

Modeling Search RFE

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Anyware Technologies

Plan

- Intro
- Scope
- Search
- Architecture
- Integration
- TopCased
- Conclusion

Introduction

- EMF is now a significant base for dozens of major open source/eclipse projects
- Java/Eclipse modeling tool, now in intensive industrial phase, mechanically lacks some productivity features
- Main reason are :
 - ▶ EMF Models complexity/size explodes
 - ▶ EMF Models fragmentation over different plugins/components
 - ▶ EMF Models based product Time to market shrinks
 - ▶ EMF Models are now synched with graphical editors

Scope

- Productivity features Examples
 - ▶ Search/Find elements or meta-elements
 - ▶ Various Elements or meta-elements Refactoring
 - ▶ Model/Elements Comparison and/or merge
 - ▶ ...

Eclipse Search

- Eclipse Search Philosophy
 - ▶ Search Result/Search Page extension points
 - ▶ Scope driven search queries
 - ▶ At least Text, Case Sensitive, Regex queries
 - ▶ Opening editors + selection while double clicking on matches
 - ▶ Queries history, Results history

Modeling Search

- EMF/Ecore based
 - ▶ A foundation for generic model search engine
 - ▶ To be reused for all Ecore based Models
 - ▶ (included in genmodel as a generation option ?)
 - ▶ Defines a meta-model based search framework
 - ▶ Must be extensible
 - To contribute search queries kinds
 - To contribute search participant meta-elements
 - To contribute search strategies/patterns

Ecore Search

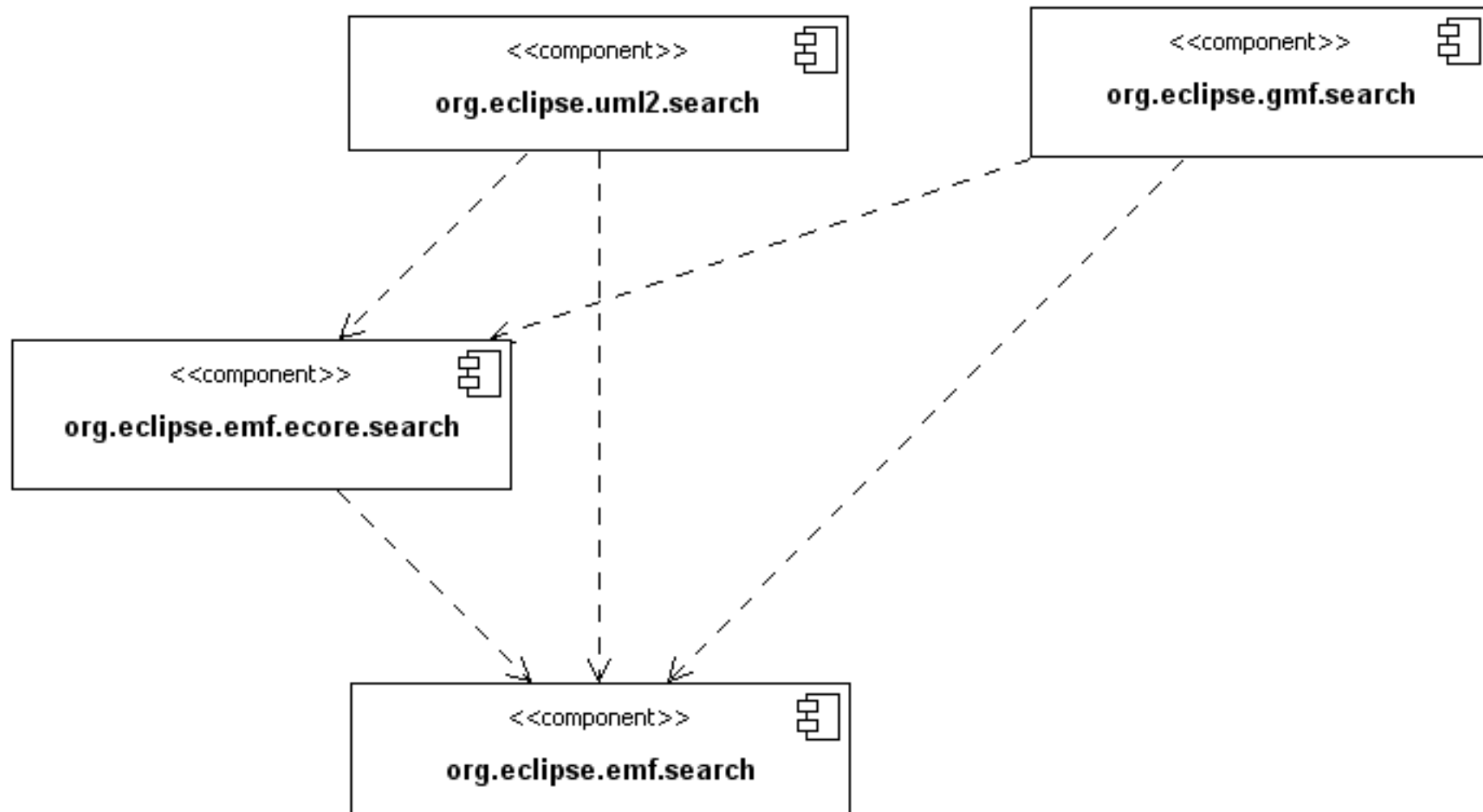
- Modeling Search
 - ▶ Lowest level model search
 - ▶ Base for all other Ecore based models search engines
 - ▶ Defines search core APIs to be reused by higher level models
 - ▶ Extensible with extension points

