SAIC DE Profile

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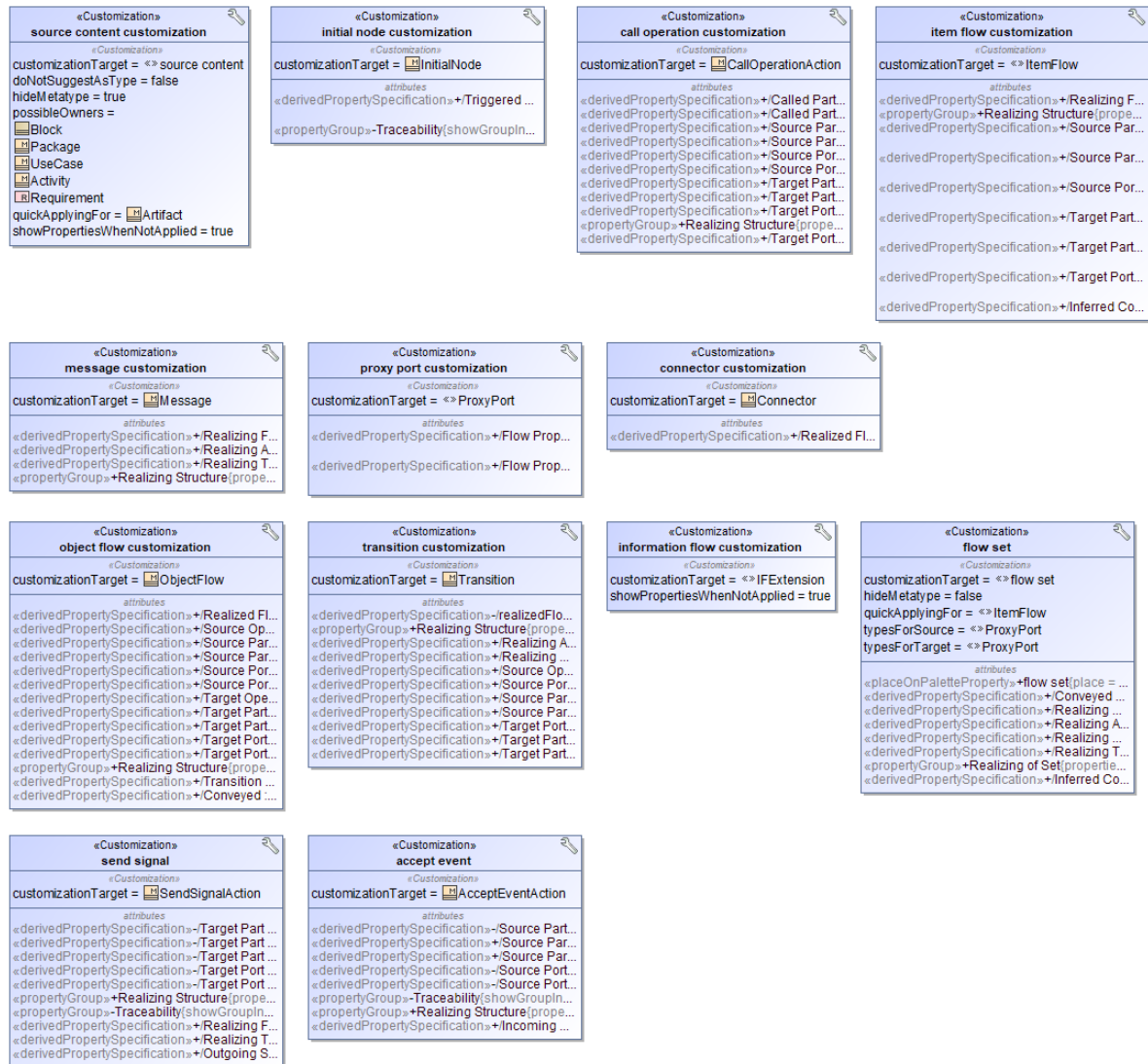
Appendix A: Diagram

