Report Generated by Test Manager

Title: **Integration Test: Results report**
Author: **Team 2 (CoDeAS 20/21)**
Date: **26-Feb-2021 09:42:05**

Test Environment

Platform: PCWIN64
MATLAB: (R2020b)

Summary

Name	Outcome	Duration (Seconds)
Results: 2021-Feb-26 09:41:21	8 ✓	8.38
IntegrationTest	8 ✓	8.38
IntegrationTest Suite 1	8 ✓	8.38
Test Case 1	✓	1.438
Test Case 2	✓	1.003
Test Case 3	✓	0.805
Test Case 4	✓	0.838
Test Case 5	✓	1.152
Test Case 6	✓	1.313
Test Case 7	✓	0.954
Test Case 8	✓	0.695

Results: 2021-Feb-26 09:41:21

Result Type:	Result Set
Parent:	None
Start Time:	26-Feb-2021 09:41:23
End Time:	26-Feb-2021 09:41:32
Outcome:	Total: 8, Passed: 8

Back to Report Summary

IntegrationTest

Test Result Information

Result Type:	Test File Result
Parent:	Results: 2021-Feb-26 09:41:21
Start Time:	26-Feb-2021 09:41:23
End Time:	26-Feb-2021 09:41:32
Outcome:	Total: 8, Passed: 8

Test Suite Information

Name:	IntegrationTest

Back to Report Summary

IntegrationTest Suite 1

Test Result Information

Result Type:	Test Suite Result
Parent:	IntegrationTest
Start Time:	26-Feb-2021 09:41:23
End Time:	26-Feb-2021 09:41:32
Outcome:	Total: 8, Passed: 8

Test Suite Information

Name:	IntegrationTest Suite 1

Back to Report Summary

Test Case 1

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:23
End Time:	26-Feb-2021 09:41:25
Outcome:	Passed
Description:	

Scenario 1: Vehicle in full electrical drive

INPUTS conditions:

- request AccPedal < MaxAccMGU (t = 5s)

- Low speed condtions

- BrakePedal: 0

- SOC > SOCMin

- Fuel > fuelMin

EXPECTED OUTPUT:

Only MGU mode: due to low speed, controller must demand torque only to the MGU (MGUdem != 0).

Test Case Information

Name:	Test Case 1
Type:	Simulation Test

Logical and Temporal Assessments

Name	Assessment

Assessment1	At any point in time, if (AccPedal > 0) becomes true then, with a delay of at most 0.4 seconds, (((MGUdem > 0) & (ICEdem == 0)) & (Brake == 0)) must be true

Simulation

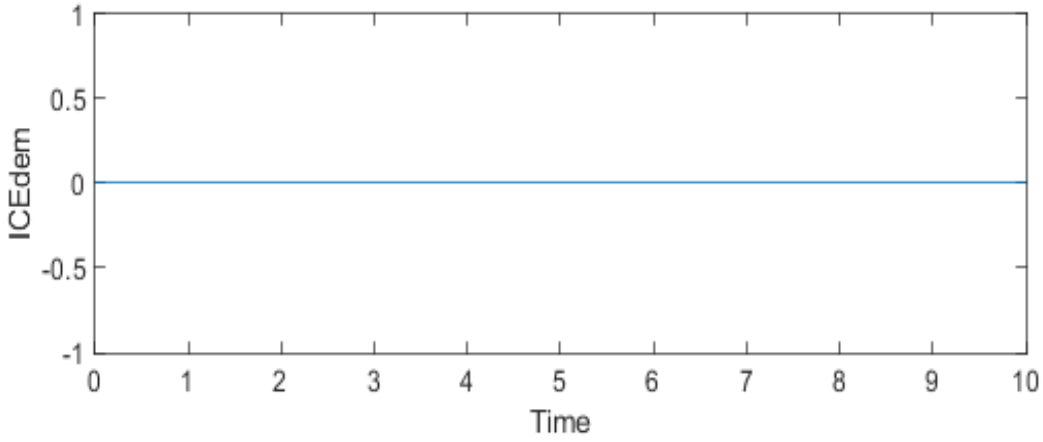
System Under Test Information

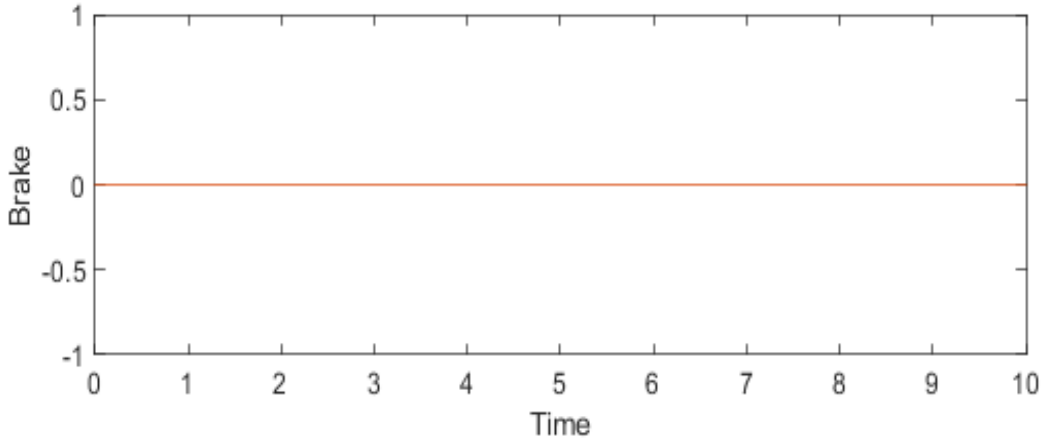
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario1.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario1.mat
Start Time:	0
Stop Time:	10
Checksum:	904374529 348716616 2756198423 2941394292
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:23
Simulation Stop Time:	2021-02-26 09:41:24
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link
AccPedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

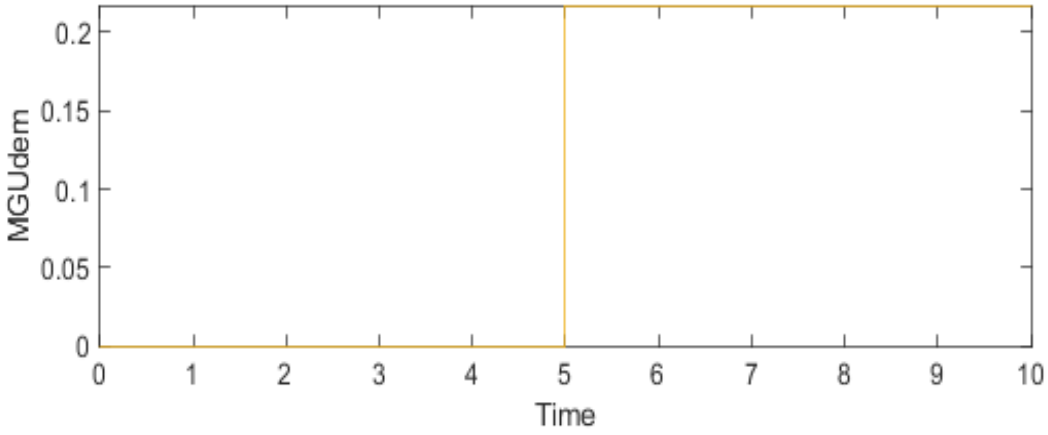
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

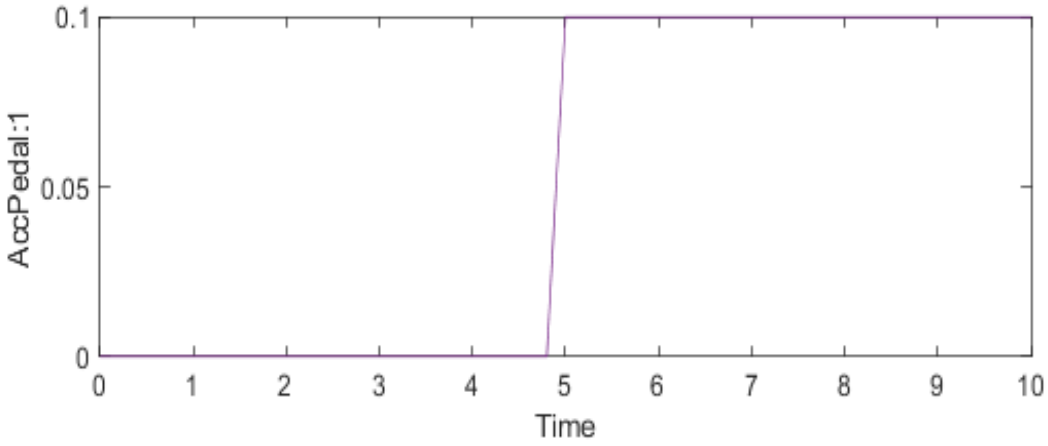




Back to Report SummaryBack to Signal Summary

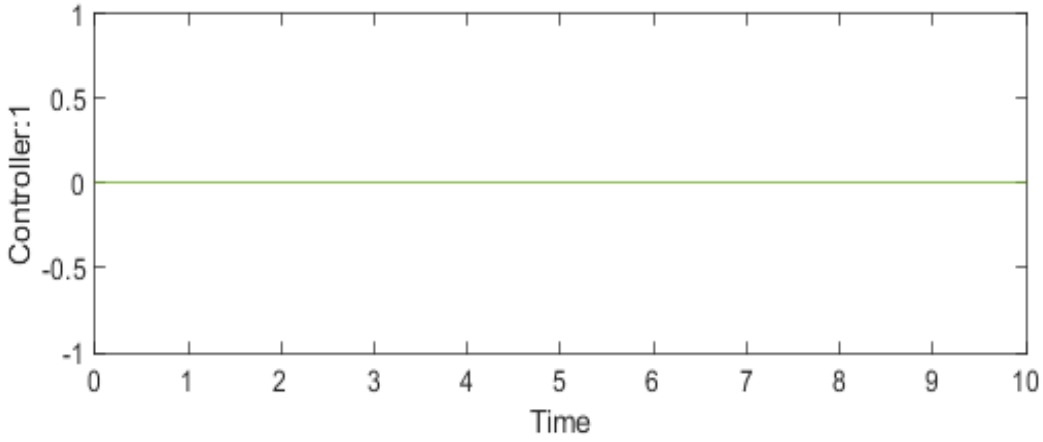
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

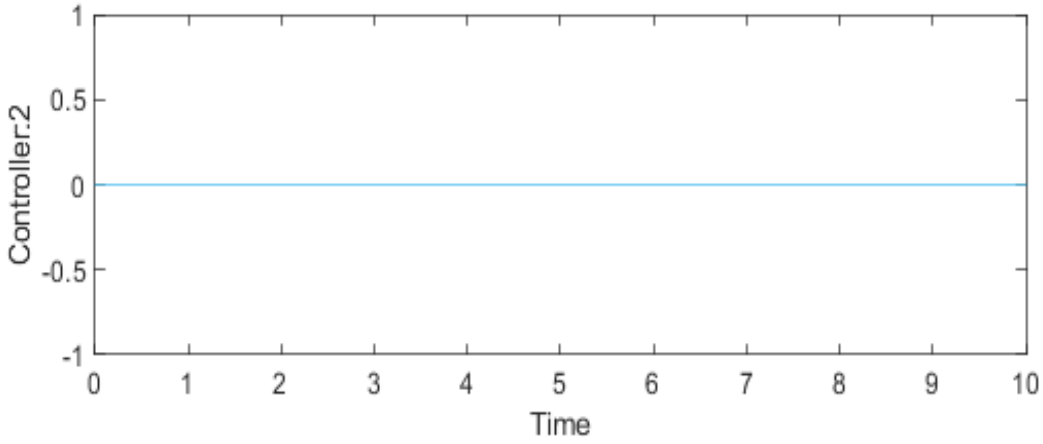




Back to Report SummaryBack to Signal Summary

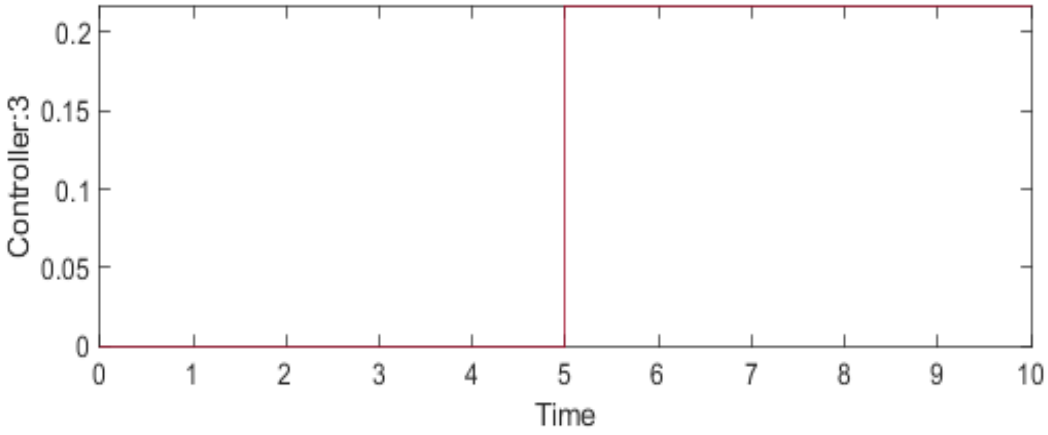
Name	Data Type	Units	Sample Time	Interp	Sync
Controller:1	double		Continuous	zoh	union
Controller:2	double		Continuous	zoh	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 2

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:25

End Time: 26-Feb-2021 09:41:26
Outcome: Passed
Description:

Scenario 2: No charge

INPUTS conditions:

- request AccPedal < MaxAccMGU (t = 5s)

- Low speed condtions

- BrakePedal: 0

- SOC < SOCMin

- Fuel > fuelMin

EXPECTED OUTPUT:

Only ICE mode: due to battery low level, controller must demand torque only to the ICE (ICEdem != 0)discarding the MGU.

