



NEW AND NOTEWORTHY

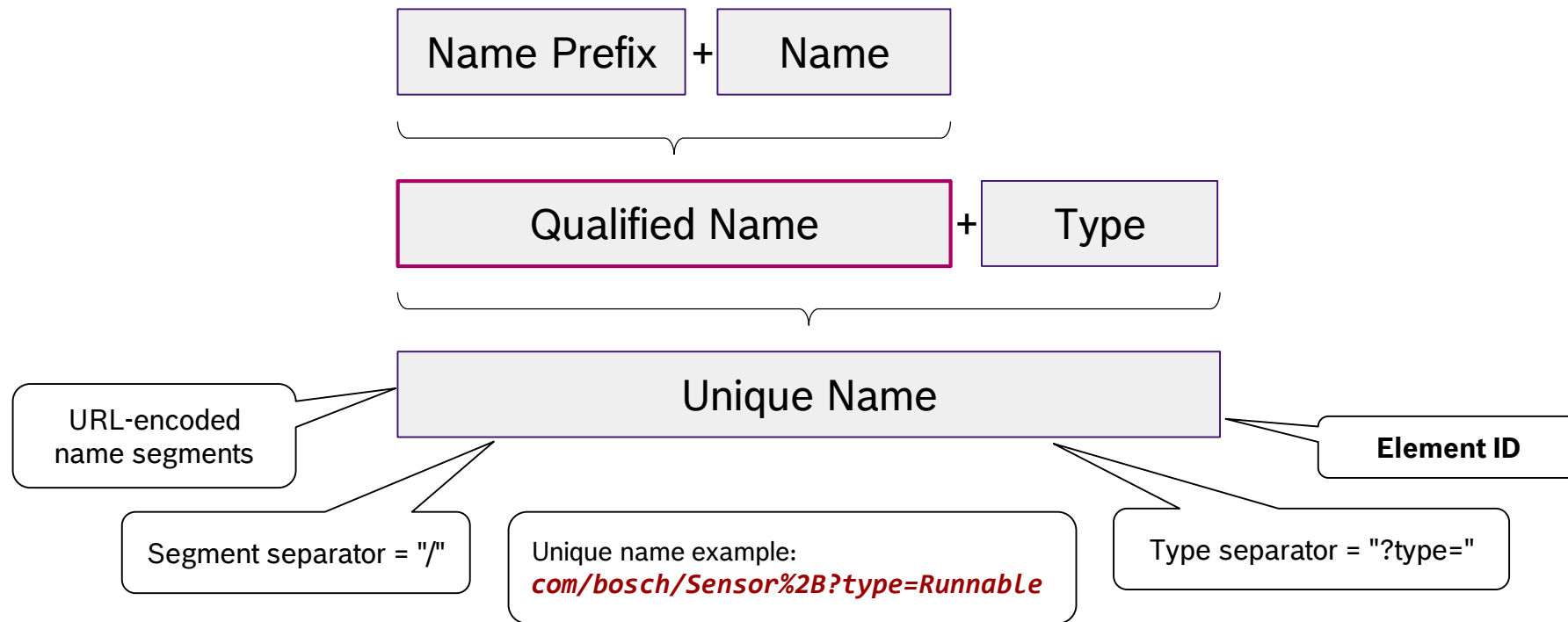
APP4MC 0.9.7 (JAN 2020)

- ▶ General description of platform changes
 - ▶ **Introduced qualified names and namespaces**
 - ▶ **Introduced component structures**
 - ▶ **Simplified component ports**
 - ▶ **Introduced hierarchical interfaces** for component ports and connections
 - ▶ **User interface improvements**
 - ▶ **New migration component**
- ▶ Technical description of model changes
 - ▶ **Namespaces / Element IDs**
 - ▶ **Port and Interface migration**
 - ▶ **Component References migration**
 - ▶ **Call Graph migration**

