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TR-512.8

Data Dictionary

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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   Introduction

This document is an addendum to the TR-512_v1.2 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 ONF Core IM - Overview.

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.

- Network including Forwarding, Termination, Topology and Resilience (see TR-512.2, TR-512.4 and TR-512.5)
- Foundation including naming, identification and states (see TR-512.3)
- Physical including Equipment and Connector (see TR-512.6)
- Specification (see TR-512.7)
- Further Enhancements (see TR-512.10)

2.1 Core Network Model data dictionary

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

Two classes, NetworkControlDomain and SdnController, have intentionally been omitted due to their very limited coverage and due to work in progress in the next phase that will cause significant change.

Whilst the NetworkElement will also change significantly it is a very familiar entity that is expected in the model hence it has not been omitted.

2.1.1 Classes

2.1.1.1 ConfigurationAndSwitchController
Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::Resilience::ConfigurationAndSwitchController

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

Table 1: Attributes for ConfigurationAndSwitchController

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
switchRule	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	A sketch of the presence of complex rules governing the switch behavior.
_fcSwitch	FcSwitch	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The switch being controlled.
_controlParameters	ControlParameters_Pac	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The control parameters to be applied if local parameters are used rather than profiles
_profileProxy	ProfileProxy	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Applied profiles.
_local_Pac	Local_Pac	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_global_Pac	Global_Pac	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
isFrozen	Boolean	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					protection are rejected.
isCoordinatedSwitchingBothEnds	Boolean	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The C&SC is operating such that switching at both ends of each flow acorss the FC is coordinated at both ingress and egress ends.
_subordinateController	ConfigurationAndSwitchController	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.1.1.2 ControlParameters_Pac

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

A list of control parameters to apply to a switch.

Applied stereotypes:
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY
- Preliminary

Table 2: Attributes for ControlParameters_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
reversionMode	ReversionMode	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indcates whether the protection scheme is revertive or non-revertive.
waitToRevertTime	Integer	0..1	RW	Experimental OpenModelAttribute • AVC: NA • 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 reverting to the preferred resource.
protType	ProtectionType	0..1	RW	Obsolete OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indicates the protection scheme that is used for the ProtectionGroup.
holdOffTime	Integer	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	This attribute indicates the time, in milliseconds, between declaration of signal degrade or signal fail, and the initialization of the protection switching algorithm.
_networkSchemeSpecification	NetworkSchemeSpecification	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.1.1.3 FcPort

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

The association of the FC to LTPs is made via FcPorts. 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 or protection) point. The FcPort replaces the Protection Unit of a traditional protection model. The ForwardingConstruct can be considered as a component and the FcPort as a Port on that component.

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

Inherits properties from:
- LocalClass

Table 3: Attributes for FcPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..2	RW	OpenModelAttribute • AVC: NA • 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 Ltps Zero Ltp - BreakBeforeMake transition - Planned Ltp not yet in place - Off-network LTP referenced through other mechanism
role	PortRole	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Each FcPort of the FC has a role (e.g., working, protection, protected, symmetric, hub, spoke, leaf, root) in the context of the FC with respect to the FC function.
fcPortDirection	PortDirection	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The orientation of defined flow at the FcPort.
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 priory. 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.
isInternalPort	Boolean	1	R	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
_fcRouteFeedsFcPortEgress	FcRoute	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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).
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

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Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

2.1.1.4 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 unmodelled 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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- LocalClass

Table 4: Attributes for FcRoute

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fc	ForwardingConstruct	1..*	RW	OpenModelAttribute • AVC: NA • 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.
selectionPriority	Integer	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					are of equal priory. 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.
routeSelectionControl	RouteSelectionControl	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Degree of administrative control applied to the route selection.
routeSelectionReason	RouteSelectionReason	1	R	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The reason for the current route selection.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.5 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. Essentially performs one of the functions of the Protection Group in a traditional model. It associates to 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 switch, 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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- LocalClass

Table 5: Attributes for FcSwitch

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
holdOffTime	Integer	1	RW	Obsolete OpenModelAttribute • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indicates the protection scheme that is used for the ProtectionGroup.
reversionMode	ReversionMode	1	RW	Obsolete OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Provides a set of predefined values for switch control in place of the direct values available via the FcSwitch or via _configurationAndSwitchControl.
_configurationAndSwitchControl	ConfigurationAndSwitchController	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	A ConfigurationAndSwitchController encapsulated in the FcSwitch that controls the FcSwitch alone.
_internalConfigurationAndSwitchControl	ConfigurationAndSwitchController	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	A switch controller encapsulated in the FcSwitch.
switchControl	SwitchControl	1	RW	Preliminary OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	The reason for the current switch selection.
_controlParameters	ControlParameters_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
waitToRestoreTime	Integer	1	RW	Obsolete OpenModelAttribute • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.6 *ForwardingConstruct*

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

The ForwardingConstruct (FC) class models enabled constrained potential for forwarding between two or more LTPs at a particular specific layerProtocol. Like the LTP, the FC supports any transport protocol including all circuit and packet forms. It is used to effect forwarding of transport characteristic (layer protocol) information. An FC can be in only one FD. The ForwardingConstruct 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.

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

Inherits properties from:
- GlobalClass
- ForwardingEntity

Table 6: Attributes for ForwardingConstruct

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolName	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The layerProtocol at which the FC enables the potential for forwarding.
_lowerLevelFc	ForwardingConstruct	0..*	RW	OpenModelAttribute • AVC: NA • 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. The FC represents a Cross-Connection in an NE. The Cross-Connection in an NE is not necessarily the lowest level of FC

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					partitioning.
_fcRoute	FcRoute	0..*	RW	OpenModelAttribute • AVC: NA • 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.
_fcPort	FcPort	2..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The association of the FC to LTPs is made via FcPorts (essentially the ports of the FC).
_fcSwitch	FcSwitch	0..*	RW	OpenModelAttribute • AVC: NA • 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	ConfigurationAndSwitchController	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Reference to a ConfigurationAndSwitchController that coordinates switches encapsulated in the FC. The controller coordinates multiple switches in the same FC.
_fcSpec	ForwardingSpec	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	References the specification that describes the capability and internal structure of the FC (e.g. The arrangement of switches for a particular instance is described by a referenced FcSpec). The specification allows interpretation of FcPort role and switch configurations etc.
forwardingDirection	ForwardingDirection	0..1	RW	OpenModelAttribute • AVC: NA • 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.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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.
servicePriority	Integer	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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 preemptable.
_supportedLink	Link	0..*	RW	Experimental OpenModelAttribute • AVC: NA • 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.
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA	One or more descriptions of the location.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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	TransferCapacity_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• support: CONDITIONAL • 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.	
_transferIntegrity_Pac Inherited	TransferIntegrity_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: 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 • AVC: NA • valueRange: no range constraint • support: 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if layer transition	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				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.	

