

# Data-centric XML

## Meta-Object Facility: Meta Classes

# MOF Specification

- MOF 1.4: OMG document formal/2002-04-03

# Structure of the MOF Model

- package “Model”
  - imports package “PrimitiveTypes” (Boolean, Integer, String)

# Core Abstract Classes

- ModelElement: base class of all meta-meta-classes
- Namespace: base class of all “scope like” classes
- GeneralizableElement: base class of all “inheritable” classes
- Classifier: base class of all classes denoting “types”
- TypedElement: base class of all classes “having a type”

# Core Associations

- **Contains: ModelElement <-> Namespace**
  - restricted wrt. container
    - e.g. packages must not contain operations, classes must not contain association ends
- **Generalizes: GeneralizableElement <-> GeneralizableElement**
- **IsOfType: TypedElement <-> Classifier**
- **DependsOn: ModelElement <-> ModelElement**

# ModelElement

- base Class: None
- abstract: yes
- attributes:
  - name
  - qualifiedName
  - annotation
- references:
  - container (of Contains)
  - requiredElements (of DependsOn)
  - constraints (of Constraints)

# Namespace

- base class: ModelElement
- abstract: yes
- references:
  - contents (of Contains)

# GeneralizableElement

- base class: Namespace
- abstract: yes
- attributes:
  - isRoot
  - isLeaf
  - isAbstract
  - visibility (Typ: VisibilityKind)
- references:
  - supertypes (of Generalizes)



# TypedElement

- base class: ModelElement
- abstract: yes
- references:
  - type (of IsOfType)

# Classifier

- base class: GeneralizableElement
- abstract: yes

# Class

- base class: Classifier
- abstract: no
- ContainedElements: Class, DataType subtypes, Attribute, Reference, Operation, Exception, Constraint, Constant, Tag
- attribute:
  - isSingleton

# Data Type

- base class: Classifier
- abstract: yes
- concrete specializations:
  - PrimitiveType
  - CollectionType
  - EnumerationType
  - AliasType
  - StructureType

# Feature

- base class: ModelElement
- abstract: yes
- attribute:
  - scope (type: ScopeKind, instance\_level, classifier\_level)
  - visibility

# StructuralFeature

- base type: Feature, TypedElement
- abstract: yes
- attributes:
  - multiplicity (MultiplicityType)
  - isChangeable

# Attribute

- base type: StructuralFeature
- abstract: no
- attributes:
  - isDerived

# Reference

- base type: StructuralFeature
- abstract: no
- references:
  - exposedEnd (of Exposes)
  - referencedEnd (of RefersTo)



# BehaviouralFeature

- base type: Feature, Namespace
- abstract: yes

# Operation

- base type: BehaviouralFeature
- abstract: no
- Attribute:
  - isQuery
- References:
  - exceptions (of CanRaise)

# Exception

- base type: BehaviouralFeature
- abstract: no

# Association

- base type: Classifier
- abstract: no
- attribute:
  - isDerived

# AssociationEnd

- base type: TypedElement
- abstract: no
- attribute:
  - isNavigable
  - aggregation (type: AggregationKind)
  - multiplicity (MultiplicityType)
  - isChangeable

# Package

- base type: GeneralizableElement
- abstract: no

# Import

- base type: ModelElement
- abstract: no
- attribute:
  - visibility
  - isClustered
- references:
  - importedNamespace (of Aliases)

# Parameter

- base type: TypedElement
- abstract: no
- attribute:
  - direction (DirectionKind)
  - multiplicity (MultiplicityType)



# Constraint

- base type: ModelElement
- abstract: no
- attribute:
  - expression (String)
  - language (String)
  - evaluationPolicy (EvaluationKind)
- references:
  - constrainedElements (of Constrains)

# Constant

- base type: TypedElement
- abstract: no
- attribute:
  - value (String)

# Tag

- base type: ModelElement
- abstract: no
- attribute:
  - tagId (String)
  - values (String)
- references:
  - elements (of AttachesTo)