.
_portRoleProperties	CascPortRoleProperties	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A link to properties associated with the port role as defined by the CascSpec.
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The LTP that conveys the messages related to the port and/or is subject to control action and/or provides indications of state etc. For direct association, there may be up to 2 LTPs (to account for directionality differences). In the specification representation, there may be a number rules that provide further LTP relationships that are implicit in the instantiated model.
_encapsulatingCascPort	CascPort	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	In a case where there is nested C&SC the ports are also nested and this references the superior port.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isRelatedControlFlowDisabled	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	If TRUE, then any Control signal flow related to this controller (to, from or drop-and-continue) is prevented from passing through the related LTP carrying the signaling for this controller. This can be considered as being realized using an FcSwitch in an FC embedded in the LP at the layer of signaling to disconnect the FcPort bidirectionally. This FcSwitch should be represented in the LTP spec. Note that the FcSwitch will be at the granularity of the relevant control signal and other flows may be passed uninterrupted.
isControlledFcPortDisabled	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	If TRUE, then the related FcPort on the FC is disabled and hence signal will not flow through that FcPort. This is realized using an FcSwitch to disconnect the FcPort bidirectionally. Note that as the controller may control many FCs and may switch them all together as one, in an implementation the FcSwitch could be omitted from the FC instance model. Any omission should be explained by the FcSpec. This is equivalent to a blocked indication on the LTP used in other representations.
isProtectionLockOut	Boolean	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced. If the item is locked out, then it cannot be used under any circumstances. This causes isRelatedControlFlowDisabled to become TRUE and isControlledFcPortDisabled to become TRUE.

2.1.1.2 CascPortRoleProperties

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::CascPortRoleProperties

Container for properties associated with the port role as defined by the CascSpec.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 2: Attributes for CascPortRoleProperties

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
signallingFormat	String	1	RW	Example OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A reference to the definition of the signalling format used by the instance referenced by the related port. This is a placeholder for a more sophisticated capability.
monitoringDetails	String	1	RW	Example OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Information on what is being monitored in the instance referenced by the related port. This is a placeholder for a more sophisticated capability.
controlDetails	String	1	RW	Example OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Information on what is being controlled in the instance referenced by the related port. This is a placeholder for a more sophisticated capability.

2.1.1.3 Clock

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Timing::Clock

Clock function processes the input sync information (frequency and ssm or time stamp and PTP announce messages) and provides the modified sync information to the sync distribution function.

If none of the inputs meet the quality defined by the controller the clock may enter a hold-over or free run mode.

The status of the clock will be reported to the controller.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- LocalClass

Table 3: Attributes for Clock

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
runMode	RunMode	1	R	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The run-mode of the frequency system clock, such as free-run, locked, and holdover.
_encompassedClock	Clock	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A clock may be emergent from and may effectively encompass several clocks in a resilient solution.
_encapsulatedFc	ForwardingConstruct	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A Clock may encapsulate an FC related to resilience where the clock provides an output that is essentially that of one of several other clocks in the resilience scheme.
_syncLtp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A clock may feed one or more LTPs with timing information to propagate across the network (it may feed no LTPs).
_encapsulatedCasc	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The clock may encapsulate a complex FC where there is a resilience mechanism active and that FC will need to be controlled. The Casc to control the FC can be encapsulated in the Clock.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_phaseAlignedClock	Clock	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more clocks can be actively phase aligned (this is especially relevant in a hitless resilience scheme).
localId <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.4 ConfigurationAndSwitchControl

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::ConfigurationAndSwitchControl

Represents the capability to control and coordinate switches, to add/delete/modify FCs and to add/delete/modify LTPs/LPs so as to realize a protection scheme.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 4: Attributes for ConfigurationAndSwitchControl

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
switchRule	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	A sketch of the presence of complex rules governing the switch behavior.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fcSwitch	FcSwitch	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The switch being controlled.
_controlParameters	ControlParameters_Pac	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The control parameters to be applied if local parameters are used rather than profiles.
_profileProxy	ProfileProxy	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Applied profiles.
_local_Pac	Local_Pac	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_global_Pac	Global_Pac	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
isFrozen	Boolean	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Temporarily prevents any switch action to be taken and, as such, freezes the current state. Until the freeze is cleared, additional near-end external commands are rejected and fault condition changes and received APS messages are ignored. All administrative controls of any aspect of protection are rejected.
isCoordinatedSwitchingBothEnds	Boolean	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The C&SC is operating such that switching at both ends of each flow across the FC is coordinated at both ingress and egress ends.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_subordinateControl	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A C&SC that is fully or partially subordinate this C&SC. A peer is considered as partially subordinate in that the peer will respond to requests for action from this C&SC but will also make requests for action to be carried out by this C&SC. Where there is a peer relationship each controller in the peering will see the other controller as subordinate.
_cascSpec	ConfigurationAndSwitchControllerSpec	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_encapsulatedCasc	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Where a C&SC is complex it may be decomposed into subordinate C&SC parts. The decomposition is described by the C&SC spec.
_cascPort	CascPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A reference to ports of a C&SC that can be used where there is significant asymmetry to be represented. The C&SC need not have ports.
_coordinatedFc	ForwardingConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
resilienceControlStatus	ResilienceControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The state of the control process.

2.1.1.5 ControlParameters_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::ControlParameters_Pac

A list of control parameters to apply to a switch.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 5: Attributes for ControlParameters_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
reversionMode	ReversionMode	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates whether the protection scheme is revertive or non-revertive.
waitToRevertTime	Integer	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	If the protection system is revertive, this attribute specifies the time, in minutes, to wait after a fault clears on a higher priority (preferred) resource before switching to the preferred resource. If a further fault occurs on the preferred resource in the waitToRevertTime then the reversion attempt is cancelled. The WTR timer is overridden by the needs of a higher priority signal. Depending upon which resource is requested this may simply cancel the attempt to revert or may cause immediate reversion.
protType	ProtectionType	0..1	RW	Obsolete OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Indicates the protection scheme that is used for the ProtectionGroup.
holdOffTime	Integer	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	This attribute indicates the time, in milliseconds, between declaration of a switch trigger condition (e.g. signal degrade or signal fail), and the initialization of the protection switching algorithm.
_networkSchemeSpecification	NetworkSchemeSpecification	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.1.1.6 FcPort

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::FcPort

The association of the FC to LTPs is always made via FcPorts.

In the case of media the association between FCs is made via their FcPorts and the association of an FC to the physical Pin is made via the FcPort.

The FcPort class models the access to the FC function.

The traffic forwarding between the associated FcPorts of the FC depends upon the type of FC and may be associated with FcSwitch object instances.

In cases where there is resilience, the FcPort may convey the resilience role of the access to the FC.

It can represent a protected (resilient/reliable) point or a protecting (unreliable working/main or protection/spare) point.

The FcPort replaces the Protection Unit of a traditional protection model (e.g., ITU-T).

The ForwardingConstruct can be considered as a component and the FcPort as a Port on that component.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 6: Attributes for FcPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The FcPort may be associated with more than one LTP when the FcPort is bidirectional and the LTPs are unidirectional. Multiple LTP - Bidirectional FcPort to two Uni-directional LTPs Zero LTP - BreakBeforeMake transition - Planned LTP not yet in place - Off-network LTP referenced through other mechanism.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
role	PortRole	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Each FcPort of the FC has an assigned role (e.g., working, protection, protected, symmetric, hub, spoke, leaf, root) in the context of the FC with respect to the FC function. The role is fixed by the referenced FcSpec.
fcPortDirection	PortDirection	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The orientation of the defined flow at the FcPort.
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: In protection context where the FcPort is to be excluded from use for protection. 	The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced. If the item is locked out, then it cannot be used under any circumstances. Note: Only relevant when part of a protection scheme.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
selectionPriority	Integer	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	<p>The preference priority of the resource in the protection scheme for a particular FC. The lower the value the higher the priority. A lower value of selection priority is preferred. If two resources have the same value they are of equal priority. There is no preference between equal priorities. If a resource with the lowest value selection priority fails,, then the next lowest value available (may be the same value) is picked. Hence on failure of the current resource the next best available will be selected. If there are several equal values, the choice is essentially arbitrary. If the scheme is revertive then when a resource of higher priority than the currently selected resource recovers it will be selected. This is equivalent to working/protection but allows for all static scheme types with n:m capability. In simple schemes 0 = working and 1 = protecting. If selection priority of an FcPort is increased in value and the FC is currently selecting this FcPort then if another FcPort of a lower selection priority value is available, the wait to restore process will come into action as if the other FcPort had just become available. If selection priority of a FcPort is changed and the FC is not currently selecting this FcPort but is selecting an item that is now of a higher numeric value than the changed FcPort then the wait to restore process will come into action as if the other FcPort had just become available.</p>
isInternalPort	Boolean	1	R	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	<p>The FcPort is not exposed and cannot have associated LTPs. This form of FcPort is used to enable chaining of FcSwitches or FcRoutes in complex network protection scenarios.</p>

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fcRouteFeedsFcPortEgress	FcRoute	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Identifies which route(s) currently actively forward to the FcPort to exit the FC to an LTP (or for an internal FcPort to propagate to the next internal switch/route).
_fcPort	FcPort	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An FcPort may have a direct association to another FcPort where there is a transition from one domain to another but where there has been no termination.
_portOfInternalFc	FcPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_pin	Pin	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	For media FCs, the name of the pin that terminates the media.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.7 FcRoute

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::FcRoute

Each instance of an FC Route (FcRoute) class models an individual route of an FC. The route is an alternative view of the internal structure of the FC to FC aggregation (see FcHasLowerLeverFcs association).

There are cases where a route is the most appropriate representation and cases where the aggregation approach is the most appropriate

representation.

The route of an FC object is represented by a list of FCs at a lower level with the implicit understanding that unmodeled link connections are interleaved between the lower level FCs.

Note that depending on the service supported by an FC, the FC can have multiple routes.

The FcRoute is also applicable where an NE level ForwardingDomain may be decomposed into subordinate ForwardingDomains.

Applies to both virtual and real NE cases.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass

Table 7: Attributes for FcRoute

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fc	ForwardingConstruct	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The list of FCs describing the route of an FC. In most cases the FcRoute has 2 or more FCs however there are some cases where a Route with one FC is valid.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
selectionPriority	Integer	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	<p>The preference priority of the resource in the resilience scheme for a particular FC. The lower the value the higher the priority. A lower value of selection priority is preferred If two resources have the same value they are of equal priority. There is no preference between equal priorities. If a resource with the lowest value selection priority fails, then the next lowest value available (may be the same value) is picked. Hence on failure of the current resource the next best available will be selected. If there are several equal values, the choice is essentially arbitrary). If the scheme is revertive then when a resource of higher priority than the currently selected resource recovers it will be selected. This is equivalent to working/protection but allows for all static scheme types with n:m capability. In simple schemes 0 = working and 1 = protecting. If selection priority of a Route is increased in value and the Route is currently selecting this Route, then if another Route of a lower selection priority value is available the wait to restore process will come into action as if the other Route had just become available. If selection priority of a Route is changed and the FC is not currently selecting this Route but is selecting an item that is now of a higher numeric value than the changed Route, then the wait to restore process will come into action as if the other Route had just become available.</p>
routeSelectionControl	RouteSelectionControl	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Degree of administrative control applied to the route selection.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
routeSelectionReason	RouteSelectionReason	1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The reason for the current route selection.
_link	Link	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.8 FcSwitch

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::FcSwitch

The FcSwitch class models the switched forwarding of traffic (traffic flow) between FcPorts and is present where there is protection functionality in the FC.

If an FC exposes protection (having two or more FcPorts that provide alternative identical inputs/outputs), the FC will have one or

more associated FcSwitch objects to represent the alternative flow choices visible at the edge of the FC.

The FC switch represents and defines a protection switch structure encapsulated in the FC and essentially "decorates" FCs that are involved in resilience schemes that use switching in a protection mechanism.

Essentially FcSwitch performs one of the functions of the Protection Group in a traditional model. It associates 2 or more FcPorts each playing the role of a Protection Unit.

One or more protection, i.e. standby/backup, FcPorts provide protection for one or more working (i.e. regular/main/preferred) FcPorts where either protection or working can feed one or more protected FcPort.

The switch may be used in revertive or non-revertive (symmetric) mode. When in revertive mode it may define a waitToRestore time. It may be used in one of several modes including source switched, destination switched, source and destination switched etc. (covering cases such as 1+1 and 1:1).

It may be locked out (prevented from switching), force switched or manual switched.

It will indicate switch state and change of state.

The switch can be switched away from all sources such that it becomes open and hence two coordinated switches can both feed the same LTP so long as at least one of the two is switched away from all sources (is "open").

The ability for a Switch to be "high impedance" allows bidirectional ForwardingConstructs to be overlaid on the same bidirectional LTP where the appropriate control is enabled to prevent signal conflict.

This ability allows multiple alternate routes to be present that otherwise would be in conflict.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 8: Attributes for FcSwitch

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
holdOffTime	Integer	1	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Moved to ControlParameter_Pac. This attribute indicates the time, in seconds, between declaration of unacceptable quality of signal on the currently selected FcPort, and the initialization of the protection switching algorithm.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
protType	ProtectionType	1	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Indicates the protection scheme that is used for the ProtectionGroup.
reversionMode	ReversionMode	1	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Moved to ControlParameter_Pac. This attribute whether or not the protection scheme is revertive or non-revertive.
_selectedFcPort	FcPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Indicates which points are selected by the switch. Depending on the switch spec (via FcSpec) - more than one FcPort can be selected at any one time (e.g. egress switch, ingress packet switch) - zero FcPorts can be selected. For an ingress switch this indicates that the switch common (egress) is "high impedance" .
_profileProxy	ProfileProxy	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Provides a set of predefined values for switch control in place of the direct values available via the FcSwitch or via _configurationAndSwitchControl.
_configurationAndSwitchControl	ConfigurationAndSwitchControl	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A ConfigurationAndSwitchController that is external to the switch (it is coordinating many switches and hence cannot be encapsulated in the FcSwitch.
_internalConfigurationAndSwitchControl	ConfigurationAndSwitchControl	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A ConfigurationAndSwitchController encapsulated in the FcSwitch that controls the FcSwitch alone.
switchControl	SwitchControl	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Degree of administrative control applied to the switch selection.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
switchSelectsPorts	PortDirection	1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Indicates whether the switch selects from ingress to the FC or to egress of the FC, or both.
switchSelectionReason	SwitchStateReason	1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The reason for the current switch selection.
_controlParameters	ControlParameters_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	See referenced class
waitToRestoreTime	Integer	1	RW	Obsolete OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Moved to ControlParameter_Pac and changed to waitToRevert. If the protection system is revertive, this attribute specifies the amount of time, in seconds, to wait after the preferred FcPort returns to an acceptable state of operation (e.g. a fault has cleared) before restoring traffic to that preferred FcPort.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.9 FdPort

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::FdPort

The association of the FD to LTPs may be direct for symmetric FDs and may be via FdPort for asymmetric FDs.

The FdPort class models the role of the access to the FD function.

The capability to set up FCs between the associated FdPorts of the FD depends upon the type of FD. It is asymmetry in this capability

that brings the need for FdPort.

The FD can be considered as a component and the FdPort as a Port on that component.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 9: Attributes for FdPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..2	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An instance of FD is associated with zero or more LTP objects. The LTPs that bound the FD provide capacity for forwarding. For asymmetric FDs, the association to the LTP is via the FdPort.
role	PortRole	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Each FdPort of the FD has a role (e.g., symmetric, hub, spoke, leaf, root) in the context of the FD with respect to the FD capability.
fdPortDirection	PortDirection	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The orientation of the defined flow at the FdPort.
_fcPort	FcPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Where an FD is asymmetric and hence has FdPorts and where that FD and supports FCs, appropriate FdPorts of that FD support the corresponding FcPorts.
_pin	Pin	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	For media, a pin on the boundary of the FD.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fdPort	FdPort	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An FdPort may have a direct association to another FdPort where there is a transition from one domain to another but where there has been no termination.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.10 ForwardingConstruct

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::ForwardingConstruct

The ForwardingConstruct (FC) represents enabled constrained potential for forwarding between two or more FcPorts at a particular specific layerProtocol .

The constraint is explained by the FcSpec. Even when an FC is in place enabling potential for flow, it is possible that no information is flowing as there is no flow matching the constraint, hence "potential".

Like the LTP, the FC supports any transport protocol including all analogue, circuit and packet forms.

The FC is used to effect forwarding of transport characteristic (layer protocol) information.

An FC can be in only one ForwardingDomain (FD).

The FC is a forwarding entity.

At a low level of the recursion, a FC represents a cross-connection within an NE. It may also represent a fragment of a cross-connection under certain circumstances.

The FC object can be used to represent many different structures including point-to-point (P2P), point-to-multipoint (P2MP), rooted-multipoint (RMP) and multipoint-to-multipoint (MP2MP) bridge and selector structures for linear, ring or mesh protection schemes. When applied to media, the FC represents the ability for a flow/wave (potentially containing information), to be propagated between FcPorts.

The existence of a FC instance is independent of the presence (or absence) of a flow/wave (and any information encoded within it)

where flow/wave covers the progressing of any analogue or digital (packet/frame etc.) structure.
A flow/wave cannot propagate in the absence of a FC instance.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass
- ForwardingEntity

Table 10: Attributes for ForwardingConstruct

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolNameAndQualifier	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The layerProtocol at which the FC enables the potential for forwarding.
_lowerLevelFc	ForwardingConstruct	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An FC object supports a recursive aggregation relationship such that the internal construction of an FC can be exposed as multiple lower level FC objects (partitioning). Aggregation is used as for the FD to allow changes in hierarchy. FC aggregation reflects FD aggregation. For example a low level FC could represent what would have traditionally been considered as a "Cross-Connection" in an "NE". The "Cross-Connection" in an "NE" is not necessarily the lowest level of FC partitioning.
_fcRoute	FcRoute	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An FC object can have zero or more routes, each of which is defined as a list of lower level FC objects describing the flow across the network.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fcPort	FcPort	2..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The FcPorts define the boundary of the FC. The FC is accessed via the FcPorts. Flow within the FC is defined in terms of its FcPorts.
_fcSwitch	FcSwitch	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	If an FC exposes protection (having two FcPorts that provide alternative identical inputs/outputs), the FC will have one or more associated FcSwitch objects. The arrangement of switches for a particular instance is described by a referenced FcSpec.
_configurationAndSwitchControl	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Reference to a ConfigurationAndSwitchController that coordinates switches encapsulated in the FC. The controller coordinates multiple switches in the same FC.
forwardingDirection	ForwardingDirection	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The directionality of the ForwardingConstruct. Is applicable to simple ForwardingConstructs where all FcPorts are BIDIRECTIONAL (the ForwardingConstruct will be BIDIRECTIONAL) or UNIDIRECTIONAL (the ForwardingConstruct will be UNIDIRECTIONAL). Is not present in more complex cases. In the case of media the FcPorts and FC may also be omni-directional.
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: In protection context if server of protection where entire server is to be excluded from use for protection. 	The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced. If the item is locked out then it cannot be used under any circumstances. Note: Only relevant when part of a protection scheme.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
servicePriority	Integer	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Relevant where "service" FCs are competing for server resources. Used to determine which signal FC is allocated resource. The priority of the "service" with respect to other "services". Lower numeric value means higher priority. Covers cases such as pre-emptible in a resilience solution.
_fcSpecReference:ClassRef	Metaclass:Class	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass=ForwardingConstruct Experimental SpecReference	Reference to the specific FcSpec class that defines the properties that augment the instance of FC.
_supportedLink	Link	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An FC that spans between LTPs that terminate the LayerProtocol usually supports one or more links in the client layer.
_multipleStrandSpan	MultipleStrandSpan	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_supportingPc	ProcessingConstruct	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The functionality supporting this entity.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if risk information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if risk is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_transferCost_Pac Inherited	TransferCost_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if cost information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if cost is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferTiming_Pac Inherited	TransferTiming_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer timing information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer timing is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferCapacity_Pac Inherited	TransferCapacity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer capacity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer capacity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_transferIntegrity_Pac Inherited	TransferIntegrity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer integrity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer integrity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_validation_Pac Inherited	Validation_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if validation information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if validation is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that validation may not be possible for the specific layer protocol or in the particular case. 	See referenced class
_layerTransition_Pac Inherited	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if layer transition information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if layer transition is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that layer transition occurs in a limited number of cases. 	See referenced class

2.1.1.11 ForwardingDomain

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::ForwardingDomain

The ForwardingDomain (FD) class models the topological component that represents a forwarding capability that provides the opportunity to enable forwarding (of specific transport characteristic information at one or more protocol layers) between points. The FD object provides the context for and constrains the formation, adjustment and removal of FCs and hence offers the potential to enable forwarding.