UML2 Search

- Ecore Search based
 - ▶ Reuses Ecore model search engine
 - ▶ Contributes its own meta-element search participants
 - ▶ Could contribute an OCL based search query (SQL ?)

Modeling Search

- Stratospheric Overview



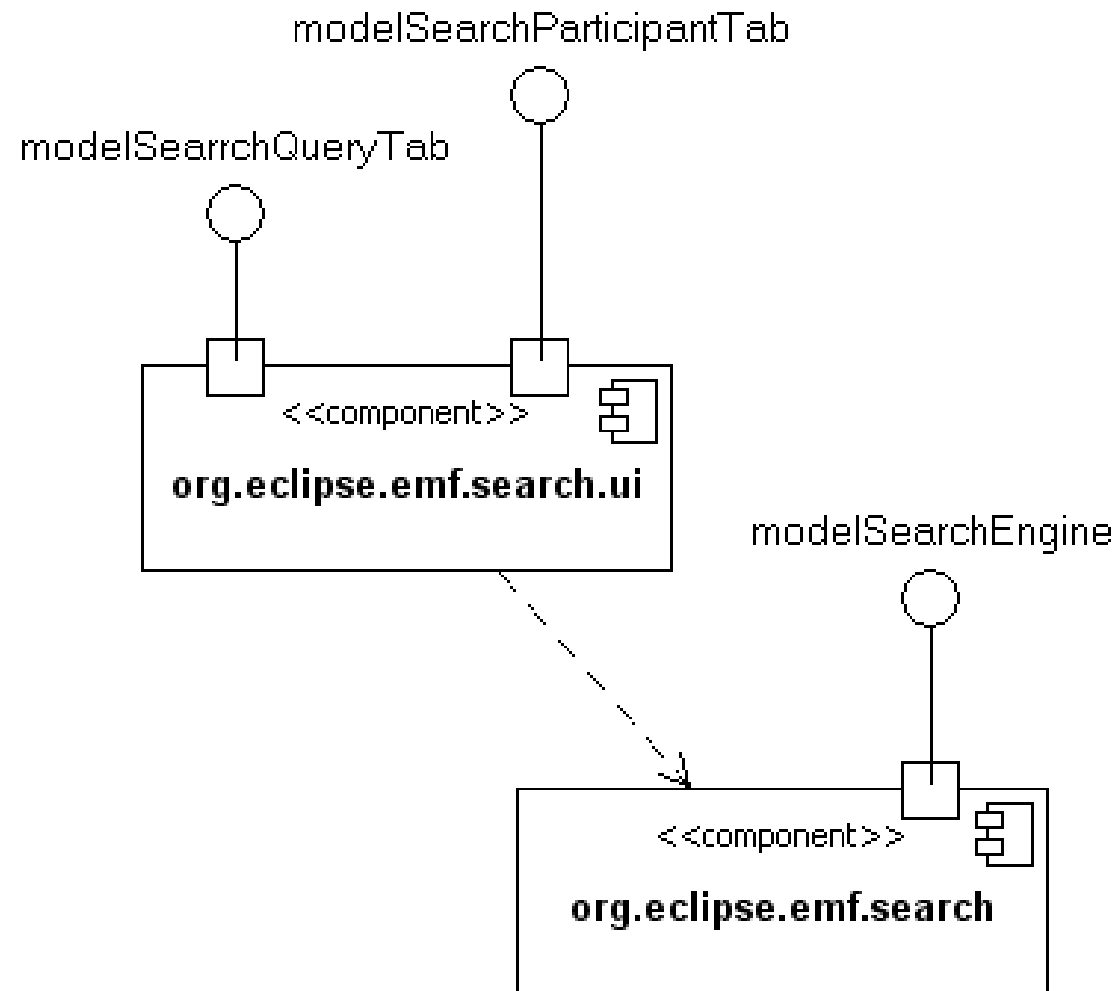
Meta Model Search

- Search Participants
 - ▶ Meta Elements against which a query will be ran
 - ▶ At least ENamedElement for textual query ...
- Query Participants
 - ▶ Query + Parameters Factories to be considered
- Model Participants
 - ▶ A model resource (.ecore, .uml2, ..., .xyz) to be considered
 - ▶ Graphical editors (visual representation of model participants)
