Report Generated by Test Manager

Title: TestResults
Author: CoDeAs team 2
Date: 11-Feb-2021 19:58:44

Test Environment

Platform: PCWIN64
MATLAB: (R2020b)

Summary

Name	Outcome	Duration (Seconds)
Results: 2021-Feb-11 19:57:04	11 ✓	14.17
controllerTest	11 ✓	14.17
No Charge	✓	1.027
Scenario 10	✓	1.027
Dead	✓	1.397
Scenario9	✓	1.398
Combined	4 ✓	5.29
Scenario 1	✓	1.097
Scenario2	✓	1.184
Scenario3	✓	1.117
Scenario4	✓	1.764
Regenerative Braking	4 ✓	5.006
Scenario5	✓	1.234
Scenario6	✓	1.247
Scenario7	✓	1.112
Scenario8	✓	1.343
Electrical Drive	✓	1.236
Scenario11	✓	1.236

Results: 2021-Feb-11 19:57:04

Result Type:	Result Set
Parent:	None
Start Time:	11-Feb-2021 19:57:05
End Time:	11-Feb-2021 19:57:19
Outcome:	Total: 11, Passed: 11

Back to Report Summary

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controllerTest

Test Result Information

Result Type:	Test File Result
Parent:	Results: 2021-Feb-11 19:57:04
Start Time:	11-Feb-2021 19:57:05
End Time:	11-Feb-2021 19:57:19
Outcome:	Total: 11, Passed: 11

Test Suite Information

Name: controllerTest

Back to Report Summary

No Charge

Test Result Information

Result Type:	Test Suite Result
Parent:	controllerTest
Start Time:	11-Feb-2021 19:57:05
End Time:	11-Feb-2021 19:57:06
Outcome:	Total: 1, Passed: 1

Test Suite Information

Name: No Charge

Back to Report Summary

Scenario 10

Test Result Information

Result Type:	Test Case Result
Parent:	No Charge
Start Time:	11-Feb-2021 19:57:05
End Time:	11-Feb-2021 19:57:06
Outcome:	Passed
Description:	

State = no charge

AccPedal = exponential growth and decay over time

BrakePedal = 0

SOC = between 0 and 0.1

Test Case Information

Name:	Scenario 10
Type:	Baseline Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point of time, ((ICreq <= AccPedal) | (ICreq <= 1)) must be true

Input Data

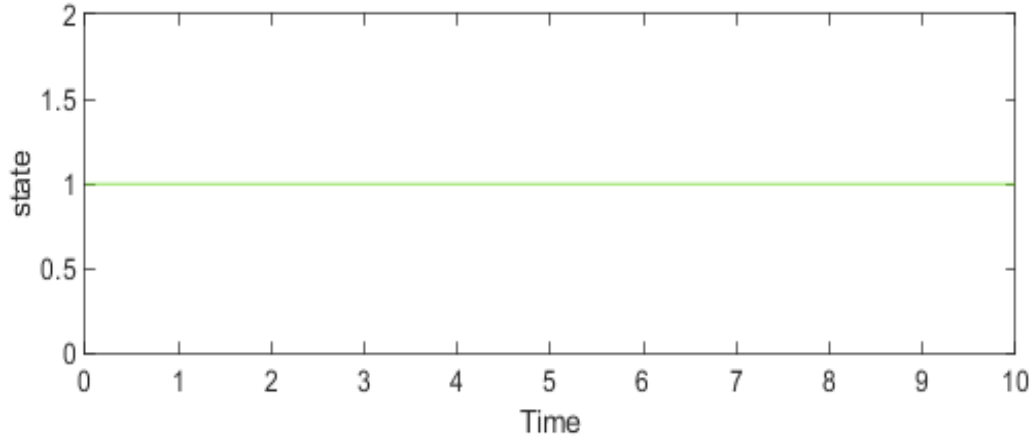
Input Information

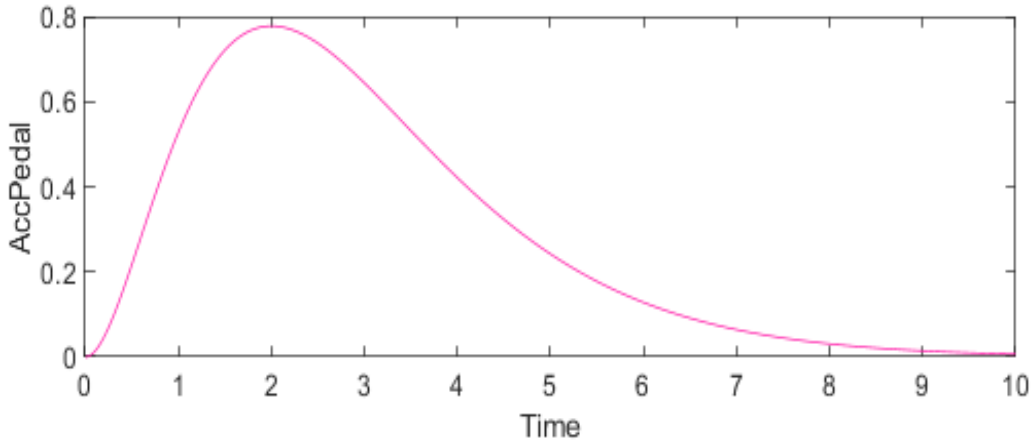
External Input Name:	controllerInputs10.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-

controller\Test\ControllerTest\testScenarios\controllerInputs10.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

