




















Report Generated by Test Manager












Title: TestResults
Author: CoDeAs team 2
Date: 17-Feb-2021 12:57:43

Test Environment

Platform: PCWIN64
MATLAB: (R2020b)

Summary

Name	Outcome	Duration (Seconds)
Results: 2021-Feb-17 12:55:35	27 ✓	25.898
 FSM_test	27 ✓	25.899
 DEAD	5 ✓	4.79
 Dead-Dead	✓	1.096
 Dead-Regen	✓	0.891
 Dead-ED	✓	0.887
 Dead-NoCharge	✓	0.899
 Dead-Combined	✓	0.893
 No Charge	6 ✓	5.72
 NoCharge-DEAD	✓	0.862
 NoCharge-Regen	✓	0.959
 NoCharge-ED	2 ✓	1.894
 Iteration1	✓	0.902
 Iteration2	✓	0.937
 NoCharge-Combined	✓	0.93
 NoCharge-NoCharge	✓	0.865
 ED	6 ✓	5.743
 ED-ED	✓	0.867
 ED-Regen	✓	0.858
 ED-DEAD	✓	0.892
 ED-NoCharge	✓	0.905
 ED-Combined	2 ✓	2.111
 Iteration1	✓	0.976
 Iteration2	✓	1.011
 Combined	5 ✓	4.808

 Combined-Combined	✓	1.027
 Combined-Regen	✓	0.851
 Combined-DEAD	✓	0.905
 Combined-ED	✓	0.975
 Combined-NoCharge	✓	0.889
 Regen	5 ✓	4.589
 Regen-Regen	✓	0.915
 Regen-DEAD	✓	0.847
 Regen-ED	✓	0.861
 Regen-NoCharge	✓	0.84
 Regen-Combined	✓	0.951

Results: 2021-Feb-17 12:55:35

Result Type: Result Set
Parent: None
Start Time: 17-Feb-2021 12:55:39
End Time: 17-Feb-2021 12:56:05
Outcome: Total: 27, Passed: 27

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FSM_test

Test Result Information

Result Type: Test File Result
Parent: [Results: 2021-Feb-17 12:55:35](#)
Start Time: 17-Feb-2021 12:55:39
End Time: 17-Feb-2021 12:56:05
Outcome: Total: 27, Passed: 27

Test Suite Information

Name: FSM_test

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DEAD

Test Result Information

Result Type: Test Suite Result
Parent: [FSM_test](#)
Start Time: 17-Feb-2021 12:55:39
End Time: 17-Feb-2021 12:55:43
Outcome: Total: 5, Passed: 5
Description:

This suite contains all the test performed with DEAD as main state. It includes also the transitions from dead to other states.

Test Suite Information

Name: DEAD

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Dead-Dead

Test Result Information

Result Type: Test Case Result
Parent: [DEAD](#)
Start Time: 17-Feb-2021 12:55:39
End Time: 17-Feb-2021 12:55:40
Outcome: **Passed**
Description:

DEAD state check:

- no SOC
- no fuel
- Uniformely increasing acceleration request
- zero brake request

The state should be DEAD for all the testing time.

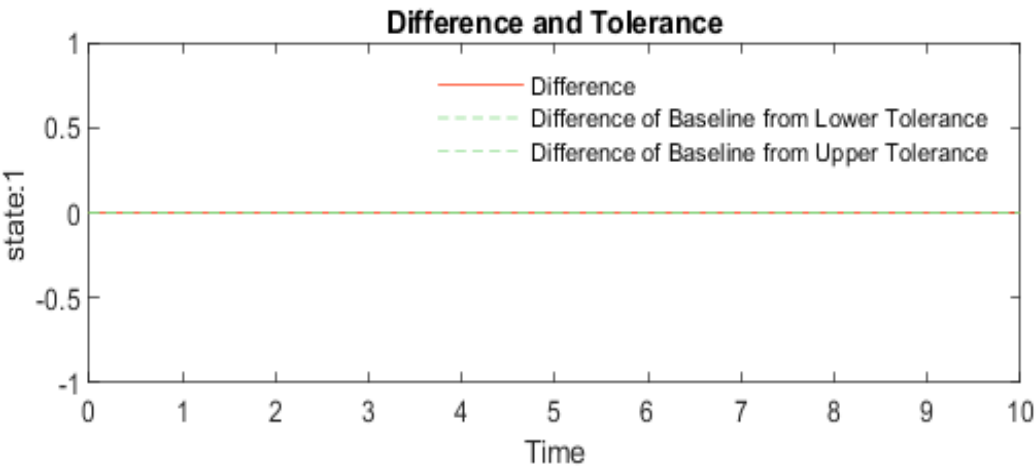
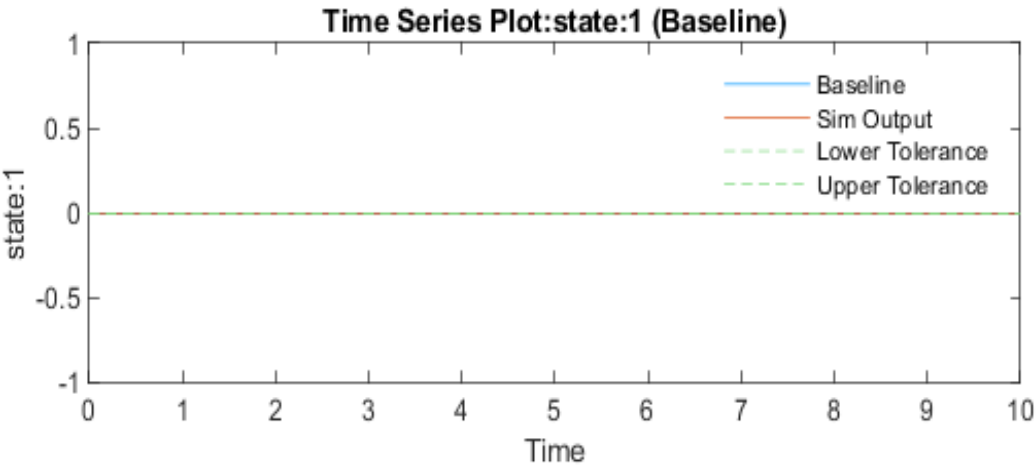
Test Case Information

Name: Dead-Dead
Type: Baseline Test
Baseline Name: Dead_Dead_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Dead_Dead_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

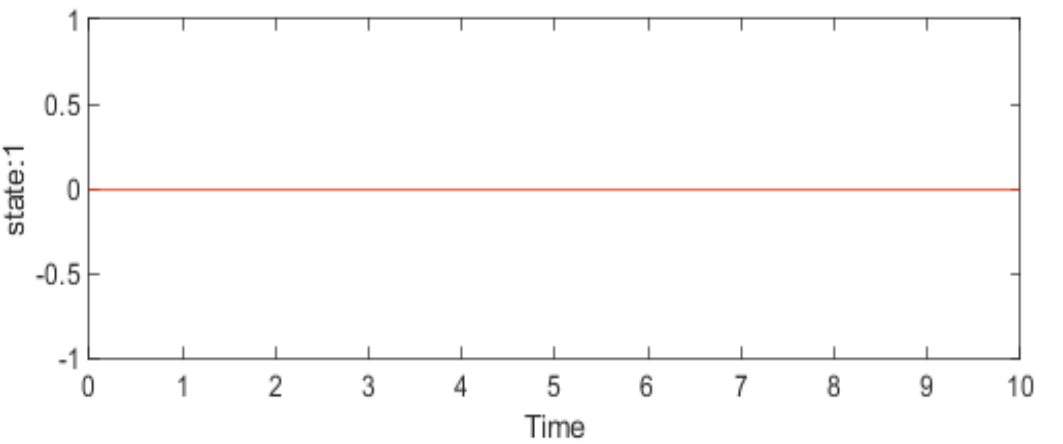
Model: FSM_Model
Release: Current
Simulation Mode: normal
Override SIL or PIL: 0
Mode:
Configuration Set: Configuration
External Input Name: Dead1.mat
External Input File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM Test\Inputs\Dead1.mat
Start Time: 0
Stop Time: 10
Checksum: 1272805733 3818056235 2604121839 221217785
Simulink Version: 10.2
Model Version: 1.3
Model Author: mordi
Date: Tue Feb 16 15:30:18 2021
User ID: mordi
Model Path: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM Test\FSM_Model.slx
Machine Name: DESKTOP-PM6NB79
Solver Name: VariableStepDiscrete
Solver Type: Variable-Step
Max Step Size: 0.20000000000000001
Simulation Start Time: 2021-02-17 12:55:39
Simulation Stop Time: 2021-02-17 12:55:39
Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
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state:1	double		Continuous	zoh	union	Link
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Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Dead-Regen

Test Result Information

Result Type: Test Case Result
Parent: [DEAD](#)
Start Time: 17-Feb-2021 12:55:40
End Time: 17-Feb-2021 12:55:41
Outcome: **Passed**
Description:

DEAD to Regen state transition check:

-fuel < fuelMin

-SOC < SOCMin

-BrakePedal request at 5s

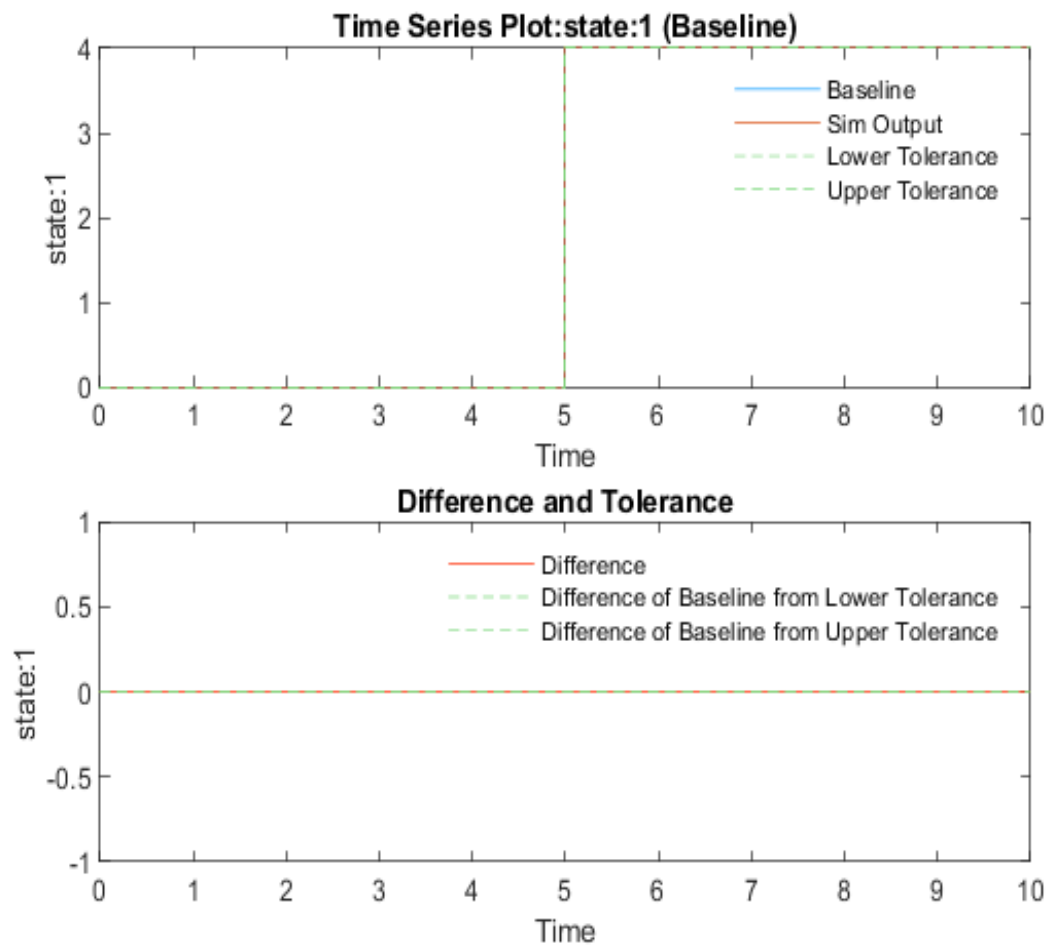
Test Case Information

Name: Dead-Regen
Type: Baseline Test
Baseline Name: Dead_Regen_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Dead_Regen_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

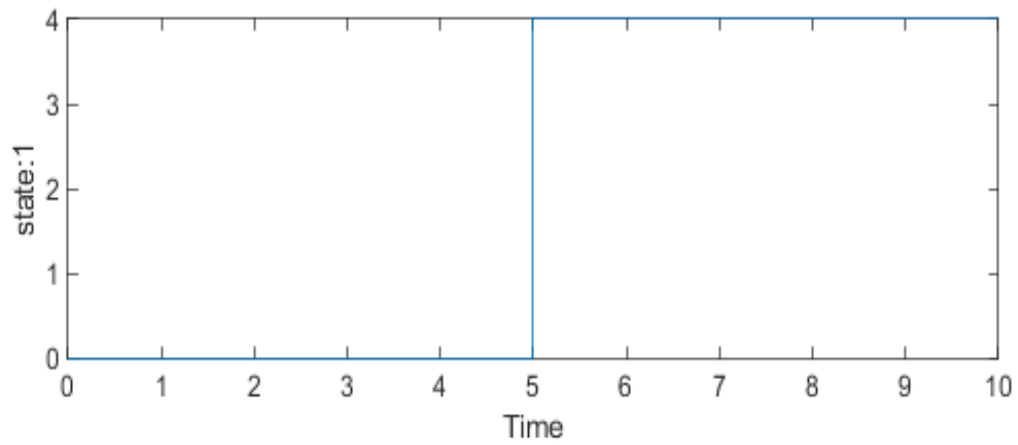
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Dead2.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Dead2.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:40
 Simulation Stop Time: 2021-02-17 12:55:40
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Dead-ED

Test Result Information

Result Type: Test Case Result
Parent: [DEAD](#)
Start Time: 17-Feb-2021 12:55:41

End Time: 17-Feb-2021 12:55:42
Outcome: Passed
Description:

DEAD to ED state transition check:

-SOC > SOCMin

-AccPedal < maxAccMGU

The state should pass from DEAD to Electric Drive

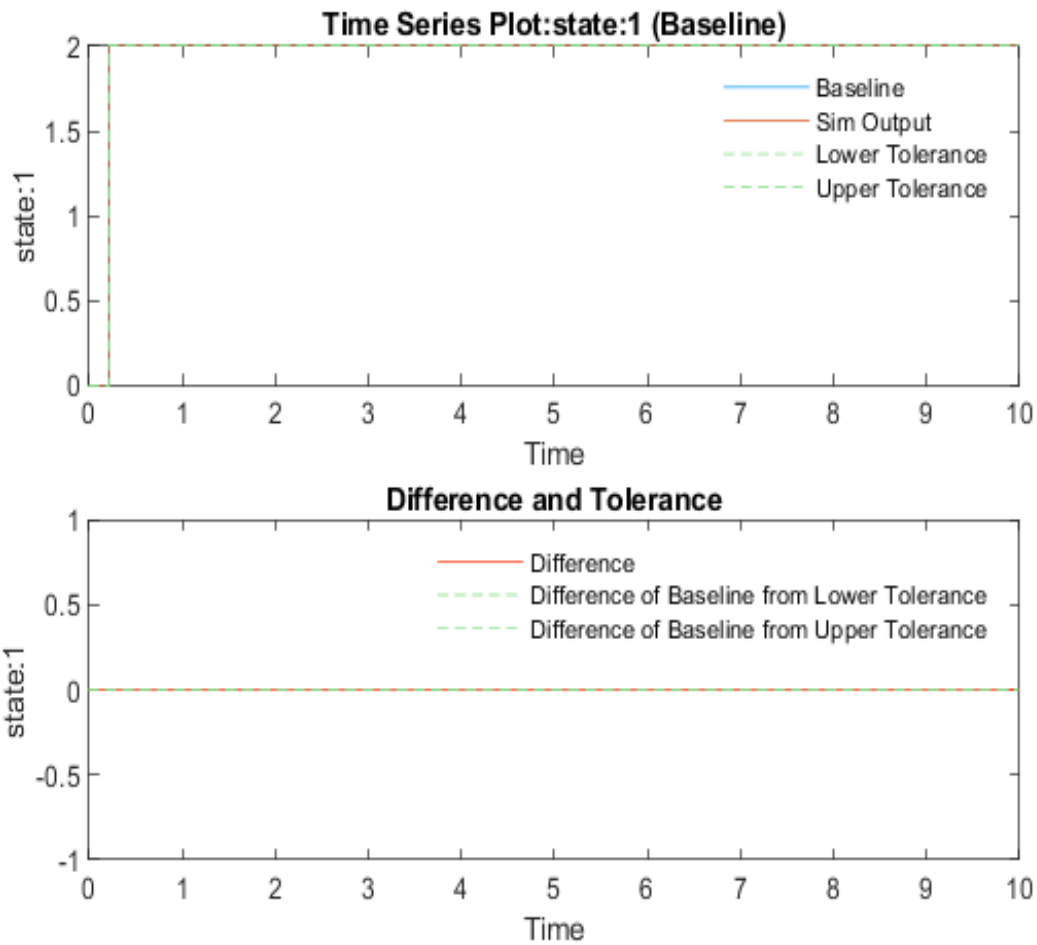
Test Case Information

Name: Dead-ED
Type: Baseline Test
Baseline Name: Dead_ED_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Dead_ED_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

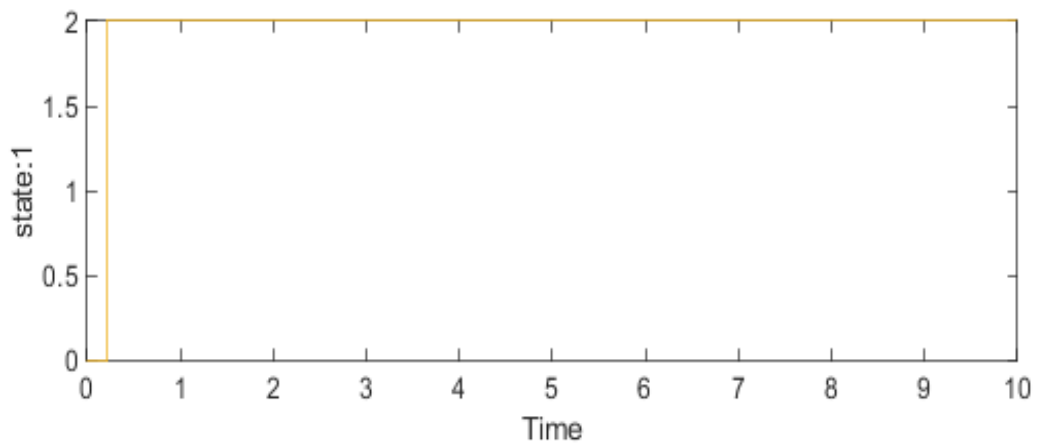
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Dead3.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Dead3.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:41
 Simulation Stop Time: 2021-02-17 12:55:41
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Dead-NoCharge

Test Result Information

Result Type: Test Case Result
Parent: [DEAD](#)
Start Time: 17-Feb-2021 12:55:42

End Time: 17-Feb-2021 12:55:43
Outcome: Passed
Description:

DEAD to No Charge state transition check:

-SOC < SOCMin

-fuel > fuelMin

-AccPedal < maxAccICE

The state should pass from DEAD to No Charge

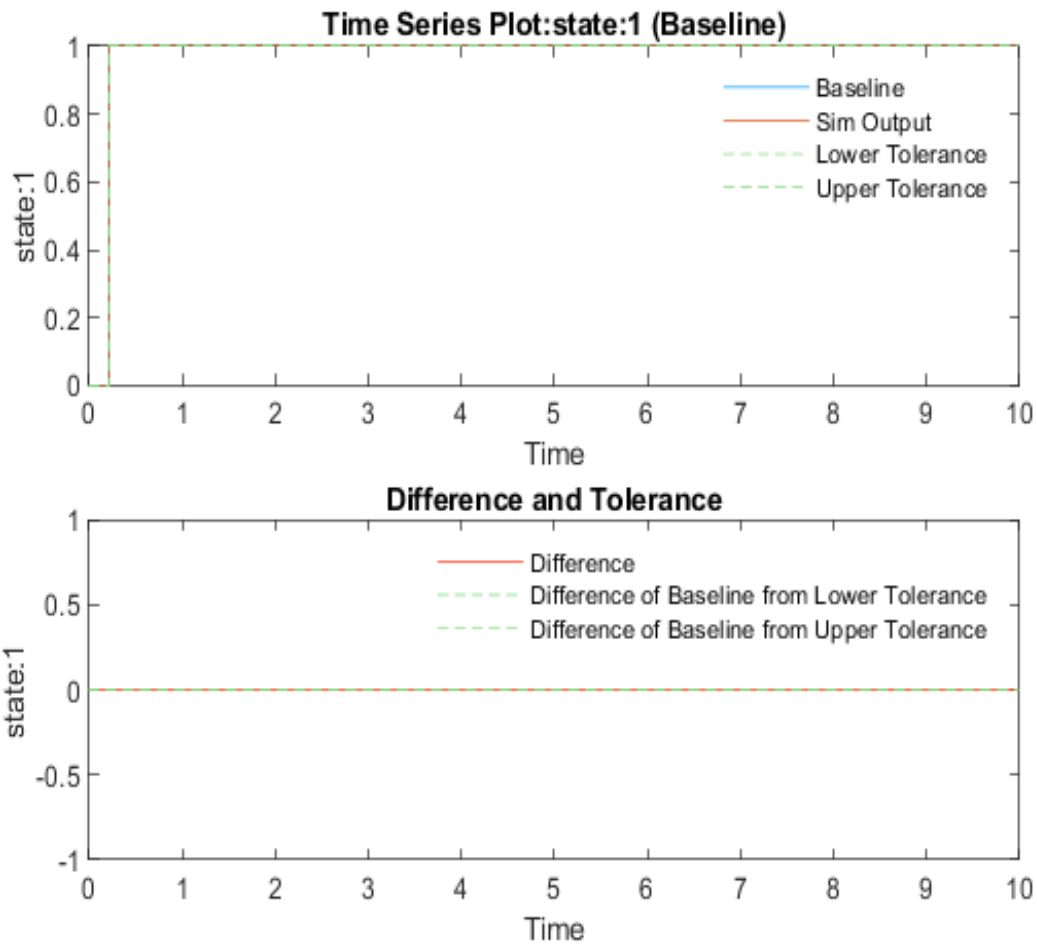
Test Case Information

Name: Dead-NoCharge
Type: Baseline Test
Baseline Name: Dead_NoCharge_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Dead_NoCharge_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

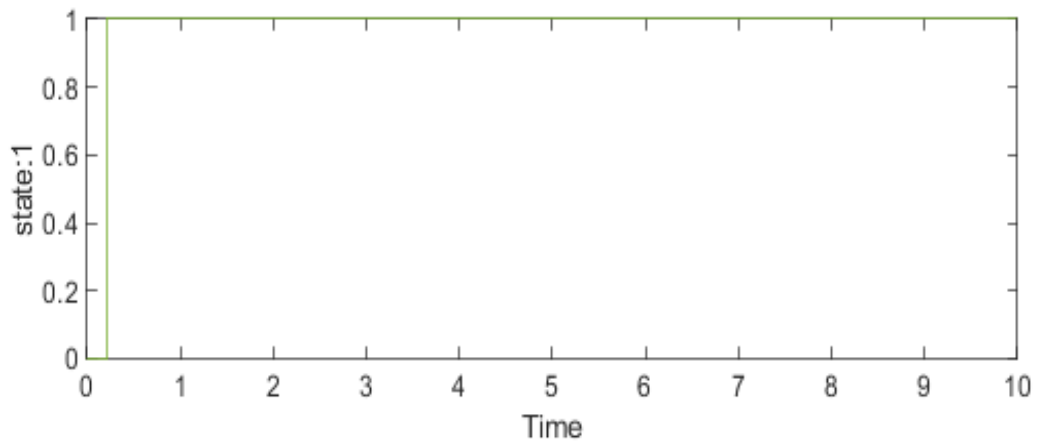
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Dead4.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Dead4.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:42
 Simulation Stop Time: 2021-02-17 12:55:42
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Dead-Combined

Test Result Information

Result Type: Test Case Result
Parent: [DEAD](#)
Start Time: 17-Feb-2021 12:55:43

End Time: 17-Feb-2021 12:55:43
Outcome: Passed
Description:

DEAD to Combined state transition check:

-SOC > SOCMin

-fuel > fuelMin

-AccPedal > maxAccMGU

The state should pass from DEAD to Combined

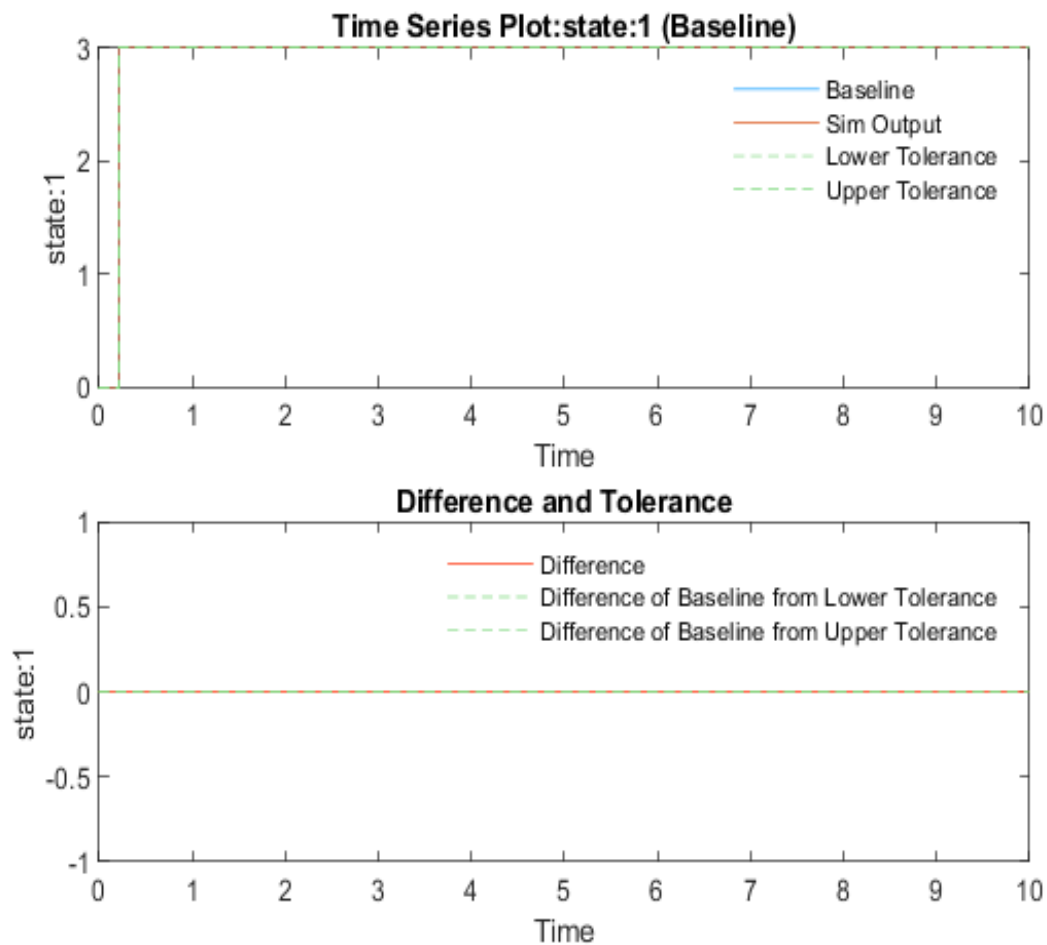
Test Case Information

Name: Dead-Combined
Type: Baseline Test
Baseline Name: Dead_Combined_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Dead_Combined_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

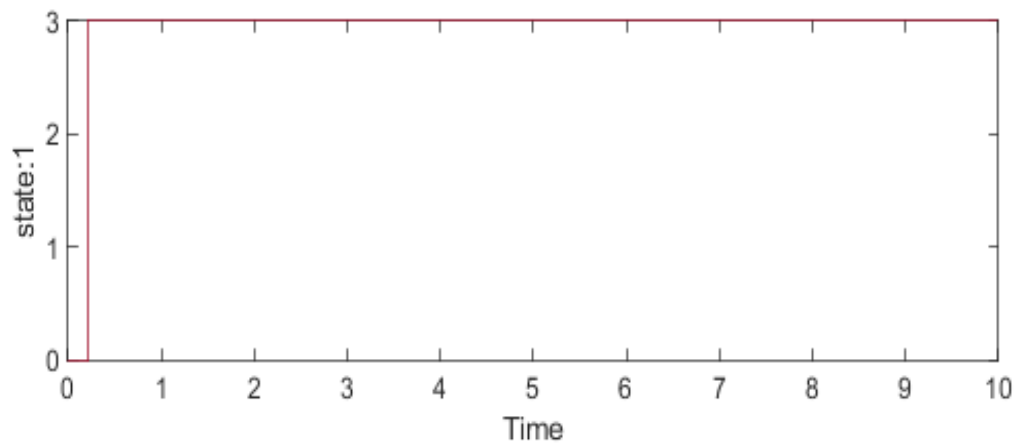
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Dead5.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Dead5.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:43
 Simulation Stop Time: 2021-02-17 12:55:43
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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No Charge

Test Result Information

Result Type: Test Suite Result
Parent: [FSM_test](#)
Start Time: 17-Feb-2021 12:55:43

End Time: 17-Feb-2021 12:55:49
Outcome: Total: 6, **Passed: 6**
Description:

From No Charge to all other states. Initially, the FSM starts from DEAD, but soon enters the No Charge state at the first sampling instant.

Test Suite Information

Name: No Charge

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NoCharge-DEAD

Test Result Information

Result Type: Test Case Result
Parent: [No Charge](#)
Start Time: 17-Feb-2021 12:55:43
End Time: 17-Feb-2021 12:55:44
Outcome: **Passed**
Description:

Transition from No Charge to DEAD:

Fuel < fuelMin

SOC < SOCmin

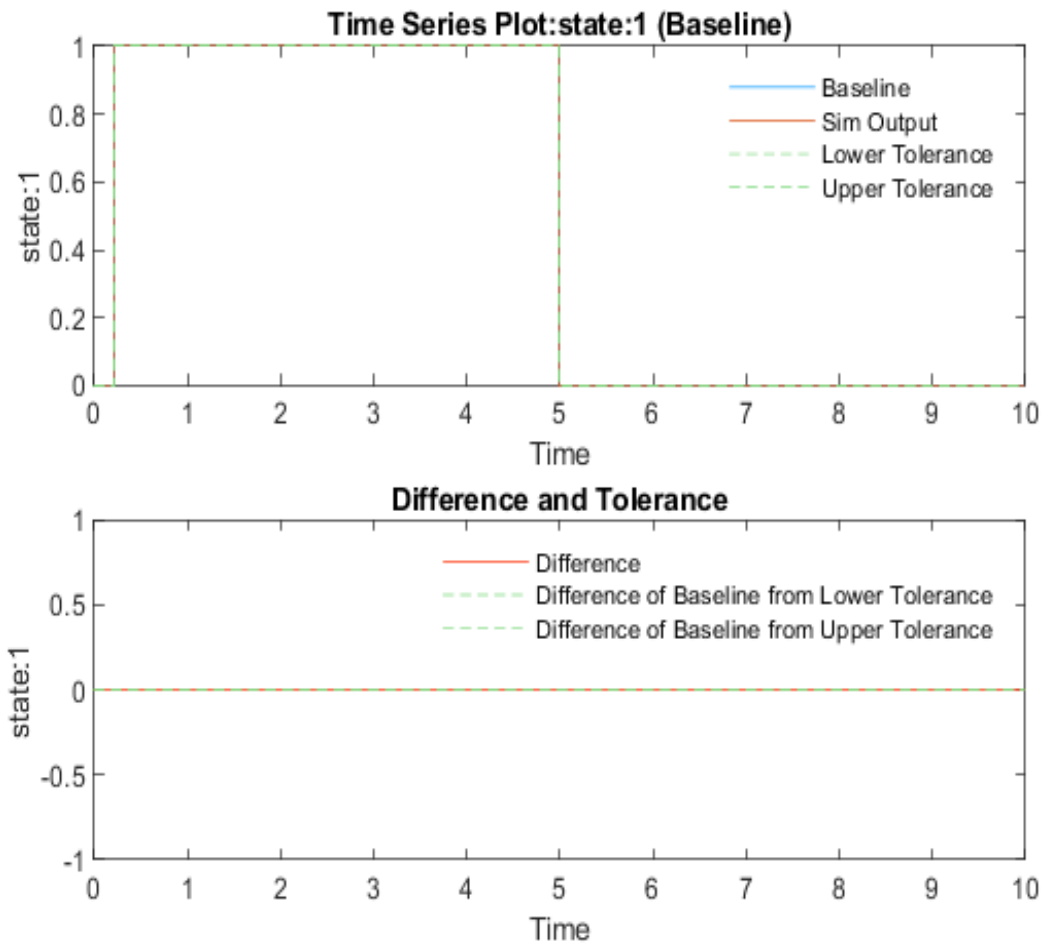
Test Case Information

Name: NoCharge-DEAD
Type: Baseline Test
Baseline Name: NoChargeToDEAD_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\NoChargeToDEAD_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

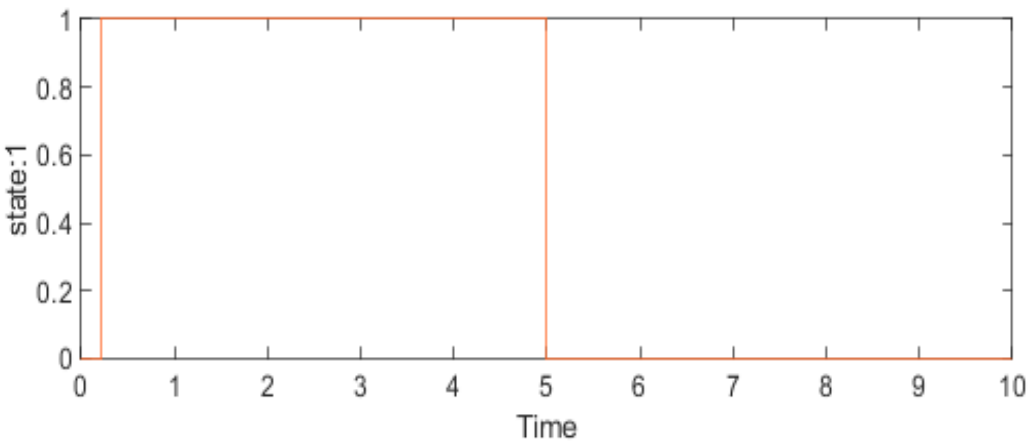
Model: FSM_Model
Release: Current
Simulation Mode: normal
Override SIL or PIL: 0
Mode:
Configuration Set: Configuration
External Input Name: NoCharge1.mat
External Input File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM Test\Inputs\NoCharge1.mat
Start Time: 0
Stop Time: 10
Checksum: 1272805733 3818056235 2604121839 221217785
Simulink Version: 10.2
Model Version: 1.3
Model Author: mordi
Date: Tue Feb 16 15:30:18 2021
User ID: mordi
Model Path: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM Test\FSM_Model.slx
Machine Name: DESKTOP-PM6NB79
Solver Name: VariableStepDiscrete
Solver Type: Variable-Step
Max Step Size: 0.20000000000000001
Simulation Start Time: 2021-02-17 12:55:43
Simulation Stop Time: 2021-02-17 12:55:44
Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
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state:1	double		Continuous	zoh	union	Link
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Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Test Result Information

Result Type: Test Case Result
Parent: [No Charge](#)
Start Time: 17-Feb-2021 12:55:44
End Time: 17-Feb-2021 12:55:45
Outcome: **Passed**
Description:

Transition from No Charge to Regenerative Braking:

Fuel > fuelMin

SOC < SOCmin

BrakePedal request after 5s

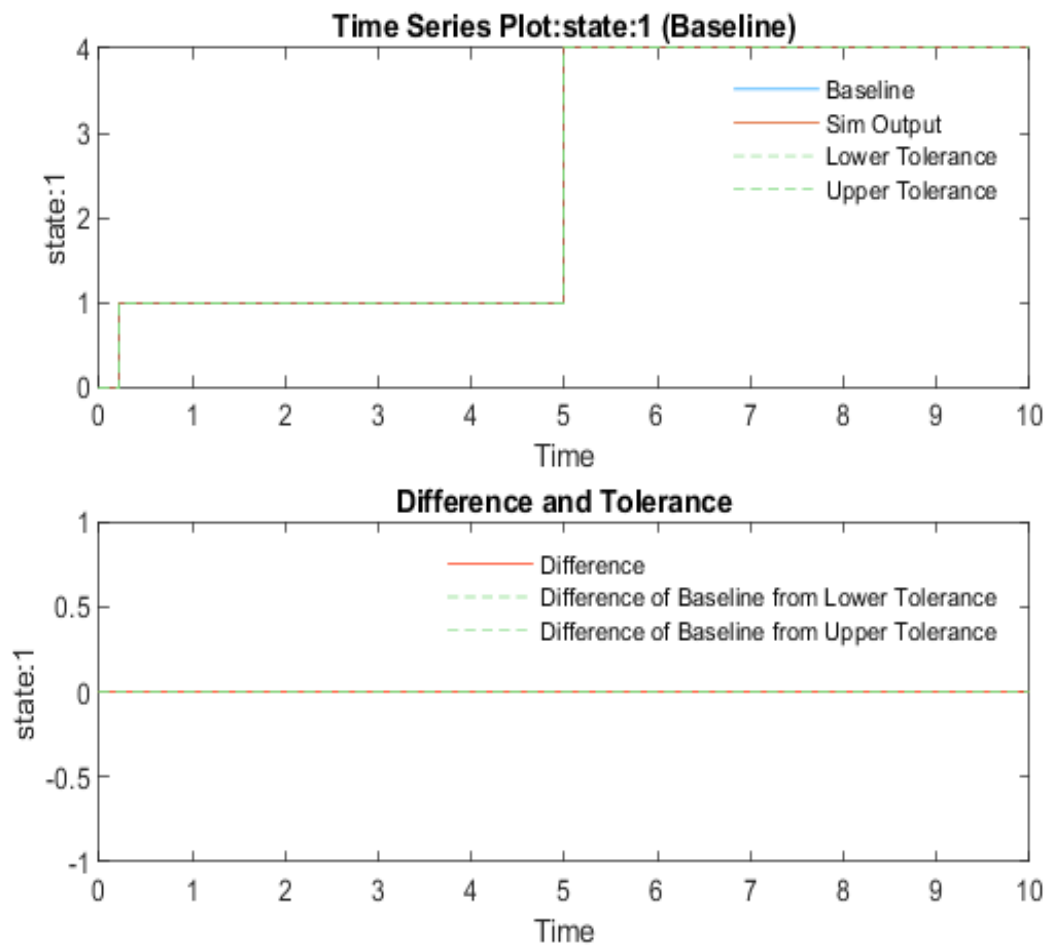
Test Case Information

Name: NoCharge-Regen
Type: Baseline Test
Baseline Name: NoChargeToRegen_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\NoChargeToRegen_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

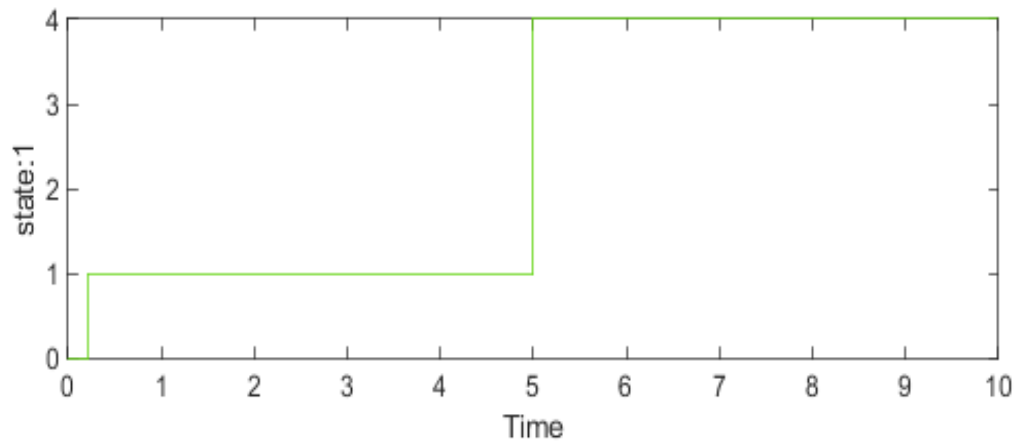
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: NoCharge2.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\NoCharge2.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:44
 Simulation Stop Time: 2021-02-17 12:55:45
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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NoCharge-ED

Test Result Information

Result Type: Test Case Result
Parent: [No Charge](#)
Start Time: 17-Feb-2021 12:55:45

End Time: 17-Feb-2021 12:55:47
Outcome: **Passed**
Description:

Transition from No Charge to Regenerative Braking:

Fuel > fuelMin

SOC < SOCmin for a while, then SOC>SOCmin

RealSpeed<SpeedEDMax or Fuel<fuelMin after a while

This check is done in two iterations

Test Case Information

Name: NoCharge-ED
Type: Baseline Test

Iteration1

Test Result Information

Result Type: Test Iteration Result
Parent: [NoCharge-ED](#)
Start Time: 17-Feb-2021 12:55:45
End Time: 17-Feb-2021 12:55:46
Outcome: **Passed**

Test Case Information

Name: Iteration1
Type: Baseline Test
Baseline Name: NoCharge_ED_baseline_Iteration1.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM

Test\Baselines\NoCharge_ED_baseline_Iteration1.
mat

Iteration Settings

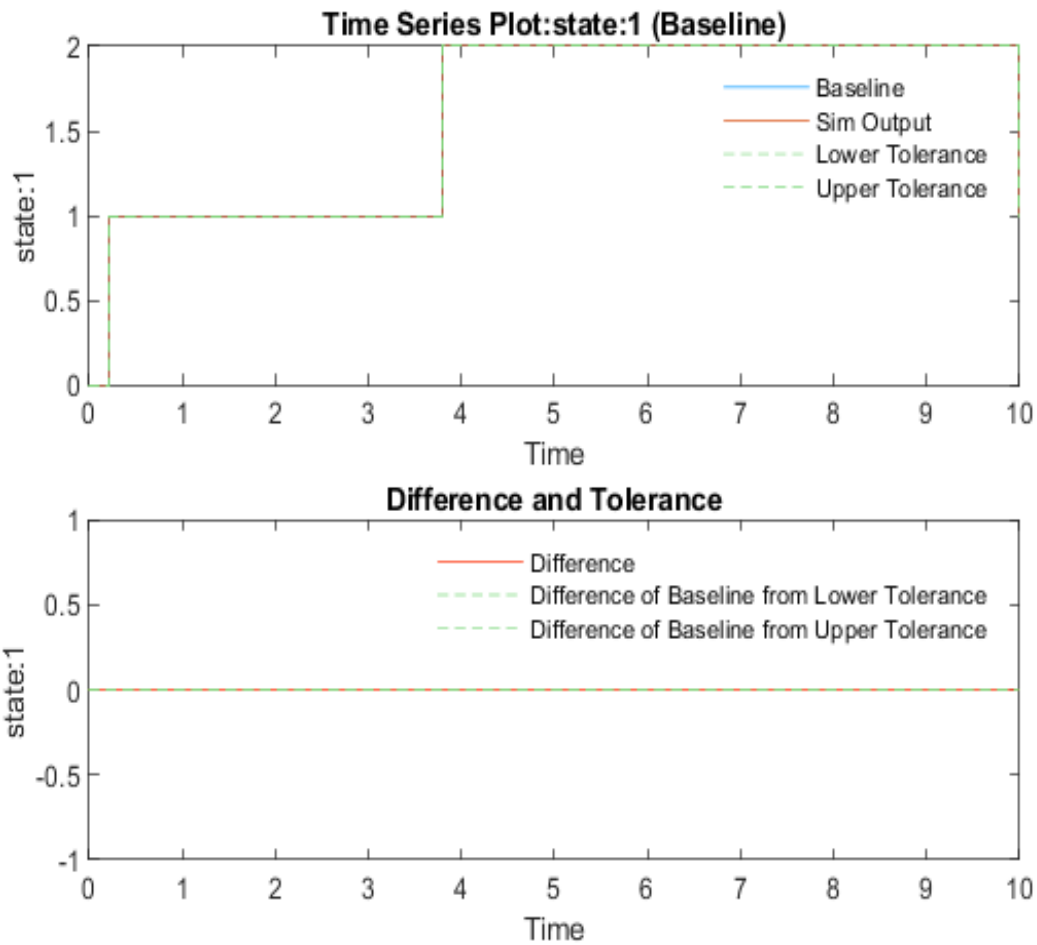
Test Overrides

Parameter Name	Value
ExternalInput	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Inputs\NoCharge3.mat
Baseline	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Baselines\NoChargeToED_baseline 2.mat\SLBaselineFiles\Iteration1.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

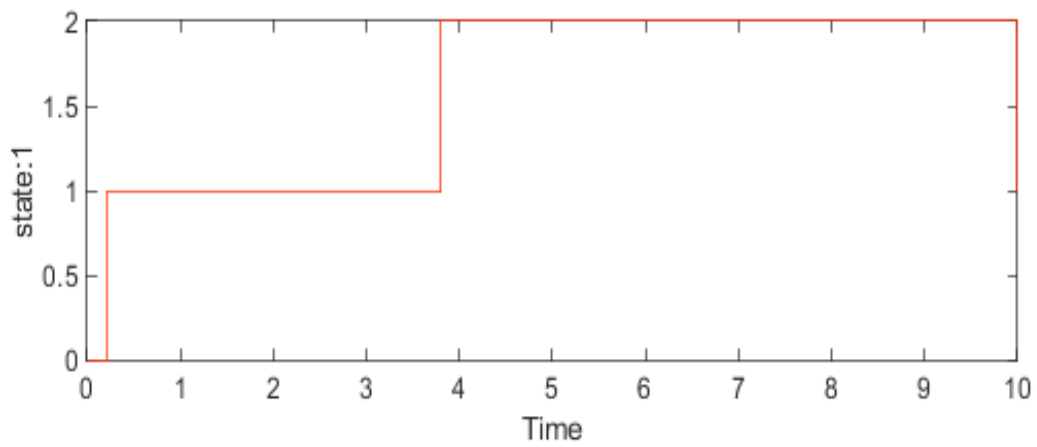
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: NoCharge3.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\NoCharge3.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:45
 Simulation Stop Time: 2021-02-17 12:55:46
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Iteration2

Test Result Information

Result Type: Test Iteration Result
Parent: [NoCharge-ED](#)
Start Time: 17-Feb-2021 12:55:46

End Time: 17-Feb-2021 12:55:47

Outcome: Passed

Test Case Information

Name: Iteration2
Type: Baseline Test
Baseline Name: NoCharge_ED_baseline_Iteration2.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\NoCharge_ED_baseline_Iteration2.
mat

Iteration Settings

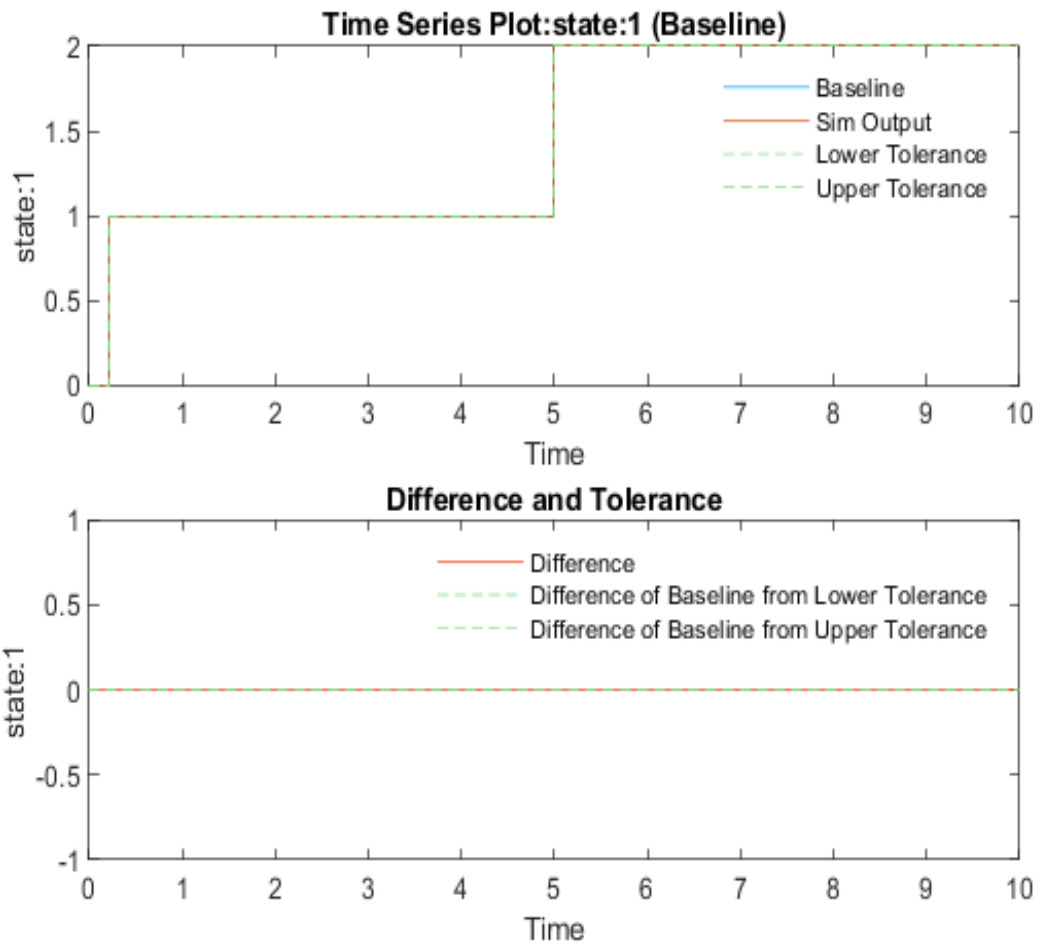
Test Overrides

Parameter Name	Value
ExternalInput	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Inputs\NoCharge4.mat
Baseline	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Baselines\NoChargeToED_baseline 2.mat\SLBaselineFiles\Iteration2.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

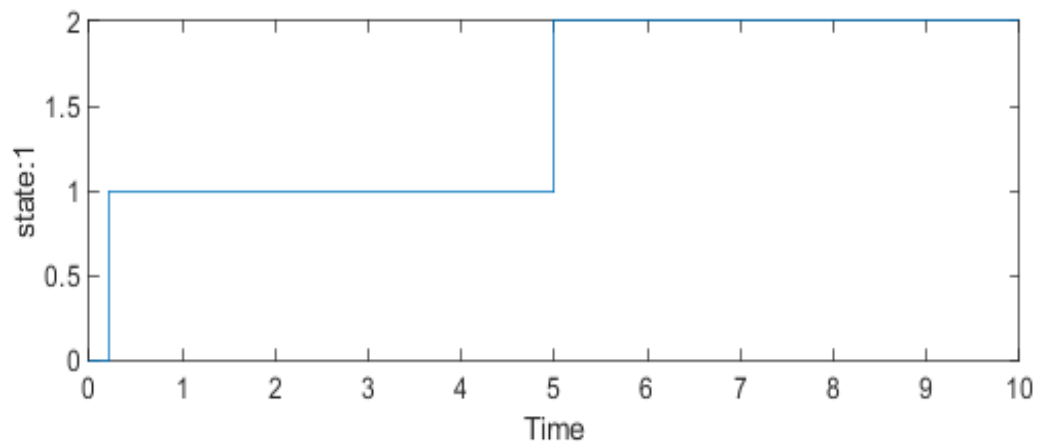
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: NoCharge4.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\NoCharge4.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:46
 Simulation Stop Time: 2021-02-17 12:55:47
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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NoCharge-Combined

Test Result Information

Result Type: Test Case Result
Parent: [No Charge](#)
Start Time: 17-Feb-2021 12:55:47

End Time: 17-Feb-2021 12:55:48
Outcome: Passed
Description:

Transition from No Charge to Combined:

Fuel > fuelMin

SOC > SOCmin

AccPedal> MaxAccICE

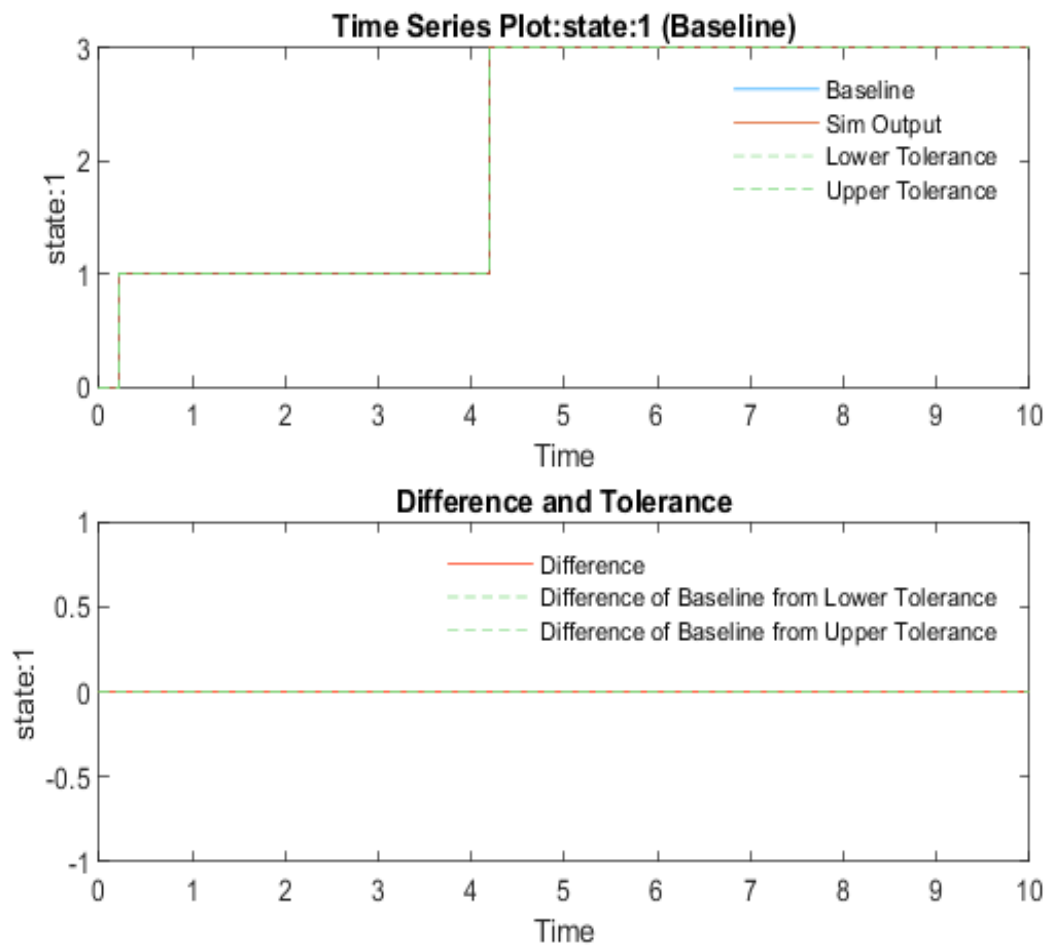
Test Case Information

Name: NoCharge-Combined
Type: Baseline Test
Baseline Name: NoChargeToCombined_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\NoChargeToCombined_baseline.m
at

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

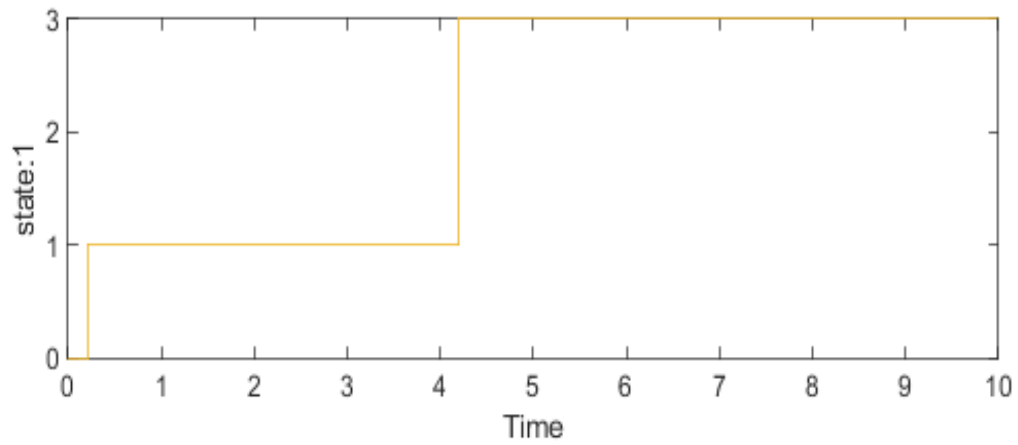
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: NoCharge5.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\NoCharge5.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:47
 Simulation Stop Time: 2021-02-17 12:55:48
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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NoCharge-NoCharge

Test Result Information

Result Type: Test Case Result
Parent: [No Charge](#)
Start Time: 17-Feb-2021 12:55:48

End Time: 17-Feb-2021 12:55:49
Outcome: Passed
Description:

No Charge state check:

-SOC<SOCMin

-Fuel>fuelMin

-Uniformly increasing acceleration request

The state should be No Charge for all the testing time.