Test Case Information

Name: Test Case 2
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, if (AccPedal > 0) becomes true then, with a delay of at most 0.4 seconds, (((ICEdem > 0) & (Brake == 0)) & (MGUdem == 0)) must be true

Simulation

System Under Test Information

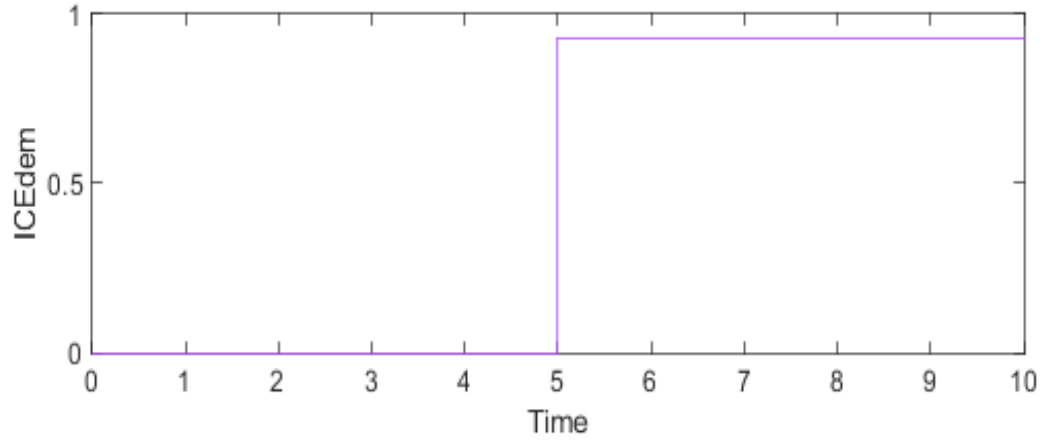
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario2.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario2.mat
Start Time:	0
Stop Time:	10
Checksum:	904374529 348716616 2756198423 2941394292
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:25
Simulation Stop Time:	2021-02-26 09:41:25
Platform:	PCWIN64

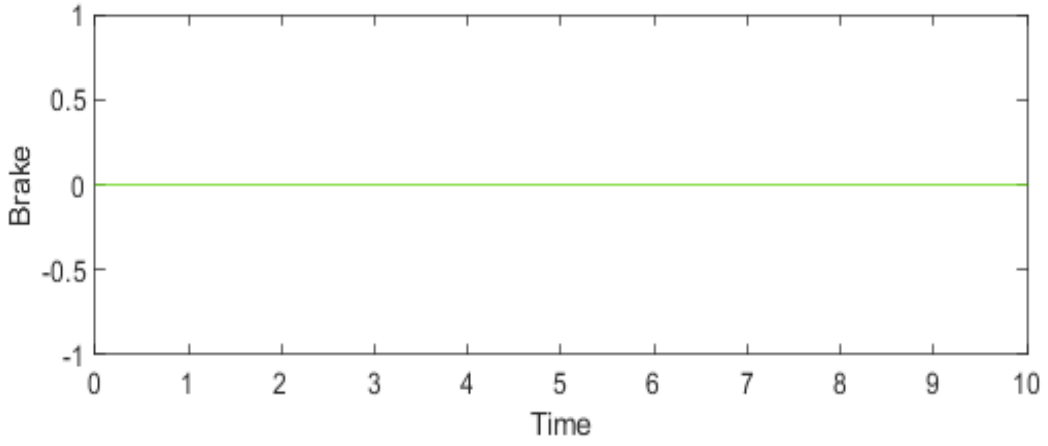
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link

AccPedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

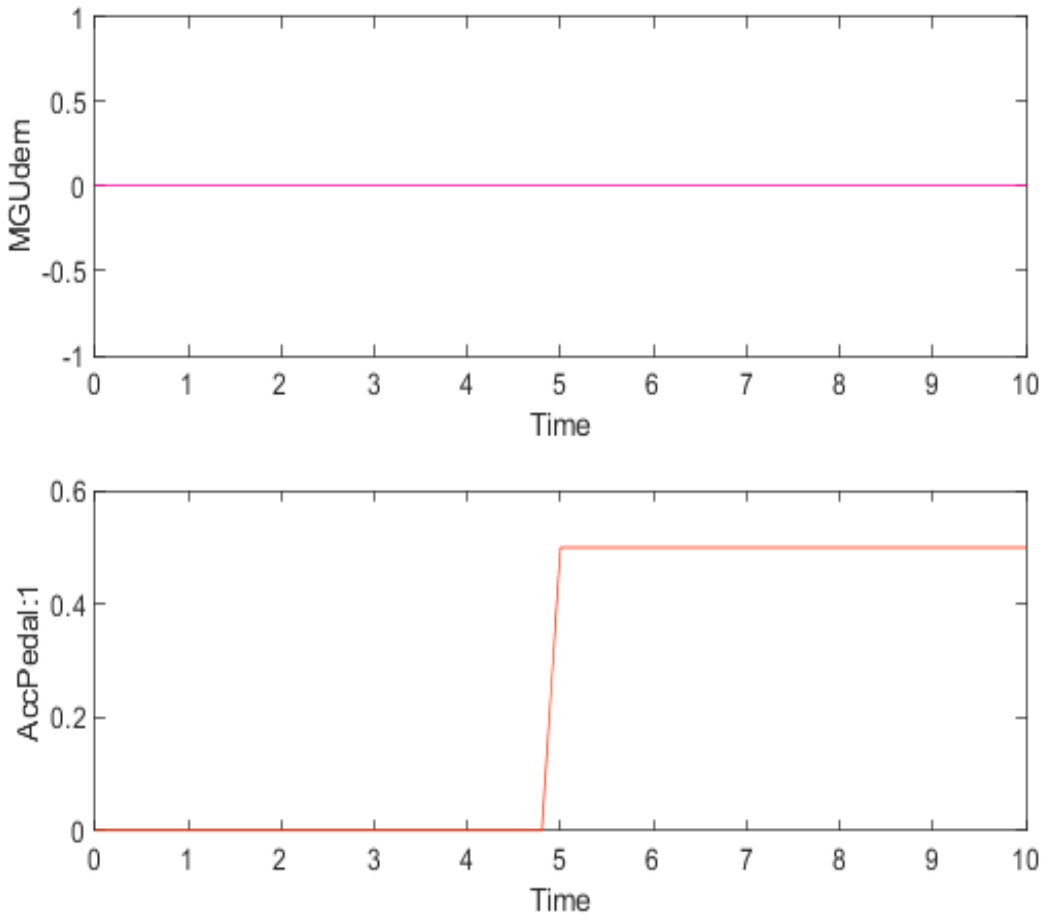
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union





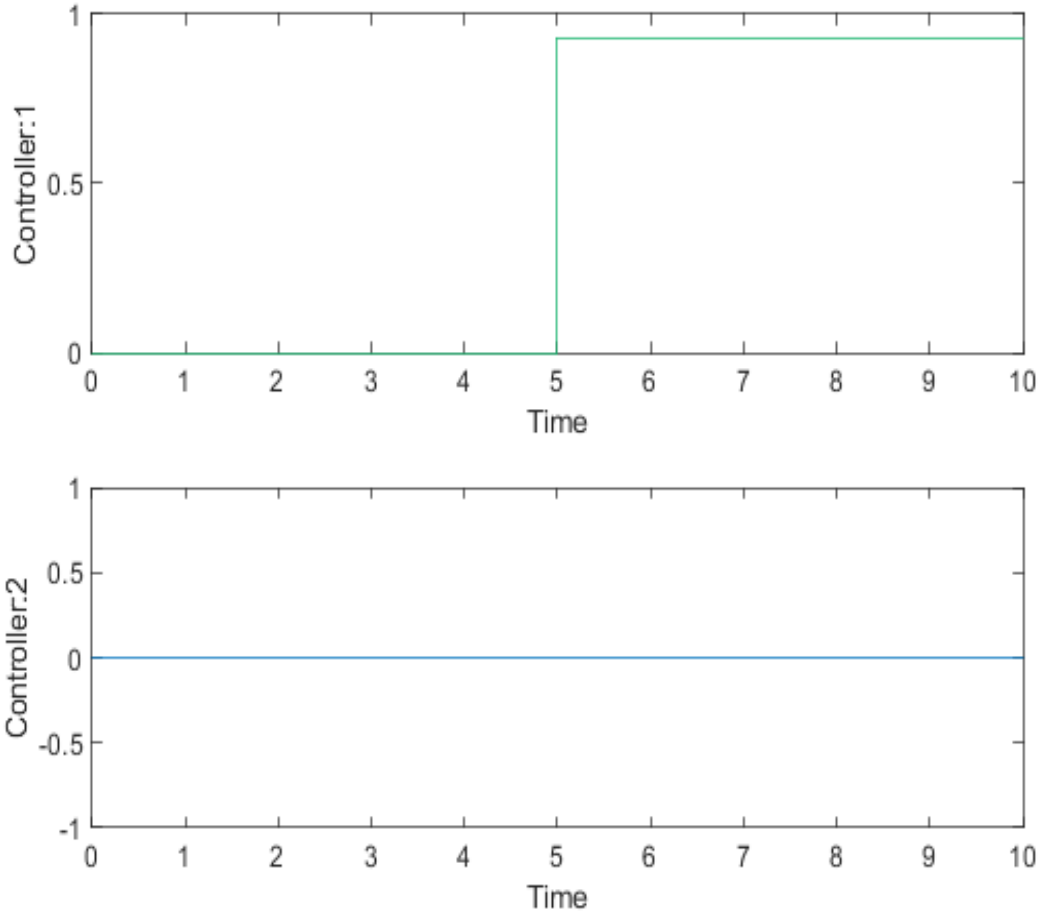
Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union



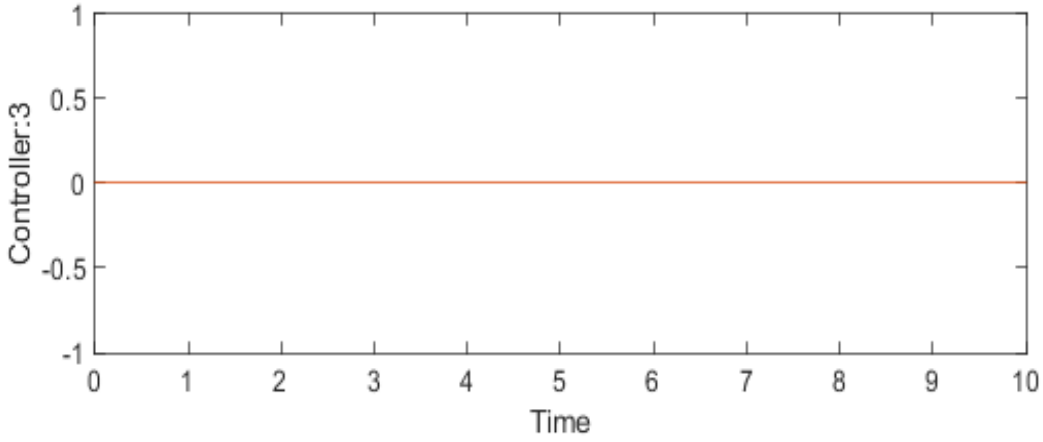
Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:1	double		Continuous	zoh	union
Controller:2	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 3

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:26

End Time: 26-Feb-2021 09:41:27
Outcome: Passed
Description:

Scenario 3: No fuel conditions

INPUTS conditions:

- request AccPedal > MaxAccMGU (t = 5s)

- Low speed condtions

- BrakePedal: 0

- SOC > SOCMin

- Fuel < fuelMin

EXPECTED OUTPUT:

Only MGU mode and saturation at max value of MGU request: due to low speed and low fuel level, a saturation of the MGU request in terms
of torque is expected because of the higher □□□□□□□□ request after 5s.