Customizations

NA

Figure 1.   Customizations

SAIC DE Profile

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Figure 2.   SAIC DE Profile

SAIC Validation Rules

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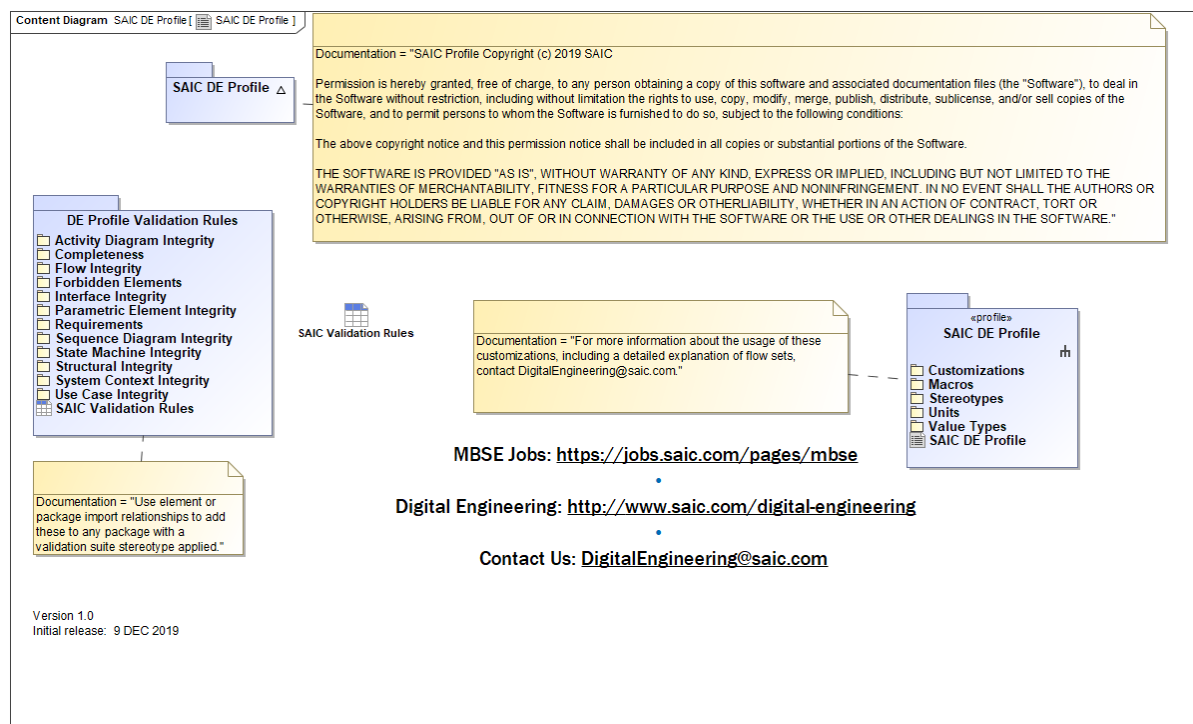
#	Name	Abbreviation	Owner	Constrained Element	Severity	Error Message
1	{} NOATTACHMENT	NOATTACHMENT	Forbidden Elements	AttachedFile [Comment]	error	Embedding files in the model is not allowed. Use a hyperlink to an authoritative source instead (use an a...
2	{} SRCCNT	SRCCNT	Completeness	source content [Artifact]	error	All source content elements must have either a file name or hyperlink.
3	{} UCTRACE	UCTRACE	Use Case Integrity	UseCase	error	All use cases must have an outgoing trace, extend or refine relationship or an incoming include relationsh...
4	{} UCDOCUMENTATION	UCDOCUMENTATION	Completeness	UseCase	error	All use cases must have documentation.
5	{} ACTREALIZATION	ACTREALIZATION	System Context Integrity	Actor	error	All Actors and other use case elements must be realized by at least one part property in the structure tre...
6	{} CONTEXTREALIZATION	CONTEXTREALIZATION	System Context Integrity	PartProperty [Property]	error	All part properties owned by system context blocks must realize one or more use case elements.
7	{} ACTORASSOCIATIONS	ACTORASSOCIATIONS	Use Case Integrity	Actor	error	All Actors and other use case elements must be associated with at least one use case.
8	{} CONBLOCKDOCUMENTATION	CONBLOCKDOCUMENTATION	Completeness	Block [Class]	error	All blocks that type part properties of the system context must have documentation.
9	{} OPDOCUMENTATION	OPDOCUMENTATION	Completeness	Operation	error	All operations must have documentation.
10	{} PARATYPE	PARATYPE	Completeness	Parameter	error	All parameters owned by operations must be typed.
11	{} PARTTYPE	PARTTYPE	Completeness	PartProperty [Property]	error	All part properties must be typed.
12	{} LOGICALARCH	LOGICALARCH	Structural Integrity	PartProperty [Property]	error	Part properties that are owned by a block with a logical stereotype must be typed by a block with a logica...
13	{} PHYSICALARCH	PHYSICALARCH	Structural Integrity	PartProperty [Property]	error	Part properties that are owned by a block with a physical stereotype must be typed by a block with a phy...
14	{} LOGICALPHYSICAL	LOGICALPHYSICAL	Structural Integrity	Block [Class]	error	Blocks cannot have both logical and physical stereotypes applied.
15	{} INPINCONN	INPINCONN	Activity Diagram Integrity	InputPin	error	Input pins must have an incoming object flow (target pins are exempt from this rule).
16	{} OUTPINCONN	OUTPINCONN	Activity Diagram Integrity	OutputPin	error	Output pins must have an outgoing object flow
17	{} OPUSAGE	OPUSAGE	Completeness	Operation	info	This operation is not used (called on an Activity or Sequence) in the model
18	{} PHYSTERMPARTS	PHYSTERMPARTS	Structural Integrity	physical [Class]	error	Physical blocks with ATOMIC = TRUE may not own part properties.
19	{} LOGTERMPARTS	LOGTERMPARTS	Structural Integrity	logical [Class]	error	Logical blocks with ATOMIC = TRUE may not own part properties.
20	{} STMINTEGRITY	STMINTEGRITY	State Machine Integrity	StateMachine	error	State machines may only call operations owned within their owning block's structural decomposition (owne...
