Simulink Design Verifier Report

ae2e3/Chart

attit

Simulink Design Verifier Report: ae2e3/Chart

attit

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Chapter 1. Summary

Analysis Information.

Model:	ae2e3
Release:	R2022a Update 5
Analyzed Subsystem:	ae2e3/Chart
Checksum:	2555612038 2213538726 3978229151 3942368965
Mode:	Test generation
Model Representation:	Built on 25-Nov-2022 19:39:30
Test Generation Target:	Model
Status:	Stopped by user
PreProcessing Time:	38s
Analysis Time:	3590s

Objectives Status.

Number of Objectives:	**64**	
Objectives Satisfied:	55	(86%)
Objectives Unsatisfiable:	2	(3%)
Objectives Undecided when the Analysis was Stopped:	7	(11%)

Chapter 2. Analysis Information

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Model Information

File:	ae2e3
Version:	1.3
Time Stamp:	Fri Nov 25 18:28:44 2022
Author:	attit

Analysis Options

Mode:	TestGeneration
Rebuild Model Representation:	IfChangeIsDetected
Test Generation Target:	Model
Test Suite Optimization:	Auto
Maximum Testcase Steps:	10000time steps
Test Conditions:	UseLocalSettings
Test Objectives:	UseLocalSettings
Model Coverage Objectives:	Decision
Add tests for the missing coverage:	off
Include Relational Boundary Objectives:	off
Maximum Analysis Time:	4000s
Block Replacement:	off
Parameters Analysis:	off
Include expected output values:	off
Randomize data that do not affect the outcome:	off
Additional analysis to reduce instances of rational approximation:	on
Save Data:	on
Save Harness:	off
Save Report:	off

User Artifacts

Coverage Data:	n/a
Test Data:	n/a

Constraints

Design Min Max Constraints

Name	Design Min Max Constraint
Pos_input	[1..4]

Chapter 3. Test Objectives Status

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Objectives Satisfied

Simulink Design Verifier generated test cases that exercise these test objectives.

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
1	Decision	Chart	trigger edge occurred **true**	15	1 [0]
2	Decision	Chart	trigger edge occurred **false**	15	1 [0]
3	Decision	Transition "[F1_evt&&Floor_1~=1] {Add(1)..." from "RequestWait" to "RequestWait"	expression "F1_evt&&Floor_1~=1" **true**	33	2 [0]
4	Decision	Transition "[F1_evt&&Floor_1~=1] {Add(1)..." from "RequestWait" to "RequestWait"	expression "F1_evt&&Floor_1~=1" **false**	15	1 [0]
5	Decision	Transition "[F2_evt&&Floor_2~=1] {Add(2)..." from "RequestWait" to "RequestWait"	expression "F2_evt&&Floor_2~=1" **true**	35	3 [0]
6	Decision	Transition "[F2_evt&&Floor_2~=1] {Add(2)..." from "RequestWait" to "RequestWait"	expression "F2_evt&&Floor_2~=1" **false**	15	1 [0]
7	Decision	Transition "[F3_evt&&Floor_3~=1] {Add(3)..." from "RequestWait" to "RequestWait"	expression "F3_evt&&Floor_3~=1" **true**	15	1 [0]
8	Decision	Transition "[F3_evt&&Floor_3~=1] {Add(3)..." from "RequestWait" to "RequestWait"	expression "F3_evt&&Floor_3~=1" **false**	34	2 [0]