Test Case Information

Name: Test Case 3
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, if (AccPedal > 0) becomes true then, with a delay of at most 0.4 second s, (((ICEdem == 0) & (MGUdem == 1)) & (Brake == 0)) must be true

Simulation

System Under Test Information

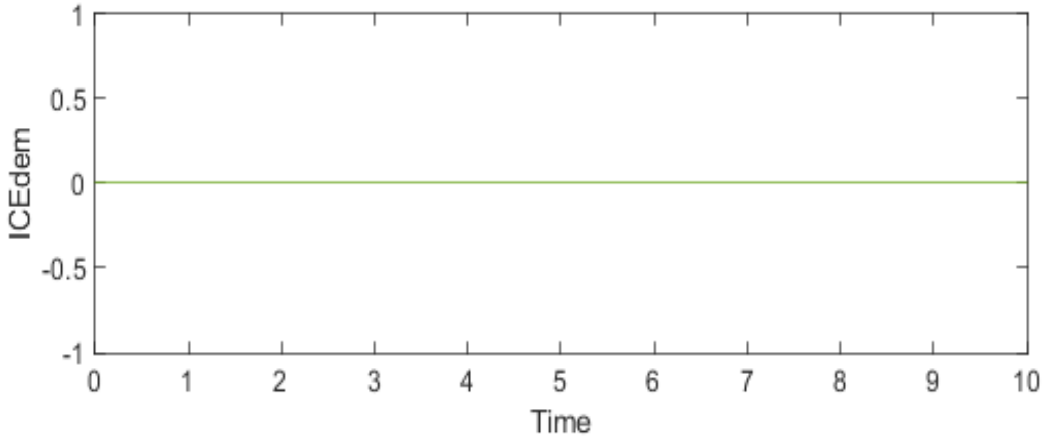
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario3.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario3.mat
Start Time:	0
Stop Time:	10
Checksum:	904374529 348716616 2756198423 2941394292
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:26
Simulation Stop Time:	2021-02-26 09:41:26
Platform:	PCWIN64

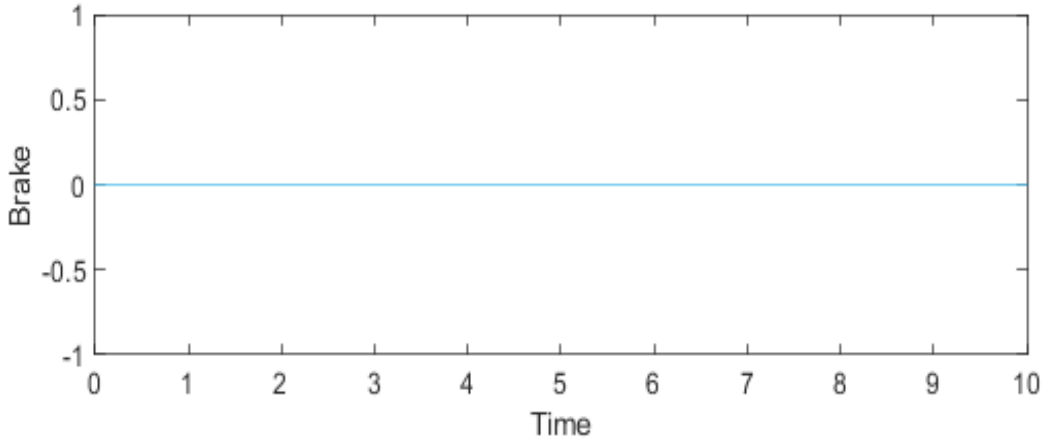
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link

AccPedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

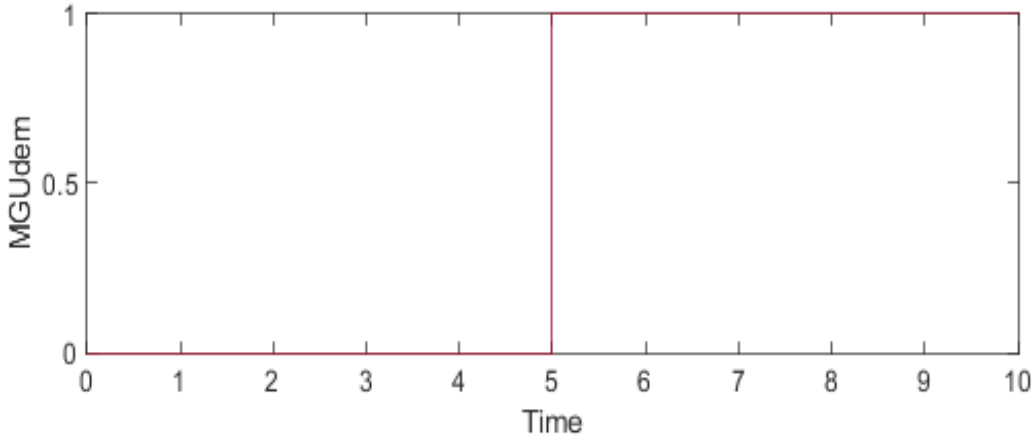
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

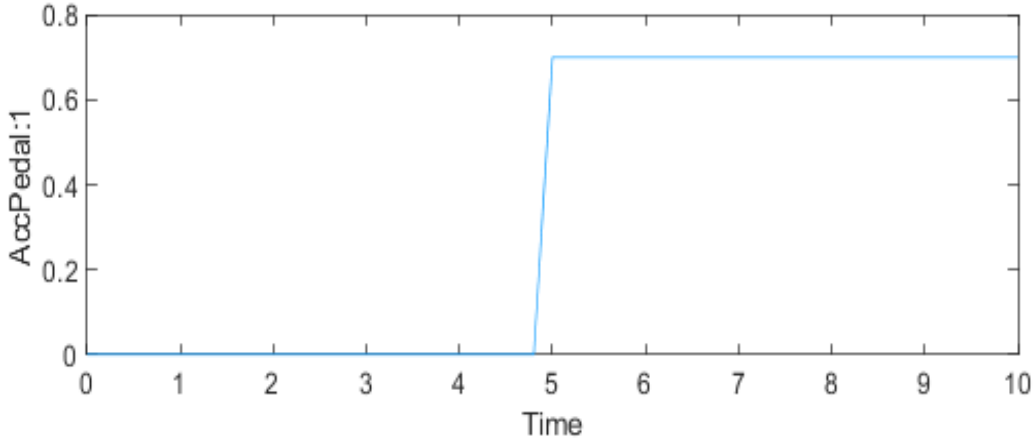




Back to Report SummaryBack to Signal Summary

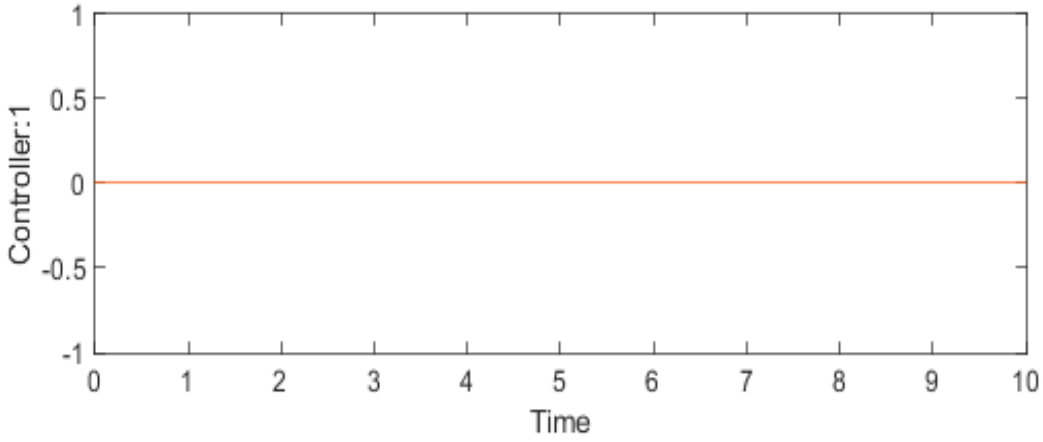
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

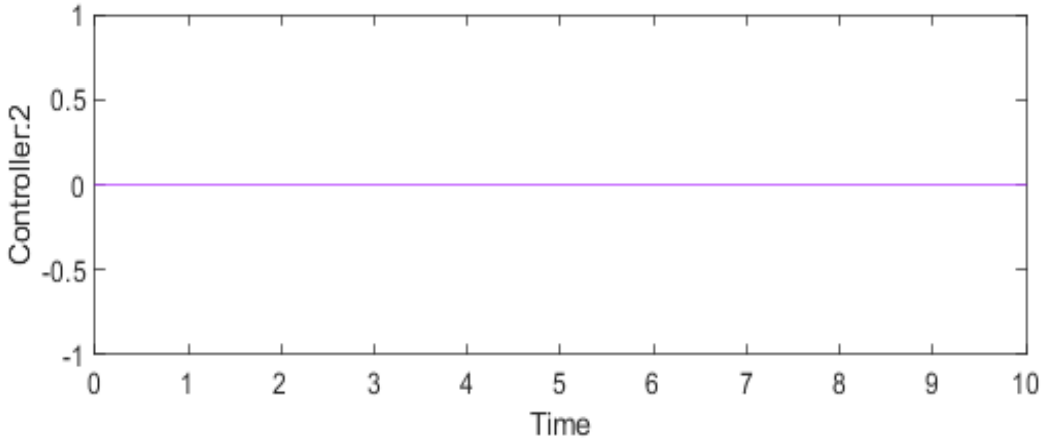




Back to Report SummaryBack to Signal Summary

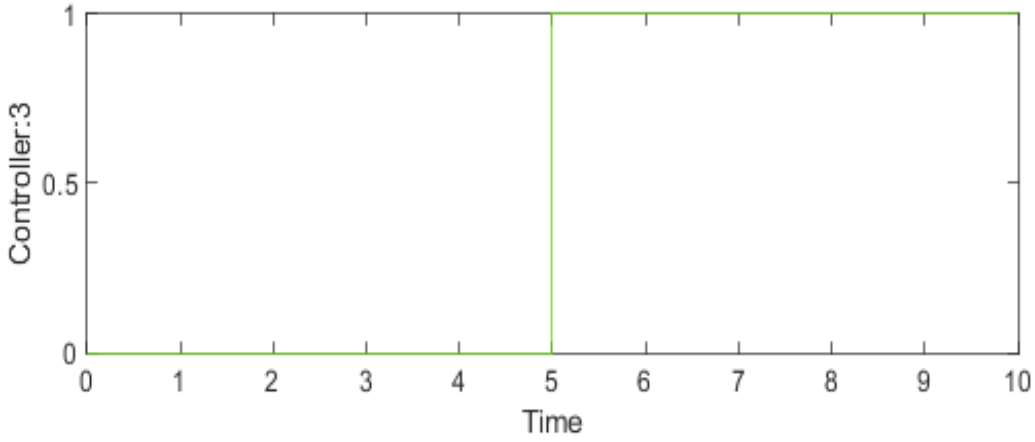
Name	Data Type	Units	Sample Time	Interp	Sync
Controller:1	double		Continuous	zoh	union
Controller:2	double		Continuous	zoh	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 4

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:27

End Time: 26-Feb-2021 09:41:27
Outcome: Passed
Description:

Scenario 4: No charge conditions

INPUTS conditions:

- request AccPedal > MaxAccICE (t = 5s)

- Low speed condtions

- BrakePedal: 0

- SOC < SOCMin

- Fuel > fuelMin

EXPECTED OUTPUT:

Only ICE mode and saturation at max value of ICE request: expected saturation of the ICE torque request because of the
higher AccPedal (higher with respect to the maximum ICE acceleration) request after 5s. No MGU request expected due to low SOC level.

