

Tau to Rhapsody Diagrams Mapping

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1. Overview

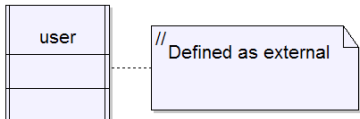
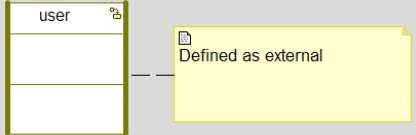

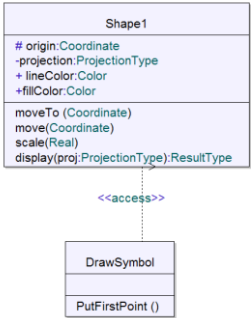
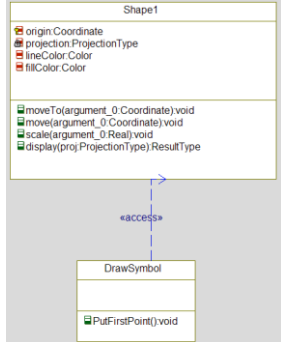
This document explains the diagram mapping from IBM Rational Tau to IBM Rational Rhapsody applications. Only the graphical mapping is presented here, the semantic mapping can be found in the Rhapsody_Tau_Integration.pdf document.

2. Some general limitations

For dynamic diagrams, only one graphical diagram is accepted for one Behavior (for instance just one Diagram of an Interaction will be mapped to Rhapsody. Rhapsody does not allow multiple views of the same behavior).

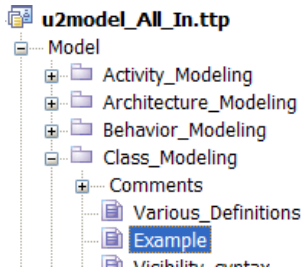
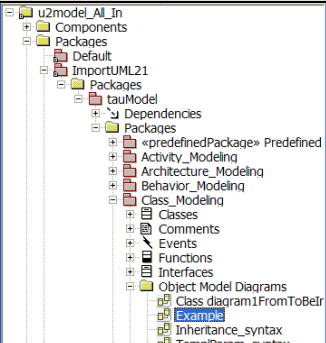
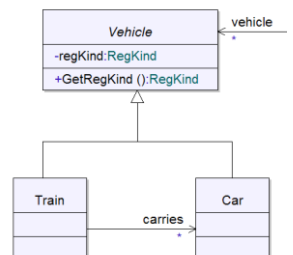
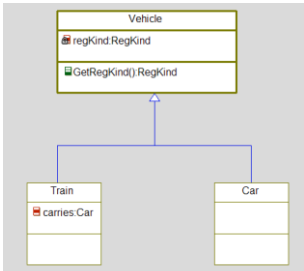
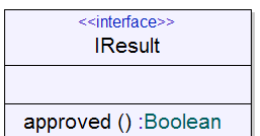
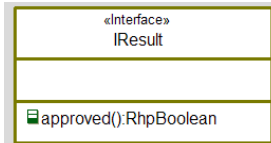
The document describes some unmanaged elements. In most of the case, the process tries to create a graphical Note which represents the lost element in order to keep its size and position. The Note's text contains the UML type and the qualified name of this element. Nevertheless, all edges going from/to this element will not be drawn.

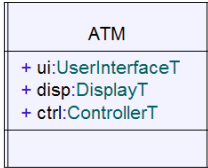
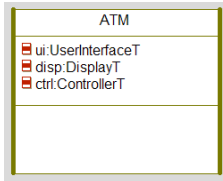
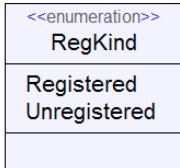
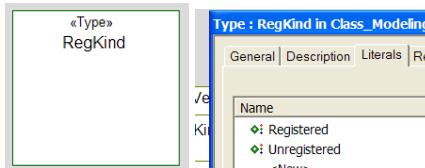
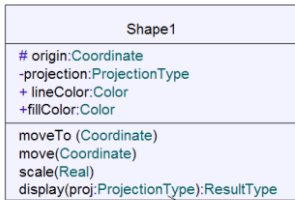
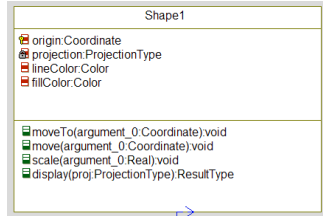
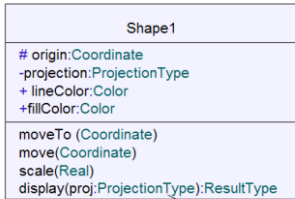
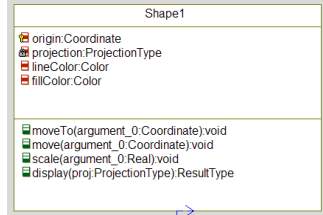
3. All diagrams

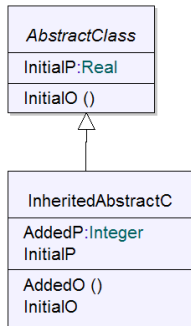
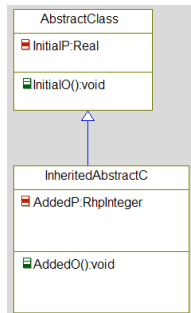