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
9	Decision	Transition "[F4_evt&&Floor_4~=1] {Add(4)..." from "RequestWait" to "RequestWait"	expression "F4_evt&&Floor_4~=1" **true**	34	2 [0]
10	Decision	Transition "[F4_evt&&Floor_4~=1] {Add(4)..." from "RequestWait" to "RequestWait"	expression "F4_evt&&Floor_4~=1" **false**	34	2 [0]
12	Decision	State "LiftAlgorithm"	Substate executed **"DOOR_WAIT"**	34	2 [0]
13	Decision	State "LiftAlgorithm"	Substate executed **"MOTOR_ON"**	37	4 [0]
14	Decision	State "LiftAlgorithm"	Substate executed **"REQUESTED_FLOOR_FOUND"**	254	10 [0]
15	Decision	State "LiftAlgorithm"	Substate executed **"REQUEST_ACCEPTED"**	35	3 [0]
16	Decision	State "LiftAlgorithm"	Substate executed **"WAIT"**	15	1 [0]
22	Decision	Transition "[after(5,sec)]" from "DOOR_WAIT" to "DOOR_DONE"	expression "after(5,sec)" **false**	34	2 [0]
23	Decision	Transition "[1==ValidFloor(Pos_input)&&..." from "MOTOR_ON" to "REQUESTED_FLOOR_FOUND"	expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" **true**	192	9 [0]
24	Decision	Transition "[1==ValidFloor(Pos_input)&&..." from "MOTOR_ON" to "REQUESTED_FLOOR_FOUND"	expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" **false**	37	4 [0]
25	Decision	Transition "[abs(Direction-Pos_input)<0..." from "REQUESTED_FLOOR_FOUND" to "DOOR_WAIT"	expression "abs(Direction-Pos_input)<0.1" **true**	284	11 [0]
26	Decision	Transition "[abs(Direction-Pos_input)<0..." from "REQUESTED_FLOOR_FOUND" to "DOOR_WAIT"	expression "abs(Direction-Pos_input)<0.1" **false**	254	10 [0]
27	Decision	Transition "[Direction~=Pos_input]" from "REQUEST_ACCEPTED" to "MOTOR_ON"	expression "Direction~=Pos_input" **true**	37	4 [0]
28	Decision	Transition "[Direction~=Pos_input]" from	expression "Direction~=Pos_input" **false**	35	3 [0]

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
		"REQUEST_ACCEPTED" to "MOTOR_ON"			
29	Decision	Transition "[Direction==Pos_input]{Dire..." from "REQUEST_ACCEPTED" to "DOOR_WAIT"	expression "Direction==Pos_input" **true**	35	3 [0]
31	Decision	Transition "[PressCount>0]{Direction=Qu..." from "WAIT" to "REQUEST_ACCEPTED"	expression "PressCount>0" **true**	15	1 [0]
32	Decision	Transition "[PressCount>0]{Direction=Qu..." from "WAIT" to "REQUEST_ACCEPTED"	expression "PressCount>0" **false**	37	5 [0]
33	Decision	State "ElevatorUnitControl"	Substate executed **"GO_DOWN"**	37	4 [0]
34	Decision	State "ElevatorUnitControl"	Substate executed **"GO_UP"**	134	7 [0]
35	Decision	State "ElevatorUnitControl"	Substate executed **"HALT"**	34	2 [0]
36	Decision	State "ElevatorUnitControl"	Substate executed **"OFF"**	15	1 [0]
37	Decision	Transition "[Emergency]" from "GO_DOWN" to Junction #32	expression "Emergency" **true**	365	15 [0]
38	Decision	Transition "[Emergency]" from "GO_DOWN" to Junction #32	expression "Emergency" **false**	37	4 [0]
39	Decision	Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_DOWN" to "OFF"	expression "~in(LiftAlgorithm.MOTOR_ON)" **true**	254	10 [0]
40	Decision	Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_DOWN" to "OFF"	expression "~in(LiftAlgorithm.MOTOR_ON)" **false**	37	4 [0]
41	Decision	Transition "[Emergency]" from "GO_UP" to Junction #33	expression "Emergency" **true**	134	7 [0]
42	Decision	Transition "[Emergency]" from "GO_UP" to Junction #33	expression "Emergency" **false**	284	11 [0]
43	Decision	Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_UP" to "OFF"	expression "~in(LiftAlgorithm.MOTOR_ON)" **true**	284	11 [0]