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Qualified Names

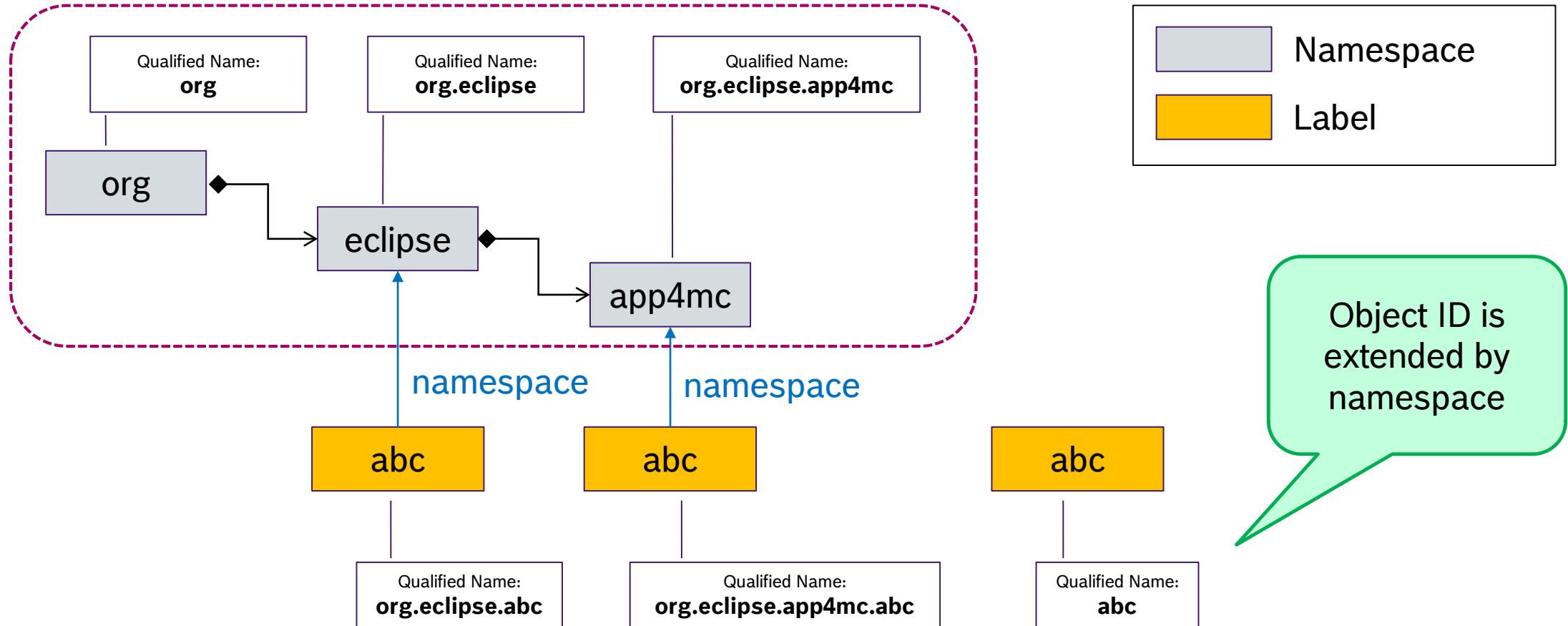
Qualified Names



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Namespaces

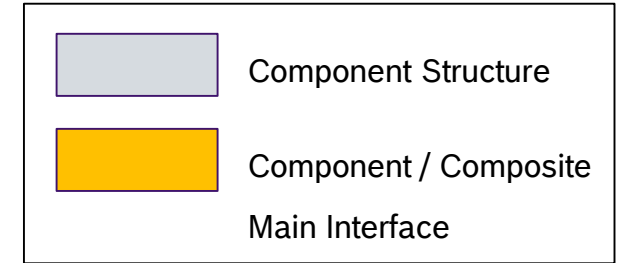
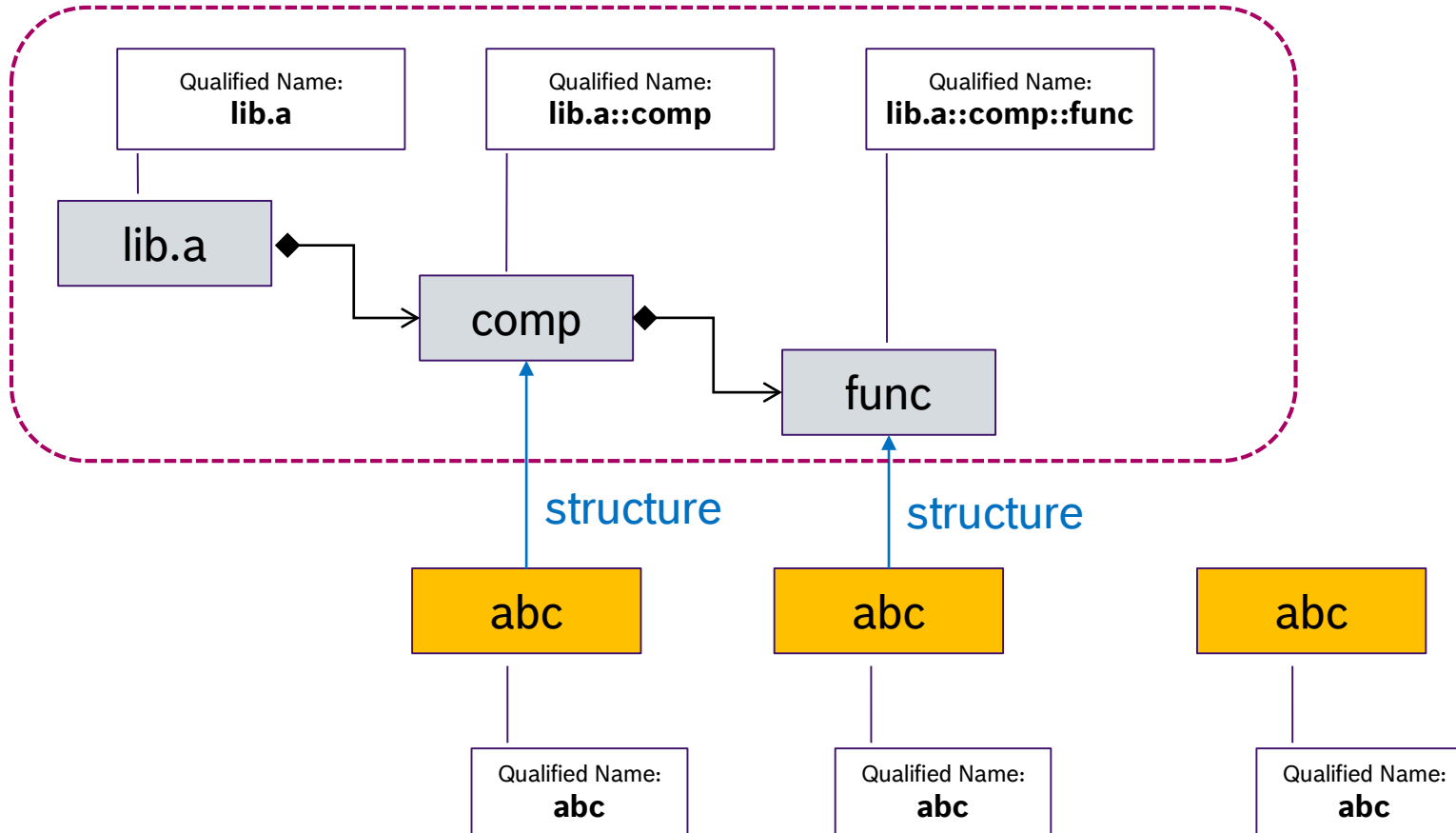