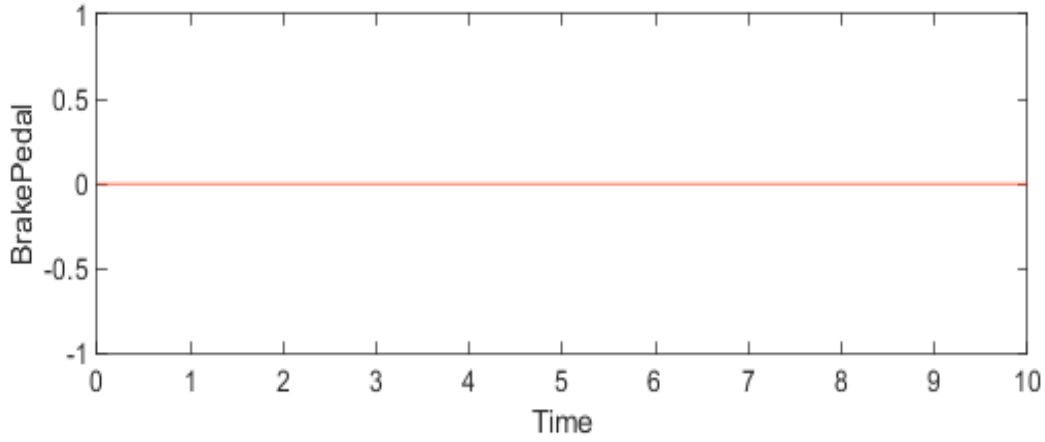
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

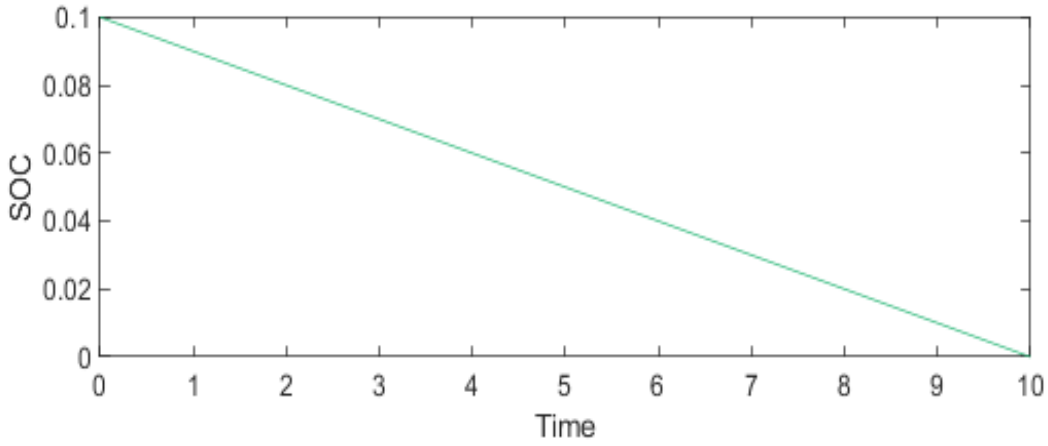




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

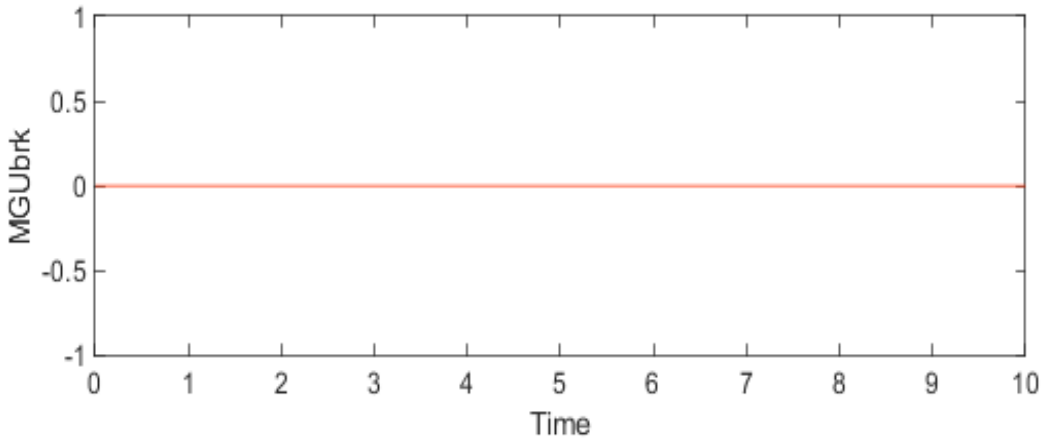
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

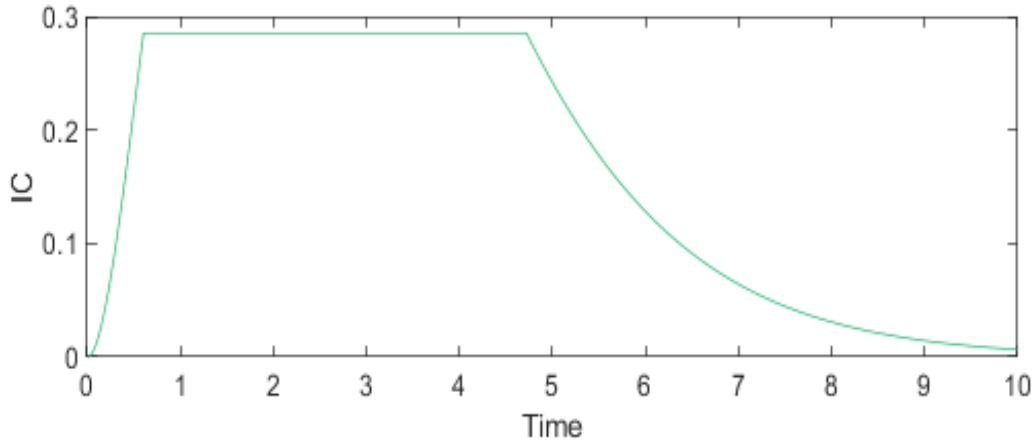
Configuration Set:	Configuration
External Input Name:	controllerInputs10.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs10.mat
Start Time:	0
Stop Time:	10
Checksum:	845622032 1545117639 3135930151 3593435725
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:05
Simulation Stop Time:	2021-02-11 19:57:05
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