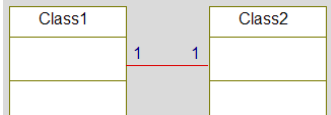
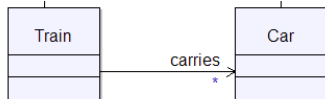

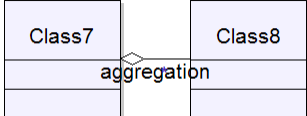
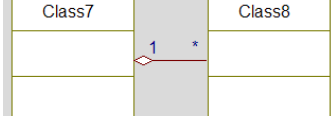
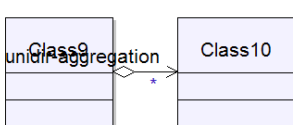
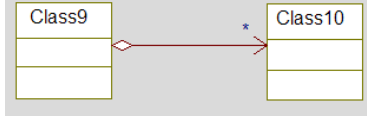
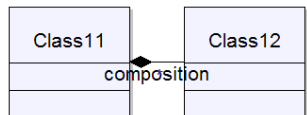
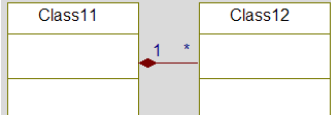
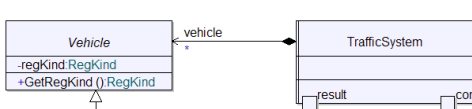

Tau		Rhapsody		Comment / Limitation
Comment		Comment		Anchors between Edge and Comment are not shown.
Frame Symbol		Not exported		The Diagram Frame is not shown.
Dependency Line		Dependency		Only one stereotype is shown. An anonymous Dependency is named with the name of its supplier.

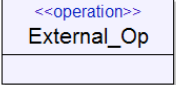
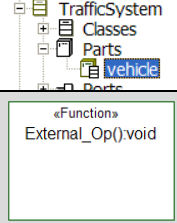
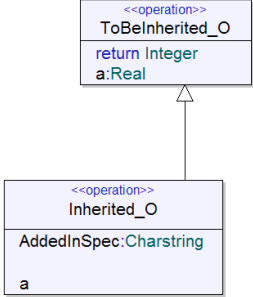
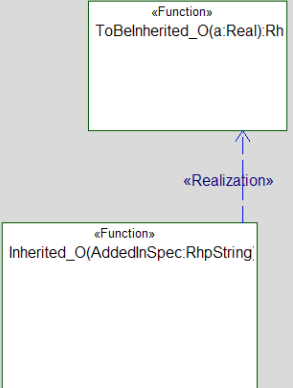
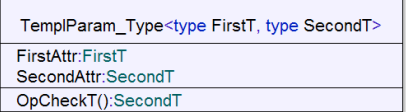
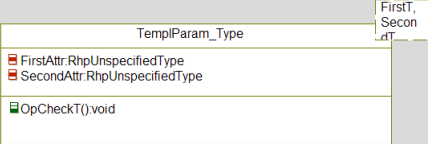
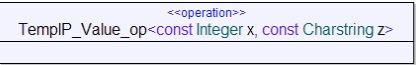
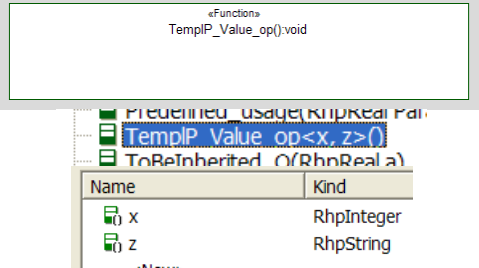
4. Static diagrams

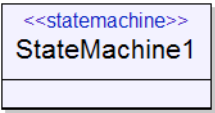
4.1. Class diagram

Tau		Rhapsody		Comment / Limitation
Class Diagram (in Package)		Object Model Diagram		
Class Diagram (not in Package)		Structure Diagram		
Class Symbol		Class		Abstract feature (<i>italic name</i>) is not shown.
Interface Symbol		Interface		See Class Symbol in Class diagram.

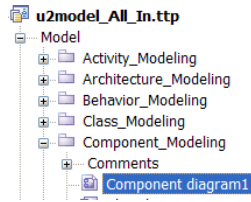
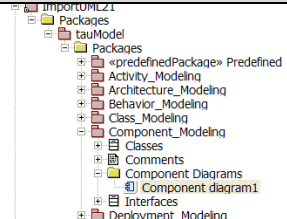
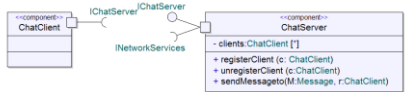

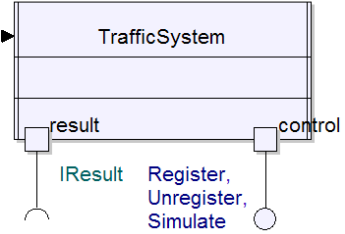
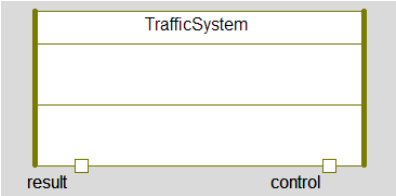
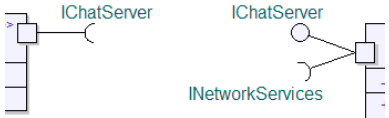
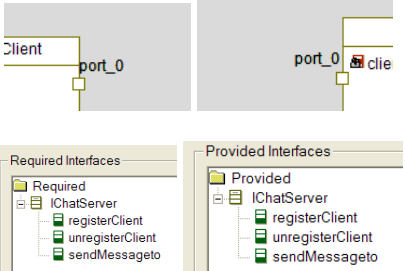
Tau	Rhapsody		Comment / Limitation
Active Class Symbol (isActive == true)			See Class Symbol in Class diagram.
Enumeration Symbol (DataType with literal(s))			Enumeration Literals are not shown.
Class / Interface Attribute Symbol			If at least one Attribute is displayed in Tau, all are displayed in Rhapsody.
Class / Interface Operation Symbol			If at least one Operation is displayed in Tau, all are displayed in Rhapsody.