The FCs may be formed between LTPs at the boundary of the FD or between AccessPorts at the boundary of the FD (for the most basic media layers cases - most media cases use LTPs).

A number of FDs (related by Links) may be grouped and abstracted to form an FD where that FD represents the effect of the underlying FDs but where the detailed structure is not apparent.

This grouping and abstraction is potentially recursive.

This aspect is essentially equivalent to ITU-T partitioning but this is an aggregation not a composition, so it allows an FD to be in multiple higher level FDs.

The notion of abstraction/grouping assumes that small things are brought together into larger things as opposed to ITU-T partitioning that assumes large things are broken down into smaller things.

An FD represents an abstraction of some combination of software behavior, electronic behavior and physical structure that provides a forwarding capability.

At a lower level of recursion an FD could represent a forwarding capability within a device.

A device may encompass two or more disjoint forwarding capabilities and may support more than one layer protocol, hence more than one FD.

A routing fabric may be logically partitioned to represent connectivity constraints, hence the FD representing the routing fabric may be partitioned into a number of FDs representing the constraints.

The FD represents a subnetwork [ITU-T G.800], FlowDomain [TMF 612] and a MultiLayerSubNetwork (MLSN) [TMF 612].

As in the TMF concept of MLSN the FD can support more than one layer-protocol.

Note that the ITU-T G.800 subnetwork is a single layer entity.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass
- ForwardingEntity

Table 11: Attributes for ForwardingDomain

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolNameAndQualifier	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	One or more protocol layers at which the FD represents the opportunity to enable forwarding between LTP that bound it.
_lowerLevelFd	ForwardingDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The FD class supports a recursive aggregation relationship (HigherLevelFdEncompassesLowerLevelFds) such that the internal construction of an FD can be exposed as multiple lower level FDs and associated Links (partitioning). The aggregated FDs and Links form an interconnected topology that provides and describes the capability of the aggregating FD. Note that the model actually represents an aggregation of lower level FDs into higher level FDs as views rather than FD partition, and supports multiple views. Aggregation allow reallocation of capacity from lower level FDs to different higher level FDs as if the network is reorganized (as the association is aggregation not composition).
_fc	ForwardingConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	An FD aggregates one or more FCs. An aggregated FC connects LTPs that bound the FD.
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	An instance of FD is associated with zero or more LTP objects. The LTPs that bound the FD provide capacity for forwarding. For asymmetric FDs, the association to the LTP is via the FdPort.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lowerLevelLink	Link	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The FD encompasses Links that interconnect lower level FDs and collect Links that are wholly within the bounds of the FD. See also _lowerLevelFd.
_fdRuleSet	FdAndLinkRuleSet	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The rules related to an FD.
_fdSpec	ForwardingDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_fdPort	FdPort	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The association of the FD to LTPs is either made directly for symmetric FDs or via FdPort for asymmetric FDs.
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if risk information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if risk is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferCost_Pac Inherited	TransferCost_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if cost information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if cost is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_transferTiming_Pac Inherited	TransferTiming_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer timing information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer timing is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferCapacity_Pac Inherited	TransferCapacity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer capacity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer capacity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferIntegrity_Pac Inherited	TransferIntegrity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer integrity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer integrity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_validation_Pac Inherited	Validation_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if validation information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if validation is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that validation may not be possible for the specific layer protocol or in the particular case. 	See referenced class
_layerTransition_Pac Inherited	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if layer transition information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if layer transition is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that layer transition occurs in a limited number of cases. 	See referenced class

2.1.1.12 ForwardingEntity

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::ForwardingEntity

A ForwardingEntity is an abstract representation of the emergent effect of the combined functioning of an arrangement of components (running hardware, software running on hardware etc.).

The effect can be considered as the realization of the potential for apparent communication adjacency for entities that are bound to the terminations at the boundary of the ForwardingEntity.

The ForwardingEntity enables the creation of constrained forwarding to achieve the apparent adjacency.

The apparent adjacency has intended performance degraded from perfect adjacency and a statement of that degradation is conveyed via the attributes of the packages associated with this class.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 12: Attributes for ForwardingEntity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_riskParameter_Pac	RiskParameter_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if risk information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if risk is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferCost_Pac	TransferCost_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if cost information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if cost is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferTiming_Pac	TransferTiming_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer timing information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer timing is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_transferCapacity_Pac	TransferCapacity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer capacity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer capacity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferIntegrity_Pac	TransferIntegrity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer integrity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer integrity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_validation_Pac	Validation_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if validation information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if validation is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that validation may not be possible for the specific layer protocol or in the particular case. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_layerTransition_Pac	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if layer transition information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if layer transition is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that layer transition occurs in a limited number of cases. 	See referenced class

2.1.1.13 LayerProtocol

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::LayerProtocol

The projection of an LTP into each transport layer is represented by a LayerProtocol (LP) instance. A LayerProtocol instance can be used for controlling termination and monitoring functionality.

It can also be used for controlling the adaptation (i.e. aggregation, encapsulation and/or multiplexing of client signal), tandem connection monitoring, traffic conditioning and/or shaping functionality at an intermediate point along a connection.

Where the client – server relationship is fixed 1:1 and immutable, the layers can be encapsulated in a single LTP instance. Where there is a n:1 relationship between client and server, the layers must be split over two separate instances of LTP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 13: Attributes for LayerProtocol

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolNameAndQualifier	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Indicate the specific layer-protocol described by the LayerProtocol entity.
configuredClientCapacity	ToBeDefined	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Provides a summarized view of the client capacity that is configurable for use. Note the client LTP association should provide all necessary detail hence this attribute is questionable.
lpDirection	TerminationDirection	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The overall directionality of the LP. - A BIDIRECTIONAL LP will have some SINK and/or SOURCE flows. - A SINK LP can only contain elements with SINK flows or CONTRA_DIRECTION_SOURCE flows - A SOURCE LP can only contain SOURCE flows or CONTRA_DIRECTION_SINK flows
terminationState	TerminationState	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Indicates whether the layer is terminated and if so how.
_configurationAndSwitchControl	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	A switch controller external to the LayerProtocol. The controller will coordinate one or more switches in one or more FCs related to the LayerProtocol
isProtectionLockOut	Boolean	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced. If the item is locked out, then it cannot be used under any circumstances. Note: Only relevant when part of a protection scheme.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
fcBlocksSignalToLp	BlockDirection	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Indicates whether the associated FC is blocking signal to/from the LTP.
_lpSpecReference:ClassRef	Metaclass:Class	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass: LayerProtocol Experimental SpecReference 	Reference to the specific LpSpec class that defines the properties that augment the instance of LP.
localId <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.14 LayerProtocolTransition_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::LayerProtocolTransition_Pac

The transition characteristics are relevant for a Link that is formed by abstracting one or more LTPs (in a stack) to focus on the flow and deemphasize the protocol transformation.

This abstraction is relevant when considering multi-layer routing.

The layer protocols of the LTP and the order of their application to the signal is still relevant and needs to be accounted for (this is derived from the LTP spec details).

This Pac provides the relevant abstractions of the LTPs and provides the necessary association to the LTPs involved.

Links that include details in this Pac are often referred to as Transitional Links.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 14: Attributes for LayerProtocolTransition_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
transitionedLayerProtocol	String	2..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Provides the ordered structure of layer protocol transitions encapsulated in the ForwardingEntity. The list starts with the client side as the first entry and includes all layer-protocol names (hence the smallest number is 2 as otherwise the Link is not transitional). The ordering relates also to the LinkPort role (which emphasizes the orientation). Where the transitional link is multi-ported and layer asymmetric the list includes the superset of layer-protocol names. Transitional links can only be applied where the transition for each port is such that all transitions between any ports are subsequences of the list. The specific subsequence is determined by the LayerProtocols of the LTP associated with the LinkPort and the role of the LinkPort.
_ltp	LogicalTerminationPoint	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Lists the LTPs that define the layer protocol transition of the transitional link.

2.1.1.15 Link

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Link

The Link class models effective adjacency between two or more ForwardingDomains (FD).

For digital layer networks, in its basic form (i.e., point-to-point Link) it associates a set of LTP clients on one FD with an equivalent set of LTP clients on another FD.

Like the FC, the Link has ports (LinkPort) which take roles relevant to the constraints on flows offered by the Link (e.g., Root role or

leaf role for a Link that has a constrained Tree configuration).

The Link is an abstraction of underlying network complexity which may include resilience schemes etc.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass
- ForwardingEntity

Table 15: Attributes for Link

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolNameAndQualifier	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The Link can support multiple transport layer protocols via the associated LTP object. For implementation optimization, where appropriate, multiple layer-specific Links can be merged and represented as a single Link instance as the Link can represent a list of layer protocols. A Link may support different layer protocols at each of its LinkPorts when it is a transitional Link.
_fd	ForwardingDomain	2..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The Link associates with two or more FDs. This association provides a direct summarization of the association via LinkPort and LTP.
_linkPort	LinkPort	2..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The association of the Link to LTPs is made via LinkPort (essentially the ports of the Link).

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lowerLevelLink	Link	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A Link may be formed from subordinate links (similar FD formations from subordinate FDs). This association is intended to cover concepts such as serial compound links.
linkDirection	ForwardingDirection	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The directionality of the Link. Is applicable to simple Links where all LinkPorts are BIDIRECTIONAL (the Link will be BIDIRECTIONAL) or UNIDIRECTIONAL (the Link will be UNIDIRECTIONAL). Is not present in more complex cases.
_fdRuleSet	FdAndLinkRuleSet	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The rules related to a Link.
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: In protection context if server of protection where entire server is to be excluded from use for protection. 	The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced. If the item is locked out, then it cannot be used under any circumstances. Note: Only relevant when part of a protection scheme.
_fc	ForwardingConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A Link contains one or more FCs. A contained FC connects LTPs that bound the Link. This FC represents the traditional link connection. It is often not supported in implementations as it can be inferred from FCs in the corresponding FDs.
_lowerLevelFd	ForwardingDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	FD(s) that form part of a serial compound Link.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
<code>_linkSpec</code>	Link	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
<code>_linkSpecReference:ClassRef</code>	Metaclass:Class	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass=Link Experimental SpecReference	See referenced class
<code>localId</code> Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
<code>uuid</code> Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
<code>name</code> Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if risk information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if risk is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferCost_Pac Inherited	TransferCost_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if cost information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if cost is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferTiming_Pac Inherited	TransferTiming_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer timing information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer timing is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_transferCapacity_Pac Inherited	TransferCapacity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer capacity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer capacity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_transferIntegrity_Pac Inherited	TransferIntegrity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if transfer integrity information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if transfer integrity is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. 	See referenced class
_validation_Pac Inherited	Validation_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if validation information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if validation is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that validation may not be possible for the specific layer protocol or in the particular case. 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_layerTransition_Pac Inherited	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL_OPTIONAL • condition: Present if layer transition information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if layer transition is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that layer transition occurs in a limited number of cases. 	See referenced class

2.1.1.16 LinkPort

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::LinkPort

The association of the Link to LTPs is made via LinkPort.

The LinkPort class models the access to the Link function.

The traffic forwarding between the associated LinkPorts of the Link depends upon the type of Link.

In cases where there is resilience, the LinkPort may convey the resilience role of the access to the Link.

The Link can be considered as a component and the LinkPort as a Port on that component.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 16: Attributes for LinkPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The LinkPort may be associated with more than one LTP when the LinkPort is bidirectional and the LTPs are unidirectional. Multiple LTP - Bidirectional LinkPort to two Unidirectional LTPs Zero LTP - BreakBeforeMake transition - Planned LTP not yet in place - Off-network LTP referenced through other mechanism.
role	PortRole	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Each LinkPort of the Link has a role (e.g., symmetric, hub, spoke, leaf, root) in the context of the Link with respect to the Link capability.
offNetworkAddress	String	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A freeform opportunity to express a reference for a Port of the Link that is not visible and hence is outside the scope of the control domain (off-network). This attribute is expected to convey a foreign identifier/name/address or a shared reference for some mid-span point at the boundary between two administrative domains. This is a reference shared between the parties either side of the network boundary. The assumption is that the provider knows the mapping between network port and offNetworkAddress and the client knows the mapping between the client port and the offNetworkAddress and that the offNetworkAddress references some common point or pool of points. It may represent some physical location where the hand-off takes place. This attribute is used when an LTP cannot be referenced. A Link with an Off-network end cannot be encompassed by an FD.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
linkPortDirection	PortDirection	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The orientation of the defined flow at the LinkPort.
_fcPort	FcPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Where a Link supports FCs each LinkPort of that Link supports the corresponding FcPorts.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.17 LogicalTerminationPoint

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::LogicalTerminationPoint

The LogicalTerminationPoint (LTP) class encapsulates the termination and adaptation functions of one or more transport layers represented by instances of LayerProtocol.

The encapsulated transport layers have a simple fixed 1:1 client-server relationship defined by association end ordering.

The structure of LTP supports all transport protocols including analogue, circuit and packet forms.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass

Table 17: Attributes for LogicalTerminationPoint

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_serverLtp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	References contained LTPs representing servers of this LTP in an inverse multiplexing configuration (e.g. VCAT).
_clientLtp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	References contained LTPs representing client traffic of this LTP for normal cases of multiplexing.
_lp	LayerProtocol	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Ordered list of LayerProtocols that this LTP is comprised of where the first entry in the list is the lowest server layer (e.g. physical).
_connectedLtp	LogicalTerminationPoint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Applicable in a simple context where two LTPs are associated via a non-adjustable enabled forwarding. Reduces clutter removing the need for two additional LTPs and an FC with a pair of FcPorts.
_peerLtp	LogicalTerminationPoint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	References contained LTPs representing the reversal of orientation of flow where two LTPs are associated via a non-adjustable enabled forwarding and where the referenced LTP is fully dependent on this LTP.
physicalPortReference	String	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	One or more text labels for the unmodeled physical port associated with the LTP. In many cases there is no associated physical port.
_ltpInOtherView	LogicalTerminationPoint	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	References one or more LTPs in other views that represent this LTP. The referencing LTP is the provider of capability.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
ltpDirection	TerminationDirection	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The overall directionality of the LTP. - A BIDIRECTIONAL LTP must have at least some LPs that are BIDIRECTIONAL but may also have some SINK and/or SOURCE LPs. - A SINK LTP can only contain SINK LPs - A SOURCE LTP can only contain SOURCE LPs
_accessPort	AccessPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Provides a reference to the place where the signal is accessed. It may represent a physical place (some part of one or more connectors) or a virtual equivalent where there is no further protocol layering (visible).
_transferCapacity_Pac	TransferCapacity_Pac	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The LTP has as an inherent capacity derived from underlying capability. The capacity of a particular LTP may be dependent upon other uses of resource in the device and hence it may vary over time. The capacity of a Link is dependent upon the capacity of the LTPs at its ends. An LTP may be an abstraction and virtualization of a subset of the underlying capability offered in a view or may be directly reflecting the underlying realization.
_ltpSpecReference:ClassRef	Metaclass:Class	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass: LogicalTerminationPoint SpecReference Experimental	Provides a reference to a specification which is in the form of a class definition. An instance of LTP will reference a class (by a universally unique id) that provides definition that extends the LTP including attributes and structure that are present in the LTP instance but that are not defined in the native LTP class.
_fdRuleGroup	ForwardingDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An LTP can reference FD rules that the FD that aggregates it also references so that the rules can then apply to the LTP.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_embeddedClock	Clock	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	See referenced class
_supportingPc	ProcessingConstruct	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The functionality supporting this entity.
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.1.1.18 RiskParameter_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::RiskParameter_Pac

The risk characteristics of a ForwardingEntity come directly from the underlying physical realization.

The risk characteristics propagate from the physical realization to the client and from the server layer to the client layer; this propagation may be modified by protection.

A ForwardingEntity may suffer degradation or failure as a result of a problem in a part of the underlying realization.

The realization can be partitioned into segments which have some relevant common failure modes.

There is a risk of failure/degradation of each segment of the underlying realization.

Each segment is a part of a larger physical/geographical unit that behaves as one with respect to failure (i.e. a failure will have a high probability of impacting the whole unit (e.g. all cables in the same duct).

Disruptions to that larger physical/geographical unit will impact (cause failure/errors to) all ForwardingEntities that use any part of that larger physical/geographical entity.

Any ForwardingEntity that uses any part of that larger physical/geographical unit will suffer impact and hence each ForwardingEntity shares risk.

The identifier of each physical/geographical unit that is involved in the realization of each segment of a ForwardingEntity can be listed in the RiskParameter_Pac of that ForwardingEntity.

A segment has one or more risk characteristic.

Shared risk between two ForwardingEntities compromises the integrity of any solution that use one of those ForwardingEntity as a backup for the other.

Where two ForwardingEntities have a common risk characteristic they have an elevated probability of failing simultaneously compared to two ForwardingEntities that do not share risk characteristics.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 18: Attributes for RiskParameter_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
riskCharacteristic	RiskCharacteristic	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A list of risk characteristics for consideration in an analysis of shared risk. Each element of the list represents a specific risk consideration.

2.1.1.19 TransferCapacity_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::TransferCapacity_Pac

The ForwardingEntity derives capacity from the underlying realization.

A ForwardingEntity may be an abstraction and virtualization of a subset of the underlying capability offered in a view or may be directly reflecting the underlying realization.

A ForwardingEntity may be directly used in the view or may be assigned to another view for use.

The clients supported by a multi-layer ForwardingEntity may interact such that the resources used by one client may impact those available to another. This is derived from the LTP spec details.

Represents the capacity available to user (client) along with client interaction and usage.

A ForwardingEntity may reflect one or more client protocols and one or more members for each profile.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 19: Attributes for TransferCapacity_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
totalPotentialCapacity	Capacity	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An optimistic view of the capacity of the ForwardingEntity assuming that any shared capacity is available to be taken.
availableCapacity	Capacity	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Capacity available to be assigned.
capacityAssignedToUserView	Capacity	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Capacity already assigned.
capacityInteractionAlgorithm	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A reference to an algorithm that describes how various chunks of allocated capacity interact (e.g. when shared).

2.1.1.20 TransferCost_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::TransferCost_Pac

The cost characteristics of a ForwardingEntity not necessarily correlated to the cost of the underlying physical realization.

They may be quite specific to the individual ForwardingEntity (e.g. opportunity cost) and relates to layer capacity

There may be many perspectives from which cost may be considered for a particular ForwardingEntity and hence many specific costs and potentially cost algorithms.

Using an entity will incur a cost.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 20: Attributes for TransferCost_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
costCharacteristic	CostCharacteristics	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY • condition:	The list of costs where each cost relates to some aspect of the ForwardingEntity.

2.1.1.21 TransferIntegrity_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::TransferIntegrity_Pac

Transfer integrity characteristic covers expected/specified/acceptable characteristic of degradation of the transferred signal.

It includes all aspects of possible degradation of signal content as well as any damage of any form to the total ForwardingEntity and to the carried signals.

