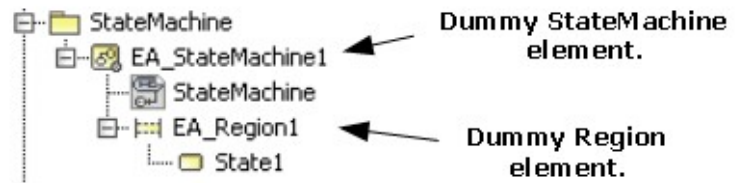# State Machine diagram elements

On this page

StateMachine

After conversion, a dummy StateMachine element will be created. The dummy StateMachine is either created by the XMI exporter from EA or by EA Import. A StateMachine diagram will be placed inside the dummy StateMachine and a dummy Region element will be created to contain all of the StateMachine elements.

A dummy StateMachine element and a dummy Region element.

State

State containing other elements

A State element containing other elements will be transformed to a Composite State. All of the contained elements will be placed inside the Region element of the State element.

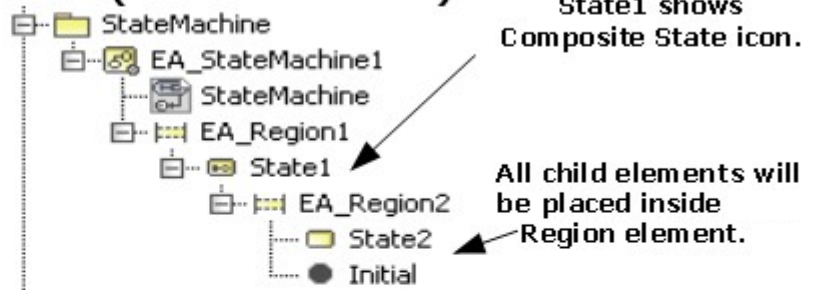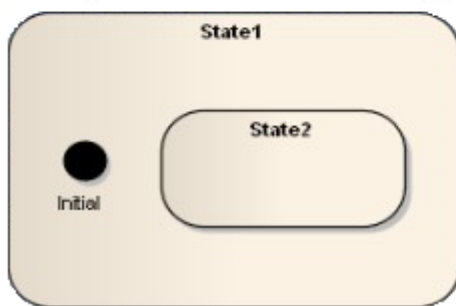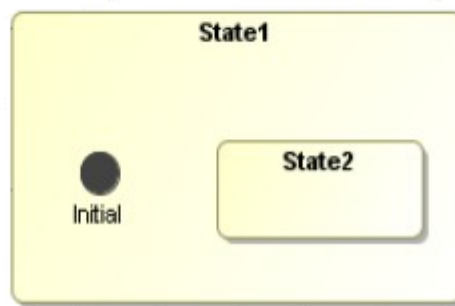## Containment tree

EA (Before Conversion)

- StateMachine
  - StateMachine
  - State1
    - State2
    - Initial

MD (After Conversion)

- StateMachine
  - EA_StateMachine1
    - StateMachine
  - EA_Region1
    - State1
      - EA_Region2
        - State2
        - Initial

State1 shows Composite State icon.

All child elements will be placed inside Region element.

Diagram View

EA (Before Conversion)

State1

State2

Initial

MD (After Conversion)

State1

State2

Initial

State Containing Other Elements.

State Containing StateMachine

If a State element contains a StateMachine element, the StateMachine element will be brought out and placed at the same level of the Region element of the State element.

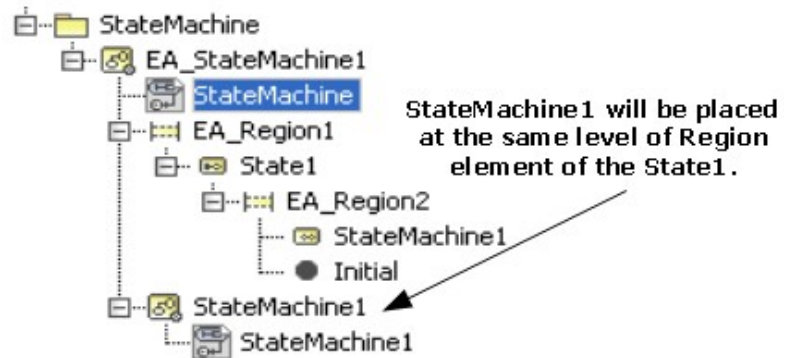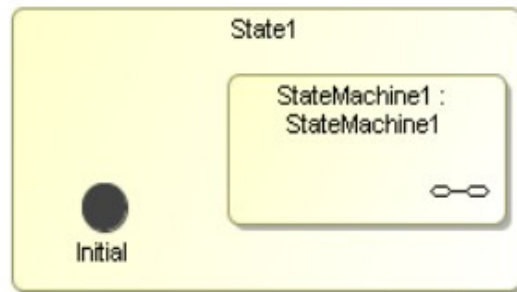## Containment tree

EA (Before Conversion)

- StateMachine
  - StateMachine
  - State1
    - Initial
    - StateMachine1
      - StateMachine1

MD (After Conversion)

- StateMachine
  - EA_StateMachine1
    - StateMachine
    - EA_Region1
      - State1
        - EA_Region2
          - StateMachine1
          - Initial
  - StateMachine1
    - StateMachine1

StateMachine1 will be placed at the same level of Region element of the State1.

Diagram View

EA (Before Conversion)

State1

StateMachine1

Initial

MD (After Conversion)

State1

StateMachine1 : StateMachine1

Initial

State Containing StateMachine.

State containing Attribute and Operation

If a State element contains Attribute and Operation elements, the Attribute and Operation elements will be removed from both the Diagram pane and Containment tree.

Containment tree
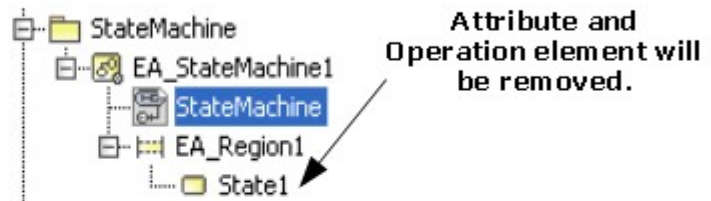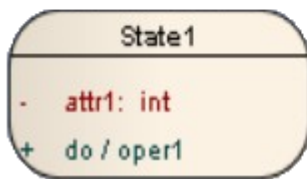
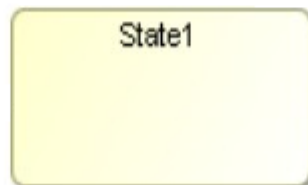### EA (Before Conversion)

MD (After Conversion)

Attribute and Operation element will be removed.

Diagram View

EA (Before Conversion)

MD (After Conversion)

Attribute and Operation element will be removed.

State Containing Attribute and Operation.

The following transformation messages will open:

- Removed element <xmi:id>: State cannot contain Attribute.
- Removed element <xmi:id>: State cannot contain Operation.

State containing Diagram Element

If a diagram element is placed inside a State element, it will be removed.

Containment tree

EA (Before Conversion)

MD (After Conversion)

A diagram element that placed inside State element will be removed.

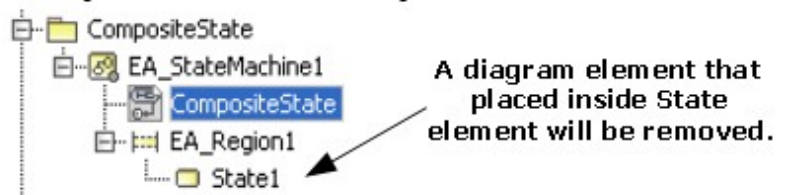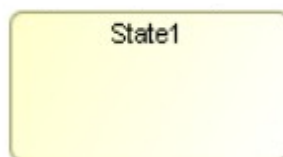## Diagram View

EA (Before Conversion)

MD (After Conversion)

State Containing Diagram Element.

The following transformation message will open:

```
Removed element <xmi:id>: State cannot contain diagram element.
```

StateMachine placed on a diagram

If a StateMachine element is drawn in a StateMachine diagram, an additional SubMachineState will be created to represent the StateMachine.

> ⚠ **Note**
> A SubMachine State is a State whose SubMachine property is set to a StateMachine.
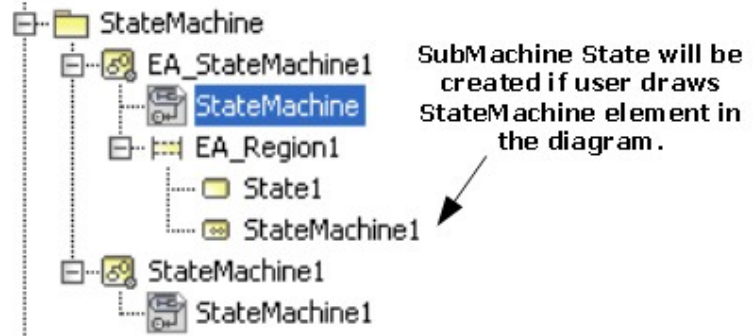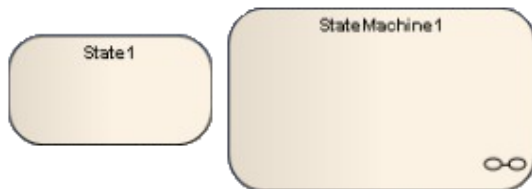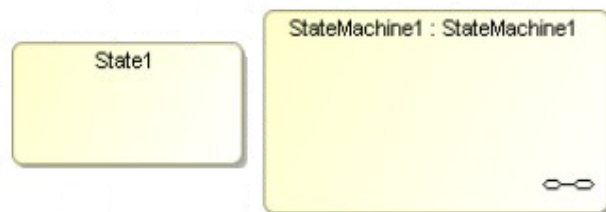
StateMachine Represented by a SubMachine State.

Object

An Object element placed in a State Machine diagram will be removed from the Diagram view. However, its data will be preserved in the Containment tree as an InstanceSpecification.

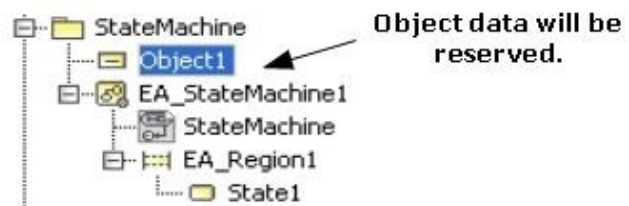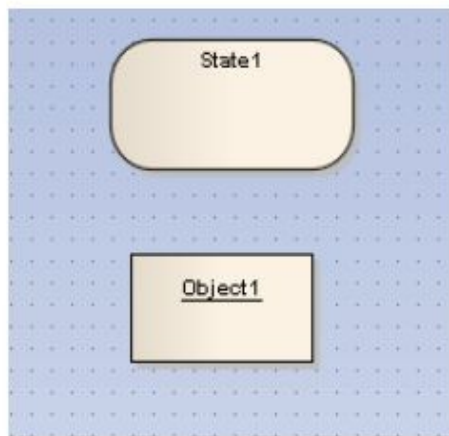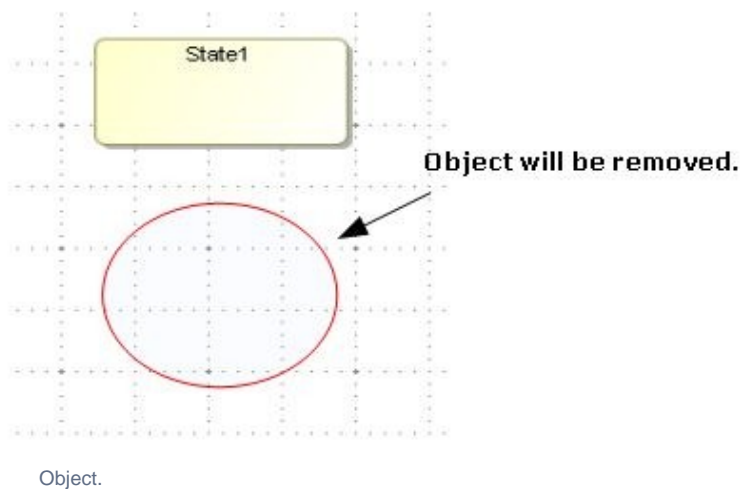# Containment tree

EA (Before Conversion)

```
StateMachine
    StateMachine
    Object1
    State1
```

MD (After Conversion)

```
StateMachine
    Object1                    Object data will be
    EA_StateMachine1               reserved.
        StateMachine
        EA_Region1
            State1
```

Diagram View

EA (Before Conversion)

State1

Object1

MD (After Conversion)

State1

Object will be removed.

Object.

The following transformation message will open:
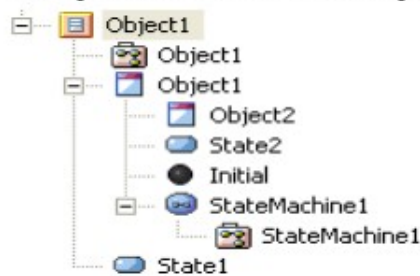
```
Removed view <xmi:id>: The view represents element that does not support in State Machine Diagram.
```

Object containing a State Machine element

In EA, an Object element can contain a State Machine element. After it has been imported to the modeling tool, the State Machine element placed inside an Object element will be removed both from the Diagram pane and Containment tree. However, the Object element data will be preserved. All of the Object element data will be placed at the closest owner package of the Object element.

Containment tree

EA (Before Conversion)

- 🟦 Object1
  - 🔲 Object1
  - 🔳 Object1
    - 🔷 Object2
    - 🔵 State2
    - ⚫ Initial
    - 🔵 StateMachine1
      - 🔲 StateMachine1
  - 🔵 State1

MD (After Conversion)

- 📁 Object1
  - 🔲 Object1
  - 🔲 Object2
  - 🔳 EA_StateMachine2
    - 🔲 Object1
  - ⋮⋮ EA_Region2
    - 🔲 State1

State Machine element that is placed under Object element will be removed.

All Object elements will be placed at a closest owner package of the Object element.

Diagram View

EA (Before Conversion)
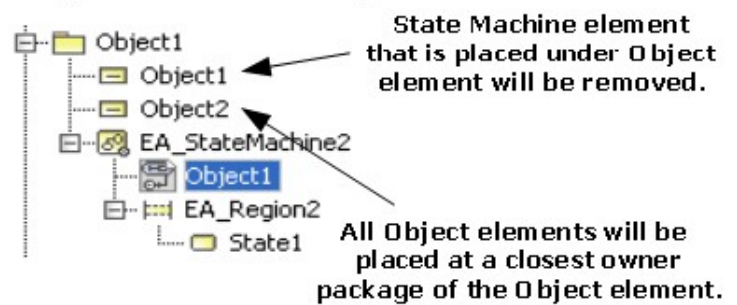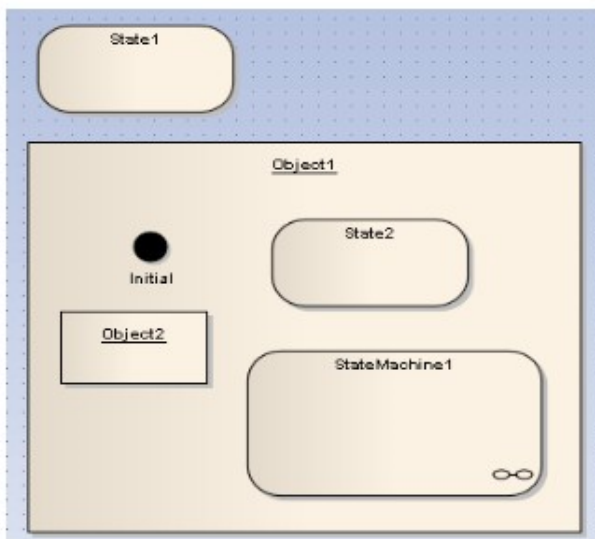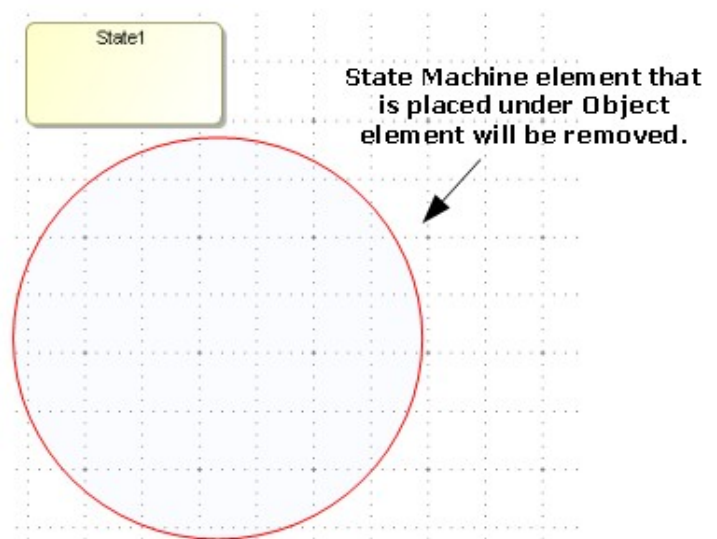

MD (After Conversion)

State Machine element that is placed under Object element will be removed.

Object Containing State Machine Element.

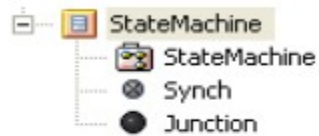The following transformation message will open:

```
Removed element <xmi:id>: Invalid element. Instancespecification can not contain element from
State Machine.
```

Synch

A Synch element will be transformed to a Junction element.
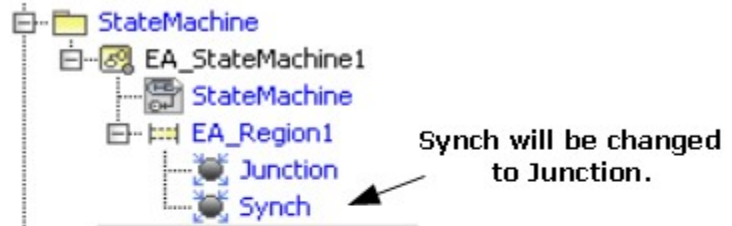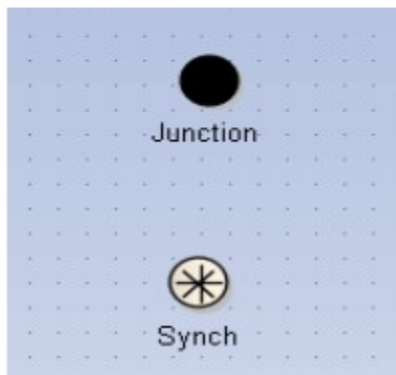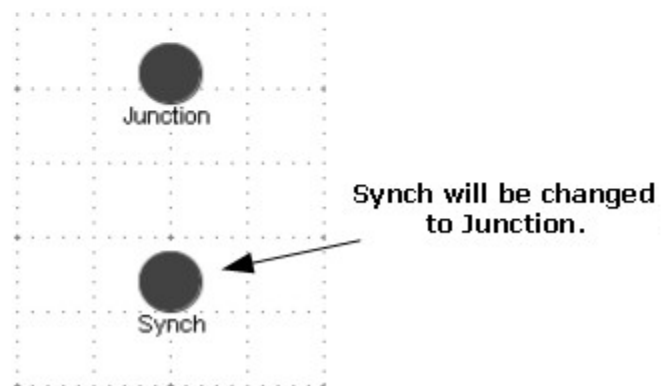
Containment tree

EA (Before Conversion)

- StateMachine
  - StateMachine
  - Synch
  - Junction

MD (After Conversion)

- StateMachine
  - EA_StateMachine1
    - StateMachine
    - EA_Region1
      - Junction
      - Synch

Synch will be changed to Junction.

Diagram View

EA (Before Conversion)

Junction

Synch

MD (After Conversion)

Junction

Synch will be changed to Junction.

Synch

Synch.

The following transformation message will open:

```
Updated element <xmi:id>: Synch updated to Junction.
```

EntryPoint / ExitPoint

An Entry or Exit point placed inside a State (or StateMachine) element will be placed outside a Region element of its parent element in the Containment tree. It will be relocated to the nearest boundary of its parent element in the Diagram pane.

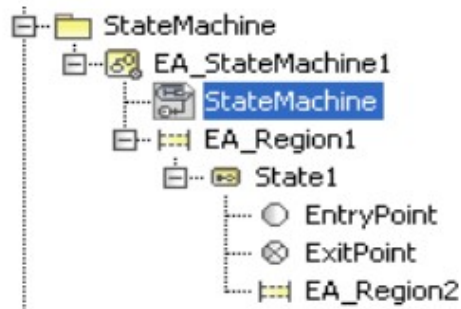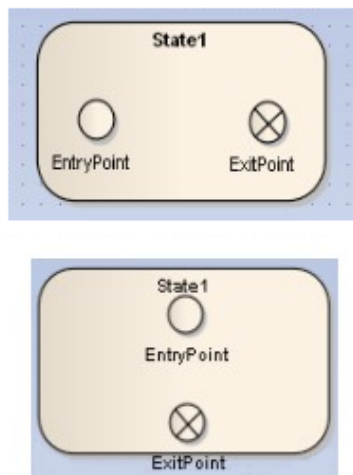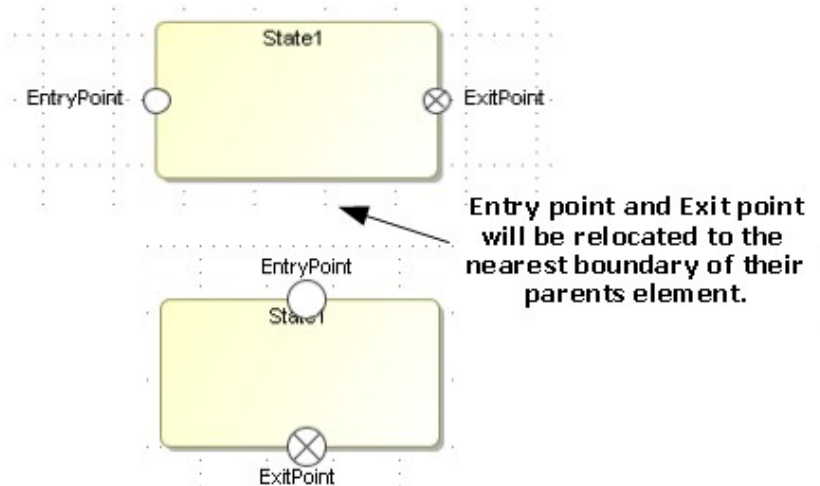## Containment tree

EA (Before Conversion)

- StateMachine
  - StateMachine
  - State1
    - EntryPoint1
    - ExitPoint1

MD (After Conversion)

- StateMachine
  - EA_StateMachine1
    - **StateMachine**
    - EA_Region1
      - State1
        - EntryPoint
        - ExitPoint
        - EA_Region2

Diagram View

EA (Before Conversion)

MD (After Conversion)

Entry point and Exit point will be relocated to the nearest boundary of their parents element.
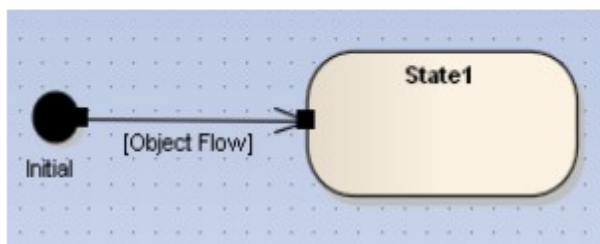
Entry/Exit Point.

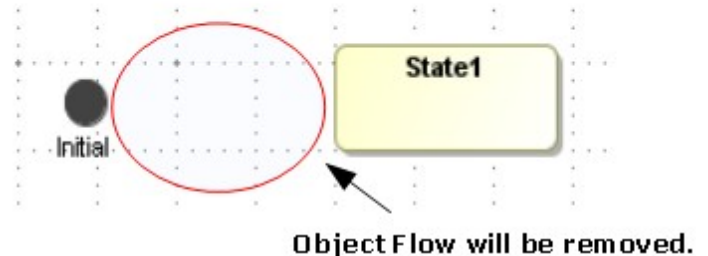## Object Flow connecting State Machine elements

An Object Flow connecting the elements in a State Machine will be removed from both the Diagram view and Containment tree.

Diagram View

EA (Before Conversion)

MD (After Conversion)

Object Flow will be removed.

ObjectFlow Connecting State Machine Elements.

The following transformation message will open:

Information Flow connecting State Machine elements

An Information Flow connecting the elements in a State Machine will be removed from the Diagram pane; however, its data will be preserved.
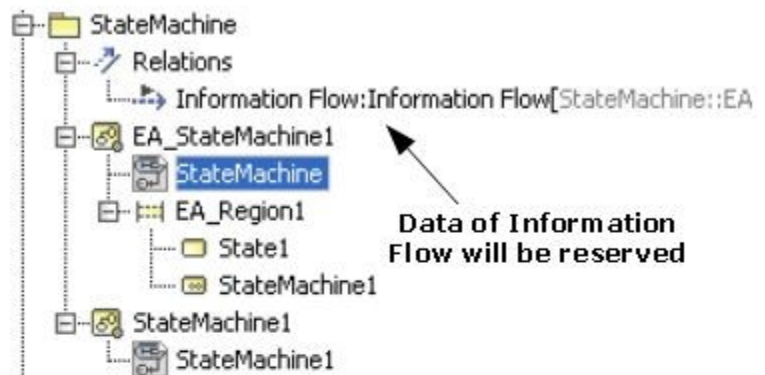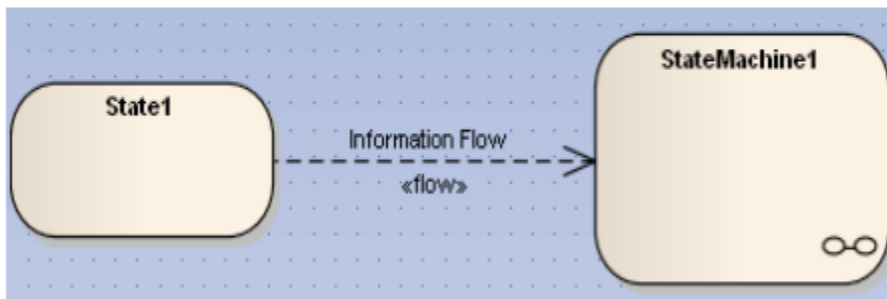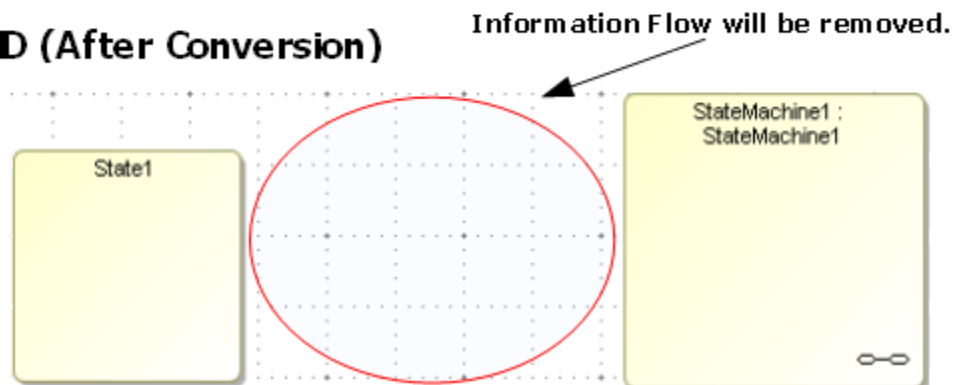
Containment tree

EA (Before Conversion)

- StateMachine
  - StateMachine
  - State1
  - StateMachine1
    - StateMachine1

MD (After Conversion)

- StateMachine
  - Relations
    - Information Flow:Information Flow[StateMachine::EA
  - EA_StateMachine1
    - StateMachine
    - EA_Region1
      - State1
      - StateMachine1
  - StateMachine1
    - StateMachine1

Data of Information Flow will be reserved

Diagram View

EA (Before Conversion)

State1 — Information Flow «flow» → StateMachine1

MD (After Conversion)

Information Flow will be removed.

State1   StateMachine1 : StateMachine1

Information Flow, Trace, and Dependency.

The following transformation message will open:

Trigger

If there is a Trigger element unrelated to any Transition line, a dummy StateMachine will be created to hold the Trigger element. The dummy StateMachine will be named after the parent package name concatenating with 'trigger'.

In the case of a Trigger element related to Transition, the data of the Trigger element will be placed inside its parent Transition. Each Trigger element will be given an event type, represented by an Event element. After conversion, the Event will be placed at the closest owner package of the Event.
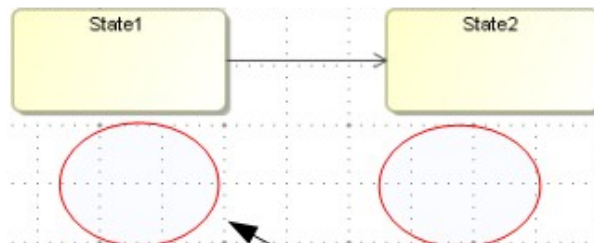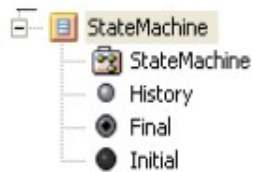

Trigger.

Self Transition

Most of the elements in a StateMachine diagram can have a self transition, except the Initial, Final, and History elements. The self transition in these three elements will be removed from the Diagram pane, but the data of the self transition will be preserved in the Containment tree.
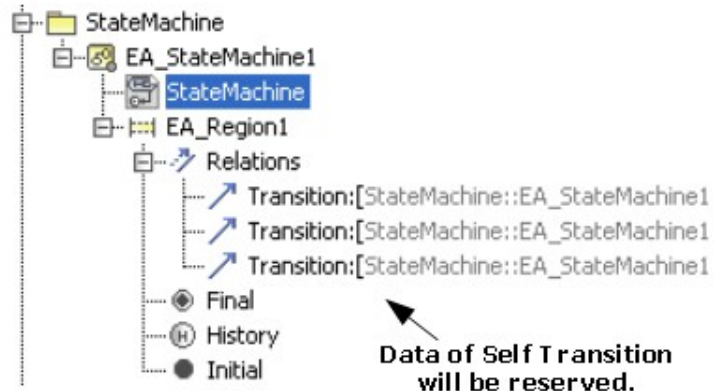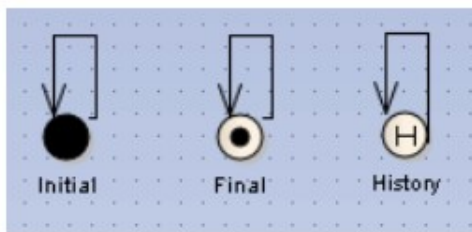
Containment tree

EA (Before Conversion)

```
⊟ 📄 StateMachine
    📷 StateMachine
    ⚪ History
    ◉ Final
    ⚫ Initial
```

MD (After Conversion)

```
⊟ 📁 StateMachine
    ⊟ 🔯 EA_StateMachine1
        📇 StateMachine
    ⊟ ⊨⊨⊨ EA_Region1
        ⊟ ⤳ Relations
            ↗ Transition:[StateMachine::EA_StateMachine1
            ↗ Transition:[StateMachine::EA_StateMachine1
            ↗ Transition:[StateMachine::EA_StateMachine1
        ◉ Final
        Ⓗ History
        ⚫ Initial
```

Data of Self Transition will be reserved.

Diagram View

EA (Before Conversion)

MD (After Conversion)

Self Transition in these element will be removed.
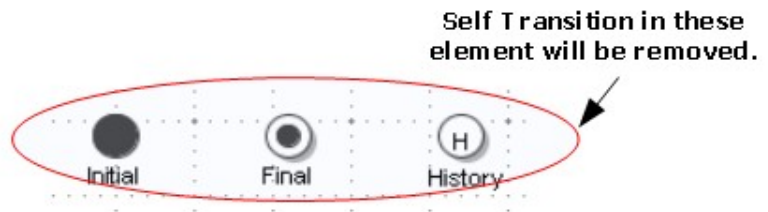
Self Transition.

The following transformation messages will open:

- *Removed view <xmi:id>: Self Transition does not support forInitial.*

- *Removed view <xmi:id>: Self Transition does not support forFinal.*

- *Removed view <xmi:id>: Self Transition does not support forHistory.*
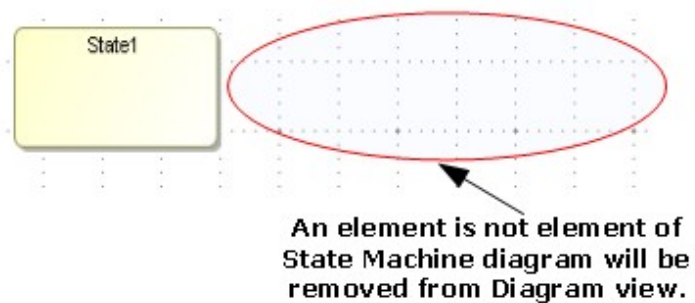
Removed element

Any element which is not the element of a State Machine diagram (such as Class, Actor, Use-case, or Action) drawn in the State Machine diagram will be removed from the Diagram pane. However, its data will be preserved in the Containment tree.

Diagram View

EA (Before Conversion)

MD (After Conversion)

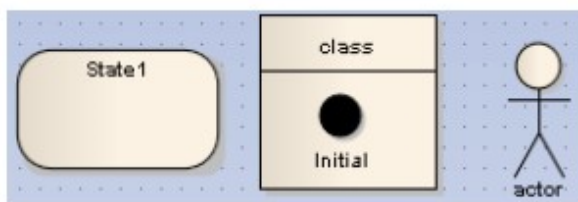An element is not element of State Machine diagram will be removed from Diagram view.
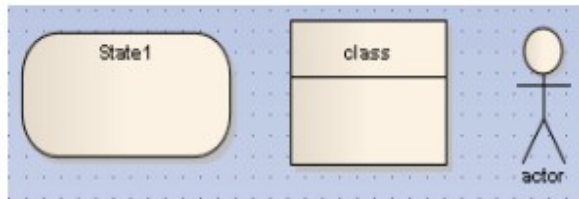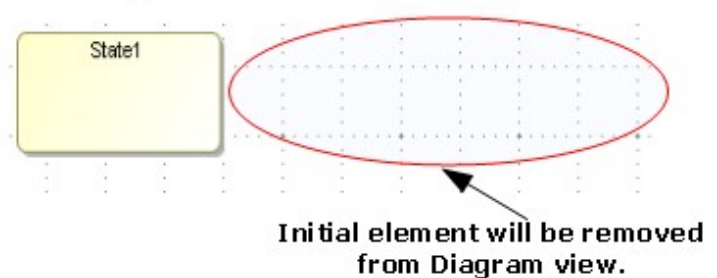
Removed element.

If an element which is not the element of a State Machine diagram has a child element and is drawn in the State Machine diagram, the element will be removed from the Diagram pane. However, its data will be preserved in the Containment tree.

Diagram View

EA (Before Conversion)

MD (After Conversion)

Initial element will be removed from Diagram view.

Removed Element with a Child Element

The following transformation message will open:

Removed view <xmi:id>:The view represents element that does not support in State Machine Diagram.

Related pages

- State Machine diagram