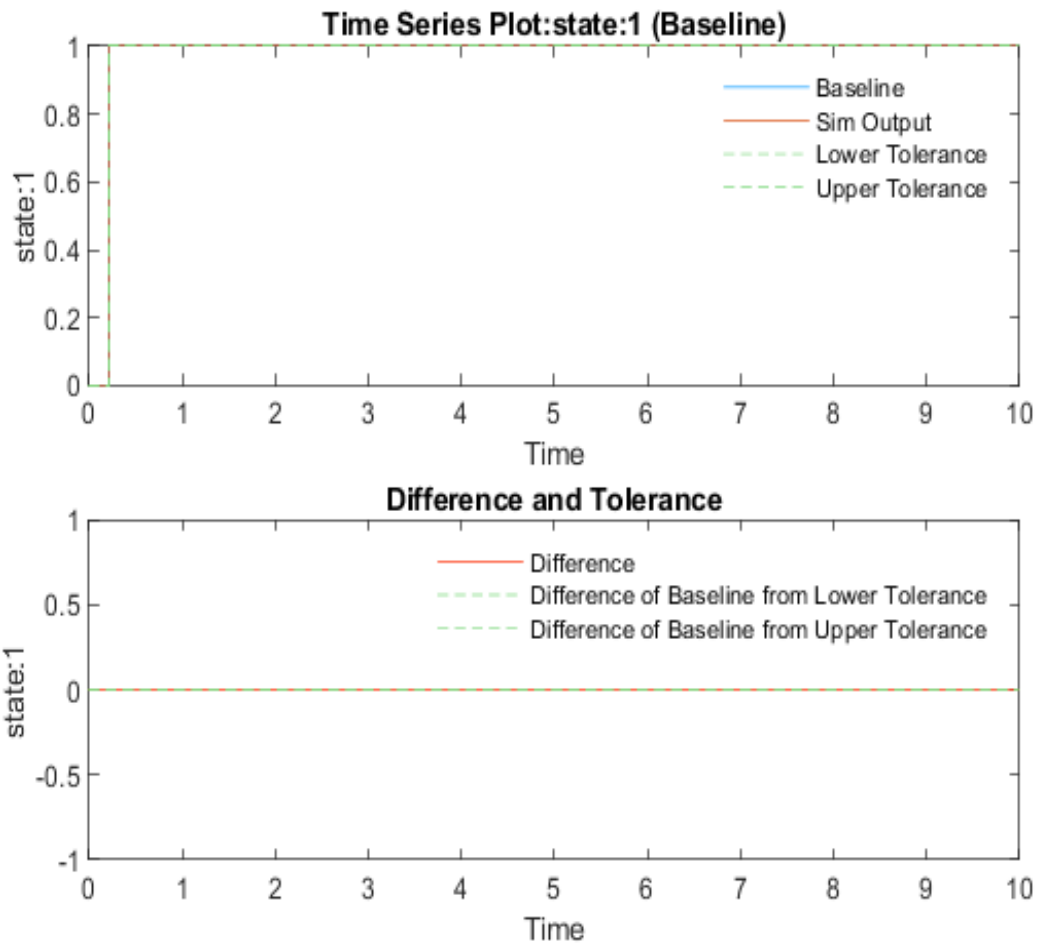
Test Case Information

Name: NoCharge-NoCharge
Type: Baseline Test
Baseline Name: NoCharge_NoCharge_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\NoCharge_NoCharge_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

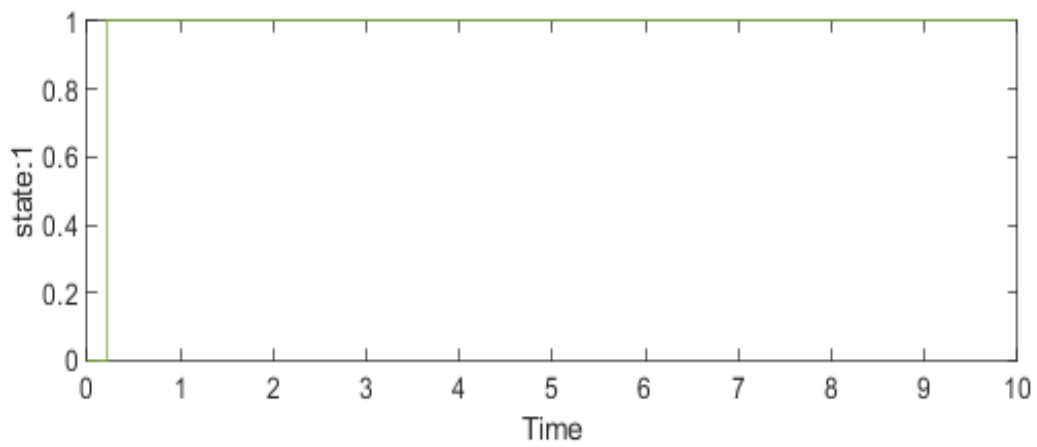
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: NoCharge6.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\NoCharge6.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:48
 Simulation Stop Time: 2021-02-17 12:55:49
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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ED

Test Result Information

Result Type: Test Suite Result
Parent: [FSM_test](#)
Start Time: 17-Feb-2021 12:55:49

End Time: 17-Feb-2021 12:55:55
Outcome: Total: 6, Passed: 6
Description:

From Electrical Drive to all other states. Initially, the FSM starts from DEAD, but soon enters the ED state at the first sampling instant.

Test Suite Information

Name: ED

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ED-ED

Test Result Information

Result Type: Test Case Result
Parent: [ED](#)
Start Time: 17-Feb-2021 12:55:49
End Time: 17-Feb-2021 12:55:50
Outcome: Passed
Description:

Electrical Drive state check:

-SOC>SOCMin

-Fuel>fuelMin

-RealSpeed<SpeedEDMax

-AccPedal<MaxAccMGU

The state should be Electrical Drive for all the testing time.

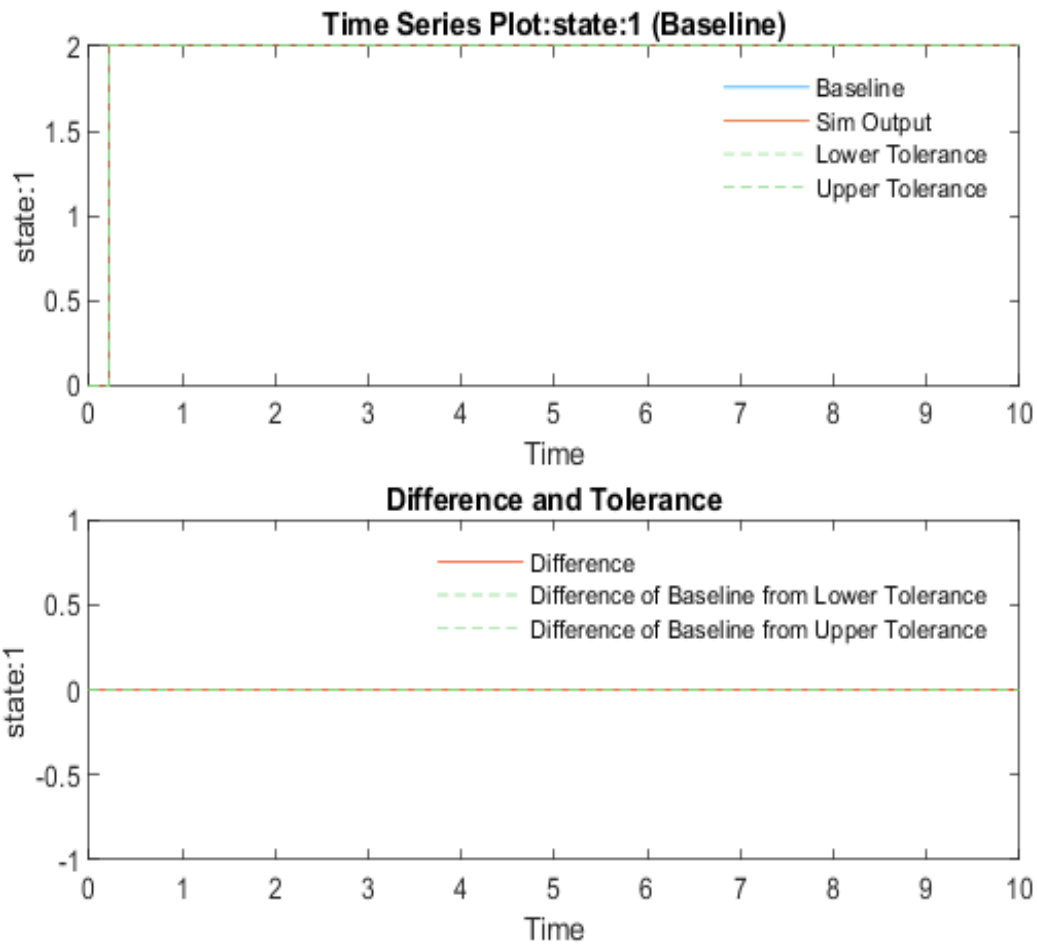
Test Case Information

Name: ED-ED
Type: Baseline Test
Baseline Name: ED_ED_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\ED_ED_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

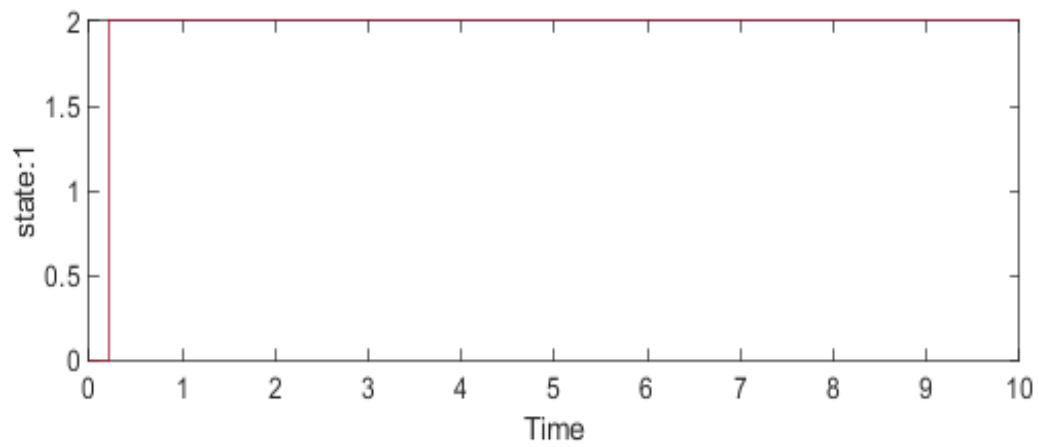
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED1.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED1.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:49
 Simulation Stop Time: 2021-02-17 12:55:50
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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ED-Regen

Test Result Information

Result Type: Test Case Result
Parent: [ED](#)
Start Time: 17-Feb-2021 12:55:50

End Time: 17-Feb-2021 12:55:51
Outcome: Passed
Description:

Transition from Electrical Drive to Regenerative Braking:

SOC > SOCmin

RealSpeed < SpeedMaxED

BrakePedal request after 5s

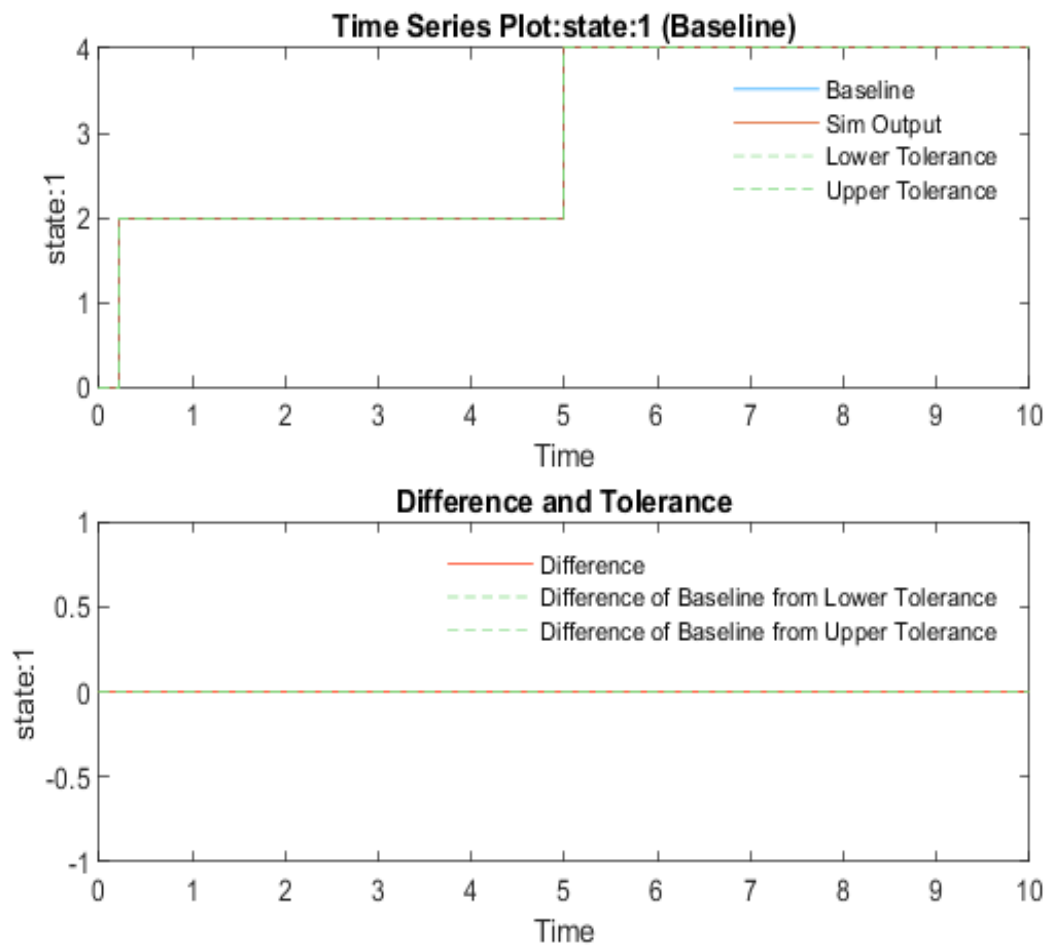
Test Case Information

Name: ED-Regen
Type: Baseline Test
Baseline Name: ED_Regen_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\ED_Regen_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

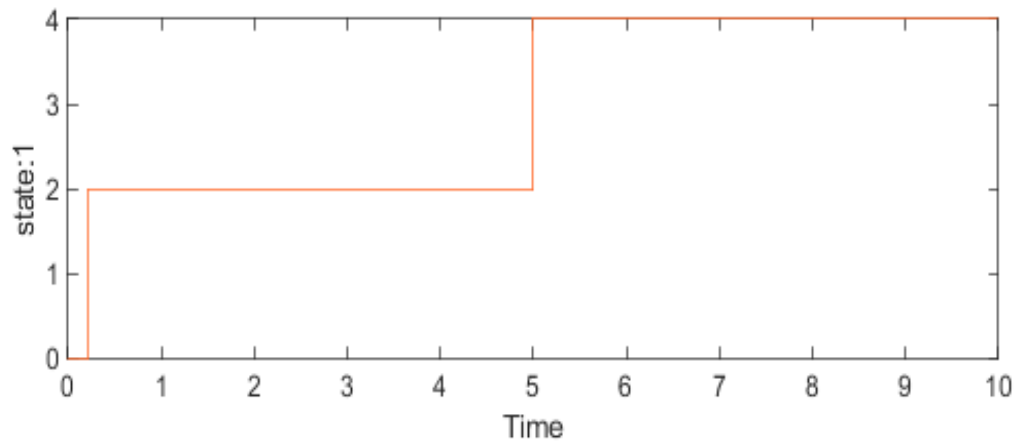
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED2.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED2.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:50
 Simulation Stop Time: 2021-02-17 12:55:50
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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ED-DEAD

Test Result Information

Result Type: Test Case Result
Parent: [ED](#)
Start Time: 17-Feb-2021 12:55:51

End Time: 17-Feb-2021 12:55:52
Outcome: Passed
Description:

Transition from Electrical Drive to DEAD:

Fuel < fuelMin

SOC < SOCmin

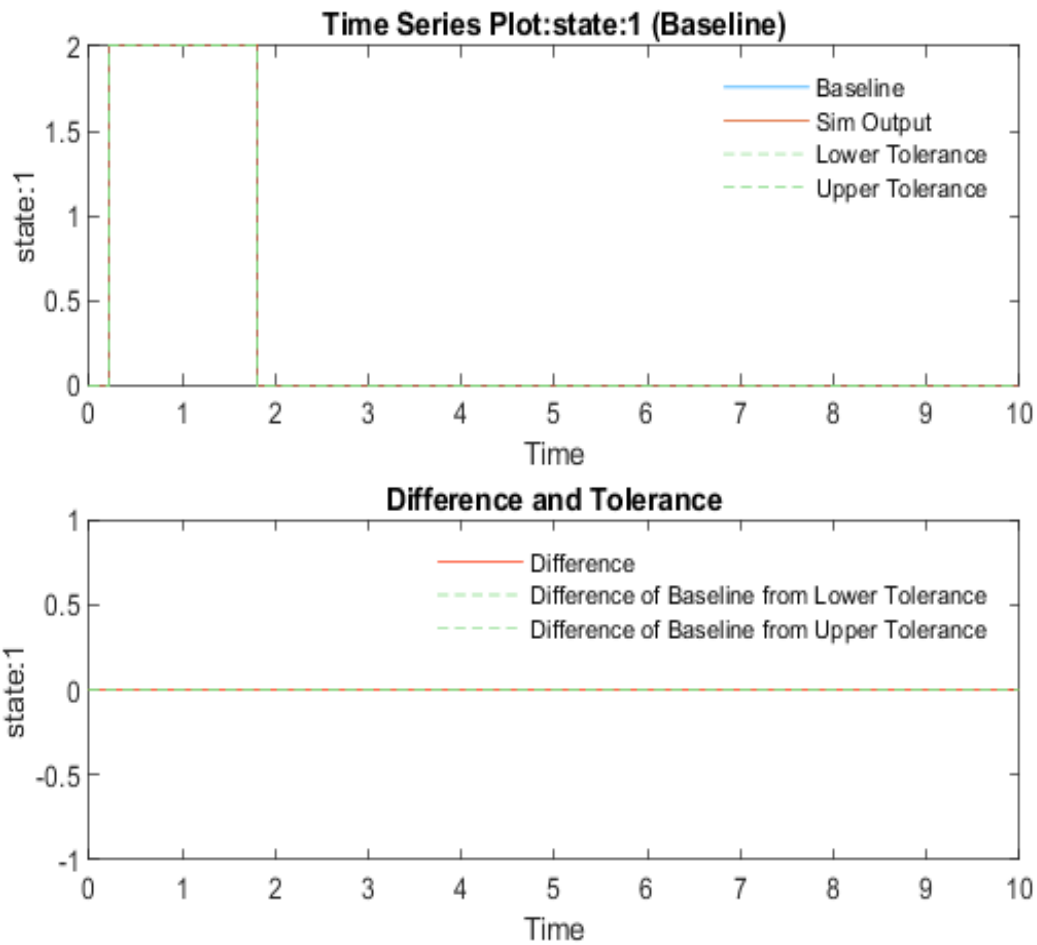
Test Case Information

Name: ED-DEAD
Type: Baseline Test
Baseline Name: ED_Dead_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\ED_Dead_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

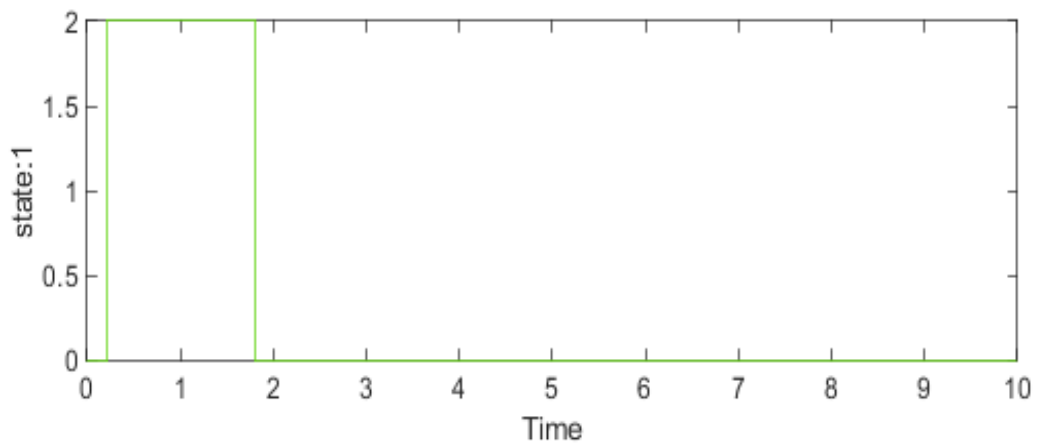
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED3.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED3.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:51
 Simulation Stop Time: 2021-02-17 12:55:51
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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ED-NoCharge

Test Result Information

Result Type: Test Case Result
Parent: [ED](#)
Start Time: 17-Feb-2021 12:55:52

End Time: 17-Feb-2021 12:55:53
Outcome: Passed
Description:

Electrical Drive to No Charge state transition check:

-SOC < SOCMin

-fuel > fuelMin

-AccPedal < maxAccICE

The state should pass from Electrical Drive to No Charge

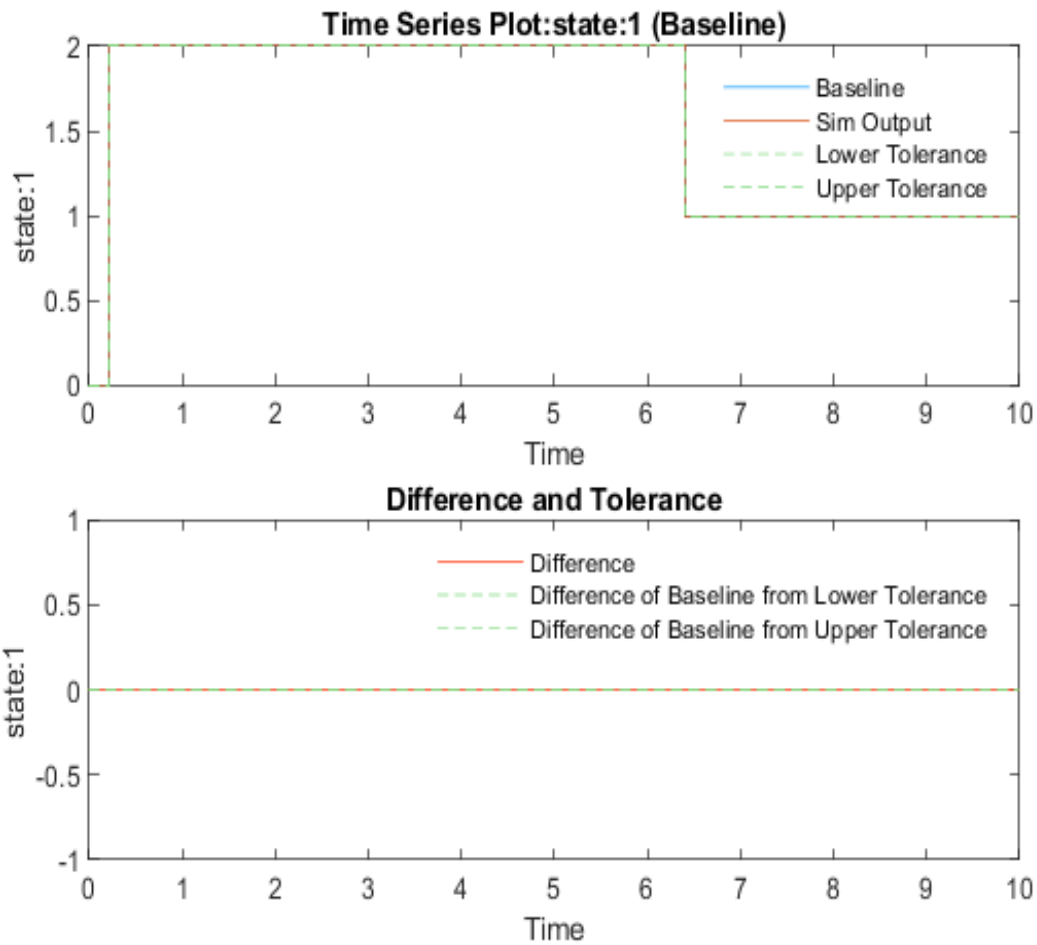
Test Case Information

Name: ED-NoCharge
Type: Baseline Test
Baseline Name: ED_NoCharge_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\ED_NoCharge_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

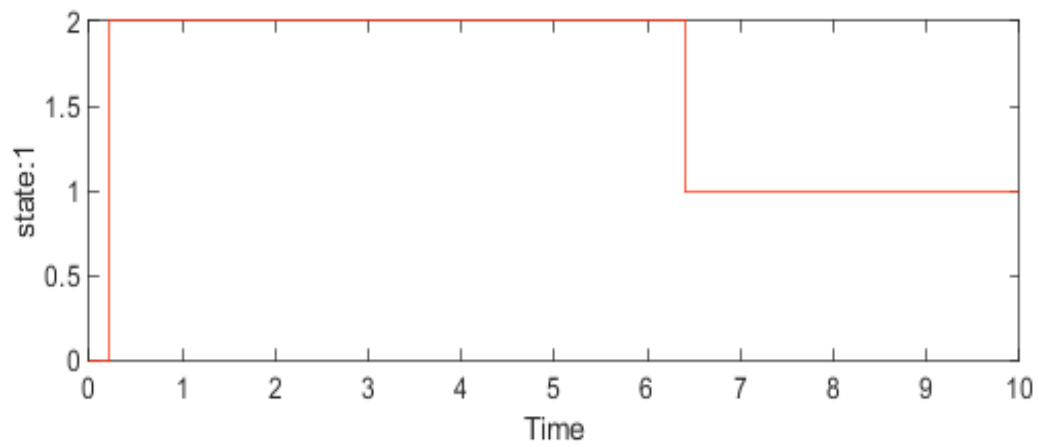
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED4.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED4.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:52
 Simulation Stop Time: 2021-02-17 12:55:52
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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ED-Combined

Test Result Information

Result Type: Test Case Result
Parent: [ED](#)
Start Time: 17-Feb-2021 12:55:53

End Time: 17-Feb-2021 12:55:55
Outcome: **Passed**
Description:

Transition from Electrical Drive to Combined:

Fuel > fuelMin

SOC > SOCmin

AccPedal> MaxAccMGU

or

RealSpeed>MaxSpeedMGU

Test Case Information

Name: ED-Combined
Type: Baseline Test

Iteration1

Test Result Information

Result Type: Test Iteration Result
Parent: [ED-Combined](#)
Start Time: 17-Feb-2021 12:55:53
End Time: 17-Feb-2021 12:55:54
Outcome: **Passed**

Test Case Information

Name: Iteration1
Type: Baseline Test
Baseline Name: ED_Comb_baseline1.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-

controller\Test\FSM
Test\Baselines\ED_Comb_baseline1.mat

Iteration Settings

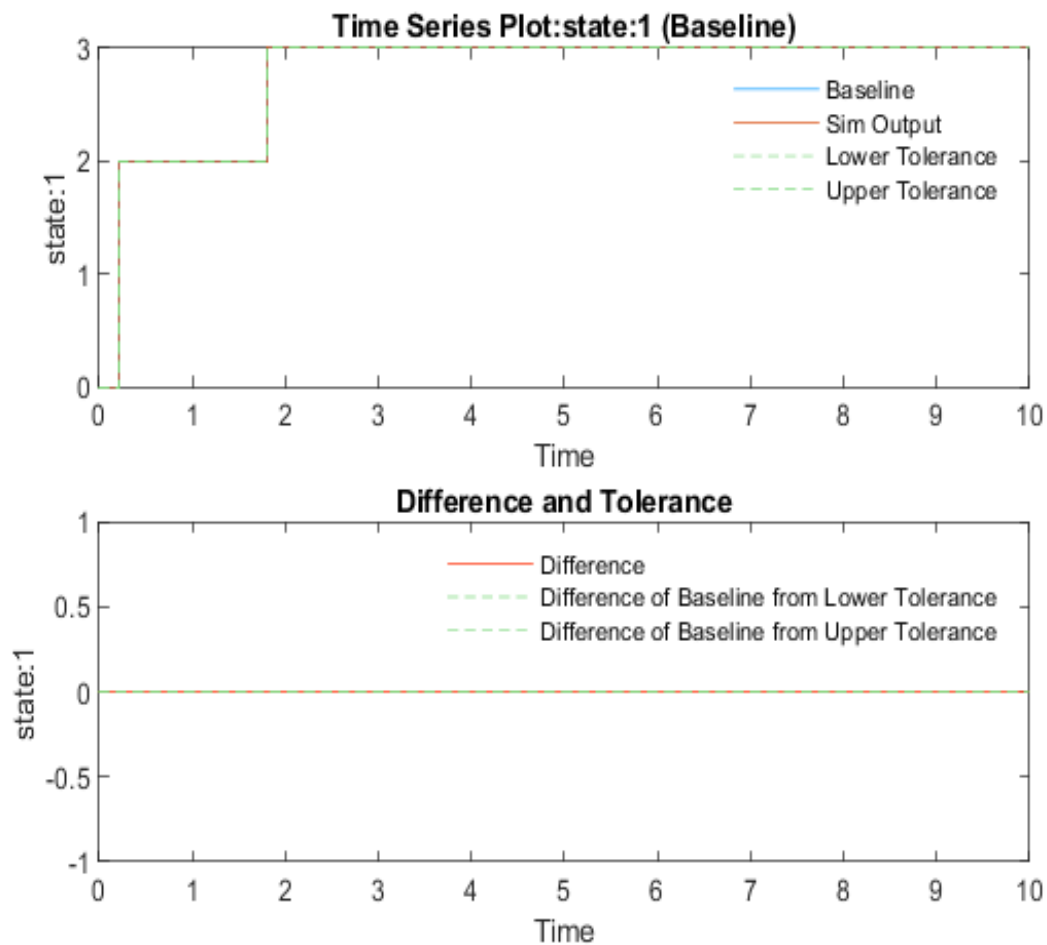
Test Overrides

Parameter Name	Value
ExternalInput	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Inputs\ED5.mat
Baseline	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Baselines\ED_Combined_baseline. mat\SLBaselineFiles\Iteration1.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

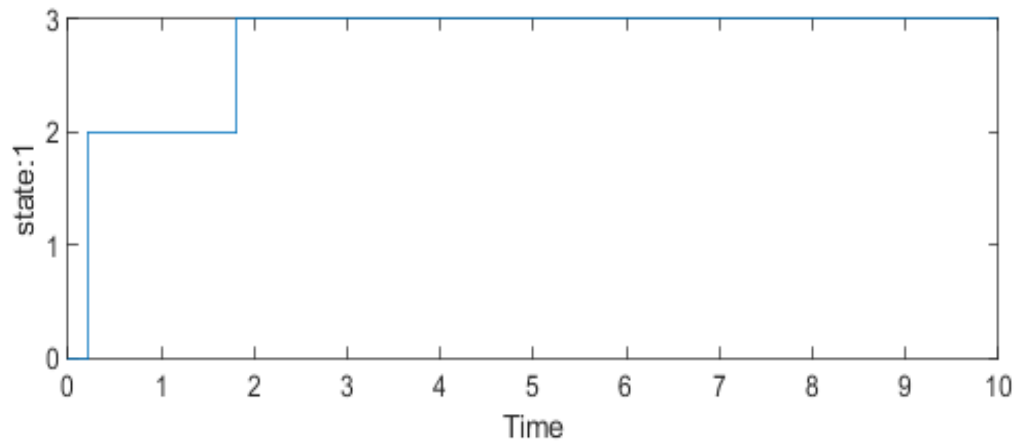
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED5.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED5.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:53
 Simulation Stop Time: 2021-02-17 12:55:53
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Iteration2

Test Result Information

Result Type: Test Iteration Result
Parent: [ED-Combined](#)
Start Time: 17-Feb-2021 12:55:54

End Time: 17-Feb-2021 12:55:55

Outcome: Passed

Test Case Information

Name: Iteration2
Type: Baseline Test
Baseline Name: ED_Comb_baseline2.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\ED_Comb_baseline2.mat

Iteration Settings

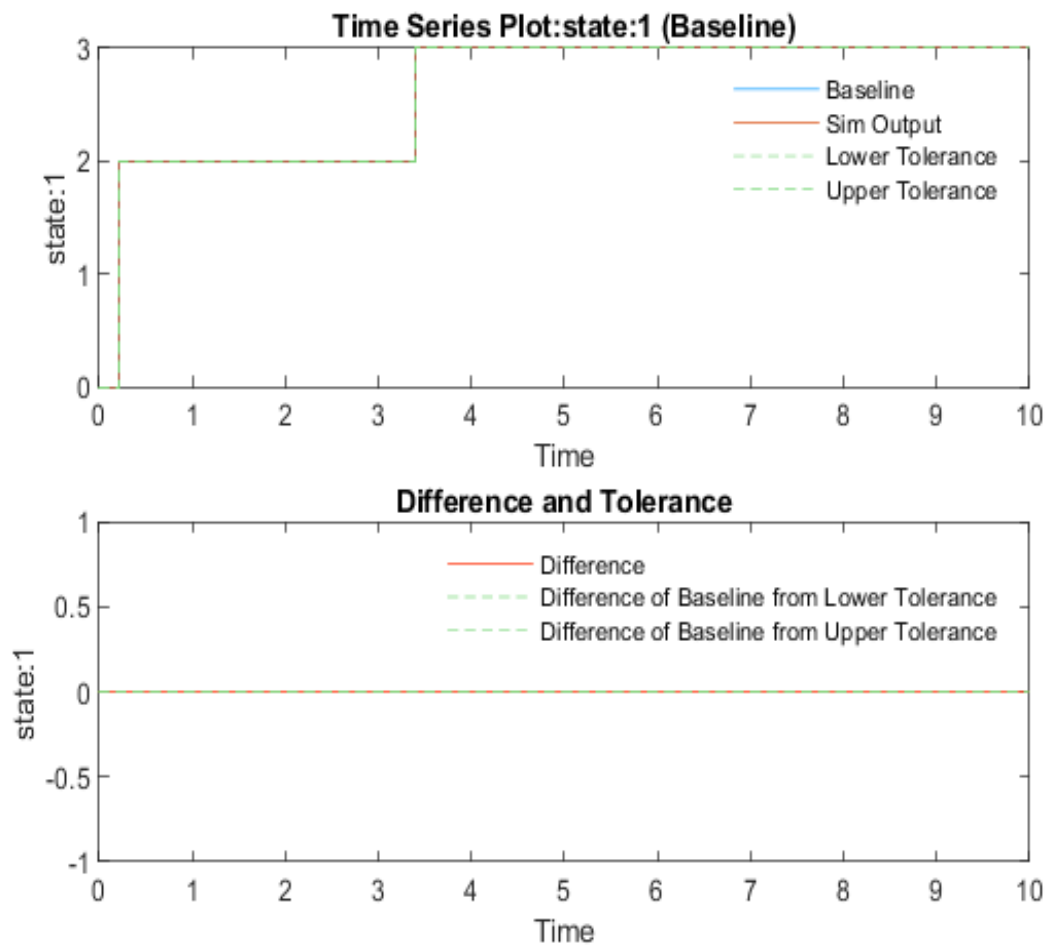
Test Overrides

Parameter Name	Value
ExternalInput	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Inputs\ED6.mat
Baseline	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid- controller\Hybrid-controller\Test\FSM Test\Baselines\ED_Combined_baseline. mat\SLBaselineFiles\Iteration2.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

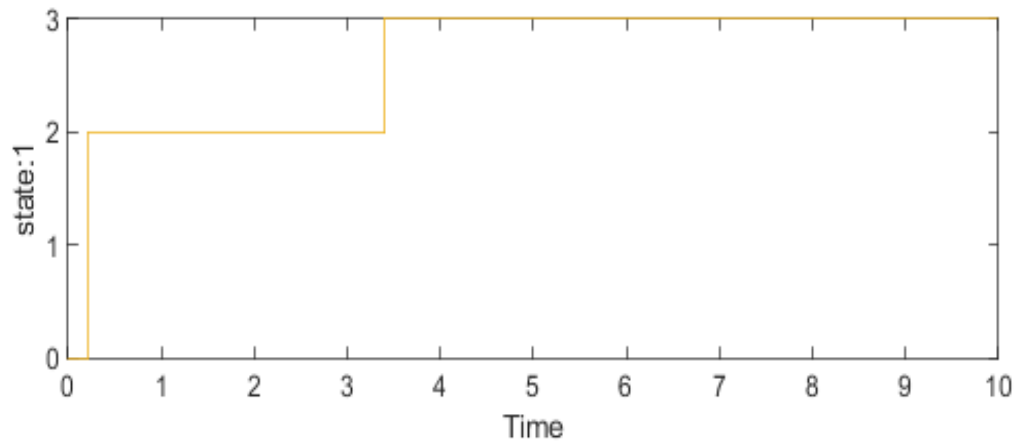
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: ED6.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\ED6.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:54
 Simulation Stop Time: 2021-02-17 12:55:54
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Combined

Test Result Information

Result Type: Test Suite Result
Parent: [FSM_test](#)
Start Time: 17-Feb-2021 12:55:55

End Time: 17-Feb-2021 12:56:00
Outcome: Total: 5, Passed: 5
Description:

From Combined to all other states. Initially, the FSM starts from DEAD, but soon enters the Combined state at the first sampling instant.

Test Suite Information

Name: Combined

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Combined-Combined

Test Result Information

Result Type: Test Case Result
Parent: [Combined](#)
Start Time: 17-Feb-2021 12:55:55
End Time: 17-Feb-2021 12:55:56
Outcome: Passed
Description:

Combined state check:

-SOC>SOCMin

-Fuel>fuelMin

-RealSpeed>SpeedEDMax

The state should be Combined for all the testing time.

Test Case Information

Name: Combined-Combined

Type:Baseline Test

Baseline Name:Comb_Comb_baseline.mat

Baseline File:C:\Users\mordi\Desktop\Materiale

Università\Compliance\hybrid-controller\Hybrid-

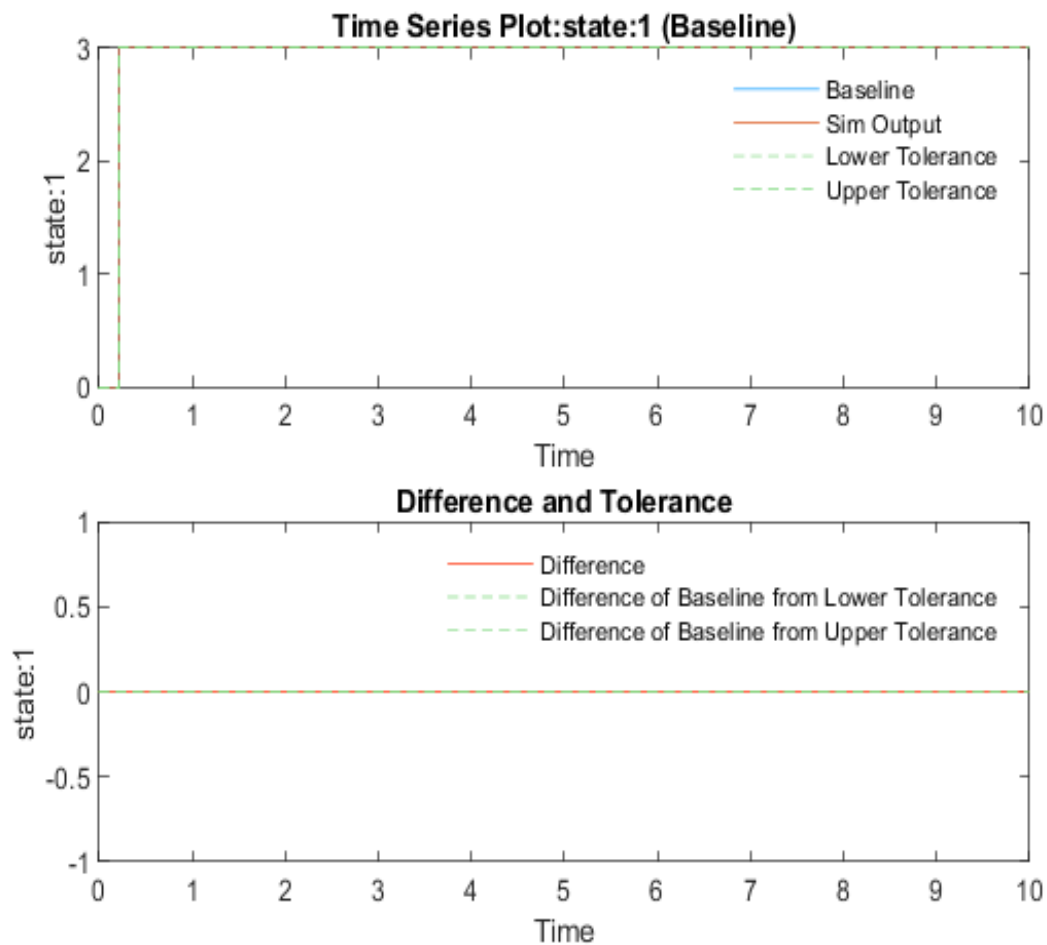
controller\Test\FSM

Test\Baselines\Comb_Comb_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✔ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

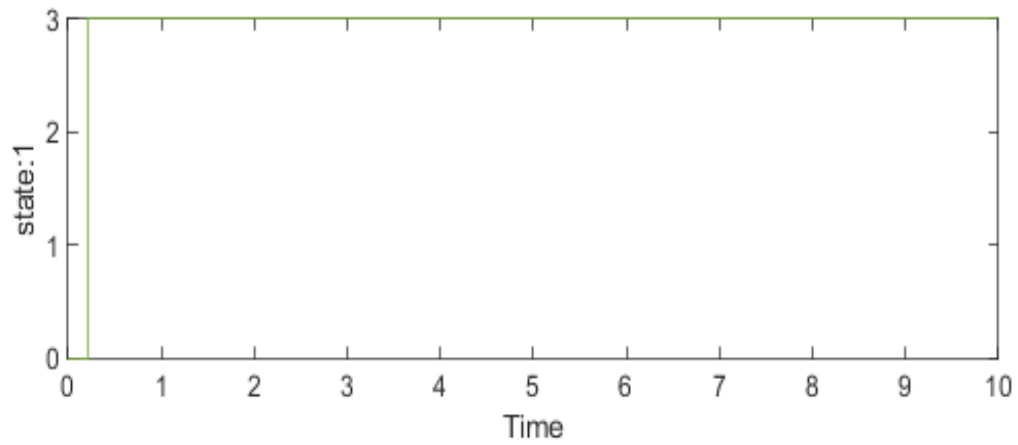
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Comb1.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Comb1.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:55
 Simulation Stop Time: 2021-02-17 12:55:56
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Combined-Regen

Test Result Information

Result Type: Test Case Result
Parent: [Combined](#)
Start Time: 17-Feb-2021 12:55:56

End Time: 17-Feb-2021 12:55:57
Outcome: Passed
Description:

Transition from Combined to Regenerative Braking:

SOC > SOCmin

fuel>fuelMin

RealSpeed > SpeedMaxED

BrakePedal request after 5s

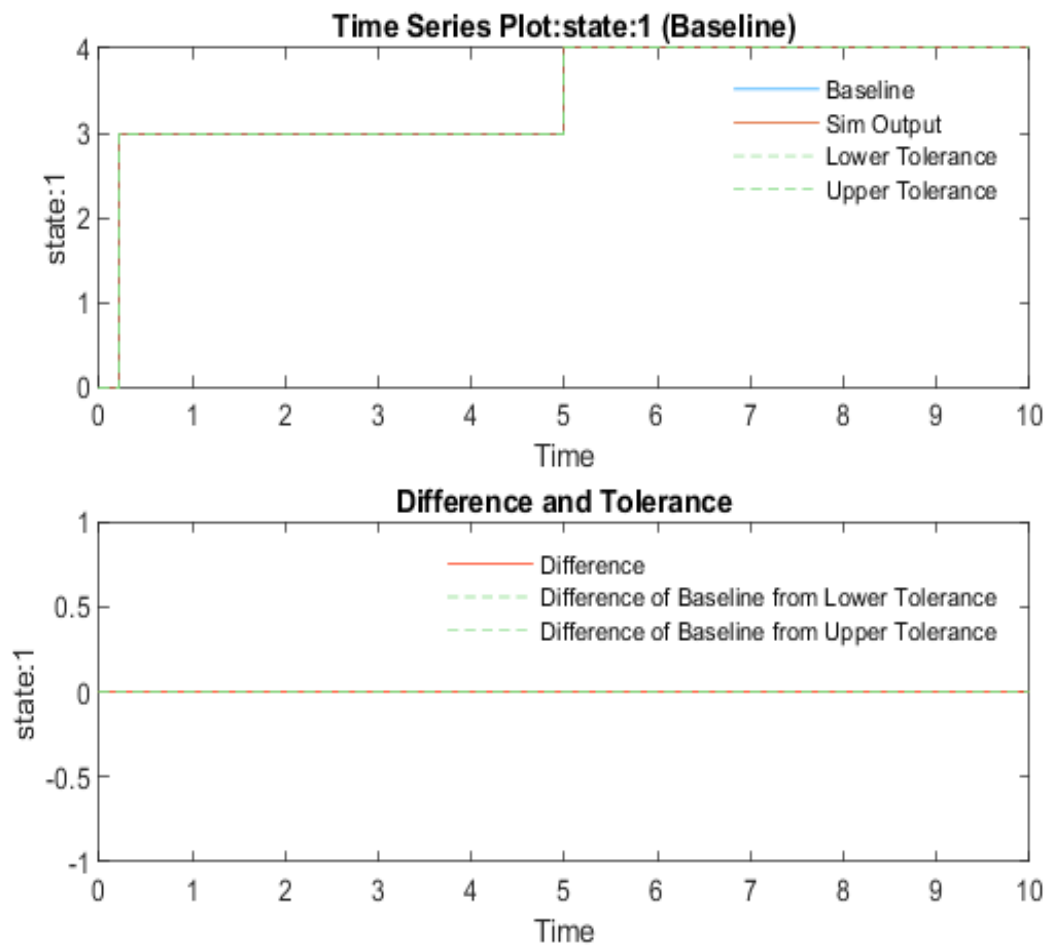
Test Case Information

Name: Combined-Regen
Type: Baseline Test
Baseline Name: Comb_Regen_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Comb_Regen_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

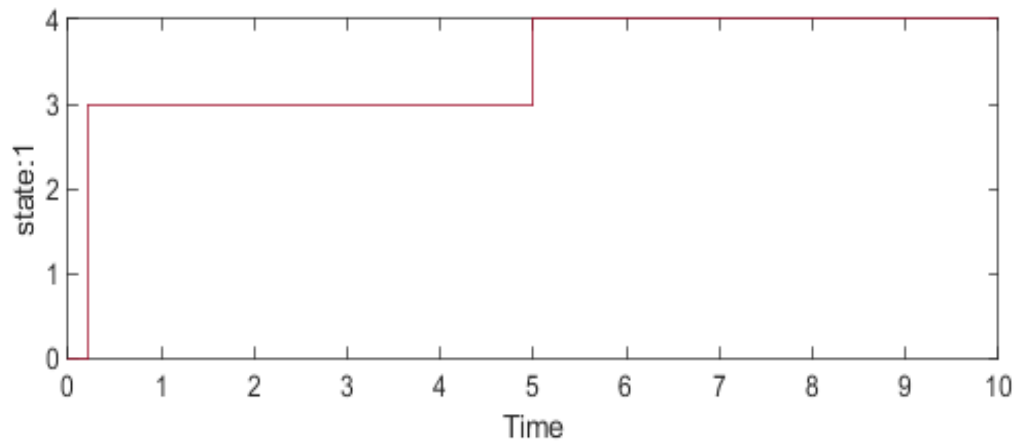
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Comb2.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Comb2.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:56
 Simulation Stop Time: 2021-02-17 12:55:56
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Combined-DEAD

Test Result Information

Result Type: Test Case Result
Parent: [Combined](#)
Start Time: 17-Feb-2021 12:55:57

End Time: 17-Feb-2021 12:55:58
Outcome: Passed
Description:

Transition from Combined to DEAD:

Fuel < fuelMin

SOC < SOCmin

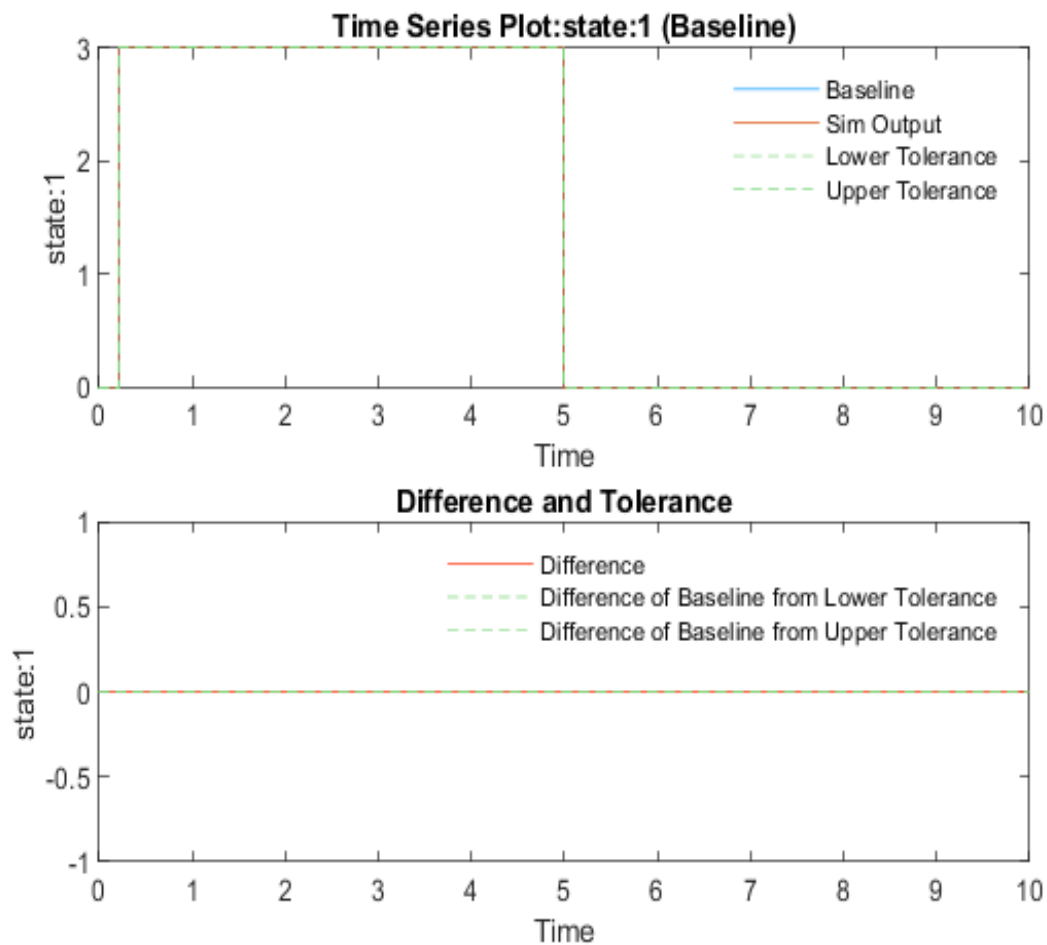
Test Case Information

Name: Combined-DEAD
Type: Baseline Test
Baseline Name: Comb_Dead_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Comb_Dead_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

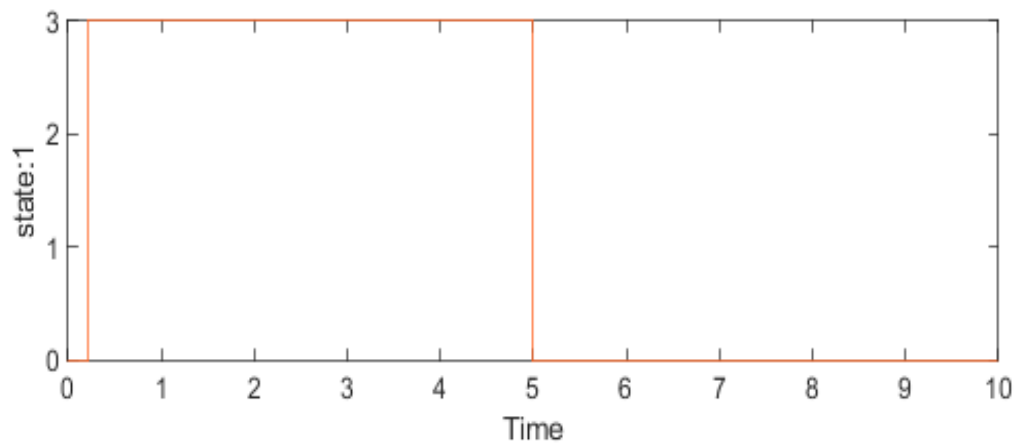
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Comb3.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Comb3.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:57
 Simulation Stop Time: 2021-02-17 12:55:57
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Combined-ED

Test Result Information

Result Type: Test Case Result
Parent: [Combined](#)
Start Time: 17-Feb-2021 12:55:58

End Time: 17-Feb-2021 12:55:59
Outcome: Passed
Description:

Combined to ED transition check:

-SOC>SOCMin

-RealSpeed < SpeedEDMax after 5s

-AccPedal < MaxAccMGU after 5s

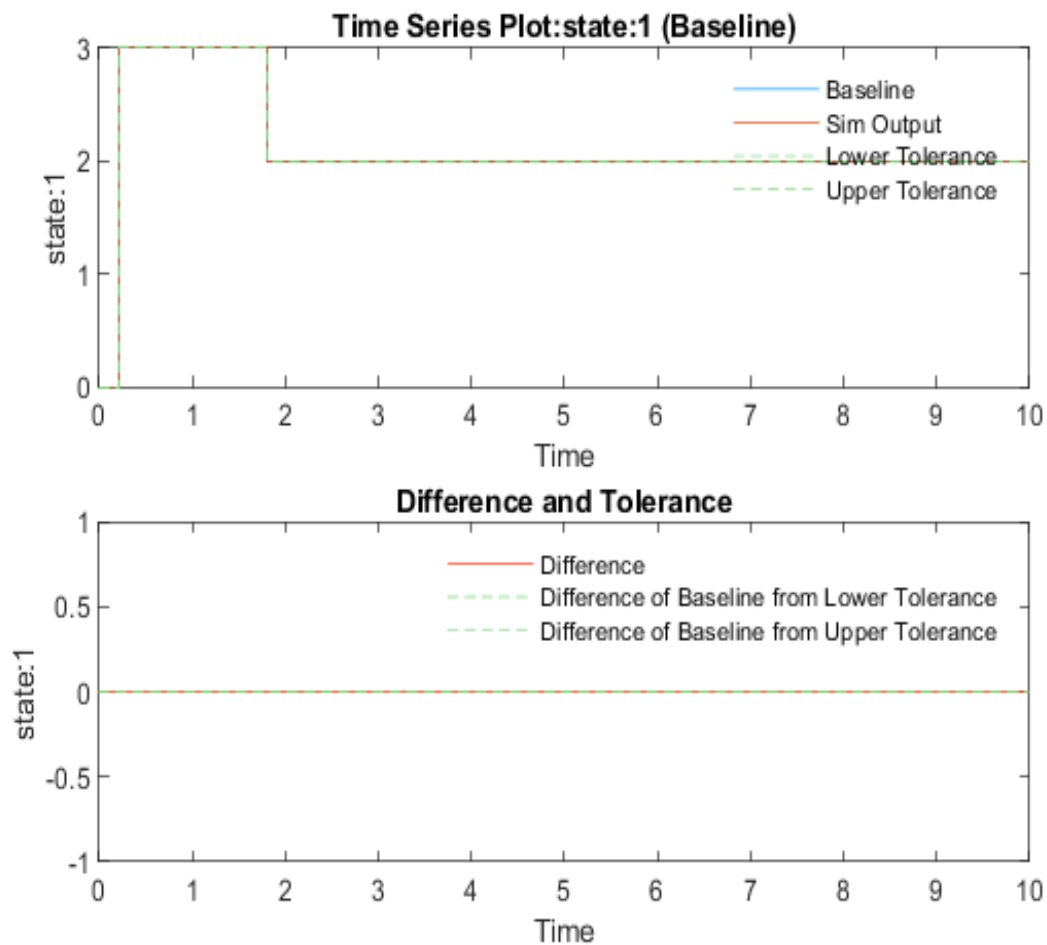
Test Case Information

Name: Combined-ED
Type: Baseline Test
Baseline Name: Comb_ED_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Comb_ED_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

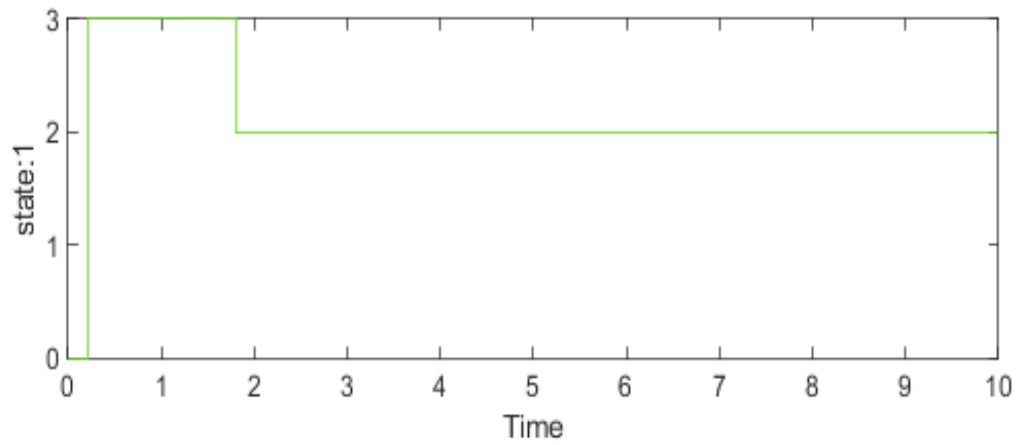
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Comb4.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Comb4.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:58
 Simulation Stop Time: 2021-02-17 12:55:58
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Combined-NoCharge

Test Result Information

Result Type: Test Case Result
Parent: [Combined](#)
Start Time: 17-Feb-2021 12:55:59

End Time: 17-Feb-2021 12:56:00
Outcome: Passed
Description:

Combined to No Charge state transition check:

-SOC < SOCMin

-fuel > fuelMin

-AccPedal < maxAccICE

The state should pass from Combined to No Charge

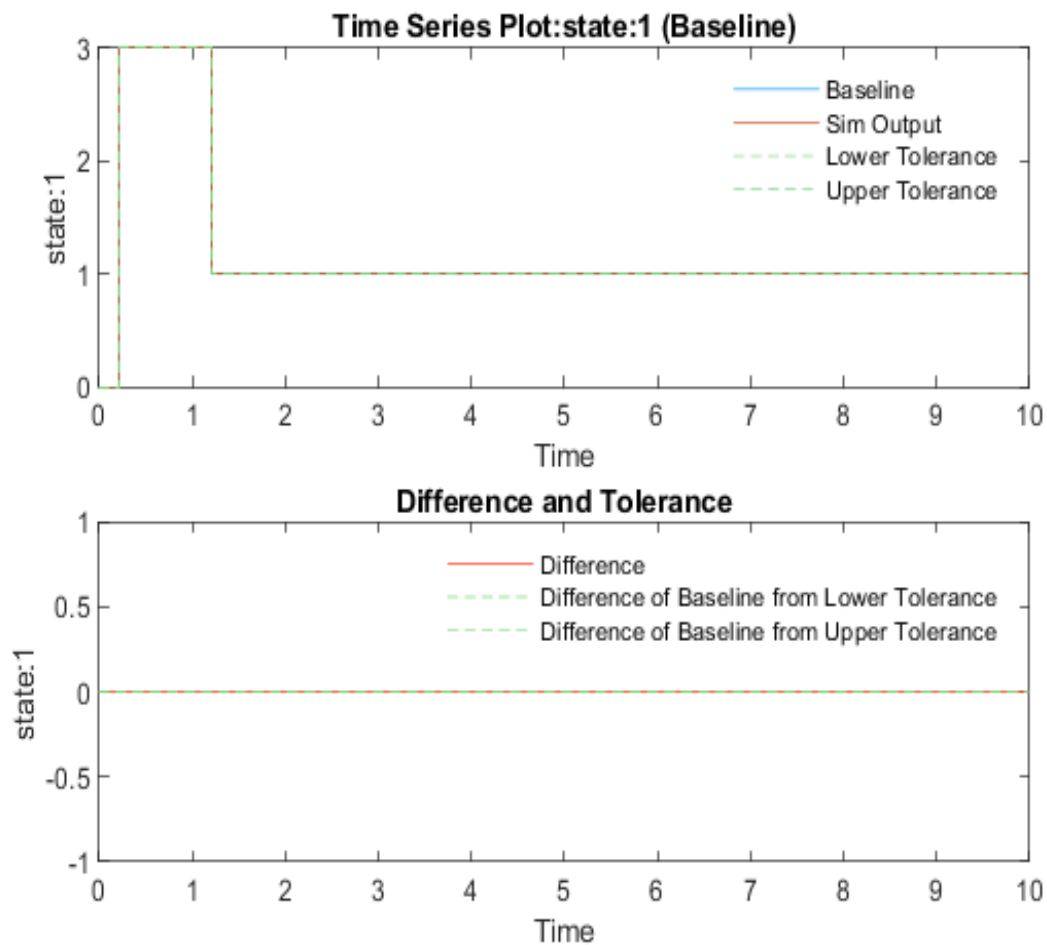
Test Case Information

Name: Combined-NoCharge
Type: Baseline Test
Baseline Name: Comb_NoCharge_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Comb_NoCharge_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

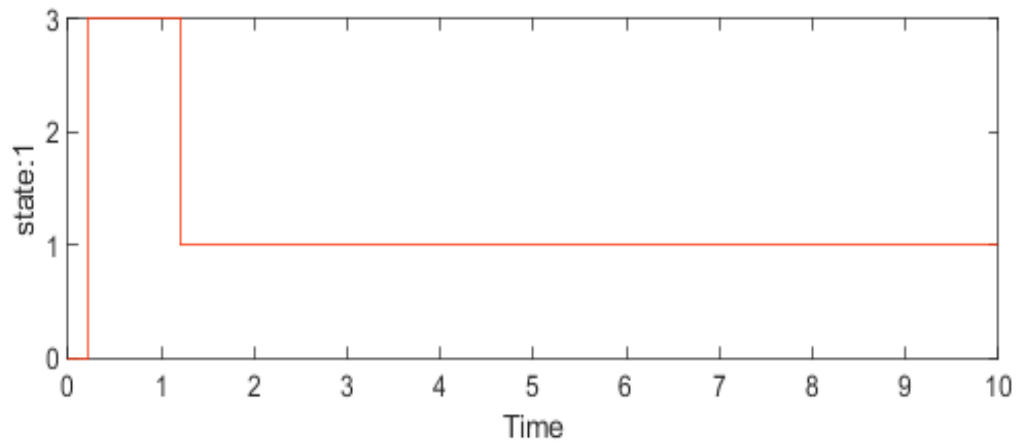
Model: FSM_Model
Release: Current
Simulation Mode: normal
Override SIL or PIL: 0
Mode:

Configuration Set: Configuration
 External Input Name: Comb5.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Comb5.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:55:59
 Simulation Stop Time: 2021-02-17 12:55:59
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Regen

Test Result Information

Result Type: Test Suite Result
Parent: [FSM_test](#)
Start Time: 17-Feb-2021 12:56:00

End Time: 17-Feb-2021 12:56:05
Outcome: Total: 5, Passed: 5
Description:

From Regenerative Braking to all other states. Initially, the FSM starts from DEAD, but soon enters the Regen state at the first sampling instant.

Test Suite Information

Name: Regen

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Regen-Regen

Test Result Information

Result Type: Test Case Result
Parent: [Regen](#)
Start Time: 17-Feb-2021 12:56:00
End Time: 17-Feb-2021 12:56:01
Outcome: Passed
Description:

Regenerative Braking state check:

-BrakePedal > 0

The state should be Regenerative Braking for all the testing time.

Test Case Information

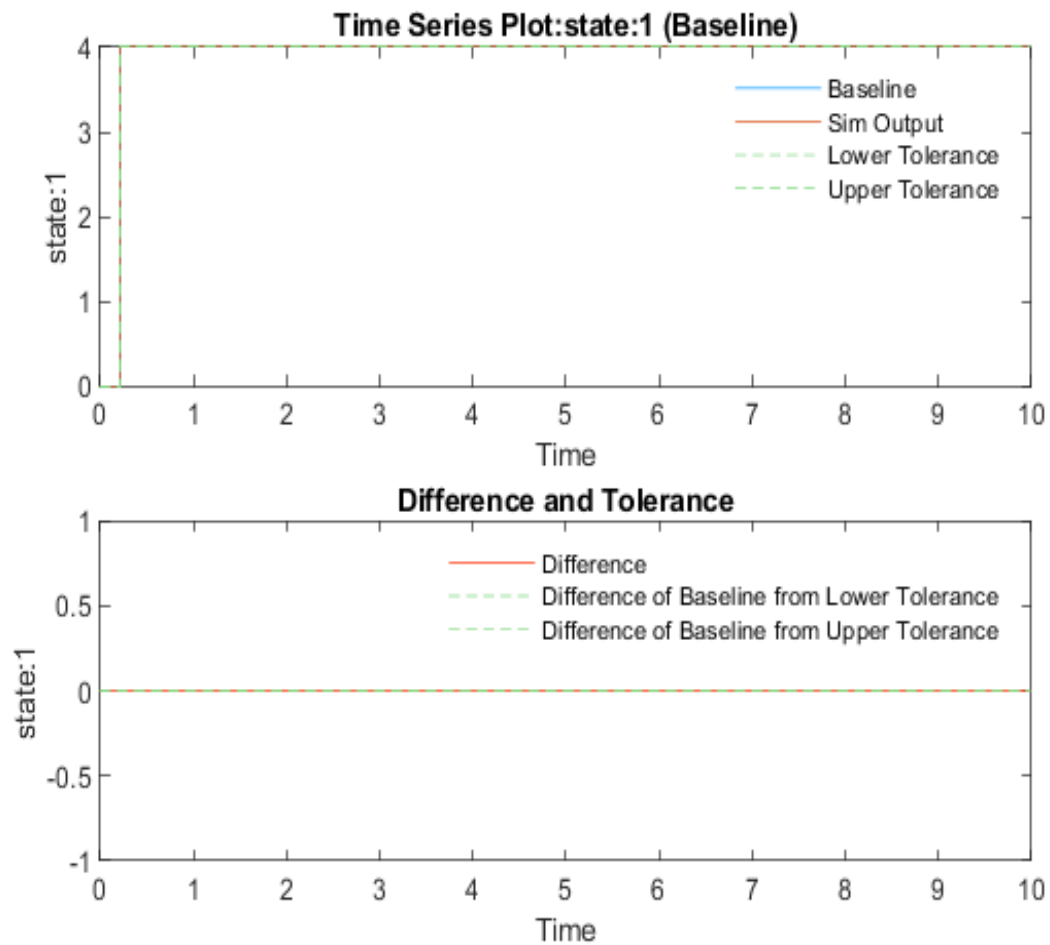
Name: Regen-Regen
Type: Baseline Test
Baseline Name: Regen_Regen_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-

controller\Test\FSM
Test\Baselines\Regen_Regen_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

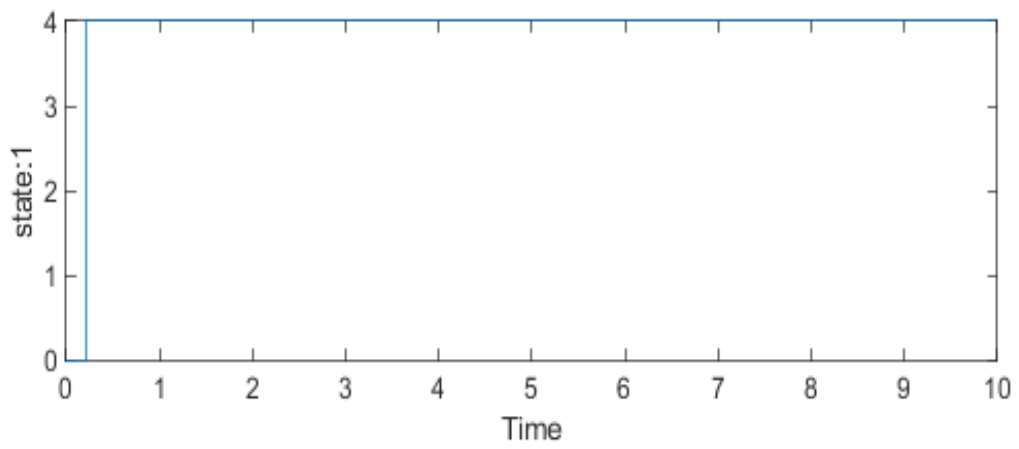
System Under Test Information

Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Regen1.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid- controller\Test\FSM Test\Inputs\Regen1.mat
Start Time:	0
Stop Time:	10
Checksum:	1272805733 3818056235 2604121839 221217785
Simulink Version:	10.2
Model Version:	1.3
Model Author:	mordi
Date:	Tue Feb 16 15:30:18 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid- controller\Test\FSM Test\FSM_Model.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-17 12:56:00
Simulation Stop Time:	2021-02-17 12:56:00
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Regen-DEAD

Test Result Information

Result Type: Test Case Result
Parent: [Regen](#)
Start Time: 17-Feb-2021 12:56:01
End Time: 17-Feb-2021 12:56:02
Outcome: **Passed**
Description:

Transition from Regenerative Braking to DEAD:

Fuel < fuelMin

SOC < SOCmin

AccPedal > 0

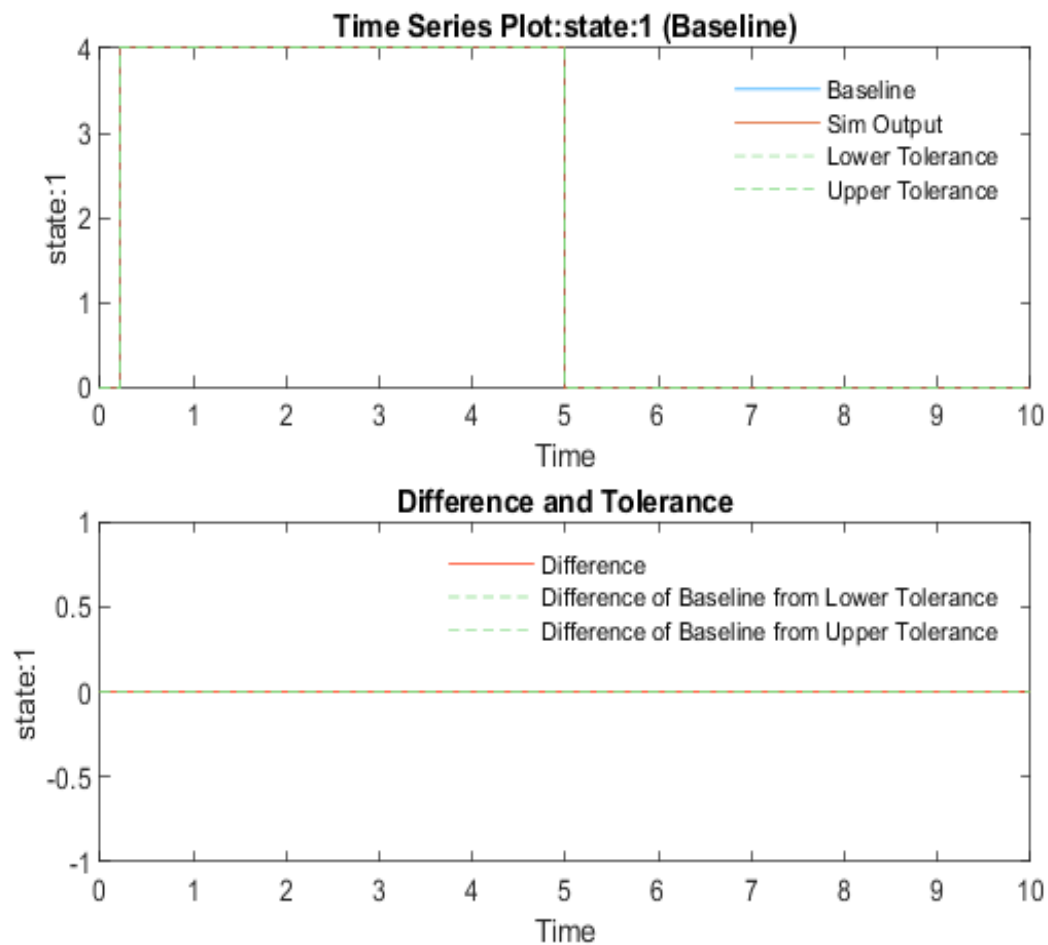
Test Case Information

Name: Regen-DEAD
Type: Baseline Test
Baseline Name: Regen_Dead_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Regen_Dead_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

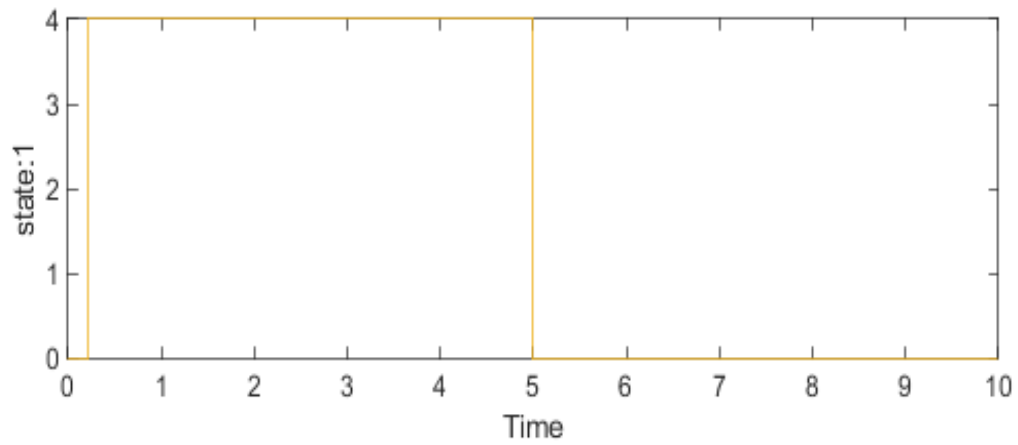
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Regen2.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Regen2.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:56:01
 Simulation Stop Time: 2021-02-17 12:56:01
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Regen-ED

Test Result Information

Result Type: Test Case Result
Parent: [Regen](#)
Start Time: 17-Feb-2021 12:56:02

End Time: 17-Feb-2021 12:56:03
Outcome: Passed
Description:

Transition from Regenerative Braking to ED

SOC < SOCmin for a while, then SOC>SOCmin

RealSpeed<SpeedEDMax

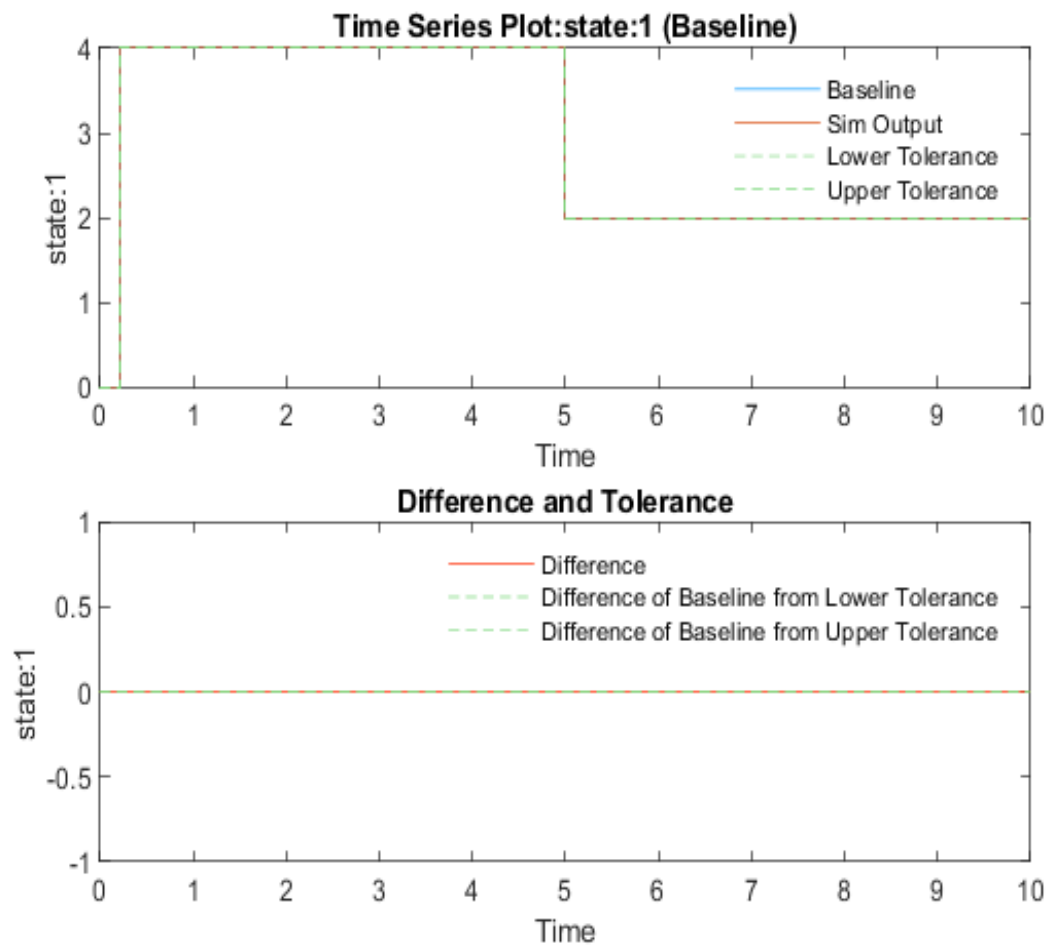
Test Case Information

Name: Regen-ED
Type: Baseline Test
Baseline Name: Regen_ED_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Regen_ED_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

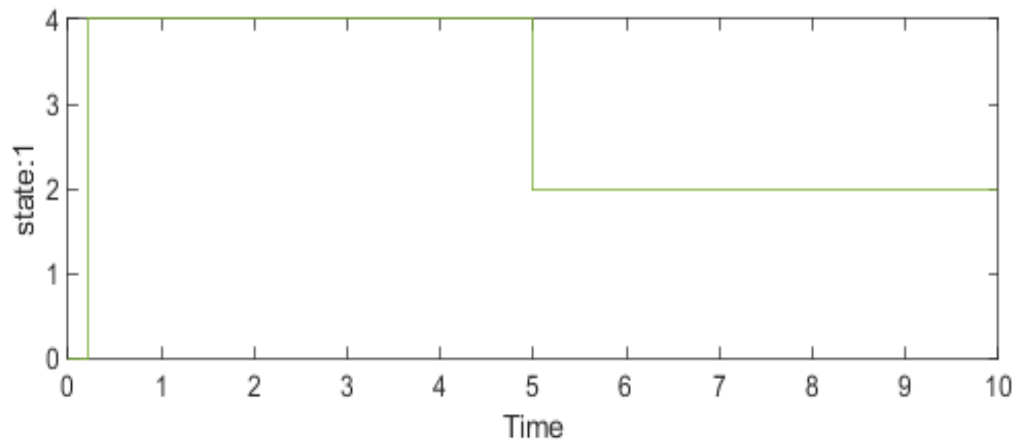
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Regen3.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Regen3.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:56:02
 Simulation Stop Time: 2021-02-17 12:56:02
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Regen-NoCharge

Test Result Information

Result Type: Test Case Result
Parent: [Regen](#)
Start Time: 17-Feb-2021 12:56:03

End Time: 17-Feb-2021 12:56:04
Outcome: Passed
Description:

Transition check from Regenerative Braking to No Charge state:

-BrakePedal > 0 until 5s

-AccPedal > 0 after 5s

-fuel>fuelMin

-SOC<SOCMin

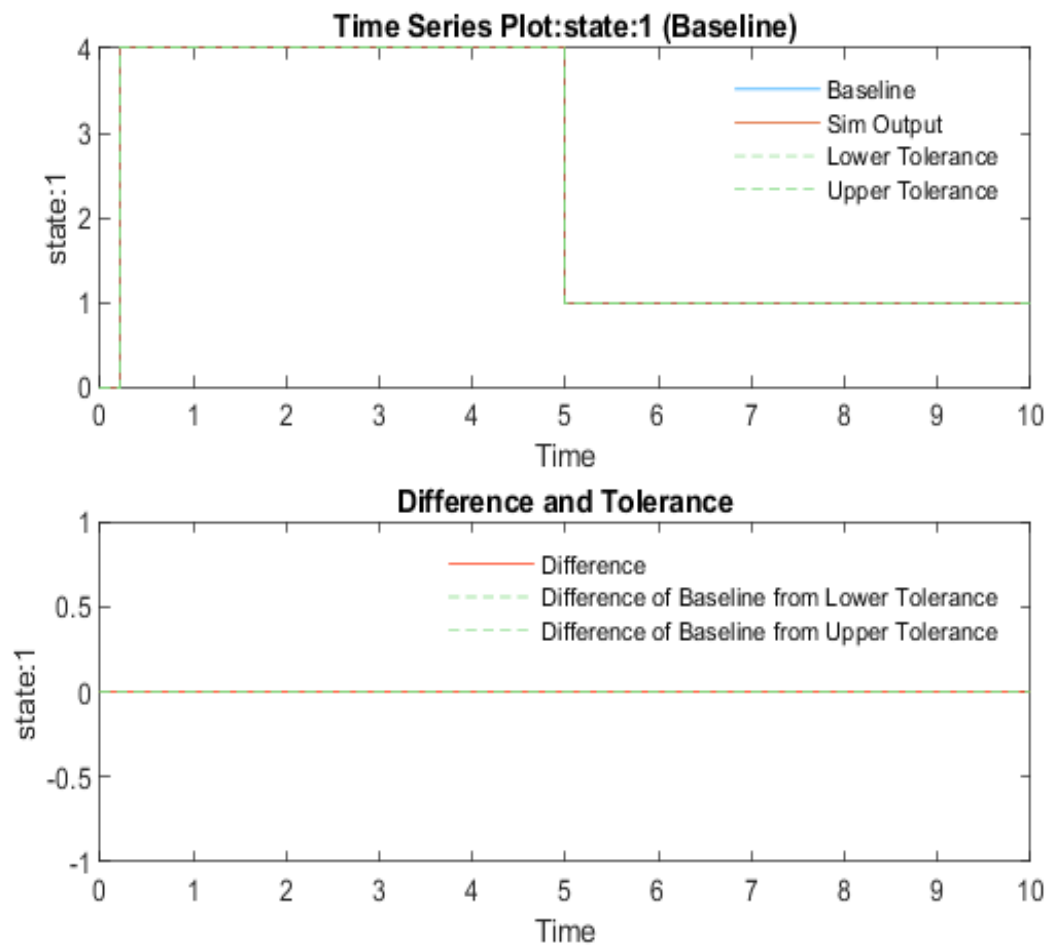
Test Case Information

Name: Regen-NoCharge
Type: Baseline Test
Baseline Name: Regen_NoCharge_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Regen_NoCharge_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

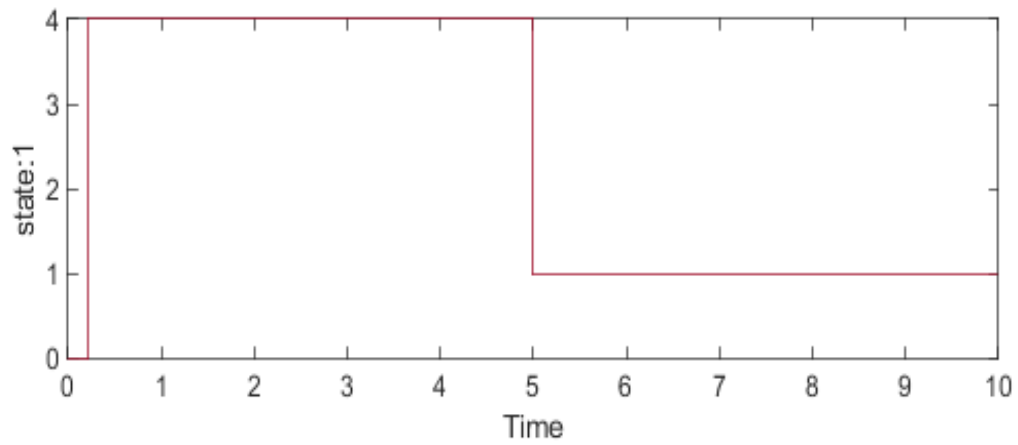
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Regen4.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Regen4.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:56:03
 Simulation Stop Time: 2021-02-17 12:56:03
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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Regen-Combined

Test Result Information

Result Type: Test Case Result
Parent: [Regen](#)
Start Time: 17-Feb-2021 12:56:04

End Time: 17-Feb-2021 12:56:05
Outcome: Passed
Description:

Transition from Regen to Combined state:

-SOC > SOCMin

-Fuel> fuelMin

-RealSpeed > SpeedMaxMGU

-BrakePedal = 0 after 5s

-AccPedal > 0 after 5s

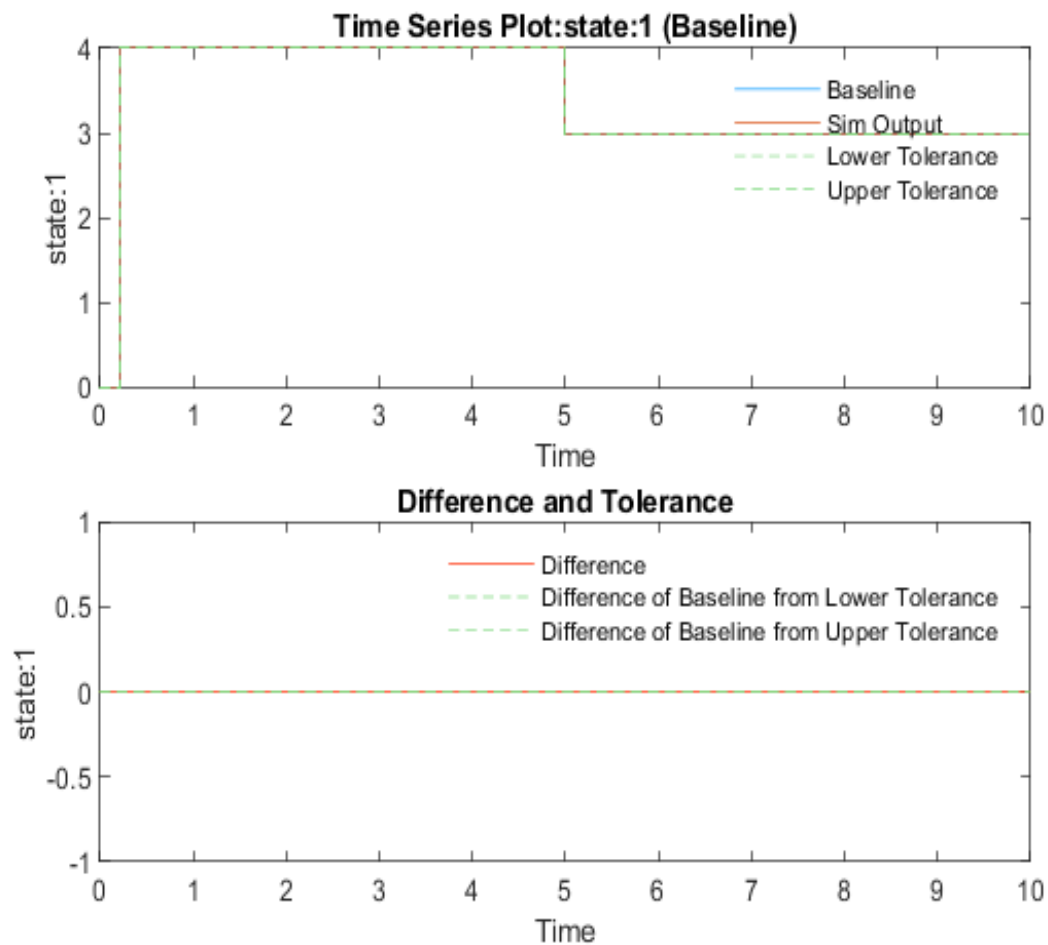
Test Case Information

Name: Regen-Combined
Type: Baseline Test
Baseline Name: Regen_Combined_baseline.mat
Baseline File: C:\Users\mordi\Desktop\Materiale
Università\Compliance\hybrid-controller\Hybrid-
controller\Test\FSM
Test\Baselines\Regen_Combined_baseline.mat

Baseline Comparison

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union	Link

Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
✓ state:1	0	0	0	0	0	double			double		Continuous	zoh	union



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Simulation

System Under Test Information

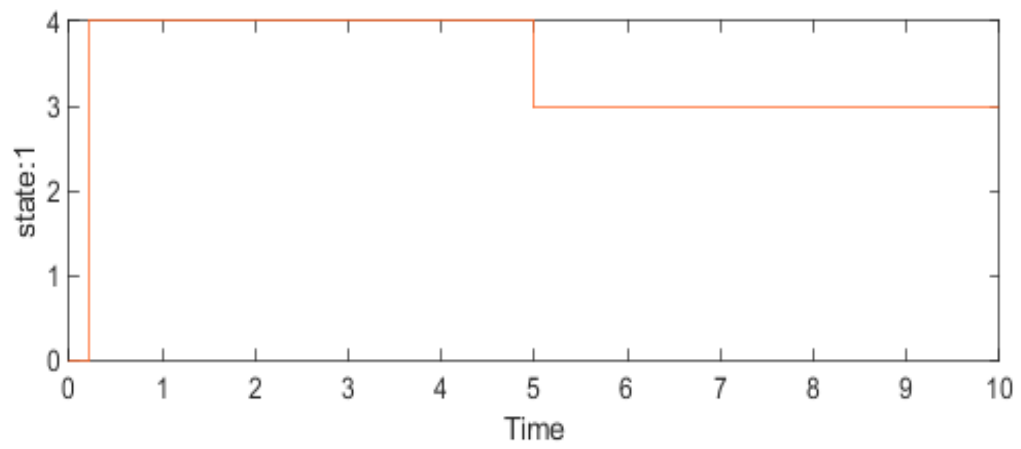
Model:	FSM_Model
Release:	Current
Simulation Mode:	normal
Override SIL or PIL	0
Mode:	

Configuration Set: Configuration
 External Input Name: Regen5.mat
 External Input File: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\Inputs\Regen5.mat
 Start Time: 0
 Stop Time: 10
 Checksum: 1272805733 3818056235 2604121839 221217785
 Simulink Version: 10.2
 Model Version: 1.3
 Model Author: mordi
 Date: Tue Feb 16 15:30:18 2021
 User ID: mordi
 Model Path: C:\Users\mordi\Desktop\Materiale
 Università\Compliance\hybrid-controller\Hybrid-
 controller\Test\FSM Test\FSM_Model.slx
 Machine Name: DESKTOP-PM6NB79
 Solver Name: VariableStepDiscrete
 Solver Type: Variable-Step
 Max Step Size: 0.20000000000000001
 Simulation Start Time: 2021-02-17 12:56:04
 Simulation Stop Time: 2021-02-17 12:56:04
 Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state:1	double		Continuous	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
state:1	double		Continuous	zoh	union



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