Note that the statement is of total impact to the ForwardingEntity so any partial usage of the ForwardingEntity (e.g. a signal that does not use full capacity) will only suffer its portion of the impact.

This class is abstract.

Applied stereotypes:

- OpenModelClass

- support: MANDATORY

Table 21: Attributes for TransferIntegrity_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
errorCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if errorCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if errorCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to TDM. 	Describes the degree to which the signal propagated can be errored. Applies to TDM systems as the errored signal will be propagated and not packet as errored packets will be discarded.
lossCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if lossCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if lossCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to packet systems. 	Describes the acceptable characteristic of lost packets where loss may result from discard due to errors or overflow. Applies to packet systems and not TDM (as for TDM errored signals are propagated unless grossly errored and overflow/underflow turns into timing slips).

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
repeatDeliveryCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if repeatDeliveryCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if repeatDeliveryCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this primarily applies to packet systems where a packet may be delivered more than once (in fault recovery for example). Note that it can also apply to TDM where several frames may be received twice due to switching in a system with a large differential propagation delay. 	Primarily applies to packet systems where a packet may be delivered more than once (in fault recovery for example). It can also apply to TDM where several frames may be received twice due to switching in a system with a large differential propagation delay.
deliveryOrderCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if deliveryOrderCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if deliveryOrderCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to packet systems. 	Describes the degree to which packets will be delivered out of sequence. Does not apply to TDM as the TDM protocols maintain strict order.
unavailableTimeCharacteristic	String	1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Describes the duration for which there may be no valid signal propagated.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
serverIntegrityProcessCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if serverIntegrityProcessCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if serverIntegrityProcessCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies where the server has some error recovery mechanism alters the characteristics of the link from a normal distribution. 	Describes the effect of any server integrity enhancement process on the characteristics of the ForwardingEntity.

2.1.1.22 TransferTiming_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::TransferTiming_Pac

A ForwardingEntity will suffer effects from the underlying physical realization related to the timing of the information passed by the ForwardingEntity.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 22: Attributes for TransferTiming_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
fixedLatencyCharacteristic	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	A ForwardingEntity suffers delay caused by the realization of the servers (e.g. distance related; FEC encoding etc.) along with some client specific processing. This is the total average latency effect of the ForwardingEntity.
jitterCharacteristic	String	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if jitterCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if jitterCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to TDM. 	High frequency deviation from true periodicity of a signal and therefore a small high rate of change of transfer latency. Applies to TDM systems (and not packet).
wanderCharacteristic	String	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if wanderCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. Note that if wanderCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to TDM. 	Low frequency deviation from true periodicity of a signal and therefore a small low rate of change of transfer latency. Applies to TDM systems (and not packet).

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
queuingLatencyCharacteristic	QueuingLatency	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: CONDITIONAL • condition: Present if queuingLatencyCharacteristic information is relevant to usage and statement can be made that applies equally to all flows that can be supported by the ForwardingEntity. There may be more than one instance if the queuing behavior depends upon traffic properties. Note that if queuingLatencyCharacteristic is relevant but consistent statement cannot be made then the ForwardingEntity should be described in terms of subordinate parts against which coherent statements can be made. Note that this only applies to packet system. 	The effect on the latency of a queuing process. This only has significant effect for packet based systems and has a complex characteristic.

2.1.1.23 Validation_Pac

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Topology::Validation_Pac

Validation covers the various adjacency discovery and reachability verification protocols. Also may cover Information source and degree of integrity.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 23: Attributes for Validation_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
validationMechanism	ValidationMechanism	1..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Provides details of the specific validation mechanism(s) used to confirm the presence of an intended ForwardingEntity.

2.1.2 Data Types

2.1.2.1 Capacity

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Topology::Capacity

Information on capacity of a particular ForwardingEntity.

Applied stereotypes:

No stereotypes applied

Table 24: Attributes for Capacity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
totalSize	String	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Total capacity of the ForwardingEntity in Mbits/s.
numberOfClientInstances	String	0..1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Where there is some limit to the number of client (e.g. in a channelized case).
maximumClientSize	String	0..1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Where a client is of variable capacity but due to some underlying realization the maximum size of the client is smaller than the totalSize.
numberingRange	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Method for identifying units of capacity via some numbering scheme.

2.1.2.2 CostCharacteristics

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Topology::CostCharacteristics

The information for a particular cost characteristic.

Applied stereotypes:

No stereotypes applied

Table 25: Attributes for CostCharacteristics

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
costName	String	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The cost characteristic is related to some aspect of the ForwardingEntity (e.g. \$ cost, routing weight). This aspect will be conveyed by the costName.
costValue	String	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The specific cost.
costAlgorithm	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The cost may vary based upon some properties of the ForwardingEntity. The rules for the variation are conveyed by the costAlgorithm.

2.1.2.3 Global_Pac

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::Global_Pac

Provides the properties of a GlobalClass via composition.

Applied stereotypes:

- Preliminary

Inherits properties from:

- GlobalClass

2.1.2.4 LayerProtocolNameAndQualifier

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::LayerProtocolNameAndQualifier

Provides a controlled list of layer protocol names and indicates the naming authority.

Note that it is expected that attributes will be added to this structure to convey the naming authority name, the name of the layer protocol using a human readable string and any particular standard reference.

Layer protocol names include:

- Layer 1 (L1): OTU, ODU
- Layer 2 (L2): Carrier Grade Ethernet (ETY, ETH), MPLS-TP (MT)

Applied stereotypes:

- Preliminary

Table 26: Attributes for LayerProtocolNameAndQualifier

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolQualifier	String	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Qualifies the use of the LayerProtocol where the same LayerProtocol may be used recursively such that each recursion has the same characteristic information in the main traffic path but where there is some distinction in some other aspect. An example of use is in the case of the PHOTONIC_MEDIA LayerProtocol. All photonic media is of the same characteristic in the main traffic path, just a channel that enables the flow of photons, but may differ in overhead and with respect to level of nesting. For the PHOTONIC_MEDIA, qualifiers may include OMS (Optical Multiplex Section), OTS (Optical Transmission Section) and NMCA (Network Media Channel Assembly).
layerProtocolName	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The name of the LayerProtocol chosen from a controlled list. LayerProtocol names include: <ul style="list-style-type: none"> - PHOTONIC_MEDIA - ODU - ETHERNET

2.1.2.5 Local_Pac

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::Local_Pac

Provides the properties of a LocalClass via composition.

Applied stereotypes:

- Preliminary

Inherits properties from:

- LocalClass

2.1.2.6 PortRole

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::PortRole

The role of a port in the context of the function of the forwarding entity that it bounds.

Applied stereotypes:

- Preliminary

Table 27: Attributes for PortRole

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
roleName	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The name of the role of the port of the FC.

2.1.2.7 ProtectionType

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::ProtectionType

Identifies the type of protection of an FcSwitch.

Applied stereotypes:

- Obsolete

2.1.2.8 QueuingLatency

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Topology::QueuingLatency

Provides information on latency characteristic for a particular stated trafficProperty.

Applied stereotypes:

No stereotypes applied

Table 28: Attributes for QueuingLatency

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
trafficProperty	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier of the specific traffic property to which the queuing latency applies.
latencyForTrafficWithProperty	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The specific queuing latency for the traffic property.

2.1.2.9 RiskCharacteristic

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Topology::RiskCharacteristic

The information for a particular risk characteristic where there is a list of risk identifiers related to that characteristic.

Applied stereotypes:

No stereotypes applied

Table 29: Attributes for RiskCharacteristic

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
riskCharacteristicName	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The name of the risk characteristic. The characteristic may be related to a specific degree of closeness. For example, a particular characteristic may apply to failures that are localized (e.g. to one side of a road) where as another characteristic may relate to failures that have a broader impact (e.g. both sides of a road that crosses a bridge). Depending upon the importance of the traffic being routed different risk characteristics will be evaluated.
riskIdentifier	String	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	A list of the identifiers of each physical/geographic unit (with the specific risk characteristic) that is related to a segment of the ForwardingEntity.

2.1.2.10 ValidationMechanism

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Topology::ValidationMechanism

Identifies the validation mechanism and describes the characteristics of that mechanism.

Applied stereotypes:

No stereotypes applied

Table 30: Attributes for ValidationMechanism

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
validationMechanism	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Name of mechanism used to validate adjacency.
layerProtocolAdjacencyValidated	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	State of validation.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
validationRobustness	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Quality of validation (i.e. how likely is the stated validation to be invalid).

2.1.3 Enumeration Types

2.1.3.1 ExtendedTerminationDirection

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::ExtendedTerminationDirection

Extended to include contra-direction considerations. Only applies to LP and elements of LP not to LTP.

Applied stereotypes:

- Experimental

Inherits literals from:

- TerminationDirection

Contains Enumeration Literals:

- CONTRA_DIRECTION_SINK:
 - The essential flow of the Termination entity is SINK (i.e. up the layer stack) but the INPUT flow of the Termination entity was provided by a SOURCE OUTPUT or taken from a SOURCE INPUT (duplicating the input signal) hence reversing the flow orientation from down the layer stack to up the layer stack.
 - Applied stereotypes:
- CONTRA_DIRECTION_SOURCE:
 - The essential flow of the Termination entity is SOURCE (i.e. down the layer stack) but the OUTPUT flow of the Termination entity was fed to (and replaces) a SINK OUTPUT or was fed to a SINK INPUT (replacing the normal flow) hence reversing the flow orientation from down the layer stack to up the layer stack.
 - Applied stereotypes:

2.1.3.2 ForwardingDirection

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::ForwardingDirection

The directionality of a Forwarding entity.

Applied stereotypes:

No stereotypes applied

Contains Enumeration Literals:

- **BIDIRECTIONAL:**
 - The Forwarding entity supports both BIDIRECTIONAL flows at all Ports (i.e. all Ports have both an INPUT flow and an OUTPUT flow defined).
- **UNIDIRECTIONAL:**
 - The Forwarding entity has Ports that are either INPUT or OUTPUT. It has no BIDIRECTIONAL Ports.
- **UNDEFINED_OR_UNKNOWN:**
 - Not a normal state. The system is unable to determine the correct value.
- **OMNIDIRECTIONAL:**

2.1.3.3 LayerProtocolName

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::LayerProtocolName

A controlled list of LayerProtocol names.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **PHOTONIC_MEDIA:**
 - The characteristic information is that of a channel able to carry photons and of the photon source/sink.
 - Applied stereotypes:
 - Experimental
- **OTU_AND_ODU:**
 - The characteristic information is that of a channel able to carry ODU/OTU protocol (OTN) and of the ODU/OTU source/sink.
 - Applied stereotypes:
 - Experimental

- **ETHERNET:**
 - The characteristic information is that of a channel able to carry Ethernet protocol and of the Ethernet protocol source/sink.
 - Applied stereotypes:
 - Experimental

2.1.3.4 PortDirection

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::PortDirection

The orientation of flow at the Port of a Forwarding entity.

Applied stereotypes:

No stereotypes applied

Contains Enumeration Literals:

- **BIDIRECTIONAL:**
 - The Port has both an INPUT flow and an OUTPUT flow defined.
- **INPUT:**
 - The Port only has definition for a flow into the Forwarding entity (i.e. an ingress flow).
- **OUTPUT:**
 - The Port only has definition for a flow out of the Forwarding entity (i.e. an egress flow).
- **UNIDENTIFIED_OR_UNKNOWN:**
 - Not a normal state. The system is unable to determine the correct value.
- **OMNIDIRECTIONAL:**

2.1.3.5 ProtectionReason

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::ProtectionReason

The cause of the current protection state.

Applied stereotypes:

- Preliminary

Contains Enumeration Literals:

- **WAIT_TO_REVERT:**
 - The resource is selected as control is waiting to restore to a preferred resource.
 - Applied stereotypes:
 - Preliminary
- **SIGNAL_DEGRADE:**
 - The resource is selected as the best preferred resource is in signal degrade.
 - Applied stereotypes:
 - Preliminary
- **SIGNAL_FAIL:**
 - The resource is selected as the best preferred resource is in signal fail.
 - Applied stereotypes:
 - Preliminary

2.1.3.6 ResilienceControl

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::ResilienceControl

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **QUIESCENT:**
 - Applied stereotypes:
 - Experimental
- **RESTORING:**
 - Applied stereotypes:
 - Experimental
- **RECOVERY_FAILED:**
 - Applied stereotypes:
 - Experimental
- **UNKNOWN:**
 - Applied stereotypes:

- Experimental

2.1.3.7 ReversionMode

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::ReversionMode

The reversion mode associated with protection.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- REVERTIVE:
 - An FC switched to a lower priority (non-preferred) resource will revert to a higher priority (preferred) resource when that recovers (potentially after some hold-off time).
 - Applied stereotypes:
 - Experimental
- NON-REVERTIVE:
 - An FC switched to a lower priority (non-preferred) resource will not revert to a higher priority (preferred) resource when that recovers.
 - Applied stereotypes:
 - Experimental

2.1.3.8 RouteSelectionControl

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::RouteSelectionControl

Possible degrees of administrative control applied to the Route selection.

Applied stereotypes:

- Preliminary

Inherits literals from:

- SwitchControl

Contains Enumeration Literals:

- **LOCK_OUT:**
 - The resource is configured to temporarily not be available for use in the protection scheme(s) it is part of. This overrides all other protection control states including forced.
If the item is locked out, then it cannot be used under any circumstances.
Note: Only relevant when part of a protection scheme.
Note: if a protection process that has a relationship to the item (i.e. is one of the options the protection process may choose) is deactivated by being isFrozen = true) then the lockout request will be rejected.
 - Applied stereotypes:
 - Preliminary

2.1.3.9 RouteSelectionReason

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::RouteSelectionReason

The cause of the current route selection.

Applied stereotypes:

- Preliminary

Inherits literals from:

- RouteSelectionControl
- ProtectionReason

2.1.3.10 RunMode

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Timing::RunMode

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **FREE_RUN:**
 - The clock is not synchronized to another clock.
 - Applied stereotypes:
 - Experimental
- **LOCKED:**
 - The clock is synchronized to another clock.
 - Applied stereotypes:
 - Experimental
- **HOLD_OVER:**
 - The clock was previously synchronized to another clock but that timing input has been lost.
The clock is set to the last known synchronization.
 - Applied stereotypes:
 - Experimental

2.1.3.11 SwitchControl

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::SwitchControl

Applied stereotypes:

- Preliminary

Contains Enumeration Literals:

- **NORMAL:**
 - No administrative control applied to the switch.
 - Applied stereotypes:
 - Preliminary
- **MANUAL:**
 - Resource temporarily chosen by control configuration where the resource is not the preferred resource.
Preferred resource has highest priority.
Temporarily overrides reversion.
If this resource fails, it will switch to best available resource.
If resource selected is shared and another FC requires the resource, then the selection control will change to Normal and switch to best available based upon normal rules.

Cannot manually switch a Forced switch, cannot remove a forced switch, cannot switch to a locked out item and will be rejected if the protection process is deactivated by being Freeze = true).

A manual switch/route that is selecting an FcPort, LTP, FC, Link or Route that is subsequently set to LOCK_OUT will have the manual removed (changed to NORMAL) and will switch away from the FcPort with LOCK_OUT to best available based upon normal rules.

A manual switch that is selecting an FcPort that is subsequently selected by a Forced switch will be restored to normal operation and the manual will be removed.

A manual switch/route that is selecting an FcPort, LTP, FC, Link or Route that is subsequently manual selected by another switch/route will have the manual removed and will switch away from the FcPort.

Can be returned to NORMAL by configuration action.

- Applied stereotypes:
 - Preliminary
- FORCED:
 - Resource temporarily chosen by control configuration where the resource is not the preferred resource. Preferred resource has highest priority. Temporarily overrides reversion. If this resource fails it will NOT switch. If resource selected is shared and another FC requires the resource through a FORCE on that FC and the FC is of a higher FcPriority then the selection control on this FC will change to NORMAL and switch to best available based upon normal rules. If the resource selected is then set to LOCK_OUT then the selection control will change to NORMAL and switch to best available based upon normal rules. Can be returned to NORMAL by configuration action.
 - Applied stereotypes:
 - Preliminary

2.1.3.12 SwitchStateReason

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::Resilience::SwitchStateReason

Explains the reason for the current switch state.

Applied stereotypes:

- Preliminary

Inherits literals from:

- SwitchControl
- ProtectionReason

2.1.3.13 TerminationDirection

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::TerminationDirection

The directionality of a termination entity.

Applied stereotypes:

No stereotypes applied

Contains Enumeration Literals:

- BIDIRECTIONAL:
 - A Termination with both SINK and SOURCE flows.
- SINK:
 - The flow is up the layer stack from the server side to the client side.
Considering an example of a Termination function within the termination entity, a SINK flow:
 - will arrive at the base of the termination function (the server side) where it is essentially at an INPUT to the termination component
 - then will be decoded and deconstructed
 - then relevant parts of the flow will be sent out of the termination function (the client side) where it is essentially at an OUTPUT from the termination componentA SINK termination is one that only supports a SINK flow.
A SINK termination can be bound to an OUTPUT Port of a Forwarding entity
- SOURCE:
 - The flow is down the layer stack from the server side to the client side.
Considering an example of a Termination function within the termination entity, a SOURCE flow:
 - will arrive at the top of the termination function (the client side) where it is essentially at an INPUT to the termination component
 - then will be assembled with various overheads etc. and will be coded

- then coded form of the assembly of flow will be sent out of the termination function (the server side) where it is essentially at an OUTPUT from the termination component

A SOURCE termination is one that only supports a SOURCE flow.

A SOURCE termination can be bound to an INPUT Port of a Forwarding entity

- UNDEFINED_OR_UNKNOWN:
 - Not a normal state. The system is unable to determine the correct value.

2.1.3.14 TerminationState

Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::TerminationState

Provides support for the range of behaviors and specific states that an LP can take with respect to termination of the signal. Indicates to what degree the LayerTermination is terminated.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- LP_CAN_NEVER_TERMINATE:
 - A non-flexible case that can never be terminated.
 - Applied stereotypes:
 - Experimental
- LP_NOT_TERMINATED:
 - A flexible termination that can terminate but is currently not terminated.
 - Applied stereotypes:
 - Experimental
- TERMINATED_SERVER_TO_CLIENT_FLOW:
 - A flexible termination that is currently terminated for server to client flow only.
 - Applied stereotypes:
 - Experimental
- TERMINATED_CLIENT_TO_SERVER_FLOW:
 - A flexible termination that is currently terminated for client to server flow only.
 - Applied stereotypes:
 - Experimental

- **TERMINATED_BIDIRECTIONAL:**
 - A flexible termination that is currently terminated in both directions of flow.
 - Applied stereotypes:
 - Experimental
- **LP_PERMENANTLY_TERMINATED:**
 - A non-flexible termination that is always terminated (in both directions of flow for a bidirectional case and in the one direction of flow for both unidirectional cases).
 - Applied stereotypes:
 - Experimental
- **TERMINATION_STATE_UNKNOWN:**
 - There TerminationState cannot be determined.
 - Applied stereotypes:
 - Experimental

2.1.4 Primitive Types

2.2 Core Foundation Model data dictionary

This section provides the model details for the foundation.

2.2.1 Classes

2.2.1.1 Address

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::Address

Provides an opportunity to state the location of the entity via one or more hierarchies of narrowing contexts.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 31: Attributes for Address

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
address	Address	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.2.1.2 AdministrativeState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::StateMachines::AdministrativeState::AdministrativeState

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.2.1.3 ConditionalPackage

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::ConditionalPackage

The base class for conditional packages.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Label
- Extension

2.2.1.4 Extension

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::Extension

Extension provides an opportunity to define properties not declared in the class that extend the class enabling a realization with simple ad-hoc extension of standard classes to be conformant.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 32: Attributes for Extension

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.

2.2.1.5 GlobalClass

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::GlobalClass

Represents a type of thing (an Entity) that has instances which can exist in their own right (independently of any others).

Entity: Has identity, defined boundary, properties, functionality and lifecycle in a global context.

(This should be considered in the context of a Class: (usage) The representation of a thing that may be an entity or an inseparable Entity Feature).

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- Label
- Name
- Extension
- State_Pac
- Address

Table 33: Attributes for GlobalClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	<p>An identifier that is unique in the context of some scope that is less than the global scope.</p> <p>(This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)</p>
uuid	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	<p>UUID: An identifier that is universally unique</p> <p>(This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.</p>
name <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.2.1.6 Label

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::Label

A property of an entity with a value that is not expected to be unique and is allowed to change. A label carries no semantics with respect to the purpose of the entity and has no effect on the entity behavior or state.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 34: Attributes for Label

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of labels.

2.2.1.7 LifecycleState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::StateMachines::LifecycleState::LifecycleState

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.2.1.8 LocalClass

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::LocalClass

A LocalClass represents a Feature of an Entity. It is inseparable from a GlobalClass but is a distinct feature of that GlobalClass such that the instances of LocalClass are able to have associations to other instances.

Feature of an Entity: An inseparable, externally distinguishable part of an entity.

The mandatory LocalId of the LocalClass instance is unique in the context of the GlobalClass from which it is inseparable.

(This should be considered in the context of a Class: (usage) The representation of a thing that may be an entity or an inseparable

feature of an entity.)

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- Label
- Name
- Extension
- State_Pac
- Address

Table 35: Attributes for LocalClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.2.1.9 Name

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::Name

Name: A property of an entity with a value that 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.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 36: Attributes for Name

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
name	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of names.

2.2.1.10 NameAndValueAuthority

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::NameAndValueAuthority

Represents the authority that controls the legal values for the names and values of a name/value attribute.

This class is abstract.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 37: Attributes for NameAndValueAuthority

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid	UniversalId	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The UUID for the NameAndValueAuthority.

2.2.1.11 OperationalState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::StateMachines::OperationalState::OperationalState

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.2.1.12 State_Pac

Qualified Name: CoreModel::CoreFoundationModel::StateModel::ObjectClasses::State_Pac

Provides general state attributes.

This class is abstract.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 38: Attributes for State_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
operationalState	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.

2.2.1.13 UniversalIdAuthority

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::ObjectClasses::UniversalIdAuthority

Represents the authority that controls the allocation of UUIDs.

This class is abstract.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 39: Attributes for UniversalIdAuthority

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid	UniversalId	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The UUID for the UUID authority.

2.2.2 Data Types

2.2.2.1 Address

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::Address

A description of location via a hierarchy of narrowing contexts.

Applied stereotypes:

- Experimental

Table 40: Attributes for Address

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
addressName	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the address (to allow the specific hierarchy to be distinguished from others for the same entity).
addressElement	AddressElement	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The elements of the address that form the recursive scope narrowing.

2.2.2.2 AddressElement

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::AddressElement

One element of a hierarchy of elements.

Note that the element must have one and only one value chosen from a list of potential value types.

Applied stereotypes:

- Choice
- Experimental

Table 41: Attributes for AddressElement

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
addressElementName	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The name of the address element (e.g. "shelf" as an element of a shelf/slot/port addressing scheme). The remainder of the structure has the reference for the shelf.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId	LocalIdAndClass	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	If the element is a localId (where the element above in the hierarchy must be the context in which the specific localId is relevant).
uuid	UniversalId	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	If the element is a uuid (where this element could be the top of a hierarchy but may also be at some level in the hierarchy where address navigation is considered necessary to assist in location of the UUID).
name	NameAndClass	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	If the element is a name.
_address	Address	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
arbitraryElement	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Where the element is from some external model that is not formally represented in this model.

2.2.2.3 DateAndTime

Qualified Name: CoreModel::CoreFoundationModel::TypeDefinitions::DateAndTime

This primitive type defines the date and time according to the following structure:

"yyyyMMddhhmmss.s[Z]{+|-}HHMm]" where:

yyyy	"0000".."9999"	year
MM	"01".."12"	month
dd	"01".."31"	day
hh	"00".."23"	hour
mm	"00".."59"	minute
ss	"00".."59"	second
s	".0".."9"	tenth of second (set to ".0" if EMS or NE cannot support this granularity)
Z	"Z"	indicates UTC (rather than local time)
{+ -}	"+" or "-"	delta from UTC
HH	"00".."23"	time zone difference in hours
Mm	"00".."59"	time zone difference in minutes.

Applied stereotypes:

No stereotypes applied

2.2.2.4 LocalIdAndClass

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::LocalIdAndClass

The localId and the class of entity that it identifies.

Applied stereotypes:

- Experimental

Table 42: Attributes for LocalIdAndClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
classOfInstance	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The class to which the name refers.
localId	NameAndValue	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The localId of the entity.

2.2.2.5 NameAndClass

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::NameAndClass

The name and the class of entity that it names.

Applied stereotypes:

- Experimental

Table 43: Attributes for NameAndClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
classOfInstance	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The class to which the name refers.
name	NameAndValue	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the element is a name.

2.2.2.6 NameAndValue

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::NameAndValue

A scoped name-value pair.

Applied stereotypes:

No stereotypes applied

Table 44: Attributes for NameAndValue

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
valueName	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The name of the value. The value need not have a name.
value	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The value.
_nameAndValueAuthority	NameAndValueAuthority	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The authority that defines the named value.
_globalClass	GlobalClass	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The scope of the name uniqueness.
_localClass	LocalClass	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The scope of the name uniqueness.

2.2.2.7 ToBeDefined

Qualified Name: CoreModel::CoreFoundationModel::TypeDefinitions::ToBeDefined

This type is used when the actual type of the attribute is expected to be complex but where the type has not yet been developed.
This type should only be used for attributes that are experimental.

Applied stereotypes:

No stereotypes applied

2.2.2.8 UniversalId

Qualified Name: CoreModel::CoreFoundationModel::SuperClassesAndCommonPackages::TypeDefinitions::UniversalId

The universal ID value where the mechanism for generation is defined by some authority not directly referenced in the structure.
An example structure is [IETF RFC4122].

Applied stereotypes:

No stereotypes applied

Table 45: Attributes for UniversalId

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
value	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The specific value of the universal id.

2.2.3 Enumeration Types**2.2.3.1 AdministrativeControl**

Qualified Name: CoreModel::CoreFoundationModel::StateModel::TypeDefinitions::AdministrativeControl

Reflects the current control action when the entity is not in the desired state.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **UNLOCK:**
 - The intention is for the entity to become unlocked.
The entity may already be UNLOCKED.
 - Applied stereotypes:
 - Experimental
- **LOCK_PASSIVE:**
 - The intention is for the entity to become locked but no effort is expected to move to the Locked state (the state will be achieved once all users stop using the resource).
The entity may be LOCKED.
 - Applied stereotypes:
 - Experimental
- **LOCK_ACTIVE:**
 - The intention is for the entity to become locked and it is expected that effort will be made to move to the Locked state (users will be actively removed).
The entity may already be LOCKED.
 - Applied stereotypes:
 - Experimental
- **LOCK_IMMEDIATE:**
 - The intention is for the entity to become locked and it is expected to move to the Locked state immediately (users will be force removed).
The entity may already be LOCKED.
 - Applied stereotypes:
 - Experimental
- **QUIESCENT:**
 - The administrative state is at a stable value (LOCKED/UNLOCKED) and no action is being taken.
 - Applied stereotypes:
 - Experimental

2.2.3.2 AdministrativeState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::TypeDefinitions::AdministrativeState

The administrative state is used to show whether use of a resource is allowed or prohibited.

The administrative state can be observed and directly controlled by certain operational roles.

Typically, only a user (in the provider context) with administrative privileges is allowed to write the administrative state, any other users are restricted to read only.

Applied stereotypes:

- Preliminary

Contains Enumeration Literals:

- LOCKED:
 - Users are administratively prohibited from making use of the resource.
 - Applied stereotypes:
 - Preliminary
- UNLOCKED:
 - Users are allowed to use the resource.
 - Applied stereotypes:
 - Preliminary
- SHUTTING_DOWN:
 - The entity is administratively restricted to existing instances of use only. There may be specific actions to remove existing uses. No new instances of use can be enabled.
The resource automatically transitions to "locked" when the last user quits.
The administrative state is not visible in the client context.
The lifecycle state "pending removal" should be used to indicate to the client that the provider intends to remove the resource.
 - Applied stereotypes:
 - Experimental

2.2.3.3 LifecycleState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::TypeDefinitions::LifecycleState

This state is used to track the planned deployment, allocation to clients and withdrawal of resources.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **PLANNED:**
 - The resource is planned but is not present in the network.
Should include a "time" when the resources are expected to be installed.
 - Applied stereotypes:
 - Experimental
- **POTENTIAL_AVAILABLE:**
 - The supporting resources are present in the network but are shared with other clients; or require further configuration before they can be used; or both.
(1) When a potential resource is configured and allocated to a client it is moved to the INSTALLED state for that client.
(2) If the potential resource has been consumed (e.g. allocated to another client) it is moved to the POTENTIAL BUSY state for all other clients.
 - Applied stereotypes:
 - Experimental
- **POTENTIAL_BUSY:**
 - The supporting resources are present in the network but have been allocated to other clients.
 - Applied stereotypes:
 - Experimental
- **INSTALLED:**
 - The resource is present in the network and is capable of providing the service.
 - Applied stereotypes:
 - Experimental
- **PENDING_REMOVAL:**
 - The resource has been marked for removal. Should include a "time" when the resources are expected to be removed.
 - Applied stereotypes:
 - Experimental

2.2.3.4 OperationalState

Qualified Name: CoreModel::CoreFoundationModel::StateModel::TypeDefinitions::OperationalState

The operational state is used to indicate whether or not the resource is installed and working.

Applied stereotypes:

- Preliminary

Contains Enumeration Literals:

- **DISABLED:**
 - The resource is unable to meet the SLA of the user of the resource.
If no (explicit) SLA is defined the resource is disabled if it is totally inoperable and unable to provide service to the user.
 - Applied stereotypes:
 - Preliminary
- **ENABLED:**
 - The resource is partially or fully operable and available for use.
 - Applied stereotypes:
 - Preliminary

2.2.4 Primitive Types

2.2.4.1 BitString

Qualified Name: CoreModel::CoreFoundationModel::TypeDefinitions::BitString

This primitive type defines a bit oriented string.

The size of the BitString will be defined in the valueRange property of the attribute; according to ASN.1 (X.680).

The semantic of each bit position will be defined in the Documentation field of the attribute.

Applied stereotypes:

- Obsolete

2.2.4.2 PrintableString

Qualified Name: CoreModel::CoreFoundationModel::TypeDefinitions::PrintableString

A string that only includes printable characters.

Applied stereotypes:

- Obsolete

2.3 Core Physical Model data dictionary

This section provides the details for the model of physical things including equipment and connectors.

2.3.1 Classes

2.3.1.1 AccessPort

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::AccessPort

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.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- PinGroup

2.3.1.2 ActualEquipment

Qualified Name: CoreModel::CorePhysicalModel::ExpectedAndActual::ObjectClasses::ActualEquipment

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

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.3.1.3 ActualHolder

Qualified Name: CoreModel::CorePhysicalModel::ExpectedAndActual::ObjectClasses::ActualHolder

A holder in the ActualEquipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.3.1.4 AggregateFunction

Qualified Name: CoreModel::CorePhysicalModel::EquipmentToFunction::ObjectClasses::AggregateFunction

Represents some assembly of atomic functions that can be considered as useful from some perspective. Can be viewed as one or more functional blocks (essential leading to a recursive cycle of Block --> Atomic --> Aggregate --> Block).

Each of the functional entities in the model is a view of a single AggregateFunction.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Table 46: Attributes for AggregateFunction

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_atomicFunction	AtomicFunction	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_functionBlock	FunctionBlock	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_atomicFunctionView	AtomicFunction	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.5 AtomicFunction

Qualified Name: CoreModel::CorePhysicalModel::EquipmentToFunction::ObjectClasses::AtomicFunction

Represents the micro-function that is the largest function of the functional block that will not need to be subdivided when forming the relevant abstract views (i.e., it can just be assembled).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Table 47: Attributes for AtomicFunction

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_aggregateFunction	AggregateFunction	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.6 Cable

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::ObjectClasses::Cable

Basic model representing a cable with connectors fitted at the cable ends as appropriate.

The cable may be an abstraction where the apparent ends are actually ends of two different cables that are connected indirectly by other cables and where that cable detail is not relevant or is not known.

This is intentionally a very basic representation of a cable.

The model does not account for any outside plant considerations.

In a more sophisticated representation cable ends might be represented that then associate to the attached connector.

At this point it is assumed that the basic model is sufficient.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- GroupOfStrands
- GlobalClass

Table 48: Attributes for Cable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A connector that terminates the Cable to support the cable and/or allow signal flow into/out of the Cable.
_manufacturedThing	ManufacturedThing	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_physicalCharacteristics	PhysicalCharacteristics	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_mechanicalFeatures	MechanicalFeatures	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_spatialPropertiesOfType	SpatialPropertiesOfType	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_strand	Strand	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_bundledCable	Cable	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.3.1.7 Connector

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::ObjectClasses::Connector

Represents a connector that may be fully exposed (e.g. to plug in a cable or on the end of a cable) or partially exposed (e.g. backplane to plug in another piece of equipment such as a module).

A physical port on the Equipment. A place where signals produced by the functionality of the Equipment may be accessed.

This class is abstract.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- PinGroup
- LocalClass

Table 49: Attributes for Connector

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The Connector that is attached to this Connector so as to join the Equipment/Cable with this Connector to another Equipment/Cable. This may provide physical support and/or allow signal flow.
_pin	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
orientation	ConnectorAndPinOrientation	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The physical orientation of the connector, such as whether it is a male, or female, or neutral structure.
_manufacturedThing	ManufacturedThing	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_position	Position	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFeatures	MechanicalFeatures	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_pinLayout	PinLayout	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
connectorType	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The type of the connector.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
role	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The purpose of the Connector in the physical space and the functional space.
localId <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name <i>Inherited</i>	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension <i>Inherited</i>	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_pin	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.8 ConnectorCableEnd

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::ConnectorRules::ObjectClasses::ConnectorCableEnd

A rule class (an abstract specialization of Connector) that represents a connector on the end of a cable.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Connector

Table 50: Attributes for ConnectorCableEnd

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connectorOnEquipmentForCable	ConnectorOnEquipmentForCable	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The cable connector is plugged into a connector on an Equipment.
_connectorOnCableEnd	ConnectorCableEnd	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The cable is joined to another cable via connectors.
_connector Inherited	Connector	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The Connector that is attached to this Connector so as to join the Equipment/Cable with this Connector to another Equipment/Cable. This may provide physical support and/or allow signal flow.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The physical orientation of the connector, such as whether it is a male, or female, or neutral structure.
_manufacturedThing Inherited	ManufacturedThing	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	See referenced class
_position Inherited	Position	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pinLayout Inherited	PinLayout	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
connectorType Inherited	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The type of the connector.
role Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The purpose of the Connector in the physical space and the functional space.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.9 ConnectorInHolder

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::ConnectorRules::ObjectClasses::ConnectorInHolder

A rule class (an abstract specialization of Connector) that represents a connector that are only accessible to an equipment inserted in the holder.

This class is abstract.

Applied stereotypes:

- OpenModelClass

- support: MANDATORY
- Experimental

Inherits properties from:

- Connector

Table 51: Attributes for ConnectorInHolder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connectorOnEquipmentForHolder	ConnectorOnEquipmentForHolder	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The holder connector has a connector from the referenced equipment plugged into it.
_connector Inherited	Connector	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The Connector that is attached to this Connector so as to join the Equipment/Cable with this Connector to another Equipment/Cable. This may provide physical support and/or allow signal flow.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The physical orientation of the connector, such as whether it is a male, or female, or neutral structure.
_manufacturedThing Inherited	ManufacturedThing	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_position Inherited	Position	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_pinLayout Inherited	PinLayout	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
connectorType Inherited	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The type of the connector.
role Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The purpose of the Connector in the physical space and the functional space.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.10 ConnectorOnEquipmentForCable

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::ConnectorRules::ObjectClasses::ConnectorOnEquipmentForCable

A rule class (an abstract specialization of Connector) that represents a connector exposed on an equipment such that a cable may be plugged in.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Connector

Table 52: Attributes for ConnectorOnEquipmentForCable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connectorCableEnd	ConnectorCableEnd	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The connector on an equipment has a cable plugged into it.
_connector Inherited	Connector	0..1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The Connector that is attached to this Connector so as to join the Equipment/Cable with this Connector to another Equipment/Cable. This may provide physical support and/or allow signal flow.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The physical orientation of the connector, such as whether it is a male, or female, or neutral structure.
_manufacturedThing Inherited	ManufacturedThing	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_position Inherited	Position	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_pinLayout Inherited	PinLayout	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
connectorType Inherited	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The type of the connector.
role Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The purpose of the Connector in the physical space and the functional space.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.11 ConnectorOnEquipmentForHolder

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::ConnectorRules::ObjectClasses::ConnectorOnEquipmentForHolder

A rule class (an abstract specialization of Connector) that represents a connector on an equipment that is intended to mate with a connector in a holder.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Connector

Table 53: Attributes for ConnectorOnEquipmentForHolder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connectorInHolder	ConnectorInHolder	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The equipment connector is plugged into the referenced holder connector.
_connector Inherited	Connector	0..1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The Connector that is attached to this Connector so as to join the Equipment/Cable with this Connector to another Equipment/Cable. This may provide physical support and/or allow signal flow.
_pin Inherited	Pin	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The physical orientation of the connector, such as whether it is a male, or female, or neutral structure.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_manufacturedThing Inherited	ManufacturedThing	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_position Inherited	Position	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_pinLayout Inherited	PinLayout	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
connectorType Inherited	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The type of the connector.
role Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The purpose of the Connector in the physical space and the functional space.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pin Inherited	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.12 ElementalSignals

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::ElementalSignals

The elemental (sub-atomic) parts of an "indivisible" signal where processing in the LTP is required to extract the elemental signals.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 54: Attributes for ElementalSignals

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pin	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.13 EnvironmentalRating

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::EnvironmentalRating

Represents the invariant physical operational boundaries for the equipment/holder type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 55: Attributes for EnvironmentalRating

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
thermalRating	ThermalRating	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	This attribute represents the thermal characteristics (preferred maximum/minimum, absolute maximum/minimum etc) that the entity can tolerate.
powerRating	PowerRating	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	This attribute represents the power characteristics (peak and mean per power source) of the entity. For an Equipment this is the power consumption. For a Holder this is the power that can be conveyed.
humidityRating	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	This attribute represents the humidity characteristics (preferred maximum/minimum, absolute maximum/minimum etc.) that the entity can tolerate.

2.3.1.14 Equipment

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::ObjectClasses::Equipment

Represents any relevant physical thing.

Can be either field replaceable or not field replaceable.

Note: The model is currently constrained to inside plant.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Mature

Inherits properties from:

- GlobalClass

Table 56: Attributes for Equipment

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Mature	A Connector on the Equipment.
_containedHolder	Holder	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Mature	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.
_addressedByHolder	Holder	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A Holder through which the Equipment can be identified (where the Holder name/identifier is part of the Address).
_encapsulatedNonFru	Equipment	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An Equipment that is part of this Equipment and that is not separately field replaceable (i.e. will be field replaced with this Equipment).
_exposedCable	Cable	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A Cable that is attached to part of the Equipment at one end and exposed at the other end through a Connector.
_manufacturedThing	ManufacturedThing	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_spatialPropertiesOfType	SpatialPropertiesOfType	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFeatures	MechanicalFeatures	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_physicalProperties	PhysicalProperties	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_functionEnablers	FunctionEnablers	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFunctions	MechanicalFunctions	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_physicalCharacteristics	PhysicalCharacteristics	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_swappability	Swappability	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_structure	EquipmentStructure	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_environmentalRating	EnvironmentalRating	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_nonFruSupportPosition	NonFruSupportPosition	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
isFieldReplaceable	Boolean	1	R	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Indicates whether or not the equipment can be removed and replaced "in the field" (i.e. in a deployment) by normal operations personnel.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_functionBlock	FunctionBlock	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_expectedEquipment	ExpectedEquipment	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_actualEquipment	ActualEquipment	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_location	Location	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_equipmentFunctionalBoundary	ConstraintDomain	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	<p>An identifier that is unique in the context of some scope that is less than the global scope.</p> <p>(This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)</p>

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.3.1.15 EquipmentInstance

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::EquipmentInstance

Represents the per instance invariant properties of the equipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 57: Attributes for EquipmentInstance

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
manufactureDate	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	This attribute represents the date on which this instance is manufactured.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
serialNumber	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute represents the serial number of this instance.
assetInstanceIdentifier	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute represents the asset identifier of this instance from the manufacturer's perspective.

2.3.1.16 EquipmentStructure

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::EquipmentStructure

Represents the form of the equipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 58: Attributes for EquipmentStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
category	EquipmentCategory	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute provides the identifier for a category of equipments regarded as having particular shared characteristics.

2.3.1.17 EquipmentType

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::EquipmentType

Represents the invariant properties of the equipment that define and characterize the type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

Table 59: Attributes for EquipmentType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
description	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Text describing the type of Equipment.
modelIdentifier	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute identifies the model of the equipment.
partTypeIdentifier	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute identifies the part type of the equipment.
typeName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute identifies the type of the equipment.
version	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute identifies the version of the equipment.

2.3.1.18 ExpectedEquipment

Qualified Name: CoreModel::CorePhysicalModel::ExpectedAndActual::ObjectClasses::ExpectedEquipment

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.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

2.3.1.19 ExpectedHolder

Qualified Name: CoreModel::CorePhysicalModel::ExpectedAndActual::ObjectClasses::ExpectedHolder

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

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.3.1.20 FieldReplaceable

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::FruNonFruRules::ObjectClasses::FieldReplaceable

A rule class (an abstract specialization of Equipment) that represents an equipment that can be replaced in the field.

May plug in to a holder in another equipment (if not stand-alone).

Realization could use an FRU Boolean on Equipment.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Equipment

Table 60: Attributes for FieldReplaceable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_equipmentNonFru	NonFieldReplaceable	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_holder	Holder	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_holderAddress	Holder	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_connector	Connector	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_connector Inherited	Connector	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Mature	A Connector on the Equipment.
_containedHolder Inherited	Holder	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Mature	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.
_addressedByHolder Inherited	Holder	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A Holder through which the Equipment can be identified (where the Holder name/identifier is part of the Address).
_encapsulatedNonFru Inherited	Equipment	0..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An Equipment that is part of this Equipment and that is not separately field replaceable (i.e. will be field replaced with this Equipment).

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_exposedCable Inherited	Cable	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A Cable that is attached to part of the Equipment at one end and exposed at the other end through a Connector.
_manufacturedThing Inherited	ManufacturedThing	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_spatialPropertiesOfType Inherited	SpatialPropertiesOfType	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_physicalProperties Inherited	PhysicalProperties	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_functionEnablers Inherited	FunctionEnablers	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_mechanicalFunctions Inherited	MechanicalFunctions	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_physicalCharacteristics Inherited	PhysicalCharacteristics	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_swappability Inherited	Swappability	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_structure Inherited	EquipmentStructure	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_environmentalRating Inherited	EnvironmentalRating	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_nonFruSupportPosition Inherited	NonFruSupportPosition	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
isFieldReplaceable	Boolean	1	R	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Indicates whether or not the equipment can be removed and replaced "in the field" (i.e. in a deployment) by normal operations personnel.
_functionBlock Inherited	FunctionBlock	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_expectedEquipment Inherited	ExpectedEquipment	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_actualEquipment Inherited	ActualEquipment	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_location Inherited	Location	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_equipmentFunctionalBoundary Inherited	ConstraintDomain	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.3.1.21 FunctionBlock

Qualified Name: CoreModel::CorePhysicalModel::EquipmentToFunction::ObjectClasses::FunctionBlock

Represents the chunks of base functionality provided by the equipment.

The chunks of base functionality are likely to relate to the hardware layout and be quite distinct from the functions of the familiar abstract representation.

The functions are necessarily abstract and, to a degree, virtualized.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Table 61: Attributes for FunctionBlock

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_atomicFunction	AtomicFunction	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_equipment	Equipment	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.22 FunctionEnablers

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::DynamicDetails::FunctionEnablers

Represents the dynamic aspects of the properties that relate to the motive force that directly enable functionality to emerge from the equipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 62: Attributes for FunctionEnablers

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
powerState	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	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 PC instances representing the relevant parts of the Power function (e.g. different voltage supplies).

2.3.1.23 GroupOfPins

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::GroupOfPins

A group of pins from one or more connectors relevant for some purpose.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

2.3.1.24 GroupOfStrands

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::GroupOfStrands

A group of strands from one or more cables relevant for some purpose

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.3.1.25 Holder

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::ObjectClasses::Holder

Represents a space in an equipment in which another equipment can be fitted in the field.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Mature

Inherits properties from:

- LocalClass

Table 63: Attributes for Holder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The connector associated with a Holder of an Equipment. May represent connector on a backplane that takes Field Replaceable Units or a connector on a circuit pack that takes an SFP (Small Form-factor Pluggable).
_occupyingFru	Equipment	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Mature	The FRU that is occupying the holder. A holder may be unoccupied. An FRU may occupy more hat one holder (using or blocking are intentionally not distinguished here).
_spatialPropertiesOfType	SpatialPropertiesOfType	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_holderMonitor	HolderMonitor	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
holderLocation	Address	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The relative position of the holder in the context of its containing equipment along with the position of that containing Equipment (and further recursion).
_position	Position	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_holderStructure	HolderStructure	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_environmentalRating	EnvironmentalRating	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_supportedEquipmentType	SupportedEquipmentType	1..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An Equipment type that the Holder can accommodate (is compatible with).
_expectedHolder	ExpectedHolder	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_actualHolder	ActualHolder	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.3.1.26 HolderMonitor

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::DynamicDetails::HolderMonitor

Represents the dynamic state of the holder instance.

Applied stereotypes:

- OpenModelClass

- support: MANDATORY
- Experimental

Table 64: Attributes for HolderMonitor

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isActive	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Indicates that the holder is active and is supporting an Equipment instance.
isActualMismatchWithExpected	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Indicates that the equipment in the holder does not match the equipment expected to be in the holder.
_aggregateFunction	AggregateFunction	1	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Obsolete
_supportingPc	ProcessingConstruct	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The functionality supporting this entity.

2.3.1.27 HolderStructure

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::HolderStructure

Represents the form of the holder.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 65: Attributes for HolderStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
holderCategory	HolderCategory	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
isCaptive	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
isGuided	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	This attribute indicates whether the holder has guides that constrain the position of the equipment in the holder or not.
isQuantisedSpace	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.28 Location

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::DynamicDetails::Location

Represents where the equipment is.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 66: Attributes for Location

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
equipmentLocation	Address	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
geographicalLocation	Address	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.29 ManufacturedThing

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::ManufacturedThing

Collects all invariant aspects of a manufactured thing.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 67: Attributes for ManufacturedThing

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_manufacturerProperties	ManufacturerProperties	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_equipmentType	EquipmentType	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_equipmentInstance	EquipmentInstance	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_operatorAugmentedEquipmentType	OperatorAugmentedEquipmentType	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_operatorAugmentedEquipmentInstance	OperatorAugmentedEquipmentInstance	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.30 ManufacturerProperties

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::ManufacturerProperties

Represents the properties of the manufacturer.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 68: Attributes for ManufacturerProperties

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
manufacturerIdentifier	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
manufacturerName	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.31 MechanicalFeatures

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::MechanicalFeatures

Represents the invariant characteristics of dynamic mechanical features of a physical thing.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

2.3.1.32 MechanicalFunctions

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::DynamicDetails::MechanicalFunctions

Represents the dynamic aspects of the mechanical functions of the equipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 69: Attributes for MechanicalFunctions

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
rotationSpeed	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.33 MultipleStrandSpan

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::MultipleStrandSpan

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:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- GroupOfStrands

Table 70: Attributes for MultipleStrandSpan

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_accessPort	AccessPort	2..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_strand	Strand	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.34 NonFieldReplaceable

Qualified Name: CoreModel::CorePhysicalModel::RuleModels::FruNonFruRules::ObjectClasses::NonFieldReplaceable

A rule class (an abstract specialization of Equipment) that represents an equipment that cannot be replaced in the field.

Is simply a subordinate part of an FRU (or another NFRU – where there must be an FRU at the top of the hierarchy).

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).

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- Equipment

2.3.1.35 NonFruSupportPosition

Qualified Name: CoreModel::CorePhysicalModel::EquipmentSpecification::ObjectClasses::NonFruSupportPosition

Equivalent to the holder for the FRU, represents in the specification a place where one or more types of non-FRU could be present. Unlike the FRU in a Holder, the non-FRU present is fixed in place whilst the equipment is in the field (as it is not Field-replaceable).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 71: Attributes for NonFruSupportPosition

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_supportedNonFruType	SupportedNonFruType	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.36 OperatorAugmentedEquipmentInstance

Qualified Name:

CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::OperatorAugmentedEquipmentInstance

Represents the invariant properties of the equipment asset allocated by the operator that define and characterize the type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 72: Attributes for OperatorAugmentedEquipmentInstance

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
assetInstanceIdentifier	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	This attribute represents the asset identifier of this instance from the operator's perspective.

2.3.1.37 OperatorAugmentedEquipmentType

Qualified Name:

CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::OperatorAugmentedEquipmentType

Represents the invariant properties of the equipment asset allocated by the operator that define and characterize the type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 73: Attributes for OperatorAugmentedEquipmentType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
assetTypeIdentifier	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.38 PhysicalCharacteristics

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::PhysicalCharacteristics

Represents the invariant physical characteristics (including composition and physical robustness) of the type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 74: Attributes for PhysicalCharacteristics

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
weightCharaceristics	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
fireCharacteristics	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
materials	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.39 PhysicalProperties

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::DynamicDetails::PhysicalProperties

Represents the dynamic aspects of the physical environmental properties of the equipment.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 75: Attributes for PhysicalProperties

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
temperature	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.40 Pin

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::Pin

An individual physical connection point (male or female) that is not relevantly divisible.

May be capable of carrying electrical or optical signals.

A pin normally has only one wire/fiber strand attached.

It may have more than one wire/fiber attached but is such that the attachment forms a physical merge (all attached things receive exactly the same signal and any inputs to the pin are electrically/optically merged).

This class is abstract.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 76: Attributes for Pin

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_position	Position	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
orientation	ConnectorAndPinOrientation	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.41 PinGroup

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::PinGroup

A group of pins relevant for some purpose.

This class is abstract.

Applied stereotypes:

- OpenModelClass

- support: MANDATORY
- Experimental

Table 77: Attributes for PinGroup

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pin	Pin	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.42 PinLayout

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::PinLayout

The structuring of pins in a connector.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 78: Attributes for PinLayout

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_position	Position	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.43 Position

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::Position

Represents the invariant relative position of the holder (with respect to some frame of reference in an equipment) or connector on an equipment or pin in a connector.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 79: Attributes for Position

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
relativePosition	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.44 ResilienceSelector

Qualified Name: CoreModel::CorePhysicalModel::EquipmentToFunction::ObjectClasses::ResilienceSelector

Represents the ability to select capability from two or more identical FunctionalBlocks so as to give rise to an equivalent emergent resilient function.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Table 80: Attributes for ResilienceSelector

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_resilientFunctionBlock	ResilientFunctionBlock	1	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_functionBlock	FunctionBlock	2..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.45 ResilientFunctionBlock

Qualified Name: CoreModel::CorePhysicalModel::EquipmentToFunction::ObjectClasses::ResilientFunctionBlock

Represents the functions emergent from a function protection process.

The emergent functions are necessarily significantly virtualized.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Table 81: Attributes for ResilientFunctionBlock

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_atomicFunction	AtomicFunction	0..*	RW	Obsolete OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.46 SignalRefPt

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::SignalRefPt

A single coherent signal as processed by a single LTP.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 82: Attributes for SignalRefPt

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_elementalSignals	ElementalSignals	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.47 SignalRefPtGroup

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::SignalRefPtGroup

A conceptual access for a group of signals (where that group of signals cannot be separated).

A physical indivisible group of signals.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 83: Attributes for SignalRefPtGroup

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_accessPort	AccessPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_signalRefPt	SignalRefPt	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.48 SpatialPropertiesOfType

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::SpatialPropertiesOfType

Represents the basic invariant spatial properties of a physical thing.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 84: Attributes for SpatialPropertiesOfType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
height	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
width	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
length	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.49 Strand

Qualified Name: CoreModel::CorePhysicalModel::ConnectorAndPin::ObjectClasses::Strand

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:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 85: Attributes for Strand

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pin	Pin	0..2	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_adjacentstrand	Strand	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_splicedStrand	Strand	0..2	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
strandMediaCharacteristics		1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.1.50 SupportConstraints

Qualified Name: CoreModel::CorePhysicalModel::EquipmentSpecification::ObjectClasses::SupportConstraints

Rules related to how both non-FRU and FRU presence restricts the potential for additional equipments to be installed. An FRU type installed in one holder may limit the FRU types that can be installed in another holder etc.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 86: Attributes for SupportConstraints

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_constrainedSupportedNonFruType	SupportedNonFruType	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_constrainedSupportedFruType	SupportedEquipmentType	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.51 SupportedEquipmentType

Qualified Name: CoreModel::CorePhysicalModel::EquipmentSpecification::ObjectClasses::SupportedEquipmentType

The FRU equipment types supported by the holder.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 87: Attributes for SupportedEquipmentType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fruDetails	Equipment	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_supportConstraints	SupportConstraints	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_holder	Holder	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.52 SupportedNonFruType

Qualified Name: CoreModel::CorePhysicalModel::EquipmentSpecification::ObjectClasses::SupportedNonFruType

The non-FRU equipment types supported by the non-FRU support position.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 88: Attributes for SupportedNonFruType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_nonFruDetails	Equipment	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_blockedNonFruPosition	NonFruSupportPosition	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_supportConstraints	SupportConstraints	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.3.1.53 Swappability

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::ObjectClasses::InvariantDetails::Swappability

Represents the degree of field replacement that is possible for the equipment type.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 89: Attributes for Swappability

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isHotSwappable	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.2 Data Types

2.3.2.1 PowerRating

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::DataTypes::PowerRating

Applied stereotypes:

- Experimental

Table 90: Attributes for PowerRating

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
powerRatingName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Name of the rating property, e.g. Absolute.
powerRatingValue	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.3.2.2 ThermalRating

Qualified Name: CoreModel::CorePhysicalModel::EquipmentDetail::DataTypes::ThermalRating

A thermal rating value range.

Applied stereotypes:

- Experimental

Table 91: Attributes for ThermalRating

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
thermalRatingName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Name of the rating property, e.g. Absolute.
maximumTemperature	Real	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	The maximum temperature in Celsius.
minimumTemperature	Real	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The minimum temperature in Celsius.

2.3.3 Enumeration Types

2.3.3.1 ConnectorAndPinOrientation

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::DataTypes::ConnectorAndPinOrientation

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.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- MALE:
 - The connecting elements are dominantly protrusions.
 - Applied stereotypes:
 - Experimental
- FEMALE:
 - The connecting elements are dominantly indentations.
 - Applied stereotypes:
 - Experimental
- 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.
 - Applied stereotypes:
 - Experimental

2.3.3.2 EquipmentCategory

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::DataTypes::EquipmentCategory

The form of equipment.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- SUBRACK:

- An assembly with holders designed to accommodate CIRCUIPACKs.
The assembly is designed to be mounted in a RACK.
- Applied stereotypes:
 - Experimental
- CIRCUIPACK:
 - 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.
 - Applied stereotypes:
 - Experimental
- SMALL_FORMFACTOR_PLUGGABLE:
 - A small assembly (compared to a CIRCUIPACK) with connectors compatible with those in a holder.
The assembly is designed to be mounted in a holder (SLOT) of a CIRCUIPACK or STAND_ALONE_UNIT.
 - Applied stereotypes:
 - Experimental
- 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 CIRCUIPACKs or for SMALL_FORMFACTOR_PLUGGABLEs.
 - Applied stereotypes:
 - Experimental
- 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.
 - Applied stereotypes:
 - Experimental

2.3.3.3 HolderCategory

Qualified Name: CoreModel::CorePhysicalModel::EquipmentPatternStructure::DataTypes::HolderCategory

The form of holder.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- SLOT:
 - A guided holder with fixed connectors.
The guided holder is designed to take a particular form of CIRCUI_T_PACK or SMALL_FORMFACTOR_PLUGGABLE
 - Applied stereotypes:
 - Experimental

2.3.4 Primitive Types

2.4 Core Specification Model data dictionary

This section provides the details for the model of Specification.

2.4.1 Classes

2.4.1.1 AdapterPropertySpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::AdapterPropertySpec

The specification of the properties of the client side adapter of an LP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 92: Attributes for AdapterPropertySpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_poolPropertySpec	PoolPropertySpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_constrainingMappingInteractionRule	MappingInteractionRuleSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_ownedMappingInteractionRule	MappingInteractionRuleSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_terminationAccessPort	TerminationSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The Termination bound to the Adapter.

2.4.1.2 CascOccurrenceInFcSpec

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::CascOccurrenceInFcSpec

A CASC component that is part of a system of components that represents the behavior of an FC/ForwardingOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 93: Attributes for CascOccurrenceInFcSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_cascPortOccurrence	CascPortOccurrenceInFcSpec	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.3 CascPortOccurrenceInFcSpec

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::CascPortOccurrenceInFcSpec

Port of a CascOccurrence where the port may be bound to a port of an LpOccurrence.

This port may NOT be exposed as a port on the containing FC/ForwardingOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.4.1.4 ClientSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::ClientSpec

The specification of a client layer protocol supported by the adapter of an LP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 94: Attributes for ClientSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_mappingInteractionRule	MappingInteractionRuleSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.5 ClockSpec

Qualified Name: CoreModel::CoreSpecificationModel::ClockSpec::ObjectClasses::ClockSpec

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 95: Attributes for ClockSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_clockSpec	ClockSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.6 ComposedPart

Qualified Name: CoreModel::CoreSpecificationModel::SpecPattern::ObjectClasses::ComposedPart

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

Table 96: Attributes for ComposedPart

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_partSpecReference:ClassRef	Metaclass:Class	1..*	RW	Example OpenModelAttribute • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass=Entity/ComposedPart Experimental SpecReference	See referenced class

2.4.1.7 ConfigurationAndSwitchControllerSpec

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::ConfigurationAndSwitchControllerSpec

The spec of a ConfigurationAndSwitchController.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- GlobalClass

Table 97: Attributes for ConfigurationAndSwitchControllerSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_switchControlRule	ControlRule	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_ingressSwitchSelection	IngressSwitchSelection	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_egressSwitchSelection	EgressSwitchSelection	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
operationalState <i>Inherited</i>	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl <i>Inherited</i>	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.4.1.8 ConfigurationGroupSpec

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityAdditional::ConfigurationGroupSpec

The specification of the grouping rules for a particular configuration of FCs and CASCs.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

Inherits properties from:

- GlobalClass

Table 98: Attributes for ConfigurationGroupSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_casc	ConfigurationAndSwitchControllerSpec	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_forwardingSpec	ForwardingSpec	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_ltpAssociationRule	LtpAssociationRule	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.4.1.9 ConnectionPointAndAdapterSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::ConnectionPointAndAdapterSpec

The specification of the server facing connection point and the adapter that deals with the transformation of a single signal of the layer protocol to/from the server.

Equivalent to an ITU-T CTP [ITU-T G.8052][G.874.1].

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 99: Attributes for ConnectionPointAndAdapterSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_internalForwardingSpecPort	InternalForwardingSpecPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_poolPropertySpec	PoolPropertySpec	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The specification of the server facing connection point and the adapter that deals with the transformation of a single signal of the layer protocol to/from the server. Equivalent to an ITU-T CTP [ITU-T G.8052].
_serverAccessPoint	ServerSpec	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_lpSpecReference:ClassRef	Metaclass:Class	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass: ConnectionPointAndAdapterSpec Experimental SpecReference	Reference to the specific LpSpec class that defines the properties that augment the instance of ConnectionPointAndAdapterSpec.

2.4.1.10 ControlRule

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::ControlRule

A rule describes the bounds of the behavior of a CASC.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- LocalClass

2.4.1.11 EgressPortSet

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::EgressPortSet

The grouping of FC egress ports that have the same behavior and relationship to the switch etc.
Will carry rules for the grouping.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

2.4.1.12 EgressSwitchSelection

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::EgressSwitchSelection

Rules for the control of the state of the egress switch.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 100: Attributes for EgressSwitchSelection

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
setMember	ToBeDefined	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Provides the rules that define which port set members may be selected. This is a list of rules where each rule has: <ul style="list-style-type: none"> - condition - current input(s) to mirror in output - controlled by signalling - specific referenced output - select all, subset or individual - if subset, then define subset criteria - select none - i.e. high impedance (open switch option) - use of switching priority - rule override priority (where there are conflicting conditions). 0 is highest priority. - switch on signalling A formal structure is required here.

2.4.1.13 Entity

Qualified Name: CoreModel::CoreSpecificationModel::SpecPattern::ObjectClasses::Entity

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

Table 101: Attributes for Entity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_extensionContainer	ExtensionContainer	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_composedPart	ComposedPart	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_entitySpecReference:ClassRef	Metaclass:Class	1..*	RW	Example OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass=Entity Experimental SpecReference	See referenced class

2.4.1.14 EntitySpec

Qualified Name: CoreModel::CoreSpecificationModel::SpecPattern::ObjectClasses::EntitySpec

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

Table 102: Attributes for EntitySpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_partSpec	PartSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
specTargetClass	Metaclass:Class:Name	1	RW	Example SpecTarget OpenModelAttribute <ul style="list-style-type: none"> • valueRange: Entity, Entity/ExtensionContainer • support: MANDATORY Experimental	The name of the class (e.g. ForwardingConstruct) to which the specification applies.

2.4.1.15 ExtensionContainer

Qualified Name: CoreModel::CoreSpecificationModel::SpecPattern::ObjectClasses::ExtensionContainer

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

Table 103: Attributes for ExtensionContainer

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_entitySpecReference:ClassRef	Metaclass:Class	1..*	RW	Example OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: <ul style="list-style-type: none"> specTargetClass=Entity/ExtensionContainer Experimental SpecReference	See referenced class

2.4.1.16 FdAndLinkRule

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::ObjectClasses::FdAndLinkRule

Set of "AND" rules related to creation of FCs across the FD/Link (i.e., all rules have to be met for the FC creation to be allowed).

Embedded conditions all have to be met and hence are AND. Elements of the list attributes are ORs.

Absence fcSpec NOT valid for FORWARDING rules (only valid for cost/risk etc. rules).

Absence of FcPortRole means all roles for referenced spec.

Absence of direction means all directions.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 104: Attributes for FdAndLinkRule

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
ruleType	RuleType	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates how to interpret the rule statements.
forwardingRule	ForwardingRule	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The specific forwarding capability.
complexRuleQualifier	ToBeDefined	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	complexRuleQualifier is used to modulate the rule. complexRuleQualifier covers case such as same channel but can reference any property of the FD, of the associated LTP and of the FC instance to be created. Qualifier should be capable of expressing rule interaction. Provides restrictions (such as same channel). Note: May be better to have a same index/any index explicit rule. Could have "property=x" valueEquation=same, increment, etc.
fcSpec	ToBeDefined	0..1	RW	Obsolete OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates the type(s) of FC to which the rule applies.
fcPortRole	PortRoleRule	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates the port role to which the rule applies. If an FD carries a port role that role applies also to the associated Link rules. fcPortRole corresponded to role defined in the FcSpec. This is a list with rule opportunity. No port role statement means all port roles are allowed.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
fcPortDirection	PortDirection	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	fcPortDirection is a list of FcPortDirection.
overridePriority	Integer	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	overridePriority allows for one rule set to override another.
signalProperty	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The rule only applies to signals with the properties listed. If the attribute is not present then the rule applies to all signals.
_fcSpecReference:ClassRef	Metaclass:Class	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass=ForwardingConstruct Experimental SpecReference	See referenced class

2.4.1.17 FdAndLinkRuleSet

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::ObjectClasses::FdAndLinkRuleSet

Set of "OR" rules related to creation of FCs across the FD/Link (i.e. only one of the rules have to be met for the FC creation to be allowed).

Absence of RuleSet means "Any", i.e. all points, all FcTypes etc.

Presence of RuleSet means possibilities must all be defined by rules

Absence of forwardingRule means no explicit stated possibilities.

No capacity statement means no capacity restrictions.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 105: Attributes for FdAndLinkRuleSet

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fdRule	FdAndLinkRule	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
isRuleOnly	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates that the FD is only carrying rules and that FC creation is the FD is NOT allowed.
_layerProtocolParameterSpec	LayerProtocolParameterSpec	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.18 ForwardingOccurrence

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::ForwardingOccurrence

A forwarding component that is part of a system of components that represents the behavior of an FC or a ForwardingOccurrence at a higher abstraction (leading to an FC).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 106: Attributes for ForwardingOccurrence

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_forwardingPortOccurence	ForwardingPortOccurrence	2..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_forwardingSpec	ForwardingSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.19 ForwardingPortOccurrence

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::ForwardingPortOccurrence

Port of a ForwardingOccurrence where the port may be bound to another port of another ForwardingOccurrence or to another component or may be exposed as a port on the containing FC/ForwardingOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 107: Attributes for ForwardingPortOccurrence

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_forwardingPortOccurrence	ForwardingPortOccurrence	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_lpPortOccurrence	LpPortOccurrenceInFcSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_portSetSpec	PortSetSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.20 ForwardingSpec

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::ForwardingSpec

The overall spec for the forwarding entity.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- GlobalClass

Table 108: Attributes for ForwardingSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_multiSwitchedUniFlow	MultiSwitchedUniFlow	0..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_cascSpec	ConfigurationAndSwitchControllerSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_portSetSpec	PortSetSpec	1..*	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_configurationGroupSpecSpec	ConfigurationGroupSpec	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_ltpAssociationRule	LtpAssociationRule	1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_layerProtocolParameterSpec	LayerProtocolParameterSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
specTargetClass	Metaclass:Class:Name	1	RW	SpecTarget OpenModelAttribute <ul style="list-style-type: none"> • valueRange: Link, ForwardingConstruct • support: MANDATORY Experimental	The name of the class (e.g. ForwardingConstruct) to which the specification applies.
_forwardingOccurrence	ForwardingOccurrence	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_lpOccurrenceInFcSpec	LpOccurrenceInFcSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
_cascOccurrenceInFcSpec	CascOccurrenceInFcSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.4.1.21 IngressPortSet

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::IngressPortSet

The grouping of FC ingress ports that have the same behavior and relationship to the switch etc.
Will carry rules for the grouping.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

2.4.1.22 IngressSwitchSelection

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::IngressSwitchSelection

Rules for the control of the state of the ingress switch.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Table 109: Attributes for IngressSwitchSelection

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
setMember	ToBeDefined	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	<p>Provides the rules that define which port set members may be selected. This is a list of rules where each rule has:</p> <ul style="list-style-type: none"> - condition - current input(s) - any input - any other input not current - specific referenced input - select all, subset or individual - if subset, then define subset criteria - select none - i.e. high impedance (open switch option) - use of switching priority - rule override priority (where there are conflicting conditions). 0 is highest priority. - switch on signalling <p>Simple case of a rule is:</p> <ul style="list-style-type: none"> - select individual - prefer higher priority input - switch away on failure of input to highest priority working input - select working input - apply reversion and priorities <p>A formal structure is required here.</p>

2.4.1.23 InternalForwardingSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::InternalForwardingSpec

InternalForwardingSpec defines the encapsulated forwarding in the LP.

The InternalForwarding is essentially a ForwardingConstruct.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 110: Attributes for InternalForwardingSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_internalForwardingSpecPort	InternalForwardingSpecPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_fcSpecReference:ClassRef	Metaclass:Class	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Reference to the specific FcSpec class that defines the properties that augment the instance of InternalForwardingSpec.

2.4.1.24 InternalForwardingSpecPort

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::InternalForwardingSpecPort

The specification of the flexibility of the association between the ConnectionPoint and the Termination of the LP.

This is the port of the Internal Forwarding and is the equivalent to the FcPort.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 111: Attributes for InternalForwardingSpecPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_internalForwardingSpecPort	InternalForwardingSpecPort	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Allows for specification of complex connectivity between multiple terminations in a sophisticated LP.

2.4.1.25 LayerProtocolParameterSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LayerProtocolParameterSpec

Offers the opportunity to define a list of layer-protocol related parameters.

Used to specify the extension a class.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.4.1.26 LpOccurrence

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LpOccurrence

An occurrence of a LP in the specified LTP where the LP occurrence will have an identifier.
The LP occurrence will have a spec.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 112: Attributes for LpOccurrence

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpPortOccurrence	LpPortOccurrence	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_lpSpec	LpSpec	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.27 LpOccurrenceInFcSpec

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::LpOccurrenceInFcSpec

A termination component that is part of a system of components that represents the behavior of an FC/ForwardingOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 113: Attributes for LpOccurrenceInFcSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpPortOccurrence	LpPortOccurrenceInFcSpec	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_lpSpec	LpSpec	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.28 LpPortOccurrence

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LpPortOccurrence

The occurrence of a port on the LP occurrence.

The port occurrence will correspond to a port in the spec of the corresponding LpOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 114: Attributes for LpPortOccurrence

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpPortSpec	LpPortSpec	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_boundToLpPortOccurrence	LpPortOccurrence	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.29 LpPortOccurrenceInFcSpec

Qualified Name:

CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::OccurrencesInFcSpec::LpPortOccurrenceInFcSpec

Port of a LpOccurrence where the port may be bound to another port of another LpOccurrence, a port of a ForwardingOccurrence or to another component.

This port may NOT be exposed as a port on the containing FC/ForwardingOccurrence.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 115: Attributes for LpPortOccurrenceInFcSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_cascPortOccurrence	CascPortOccurrenceInFcSpec	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_lpPortSpec	LpPortSpec	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_lpPortOccurrence	LpPortOccurrenceInFcSpec	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.30 LpPortSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LpPortSpec

The spec for the ports of the LP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 116: Attributes for LpPortSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_internalForwardingSpecPort	InternalForwardingSpecPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_terminationForwardingPort	TerminationSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_cpForwardingPort	ConnectionPointAndAdapterSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_providerView	ProviderViewSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_poolPropertySpecClientAccess	PoolPropertySpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_terminationAccessPort	TerminationSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_adapterProviderAccess	AdapterPropertySpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_providerAccess	ServerSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.31 LpSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LpSpec

The specification of the capabilities of a specific type of LP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 117: Attributes for LpSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_terminationSpec	TerminationSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A termination function of the LP.
_adapterPropertySpec	AdapterPropertySpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	An adapter definition of the LP.
_providerViewSpec	ProviderViewSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Access to the resources made available from another view.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_serverSpec	ServerSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Access to the resources from the provider.
_lpSpec	LpSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Component LP of an LP.
specTargetClass	Metaclass:Class:Name	1	RW	SpecTarget OpenModelAttribute • valueRange: LayerProtocol TerminationSpec ConnectionPointAndAdapterSpec • support: MANDATORY Experimental	The name of the class (e.g. LayerProtocol) to which the specification applies.
_internalForwardingSpec	InternalForwardingSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Internal forwarding definition of the LP.
_lpPortSpec	LpPortSpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Ports on the LP connecting to other LPs or to the ports of the LTP.

2.4.1.32 LtpAssociationRule

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityAdditional::LtpAssociationRule

Rules for the association from the port spec to LTPs identifying restrictions of use.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

2.4.1.33 LtpPortSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LtpPortSpec

Spec for the LTP Port. Each LTP Port relates to an association end related to the LTP class.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 118: Attributes for LtpPortSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpPortOccurrence	LpPortOccurrence	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
externalAccess	AccessOpportunity	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	To be provided

2.4.1.34 LtpSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::LtpSpec

The specification of a specific type of LTP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 119: Attributes for LtpSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpSpec	LpSpec	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	See referenced class
specTargetClass	Metaclass:Class:Name	1	RW	SpecTarget OpenModelAttribute <ul style="list-style-type: none"> valueRange: LogicalTerminationPoint support: MANDATORY condition: Experimental 	The name of the class (e.g. LogicalTerminationPoint) to which the specification applies.
_ltpPortSpec	LtpPortSpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	See referenced class
_lpOccurrence	LpOccurrence	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	See referenced class

2.4.1.35 MappingInteractionRuleSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::MappingInteractionRuleSpec

The specification of the interaction between the support for different client layer protocol signals.

For example an LP that supports 20 layer protocol X signals and 5 layer protocol Y signals may be such that a particular layer protocol X instance being used eliminates the possibility of using a particular layer protocol Y instance being used.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.4.1.36 MultiSwitchedUniFlow

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::MultiSwitchedUniFlow

A switched unidirectional forwarding element that can take one or more inputs and switch to one or more outputs. The switch can also be open (high impedance).

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 120: Attributes for MultiSwitchedUniFlow

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ingressPortSet	IngressPortSet	1..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressPortSet	EgressPortSet	1..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_cascSpec	ConfigurationAndSwitchControllerSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_ingressFcPortSet	IngressPortSet	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressFcPortSet	EgressPortSet	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_layerProtocolParameterSpec	LayerProtocolParameterSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.4.1.37 PartSpec

Qualified Name: CoreModel::CoreSpecificationModel::SpecPattern::ObjectClasses::PartSpec

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

Table 121: Attributes for PartSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
specTargetClass	Metaclass:Class:Name	1	RW	Example SpecTarget OpenModelAttribute <ul style="list-style-type: none"> valueRange: Entity/ComposedPart support: MANDATORY Experimental	The name of the class (e.g. LayerProtocol) to which the specification applies.

2.4.1.38 PoolPropertySpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::PoolPropertySpec

The specification for the properties of the pool of available instances of a particular client layer protocol. This may cover numbering range, capacity, number of instances etc.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 122: Attributes for PoolPropertySpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_clientSpec	ClientSpec	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
clientCapacity	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The size of the units of the pool.
_adapterPropertySpec	AdapterPropertySpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.39 PortSetSpec

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::FcCapabilityCore::PortSetSpec

The specification of a set of equivalent port of the forwarding entity.

For example, there may be a several ports with exactly the same behavior with respect to each other and with respect to all other ports. These can all reference one PortSetSpec.

In a symmetric FC this means one PortsSetSpec can be used for all ports.

Applied stereotypes:

- Preliminary
- OpenModelClass
 - support: MANDATORY

Inherits properties from:

- LocalClass

Table 123: Attributes for PortSetSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ingressPortSet	IngressPortSet	0..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressPortSet	EgressPortSet	0..*	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_ltpAssociationRule	LtpAssociationRule	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
role	PortRole	1	RW	Preliminary OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	Role of the port in the context of the ForwardingSpec.
_layerProtocolParameterSpec	LayerProtocolParameterSpec	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
isInternalPort	Boolean	1	R	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The FcPort is not exposed and cannot have associated LTPs. This form of FcPort is used to enable chaining of FcSwitches or FcRoutes in complex network protection scenarios.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_forwardingPortOccurrence	ForwardingPortOccurrence	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	See referenced class
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.4.1.40 ProviderViewSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::ProviderViewSpec

The specification of the properties of an LP at the base of a virtual/floating LTP that relate to the provider of capacity/capability for that floating LTP.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 124: Attributes for ProviderViewSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_poolPropertySpec	PoolPropertySpec	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.4.1.41 ServerSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::ServerSpec

The specification of the server side of an LP at the base of an LTP that supports the creation of server LTPs for use in an inverse multiplexing scheme.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.4.1.42 TerminationSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::TerminationSpec

The specification of the layer protocol termination (including framing, modulation etc.).

For example, the specification of the function that takes a MAC frame and extracts the content (removing the MAC address in the process).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 125: Attributes for TerminationSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_internalForwardingSpecPort	InternalForwardingSpecPort	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_adapterPropertySpec	AdapterPropertySpec	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_lpSpecReference:ClassRef	Metaclass:Class	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY • condition: specTargetClass: TerminationSpec Experimental SpecReference	Reference to the specific LpSpec class that defines the properties that augment the instance of TerminationSpec.

2.4.2 Data Types

2.4.2.1 AccessOpportunity

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::TypeDefinition::AccessOpportunity

Applied stereotypes:

- Experimental

Table 126: Attributes for AccessOpportunity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
partner	Partner	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The class of the instance to which this port may be bound.
qualifier	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A property of the instance of the related class that must be present at a stated value to allow the ports to be bound. For example the layerProtocol of a related port must be of the same as the layerProtocol of LP related to the LTP port. This attribute requires more formal definition.

2.4.2.2 Metaclass:Class

Qualified Name: CoreModel::CoreSpecificationModel::TypeDefinitions::Metaclass:Class

This datatype represents the "<<Metaclass>> Class" from the UML metamodel.

An instance of the referencing Class (e.g. LTP) will reference a Class (not an instance).

This referenced Class will provide definition to extend the referencing instance.

So, for example, an LTP instance will have the attributes defined in the LTP class and also the attributes defined in the referenced Class (an LtpSpec).

The referenced Class may:

- (1) provide invariant properties (that are the same for many instances) that then are not conveyed with the referencing instance.
- (2) provide definitions for attributes that are present in the instance that are not defined in the Class of the instance (these attribute may have been pruned and refactored from one or more external definition sources).
- (3) apply constraints to attributes in the instance that were defined in the class of the referencing instance.
- (4) replace attributes that were present in the class of the referencing instance by a new definition (same name).;

Applied stereotypes:

- Experimental

Table 127: Attributes for Metaclass:Class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Name	Metaclass:Class:Name	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The text name of the Class

2.4.2.3 Metaclass:Class:Name

Qualified Name: CoreModel::CoreSpecificationModel::TypeDefinitions::Metaclass:Class:Name

Applied stereotypes:

- Experimental

2.4.2.4 PortRoleRule

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::PortRoleRule

Constrains which ports the rule applies to.

Applied stereotypes:

- Experimental

Table 128: Attributes for PortRoleRule

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
portRole	PortRole	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The role of the port considered.
portRoleRule	PortRoleRuleOption	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.4.2.5 SignalPropertyRule

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::SignalPropertyRule

Applied stereotypes:

- Experimental

Table 129: Attributes for SignalPropertyRule

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
signalPropertyName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the signal property to which the rule applies.
signalPropertyValueRule	SignalPropertyValueRule	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Indicates whether signal properties should be accounted for or not.
applicableSignalValue	String	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Specific values of the signal property to which the rule applies.

2.4.3 Enumeration Types

2.4.3.1 ForwardingRule

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::ForwardingRule

Rule that restricts the creation/deletion of an FC between points grouped by FD or related by the Link between FDs.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- CANNOT_FORWARD_ACROSS_FD_LINK:
 - LTPs referenced by the FD (or indirectly by the Link between FDs) cannot have FCs created between them. This rule overrides all others.
 - Applied stereotypes:
 - Experimental
- MUST_FORWARD_ACROSS_FD_LINK:
 - LTPs referenced by the FD (or indirectly by the Link between FDs) MUST have FCs created between them. This rule overrides all others except the CANNOT_FORWARD rule.
 - Applied stereotypes:
 - Experimental
- MAY_FORWARD_ACROSS_FD_LINK:
 - LTPs referenced by the FD (or indirectly by the Link between FDs) may have FCs created between them. FCs may not be created between points that are not related by this rule either directly in an FD or indirectly via a Link linking two or more FDs. For a Link points in an FD at one end of the Link can be connected to points in an FD at an other end of the Link.
 - Applied stereotypes:
 - Experimental
- NULL_FORWARDING_RULE:
 - Applied stereotypes:
 - Experimental

2.4.3.2 Partner

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::TypeDefinition::Partner

The class of the instance to which this port may be related.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- FC:
 - ForwardingConstruct.
 - Applied stereotypes:
 - Experimental
- FD:
 - ForwardingDomain.
 - Applied stereotypes:
 - Experimental
- LINK:
 - Link.
 - Applied stereotypes:
 - Experimental
- CASC:
 - ConfigurationAndSwitchController.
 - Applied stereotypes:
 - Experimental
- CC:
 - ControlConstruct.
 - Applied stereotypes:
 - Experimental
- CD:
 - ConstraintDomain.
 - Applied stereotypes:
 - Experimental
- PC:

- ProcessingConstruct.
 - Applied stereotypes:
 - Experimental
- PEER:
 - LTP peer.
 - Applied stereotypes:
 - Experimental
- CLIENT:
 - LTP client.
 - Applied stereotypes:
 - Experimental
- SERVER:
 - LTP server.
 - Applied stereotypes:
 - Experimental
- VIEW:
 - LTP in other view.
 - Applied stereotypes:
 - Experimental

2.4.3.3 PortRoleRuleOption

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::PortRoleRuleOption

Indicates how to interpret the PortRole list.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- SAME_ROLE:
 - The ports to which the rule applies must have role from the list in PortRole.
 - Applied stereotypes:
 - Experimental

- **DIFFERENT_ROLE:**
 - The ports to which the rule applies must not have a role from the list in PortRole.
 - Applied stereotypes:
 - Experimental
- **ANY_ROLE:**
 - The rule applies to any role of port.
 - Applied stereotypes:
 - Experimental

2.4.3.4 RuleType

Qualified Name: CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::RuleType

Indicates the focus of the rule.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- **FORWARDING:**
 - The rule relates to creation of FCs.
 - Applied stereotypes:
 - Experimental
- **COST:**
 - The rule relates to forwarding cost.
 - Applied stereotypes:
 - Experimental
- **RISK:**
 - The rule relates to forwarding risk.
 - Applied stereotypes:
 - Experimental
- **CAPACITY:**
 - Applied stereotypes:
 - Experimental

2.4.3.5 **SignalPropertyValueRule**

Qualified Name:

CoreModel::CoreSpecificationModel::ForwardingDomainAndLinkCapability::TypeDefinitions::SignalPropertyValueRule

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- SAME_VALUE:
 - Applied stereotypes:
 - Experimental
- ANY_VALUE:
 - Applied stereotypes:
 - Experimental

2.4.4 **Primitive Types**

2.5 **General Processing Model data dictionary**

This section provides the model details for generalized model of processing.

2.5.1 **Classes**

2.5.1.1 **CdPort**

Qualified Name: CoreModel::ProcessingConstructModel::ObjectClasses::CdPort

The association of the CD to LTPs is direct for symmetric CDs and via CdPort for asymmetric CDs.

The CdPort class models role based access to a CD.

The capability to set up PCs between the associated CdPorts of a CD depends upon the type of CD.

It is asymmetry in this capability that brings the need for CdPort.
The CD can be considered as a component and the CdPort as a Port on that component.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- LocalClass

Table 130: Attributes for CdPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_cdPort	CdPort	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Constraint Domains can be meshed together view their ports directly as well as via LTPs indirectly.
_ltp	LogicalTerminationPoint	0..2	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CdPort is associated with zero or more LTP objects. The LTPs on the CD boundary provide capacity for processing. For symmetric CDs the association is directly from the CD to the LTP.
_pcPort	PcPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Where a CD is asymmetric and hence has CdPorts and where that CD supports PCs, appropriate CdPorts of that CD support the corresponding PcPorts.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.5.1.2 ConstraintDomain

Qualified Name: CoreModel::ProcessingConstructModel::ObjectClasses::ConstraintDomain

ConstraintDomain (CD) models the topological component that represents the opportunity to enable processing of information between two or more of its CdPorts.

A CdPort may be associated with another CdPort or with an LTP at a particular specific layerProtocol.

It provides the context for and constrains the formation, adjustment and removal of PCs and hence offers the potential to enable processing.

The LTPs available are those defined at the boundary of the CD.

A CD may be:

- Asymmetric such that it offers several functions and such that different functions are offered to different attached entities.
- Symmetric such that it offers (or is considered as offering) only one function and the same function is offered to any attached entity with no interactions between functions offered to each attached entity

An asymmetric CD offering a number of distinct functions will have CdPorts through which the distinct functions are accessed.

A symmetric CD offering only a single function need not have CdPorts, the function can be accessed directly from the CD.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

Inherits properties from:

- GlobalClass

Table 131: Attributes for ConstraintDomain

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_cdPort	CdPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An asymmetric CD instance is related to LTPs via CdPorts (essentially the ports of the CD). Symmetric CDs don't have CdPorts and are directly related to LTPs.
_pcInDomain	ProcessingConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more PCs. A constrained PC connects LTPs that are on the CD boundary.
_ltp	LogicalTerminationPoint	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A symmetric CD instance is associated with zero or more LTP objects. The LTPs on the CD boundary provide capacity for processing. For asymmetric FDs the association to the LTP is via the FdPort.
_cdInDomain	ConstraintDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The CD class supports a recursive aggregation relationship such that the internal construction of an CD can be exposed as multiple lower level CDs. Note that the model actually represents an aggregation of lower level CDs into higher level CDs as viewpoints rather than partitions, and supports multiple views
_cascInDomain	ConfigurationAndSwitchControl	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A controller operating in the scope defined.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_equipmentInDomain	Equipment	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A ConstraintDomain can be used to represent physical constraints in the logical view. In this case the CD can be associated to the physical equipment.
_fcInDomain	ForwardingConstruct	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more FCs. A constrained FC connects LTPs that are on the CD boundary.
_fdInDomain	ForwardingDomain	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more FDs. A constrained FD connects LTPs that are on the CD boundary.
_controlConstructInDomain	ControlConstruct	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more ControlConstructs.
_ltpInDomain	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more LTPs.
_linkInDomain	Link	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A CD constrains one or more Links. A constrained Link connects LTPs that are on the CD boundary.
_runningOsInDomain	RunningOperatingSystem	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A RunningOs constrained by the ConstraintDomain.
_runningSoftwareApplicationInDomain	RunningSoftwareApplication	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A RunningSoftwareApplication constrained by the ConstraintDomain.
_runningNativeVmmInDomain	RunningNativeVmm	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A RunningVmm constrained by the ConstraintDomain.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fileSystemInDomain	FileSystem	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A FileSystem constrained by the ConstraintDomain.
_vmfInDomain	ViewMappingFunction	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A ViewMappingFunction constrained by the ConstraintDomain.
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.5.1.3 PcPort

Qualified Name: CoreModel::ProcessingConstructModel::ObjectClasses::PcPort

Represents the access to the functionality of a PC.

Applied stereotypes:

- OpenModelClass

- support: MANDATORY
- Experimental

Inherits properties from:

- LocalClass

Table 132: Attributes for PcPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> ● valueRange: no range constraint ● support: MANDATORY Experimental	A PC instance is associated with zero or more LTP objects. The LTPs on the PC boundary provide capacity for processing. For asymmetric PCs the association to the LTP is via the PcPort.
_pcPort	PcPort	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> ● valueRange: no range constraint ● support: MANDATORY Experimental	A PcPort can be directly bound to another PcPort (rather than via a LTP) to support a simplified application level view (rather than requiring the full transport level view).
_fcPort	FcPort	0..2	RW	OpenModelAttribute <ul style="list-style-type: none"> ● valueRange: no range constraint ● support: MANDATORY Experimental	A PcPort can be directly bound to an FcPort (rather than via a LTP) to support a simplified application level view (rather than requiring the full transport level view). This is used to represent complex semantic associations between PCs where _pcPort direct association is not sufficient.
portRole	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> ● valueRange: no range constraint ● support: MANDATORY 	Identifies the role of the port in the context of the specification of the PC.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	One or more descriptions of the location.

2.5.1.4 PcResilienceSelector

Qualified Name: CoreModel::ProcessingConstructModel::ObjectClasses::PcResilienceSelector

Rudimentary resilience model for PC.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Obsolete

Inherits properties from:

- LocalClass

Table 133: Attributes for PcResilienceSelector

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pc	ProcessingConstruct	2..*	RW	OpenModelAttribute <ul style="list-style-type: none"> valueRange: no range constraint support: MANDATORY Experimental	Alternative PC.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeState <i>Inherited</i>	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState <i>Inherited</i>	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address <i>Inherited</i>	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.5.1.5 ProcessingConstruct

Qualified Name: CoreModel::ProcessingConstructModel::ObjectClasses::ProcessingConstruct

ProcessingConstruct (PC) can be used to represent both potential and enabled processing between two or more of its PcPorts.

A PcPort may be associated with another PcPort or with an LTPs at a particular specific layerProtocol.

Like the LTP, the PC supports any transport protocol including all circuit and packet forms.

The PC is used to effect processing of information extracted from the transport layer protocol signal.

A PC may be:

- Asymmetric such that it offers several functions and such that different functions are offered to different attached entities.
- Symmetric such that it offers (or is considered as offering) only one function and the same function is offered to any attached entity with no interactions between functions offered to each attached entity

An asymmetric PC offering a number of distinct functions will have PcPorts through which the distinct functions are accessed.

A symmetric PC offering only a single function need not have PcPorts, the function can be accessed directly from the PC.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- GlobalClass

Table 134: Attributes for ProcessingConstruct

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pcPort	PcPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An asymmetric PC instance is related to LTPs via PcPorts (essentially the ports of the PC). Symmetric PCs don't have PcPorts and are directly related to LTPs.
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A symmetric PC instance is associated with zero or more LTP objects. The LTPs on the PC boundary provide information for processing and capacity for communication. For asymmetric PCs the association to the LTP is via the PcPort (with stated role, allowing access to a specific function of the PC).
_fd	ForwardingDomain	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more ForwardingDomains can constrain a ProcessingConstruct. A constrained PC connects LTPs on the boundary of the FD.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_composedPc	ProcessingConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The PC class supports a recursive aggregation relationship (PcIsAssemblyOfPc). This allows both: - abstraction where an assembly of PCs (forming a System) is viewed as an abstract PC - decomposition such that the internal construction of a PC can be exposed as multiple lower level PCs. Appropriate use of this association allows each of a collection of PCs to be decomposed into atomic parts (PCs) that can then be assembled into set of complex functions where each function in the set can be viewed as a PC. Note that the model actually represents an aggregation of lower level PCs into higher level PCs as viewpoints rather than partitions, and supports multiple views.
_pcResilienceSelector	PcResilienceSelector	0..1	RW	Obsolete OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	PcResilienceSelector that realizes the resilience of the PC.
_runningSoftwareProcess	RunningSoftwareProcess	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_runningEquipment	Equipment	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	An identifier that is unique in the context of some scope that is less than the global scope. (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself unique, and immutable. The identifier therefore represents the identity of the entity/role. An identifier carries no semantics with respect to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	UUID: An identifier that is universally unique (This should be considered in the context of Identifier: A property of an entity/role with a value that is unique within an identifier space, where the identifier space is itself globally unique, and immutable. An identifier carries no semantics with respect to the purpose or state of the entity) The uuid should be treated as opaque by the user.
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	The operational state is used to indicate whether or not the resource is installed and working.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
administrativeControl Inherited	AdministrativeControl	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The administrativeControl state provides control of the availability of specific resources without modification to the provisioning of those resources. The value is the current control target. The actual administrativeState may or may not be at target.
administrativeState Inherited	AdministrativeState	0..1	R	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	0..1	RW	Preliminary OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	One or more descriptions of the location.

2.5.2 Data Types

2.5.3 Enumeration Types

2.5.4 Primitive Types

2.6 General Control Model data dictionary

This section provides the model details for Control model (other than specific control classes used in modeling of resilience).

2.6.1 Classes

2.6.1.1 ControlConstruct

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlConstruct

Represents control capability/functionality.

ControlConstructs communicate with other ControlConstructs through ControlPorts about things within the related ConstraintDomains.

The ControlConstruct applies to all Control/Management cases including:

- the controller in the Network/Managed Element e.g. an SNMP agent).
- an SDN Controller.
- an EMS.
- an NMS.

This specific model follows a subset of the Component-System Pattern.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 135: Attributes for ControlConstruct

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_exposureContext	ExposureContext	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A view supported by the ControlConstruct that may be exposed at a ControlPort of the ControlConstruct.
_definingViewMapping	ViewMappingFunction	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	ControlConstruct behavior is defined in part by view mappings.
_controlPort	ControlPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A port on the ControlConstruct that allows access to the functions of the ControlConstruct.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_subordinateControlConstructContext	ControlConstruct	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A ControlConstruct that is part of an abstract view of the system that supports the referencing ControlConstruct and hence describes part of the behavior of the referencing ControlConstruct.
_viewMapping	ViewMappingFunction	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	ControlConstruct uses the referenced ViewMapping to produce one view from another.
_controlTasks	ControlTask	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An activity being carried out by the ControlConstruct where that activity is being exposed such that progress can be observed through a ControlPort.

2.6.1.2 ControlPort

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPort

The access to the ControlConstruct following the normal Component-Port pattern (i.e., the functions of a component are accessed via ports).

Is assumed to usually be bidirectional.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 136: Attributes for ControlPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_protectingControlPort	ControlPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A simple representation of resilience where one ControlPorts are identified as providing equivalent information.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_controlPort	ControlPort	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Control Ports may be used to associate controllers in a hierarchy and as peers. Peer controllers are assumed to both the subordinate of each other.
_ltp	LogicalTerminationPoint	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The LTP through which the control messaging/signaling flows.
_providerRole	ProviderRole	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Properties relevant when the ControlPort is exposing the ControlConstruct as a provider of capability.
_userRole	UserRole	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Properties relevant when the ControlPort is exposing the ControlConstruct as a user of capability.
_exposureContext	ExposureContext	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A view presented through the ControlPort.

2.6.1.3 ControlTask

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPortInterfacing::ControlTask

The representation of the task related to some request for activity or some spontaneous activity.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 137: Attributes for ControlTask

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
problemsAndWarnings	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A list of problems and warnings related to the task.
timeToCompletion	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The estimated time to completion of the task.
taskLifecycleState	TaskLifecycleState	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The state of the task (progress etc.).
activityLiveLog	ToBeDefined	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A log of activities.
requestContext	UniversalRequestConstraintStructure	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	All details from the request.
_controlTask	ControlTask	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.6.1.4 ExposureContext

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ExposureContext

A view of the things controlled by a control system. For example, a virtual network of ONF TR-502, or more generally, resources (clause A.10 of ONF TR-521).

A referenced ConstraintDomain bounds a view which is a structured presentation of the underlying controlled things (the "actual" entities) for some purpose.

The model bounded by the ConstraintDomain is constructed by mapping/abstracting the models of the underlying controlled things. The ControlConstruct is itself controlled and presents itself in terms of ControlConstructs (subordinate) in a view.

At one extreme the referenced ConstraintDomain may expose all underlying details of everything controlled with no adjustment from the presentation provided by the controlled things.

A ConstraintDomain may expose a subset of the controlled things that focuses on a particular aspect (e.g., only the ControlConstructs).

A ControlPort has an association to the ExposureContext that explains, via the related ConstraintDomain, what can be acquired through the port

The emphasis is on exposing a constrained set of information and operations

Bounds what is presented over an interface from a particular viewpoint. The domain of control is almost always broader than the entities etc. bounded by the ConstraintDomain.

Represents the domain of control available to the viewer.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 138: Attributes for ExposureContext

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_constraintDomain	ConstraintDomain	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The ConstraintDomain that defines the view to be exposed.

2.6.1.5 ProviderRole

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPortInterfacing::ProviderRole

Representation of the port activity where the ControlConstruct is acting as a provider.

A provider offers capabilities for others to use.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 139: Attributes for ProviderRole

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
providerSynchronousPortRole	ProviderSynchronousPortType	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The UML port representing the provider role.
_userRole	UserRole	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.6.1.6 ProviderSynchronousPortType

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPortInterfacing::ProviderSynchronousPortType

Exposes the synchronous communication capability of the provider aspect of the port.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.6.1.7 UserRole

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPortInterfacing::UserRole

Representation of the port activity where the ControlConstruct is acting as a user.

A user has needs that are satisfied by a provider.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 140: Attributes for UserRole

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
userSynchronousPortRole	UserSynchronousPortType	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The UML port representing the user role.

2.6.1.8 UserSynchronousPortType

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ControlPortInterfacing::UserSynchronousPortType

Exposes the synchronous communication capability of the user aspect of the port.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.6.1.9 ViewMappingFunction

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::ViewMappingFunction

The rules that relate one view to another.

A ControlConstruct aggregates ViewMappingFunctions.

Each ViewMappingFunction in the context of a ControlConstruct define the relationship between the views presented in an ExposureContext of that ControlConstruct and other views within the Controller.

The ViewMappingFunction is applied to the entities aggregated by one or more ConstraintDomains (via VmfPort - CdPort VmfMapsFromCdConstraintSet to construct the view in another ConstraintDomain (via VmfPort - CdPort VmfGovernsCdConstraintSet association).

For example, a pair of LTPs with matching adjacency tags in a nodal view may be mapped to a Link in a network view where the rules would describe the matching criteria etc.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

- Experimental

Table 141: Attributes for ViewMappingFunction

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_exposureContext	ExposureContext	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	An ExposureContext available to the ViewMappingFunction.
_vmfPort	VmfPort	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A port of the ViewMappingFunction.

2.6.1.10 VmfPort

Qualified Name: CoreModel::GeneralControllerModel::ObjectClasses::VmfPort

A port of the MappingFunction through which the effects of the mapping is exposed.

This can be an input to the mapping of as an output of the mapping where the inputs and outputs may have more detailed roles.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 142: Attributes for VmfPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_vmfPort	VmfPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Feeding to/from another Vmf.
_sourceCdPort	CdPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Drawing from a ConstraintDomain that aggregates classes to feed the mapping.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_governedCdPort	CdPort	0..1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Causing instances of classes to be created/deleted/modified in the context of a ConstraintDomain that aggregates a view. This governs what the ConstraintDomain may aggregate and also governs the lifecycle of the aggregated entities.

2.6.2 Data Types

2.6.2.1 UniversalOutputConstraintStructure

Qualified Name: CoreModel::GeneralControllerModel::DataTypes::ControlPortInterfacing::UniversalOutputConstraintStructure

A universal structure for representation of output from a task.

Applied stereotypes:

- Experimental

Table 143: Attributes for UniversalOutputConstraintStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
progressStatus	ProgressStatus	1	R	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	Indicates the progress of the task.
_controlTask	ControlTask	0..1	R	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
structureConstraint	OperationEnvelope	1	R	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A universal structure to express the output from the task.
_exposureContext	ExposureContext	1	R	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.6.2.2 UniversalRequestConstraintStructure

Qualified Name: CoreModel::GeneralControllerModel::DataTypes::ControlPortInterfacing::UniversalRequestConstraintStructure

A universal structure for representation of the request to trigger a task.

Applied stereotypes:

- Experimental

Table 144: Attributes for UniversalRequestConstraintStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
outcomeConstraint	OperationEnvelope	1	R	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The definition of the constraint on the desired/agreed outcome.
_exposureContext	ExposureContext	1	R	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.6.3 Enumeration Types

2.6.3.1 ProgressStatus

Qualified Name: CoreModel::GeneralControllerModel::DataTypes::ControlPortInterfacing::ProgressStatus

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- COMPLETE:
 - Applied stereotypes:
 - Experimental
- IN_PROGRESS:
 - Applied stereotypes:
 - Experimental

- FAILED:
 - Applied stereotypes:
 - Experimental

2.6.3.2 TaskLifecycleState

Qualified Name: CoreModel::GeneralControllerModel::DataTypes::ControlPortInterfacing::TaskLifecycleState

The potential states of the task.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- RUNNING:
 - The task is running.
 - Applied stereotypes:
 - Experimental
- PAUSED:
 - The task has been paused.
 - Applied stereotypes:
 - Experimental
- WAITING:
 - The task is waiting for input etc.
 - Applied stereotypes:
 - Experimental
- ABORTING:
 - The task is aborting.
 - Applied stereotypes:
 - Experimental
- COMPLETED:
 - The task has been completed successfully.
 - Applied stereotypes:
 - Experimental

- **ABORTED:**
 - The task has been aborted.
 - Applied stereotypes:
 - Experimental
- **ATTEMPTING_ROLLBACK:**
 - The task is attempting to return the controlled system to a previous state.
 - Applied stereotypes:
 - Experimental
- **ROLLBACK_COMPLETE:**
 - The task has completed a roll back action.
 - Applied stereotypes:
 - Experimental
- **ABANDONING:**
 - Task is abandoning.
 - Applied stereotypes:
 - Experimental
- **ABANDONED:**
 - The task has been abandoned and is no longer running.
 - Applied stereotypes:
 - Experimental
- **FAILED:**
 - The task has failed.
 - Applied stereotypes:
 - Experimental
- **ARCHIVED:**
 - The task has been archived (and is no longer running).
 - Applied stereotypes:
 - Experimental

2.6.4 Primitive Types

2.7 Core Interactions Model data dictionary

This section provides the model details for Interactions model supporting the generalized operations pattern, notification patterns, etc..

2.7.1 Classes

2.7.1.1 DesiredOutcomeConstraints

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::DesiredOutcomeConstraints

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 145: Attributes for DesiredOutcomeConstraints

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_outcomeElement	OutcomeElementConstraints	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental DefinedBySpec StrictComposition	See referenced class
activityDirective	ActivityDirective	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
hasDeleteConfirmation	Boolean	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A delete confirmation exchange is required.
numberOfInstancesOfEachOutcomeElement	Integer	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The outcome statement defines a pattern where more than one instances of that pattern may be required.

2.7.1.2 ElementConstraints

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::ElementConstraints

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 146: Attributes for ElementConstraints

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_specificClassStructure	SpecificClassStructure	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY SpecReference Experimental	See referenced class
_specificPattern	SpecificPattern	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.7.1.3 GeneralDirectives

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::GeneralDirectives

A structure of directives.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.7.1.4 Ltp

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::Ltp

Applied stereotypes:

- Example
- OpenModelClass
 - support: MANDATORY
- Experimental

2.7.1.5 NecessaryInitialConditionConstraints

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::NecessaryInitialConditionConstraints

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 147: Attributes for NecessaryInitialConditionConstraints

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isNot	Boolean	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Qualifies a condition to be inverse, i.e. that something is not true rather than true prior commencing the task.

2.7.1.6 OperationDetails

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::OperationDetails

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 148: Attributes for OperationDetails

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
actionVerb	ActionVerbs	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Opportunity to provide an action verb to allow formation of a more traditional operation statement or a REST statement.
_necessaryInitialConditionConstraints	NecessaryInitialConditionConstraints	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_desiredOutcomeConstraints	DesiredOutcomeConstraints	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.7.1.7 OperationEnvelope

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::OperationEnvelope

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 149: Attributes for OperationEnvelope

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_operationSet	OperationSet	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
generalDirectives	GeneralDirectives	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	General policy and other constraints to guide the operation execution. Significant definition is required here.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
operationIdentifiers	OperationIdentifiers	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	To be provided

2.7.1.8 OperationIdentifiers

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::OperationIdentifiers

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.7.1.9 OperationSet

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::OperationSet

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 150: Attributes for OperationSet

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_operationSetThatMustHaveStarted	OperationSet	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class
_operationSetThatMustEnd	OperationSet	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
abortAfterDurationWithActionRule	ToBeDefined	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
effortAndAction	ActionEffort	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
pauseResumeRule	PauseResumeRule	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
operationSet	OperationSet	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
isShortLived	Boolean	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	To be provided
_operationDetails	OperationDetails	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.7.1.10 OutcomeElementConstraints

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::OutcomeElementConstraints

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- ElementConstraints

2.7.1.11 SpecificClassStructure

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::SpecificClassStructure

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 151: Attributes for SpecificClassStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_classTypeName	Ltp	1	RW	AttributeExtention OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	See referenced class

2.7.1.12 SpecificPattern

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::ObjectClasses::SpecificPattern

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

2.7.2 Data Types**2.7.3 Enumeration Types****2.7.3.1 ActionEffort**

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::DataTypes::ActionEffort

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- BEST_EFFORT:
 - Applied stereotypes:
 - Experimental
- EXACT_MATCH:
 - Applied stereotypes:
 - Experimental

2.7.3.2 ActionVerbs

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::DataTypes::ActionVerbs

Verb constructs that direct the activity.

Applied stereotypes:

- ControlledString

Contains Enumeration Literals:

- CREATE_POST_ADD:
 - Cause the addition of some structure.
 - Applied stereotypes:
- SET_UPDATE_PUT_MODIFY_WRITE_ADD:
 - Cause the adjustment to some properties.
 - Applied stereotypes:
- GET_READ:
 - Acquire information.
 - Applied stereotypes:
- DELETE_REMOVE:
 - Eliminate some structure.
 - Applied stereotypes:

2.7.3.3 ActivityDirective

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::DataTypes::ActivityDirective

Explains how to interpret the request.

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- STRUCTURE_IS_NOT:
 - The structure defined should not be present. No part should be present (within the stated degrees of precision).
 - Applied stereotypes:
 - Experimental
- NEW_STRUCTURE_AND_VALUES:
 - None of the structure stated is expected to be present, but is required.
 - Applied stereotypes:
 - Experimental
- INCREMENTAL_STRUCTURE_AND_VALUES:
 - The structure stated is an increment on what already exists.
Increment in this case may also be decrement.
 - Applied stereotypes:
 - Experimental
- ONLY_VALUES_IN_EXISTING_STRUCTURE:
 - Only values should be modified, no new structure should be created and no structure should be deleted.
 - Applied stereotypes:
 - Experimental
- DEFINED_BY_VERB:
 - A verb is provided to give guidance (such as Create).
 - Applied stereotypes:
 - Experimental

2.7.3.4 PauseResumeRule

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::DataTypes::PauseResumeRule

Applied stereotypes:

- Experimental

Contains Enumeration Literals:

- NO_PAUSE_POSSIBLE:
 - Applied stereotypes:
 - Experimental

2.7.4 Primitive Types

2.7.4.1 TestType

Qualified Name: CoreModel::CoreInteractionModel::CoreOperationsModel::DataTypes::TestType

Applied stereotypes:

- RuntimeTypeExtension
- Experimental

2.8 Core Software Model data dictionary

This section provides the model details for Software model supporting modeling of file systems, running software, software containers and virtual machines.

2.8.1 Classes

2.8.1.1 Directory

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::FileSystem::Directory

A Directory is a collection of Files and other Directories. Because a Directory can contain other Directories, this allows a hierarchical file system to be represented.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- FileSystemEntry

Table 152: Attributes for Directory

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fileSystemEntry	FileSystemEntry	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Directory entry, which can be a File or another Directory.
isReadOnly Inherited	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File contents can be modified or not.
isHidden Inherited	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File is hidden by the FileSystem.
pathName Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The full pathname of the entry, back to the root Directory.
localName Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the entry in its Directory.
createDate Inherited	DateTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date that the entry was created.

2.8.1.2 File

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::FileSystem::File

A File is a data structure used to store information (user data, commands, software etc.) in a computer system. Note that in this CIM class, we are only storing the metadata associated with the File, not the actual contents of the File.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- FileSystemEntry

Table 153: Attributes for File

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
size	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The size of the File, in bytes.
lastModifyTime	DateTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time that the File was last modified.
checksum	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	A checksum that can be used to validate the contents of the File (in case of corruption or malicious changes) using a hashing algorithm like MD5 or SHA1.
isReadOnly	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File contents can be modified or not.
isHidden	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File is hidden by the FileSystem.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
pathName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The full pathname of the entry, back to the root Directory.
localName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the entry in its Directory.
createDate	DateTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date that the entry was created.

2.8.1.3 FileSystem

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::FileSystem::FileSystem

A FileSystem organizes the data on a storage system so that it can be easily created, updated and accessed. It manages the Directories and also the metadata for the Files.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 154: Attributes for FileSystem

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_filesystemEntry	FileSystemEntry	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The root FileSystem entries, which can be Files or Directories.

2.8.1.4 FileSystemEntry

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::FileSystem::FileSystemEntry

FileSystemEntry is an abstraction of File and Directory, useful when there is a need to reference both classes. It also allows for an easy representation of a hierarchical filesystem.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 155: Attributes for FileSystemEntry

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isReadOnly	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File contents can be modified or not.
isHidden	Boolean	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If the File is hidden by the FileSystem.
pathName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The full pathname of the entry, back to the root Directory.
localName	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the entry in its Directory.
createDate	DateTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date that the entry was created.

2.8.1.5 InstalledSoftwareComponent

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::RunningSoftware::InstalledSoftwareComponent

InstalledSoftwareComponent is part of the software inventory. It represents an application or an application suite or an application (feature) option. It is the unit of installation. Note that this is operating system dependent. For example, Microsoft DOS 3.3 didn't have an installation manager.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 156: Attributes for InstalledSoftwareComponent

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
name	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the installed component as returned by the operating system.
version	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The version of the installed component as returned by the operating system.
serialNumber	String	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	As part of software licensing, a serial number may be available for the installation.
_installationFile	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	If available, the File that the installation was from.
_childInstalledSoftwareComponent	InstalledSoftwareComponent	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any child installations.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_installedFileSystemEntry	FileSystemEntry	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any Directories or Files created or used by the installation. Note that installations may share files. So installation 1 may create key.dll in a common area, and installation 2 would create this if it wasn't present. Because it is already present, installation 2 just references the file. Now if installation 1 is uninstalled, key.dll is not removed as there is still a reference to it.

2.8.1.6 RunningContainer

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::SoftwareContainer::RunningContainer

A container that has been activated by its container engine and hence can provide and consume resources.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningSoftwareProcess

Table 157: Attributes for RunningContainer

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_containerBoundary	ConstraintDomain	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The constraints defining the boundary of the Container.
processId Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier provided by the operating system.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
priority Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The process priority which is used by a multi-tasking operating system to assign resource allocations for the different running software processes.
invokingUser Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The username of the account that invoked the process.
invokingCommand Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The command string that invoked the process.
timeInvoked Inherited	DateAndTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time when the process was invoked.
runState Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The current run state. A software process may be actively running or suspended (or some other state supported by the operating system).
name Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the process as assigned by the operating system.
description Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The description of the process as assigned by the operating system.
_executable Inherited	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A reference to the executable file (invoked via the invokingCommand). Note that the invoking command may not list the full file path.
_childSoftwareProcess Inherited	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to a software process's subprocesses and threads.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_openFile Inherited	File	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any files opened and/or locked by the running process.

2.8.1.7 RunningContainerEngine

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::SoftwareContainer::RunningContainerEngine

A software process that abstracts running applications from the operating system. It provides some level of isolation, but not as much as a hypervisor.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningSoftwareProcess

Table 158: Attributes for RunningContainerEngine

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_runningContainer	RunningContainer	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The containers running in this container engine.
processId Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier provided by the operating system.
priority Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The process priority which is used by a multi-tasking operating system to assign resource allocations for the different running software processes.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
invokingUser Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The username of the account that invoked the process.
invokingCommand Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The command string that invoked the process.
timeInvoked Inherited	DateAndTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time when the process was invoked.
runState Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The current run state. A software process may be actively running or suspended (or some other state supported by the operating system).
name Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the process as assigned by the operating system.
description Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The description of the process as assigned by the operating system.
_executable Inherited	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A reference to the executable file (invoked via the invokingCommand). Note that the invoking command may not list the full file path.
_childSoftwareProcess Inherited	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to a software process's subprocesses and threads.
_openFile Inherited	File	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any files opened and/or locked by the running process.

2.8.1.8 RunningHostOsVmm

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::VirtualMachine::RunningHostOsVmm

A Virtual Machine Monitor (VMM or Hypervisor) running in a host operating system (type-2).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningVirtualMachineMonitor

2.8.1.9 RunningNativeVmm

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::VirtualMachine::RunningNativeVmm

A Virtual Machine Monitor (VMM or Hypervisor) running directly on the hardware (bare metal or type-1).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningVirtualMachineMonitor

2.8.1.10 RunningOperatingSystem

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::RunningSoftware::RunningOperatingSystem

An operating system is a running software process that enables software applications to utilize the computer's hardware.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningSoftwareProcess

Table 159: Attributes for RunningOperatingSystem

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_runningSoftwareProcess	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The software processes running under this operating system.
_runningContainerEngine	RunningContainerEngine	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The running container engines supported by the running operating system.
_runningHostOsVmm	RunningHostOsVmm	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The host OS VMMs running under this operating system.
processId Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier provided by the operating system.
priority Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The process priority which is used by a multi-tasking operating system to assign resource allocations for the different running software processes.
invokingUser Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The username of the account that invoked the process.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
invokingCommand Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The command string that invoked the process.
timeInvoked Inherited	DateAndTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time when the process was invoked.
runState Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The current run state. A software process may be actively running or suspended (or some other state supported by the operating system).
name Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the process as assigned by the operating system.
description Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The description of the process as assigned by the operating system.
_executable Inherited	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A reference to the executable file (invoked via the invokingCommand). Note that the invoking command may not list the full file path.
_childSoftwareProcess Inherited	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to a software process's subprocesses and threads.
_openFile Inherited	File	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any files opened and/or locked by the running process.

2.8.1.11 RunningSoftwareApplication

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::RunningSoftware::RunningSoftwareApplication

This covers generic software processes that don't have a special subclass (operating system, virtual machine and container special cases have their own specific subclasses).

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningSoftwareProcess

2.8.1.12 RunningSoftwareProcess

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::RunningSoftware::RunningSoftwareProcess

This is the unit of software execution. It could be a running application or a thread (the smallest level of software execution).

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 160: Attributes for RunningSoftwareProcess

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
processId	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier provided by the operating system.
priority	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The process priority which is used by a multi-tasking operating system to assign resource allocations for the different running software processes.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
invokingUser	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The username of the account that invoked the process.
invokingCommand	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The command string that invoked the process.
timeInvoked	DateAndTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time when the process was invoked.
runState	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The current run state. A software process may be actively running or suspended (or some other state supported by the operating system).
name	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the process as assigned by the operating system.
description	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The description of the process as assigned by the operating system.
_executable	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A reference to the executable file (invoked via the invokingCommand). Note that the invoking command may not list the full file path.
_childSoftwareProcess	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to a software process's subprocesses and threads.
_openFile	File	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any files opened and/or locked by the running process.

2.8.1.13 RunningVirtualMachine

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::VirtualMachine::RunningVirtualMachine

This represents a VirtualMachine that is running, and hence can provide and consume resources. It isn't shown as a subclass of RunningSoftwareProcess as it may not be a running software process and the hypervisor may not allow access to any process related information.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Table 161: Attributes for RunningVirtualMachine

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_vmBoundary	ConstraintDomain	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	Similar to a physical device boundary, we allow a virtual machine to have a constraint boundary.

2.8.1.14 RunningVirtualMachineMonitor

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::VirtualMachine::RunningVirtualMachineMonitor

This is the abstraction of the two different types of VMM.

This class is abstract.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- RunningSoftwareProcess

Table 162: Attributes for RunningVirtualMachineMonitor

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_runningVm	RunningVirtualMachine	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The VMs actively running under this VMM.
processId Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The identifier provided by the operating system.
priority Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The process priority which is used by a multi-tasking operating system to assign resource allocations for the different running software processes.
invokingUser Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The username of the account that invoked the process.
invokingCommand Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The command string that invoked the process.
timeInvoked Inherited	DateAndTime	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The date time when the process was invoked.
runState Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The current run state. A software process may be actively running or suspended (or some other state supported by the operating system).
name Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The name of the process as assigned by the operating system.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
description Inherited	String	1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	The description of the process as assigned by the operating system.
_executable Inherited	File	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	A reference to the executable file (invoked via the invokingCommand). Note that the invoking command may not list the full file path.
_childSoftwareProcess Inherited	RunningSoftwareProcess	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to a software process's subprocesses and threads.
_openFile Inherited	File	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY Experimental	References to any files opened and/or locked by the running process.

2.8.1.15 SymbolicLink

Qualified Name: CoreModel::CoreSoftwareModel::ObjectClasses::FileSystem::SymbolicLink

A SymbolicLink is a File that contains a path reference to a File or a Directory.

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY
- Experimental

Inherits properties from:

- File

Table 163: Attributes for SymbolicLink

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fileSystemEntry	FileSystemEntry	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The FileSystemEntry that this SymbolicLink refers to.
size Inherited	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The size of the File, in bytes.
lastModifyTime Inherited	DateTime	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The date time that the File was last modified.
checksum Inherited	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	A checksum that can be used to validate the contents of the File (in case of corruption or malicious changes) using a hashing algorithm like MD5 or SHA1.
isReadOnly Inherited	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	If the File contents can be modified or not.
isHidden Inherited	Boolean	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	If the File is hidden by the FileSystem.
pathName Inherited	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The full pathname of the entry, back to the root Directory.
localName Inherited	String	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The name of the entry in its Directory.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
createDate Inherited	DateTime	1	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY Experimental	The date that the entry was created.

2.8.2 Data Types

2.8.3 Enumeration Types

2.8.4 Primitive Types

2.9 Model Patterns data dictionary

This section provides a view of the Classes related to the patterns that underpin the model. These classes are experimental and are provided for rough guidance only.

2.9.1 Component-System pattern

This section provides the classes for the Component-System pattern.

2.9.1.1 Classes for Management/Control modeling

2.9.1.2 Component

Qualified Name: CoreModel::InformationArchitectureAndPatterns::Patterns::ComponentSystemPattern::Component

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 164: Attributes for Component

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_boundComponent	Component	0..*	RW	OpenModelAttribute <ul style="list-style-type: none"> • valueRange: no range constraint • support: MANDATORY 	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_componentPart	Component	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_port	Port	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_boundaryPort	Port	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.9.1.3 Port

Qualified Name: CoreModel::InformationArchitectureAndPatterns::Patterns::ComponentSystemPattern::Port

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 165: Attributes for Port

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_boundPort	Port	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_aggregatedSubordinatePort	Port	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.9.1.4 System

Qualified Name: CoreModel::InformationArchitectureAndPatterns::Patterns::ComponentSystemPattern::System

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 166: Attributes for System

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_boundaryPort	Port	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_componentPart	Component	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_opaqueComponent	Component	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_systemPort	SystemBoundaryPort	0..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

2.9.1.5 SystemBoundaryPort

Qualified Name: CoreModel::InformationArchitectureAndPatterns::Patterns::ComponentSystemPattern::SystemBoundaryPort

Applied stereotypes:

- OpenModelClass
 - support: MANDATORY

Table 167: Attributes for SystemBoundaryPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_aggregatedPort	Port	1..*	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class
_componentPort	Port	0..1	RW	OpenModelAttribute • valueRange: no range constraint • support: MANDATORY	See referenced class

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