Test Case Information

Name: Test Case 4
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, if (AccPedal > 0) becomes true then, with a delay of at most 0.4 seconds, (((ICEdem == 1) & (MGUdem == 0)) & (Brake == 0)) must be true

Simulation

System Under Test Information

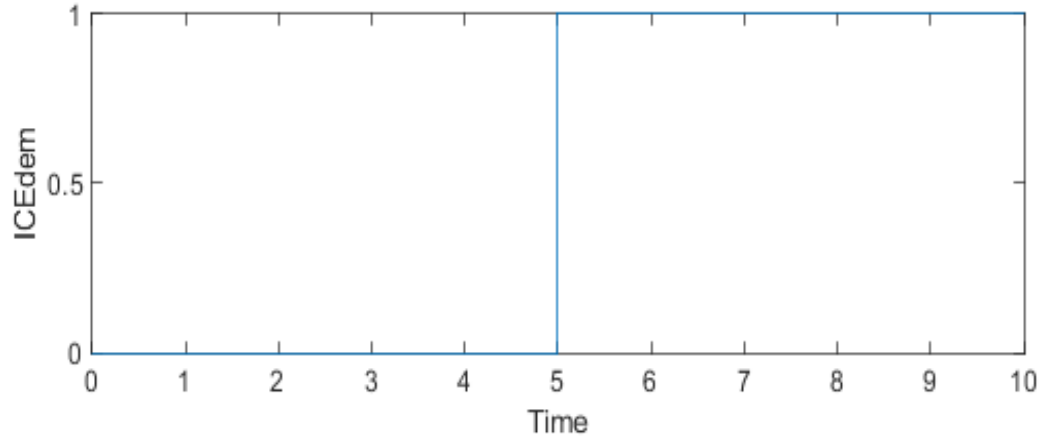
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario4.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario4.mat
Start Time:	0
Stop Time:	10
Checksum:	904374529 348716616 2756198423 2941394292
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:27
Simulation Stop Time:	2021-02-26 09:41:27
Platform:	PCWIN64

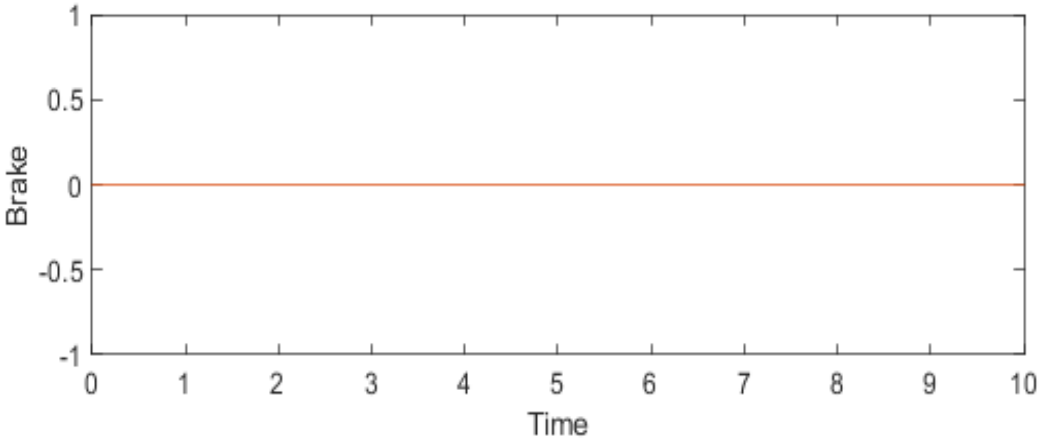
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link

AccPedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

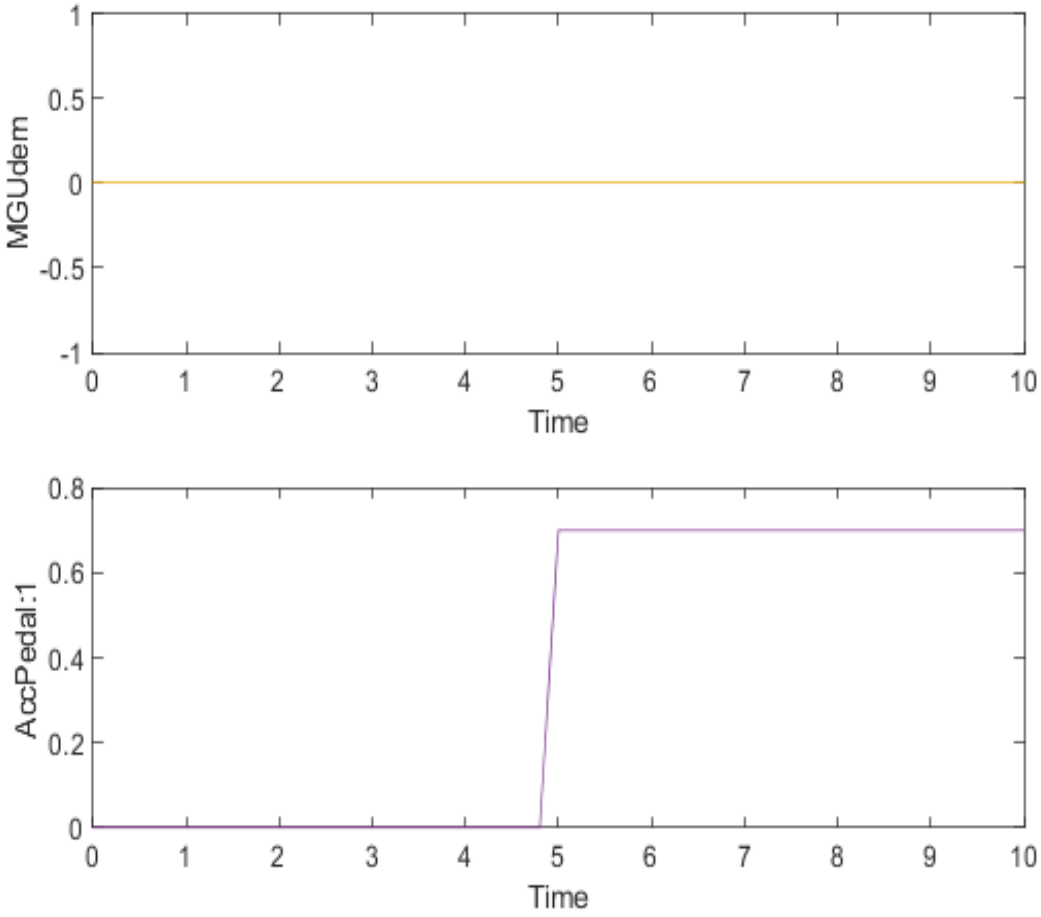
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union





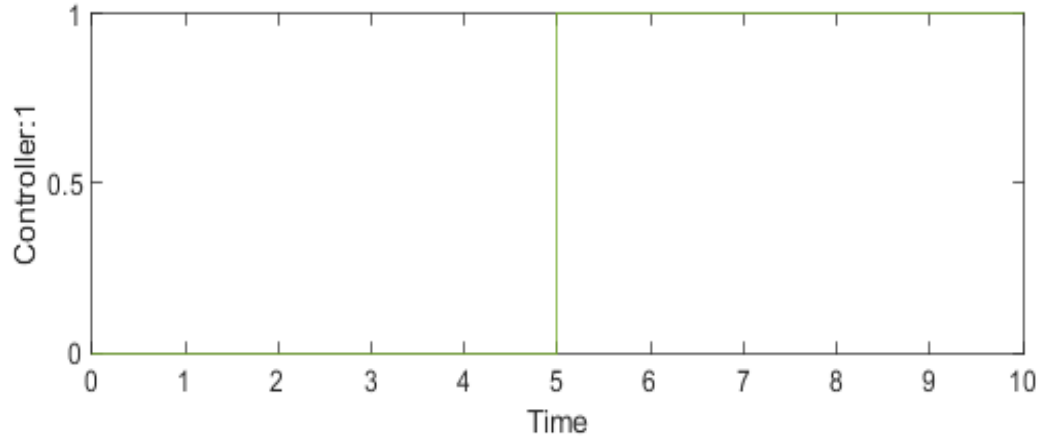
Back to Report SummaryBack to Signal Summary

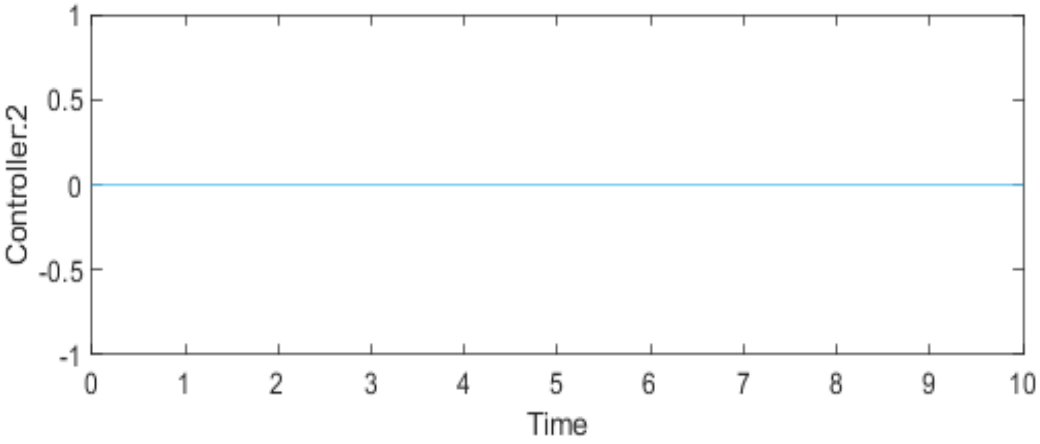
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

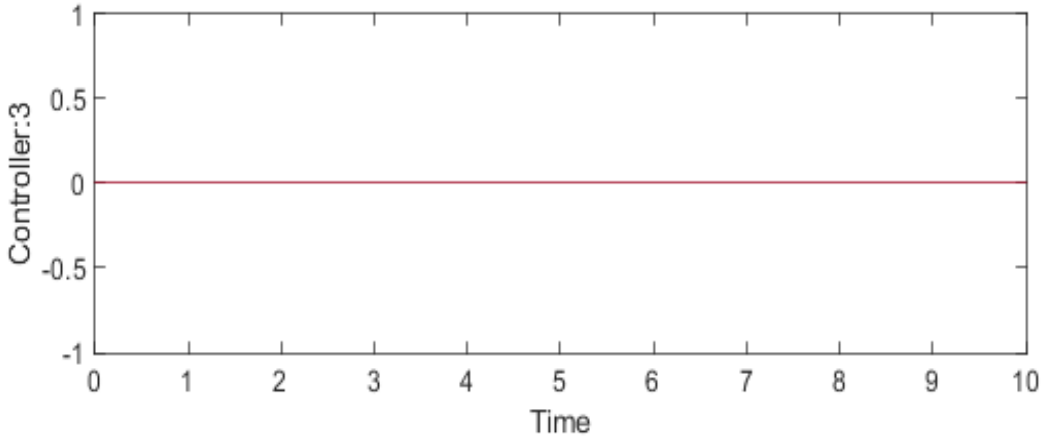
Name	Data Type	Units	Sample Time	Interp	Sync
Controller:1	double		Continuous	zoh	union
Controller:2	double		Continuous	zoh	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 5

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:27

End Time: 26-Feb-2021 09:41:29
Outcome: Passed
Description:

Scenario 5: Combined and Regen. braking transition

INPUTS conditions:

- request AccPedal > MaxAccMGU (t = 5s)

- High speed condtions

- BrakePedal: != 0 at t = 5s

- SOC > SOCMin

- Fuel > fuelMin

EXPECTED OUTPUT:

Both MGU and ICE requests, Regen. braking when braking: in this case car is traveling at high speed, so that the controller cannot
work in Electrical Drive only. Both fuel and SOC are above the minimum for working. When braking, Regen. braking state is expected.