Tau	Rhapsody		Comment / Limitation	
Class Generalization / Interface Realization Line		Class Generalization / Interface Realization		
Association Line (Bidirectional Reference)		Association		All decorations are not shown, only multiplicity is always displayed.
Association Line (Unidirectional Reference)		Relation		All decorations are not shown, only multiplicity is always displayed.
Association Line (Bidirectional Aggregate (shared))		Aggregation		All decorations are not shown, only multiplicity is always displayed.
Association Line (Unidirectional Aggregate (shared))		Relation(Shared)		All decorations are not shown, only multiplicity is always displayed.
Association Line (Bidirectional Composition (part))		Composition		All decorations are not shown, only multiplicity is always displayed.
Association Line (Unidirectional Composition (part))		No graphical mapping without adding of extra semantic data.		Not shown as a graphical edge: the unidirectional reference exists as a Part.

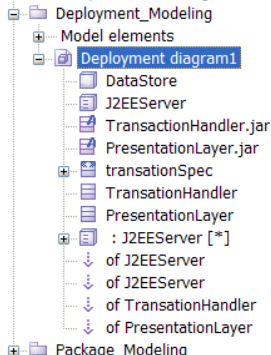
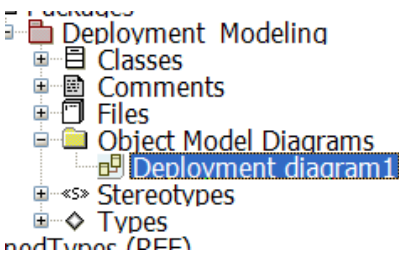
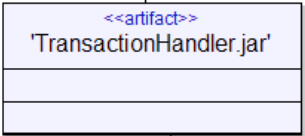
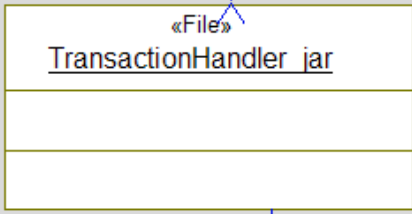
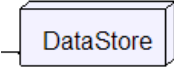
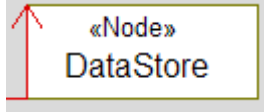
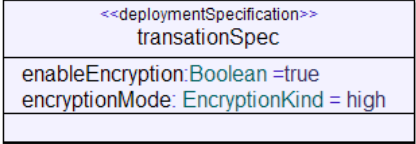
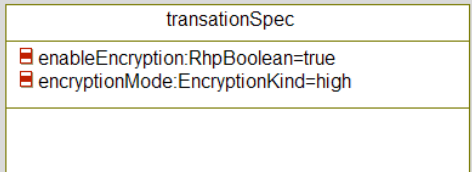
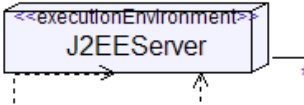
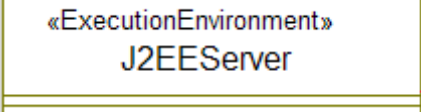
Tau		Rhapsody		Comment / Limitation
External Operation Symbol		Function		
Operation Symbol Generalization / Realization Line		Dependency + stereotype "Realization"		
Templated Class / Interface Symbol		Templated Class / Interface		
Templated Operation Symbol		Templated Operation		Template Parameters on Operation are only shown in the Browser, not in the diagram.

Tau		Rhapsody		Comment / Limitation
StateMachine Symbol		Statechart		Not shown

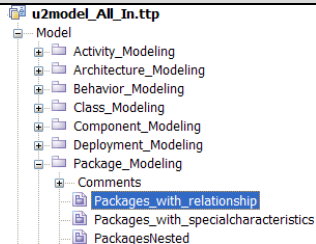
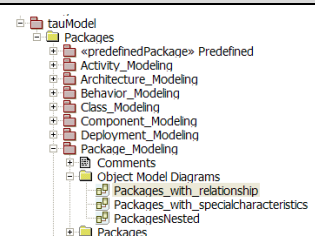
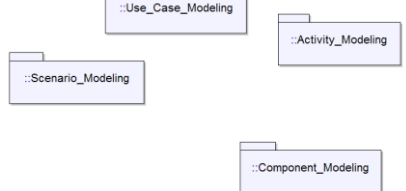
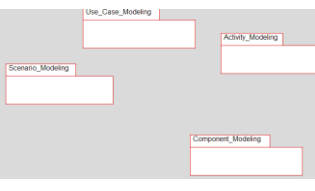
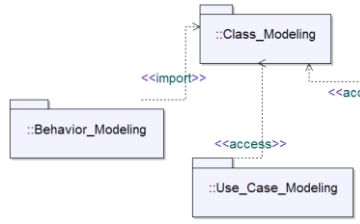
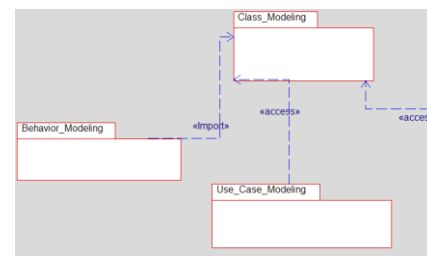
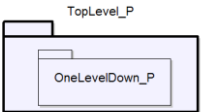
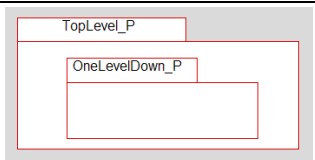
4.2. Component diagram

Tau		Rhapsody		Comment / Limitation
Component Diagram		Component Diagram		
Component Symbol		Component (Class with Port(s))		
Port Symbol		Port		
Required / Realized Interface Symbol		Required / Provided Interface		In Rhapsody, Required / Provided Interface Symbols are not shown in Component diagram.

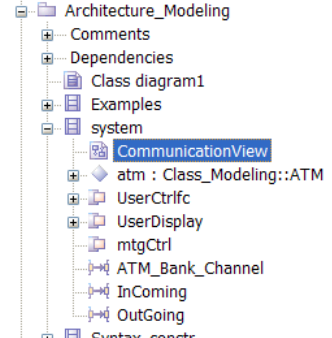
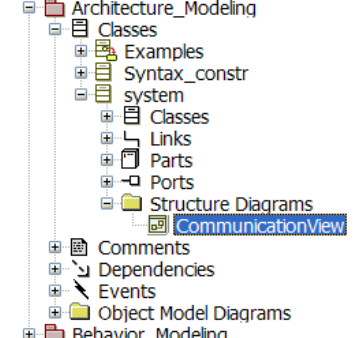
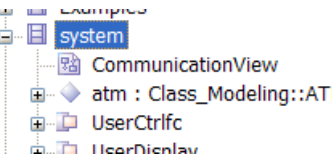
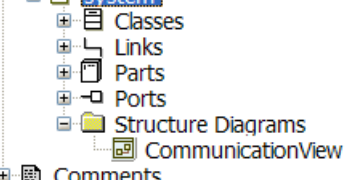
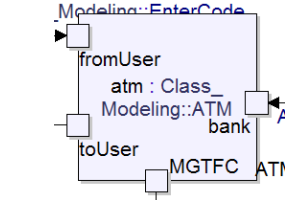
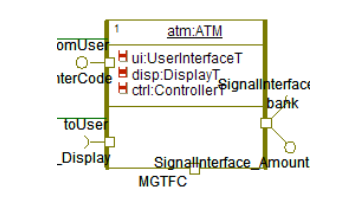
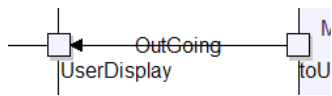
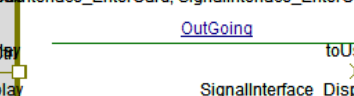
4.3. Deployment Diagram

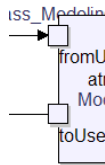
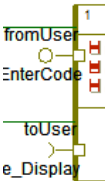
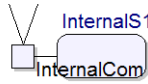
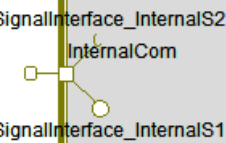
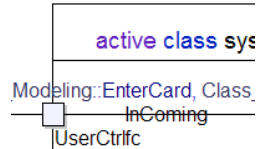
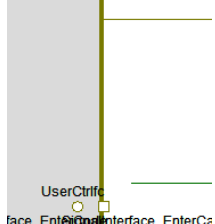
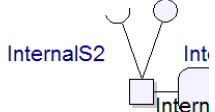
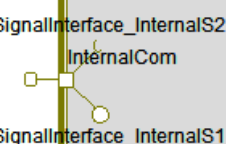
Tau		Rhapsody		Comment / Limitation
Deployment Diagram		Object Model Diagram		
Artifact Symbol		File		
Node Symbol		Class + “Node” Stereotype		
Deployment Specification Symbol		Class		
Execution Environment Symbol		Class + “ExecutionEnvironment” Stereotype		

4.4. Package diagram

Tau	Rhapsody		Comment / Limitation
Package Diagram		Object Model Diagram	
Package		Package	
Package Dependency		Package Dependency	
Nested Package		Nested Package	

4.5. Composite Structure diagrams

Tau		Rhapsody		Comment / Limitation
Composite Structure Diagram		Structure Diagram		
Composite Structure		Composite Class		All semantic Ports of the Composite Class are automatically displayed. So duplicated ones can appear if they are also present as graphical elements in the owner diagram.
Part Symbol		Object		
Connector Line		Link		The Link's direction is not shown. Rhapsody does not allow Links between Attribute and Object are not shown.

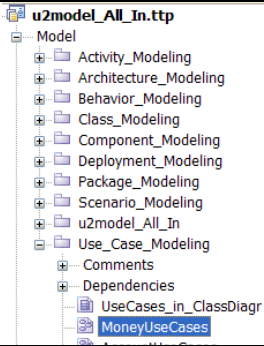
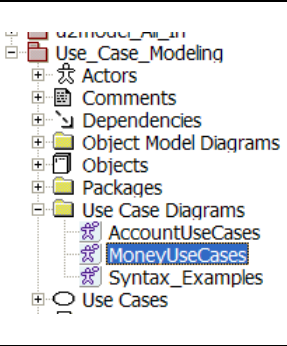
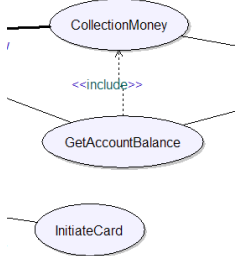
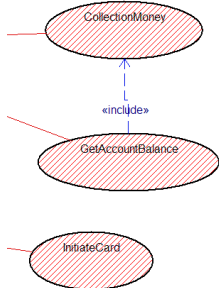
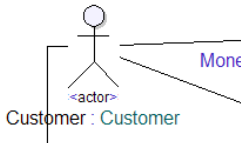
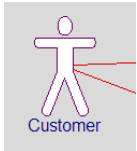
Tau		Rhapsody		Comment / Limitation
Internal Port Symbol		Port of a Part		Ports on Attribute (not Part) are not exported.
Internal Behavior Port Symbol		Port		
External Port Symbol		Port		
Required / Realized Interface Symbol		Required / Provided Interface		Required / Provided Interface are always shown (if semantically exist).

4.6. Object Diagram

Not exported into Rhapsody

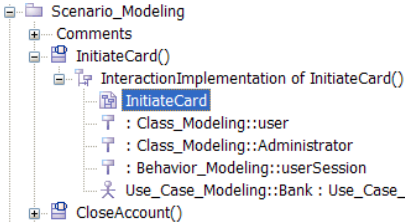
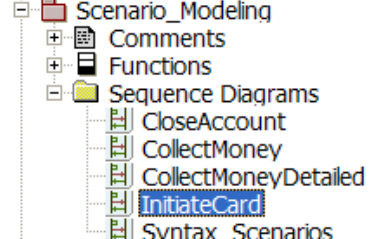
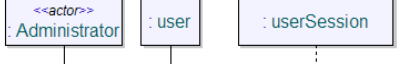
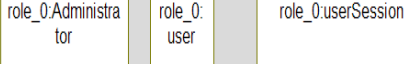


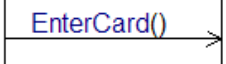
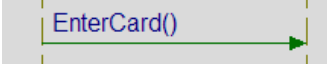
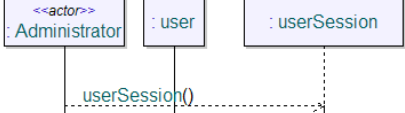

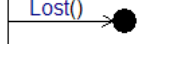

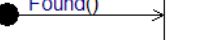
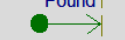
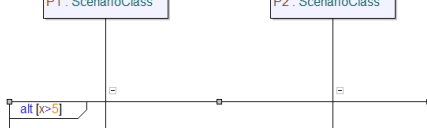
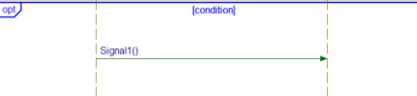
5. Dynamic diagrams


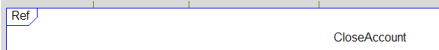

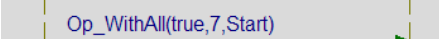


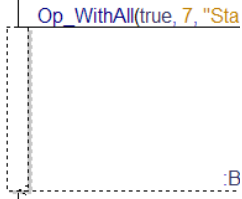
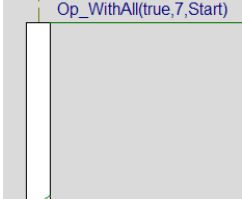
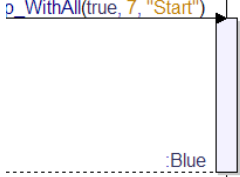
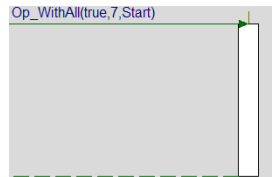
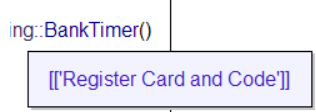
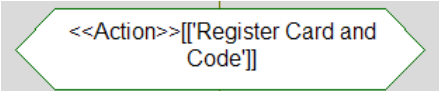
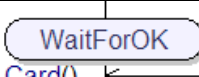
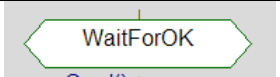
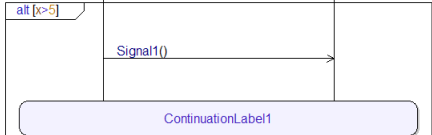
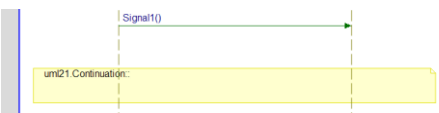
5.1. Use Case diagram

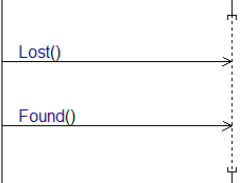
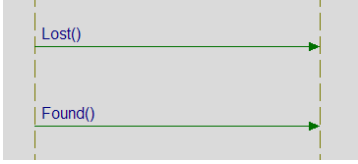
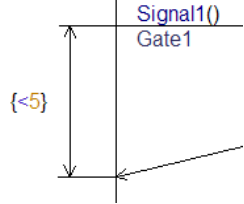
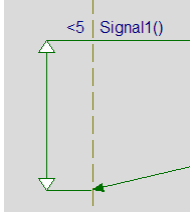

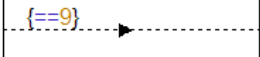
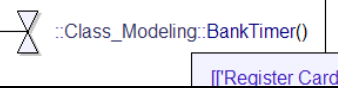
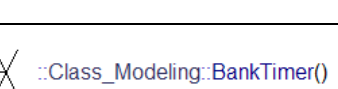
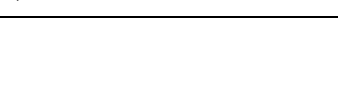
Tau		Rhapsody		Comment / Limitation
Use Case Diagram		Use Case Diagram		
Use Case Symbol		Use Case		
Actor Symbol		Actor		

Tau	Rhapsody	Comment / Limitation
Subject Symbol	<div data-bbox="593 244 869 555"> <p>UML Use Case Diagram for ATM Class Modeling (atm1::Class_Modeling:ATM). The diagram shows three use cases: CollectionMoney, GetAccountBalance, and InitiateCard. CollectionMoney is connected to GetAccountBalance via a dashed line labeled <<include>>. InitiateCard is connected to GetAccountBalance via a solid line. A red line labeled 'withdraw' points to CollectionMoney, and a red line labeled 'di' points to GetAccountBalance. A red line labeled 'Initiator' points to InitiateCard.</p> </div> <div data-bbox="1332 225 1630 571"> <p>UML Use Case Diagram for ATM Subject (atm1 ATM). The diagram shows three use cases: CollectionMoney, GetAccountBalance, and InitiateCard. CollectionMoney is connected to GetAccountBalance via a dashed line labeled <<include>>. InitiateCard is connected to GetAccountBalance via a solid line. Red striations appear on the elements in the Subject.</p> </div>	Red striations appear on the elements in the Subject.

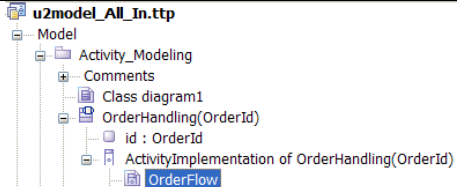
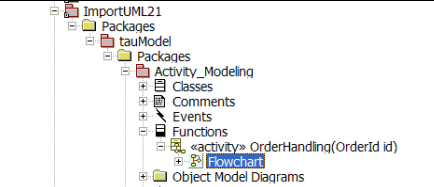
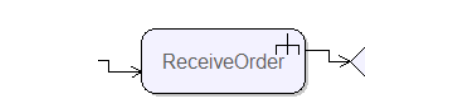
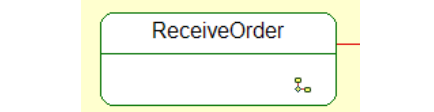
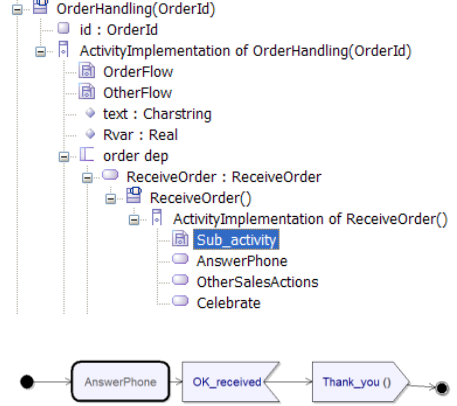
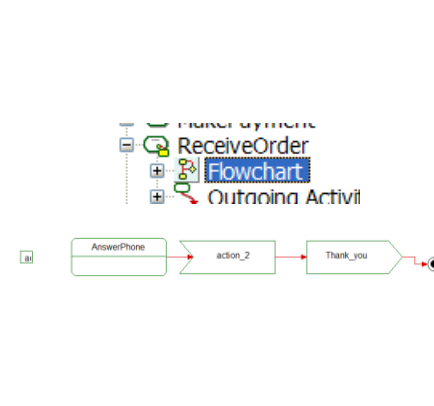
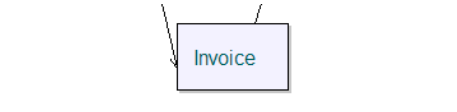
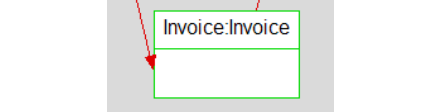

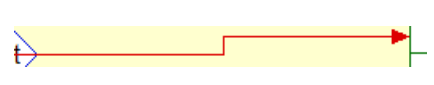
5.2. Sequence diagram








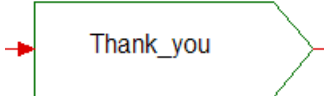

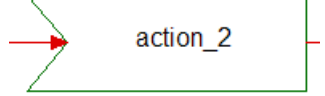
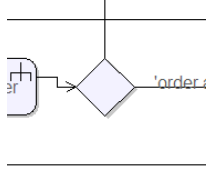
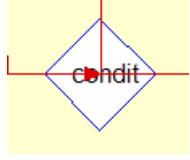
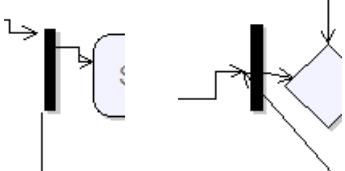

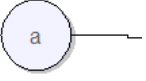
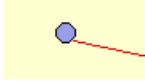
Tau		Rhapsody		Comment / Limitation
Sequence Diagram		Sequence Diagram.		
Lifeline Symbol		ClassifierRole		
Destroy Lifeline Symbol		Destruction Event		The name of a Destruction Event is always shown.
Message Line		Message		
Create Line		Create Arrow		
Message Line [Lost / Found=true]		Lost Message		
Message Line [Lost / Found=true]		Found Message		
Inline Frame Symbol		Interaction Operator		

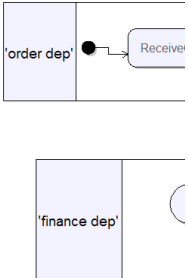
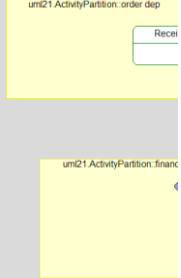
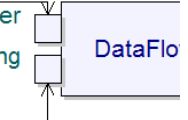
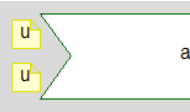
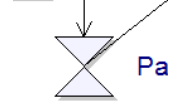
Tau		Rhapsody		Comment / Limitation
Reference Symbol		InteractionOccurrence		
Method Call Line		Message		
Method Reply Line		Reply Message		
Method Suspension Symbol		Execution Occurrence		
Method Activation Symbol		Execution Occurrence		
Action Symbol		ConditionMark		
State Symbol		ConditionMark		
Continuation Symbol		Not exported		Shown as an empty box.

Tau		Rhapsody		Comment / Limitation
Co-region Symbol		Not exported		
Time Specification Line (relative time line)		Message [messageType=time_int erval]		
Time Specification Line (absolute time line)		Not exported		
Time Specification Line (general ordering line)		Not exported		
Timer Set Symbol		Not exported		
Timer Out Symbol		Not exported		
Timer Reset Symbol		Not exported		

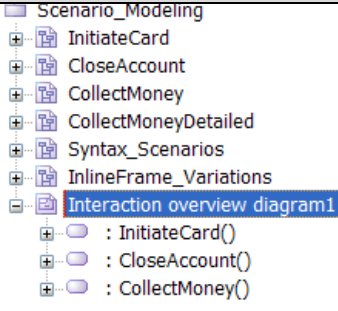
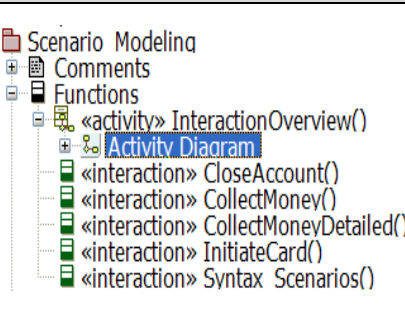

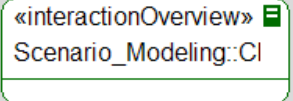
5.3. Activity diagram

Tau	Rhapsody	Comment / Limitation	
Activity Diagram		Activity Diagram	
Activity/Action Symbol		Action	
Sub Activity		State [stateType=sub_activity]	
Object Node Symbol		Object Node	
Activity Line		Transition	

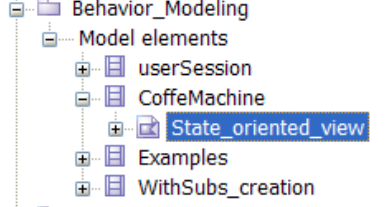
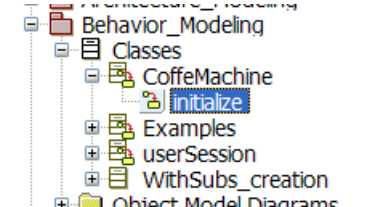
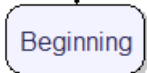
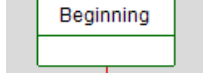

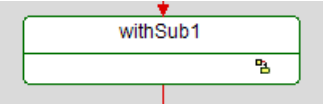
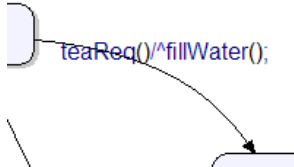
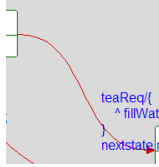
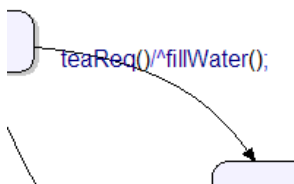

Tau		Rhapsody		Comment / Limitation
Initial Node Symbol		Default Transition		An InitialNode cannot be drawn without its outgoing transition. Only one Default Transition can be shown. Default Transitions are not shown into a SubActivity
Activity Final Symbol		Termination State		
Flow Final Symbol		Termination State		
Send Signal Symbol		Send Signal Action		
Accept Event Symbol		Accept Event Action		
Decision/Merge Symbol		Condition Connector		Transitions are shown in the foreground of the condition.
Fork/Join Symbol		Fork/Join Sync Bar		A Fork/Join Sync Bar is shown horizontally only.
Connector Symbol		Junction Connector		

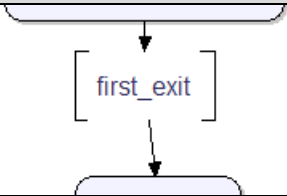
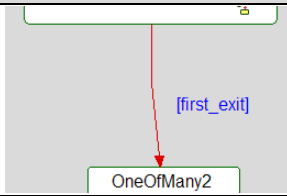
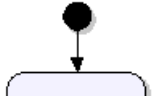