Namespaces



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Component Structures

Component Structures



Only structural information.
Object ID is not modified

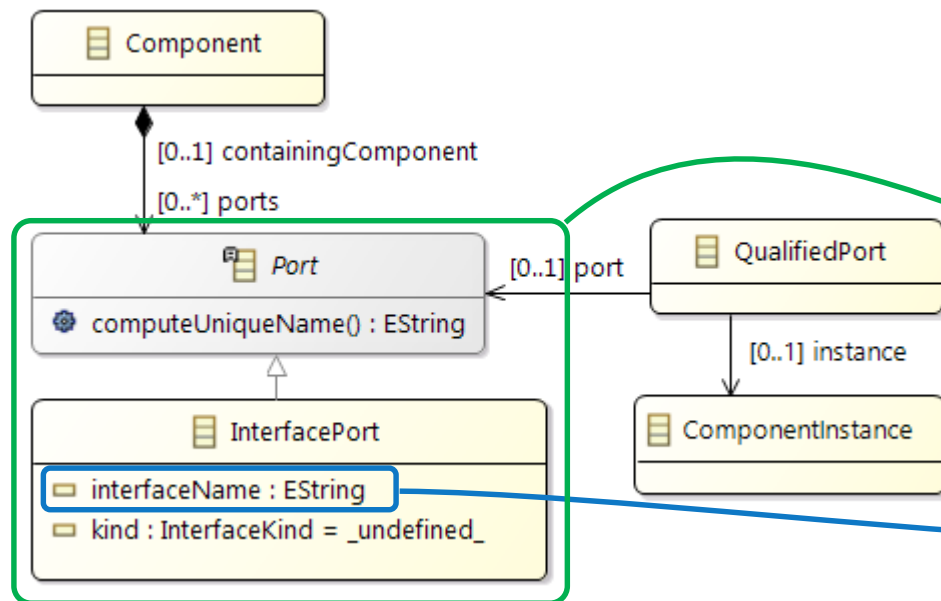
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Simplified Component Ports

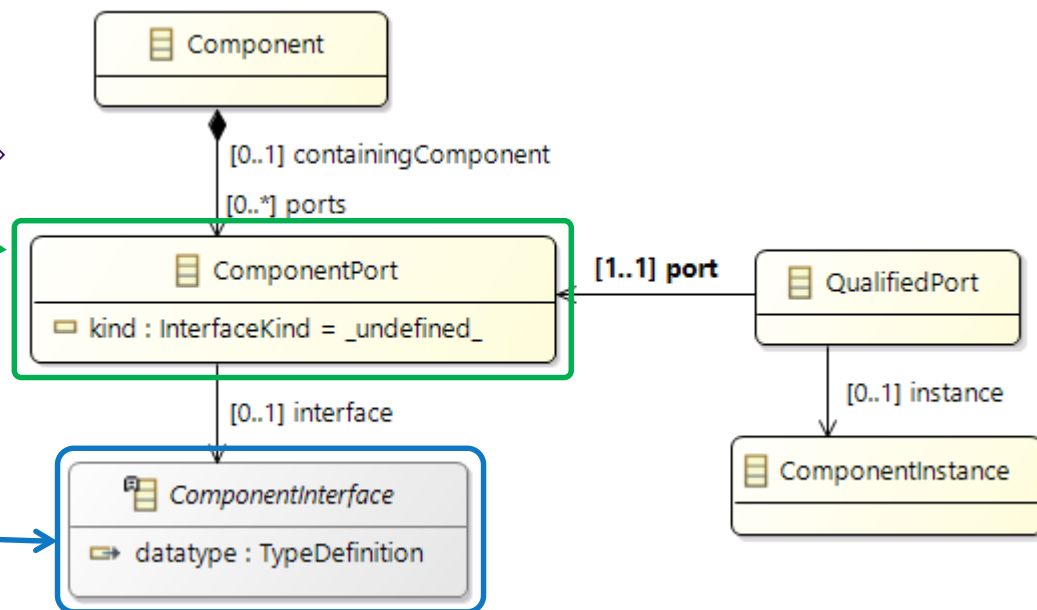
* requires migration

Component Ports (and Interfaces)

0.9.6



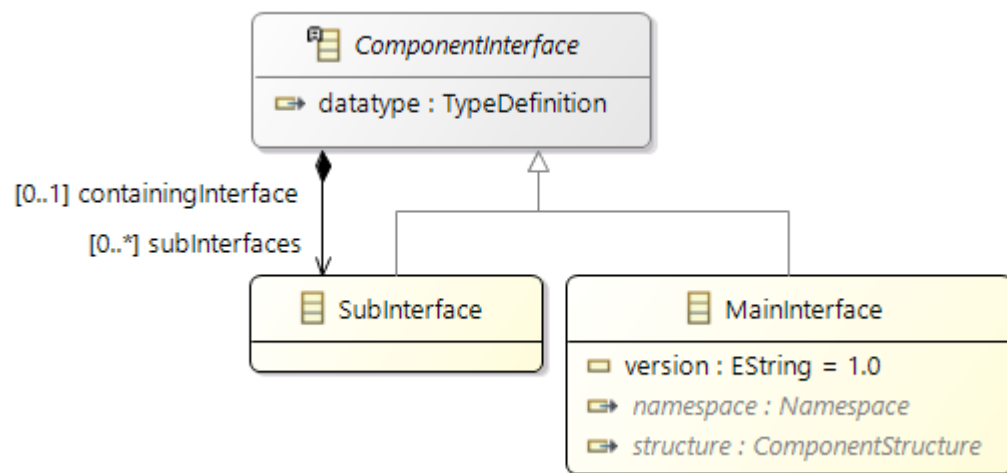
0.9.7



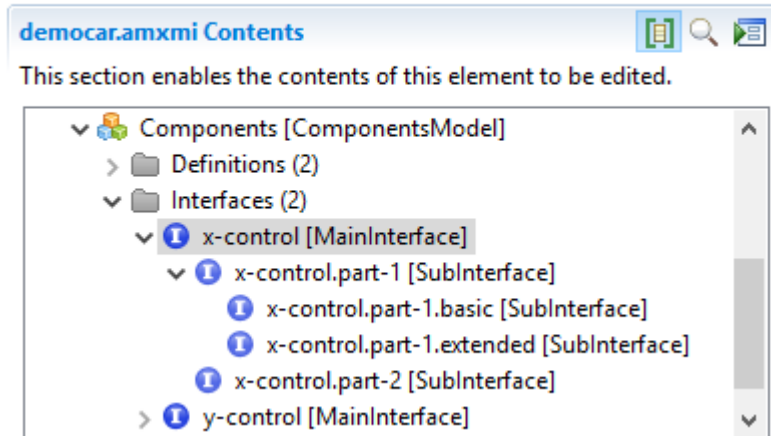
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Introduced Component Interfaces