- Scope
 - ▶ Given Workspace/Project/Resources Scope

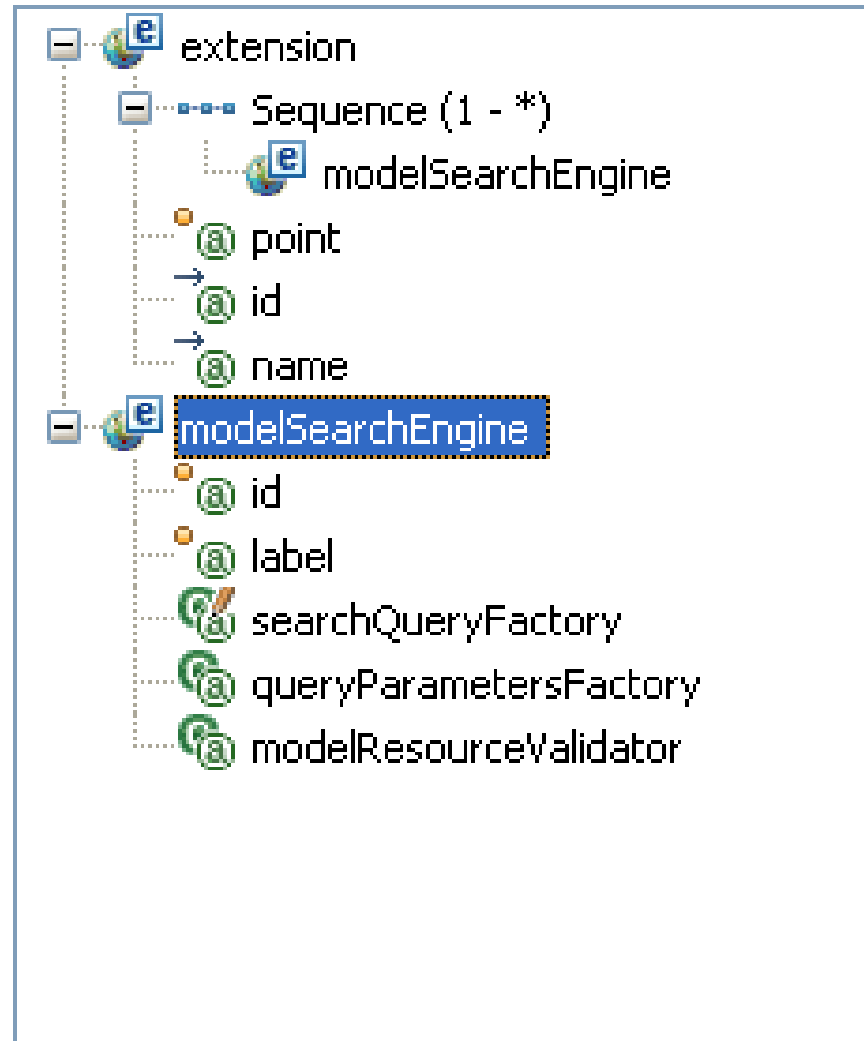
Meta Model Search Engine

- Model Search Parametrization
 - ▶ Search Participants (Which MetaElements to consider)
 - ▶ Query Participant (Which Query+Parameters to run)
 - ▶ Model Participant (Which Models to search metaElements into)
 - ▶ Scope (Which Scope to find participant models into)
- Works at a Resource/Object level
 - ▶ Only consider IResources
 - ▶ Handles generic Search/Query/Model/Scope participant objects
 - ▶ Generic Eclipse Search/Search UI implementation for models