2.1.1.7 ForwardingDomain

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

The ForwardingDomain (FD) class models the topological component that represents the opportunity to enable forwarding (of specific transport characteristic information at one or more protocol layers) between points represented by the LTP in the model. 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 LTPs available are those defined at the boundary of the FD. At a lower level of recursion an FD could represent a fabric (switch matrix) in a Network Element (NE). An NE can encompass more than one switch matrix and hence more than one FD. The FD representing a switch matrix can be further partitioned. The FD corresponds to a subnetwork [ITU-T G.800], FlowDomain [TMF 612] and a MultiLayerSubNetwork (MLSN) [TMF 612]. As in the TMF concept of MLSN and unlike the ITU-T concet of subnetwork model the FD can support more than one layer-protocol.

Applied stereotypes:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Inherits properties from:
- GlobalClass
- ForwardingEntity

Table 7: Attributes for ForwardingDomain

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolName	1..*	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	An FD aggregares one or more FCs. A aggregated FC connects LTPs that bound the FD.
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • AVC: NA • 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.
_lowerLevelLink	Link	0..*	RW	OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The rules related to an FD.
_layerProtocolParameterSpec	LayerProtocolParameterSpec	1	RW	OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• 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.	
_transferTiming_Pac Inherited	TransferTiming_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: 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	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				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.	
_validation_Pac Inherited	Validation_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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

2.1.1.8 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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 8: Attributes for ForwardingEntity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_riskParameter_Pac	RiskParameter_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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	TransferTiming_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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	TransferCapacity_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: 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 • AVC: NA • valueRange: no range constraint	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: 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.	
_layerTransition_Pac	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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

2.1.1.9 *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 instances can be used for controlling termination and monitoring functionality. It can also be used for controlling the adaptation (i.e. 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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:
- LocalClass

Table 9: Attributes for LayerProtocol

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolName	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indicate the specific layer-protocol described by the LayerProtocol entity.
_lpSpec	LpSpec	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The LpSpec identifies the interna structure of the LP explaining internal flexibilities, degree of termination and degree of adaptation on both client and server side.
configuredClientCapacity	ToBeDefined	0..1	RW	Experimental OpenModelAttribute • AVC: NA • 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	Preliminary OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indicates whether the layer is terminated and if so how.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_configAndSwitchController	ConfigurationAndSwitchController	0..*	RW	Experimental OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL_MANDATORY • condition: In protection context if LTP of protection where entire LTP 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.
fcBlocksSignalToLp	BlockDirection	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint	List of simple name-value extensions.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• support: MANDATORY	
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.10 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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 10: Attributes for LayerProtocolTransition_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
transitionedLayerProtocol	String	1..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Provides the ordered structure of layer protocol transitions encapsulated in the ForwardingEntity. The ordering relates to the LinkPort role.
_ltp	LogicalTerminationPoint	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Lists the LTPs that define the layer protocol transition of the transitional link.

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

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

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

Inherits properties from:
- GlobalClass
- ForwardingEntity

Table 11: Attributes for Link

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
layerProtocolName	LayerProtocolName	1..*	RW	OpenModelAttribute • AVC: NA • 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 Port when it is a transitional link.
_fd	ForwardingDomain	2..*	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	The association of the Link to LTPs is made via LinkPort (essentially the ports of the Link).
_lowerLevelLink	Link	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	A link may formed from subordinate links (similar FD formations from subordiate FDs). This association is intended to cover concepts such as serial compound links.
linkDirection	ForwardingDirection	0..1	RW	OpenModelAttribute • AVC: NA	The directionality of the Link. Is applicable to simple Links where all LinkPorts are

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	The rules related to a Link.
isProtectionLockOut	Boolean	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	A Link contains one or more FCs. A contained FC connects LTPs that bound the Link. This FC represents the traditional LinkConnection. It is often not supported in implementations as it can be inferred from FCs in the corresponding FDs.
_lowerLevelFd	ForwardingDomain	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	FD(s) that form part of a serial compound link.
_forwardingSpec	ForwardingSpec	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState	AdministrativeState	1	R	Preliminary OpenModelAttribute	Shows whether or not the client has permission to use or has a prohibition

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• AVC: NA • valueRange: no range constraint • support: MANDATORY	against using the resource. The administrative state expresses usage permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.
_riskParameter_Pac Inherited	RiskParameter_Pac	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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 • AVC: NA • valueRange: no range constraint • support: 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 • AVC: NA • valueRange: no range constraint • support: OPTIONAL	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• 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.	
_layerTransition_Pac Inherited	LayerProtocolTransition_Pac	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • 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   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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA

o   support: MANDATORY

Inherits properties from:
- LocalClass

Table 12: Attributes for LinkPort

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • AVC: NA • 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 Uni Ltps Zero Ltp - BreakBeforeMake transition - Planned Ltp not yet in place - Off-network LTP referenced through other mechanism
role	PortRole	1	RW	OpenModelAttribute • AVC: NA • 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 function.
offNetworkAddress	String	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	The orientation of defined flow at the LinkPort.
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.13   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 circuit and packet forms.

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

Inherits properties from:
- GlobalClass

Table 13: Attributes for LogicalTerminationPoint

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_serverLtp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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 • AVC: NA • 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 • AVC: NA • 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 • AVC: NA • 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 the this LTP.
_ltpSpec	LtpSpec	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The specification of the LTP defines internal structure of the LTP. The specification allows interpretation of organisation of LPs making up the LTP and also identifies which inter-LTP associations are valid.
physicalPortReference	String	0..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more text labels for the unmodelled physical port associated with the LTP. In many cases there is no associated physical port.
_ltpInOtherView	LogicalTerminationPoint	0..*	RW	Preliminary OpenModelAttribute	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
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
ltpDirection	TerminationDirection	1	RW	OpenModelAttribute • AVC: NA • 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
_port	Port	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.14   NetworkElement

Qualified Name: CoreModel::CoreNetworkModel::ObjectClasses::NetworkElement

The Network Element (NE) class represents a network element (traditional NE) in the data plane. A data plane network element is essentially a consolidation of capabilities that can be viewed and controlled through a "single" management-control port. In the direct interface from an SDN controller to a network element in the data plane, the NetworkElement object defines the scope of control for the resources within the network element For example internal transfer of user information between the external terminations (ports of the NE), encapsulation, multiplexing/demultiplexing, and OAM functions, etc. The NetworkElement provides the scope of the naming space for identifying objects representing the resources within the data plane network element. NE is really a product bundling or some view of management scope, management access, session. The NE is not directly part of topology but brings meaning to the FD context and the LTP context (and hence the links).