Test Case Information

Name: Test Case 5
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, whenever (AccPedal > 0) is true then, with a delay of at most 0.2 seconds, (((ICEdem > 0) & (MGUdem > 0)) & (Brake == 0)) must be true
Assessment2	At any point in time, whenever (BrakePedal > 0) is true then, with a delay of at most 0.4 seconds, (((MGUdem < 0) & (ICEdem == 0)) & (Brake > 0)) must be true

Simulation

System Under Test Information

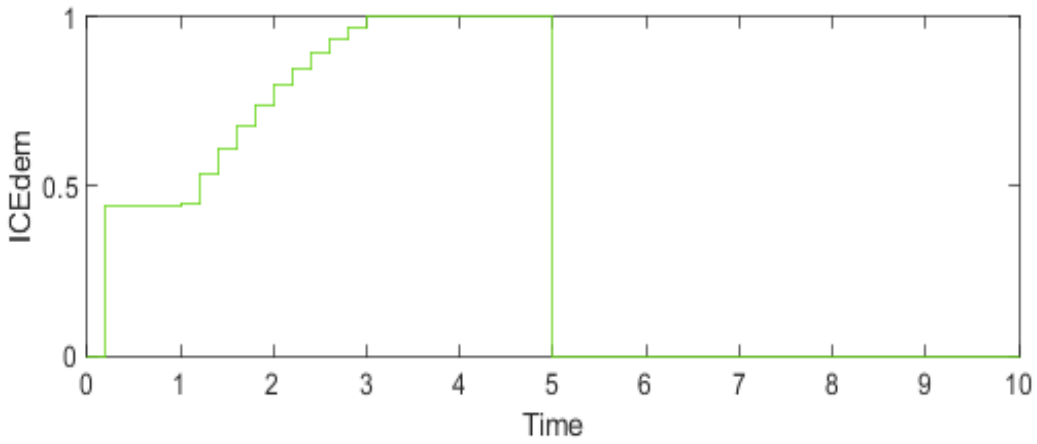
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario5.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario5.mat
Start Time:	0
Stop Time:	10
Checksum:	3931517516 1088101456 1799308556 3374006053
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:27
Simulation Stop Time:	2021-02-26 09:41:28
Platform:	PCWIN64

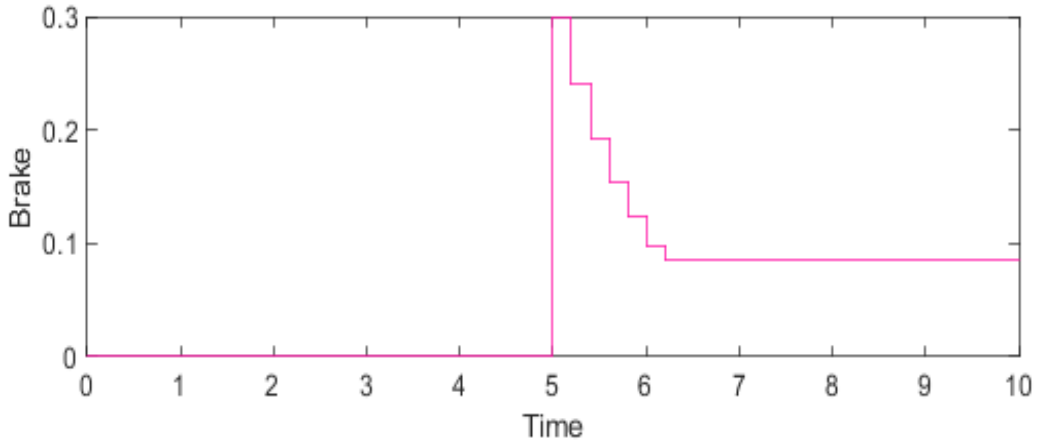
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link

Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link
AccPedal:1	double		Continuous	linear	union	Link
BrakePedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

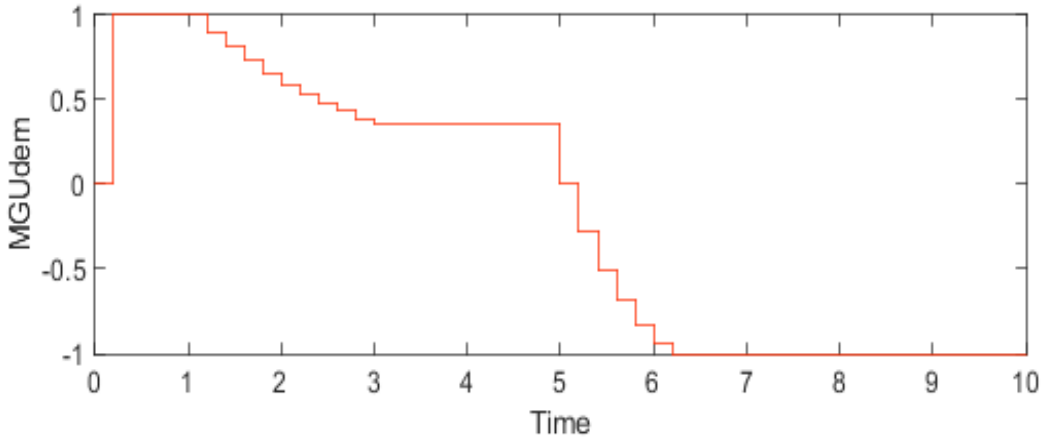
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

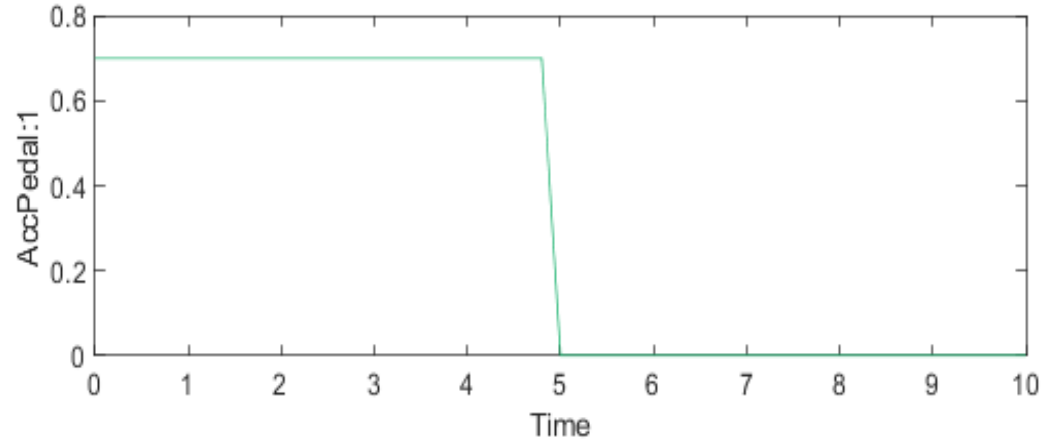




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

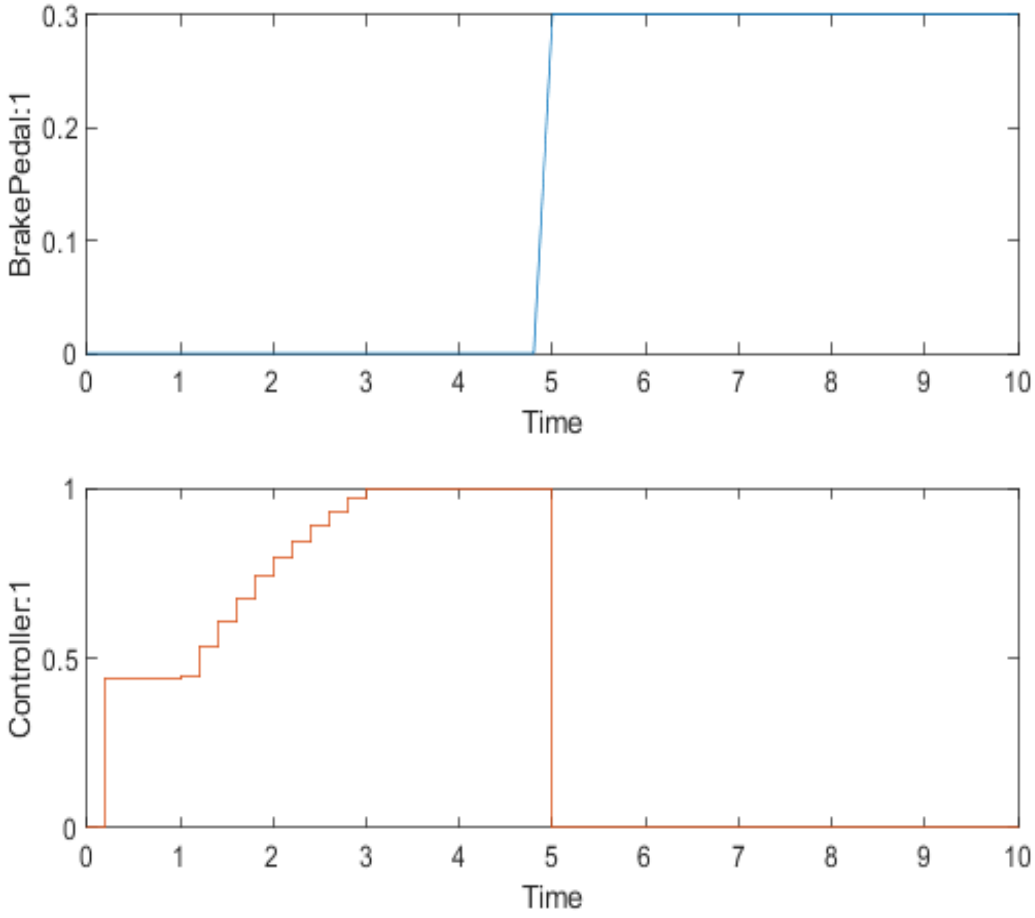




Back to Report SummaryBack to Signal Summary

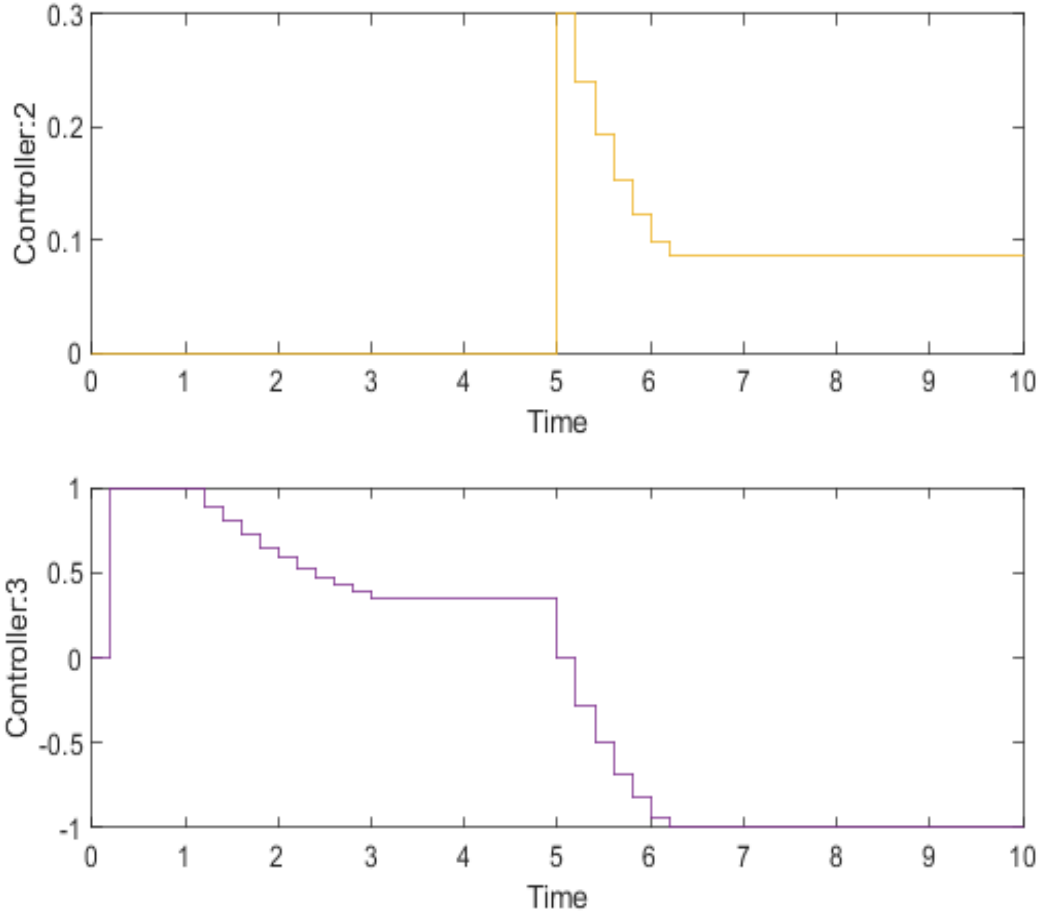
Name	Data Type	Units	Sample Time	Interp	Sync

BrakePedal:1	double		Continuous	linear	union
Controller:1	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:2	double		Continuous	zoh	union
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 6

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:29

End Time: 26-Feb-2021 09:41:30
Outcome: Passed
Description:

Scenario 6: Dead conditions (no fuel, no charge) and Regen. braking

INPUTS conditions:

- request AccPedal (until t = 5s)

- Low speed condtions

- BrakePedal: != 0 at t = 5s

- SOC < SOCMin

- Fuel < fuelMin

EXPECTED OUTPUT:

- ICEdem == MGUdem == 0.