21	{} REALIZEDIRECTION	REALIZEDIRECTION	Structural Integrity	Realization	error	Realization relationships between logical and physical elements must have the physical element as the sou...
22	{} SOFTWAREFUNCTION	SOFTWAREFUNCTION	Structural Integrity	software [Class]	info	This software element does not own any operations.
23	{} INTBLOCKFLOW	INTBLOCKFLOW	Interface Integrity	InterfaceBlock [Class]	error	Interface blocks must own at least one flow property or port.
24	{} FLOWTYPE	FLOWTYPE	Flow Integrity	FlowProperty [Property]	error	All flow properties must be typed by signals.
25	{} PROXYPORTTYPE	PROXYPORTTYPE	Interface Integrity	ProxyPort [Port]	error	Proxy ports must be typed by interface blocks.
26	{} ACTORDOCUMENTATION	ACTORDOCUMENTATION	Completeness	Actor	error	All Actors must have documentation.
27	{} ITEMFLOWCONVEYED	ITEMFLOWCONVEYED	Flow Integrity	ItemFlow [InformationFlow]	error	All item flows must convey one or more signals or be part of a flow set.
28	{} ACTIVITYEDGEGUARD	ACTIVITYEDGEGUARD	Activity Diagram Integrity	ActivityEdge	error	All control and object flows exiting a decision node must have guards defined.
29	{} TRANSITIONTRIGGER	TRANSITIONTRIGGER	State Machine Integrity	Transition	error	All transitions (except those exiting connection points or pseudostates) must have triggers.
30	{} TRANSITIONCHOICE	TRANSITIONCHOICE	State Machine Integrity	Transition	error	All transitions exiting a choice must have guards defined.
31	{} OPOWNER	OPOWNER	Structural Integrity	Operation	error	Operations must be owned by activities or blocks with context, logical, or physical stereotypes applied.
32	{} SIGNALDOCUMENTATION	SIGNALDOCUMENTATION	Completeness	Signal	error	All signals must have documentation.
33	{} ACTORASSOCIATION	ACTORASSOCIATION	Use Case Integrity	Association	error	Actors may not be associated with other actors.
34	{} ACTIVITYPARAMETERSTM	ACTIVITYPARAMETERSTM	State Machine Integrity	Activity	error	State Machine Entry, Do, Exit, and Transition activities may not have parameters.
35	{} PERFORMANCEFUNCTIONREFINE	PERFORMANCEFUNCTIONREFI	Requirements	performanceRequirement [Class]	error	Performance requirements must refine one or more functional requirements.
36	{} REQUIREMENTSSATISFY	REQUIREMENTSSATISFY	Requirements	Requirement [Class]	info	This requirement does not have any satisfy relationships. (Requirements that have blank text are exem...
37	{} REQUIREMENTVERIFY	REQUIREMENTVERIFY	Requirements	Requirement [Class]	info	This requirement does not have at least one verify relationship. (Requirements that have blank text are...
38	{} MESSAGESIGNATURE	MESSAGESIGNATURE	Sequence Diagram Inte...	Message	error	All messages on sequence diagrams must have signatures assigned (signal or operation).
39	{} ACTIVITYACTIONSTM	ACTIVITYACTIONSTM	State Machine Integrity	Activity	error	All activities owned by state machines must have at least one action node.
40	{} CONTROLNODEINCOMING	CONTROLNODEINCOMING	Activity Diagram Integrity	JoinNode / MergeNode	error	Joins and merges must have at least two incoming flows.
41	{} CONTROLNODEOUTGOING	CONTROLNODEOUTGOING	Activity Diagram Integrity	ForkNode / DecisionNode	error	Forks and decisions must have at least two outgoing flows.