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
44	Decision	Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_UP" to "OFF"	expression "~in(LiftAlgorithm.MOTOR_ON)" **false**	338	14 [0]
45	Decision	Transition "[Start]" from "HALT" to "OFF"	expression "Start" **true**	338	13 [0]
46	Decision	Transition "[Start]" from "HALT" to "OFF"	expression "Start" **false**	34	2 [0]
47	Decision	Transition "[in(LiftAlgorithm.MOTOR_ON)]" from "OFF" to Junction #30	expression "in(LiftAlgorithm.MOTOR_ON)" **true**	37	4 [0]
48	Decision	Transition "[in(LiftAlgorithm.MOTOR_ON)]" from "OFF" to Junction #30	expression "in(LiftAlgorithm.MOTOR_ON)" **false**	15	1 [0]
49	Decision	Transition "[Direction<Pos_input]" from Junction #30 to "GO_DOWN"	expression "Direction<Pos_input" **true**	37	4 [0]
50	Decision	Transition "[Direction<Pos_input]" from Junction #30 to "GO_DOWN"	expression "Direction<Pos_input" **false**	37	6 [0]
51	Decision	Transition "[Emergency]" from "OFF" to "HALT"	expression "Emergency" **true**	34	2 [0]
52	Decision	Transition "[Emergency]" from "OFF" to "HALT"	expression "Emergency" **false**	15	1 [0]
53	Decision	Transition "[Direction>Pos_input]" from Junction #30 to Junction #31	expression "Direction>Pos_input" **true**	37	6 [0]
55	Decision	Transition "[pos == 1]" from Junction #19 to Junction #14	expression "pos == 1" **true**	35	3 [0]
56	Decision	Transition "[pos == 1]" from Junction #19 to Junction #14	expression "pos == 1" **false**	163	8 [0]
57	Decision	Transition "[pos == 2]" from Junction #26 to Junction #11	expression "pos == 2" **true**	314	12 [0]
58	Decision	Transition "[pos == 2]" from Junction #26 to Junction #11	expression "pos == 2" **false**	163	8 [0]
59	Decision	Transition "[pos == 3]" from Junction #21 to Junction #28	expression "pos == 3" **true**	223	13 [0]

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
60	Decision	Transition "[pos == 3]" from Junction #21 to Junction #28	expression "pos == 3" **false**	163	8 [0]
61	Decision	Transition "[pos == 4]" from Junction #20 to Junction #17	expression "pos == 4" **true**	163	8 [0]
63	Decision	Transition "[abs(indx-1.0)<0.1|| abs(ind..." from Junction #8 to Junction #10	expression "abs(indx-1.0)<0.1|| abs(indx-2.0)<0.1|| abs(indx-3.0)<0.1|| abs(indx-4.0)<0.1" **true**	134	7 [0]
64	Decision	Transition "[abs(indx-1.0)<0.1|| abs(ind..." from Junction #8 to Junction #10	expression "abs(indx-1.0)<0.1|| abs(indx-2.0)<0.1|| abs(indx-3.0)<0.1|| abs(indx-4.0)<0.1" **false**	37	4 [0]

Objectives Unsatisfiable

Simulink Design Verifier proved these test objectives to be unreachable by any test case. This often indicates the presence of dead logic in the model. This can be a side effect of parameter configurations or minimum and maximum constraints specified on inputs. In Test Generation, this can also be a result of constraints resulting from Test Condition blocks.

#	Type	Model Item	Description	Analysis Time (sec)
20	Decision	Transition "[Direction==0]" from "DOOR_DONE" to Junction #6	expression "Direction==0" **false**	16
30	Decision	Transition "[Direction==Pos_input]{Dire..." from "REQUEST_ACCEPTED" to "DOOR_WAIT"	expression "Direction==Pos_input" **false**	16

Objectives Undecided when the Analysis was Stopped

Simulink Design Verifier was not able to process these objectives with the current options.

#	Type	Model Item	Description	Analysis Time (sec)
11	Decision	State "LiftAlgorithm"	Substate executed **"DOOR_DONE"**	-1
17	Decision	Transition "[Direction~=0]" from "DOOR_DONE" to Junction #4	expression "Direction~=0" **true**	-1
18	Decision	Transition "[Direction~=0]" from "DOOR_DONE" to Junction #4	expression "Direction~=0" **false**	-1
19	Decision	Transition "[Direction==0]" from "DOOR_DONE" to Junction #6	expression "Direction==0" **true**	-1
21	Decision	Transition "[after(5,sec)]" from "DOOR_WAIT" to "DOOR_DONE"	expression "after(5,sec)" **true**	-1
54	Decision	Transition "[Direction>Pos_input]" from Junction #30 to Junction #31	expression "Direction>Pos_input" **false**	-1
62	Decision	Transition "[pos == 4]" from Junction #20 to Junction #17	expression "pos == 4" **false**	-1

Chapter 4. Model Items

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This section presents, for each object in the model defining coverage objectives, the list of objectives and their individual status at the end of the analysis. It should match the coverage report obtained from running the generated test suite on the model, either from the harness model or by using the sldvruntest command.

Chart

#:	Type	Description	Status	Test Case
1	Decision	trigger edge occurred true	Satisfied	1 [0]

#:	Type	Description	Status	Test Case
2	Decision	trigger edge occurred false	Satis-fied	1 [0]

Transition "[F1_evt&&Floor_1~=1]{Add(1)..." from "RequestWait" to "RequestWait"

#:	Type	Description	Status	Test Case
3	Decision	expression "F1_evt&&Floor_1~=1" true	Satis-fied	2 [0]
4	Decision	expression "F1_evt&&Floor_1~=1" false	Satis-fied	1 [0]

Transition "[F2_evt&&Floor_2~=1]{Add(2)..." from "RequestWait" to "RequestWait"

#:	Type	Description	Status	Test Case
5	Decision	expression "F2_evt&&Floor_2~=1" true	Satis-fied	3 [0]
6	Decision	expression "F2_evt&&Floor_2~=1" false	Satis-fied	1 [0]

Transition "[F3_evt&&Floor_3~=1]{Add(3)..." from "RequestWait" to "RequestWait"

#:	Type	Description	Status	Test Case
7	Decision	expression "F3_evt&&Floor_3~=1" true	Satis-fied	1 [0]
8	Decision	expression "F3_evt&&Floor_3~=1" false	Satis-fied	2 [0]

Transition "[F4_evt&&Floor_4~=1]{Add(4)..." from "RequestWait" to "RequestWait"

#:	Type	Description	Status	Test Case
9	Decision	expression "F4_evt&&Floor_4~=1" true	Satisfied	2 [0]
10	Decision	expression "F4_evt&&Floor_4~=1" false	Satisfied	2 [0]

State "LiftAlgorithm"

#:	Type	Description	Status	Test Case
11	Decision	Substate executed "DOOR_DONE"	Undecided	n/a
12	Decision	Substate executed "DOOR_WAIT"	Satisfied	2 [0]
13	Decision	Substate executed "MOTOR_ON"	Satisfied	4 [0]
14	Decision	Substate executed "REQUESTED_FLOOR_FOUND"	Satisfied	10 [0]
15	Decision	Substate executed "REQUEST_ACCEPTED"	Satisfied	3 [0]
16	Decision	Substate executed "WAIT"	Satisfied	1 [0]

Transition "[Direction~=0]" from "DOOR_DONE" to Junction #4

#:	Type	Description	Status	Test Case
17	Decision	expression "Direction~=0" true	Undecided	n/a
18	Decision	expression "Direction~=0" false	Undecided	n/a

Transition "[Direction==0]" from "DOOR_DONE" to Junction #6

#:	Type	Description	Status	Test Case
19	Decision	expression "Direction==0" true	Undecided	n/a
20	Decision	expression "Direction==0" false	Unsatisfiable	n/a

Transition "[after(5,sec)]" from "DOOR_WAIT" to "DOOR_DONE"

#:	Type	Description	Status	Test Case
21	Decision	expression "after(5,sec)" true	Undecided	n/a
22	Decision	expression "after(5,sec)" false	Satisfied	2 [0]

Transition "[1==ValidFloor(Pos_input)&&..." from "MOTOR_ON" to "REQUESTED_FLOOR_FOUND"

#:	Type	Description	Status	Test Case
23	Decision	expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" true	Satisfied	9 [0]
24	Decision	expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" false	Satisfied	4 [0]

Transition "[abs(Direction-Pos_input)<0..." from "REQUESTED_FLOOR_FOUND" to "DOOR_WAIT"

#:	Type	Description	Status	Test Case
25	Decision	expression "abs(Direction-Pos_input)<0.1" true	Satisfied	11 [0]
26	Decision	expression "abs(Direction-Pos_input)<0.1" false	Satisfied	10 [0]

Transition "[Direction~=Pos_input]" from "REQUEST_ACCEPTED" to "MOTOR_ON"

#:	Type	Description	Status	Test Case
27	Decision	expression "Direction~=Pos_input" true	Satisfied	4 [0]
28	Decision	expression "Direction~=Pos_input" false	Satisfied	3 [0]

Transition "[Direction==Pos_input]{Dire..." from "REQUEST_ACCEPTED" to "DOOR_WAIT"

#:	Type	Description	Status	Test Case
29	Decision	expression "Direction==Pos_input" true	Satisfied	3 [0]
30	Decision	expression "Direction==Pos_input" false	Unsatisfiable	n/a

Transition "[PressCount>0]{Direction=Qu..." from "WAIT" to "REQUEST_ACCEPTED"

#:	Type	Description	Status	Test Case
31	Decision	expression "PressCount>0" true	Satisfied	1 [0]

#:	Type	Description	Status	Test Case
32	Decision	expression "PressCount>0" false	Satisfied	5 [0]

State "ElevatorUnitControl"

#:	Type	Description	Status	Test Case
33	Decision	Substate executed "GO_DOWN"	Satisfied	4 [0]
34	Decision	Substate executed "GO_UP"	Satisfied	7 [0]
35	Decision	Substate executed "HALT"	Satisfied	2 [0]
36	Decision	Substate executed "OFF"	Satisfied	1 [0]

Transition "[Emergency]" from "GO_DOWN" to Junction #32

#:	Type	Description	Status	Test Case
37	Decision	expression "Emergency" true	Satisfied	15 [0]
38	Decision	expression "Emergency" false	Satisfied	4 [0]

Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_DOWN" to "OFF"

#:	Type	Description	Status	Test Case
39	Decision	expression "~in(LiftAlgorithm.MOTOR_ON)" true	Satisfied	10 [0]
40	Decision	expression "~in(LiftAlgorithm.MOTOR_ON)" false	Satisfied	4 [0]

Transition "[Emergency]" from "GO_UP" to Junction #33

#:	Type	Description	Status	Test Case
41	Decision	expression "Emergency" true	Satisfied	7 [0]
42	Decision	expression "Emergency" false	Satisfied	11 [0]

Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_UP" to "OFF"

#:	Type	Description	Status	Test Case
43	Decision	expression "~in(LiftAlgorithm.MOTOR_ON)" true	Satisfied	11 [0]
44	Decision	expression "~in(LiftAlgorithm.MOTOR_ON)" false	Satisfied	14 [0]

Transition "[Start]" from "HALT" to "OFF"

#:	Type	Description	Status	Test Case
45	Decision	expression "Start" true	Satisfied	13 [0]
46	Decision	expression "Start" false	Satisfied	2 [0]

Transition "[in(LiftAlgorithm.MOTOR_ON)]" from "OFF" to Junction #30

#:	Type	Description	Status	Test Case
47	Decision	expression "in(LiftAlgorithm.MOTOR_ON)" true	Satisfied	4 [0]
48	Decision	expression "in(LiftAlgorithm.MOTOR_ON)" false	Satisfied	1 [0]

Transition "[Direction<Pos_input]" from Junction #30 to "GO_DOWN"

#:	Type	Description	Status	Test Case
49	Decision	expression "Direction<Pos_input" true	Satisfied	4 [0]
50	Decision	expression "Direction<Pos_input" false	Satisfied	6 [0]

Transition "[Emergency]" from "OFF" to "HALT"

#:	Type	Description	Status	Test Case
51	Decision	expression "Emergency" true	Satisfied	2 [0]
52	Decision	expression "Emergency" false	Satisfied	1 [0]

Transition "[Direction>Pos_input]" from Junction #30 to Junction #31

#:	Type	Description	Status	Test Case
53	Decision	expression "Direction>Pos_input" true	Satisfied	6 [0]
54	Decision	expression "Direction>Pos_input" false	Undecided	n/a

Transition "[pos == 1]" from Junction #19 to Junction #14

#:	Type	Description	Status	Test Case
55	Decision	expression "pos == 1" true	Satisfied	3 [0]
56	Decision	expression "pos == 1" false	Satisfied	8 [0]

Transition "[pos == 2]" from Junction #26 to Junction #11

#:	Type	Description	Status	Test Case
57	Decision	expression "pos == 2" true	Satisfied	12 [0]
58	Decision	expression "pos == 2" false	Satisfied	8 [0]

Transition "[pos == 3]" from Junction #21 to Junction #28

#:	Type	Description	Status	Test Case
59	Decision	expression "pos == 3" true	Satisfied	13 [0]
60	Decision	expression "pos == 3" false	Satisfied	8 [0]

Transition "[pos == 4]" from Junction #20 to Junction #17

#:	Type	Description	Status	Test Case
61	Decision	expression "pos == 4" true	Satisfied	8 [0]
62	Decision	expression "pos == 4" false	Undecided	n/a

Transition "[abs(indx-1.0)<0.1||abs(ind..." from Junction #8 to Junction #10

#:	Type	Description	Status	Test Case
63	Decision	expression "abs(indx-1.0)<0.1|| abs(indx-2.0)<0.1|| abs(indx-3.0)<0.1|| abs(indx-4.0)<0.1" true	Satisfied	7 [0]
64	Decision	expression "abs(indx-1.0)<0.1||	Satisfied	4 [0]

#:	Type	Description	Status	Test Case
		abs(indx-2.0)<0.1|| abs(indx-3.0)<0.1|| abs(indx-4.0)<0.1" false		

Chapter 5. Test Cases

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This section contains detailed information about each generated test case.

Test Case 1

Summary.

Length:	0.4 second (3 sample periods)
Objectives Satisfied:	10

Objectives.

Step	Time	Model Item	Objectives
1	0	Chart	2. trigger edge occurred false [0]
3	0.4	Chart Transition "[F1_evt&&Floor_1~=1]{Add(1)..." from "RequestWait" to "RequestWait" Transition "[F2_evt&&Floor_2~=1]{Add(2)..." from "RequestWait" to "RequestWait" Transition "[F3_evt&&Floor_3~=1]{Add(3)..." from "RequestWait" to "RequestWait" State "LiftAlgorithm" Transition "[PressCount>0]{Direction=Qu..." from "WAIT" to "REQUEST_ACCEPTED"	1. trigger edge occurred true [0] 4. expression "F1_evt&&Floor_1~=1" false [0] 6. expression "F2_evt&&Floor_2~=1" false [0] 7. expression "F3_evt&&Floor_3~=1" true [0] 16. Substate executed "WAIT" [0] 31. expression "PressCount>0" true [0] 36. Substate executed "OFF" [0] 48. expression "in(LiftAlgorithm.MOTOR_ON)" false [0] 52. expression "Emergency" false [0]

Step	Time	Model Item	Objectives
		State "ElevatorUnitControl" Transition "[in(LiftAlgorithm.MOTOR_ON)]" from "OFF" to Junction #30 Transition "[Emergency]" from "OFF" to "HALT"	

Generated Input Data.

Time	0-0.2	0.4
Step	**1-2**	**3**
Pos_input	3.5648	1.5154
input events	[1.9184 -5.4067 9.8142 -3.321 5.9365 -6.4012 2.414]	[2.6094 1.6229 -4.7853 1.162 -6.7752 -5.4024 -4.0808]

Test Case 2

Summary.

Length:	0.8 second (5 sample periods)
Objectives Satisfied:	9

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[F1_evt&&Floor_1~=1] {Add(1)..." from "RequestWait" to "RequestWait"	3. expression "F1_evt&&Floor_1~=1" true [0]
3	0.4	Transition "[F3_evt&&Floor_3~=1] {Add(3)..." from "RequestWait" to "RequestWait" Transition "[F4_evt&&Floor_4~=1] {Add(4)..." from "RequestWait" to "RequestWait" Transition "[F4_evt&&Floor_4~=1] {Add(4)..." from "RequestWait" to "RequestWait" State "LiftAlgorithm" Transition "[after(5,sec)]" from "DOOR_WAIT" to "DOOR_DONE" Transition "[Emergency]" from "OFF" to "HALT"	8. expression "F3_evt&&Floor_3~=1" false [0] 9. expression "F4_evt&&Floor_4~=1" true [0] 10. expression "F4_evt&&Floor_4~=1" false [0] 12. Substate executed "DOOR_WAIT" [0] 22. expression "after(5,sec)" false [0] 51. expression "Emergency" true [0]
5	0.8	State "ElevatorUnitControl" Transition "[Start]" from "HALT" to "OFF"	35. Substate executed "HALT" [0] 46. expression "Start" false [0]

Generated Input Data.

Time	**0**	**0.2**	**0.4-0.6**	**0.8**
Step	**1**	**2**	**3-4**	**5**
Pos_input	1	1	3.5648	1.5154
input events	[-1 -1 -1 -1 -1 1 0]	[0 0 0 -1 -1 -1 -1]	[1.9184 -5.4067 9.8142 -3.321 5.9365 -6.4012 2.414]	[2.6094 1.6229 -4.7853 1.162 -6.7752 -5.4024 -4.0808]

Test Case 3

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	5

Objectives.

Step	**Time**	**Model Item**	**Objectives**
2	0.2	Transition "[F2_evt&&Floor_2~=1]{Add(2)..." from "RequestWait" to "RequestWait" State "LiftAlgorithm" Transition "[Direction~=Pos_input]" from "REQUEST_ACCEPTED" to "MOTOR_ON" Transition "[Direction==Pos_input]{Dire..." from "REQUEST_ACCEPTED" to "DOOR_WAIT" Transition "[pos == 1]" from Junction #19 to Junction #14	5. expression "F2_evt&&Floor_2~=1" true [0] 15. Substate executed "REQUEST_ACCEPTED" [0] 28. expression "Direction~=Pos_input" false [0] 29. expression "Direction==Pos_input" true [0] 55. expression "pos == 1" true [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	1	1
input events	[-1 -1 -1 -1 -1 1 0]	[0 0 0 -1 -1 -1 -1]

Test Case 4

Summary.

Length:	0.6 second (4 sample periods)
Objectives Satisfied:	9

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[Direction~=Pos_input]" from "REQUEST_ACCEPTED" to "MOTOR_ON" Transition "[in(LiftAlgorithm.MOTOR_ON)]" from "OFF" to Junction #30 Transition "[Direction<Pos_input]" from Junction #30 to "GO_DOWN"	27. expression "Direction~=Pos_input" true [0] 47. expression "in(LiftAlgorithm.MOTOR_ON)" true [0] 49. expression "Direction<Pos_input" true [0]
4	0.6	State "LiftAlgorithm" Transition "[1==ValidFloor(Pos_input)&&..." from "MOTOR_ON" to "REQUESTED_FLOOR_FOUND" State "ElevatorUnitControl" Transition "[Emergency]" from "GO_DOWN" to Junction #32 Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_DOWN" to "OFF" Transition "[abs(indx-1.0)<0.1||abs(ind..." from Junction #8 to Junction #10	13. Substate executed "MOTOR_ON" [0] 24. expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" false [0] 33. Substate executed "GO_DOWN" [0] 38. expression "Emergency" false [0] 40. expression "~in(LiftAlgorithm.MOTOR_ON)" false [0] 64. expression "abs(indx-1.0)<0.1||abs(indx-2.0)<0.1||abs(indx-3.0)<0.1||abs(indx-4.0)<0.1" false [0]

Generated Input Data.

Time	**0**	**0.2-0.4**	**0.6**
Step	**1**	**2-3**	**4**
Pos_input	1	4	1.5154
input events	[-1 -1 -1 -1 -1 1 0]	[0 0 0 -1 -1 -1 -1]	[2.6094 1.6229 -4.7853 1.162 -6.7752 -5.4024 -4.0808]

Test Case 5

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	1

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[PressCount>0]{Direction=Qu..." from "WAIT" to "REQUEST_ACCEPTED"	32. expression "PressCount>0" false [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	1	3.7439
input events	[-1 -1 -1 -1 -1 1 0]	[-2.74 -1.5935 0.54063 -0.87993 -6.6856 9.6041 1.1827]

Test Case 6

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	2

Objectives.

Step	**Time**	**Model Item**	**Objectives**
2	0.2	Transition "[Direction<Pos_input]" from Junction #30 to "GO_DOWN" Transition "[Direction>Pos_input]" from Junction #30 to Junction #31	50. expression "Direction<Pos_input" false [0] 53. expression "Direction>Pos_input" true [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	1	1.5411
input events	[-1 -1 -1 -1 -1 1 0]	[-2.7327 4.1305 -7.9535 9.4032 7.4182 -3.8455 -6.0138]

Test Case 7

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	3

Objectives.

Step	**Time**	**Model Item**	**Objectives**
2	0.2	State "ElevatorUnitControl"	34. Substate executed "GO_UP" [0]

Step	Time	Model Item	Objectives
		Transition "[Emergency]" from "GO_UP" to Junction #33 Transition "[abs(indx-1.0)<0.1|| abs(ind..." from Junction #8 to Junction #10	41. expression "Emergency" true [0] 63. expression "abs(indx-1.0)<0.1|| abs(indx-2.0)<0.1||abs(indx-3.0)<0.1|| abs(indx-4.0)<0.1" true [0]

Generated Input Data.

Time	0	0.2
Step	**1**	**2**
Pos_input	1	1.95
input events	[-1 -1 -1 -1 -1 0 0]	[-0.05 -0.05 -1 0 0 0.05 0.05]

Test Case 8

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	4

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[pos == 1]" from Junction #19 to Junction #14 Transition "[pos == 2]" from Junction #26 to Junction #11 Transition "[pos == 3]" from Junction #21 to Junction #28 Transition "[pos == 4]" from Junction #20 to Junction #17	56. expression "pos == 1" false [0] 58. expression "pos == 2" false [0] 60. expression "pos == 3" false [0] 61. expression "pos == 4" true [0]

Generated Input Data.

Time	0	0.2
Step	**1**	**2**
Pos_input	1	4
input events	[-1 -1 -1 -1 -1 -1 0]	[-0.1 -0.1 -1 0 0 -0.1 0.1]

Test Case 9

Summary.

Length: 0.2 second (2 sample periods)
Objectives Satisfied: 1

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[1==ValidFloor(Pos_input)&&..." from "MOTOR_ON" to "REQUESTED_FLOOR_FOUND"	23. expression "1==ValidFloor(Pos_input)&&1==any(Queue(:)==round(Pos_input))" true [0]

Generated Input Data.

Time	0	0.2
Step	**1**	**2**
Pos_input	3.5	3.95
input events	[-1 -1 -1 -1 -1 -1 0]	[-0.05 -1 -0.05 0 0 0 0.05]

Test Case 10

Summary.

Length: 0.2 second (2 sample periods)
Objectives Satisfied: 3

Objectives.

Step	Time	Model Item	Objectives
2	0.2	State "LiftAlgorithm" Transition "[abs(Direction-Pos_input)<0..." from "REQUESTED_FLOOR_FOUND" to "DOOR_WAIT" Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_DOWN" to "OFF"	14. Substate executed "REQUESTED_FLOOR_FOUND" [0] 26. expression "abs(Direction-Pos_input)<0.1" false [0] 39. expression "~in(LiftAlgorithm.MOTOR_ON)" true [0]

Generated Input Data.

Time	0	0.2
Step	**1**	**2**
Pos_input	1.95	3.95
input events	[0 -1 -1 0 0 -1 0]	[-1 -0.05 0 0.05 0.05 0 0.05]

Test Case 11

Summary.

Length: 0.2 second (2 sample periods)
Objectives Satisfied: 3

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[abs(Direction-Pos_input)<0..." from "REQUESTED_FLOOR_FOUND" to "DOOR_WAIT" Transition "[Emergency]" from "GO_UP" to Junction #33 Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_UP" to "OFF"	25. expression "abs(Direction-Pos_input)<0.1" true [0] 42. expression "Emergency" false [0] 43. expression "~in(LiftAlgorithm.MOTOR_ON)" true [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	1	2.95
input events	[0 -1 0 -1 -1 0 0]	[-1 -0.05 0.05 0 0 0.05 0.05]

Test Case 12

Summary.

Length: 0.2 second (2 sample periods)
Objectives Satisfied: 1

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[pos == 2]" from Junction #26 to Junction #11	57. expression "pos == 2" true [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	1	2
input events	[-1 -1 -1 0 -1 0 0]	[-0.1 0.1 0 0 0 0.1 0]

Test Case 13

Summary.

Length: 0.4 second (3 sample periods)
Objectives Satisfied: 2

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[pos == 3]" from Junction #21 to Junction #28	59. expression "pos == 3" true [0]
3	0.4	Transition "[Start]" from "HALT" to "OFF"	45. expression "Start" true [0]

Generated Input Data.

Time	**0**	**0.2**	**0.4**
Step	**1**	**2**	**3**
Pos_input	1.5	3	3.7439
input events	[-1 -1 0 0 0 0 0]	[-1 -0.5 0.5 0.5 0 0 0.5]	[-2.74 -1.5935 0.54063 -0.87993 -6.6856 9.6041 1.1827]

Test Case 14

Summary.

Length: 0.6 second (4 sample periods)
Objectives Satisfied: 1

Objectives.

Step	Time	Model Item	Objectives
4	0.6	Transition "[~in(LiftAlgorithm.MOTOR_ON)]" from "GO_UP" to "OFF"	44. expression "~in(LiftAlgorithm.MOTOR_ON)" false [0]

Generated Input Data.

Time	**0**	**0.2-0.4**	**0.6**
Step	**1**	**2-3**	**4**
Pos_input	1	1	3.5648
input events	[-1 -1 -1 -1 -1 -1 0]	[-1 -1 -1 0 0 -1 1]	[1.9184 -5.4067 9.8142 -3.321 5.9365 -6.4012 2.414]

Test Case 15

Summary.

Length:	0.2 second (2 sample periods)
Objectives Satisfied:	1

Objectives.

Step	Time	Model Item	Objectives
2	0.2	Transition "[Emergency]" from "GO_DOWN" to Junction #32	37. expression "Emergency" true [0]

Generated Input Data.

Time	**0**	**0.2**
Step	**1**	**2**
Pos_input	3.95	4
input events	[0 0 -1 -1 1 -1 -1]	[0 0 0 0.05 -1 0 0]