- When Brake > 0 MGUdem < 0

SOC and fuel are below the minimum and there is a request from
AccPedal. The system must provide zero output in this particular condition, but must also be able
to switch to Regenerative Braking when there comes BrakePedal request.

Test Case Information

Name: Test Case 6
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, whenever (AccPedal > 0) is true then, with no delay, (((ICEdem == 0) & (MGUdem == 0)) & (Brake == 0)) must be true
Assessment2	At any point in time, whenever (BrakePedal > 0) is true then, with a delay of at most 0.25 seconds, (Brake > 0) must be true
Assessment3	At any point in time, whenever (BrakePedal > 0) is true then, with a delay of at most 0.4 seconds, ((MGUdem < 0) & (MGUdem < 1)) must be true

Simulation

System Under Test Information

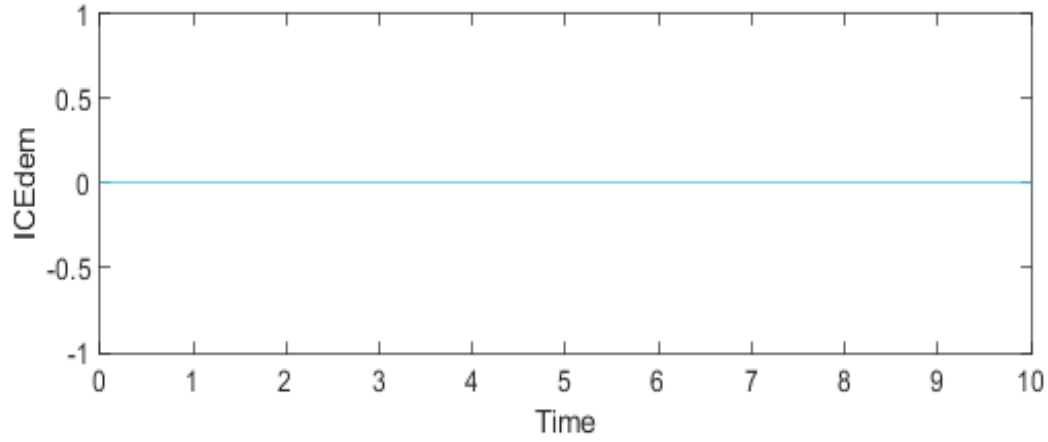
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario6.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario6.mat
Start Time:	0
Stop Time:	10
Checksum:	3931517516 1088101456 1799308556 3374006053
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete

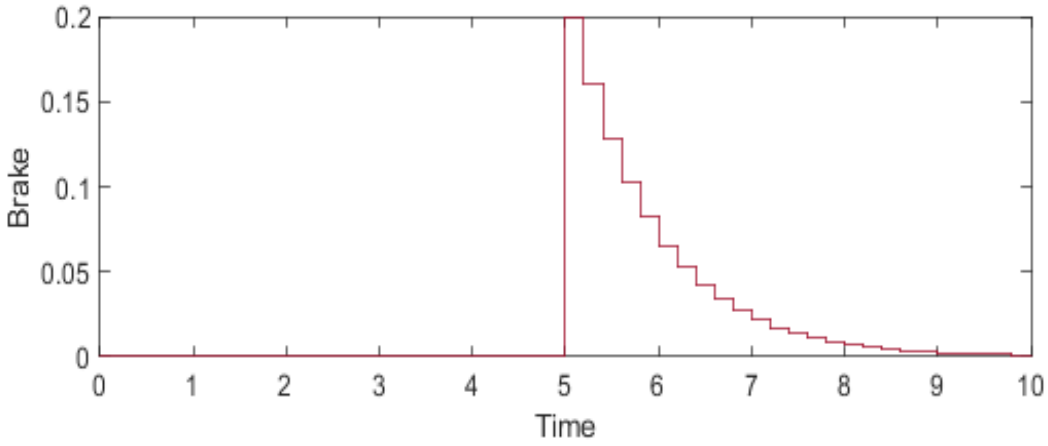
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:29
Simulation Stop Time:	2021-02-26 09:41:29
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link
AccPedal:1	double		Continuous	linear	union	Link
BrakePedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:2	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link

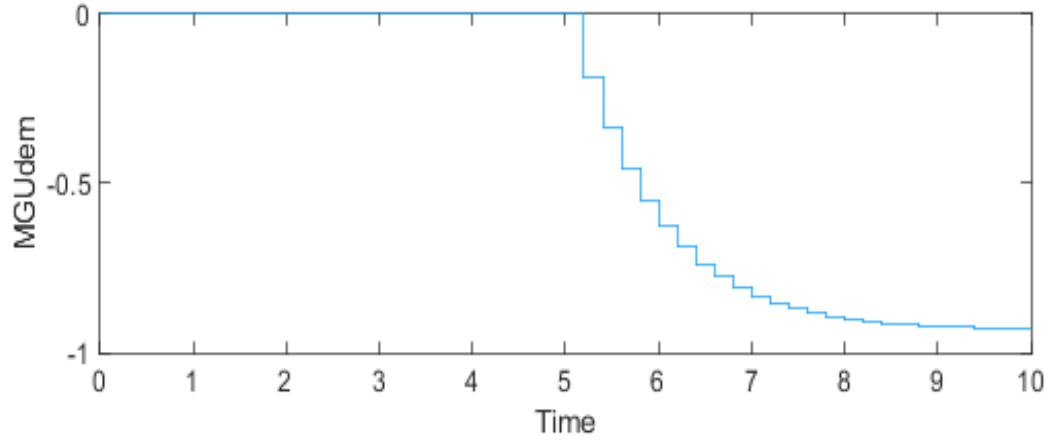
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

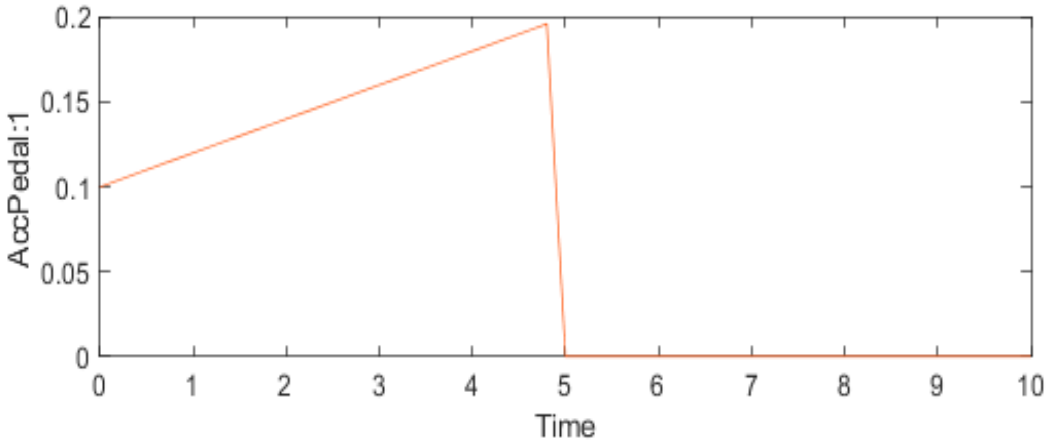




Back to Report SummaryBack to Signal Summary

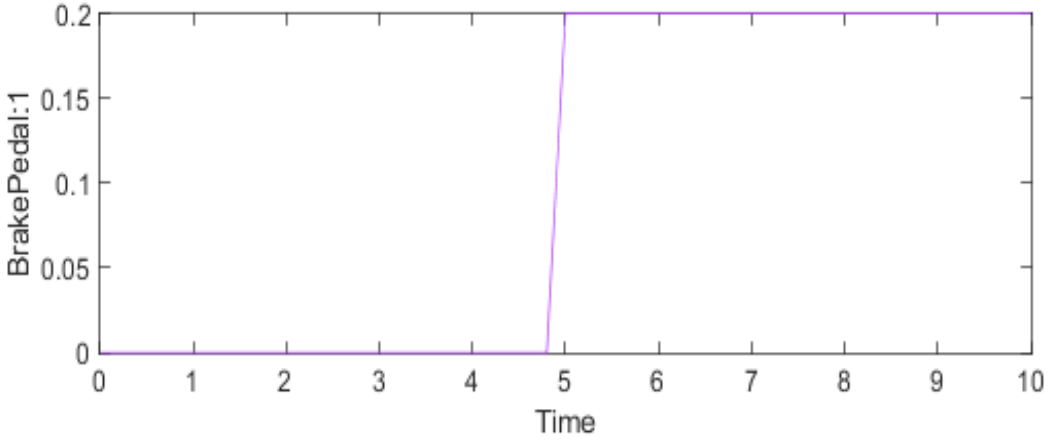
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

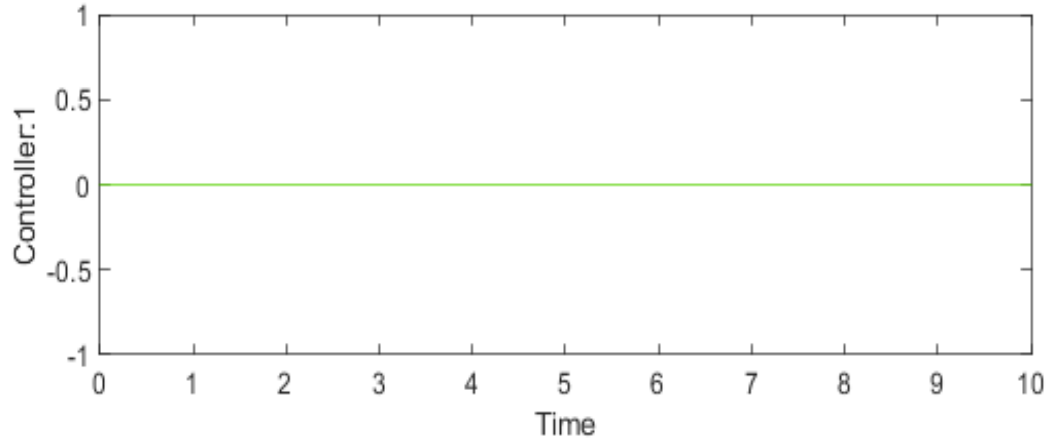




Back to Report SummaryBack to Signal Summary

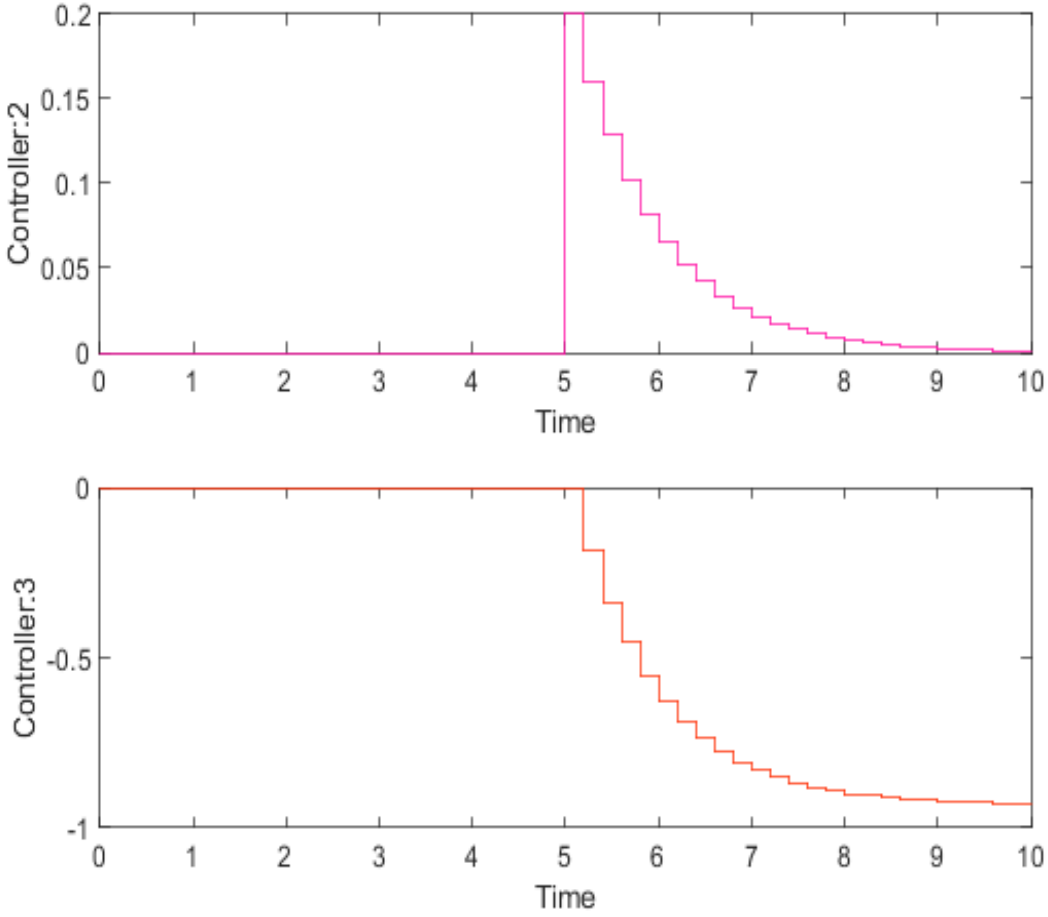
Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal:1	double		Continuous	linear	union
Controller:1	double		Continuous	zoh	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:2	double		Continuous	zoh	union
Controller:3	double		Continuous	zoh	union