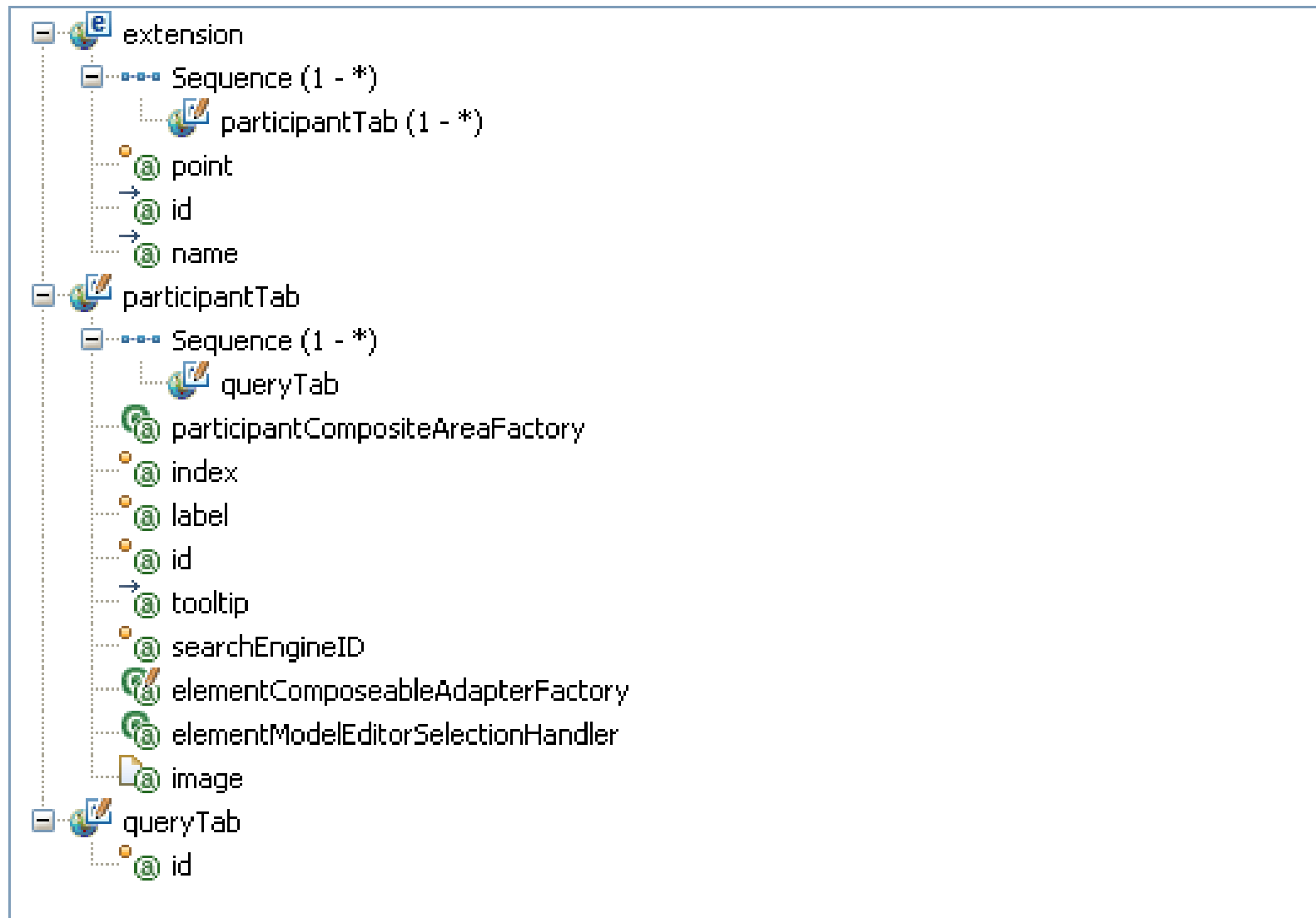
Model Search Extensibility



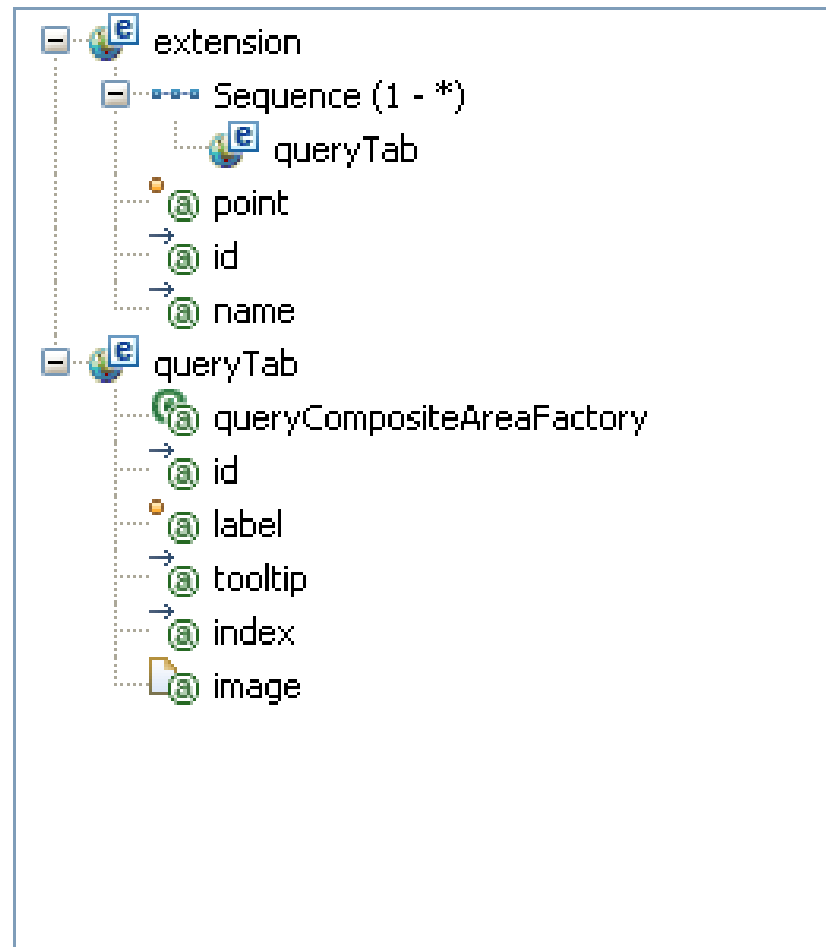
Non UI Extensibility



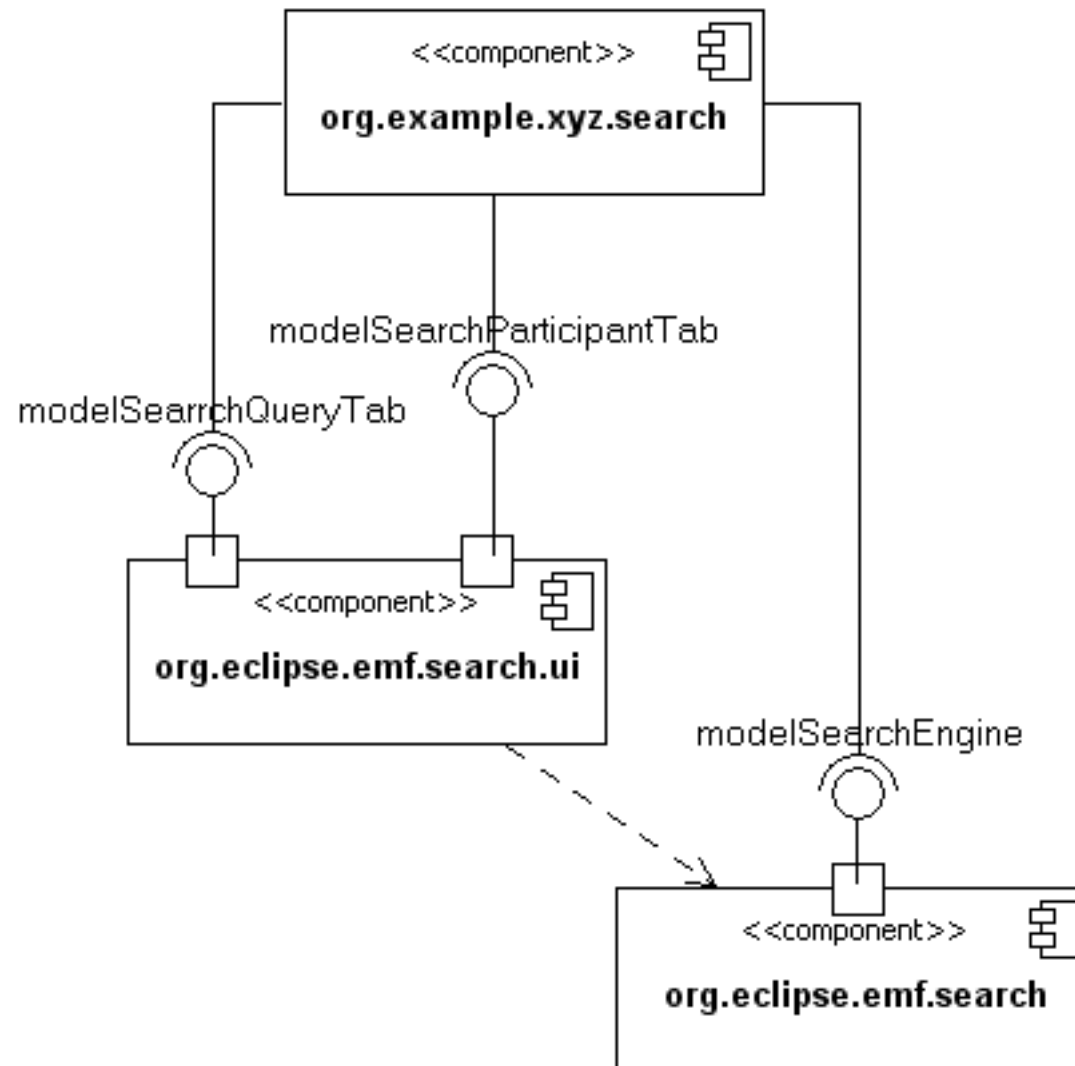
UI Extensibility



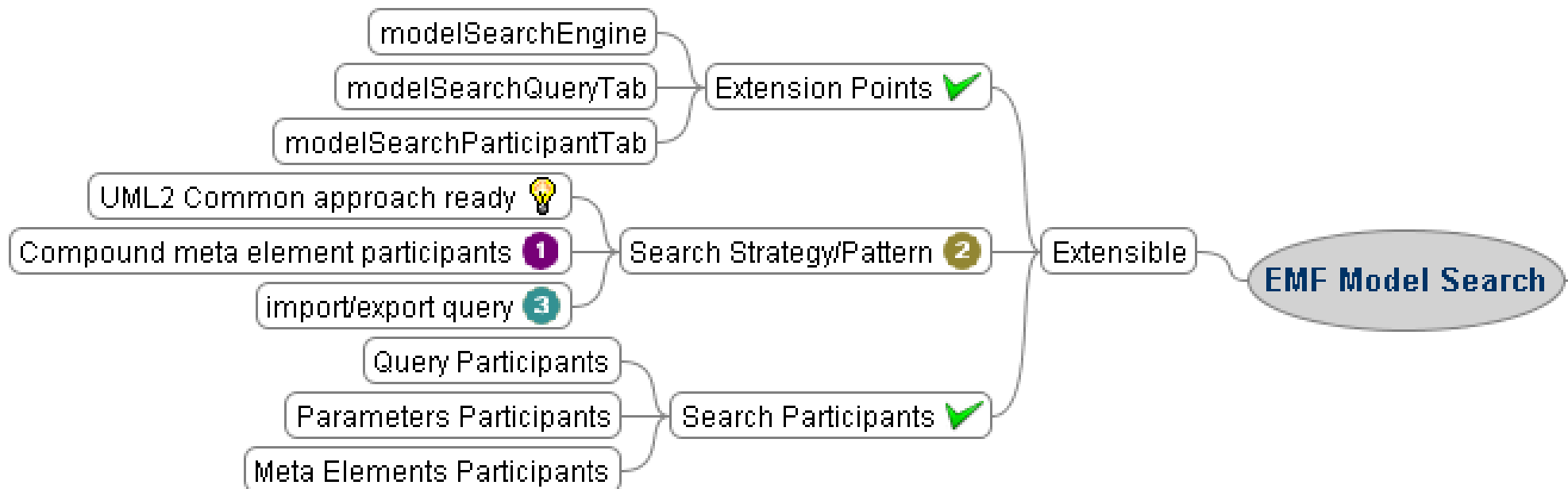
UI Extensibility



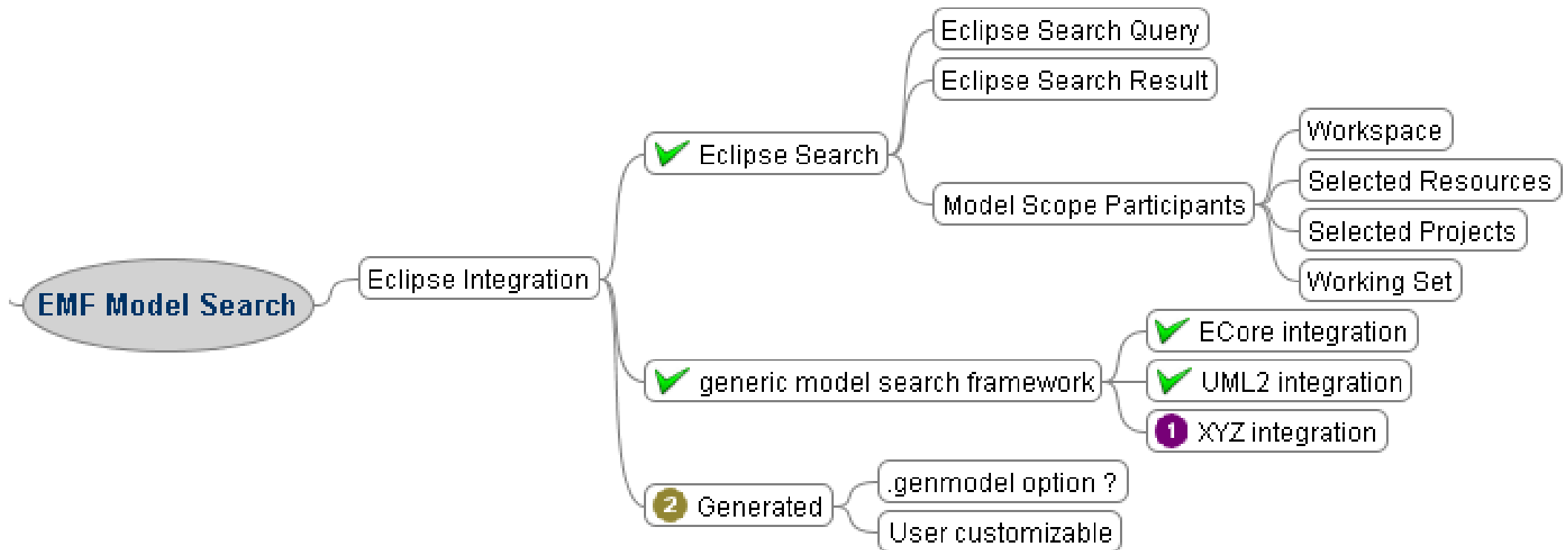
Model Search Extension



Extensibility Recap



Eclipse Integration Recap



Ecore/UM2 Model Search Extension

Query Tabs
(Textual & XPath)

Participant Tabs
(Ecore & UML2)



Integration

- Creates & Launches an Eclipse Search Query
 - ▶ `org.eclipse.search.ui.ISearchQuery`
- Coalesces Eclipse Search Results in the Search View
 - ▶ `org.eclipse.search.ui.ISearchResult`

TopCased

- TopCased 1.0 release is coming !
 - ▶ Model Search is part of TopCased 1.0
 - ▶ Modeling + TopCased Rocks !
- Contributors
 - ▶ We, all, are proud to contribute to Open Source projects
 - ▶ We, all, are impatient to collaborate with Eclipse Modeling guys

Conclusion

- It works !
- Need feedback for enhancements
 - ▶ Compound meta elements search participants
 - ▶ Search strategies (such as Rational Common Approach)
 - ▶ Non textual queries (EstructuralFeature + cardinality, ...)
- Acknowledgments
 - ▶ Sébastien Moran (Started Search Integration + nice guy)
 - ▶ David Sciama & Olivier Prouvost for their trust & support
 - ▶ Sylvie Suchet & Ludovic Le Mohan for their blind trust on me

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