Component Interfaces



AMALTHEA Contents Tree



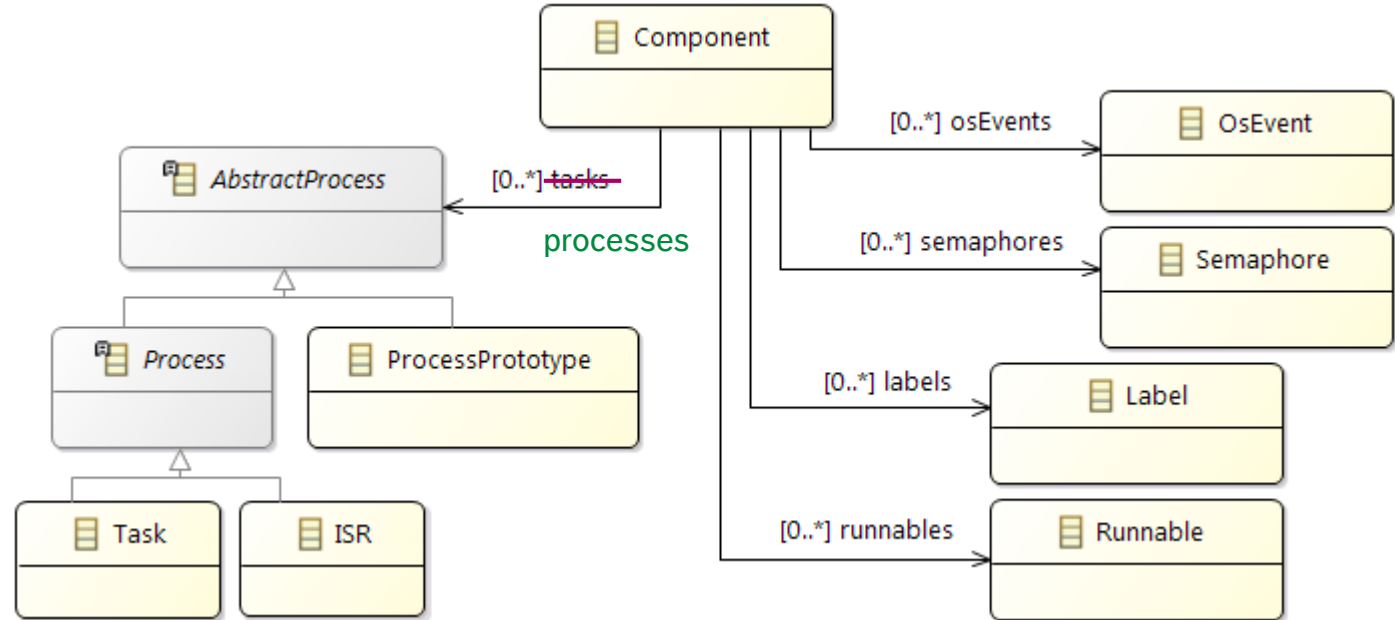
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Consolidated Component References

* requires migration

Component References

Misleading attribute "tasks" is renamed to "processes"



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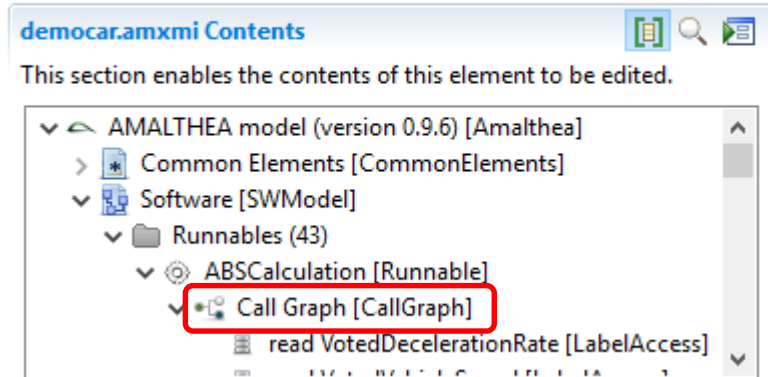
Renamed CallGraph

* requires migration

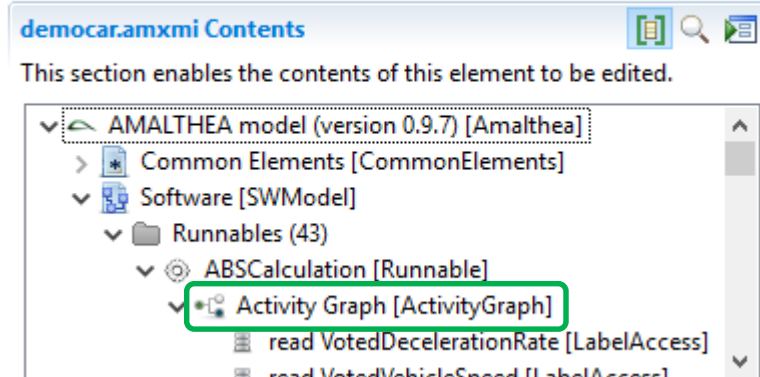
Call Graph -> ActivityGraph

Misleading attribute "callGraph" is renamed to "activityGraph"

AMALTHEA Contents Tree



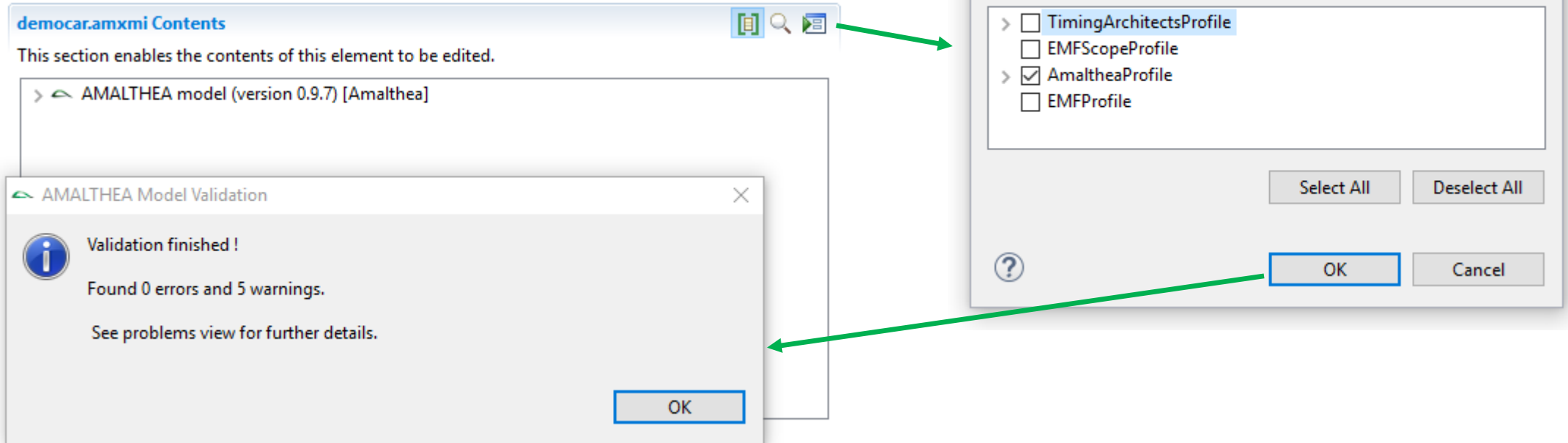
AMALTHEA Contents Tree



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User Interface

Feedback when validation is finished



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Model Migration Component

Model Migration Component - Fixed repository structure

download.eclipse.org/app4mc/components

```
-- addon
  |-- migration
    |-- releases
      |-- 0.9.6
        |-- p2repo
          |-- org.eclipse.app4mc.converters.p2repo-0.9.6.zip
      |-- 0.9.7
        |-- p2repo
          |-- headless
            |-- org.eclipse.app4mc.converters.p2repo-0.9.7.zip
        |-- latest
          |-- p2repo
            |-- headless
              |-- org.eclipse.app4mc.converters.p2repo-0.9.7.zip
    |-- snapshot
      |-- p2repo
      |-- headless
        |-- org.eclipse.app4mc.converters.p2repo-0.9.8-SNAPSHOT.zip
```

headless

- README.TXT
- amalthea_migration.jar

https://download.eclipse.org/app4mc/components/addon/migration/snapshot/p2repo/

APP4MC Migration Component - Use this URL in Eclipse APP4MC to install the component

This is the Update Site for the APP4MC Migration Component.

1. To install the APP4MC Migration Component from this site, start up Eclipse APP4MC 0.9.8, then do:
Help > Install New Software... >
2. Copy this site's URL into Eclipse, and hit Enter.
3. When the site loads, select the features to install, or click the **Select All** button.
4. To properly resolve all dependencies, check
☒ Contact all update sites during install to find required software
5. Click **Next**, agree to the license terms, and install.

Feature	Version	Feature Categor(ies)
org.eclipse.app4mc.amalthea.converters	0.9.8.202002191214	org.eclipse.app4mc.amalthea.converters
org.eclipse.app4mc.amalthea.converters.sdk	0.9.8.202002191214	org.eclipse.app4mc.amalthea.converters
Feature	Version	Feature Categor(ies)
artifacts.jar :: content.jar	:: plugins :: features	

Model Migration Component - Headless jar

APP4MC AMALTHEA Headless Migration Tool

Launch via executable jar (uses the bnd launcher)

```
java -jar amalthea_migration.jar [-v, --version <model_version>] [-r, --recursive] [-nb, --nobackup] <filename>
```

Options:

- v, --version The model version to which the model should be migrated to [optional].
 If not provided the latest supported version will be used.
- r, --recursive If folders should be traversed recursively [optional].
 If not provided only the files in the given folder will be migrated.
- nb, --nobackup If backup files should be created before the migration process [optional].
 If not provided a backup file will be created for every model file.

Parameter:

- filename The filename of the model file or the folder that contains model files to migrate

Examples:

Trigger a migration of the test.amxmi file to model version 0.9.5:

```
java -jar amalthea_migration.jar -v 0.9.5 test.amxmi
```

Trigger a migration of the test.amxmi file to the latest supported model version without file backup:

```
java -jar amalthea_migration.jar -nb test.amxmi
```

Trigger a migration of all model files in the folder test and subfolders to the latest supported model version:

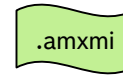
```
java -jar amalthea_migration.jar -r test
```

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Technical description of model changes



– description on Xcore level



– description on Xml / Xmi level



– handled by model migration

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Namespaces / Element IDs

Element IDs are stored in the amxmi file

0.9.6

```
<runnables
  name="APedSensor++"
  tags="SwcEngineSensors?type=Tag"
  callback="false" service="false">
  ...
</runnables>
<runnables
  name="APedVoter"
  tags="SwcEngineController?type=Tag"
  callback="false" service="false">
  ...
</runnables>
```

0.9.7

```
<runnables
  xmi:id="APedSensor%2B%2B?type=Runnable"
  name="APedSensor++"
  tags="SwcEngineSensors?type=Tag"
  callback="false" service="false">
  ...
</runnables>
<runnables
  xmi:id="APedVoter?type=Runnable"
  name="APedVoter"
  tags="SwcEngineController?type=Tag"
  callback="false" service="false">
  ...
</runnables>
```

Element IDs are stored in the amxmi file

Extended example with namespace

```

<tasks
  xmi:id="Task_5MS?type=Task"
  name="Task_5MS"
  stimuli="Timer_5MS?type=PeriodicStimulus" ...>
  <activityGraph>
    <items
      xsi:type="am:RunnableCall"
      runnable="com/bosch/Sensor%2B?type=Runnable"/>
    </activityGraph>
  </tasks>

```

Diagram illustrating the mapping of the `runnable` attribute value `com/bosch/Sensor%2B?type=Runnable` to the `xmi:id` attribute of the `Runnable` element in the `runnables` section.

```

<runnables
  xmi:id="com/bosch/Sensor%2B?type=Runnable"
  name="Sensor+"
  namespace="com/bosch?type=Namespace"
  tags="SwcEngineSensors?type=Tag"
  callback="false" service="false">
  ...
</runnables>
<runnables
  xmi:id="com/bosch/APedVoter?type=Runnable"
  name="APedVoter"
  namespace="com/bosch?type=Namespace"
  tags="SwcEngineController?type=Tag"
  callback="false" service="false">
  ...
</runnables>

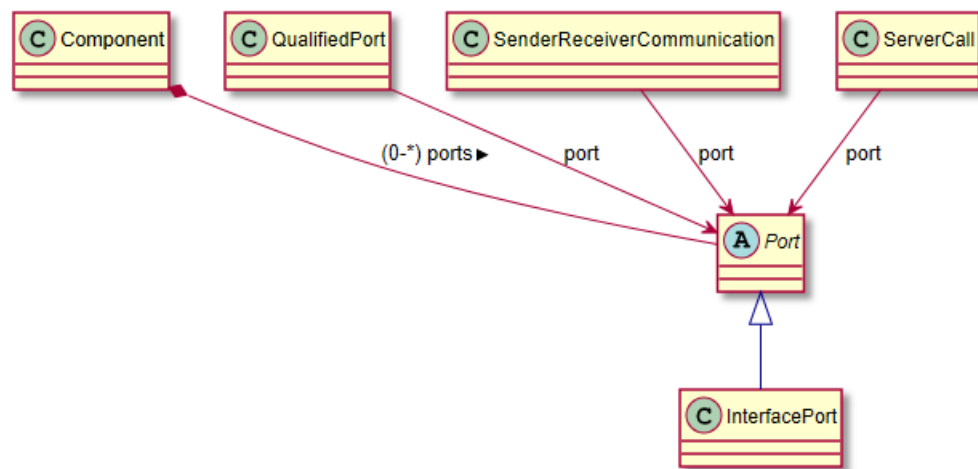
```

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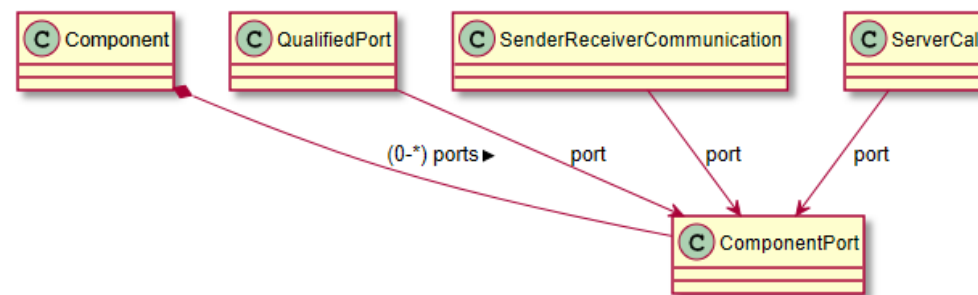
Port and Interface migration

Component Ports

0.9.6



0.9.7



Component Ports

```
<customProperties key="link">  
  <value xsi:type="am:ReferenceObject" value="comp1/p2?type=InterfacePort"/>  
</customProperties>
```

```
<customProperties key="link">  
  <value xsi:type="am:ReferenceObject" value="comp1/p2?type=ComponentPort"/>  
</customProperties>
```

Component Ports and Interfaces

Strategy:

- Build cache:
 - Collect all **interface names** that are used
(without duplicates, **ignore whitespace or empty strings**)
- First file:
 - Create (all) interfaces according to the cached names
 - (Port) remove xsi:type attribute
 - (Port) if "interfaceName" (String) is valid:
replace with a **local** reference "interface" (use url-encode)
- For other files:
 - (Port) remove xsi:type attribute
 - (Port) if "interfaceName" (String) is valid:
replace with a **cross file** reference "interface" (use url-encode)

Component Ports and Interfaces

```
<componentsModel>
  <components name="comp1" ...>
    <ports xsi:type="am:InterfacePort"
      name="p2" interfaceName="x-control" kind="requires"/>
  </components>
</componentsModel>
```

0.9.6

encode

```
<componentsModel>
  <components name="comp1" ...>
    <ports
      name="p2" interface="x-control?type=MainInterface" kind="requires"/>
  </components>
  <interfaces name="x-control"/>
</componentsModel>
```

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Component References migration

Component Reference: tasks -> processes

```
<componentsModel>  
  <components name="" tasks="Task_10MS?type=Task" labels="ABSMODE?type=Label"/>  
  ...
```

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```
<componentsModel>  
  <components name="" processes="Task_10MS?type=Task" labels="ABSMODE?type=Label"/>  
  ...
```

0.9.7

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Call Graph migration

CallGraph -> ActivityGraph

0.9.6

```
<swModel>
  <tasks name="Task_10MS" ...>
    <callGraph>
      ...
  <runnables name="Calculation" ...>
    <callGraph>
      ...
  <isrs name="Routine_c" ...>
    <callGraph>
      ...
```

0.9.7

```
<swModel>
  <tasks name="Task_10MS" ...>
    <activityGraph>
      ...
  <runnables name="Calculation" ...>
    <activityGraph>
      ...
  <isrs name="Routine_c" ...>
    <activityGraph>
      ...
```