Back to Report SummaryBack to Signal Summary

Test Case 7

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:30

End Time: 26-Feb-2021 09:41:31
Outcome: Passed
Description:

Scenario 7: Increasing speed

INPUTS conditions:

- request AccPedal

- Speed uniformely increasing up to above the MaxSpeedMGU

- BrakePedal: 0

- SOC > SOCMin

- Fuel > fuelMin

EXPECTED OUTPUT:

- ICEdem != 0

- MGUdem != 0

Vehicle is driving in a town environment at
low speed, then gets in an extraurban scenario, travelling at higher speed. Here the controller
shall be able to switch from Electrical drive to Combined mode, demanding torque to both engines.

Test Case Information

Name: Test Case 7
Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, whenever (RealSpeed > 45) is true then, with a delay of at most 0.4 seconds, (ICEdem > 0) must be true
Assessment2	At any point in time, whenever ((AccPedal > 0) & (RealSpeed > 45)) is true then, with a delay of at most 0.2 seconds, ((MGUdem > 0) & (ICEdem > 0)) must be true

Simulation

System Under Test Information

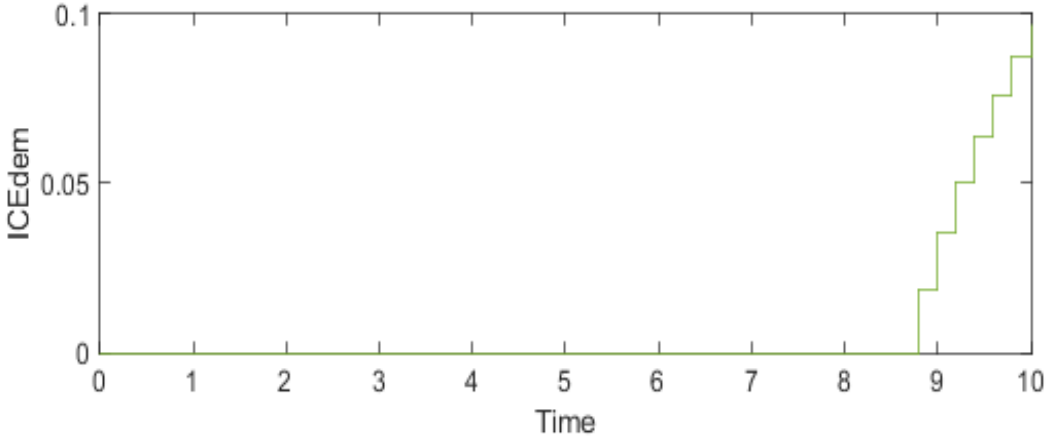
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario7.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario7.mat
Start Time:	0
Stop Time:	10
Checksum:	3417205651 2413878048 852539686 3491450584
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001

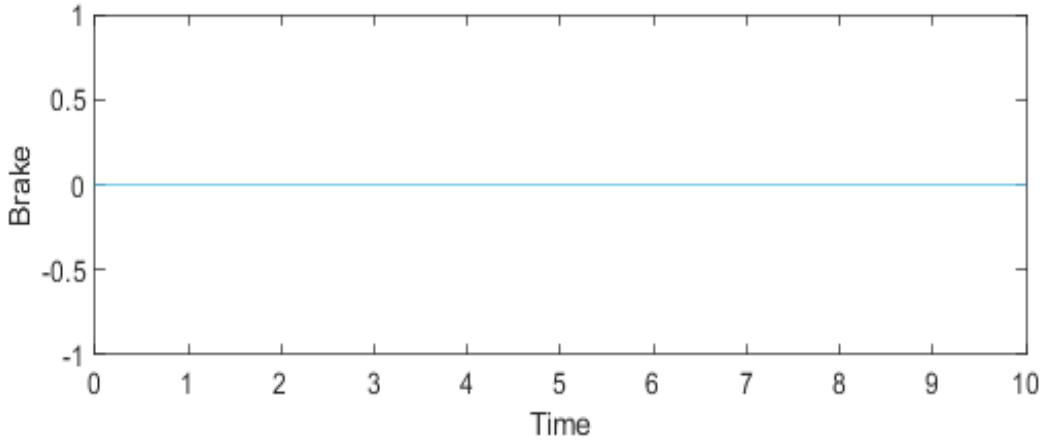
Simulation Start Time: 2021-02-26 09:41:30
Simulation Stop Time: 2021-02-26 09:41:30
Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link
AccPedal:1	double		Continuous	linear	union	Link
Controller:1	double		Continuous	zoh	union	Link
Controller:3	double		Continuous	zoh	union	Link
realSpeed:1	double		Continuous	linear	union	Link

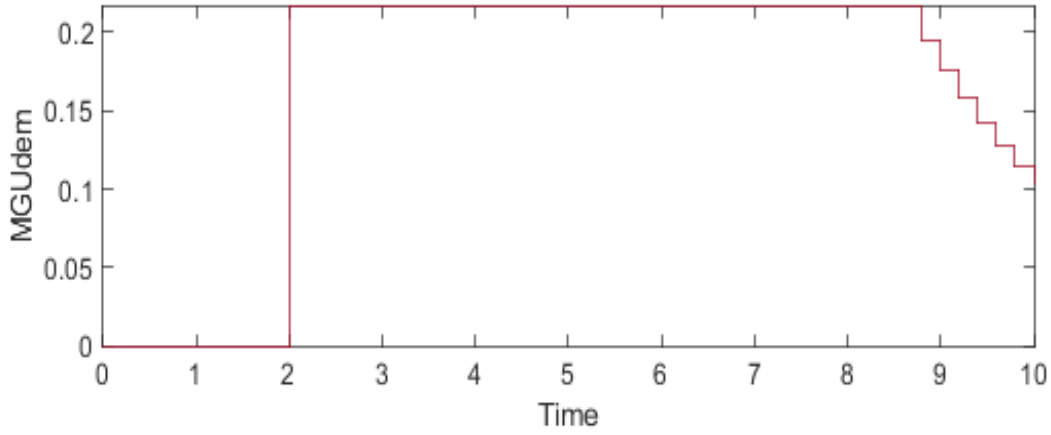
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

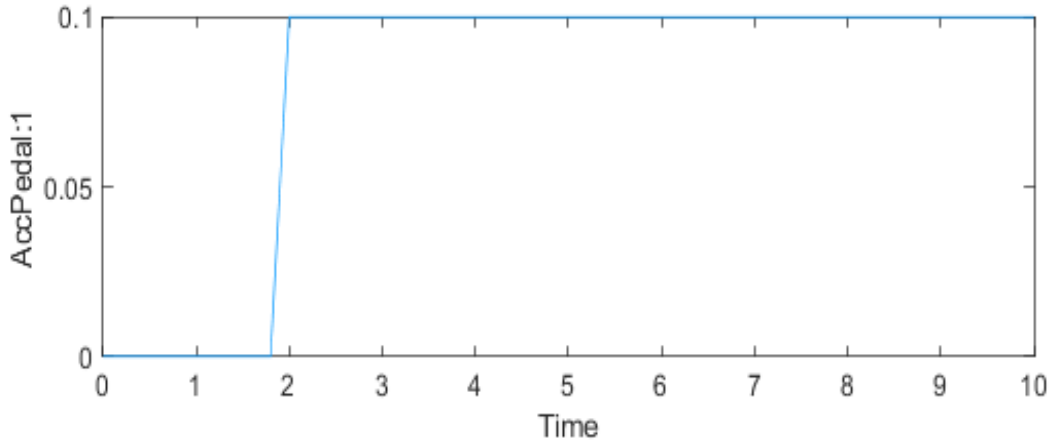




Back to Report SummaryBack to Signal Summary

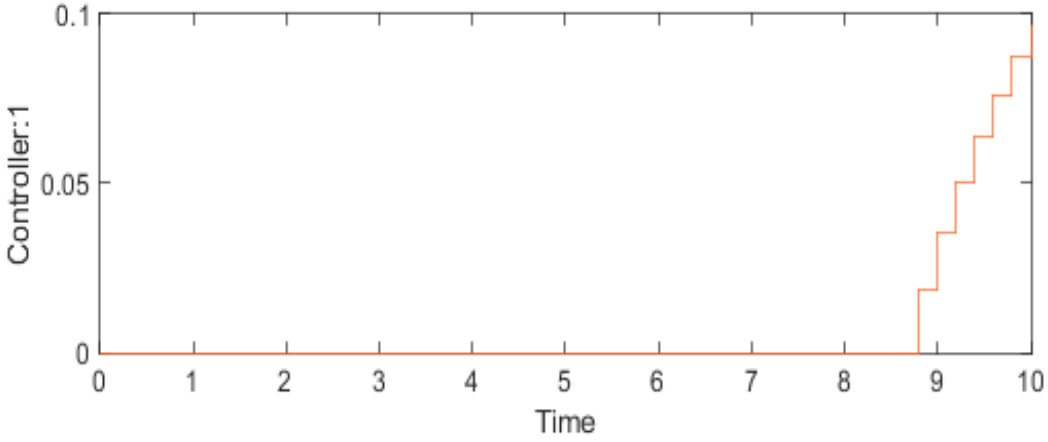
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

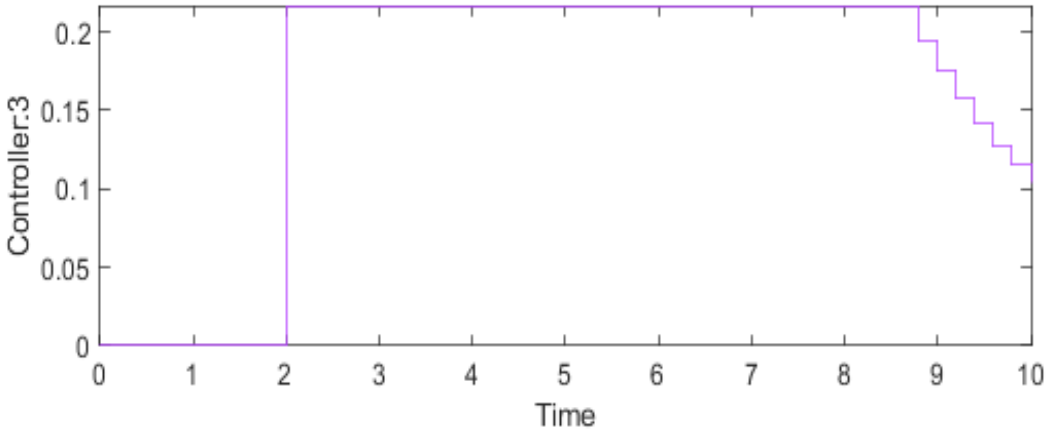




Back to Report SummaryBack to Signal Summary

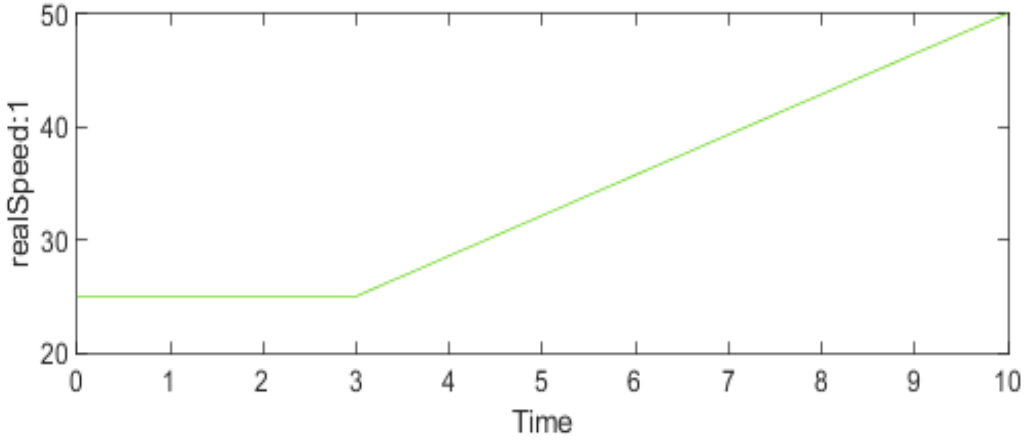
Name	Data Type	Units	Sample Time	Interp	Sync
Controller:1	double		Continuous	zoh	union
Controller:3	double		Continuous	zoh	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
realSpeed:1	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Test Case 8