42	{} DECISIONNODENAME	DECISIONNODENAME	Activity Diagram Integrity	DecisionNode	error	Decision nodes must have a name (this is used to specify the decision).
43	{} ACTIVITYINITIAL	ACTIVITYINITIAL	Activity Diagram Integrity	Activity	error	Activities that own diagrams must own one initial node and it must have one outgoing control flow.
44	{} ACTIVITYFINAL	ACTIVITYFINAL	Activity Diagram Integrity	Activity	error	Activities that own diagrams must own one final node and it must have one incoming control flow.
45	{} SUBMACHINECONNECTIONS	SUBMACHINECONNECTIONS	State Machine Integrity	State	error	States that are submachines must have all entry and exit points associated with connection points.
46	{} CONNECTIONPOINTCONNECTED	CONNECTIONPOINTCONNECT	State Machine Integrity	ConnectionPointReference	error	Connection points must have one transition (outgoing or incoming).
47	{} ACTIVITYPARAMETERFLOW	ACTIVITYPARAMETERFLOW	Activity Diagram Integrity	ActivityParameterNode	error	All activity parameter nodes must have incoming or outgoing object flows.
48	{} TIMEEVENTWHEN	TIMEEVENTWHEN	State Machine Integrity	Transition	error	All transitions triggered by time events must have WHEN defined.
49	{} CHANGEEVENTEXPRESSION	CHANGEEVENTEXPRESSION	State Machine Integrity	Transition	error	All transitions triggered by change events must have CHANGE EXPRESSION defined.
50	{} LIFELINETYPE	LIFELINETYPE	Sequence Diagram Inte...	Lifeline	error	All lifelines must be typed by blocks.
51	{} SEQUENCELEVEL	SEQUENCELEVEL	Sequence Diagram Inte...	Interaction	error	Sequence diagrams may not mix physical and logical lifeline types.
52	{} OPAQUEACTIONBODY	OPAQUEACTIONBODY	Completeness	OpaqueAction	error	Opaque actions must have a BODY specified.
53	{} CALLBEHAVIORBEHAVIOR	CALLBEHAVIORBEHAVIOR	Activity Diagram Integrity	CallBehaviorAction	error	Call behavior actions must have the called behavior specified.
54	{} CALLOPERATIONOPERATION	CALLOPERATIONOPERATION	Activity Diagram Integrity	CallOperationAction	error	Call operation actions must have the called operation specified.
55	{} PROXYPORT	PROXYPORT	Interface Integrity	Port	error	All ports must be proxy ports.
56	{} LOGICALCONNFLOWS	LOGICALCONNFLOWS	Interface Integrity	Connector	info	All connectors that connect ports in the logical architecture must have at least one flow.
57	{} LOGICALPORT	LOGICALPORT	Interface Integrity	ProxyPort [Port]	error	All proxy ports owned by blocks with the <<logical>> stereotype applied must by typed by interface bloc...
58	{} PHYSICALPORT	PHYSICALPORT	Interface Integrity	ProxyPort [Port]	error	All proxy ports owned by blocks with the <<physical>> stereotype applied must by typed by interface bl...
59	{} CONNECTOREND	CONNECTOREND	Interface Integrity	Connector	error	Connector ends must be proxy ports.
60	{} UCASSOCIATION	UCASSOCIATION	Use Case Integrity	Association	error	Use cases may not be associated with other use cases.
61	{} ACTORNAME	ACTORNAME	Completeness	Actor	error	All Actors must have names.
62	{} FLOWSETSOURCE	FLOWSETSOURCE	Flow Integrity	flow set [InformationFlow]	error	Ports that are the source of a flow set must have flow properties compatible with the conveyed signals o...
63	{} ACTIVITYEDGEMISMATCH	ACTIVITYEDGEMISMATCH	Activity Diagram Integrity	ControlNode	error	Flows into and out of a control node (join, fork, merge, or decision) must be of the same type (object or ...