Applied stereotypes:
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY
- LikelyToChange

Inherits properties from:
- GlobalClass

Table 14: Attributes for NetworkElement

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fd	ForwardingDomain	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Represents the FD that is completely within the boundary of the NE. At a low level of recursion, an FD (within a network element (NE)) represents a switch matrix (i.e., a fabric). Note that an NE can encompass multiple switch matrices (FDs) and the FD representing the switch matrix can be further partitioned. Where an FD is referenced by the NeEncompassesFd association, any FDs that it encompasses (i.e., that are associated with it by

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					HigherLevelFdEncompassesLowerLevelFds), must also be encompassed by the NE and hence must have the NeEncompassesFd association.
_ltp	LogicalTerminationPoint	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An NE has associated LTPs that are at its boundary. The NeEncompassesFd association occurs for FDs that are within the bounds of the NetworkElement definition such that the FD is bounded by LTPs, all of which are on the boundary of the NetworkElement or are within the NetworkElement. An LTP can be independent of an NE.
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.1.1.15   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 TopologicalEntities 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 Forwarding entity can be listed in the RiskParameter_Pac of that ForwardingEntity. A segment has one or more risk characteristic. Shared risk between two TopologicalEntities compromises the integrity of any solution that use one of those ForwardingEntity as a backup for the other. Where two TopologicalEntities have a common risk characteristic they have an elevated probability of failing simultaneously compared to two TopologicalEntities that do not share risk characteristics.

This class is abstract.

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

Table 15: Attributes for RiskParameter_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
riskCharacteristic	RiskCharacteristic	1..*	RW	OpenModelAttribute • AVC: NA • 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.

2.1.1.16   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
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 16: Attributes for TransferCapacity_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
totalPotentialCapacity	Capacity	1	RW	Preliminary OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Capacity available to be assigned.
capacityAssignedToUserView	Capacity	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Capacity already assigned.
capacityInteractionAlgorithm	String	1	RW	Experimental OpenModelAttribute	A reference to an algorithm that describes how various chunks of allocated capacity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	interact (e.g. when shared).

2.1.1.17   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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 17: Attributes for TransferCost_Pac

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

2.1.1.18   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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 18: Attributes for TransferIntegrity_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
errorCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if errorCharacteristics 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 errorCharacteristics 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if lossCharacteristics 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	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
				lossCharacteristics 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.	
repeatDeliveryCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if repeatCharacteristics 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 repeatCharacteristics 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if deliveryOrderCharacteristics 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 deliveryOrderCharacteristics 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	Describes the duration for which there may be no valid signal propagated.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
serverIntegrityProcessCharacteristic	String	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if serverIntegrityProcessCharacteristics 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 serverIntegrityProcessCharacteristics 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.

2.1.1.19   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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 19: Attributes for TransferTiming_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
fixedLatencyCharacteristic	String	1	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if jitterCharacteristics 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 jitterCharacteristics 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 • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if wanderCharacteristics 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 wanderCharacteristics 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).
queuingLatency	QueuingLatency	0..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: CONDITIONAL • condition: Present if	The effect on the latency of a queuing process. This only has significant effect for packet based systems and has a complex characteristic.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				queuingLatencyCharacteristics 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 queuingLatencyCharacteristics 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.	

2.1.1.20   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
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 20: Attributes for Validation_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
validationMechanism	ValidationMechanism	1..*	RW	Preliminary OpenModelAttribute • AVC: NA • 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 21: Attributes for Capacity

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
totalSize	String	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Total capacity of the ForwardingEntity in MB/s
numberOfClientInstances	String	0..1	RW	Preliminary OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 22: Attributes for CostCharacteristics

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
costName	String	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The cost characteristic will 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	The specific cost.
costAlgorithm	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 LayerProtocolName
Qualified Name: CoreModel::CoreNetworkModel::TypeDefinitions::LayerProtocolName

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

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

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 23: Attributes for QueuingLatency

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
trafficProperty	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The identifier of the specific traffic property to which the queuing latency applies.
latencyForTrafficWithProperty	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 24: Attributes for RiskCharacteristic

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
riskCharacteristicName	String	1	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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 25: Attributes for ValidationMechanism

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
validationMechanism	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint	Name of mechanism used to validate adjacency.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: MANDATORY	
layerProtocolAdjacencyValidated	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	State of validatiion.
validationRobustness	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.

   o 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.

2.1.3.3 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.

2.1.3.4 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

2.1.3.5 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

2.1.3.6 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.
    - Applied stereotypes:

- ▪ Preliminary

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

The cause of the current route selection.

Applied stereotypes:
- Preliminary

Inherits literals from:
- ProtectionReason
- RouteSelectionControl

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

Applied stereotypes:
- Preliminary

Contains Enumeration Literals:
- NORMAL:
    - o No administrative control applied to the switch.
    - o Applied stereotypes:
        - ▪ Preliminary
- MANUAL:
    - o 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 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. If the resource selected is then set to LOCK_OUT then

the the selection control will change to NORMAL and switch to best available based upon normal rules. Can be returned to NORMAL by configuration action.
- o Applied stereotypes:
  - ▪ Preliminary
- • FORCED:
  - o 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 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 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 the selection control will change to NORMAL and switch to best available based upon normal rules. Can be returned to NORMAL by configuration action.
  - o Applied stereotypes:
    - ▪ Preliminary

2.1.3.9 SwitchStateReason

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

Explains the reason for the current switch state.

Applied stereotypes:
- • Preliminary

Inherits literals from:
- • ProtectionReason
- • SwitchControl

2.1.3.10   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 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 component A SINK termination is one that only supports a SINK flow. A SINK termiation 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 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 termiation 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.

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

Provides support for the range of behaviours 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:

- o A non-flexible case that can never be terminated.
- o Applied stereotypes:
    - ▪ Experimental
- LT_NOT_TERMINATED:
    - o A flexible termination that can terminate but is currently not terminated.
    - o Applied stereotypes:
        - ▪ Experimental
- TERMINATED_SERVER_TO_CLIENT_FLOW:
    - o A flexible termination that is currently terminated for server to client flow only.
    - o Applied stereotypes:
        - ▪ Experimental
- TERMINATED_CLIENT_TO_SERVER_FLOW:
    - o A flexible termination that is currently terminated for client to server flow only.
    - o Applied stereotypes:
        - ▪ Experimental
- TERMINATED_BIDIRECTIONAL:
    - o A flexible termination that is currently terminated in both directions of flow.
    - o Applied stereotypes:
        - ▪ Experimental
- LT_PERMENANTLY_TERMINATED:
    - o 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).
    - o Applied stereotypes:
        - ▪ Experimental
- TERMINATION_STATE_UNKNOWN:
    - o There TerminationState cannot be determined.
    - o 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

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

This class is abstract.

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

Table 26: Attributes for Address

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

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

The base class for conditional packages.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- Extension
- Label

2.2.1.3 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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 27: Attributes for Extension

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.

2.2.1.4 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. (consider 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
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- Extension
- Label
- Address
- State_Pac
- Name

Table 28: Attributes for GlobalClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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	UniversalId	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
lifecycleState Inherited	LifecycleState	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.2.1.5 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
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 29: Attributes for Label

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

2.2.1.6 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. (consider 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
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Inherits properties from:
- Extension
- Label
- Address
- State_Pac
- Name

Table 30: Attributes for LocalClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
localId	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					to the purpose of the entity.)
name Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.

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

2.2.1.7 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
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 31: Attributes for Name

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

2.2.1.8 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:
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY
- Preliminary

Table 32: Attributes for NameAndValueAuthority

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

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

Provides general state attributes.

This class is abstract.

Applied stereotypes:
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY
- Preliminary

Table 33: Attributes for State_Pac

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
operationalState	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The operational state is used to indicate whether or not the resource is installed and working.
administrativeControl	AdministrativeControl	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.

2.2.1.10   UniversalIdAuthority

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

Represents the authority that controls the allocation of UUIDs.

This class is abstract.

Applied stereotypes:
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA

o   support: MANDATORY
- Preliminary

Table 34: Attributes for UniversalIdAuthority

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
uuid	UniversalId	0..1	RW	OpenModelAttribute • AVC: NA • 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 35: Attributes for Address

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
addressName	String	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The name of the address (to allow the specific hierarchy to be distinguished from others for the same entity).
addressElement	AddressElement	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 36: Attributes for AddressElement

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
addressElementName	String	0..1	RW	OpenModelAttribute • AVC: NA • 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.
localId	LocalIdAndClass	0..1	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	If the element is a name.
_address	Address	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
arbitraryElement	String	0..1	RW	OpenModelAttribute • AVC: NA • 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 37: Attributes for LocalIdAndClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
classOfInstance	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The class to which the name refers.
localId	NameAndValue	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 38: Attributes for NameAndClass

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
classOfInstance	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The class to which the name refers.
name	NameAndValue	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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 39: Attributes for NameAndValue

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
valueName	String	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The name of the value. The value need not have a name.
value	String	1	RW	OpenModelAttribute	The value.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
_nameAndValueAuthority	NameAndValueAuthority	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The authority that defines the named value.
_globalClass	GlobalClass	0..1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	The scope of the name uniqueness.
_localClass	LocalClass	0..1	RW	OpenModelAttribute • AVC: NA • 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 attrbute 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. A example structure is [IETF RFC4122].

Applied stereotypes:
> No stereotypes applied

Table 40: Attributes for UniversalId

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
value	String	1	RW	OpenModelAttribute • AVC: NA • 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.
The possible values of the current target administrative state.

Applied stereotypes:
• Experimental

Contains Enumeration Literals:
• UNLOCK:
   o The intention is for the entity to become unlocked. The entity may already be UNLOCKED.
   o Applied stereotypes:
• LOCK_PASSIVE:
   o 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.
   o Applied stereotypes:
• LOCK_ACTIVE:
   o 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.
   o Applied stereotypes:
• LOCK_IMMEDIATE:
   o 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.
   o Applied stereotypes:

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

The possible values of the administrativeState.

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

2.2.3.3 ExtendedAdminState
Qualified Name: CoreModel::CoreFoundationModel::StateModel::TypeDefinitions::ExtendedAdminState

Possible extensions to AdministrativeState.

Applied stereotypes:
- Experimental

Inherits literals from:
- AdministrativeState

Contains Enumeration Literals:
- SHUTTING_DOWN_ACTIVE:

- o The entity is administratively restricted to existing instances of use only. There are specific actions to remove existing uses. There may be no new instances of use enabled. This corresponds to a control of LOCK_ACTIVE.
  - o Applied stereotypes:
    - ▪ Experimental
- SHUTTING_DOWN_PASSIVE:
  - o The entity is administratively restricted to existing instances of use only. There may be no new instances of use enabled. This corresponds to a control of LOCK_PASSIVE.
  - o Applied stereotypes:
    - ▪ Experimental

2.2.3.4 LifecycleState

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

The possible values of the lifecycleState.

Applied stereotypes:
- Experimental

Contains Enumeration Literals:
- PLANNED:
  - o The resource is planned but is not present in the network.
  - o Applied stereotypes:
    - ▪ Experimental
- POTENTIAL:
  - o 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. o When a potential resource is configured and allocated to a client it is moved to the "installed" state for that client. o If the potential resource has been consumed (e.g. allocated to another client) it is moved to the "planned" state for all other clients.
  - o Applied stereotypes:
    - ▪ Experimental
- INSTALLED:
  - o The resource is present in the network and is capable of providing the service expected.
  - o Applied stereotypes:

- - Experimental
  - PENDING_REMOVAL:
    - The resource has been marked for removal.
    - Applied stereotypes:
      - Experimental

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

The possible values of the operationalState.

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:
>   No stereotypes applied

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

A string that only includes printable characters.

Applied stereotypes:
>   No stereotypes applied

2.2.4.3 Real
Qualified Name: CoreModel::CoreFoundationModel::TypeDefinitions::Real

This primitive type maps to the "realnumber" defined in Recommendation X.680.

Applied stereotypes:
>   No stereotypes applied

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 ActualEquipment
Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental

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

2.3.1.2 ActualHolder
Qualified Name: CoreModel::CorePhysicalModel-Initial::ExpectedAndActual::ObjectClasses::ActualHolder

A holder in the ActualEquipment.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.3.1.3 AggregateFunction
Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 41: Attributes for AggregateFunction

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_atomicFunction	AtomicFunction	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_functionBlock	FunctionBlock	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.4 AtomicFunction

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 42: Attributes for AtomicFunction

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

2.3.1.5 Cable

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

Basic model representing a cable with connectors fitted where the cable is "short" (e.g. patch cord, in-station cabling). This is intentionally a very basic representation of a cable. 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:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:
- GlobalClass

Table 43: Attributes for Cable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_manufacturedThing	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalCharacteristics	PhysicalCharacteristics	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

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Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_mechanicalFeatures	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_spatialPropertiesOfType	SpatialPropertiesOfType	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint	List of simple name-value extensions.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• support: MANDATORY	
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.6 Category

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::InvariantDetails::Category

Represents the form of the equipment.

Applied stereotypes:
- Experimental
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

Table 44: Attributes for Category

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
category	EquipmentCategory	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.3.1.7 ConectorInHolder

Qualified Name: CoreModel::CorePhysicalModel-Initial::RuleModels::ConnectorRules::ObjectClasses::ConectorInHolder

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

Inherits properties from:
- Connector

Table 45: Attributes for ConectorInHolder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
connectorOnEquipmentForHolder	ConnectorOnEquipmentForHolder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_connector Inherited	Connector	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pin Inherited	Pin	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_manufacturedThing Inherited	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_position Inherited	Position	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pinLayout	PinLayout	1	RW	Experimental OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
connectorType Inherited	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					target.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.8 Connector

Qualified Name: CoreModel::CorePhysicalModel-Initial::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).

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- LocalClass
- GroupOfPins

Table 46: Attributes for Connector

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pin	Pin	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
orientation	ConnectorAndPinOrientation	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_manufacturedThing	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_position	Position	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicalFeatures	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pinLayout	PinLayout	1	RW	Experimental OpenModelAttribute	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
connectorType	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					administrativeState may or may not be at target.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.9 ConnectorCableEnd

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:

- Connector

Table 47: Attributes for ConnectorCableEnd

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
connectorOnEquipmentForCable	ConnectorOnEquipmentForCable	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_connector Inherited	Connector	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pin Inherited	Pin	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_manufacturedThing Inherited	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_position Inherited	Position	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: MANDATORY	
_pinLayout Inherited	PinLayout	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
connectorType Inherited	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.10   ConnectorOnEquipmentForCable

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental

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

Inherits properties from:
- Connector

Table 48: Attributes for ConnectorOnEquipmentForCable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
connectorCableEnd	ConnectorCableEnd	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_connector Inherited	Connector	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pin Inherited	Pin	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_manufacturedThing Inherited	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_position	Position	1	RW	Experimental OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pinLayout Inherited	PinLayout	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
connectorType Inherited	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.11   ConnectorOnEquipmentForHolder

Qualified Name: CoreModel::CorePhysicalModel-
Initial::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:
- Experimental
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

Inherits properties from:
- Connector

Table 49: Attributes for ConnectorOnEquipmentForHolder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
conectorInHolder	ConectorInHolder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_connector Inherited	Connector	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pin Inherited	Pin	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
orientation Inherited	ConnectorAndPinOrientation	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_manufacturedThing Inherited	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_position Inherited	Position	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_pinLayout Inherited	PinLayout	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
connectorType Inherited	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
extension

Inherited | NameAndValue | 0..* | RW | OpenModelAttribute
• AVC: NA
• valueRange: no range constraint
• support: MANDATORY | List of simple name-value extensions. |
| operationalState

Inherited | OperationalState | 0..1 | R | Preliminary
OpenModelAttribute
• AVC: NA
• 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 | 1 | RW | Experimental
OpenModelAttribute
• AVC: NA
• valueRange: no range constraint
• support: MANDATORY | 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. |
| adminisatratveState

Inherited | AdministrativeState | 1 | R | Preliminary
OpenModelAttribute
• AVC: NA
• 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 | 1 | RW | Preliminary
OpenModelAttribute
• AVC: NA
• valueRange: no range constraint
• support: MANDATORY | Used to track the planned deployment, allocation to clients and withdrawal of resources. |
| address

Inherited | Address | 0..* | RW | Experimental
OpenModelAttribute
• AVC: NA
• valueRange: no range constraint
• support: MANDATORY | One or more descriptions of the location. |

2.3.1.12 ElementalSignals

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
   - objectCreationNotification: NA
   - objectDeletionNotification: NA
   - support: MANDATORY

Table 50: Attributes for ElementalSignals

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

2.3.1.13 Equipment

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
   - objectCreationNotification: NA
   - objectDeletionNotification: NA
   - support: MANDATORY

Inherits properties from:
- GlobalClass

Table 51: Attributes for Equipment

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_containedHolder	Holder	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_addressedByHolder	Holder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_encapsulatedNonFru	Equipment	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_exposedCable	Cable	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_manufacturedThing	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_spatialPropertiesOfType	SpatialPropertiesOfType	1	RW	Experimental OpenModelAttribute	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
_mechanicalFeatures	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalProperties	PhysicalProperties	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_functionEnablers	FunctionEnablers	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicallFunctions	MechanicalFunctions	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalCharacteristics	PhysicalCharacteristics	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_swapability	Swapability	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_category	Category	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_physicalRating	PhysicalRating	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_nonFruSupportPosition	NonFruSupportPosition	0..*	RW	Experimental	See referenced class
isFieldReplaceable	Boolean	1	R	Experimental OpenModelAttribute • AVC: NA • 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	FunctionBlock	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_expectedEquipment	ExpectedEquipment	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_actualEquipment	ActualEquipment	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_location	Location	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					to the purpose of the entity.)
uuid Inherited	UniversalId	1	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint	Shows whether or not the client has permission to use or has a prohibition against using the resource. The administrative state expresses usage

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: MANDATORY	permissions for specific resources without modification to the provisioning of those resources.
lifecycleState Inherited	LifecycleState	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.14   EquipmentInstance

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

Represents the per instance invariant properties of the equipment.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 52: Attributes for EquipmentInstance

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
manufactureDate	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
serialNumber	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
assetInstanceIdentifier	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.3.1.15 EquipmentType

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 53: Attributes for EquipmentType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
description	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
modelIdentifier	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
partTypeIdentifier	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
typeName	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
version	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.3.1.16   ExpectedEquipment
Qualified Name: CoreModel::CorePhysicalModel-Initial::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 dynami properties.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.3.1.17   ExpectedHolder
Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.3.1.18   FieldReplaceable

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- Equipment

Table 54: Attributes for FieldReplaceable

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_equipmentNonFru	NonFieldReplaceable	0..*	RW	Experimental OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_holder	Holder	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_holderAddress	Holder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_connector	Connector	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_connector Inherited	Connector	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_containedHolder Inherited	Holder	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_addressedByHolder Inherited	Holder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_encapsulatedNonFru Inherited	Equipment	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_exposedCable	Cable	0..*	RW	Experimental OpenModelAttribute	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• AVC: NA • valueRange: no range constraint • support: MANDATORY	
_manufacturedThing Inherited	ManufacturedThing	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_spatialPropertiesOfType Inherited	SpatialPropertiesOfType	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicalFeatures Inherited	MechanicalFeatures	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalProperties Inherited	PhysicalProperties	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_functionEnablers Inherited	FunctionEnablers	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_mechanicallFunctions Inherited	MechanicalFunctions	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalCharacteristics Inherited	PhysicalCharacteristics	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_swapability Inherited	Swapability	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_category Inherited	Category	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalRating Inherited	PhysicalRating	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_nonFruSupportPosition Inherited	NonFruSupportPosition	0..*	RW	Experimental	See referenced class
isFieldReplaceable	Boolean	1	R	Experimental OpenModelAttribute • AVC: NA • 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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_expectedEquipment Inherited	ExpectedEquipment	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_actualEquipment Inherited	ActualEquipment	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_location	Location	1	RW	OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.19   FunctionBlock

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass

o   objectCreationNotification: NA
o   objectDeletionNotification: NA
o   support: MANDATORY

Table 55: Attributes for FunctionBlock

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

2.3.1.20   FunctionEnablers

Qualified Name: CoreModel::CorePhysicalModel-Initial::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:
- Experimental
- OpenModelClass
  o   objectCreationNotification: NA
  o   objectDeletionNotification: NA
  o   support: MANDATORY

Table 56: Attributes for FunctionEnablers

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

2.3.1.21   GroupOfPins

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

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

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

2.3.1.22   Holder

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

Inherits properties from:
- LocalClass

Table 57: Attributes for Holder

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_connector	Connector	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_occupyingFru	Equipment	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_holderMonitors	HolderMonitors	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
holderLocation	Address	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_position	Position	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_holderStructure	HolderStructure	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_physicalRating	PhysicalRating	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_supportedEquipment	SupportedEquipment	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_expectedHolder	ExpectedHolder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_actualHolder	ActualHolder	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState	OperationalState	0..1	R	Preliminary OpenModelAttribute	The operational state is used to indicate whether or not the resource is installed and

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• AVC: NA • valueRange: no range constraint • support: MANDATORY	working.
administrativeControl Inherited	AdministrativeControl	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.3.1.23   HolderMonitors

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::DynamicDetails::HolderMonitors

Represents the dynamic state of the holder instance.

Applied stereotypes:
- Experimental

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

Table 58: Attributes for HolderMonitors

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isActive	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
isActualMismatchWithExpected	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_aggregateFunction	AggregateFunction	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.24   HolderStructure

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

Represents the form of the holder.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 59: Attributes for HolderStructure

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
holderCategory	HolderCategory	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
isCaptive	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
isGuided	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
isQuantisedSpace	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.3.1.25   Location

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 60: Attributes for Location

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

2.3.1.26   *ManufacturedThing*

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

Collects all invariant aspects of a manufactured thing.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 61: Attributes for ManufacturedThing

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

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_equipmentInstance	EquipmentInstance	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_operatorAugmentedEquipment Type	OperatorAugmentedEquipme ntType	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.27   ManufacturerProperties

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

Represents the properties of the manufacturer.

Applied stereotypes:
- Experimental
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

Table 62: Attributes for ManufacturerProperties

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
manufacturerIdentifier	String	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
manufacturerName	String	1	RW	Experimental OpenModelAttribute	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	

2.3.1.28   MechanicalFeatures
Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::InvariantDetails::MechanicalFeatures

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.3.1.29   MechanicalFunctions
Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::DynamicDetails::MechanicalFunctions

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 63: Attributes for MechanicalFunctions

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

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

2.3.1.30   NonFieldReplaceable

Qualified Name: CoreModel::CorePhysicalModel-Initial::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 (an associated connectors are assumed to belong to the containing FRU).

This class is abstract.

Applied stereotypes:
• Experimental
• OpenModelClass
  o objectCreationNotification: NA
  o objectDeletionNotification: NA
  o support: MANDATORY

Inherits properties from:
• Equipment

2.3.1.31   NonFruSupportPosition

Qualified Name: CoreModel::CorePhysicalModel-Initial::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 holder what is present is fixed whilt the equipment is in the field.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 64: Attributes for NonFruSupportPosition

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

2.3.1.32   OperatorAugmentedEquipmentType

Qualified Name: CoreModel::CorePhysicalModel-
Initial::EquipmentDetail::ObjectClasses::InvariantDetails::OperatorAugmentedEquipmentType

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 65: Attributes for OperatorAugmentedEquipmentType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
assetTypeIdentifier	String	1	RW	Experimental OpenModelAttribute	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	

2.3.1.33 *PhysicalCharacteristics*

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 66: Attributes for PhysicalCharacteristics

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

2.3.1.34   *PhysicalProperties*
Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::DynamicDetails::PhysicalProperties

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 67: Attributes for PhysicalProperties

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

2.3.1.35   *PhysicalRating*
Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::InvariantDetails::PhysicalRating

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA

o   support: MANDATORY

Table 68: Attributes for PhysicalRating

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

2.3.1.36   Pin

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

An individual physical connection point (male or female). May be capable of carrying electrical or optical signals. A pin may have more than one wire/fiber attached but is such that all attached things get exactly the same signal set.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 69: Attributes for Pin

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

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

2.3.1.37   PinGroup

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

A group of pins that together provide signal group where any one pin removed from the group will prevent the signals of the signal group from flowing successfully.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- GroupOfPins
- Port

Table 70: Attributes for PinGroup

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

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

2.3.1.38   PinLayout

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

The structuring of pins in a connector.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 71: Attributes for PinLayout

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

2.3.1.39   Port

Qualified Name: CoreModel::CorePhysicalModel-Initial::ConnectorAndPin::ObjectClasses::Port

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

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

2.3.1.40   Position
Qualified Name: CoreModel::CorePhysicalModel-Initial::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.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 72: Attributes for Position

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

2.3.1.41 ProtectionSwitch

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentToFunction::ObjectClasses::ProtectionSwitch

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

Table 73: Attributes for ProtectionSwitch

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_protectedFunctionBlock	ResilientFunctionBlock	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_functionBlock	FunctionBlock	2..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.42 ResilientFunctionBlock

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

Represents the functions emergent from a function protection process. The emergent functions are necessarily significantly virtualized.

Applied stereotypes:
- Experimental
- OpenModelClass

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o   objectCreationNotification: NA
o   objectDeletionNotification: NA
o   support: MANDATORY

Table 74: Attributes for ResilientFunctionBlock

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

2.3.1.43   SignalRefPt

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

A single coherent signal as processed by a single LTP.

This class is abstract.

Applied stereotypes:
• Experimental
• OpenModelClass
    o   objectCreationNotification: NA
    o   objectDeletionNotification: NA
    o   support: MANDATORY

Table 75: Attributes for SignalRefPt

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ltp	LogicalTerminationPoint	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

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

2.3.1.44   SignalRefPtGroup

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

A physical indivisible group of signals.

This class is abstract.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Inherits properties from:
- Port

Table 76: Attributes for SignalRefPtGroup

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_pinGroup	PinGroup	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_signalRefPt	SignalRefPt	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: MANDATORY	

2.3.1.45   SpatialPropertiesOfType

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

Represents the basic invariant spatial properties of a physical thing.

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 77: Attributes for SpatialPropertiesOfType

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
height	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
width	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
length	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.3.1.46   SupportConstraints

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

Rules related to how both non-FRU and FRU presence restricts the potential for additonal 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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 78: Attributes for SupportConstraints

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_constrainedSupportedNonFru	SupportedNonFru	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_constrainedSupportedFru	SupportedEquipment	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.47   SupportedEquipment

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentSpecification::ObjectClasses::SupportedEquipment

The FRU equipment types supported by the holder.

Applied stereotypes:
- Experimental
- OpenModelClass

     o   objectCreationNotification: NA
     o   objectDeletionNotification: NA
     o   support: MANDATORY

Table 79: Attributes for SupportedEquipment

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

2.3.1.48   SupportedNonFru

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentSpecification::ObjectClasses::SupportedNonFru

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - o   objectCreationNotification: NA
  - o   objectDeletionNotification: NA
  - o   support: MANDATORY

Table 80: Attributes for SupportedNonFru

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_nonFruDetails	Equipment	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_blockedNonFruPosition	NonFruSupportPosition	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_supportConstraints	SupportConstraints	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.3.1.49   Swapability

Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentDetail::ObjectClasses::InvariantDetails::Swapability

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 81: Attributes for Swapability

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
isHotSwappable	Boolean	1	RW	Experimental OpenModelAttribute • AVC: NA	To be provided

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	

2.3.2   Data Types

2.3.3   Enumeration Types

2.3.3.1 *ConnectorAndPinOrientation*
Qualified Name: CoreModel::CorePhysicalModel-Initial::EquipmentPatternStructure::DataTypes::ConnectorAndPinOrientation

Most connector schems 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-Initial::EquipmentPatternStructure::DataTypes::EquipmentCategory

The form of equipment.

Applied stereotypes:
- Experimental

Contains Enumeration Literals:
- SUBRACK:
  - An assembly with holders designed to accommodate CIRCUIT_PACKs. The assembly is designed to be mounted in a RACK.
  - Applied stereotypes:
    - Experimental
- CIRCUIT_PACK:
  - An assembly with connectors compatible with those in a holder. The assembly is designed to be mounted in a holder (SLOT) of a SUBRACK. May also support holders (SLOTs) for SMALL_FORMFACTOR_PLUGGABLEs
  - Applied stereotypes:
    - Experimental
- SMALL_FORMFACTOR_PLUGGABLE:
  - A small assembly (compared to a CIRCUIT_PACK) with connectors compatible with those in a holder. The assembly is designed to be mounted in a holder (SLOT) of a CIRCUIT_PACK or STAND_ALONE_UNIT.
  - 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 CIRCUIT_PACKs or for SMALL_FORMFACTOR_PLUGGABLEs
  - Applied stereotypes:
    - Experimental
- RACK:

o   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.
o   Applied stereotypes:
▪   Experimental

2.3.3.3 HolderCategory

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

The form of holder.

Applied stereotypes:
- Experimental

Contains Enumeration Literals:
- SLOT:
  o   A guided holder with fixed connectors. The guided holder is designed to take a particular form of CIRCUIT_PACK or SMALL_FORMFACTOR_PLUGGABLE
  o   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:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 82: Attributes for AdapterPropertySpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_poolPropertySpec	PoolPropertySpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_constrainingMppingInteraction Rule	MappingInteractionRule	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_ownedMappingInteractionRule	MappingInteractionRule	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA

o   objectDeletionNotification: NA
o   support: MANDATORY

Table 83: Attributes for ClientSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_mappingInteractionRule	MappingInteractionRule	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.4.1.3 ConfigurationAndSwitchControllerSpec

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::ConfigurationAndSwitchControllerSpec

The spec of a ConfigurationAndSwitchController.

Applied stereotypes:
• Experimental
• OpenModelClass
  o   objectCreationNotification: NA
  o   objectDeletionNotification: NA
  o   support: MANDATORY

Inherits properties from:
• GlobalClass

Table 84: Attributes for ConfigurationAndSwitchControllerSpec

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

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Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ingressSwitchSelection	IngressSwitchSelection	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressSwitchSelection	EgressSwitchSelection	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA	List of simple name-value extensions.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
Inherited				• valueRange: no range constraint • support: MANDATORY	
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.4.1.4 ConfigurationGroupSpec

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::ConfigurationGroupSpec

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:
- GlobalClass

Table 85: Attributes for ConfigurationGroupSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_casc	ConfigurationAndSwitchControllerSpec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
forwardingSpec	ForwardingSpec	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_ltpAssociationRule	LtpAssociationRule	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
lifecycleState Inherited	LifecycleState	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.4.1.5 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. Equialent to an ITU-T CTP [ITU-T G.8052].

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 86: Attributes for ConnectionPointAndAdapterSpec

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

2.4.1.6 ConnectionSpec

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::ConnectionSpec

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

2.4.1.7 ControlRule

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:
- LocalClass

2.4.1.8 EgressPortSet

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::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:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY
- Preliminary

Inherits properties from:
- LocalClass

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

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

Applied stereotypes:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY
- Preliminary

Table 87: Attributes for EgressSwitchSelection

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
setMember	ToBeDefined	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.4.1.10 *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).

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Table 88: Attributes for FdAndLinkRule

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
ruleType	RuleType	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
forwardingRule	ForwardingRule	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
complexRuleQualifier	ToBeDefined	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Provides restrictions (such as same channel).
fcSpec	ToBeDefined	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Indicates the type(s) of FC to which the rule applies.
fcPortRole	ToBeDefined	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint	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.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• support: MANDATORY	
fcPortDirection	ToBeDefined	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
overridePriority	Integer	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided

2.4.1.11   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).

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 89: Attributes for FdAndLinkRuleSet

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_fdRule	FdAndLinkRule	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
isRuleOnly	Boolean	1	RW	Experimental OpenModelAttribute	Indicates that the FD is only carrying rules and that FC creation is the FD is NOT

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• AVC: NA • valueRange: no range constraint • support: MANDATORY	allowed.

2.4.1.12   ForwardingSpec

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

The overall spec for the forwarding entity.

Applied stereotypes:
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY
- Preliminary

Inherits properties from:
- GlobalClass

Table 90: Attributes for ForwardingSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_multiSwitchedUniFlow	MultiSwitchedUniFlow	1..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_cascSpec	ConfigurationAndSwitchControllerSpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_portSetSpec	PortSetSpec	1..*	RW	Preliminary OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_configurationGroupSpecSpec	ConfigurationGroupSpec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_ltpAssociationRule	LtpAssociationRule	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_layerProtocolParameterSpec	LayerProtocolParameterSpec	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	UUID: An identifier that is universally unique (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.4.1.13   IngressPortSet

Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::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:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY
- Preliminary

Inherits properties from:
- LocalClass

2.4.1.14   IngressSwitchSelection

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

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

Applied stereotypes:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY
- Preliminary

Table 91: Attributes for IngressSwitchSelection

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description

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

2.4.1.15   LayerProtocolParameterSpec
Qualified Name: CoreModel::CoreSpecificationModel::FcCapability::ObjectClasses::LayerProtocolParameterSpec

Offers the opportunity to define a list layer-protocol related parameters. Used to specify the extension a class.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 92: Attributes for LpSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_adapterSpec	ConnectionPointAndAdapter Spec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_terminationSpec	TerminationSpec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_adapterPropertySpec	AdapterPropertySpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_providerViewSpec	ProviderViewSpec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_serverSpec	ServerSpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.4.1.17   LtpAssociationRule