Test Result Information

Result Type:	Test Case Result
Parent:	IntegrationTest Suite 1
Start Time:	26-Feb-2021 09:41:31

End Time: 26-Feb-2021 09:41:32
Outcome: Passed
Description:

Scenario 8: Recharging

INPUTS conditions:

- AccPedal:

  - request up to t = 5s

  - request between t = 7s and t = 10s

- Low Speed

- BrakePedal: request between at t = 5s and t =7s

- SOC < SOCMin until t = 7s

- Fuel > fuelMin

EXPECTED OUTPUT:

- SOC increasing

- When SOC > SOCmin, MGUdem != 0

Vehicle starts with an almost empty battery, using only the IC engine.
During the drive, the battery recharges through Regenerative Braking and when the State Of
Charge is sufficient, the controller can require torque to the MGU.

Test Case Information

Name: Test Case 8

Type: Simulation Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point in time, whenever ((SOC > 15) & (AccPedal > 0)) is true then, with a delay of at most 0.4 seconds, (MGUdem > 0) must be true

Simulation

System Under Test Information

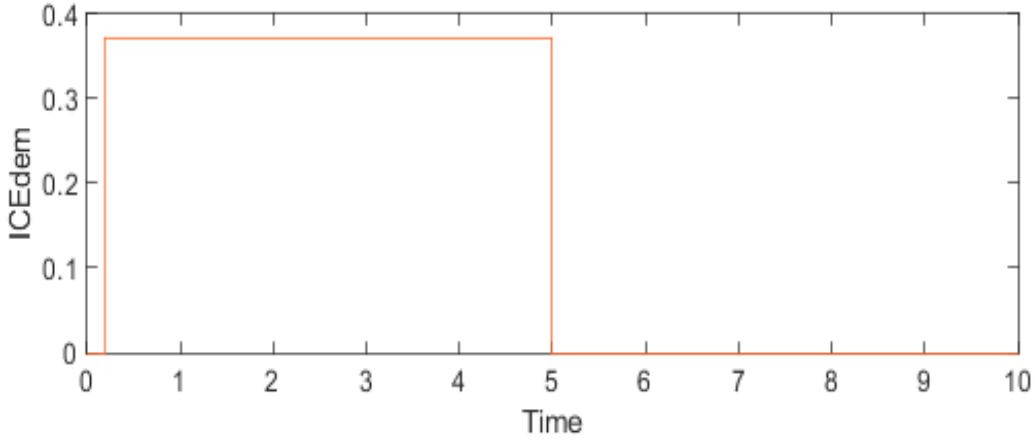
Model:	ControllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
External Input Name:	Scenario8.mat
External Input File:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\Inputs\Scenario8.mat
Start Time:	0
Stop Time:	10
Checksum:	3102339156 941945054 53118737 1700050336
Simulink Version:	10.2
Model Version:	1.9
Model Author:	mordi
Date:	Fri Feb 26 09:11:29 2021
User ID:	ivane
Model Path:	C:\Users\ivane\Documents\GitHub\hybrid-controller\Hybrid-controller\Test\Integration Test\ControllerModel.slx
Machine Name:	DESKTOP-MPG8QDG
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.20000000000000001
Simulation Start Time:	2021-02-26 09:41:31
Simulation Stop Time:	2021-02-26 09:41:31

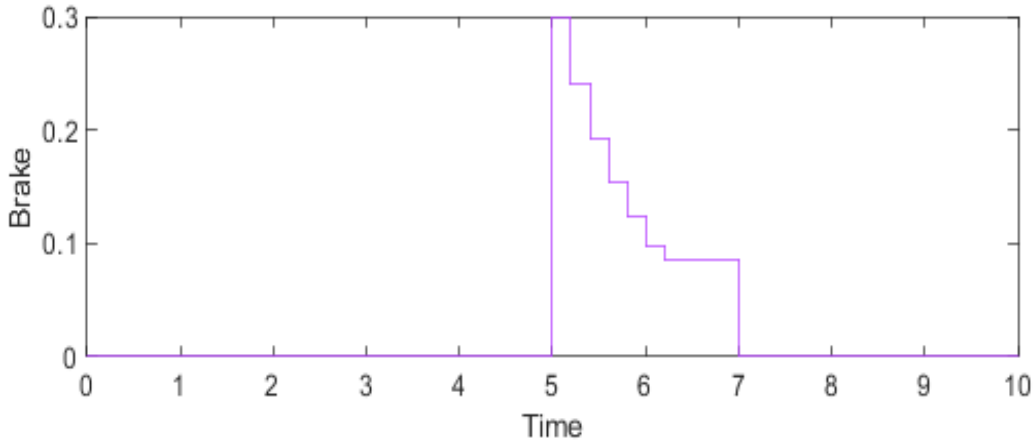
Platform: PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
ICEdem	double		Continuous	zoh	union	Link
Brake	double		Continuous	zoh	union	Link
MGUdem	double		Continuous	zoh	union	Link
AccPedal:1	double		Continuous	linear	union	Link
Controller:3	double		Continuous	zoh	union	Link
SOC:1	double		Continuous	linear	union	Link

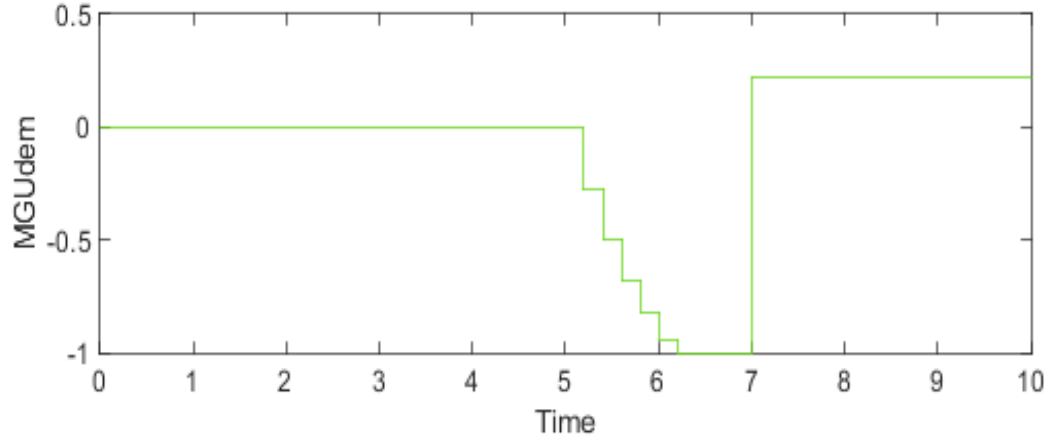
Name	Data Type	Units	Sample Time	Interp	Sync
ICEdem	double		Continuous	zoh	union
Brake	double		Continuous	zoh	union

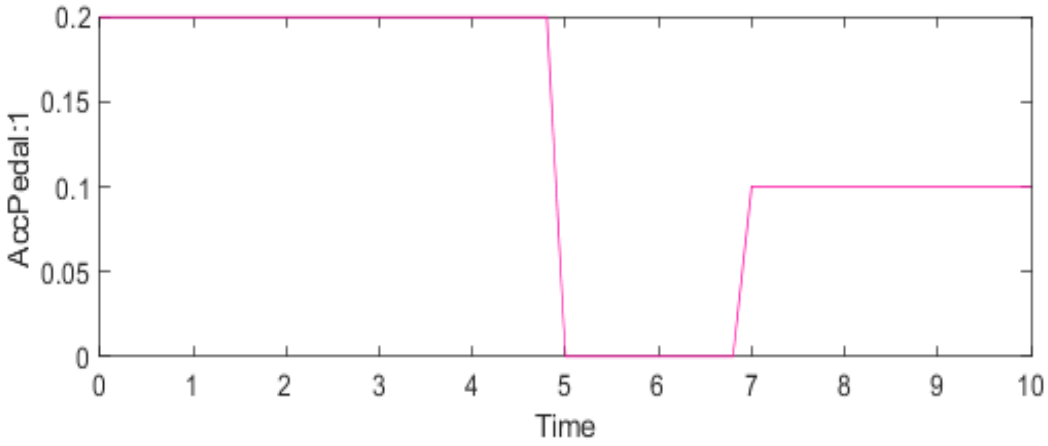




Back to Report SummaryBack to Signal Summary

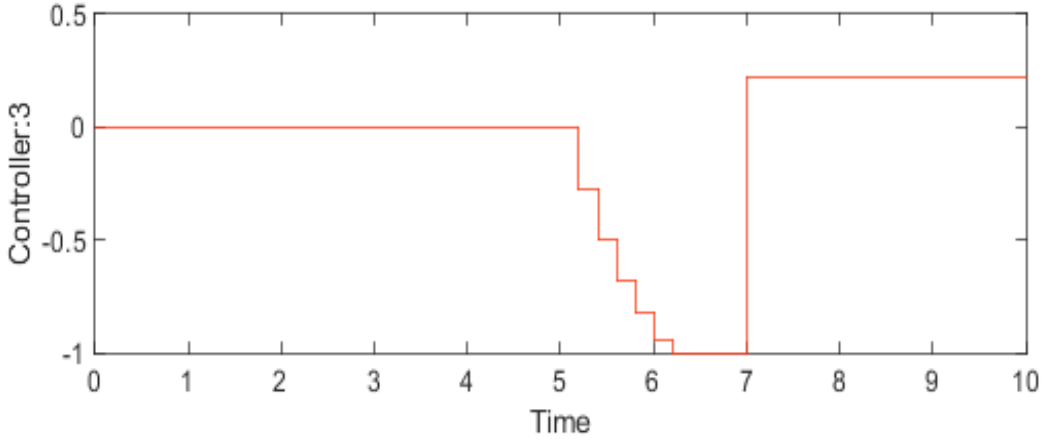
Name	Data Type	Units	Sample Time	Interp	Sync
MGUdem	double		Continuous	zoh	union
AccPedal:1	double		Continuous	linear	union

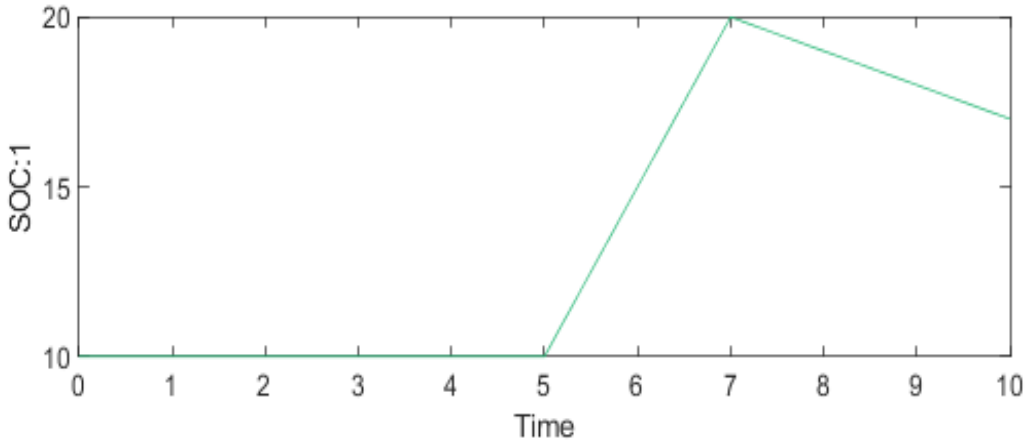




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
Controller:3	double		Continuous	zoh	union
SOC:1	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary