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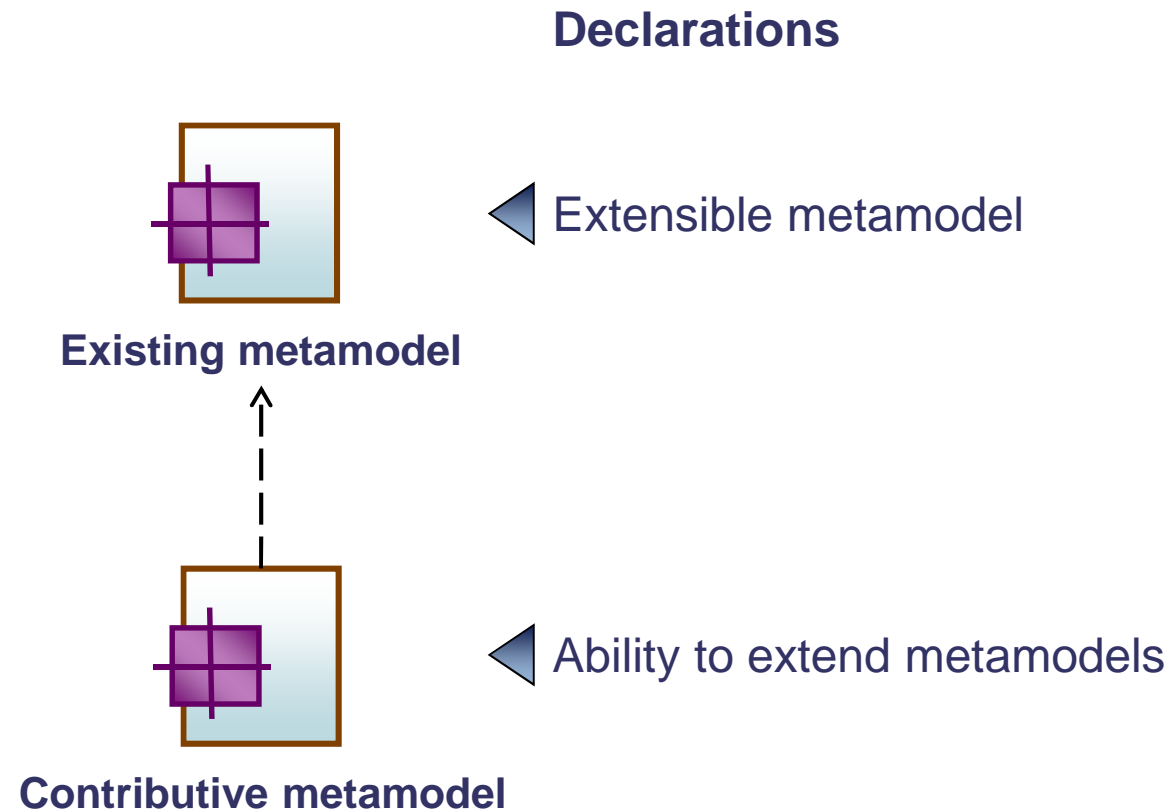
# Metamodel Extensibility

 **Kitalpha**



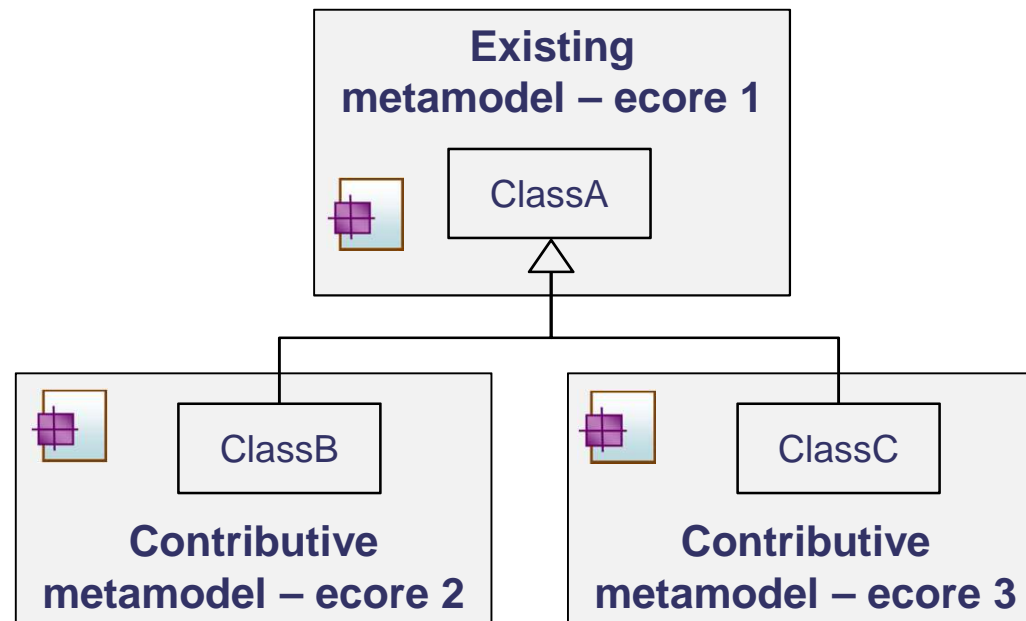
OPEN  
Version 1.0.0





Those abilities are expressed by properties in EMF (genmodel: Extensible Provider Factory, Child Creation Extenders)