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

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

Applied stereotypes:
- OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

- Preliminary

Inherits properties from:
- LocalClass

2.4.1.18   LtpSpec

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

The specification of a specific type of LTP.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 93: Attributes for LtpSpec

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

2.4.1.19   MappingInteractionRule

Qualified Name: CoreModel::CoreSpecificationModel::LtpCapability::ObjectClasses::MappingInteractionRule

The specification of the interaction between the support for different client layer protocols signals. For example an LP that support 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 posibility of using a particular layer protocol Y instance being used.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.4.1.20   MultiSwitchedUniFlow

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

A switched unidirection 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:
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY
- Preliminary

Inherits properties from:
- LocalClass

Table 94: Attributes for MultiSwitchedUniFlow

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ingressPortSet	IngressPortSet	1..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressPortSet	EgressPortSet	1..*	RW	Preliminary OpenModelAttribute • AVC: NA	See referenced class

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_casc	ConfigurationAndSwitchCon trollerSpec	0..1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_ingressFcPortSet	IngressPortSet	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressFcPortSet	EgressPortSet	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • 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 • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Used to track the planned deployment, allocation to clients and withdrawal of resources.
address Inherited	Address	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	One or more descriptions of the location.

2.4.1.21   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:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Table 95: Attributes for PoolPropertySpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_clientSpec	ClientSpec	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
clientCapacity	ToBeDefined	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	To be provided
_adapterPropertySpec	AdapterPropertySpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.4.1.22   PortSetSpec

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

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

Applied stereotypes:
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA

    o support: MANDATORY
- Preliminary

Inherits properties from:
- LocalClass

Table 96: Attributes for PortSetSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_ingressPortSet	IngressPortSet	0..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_egressPortSet	EgressPortSet	0..*	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_ltpAssociationRule	LtpAssociationRule	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
role	String	1	RW	Preliminary OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	Role of the port in the context of the ForwardingSpec.
_layerProtocolParameterSpec	LayerProtocolParameterSpec	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
localId Inherited	NameAndValue	1..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	An identifier that is unique in the context of some scope that is less than the global scope. (consider 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

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Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
					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 • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of names.
label Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of labels.
extension Inherited	NameAndValue	0..*	RW	OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	List of simple name-value extensions.
operationalState Inherited	OperationalState	0..1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	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.
adminisatratveState Inherited	AdministrativeState	1	R	Preliminary OpenModelAttribute • AVC: NA • 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	1	RW	Preliminary OpenModelAttribute • AVC: NA	Used to track the planned deployment, allocation to clients and withdrawal of resources.

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

2.4.1.23   ProviderViewSpec

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

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

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 97: Attributes for ProviderViewSpec

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_poolPropertySpec	PoolPropertySpec	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.4.1.24   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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.4.1.25   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:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 98: Attributes for TerminationSpec

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

2.4.2   Data Types

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

2.4.3.2 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

2.4.4   Primitive Types

2.5   Core Enhancements data dictionary

This section provides a view of the Classes of the Core Enhancements (data types etc are intentionally not shown). It shows owned attributes for each class.

2.5.1   Classes for Management/Control modeling

2.5.1.1 ComputeFunction
Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ComputeFunction

A generalized computational function with with no particular specialization. The specialization will be stated via a spec.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.5.1.2 ControlPolicies

Qualified Name: CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControlPolicies

Policy governing the controller

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.5.1.3 ControlledEntity

Qualified Name: CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControlledEntity

The entity that is controlled by the controller at the focus of the view. The entity may be an LTP, an FC etc. Note that the controlled entity may be another controller.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.5.1.4 ControlledExposedView

Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControlledExposedView

The view exposed of the controlled environment for the purpose of controlling the controlled enviromemt via the controller..

Applied stereotypes:
- Experimental
- OpenModelClass
  - objectCreationNotification: NA
  - objectDeletionNotification: NA
  - support: MANDATORY

Inherits properties from:
- View

Table 99: Attributes for ControlledExposedView

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_portToController	PortToController	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_controlledEntity Inherited	ControlledEntity	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.5.1.5 ControllerControlView

Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControllerControlView

The presented view of the controller for the purpose of controlling teh controller.

Applied stereotypes:
- Experimental
- OpenModelClass
  - o objectCreationNotification: NA
  - o objectDeletionNotification: NA
  - o support: MANDATORY

Inherits properties from:
- View

Table 100: Attributes for ControllerControlView

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_controllerEntity	ControllerEntity	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_portToController	PortToController	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_controlledEntity Inherited	ControlledEntity	1..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.5.1.6 *ControllerEntity*

Qualified Name: CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControllerEntity

The controller.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Inherits properties from:
- ControlledEntity

2.5.1.7 *ControllerFunction*

Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControllerFunction

The functionality of the controller.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 101: Attributes for ControllerFunction

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_computeFunction	ComputeFunction	1..*	RW	Experimental OpenModelAttribute • AVC: NA	See referenced class

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Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
				• valueRange: no range constraint • support: MANDATORY	
_view	View	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_controlInternalView	ControllerInternalView	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_controllerControlView	ControllerControlView	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_controlledExposedView	ControlledExposedView	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.5.1.8 ControllerInternalView
Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ControllerInternalView

The view the controller has of the controller environment.

Applied stereotypes:
* Experimental
* OpenModelClass
    o objectCreationNotification: NA
    o objectDeletionNotification: NA
    o support: MANDATORY

Inherits properties from:
- View

2.5.1.9 NetworkConstruct

Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::NetworkConstruct

An assembly of networking entities.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

2.5.1.10   PortToController

Qualified Name:
CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::PortToController

The access to the controller fuctions.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 102: Attributes for PortToController

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_controllerFunction	ControllerFunction	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_portToController	PortToController	0..*	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

2.5.1.11   View

Qualified Name: CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::View

A an assembly of entities that is pruned/refactored from the "actual" entities such that the presetation of entities is fit for some purpose.

Applied stereotypes:
- Experimental
- OpenModelClass
    - o objectCreationNotification: NA
    - o objectDeletionNotification: NA
    - o support: MANDATORY

Table 103: Attributes for View

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

2.5.1.12　　　ViewMapping
Qualified Name: CoreModel::CoreModelEnhancements::CoreManagementControlComponentModel::ObjectClasses::ViewMapping

The rules that relate one view to another.

Applied stereotypes:
- Experimental
- OpenModelClass
    - objectCreationNotification: NA
    - objectDeletionNotification: NA
    - support: MANDATORY

Table 104: Attributes for ViewMapping

Attribute Name	Type	Multiplicity	Access	Stereotypes	Description
_controllerInternalView	ControllerInternalView	1	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class
_view	View	1..2	RW	Experimental OpenModelAttribute • AVC: NA • valueRange: no range constraint • support: MANDATORY	See referenced class

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