64	{} ACTORUSECASE	ACTORUSECASE	Use Case Integrity	Actor	error	All use case elements must be associated with at least one use case or be specialized by other actors.
65	{} ACTPARTYPE	ACTPARTYPE	Activity Diagram Integrity	ActivityParameterNode	error	All activity parameter nodes must be typed by signals.
66	{} ALLOCATIONPROHIBIT	ALLOCATIONPROHIBIT	Forbidden Elements	Allocate [Abstraction]	error	Allocations are prohibited; use realization (between levels of abstraction) or satisfy (between requiremen...
67	{} CONTEXTPARTS	CONTEXTPARTS	System Context Integrity	System context [Class]	error	System context blocks must own at least one part property.
68	{} CONTEXTTYPE	CONTEXTTYPE	System Context Integrity	PartProperty [Property]	error	Part properties may not be typed by system context blocks; they should typically be the top-level block t...
69	{} CONVEYTYPE	CONVEYTYPE	Flow Integrity	ItemFlow [InformationFlow]	error	Item flows may only convey signals.
70	{} DATASTORETYPE	DATASTORETYPE	Activity Diagram Integrity	DataStoreNode / CentralBufferNode	error	Data stores must be typed by signals.
71	{} EXTERNALPARTTYPE	EXTERNALPARTTYPE	System Context Integrity	PartProperty [Property]	error	Part properties typed by external blocks must be owned by system context or external blocks.
72	{} FLOWDIRECTION	FLOWDIRECTION	Interface Integrity	FlowProperty [Property]	error	All flow properties must be out or inout; this ensures consistent conjugation (all 1-way in flows are conjug...
73	{} FLOWFINALINCOMING	FLOWFINALINCOMING	Activity Diagram Integrity	FlowFinalNode	error	All flow final nodes must have one incoming flow.
74	{} IBDOWNER	IBDOWNER	Interface Integrity	Diagram	error	IBDs must be owned by a block.
75	{} IBNOTSPECBLOCK	IBNOTSPECBLOCK	Interface Integrity	InterfaceBlock [Class]	error	Interface blocks may not specialize non-interface blocks.
76	{} IMPITEMFLOWCOMPAT	IMPITEMFLOWCOMPAT	Flow Integrity	flow set [InformationFlow]	error	Flow properties of proxy ports connected by flow sets must be compatible.
77	{} PARTIB	PARTIB	Structural Integrity	PartProperty [Property]	error	Part properties may not be typed by Interface blocks.
78	{} PARTLOOP	PARTLOOP	Structural Integrity	Block [Class]	error	There is a part property loop associated with this block (a block in the structure owns a part property typ...
79	{} RECEPTIONPROHIBIT	RECEPTIONPROHIBIT	Forbidden Elements	Reception	error	Receptions are prohibited; use operations instead.
80	{} REFPROPPROHIBIT	REFPROPPROHIBIT	Forbidden Elements	ReferenceProperty [Property]	error	Reference properties are prohibited. These may be represented as part properties at a higher level in th...
81	{} SIGNALEVENTSIGNAL	SIGNALEVENTSIGNAL	Activity Diagram Integrity	SignalEvent	error	Signal Events must have a signal defined.
82	{} SIGNALNAME	SIGNALNAME	Completeness	Signal	error	All signals must be named.
83	{} STATEOWNER	STATEOWNER	State Machine Integrity	StateMachine	error	State machines must be owned by blocks.
84	{} STATEREACHABILITY	STATEREACHABILITY	State Machine Integrity	State	error	All states must have at least one incoming transition.
85	{} SWIMLANEPROHIBIT	SWIMLANEPROHIBIT	Forbidden Elements	ActivityPartition	error	Swimlanes are prohibited; see customizations for operations and flows that can display part-level ownersh...
86	{} TRIGGERFLOWMISMATCH	TRIGGERFLOWMISMATCH	Flow Integrity	Transition	error	The signal triggering this transition is not conveyed on any related item flows or flow sets.
87	{} USECASENAME	USECASENAME	Completeness	UseCase	error	Use Cases must be named.
88	{} VALUENAME	VALUENAME	Completeness	ValueProperty [Property]	error	Value properties must be named.
89	{} VALUETYPE	VALUETYPE	Completeness	ValueProperty [Property]	error	Value properties must be typed by value types.
90	{} FLOWSETTARGET	FLOWSETTARGET	Flow Integrity	flow set [InformationFlow]	error	Ports that are the target of a flow set must have flow properties compatible with the conveyed signals of ...
91	{} ACCEPTOUTGOING	ACCEPTOUTGOING	Flow Integrity	AcceptEventAction	error	If an Accept Event outgoing object flow is realized by an item flow or flow set, the signal that triggers the...
92	{} FLOWSETENDS	FLOWSETENDS	Flow Integrity	flow set [InformationFlow]	error	If a flow set has individual flows assigned, the individual flows must connect the source and target of the...
93	{} SENDINCOMING	SENDINCOMING	Flow Integrity	SendSignalAction	error	If incoming object flows to a Send Signal event are realized by an item flow or flow set, the signal of the ...
94	{} MESSAGEFLOWS	MESSAGEFLOWS	Flow Integrity	Message	error	If a message is associated with item flows or flow sets, they must convey its signature signal.
95	{} SENDSIGNALMATCH	OBJECTFLOWENDS	Activity Diagram Integrity	SendSignalAction	error	The signal sent by a send signal action must match the signal typing its input pin.
96	{} ACCEPTEVENTPORTMATCH	ACCEPTEVENTPORTMATCH	Flow Integrity	AcceptEventAction	error	The assigned and inferred ports (via item flow realization) must match.
97	{} OBJECTFLOWCOMPAT	OBJECTFLOWCOMPAT	Flow Integrity	ObjectFlow	error	If an object flow is realized by an item flow or flow set, those flows must convey the signal typing its sou...
98	{} SENDSIGNALPORTMATCH	SENDSIGNALPORTMATCH	Flow Integrity	SendSignalAction	error	The assigned and inferred ports (via item flow realization) must match.
99	{} ACCEPTEVENTMATCH	ACCEPTEVENTMATCH	Activity Diagram Integrity	AcceptEventAction	error	The signal triggering an accept event action must match the signal typing its output pin.
100	{} ACCEPTEVENTOUTPUT	ACCEPTEVENTOUTPUT	Activity Diagram Integrity	AcceptEventAction	error	Accept Events must own an output pin. If you are modeling a signal that triggers a state transition, asso...
101	{} ACCEPTEVENTTIMEEVENTTRIGGER	ACCEPTEVENTTIMEEVENTTRIG	Activity Diagram Integrity	AcceptEventAction	error	Accept events triggered by time events must have WHEN defined.
102	{} STATEMACHINEOPERATIONS	STATEMACHINEOPERATIONS	State Machine Integrity	Operation	error	State machines may not own operations in their structure (move operation to a block or activity).
103	{} OPERATIONNAME	OPERATIONNAME	Completeness	Operation	error	Operations must be named.
104	{} BLOCKNAME	BLOCKNAME	Completeness	Block [Class]	error	Blocks must be named.
105	{} ACTIVITYNAME	ACTIVITYNAME	Completeness	Activity	error	Activities must be named.
106	{} STATENAME	STATENAME	Completeness	State	error	States must be named.
107	{} ACTIVITYOWNS	ACTIVITYOWNS	Completeness	Activity	error	Activities must own at least one diagram or operation. If it will not be further decomposed, set its "Leaf"...