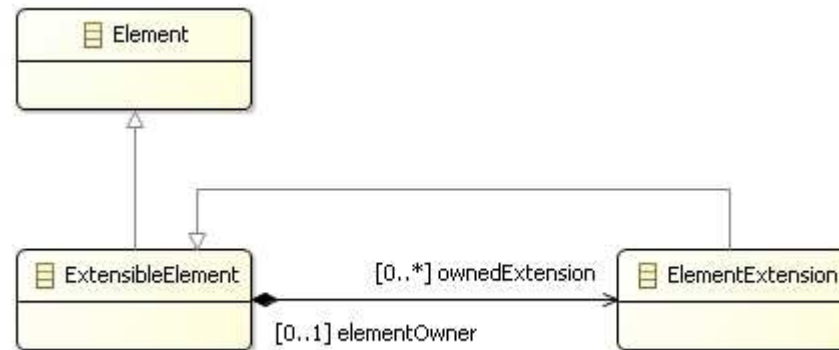
EMF enables extensibility only by subclass



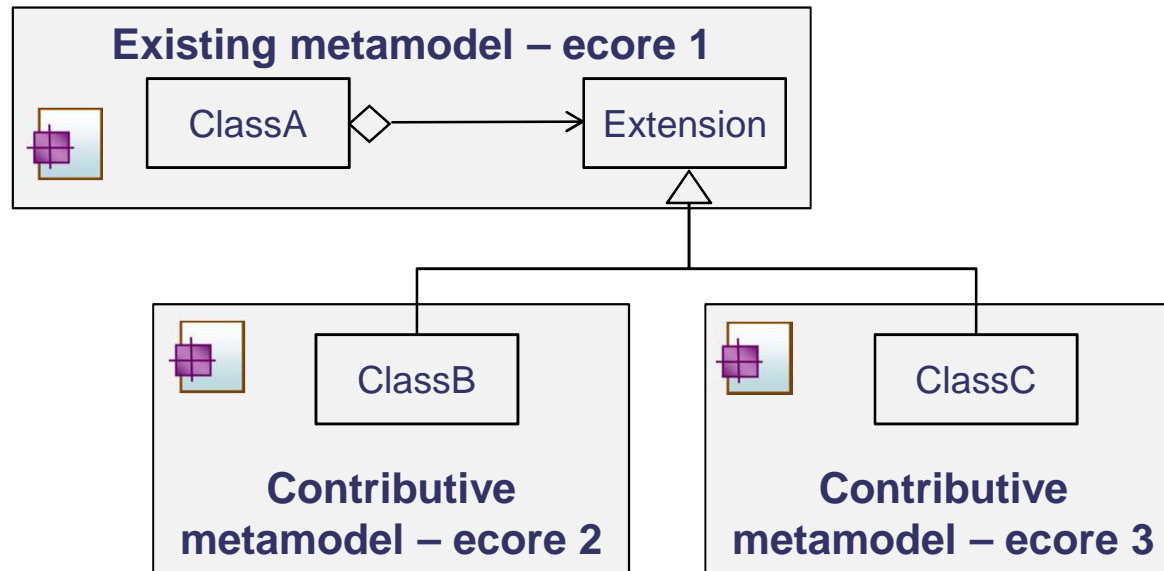
- ☺ This mechanism enables inheritance of all properties, constraints, and representations (e.g., user interfaces, diagrams)
- ☹ The type of a model element cannot be changed during its lifecycle

Kitalpha introduces the mechanism of extension by aggregation

New: **eMDE** (essential MDE metamodel), a top-level metamodel



<b>Element</b>	Top metaclass
<b>ExtensibleElement</b>	Metaclass providing the ability to dynamically aggregate new properties, named ElementExtension
<b>ExtensionElement</b>	Abstract metaclass which is adapted as new properties in contributive metamodels



Conceptually, ClassA aggregates ClassB and ClassC

```

Data ComponentSample.data {
  Class ComponentElement {
    superClass external emde.ExtensibleElement
    abstract: true
    ...
  }
  Class AbstractComponent {
    ...
  }
  Class SoftwareComponent {
    superClass AbstractComponent
  }
  Class HardwareComponent {
    superClass AbstractComponent
    ...
  }
  ...
}

```

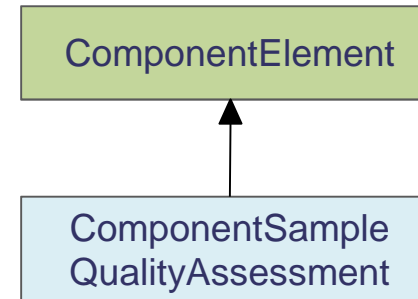
- Declaration of the extension by aggregation with inheritance of ExtensibleElement
- In this case, all the subclasses of ComponentElement become extensible

```

Data ComponentSampleQualityAssessment.data {
  Class QualityAssessment {
    extends ComponentSample.AbstractComponent
  Attributes:
    ...
  Associations:
    ...
    measures contains [0,*] QualityMeasure
  }
  Class QualityMeasure {
    ...
  }
}

```

- Declaration of the extension
- QualityAssessment extends the abstract class AbstractComponent

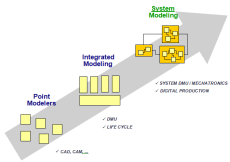




☺ The same model element can be decorated by data from different concerns (i.e. viewpoints) during its lifecycle

All the properties, constraints, and representations defined in the

☹ ExtensibleElement are not inherited by the ExtensionElement and must be redefined when needed



Kitalpha is supported by  
**Sys2Soft, Crystal, and Clarity,**  
 French and European projects



# Thank You!

<https://polarsys.org/kitalpha/>

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