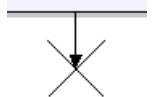


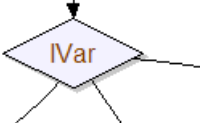
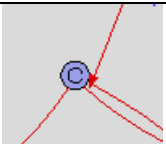
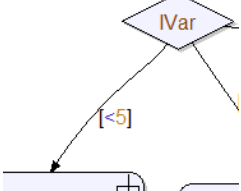
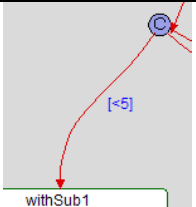
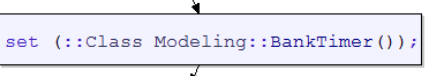

Tau		Rhapsody		Comment / Limitation
Partition Symbol		Not exported		Drawn as an empty box.
Pin/Parameter Symbol		Not exported		
Accept Time Event Symbol		Not exported		

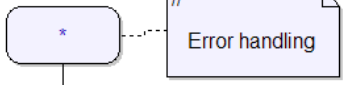
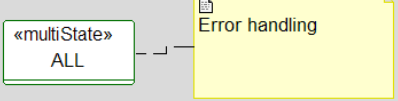
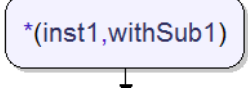
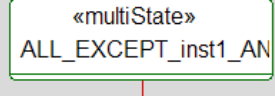
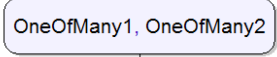
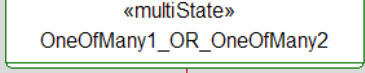

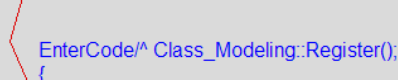
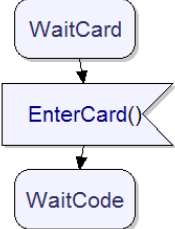
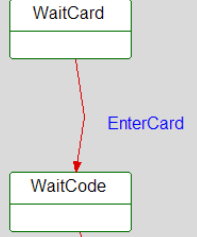


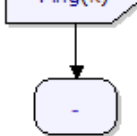
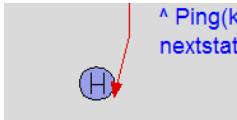

5.4. Interaction Overview

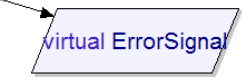
Tau		Rhapsody		Comment / Limitation
Interaction Overview	 <pre> graph TD subgraph Scenario_Modeling InitiateCard CloseAccount CollectMoney CollectMoneyDetailed Syntax_Scenarios InlineFrame_Variations Interaction_overview_diagram1 InitiateCard --> CloseAccount CloseAccount --> CollectMoney CollectMoney --> CollectMoneyDetailed CollectMoneyDetailed --> Syntax_Scenarios Syntax_Scenarios --> InlineFrame_Variations InlineFrame_Variations --> Interaction_overview_diagram1 end </pre>	Activity Diagram	 <pre> graph TD subgraph Scenario_Modeling Comments Functions Functions --> InteractionOverview["«activity» InteractionOverview()"] InteractionOverview --> ActivityDiagram["Activity Diagram"] ActivityDiagram --> CloseAccount["«interaction» CloseAccount()"] ActivityDiagram --> CollectMoney["«interaction» CollectMoney()"] ActivityDiagram --> CollectMoneyDetailed["«interaction» CollectMoneyDetailed()"] ActivityDiagram --> InitiateCard["«interaction» InitiateCard()"] ActivityDiagram --> Syntax_Scenarios["«interaction» Syntax_Scenarios()"] end </pre>	See ActivityDiagrams
ReferenceSymbol	 <pre> graph TD ref["ref"] --> CloseAccount["CloseAccount()"] </pre>	CallOperation	 <pre> graph TD interactionOverview["«interactionOverview»"] --> CloseAccount["Scenario_Modeling::CloseAccount()"] </pre>	

5.5. State Machine diagram

Tau		Rhapsody		Comment / Limitation
StatechartDiagram		Statechart Diagram.		
State Symbol		State		
State with via clause		State with a Sub Machine		
Sub Machine		Sub Statechart		Default Transitions are not shown into a Sub Statechart.
Simple Transition Symbol		Transition		
Triggered Transition		Triggered Transition		Triggers are always shown.

Tau	Rhapsody		Comment / Limitation
Guard Symbol / Guarded Transition			Guards are always shown.
Start Symbol			A Start Symbol cannot be drawn without its outgoing transition. Only one Default Transition can be shown. Default Transitions are not shown into a Sub Statechart.
Stop Symbol			
Return Symbol			
Decision Symbol			The condition is reported as trigger of the incoming transition.
Decision Answer Symbol			
Action Symbol			Drawn as a state with an associated action, or an action on a transition.

Tau		Rhapsody		Comment / Limitation
Multi State (State with Asterisk State)		<<multiState>> State		The asterisk means all states of the diagram.
Excluded Multi State (State with Asterisk State, including list of not included States)		<<multiState>> State		The asterisk before parenthesis means all states of the diagram, excepting the ones in the parenthesis.
Included Multi State (State with State List)		<<multiState>> State		
Signal Sending Symbol + 2 Flow Lines		Triggered Transition		
Signal Receipt Symbol + 2 Flow Lines		Triggered Transition		
History Symbol		History Connector		
History State		History Connector		
Junction Symbol		Not exported		

Tau		Rhapsody		Comment / Limitation
Save Symbol		Not exported		