108	{} REGIONNAME	REGIONNAME	Completeness	Region	error	Regions of orthogonal states must be named.
109	{} INTERFACENEEDED	INTERFACENEEDED	Interface Integrity	ObjectFlow	info	The owners of the ends of this object flow are different and it is not realized by an item flow.
110	{} CONSTRAINTPARAM	CONSTRAINTPARAM	Parametric Element Inte...	ConstraintBlock [Class]	error	Constraint blocks must own one or more constraint parameters.
111	{} CONSTRAINTSPECIFICATION	CONSTRAINTSPECIFICATION	Parametric Element Inte...	Constraint	error	Constraint specifications may not be empty.
112	{} BUFFERFLOW	BUFFERFLOW	Activity Diagram Integrity	CentralBufferNode	error	Buffers and data stores must have at least one object flow (incoming or outgoing).
113	{} EXTENDEXTPOINT	EXTENDEXTPOINT	Use Case Integrity	Extend	error	Extend relationships must be assigned to at least one extension point.
114	{} PACKAGENAME	PACKAGENAME	Completeness	Package	error	Packages must be named.
115	{} REQEXTEND	REQEXTEND	Forbidden Elements	Requirement [Class]	error	Non-extended requirements are forbidden.
116	{} REQTRACE	REQTRACE	Requirements	Requirement [Class]	error	Requirements must have at least one outgoing trace (to artifact) or refine relationship.
117	{} SENDSIGNALPIN	SENDSIGNALPIN	Activity Diagram Integrity	SendSignalAction	error	Send signal actions must have at least one input pin.
118	{} OBJECTFLOWENDS	SENDSIGNALOBJ	Activity Diagram Integrity	ObjectFlow	error	Object flows must have input/output pins as their source/target (no direct connection with send and accep...
119	{} CALLBEHAVIORSELF	CALLBEHAVIORSELF	Activity Diagram Integrity	CallBehaviorAction	error	Call behavior actions may not call the activity that owns them.
120	{} TRANSITIONTRIGGERFLOW	TRANSITIONTRIGGERFLOW	State Machine Integrity	Transition	info	This transition is triggered by a signal but is not associated with any item flows or flow sets.
121	{} MESSAGEFLOWNEEDED	MESSAGEFLOWNEEDED	Sequence Diagram Inte...	Message	info	This message signature is a signal and is not realized by any item flows or flow sets.
122	{} FLOWCONNECTOR	FLOWCONNECTOR	Flow Integrity	InformationFlow	error	This flow is not realized by any connectors.
123	{} ACTIVITYDOCUMENTATION	ACTIVITYDOCUMENTATION	Completeness	Activity	error	All activities must have documentation.
124	{} STATEDOCUMENTATION	STATEDOCUMENTATION	Completeness	State	error	All states must have documentation.
125	{} EXTENSIONPOINTUSE	EXTENSIONPOINTUSE	Use Case Integrity	ExtensionPoint	error	Extension points must be associated with at least one Extend relationship.
126	{} OBJFLOWSOURCE	OBJFLOWSOURCE	Activity Diagram Integrity	ObjectFlow	error	Object flows must have pins as their source (not call operations or call behaviors).

Figure 3.   SAIC Validation Rules

Stereotypes

NA

#	△ Name	Metaclass	Documentation
1	«» conceptual	M Class	Stereotype applied to elements of the conceptual architecture.
2	«» context	M Class	Stereotype applied to context elements.
3	«» logical	M Class	Stereotype applied to elements of the logical architecture.
4	«» physical	M Class	Stereotype applied to elements of the physical architecture.
5	«» software	M Class	This stereotype is applied to a block that represents a software element in the system.

Figure 4.   Stereotypes