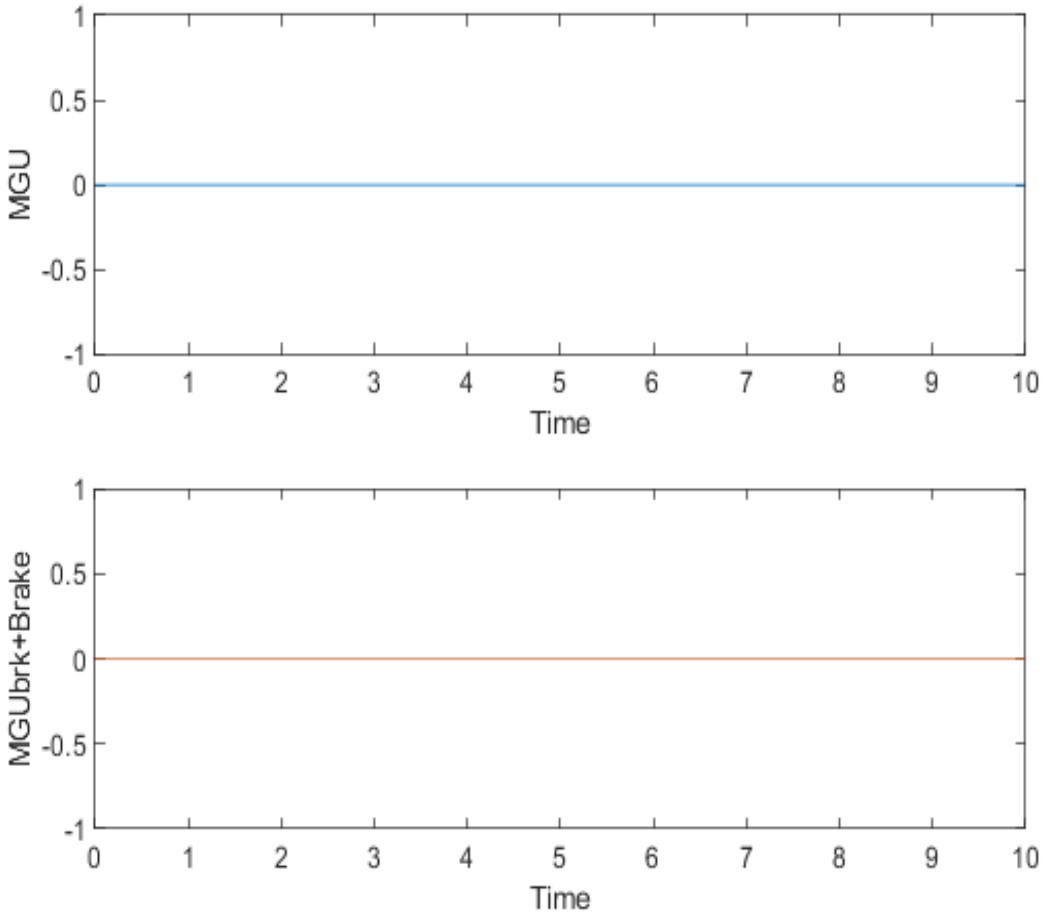




Back to Report SummaryBack to Signal Summary

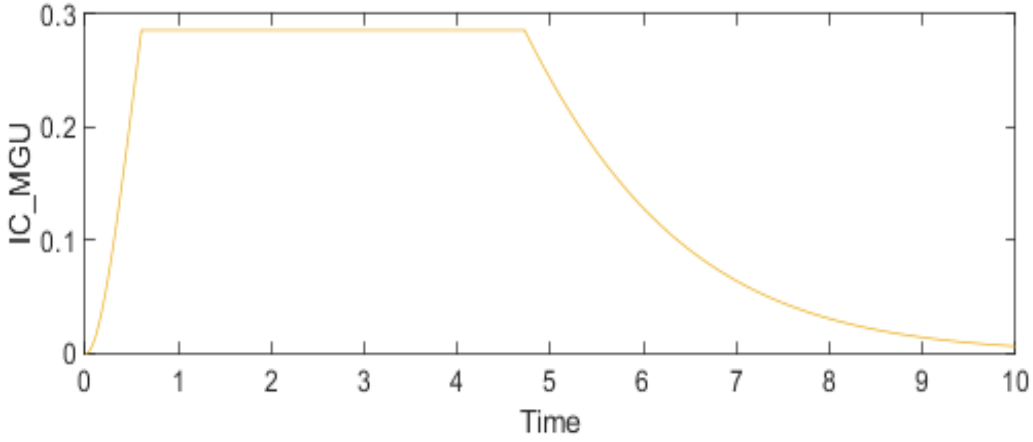
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union

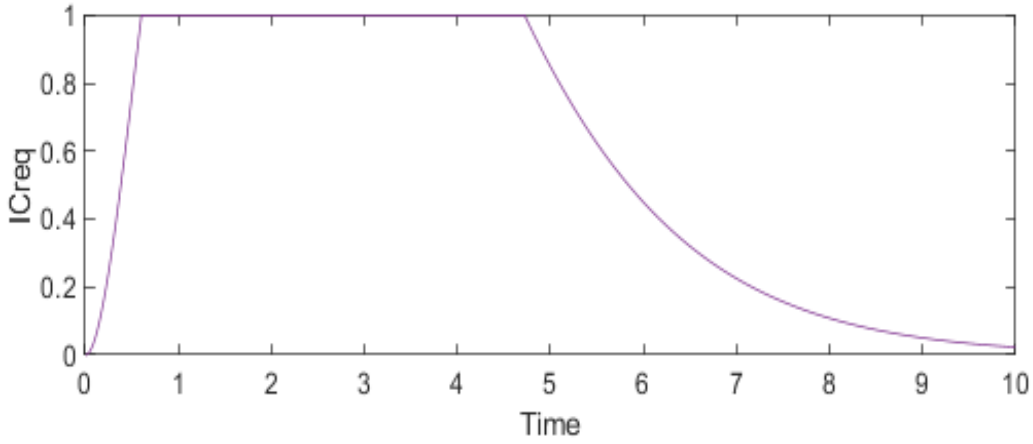
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

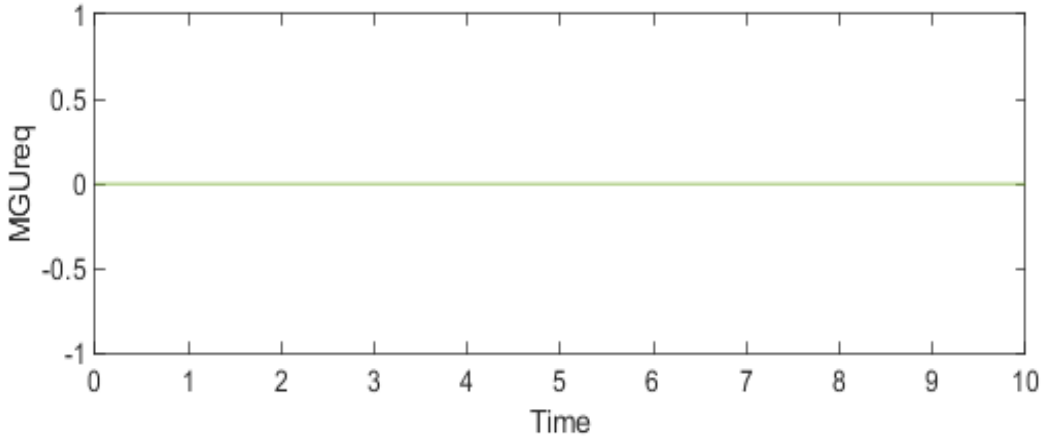
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

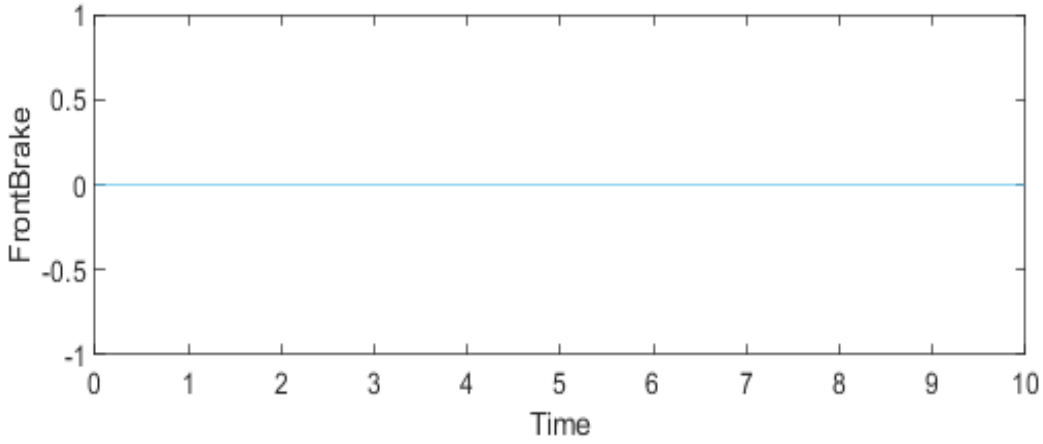




Back to Report SummaryBack to Signal Summary

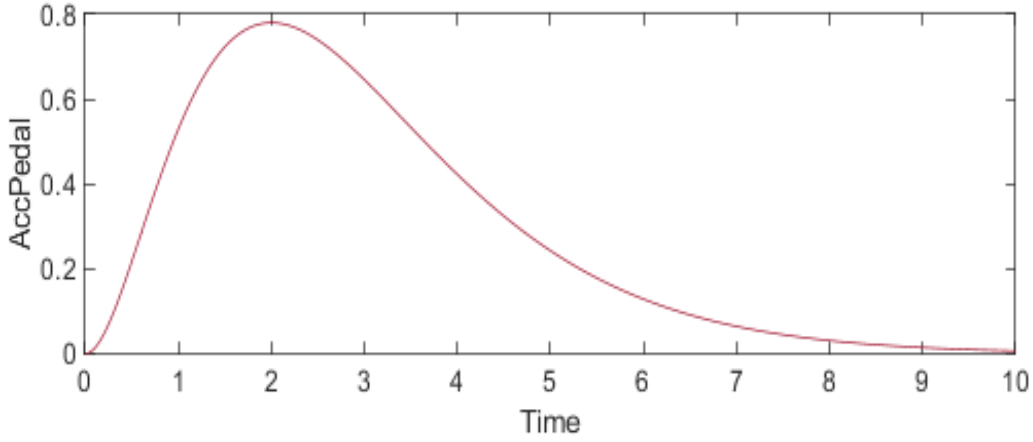
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union

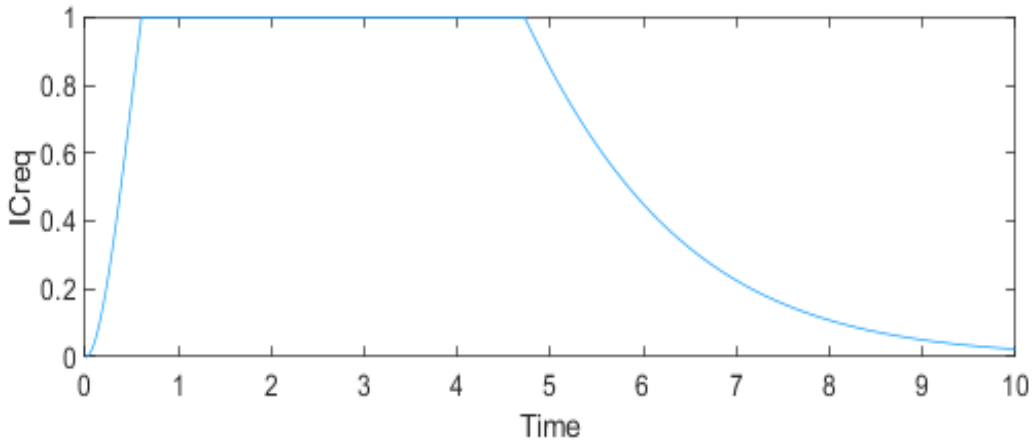




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
AccPedal	double		Continuous	linear	union
ICreq	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Test Logs:
No baseline criteria evaluation performed as no baseline data is available for this test.

Back to Report Summary

Dead

Test Result Information

Result Type:	Test Suite Result
Parent:	controllerTest
Start Time:	11-Feb-2021 19:57:06
End Time:	11-Feb-2021 19:57:07
Outcome:	Total: 1, Passed: 1
Description:	

Dead case suite of tests

Test Suite Information

Name:	Dead

Back to Report Summary

Scenario9

Test Result Information

Result Type:	Test Case Result
Parent:	Dead
Start Time:	11-Feb-2021 19:57:06
End Time:	11-Feb-2021 19:57:07
Outcome:	Passed
Description:	

Scenario 9:

State = dead

AccPedal = exp growth and decay

BrakePedal = 0

SOC = from 0.1 to 0

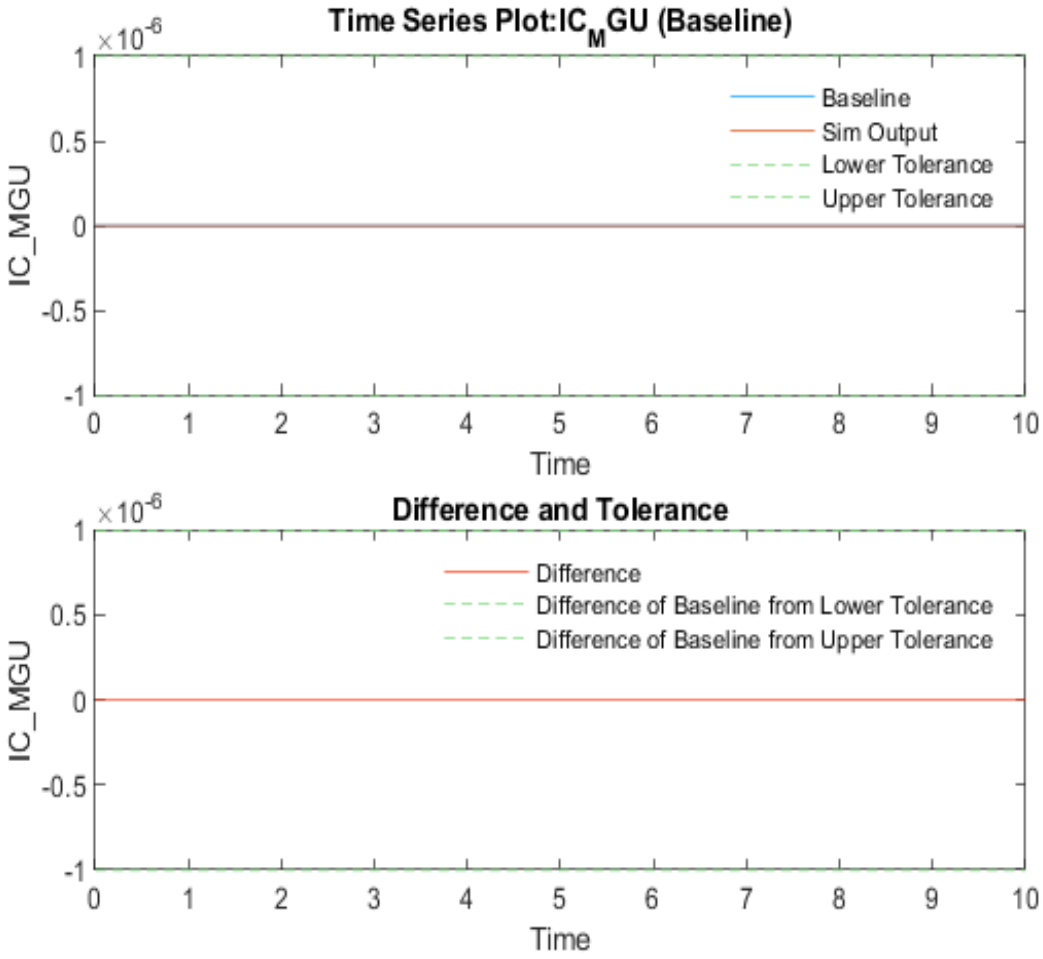
Test Case Information

Name:	Scenario9
Type:	Baseline Test
Baseline Name:	Dead_baseline.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Dead_baseline.mat

Baseline Comparison

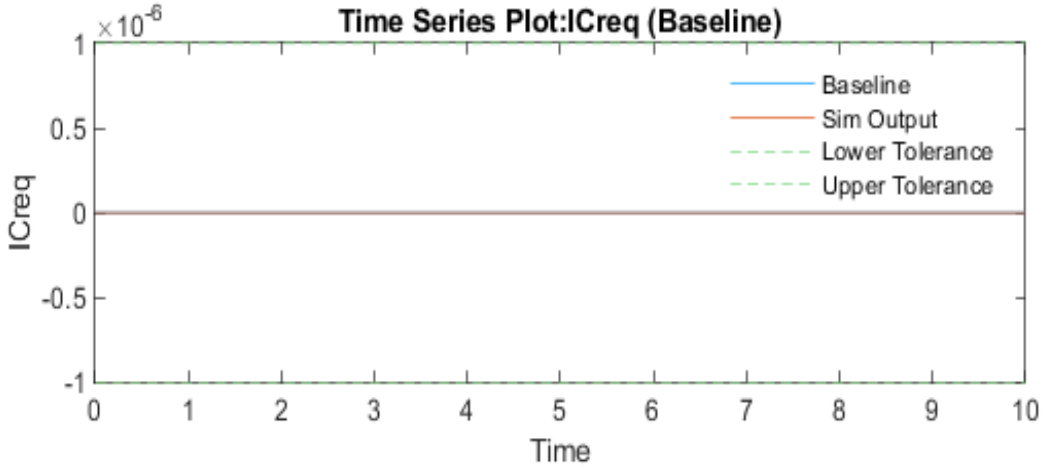
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync	Link to Plot
IC_MGU	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link
ICreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link
MGUreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link
IC	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link
MGU	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link
MGUreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union	Link

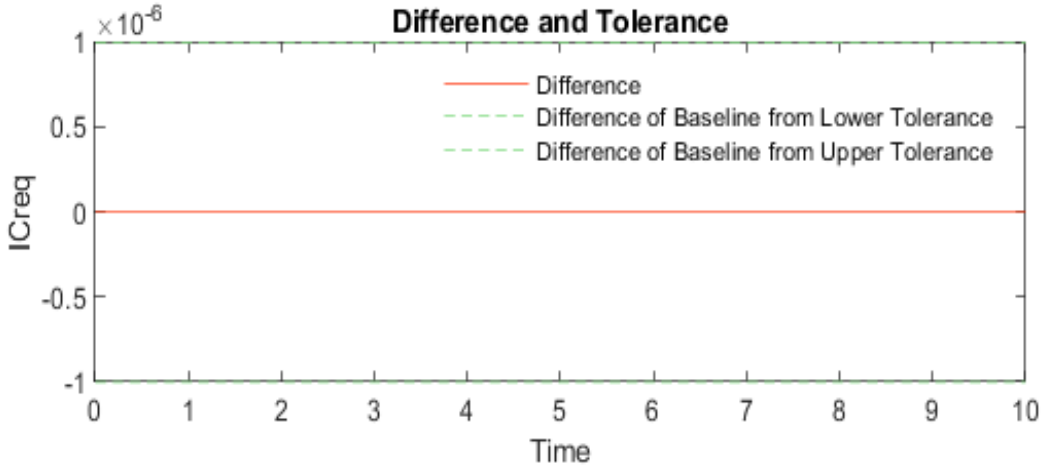
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
IC_MGU	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

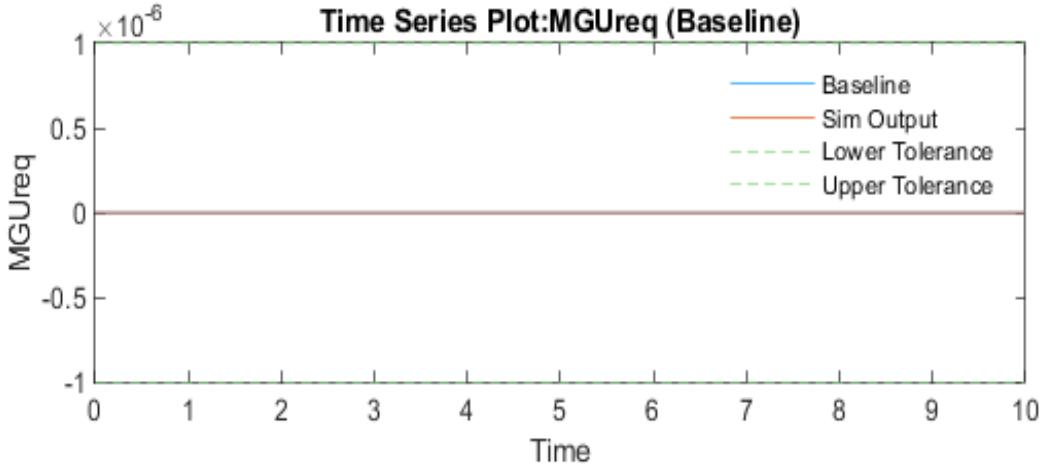
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
ICreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union

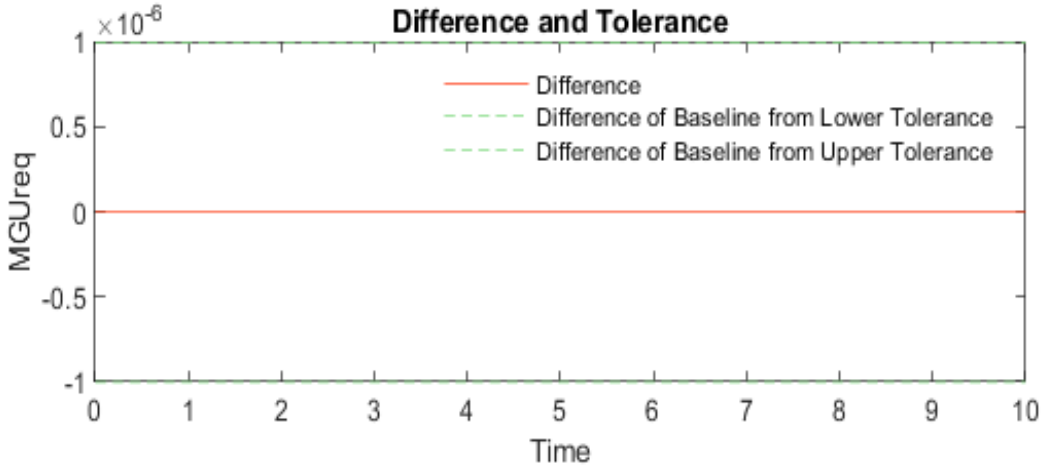




Back to Report SummaryBack to Criteria Results

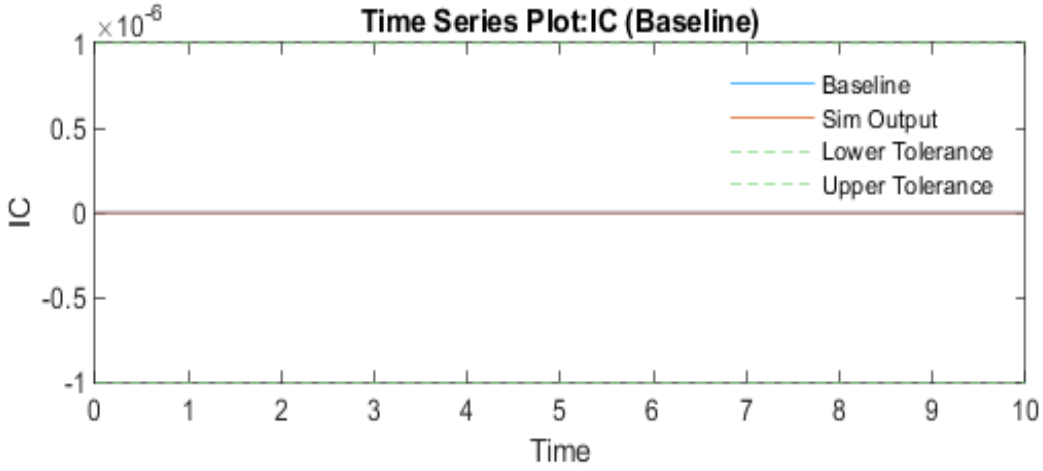
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
MGUreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union

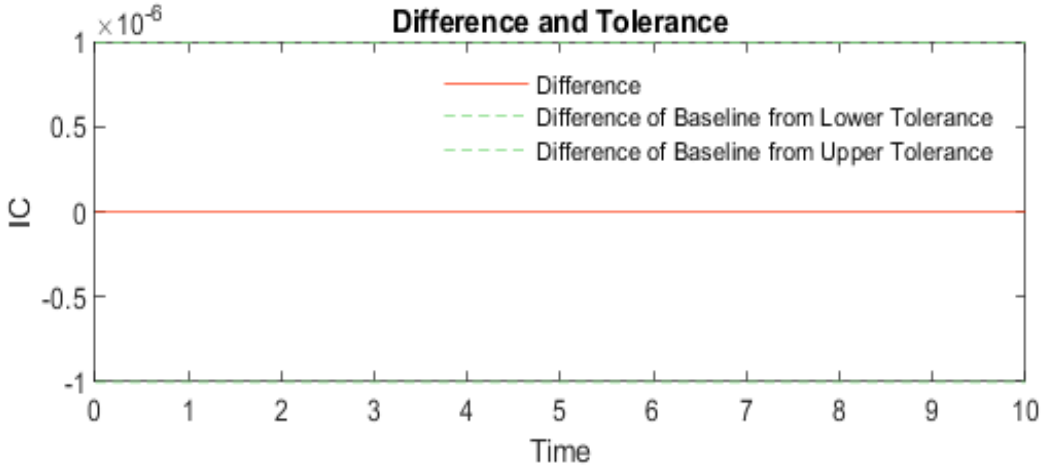




Back to Report SummaryBack to Criteria Results

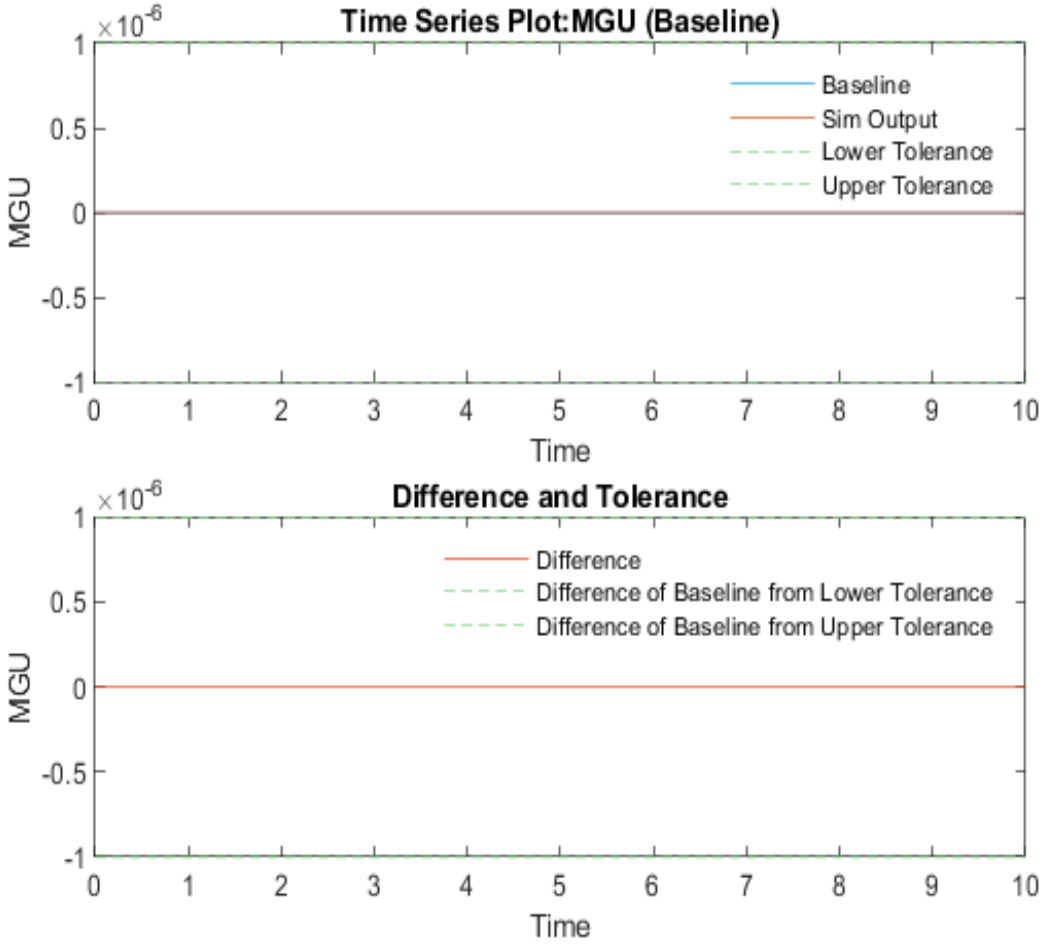
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
IC	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union





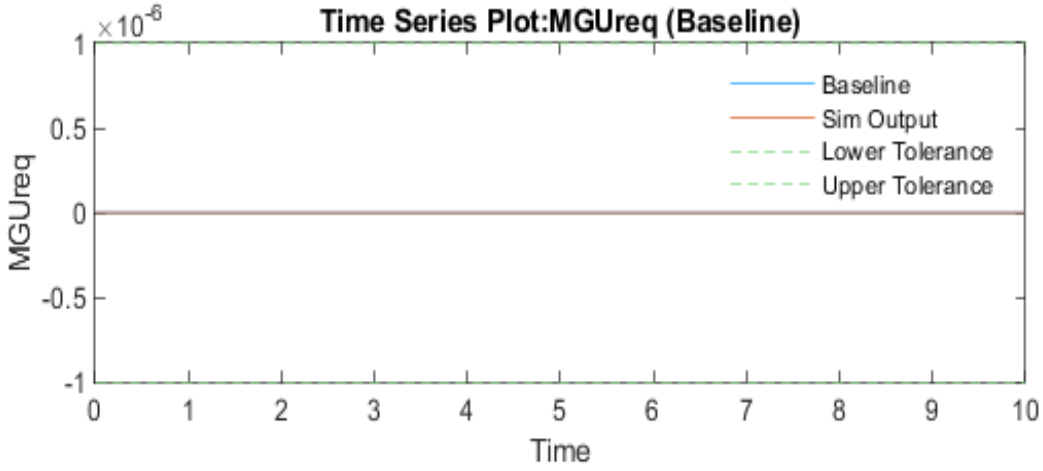
Back to Report SummaryBack to Criteria Results

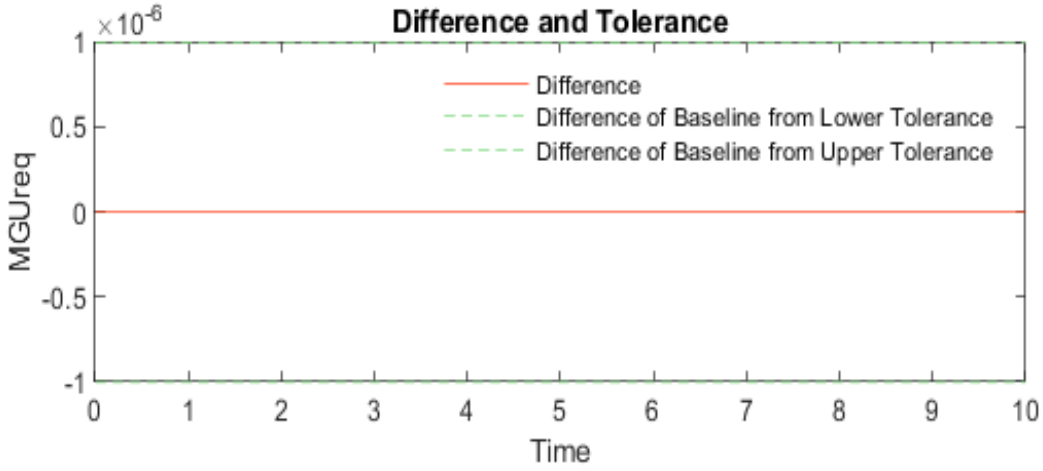
Name	Abs Tol	Rel Tol	Lead Tol	Lag Tol	Max Diff	Data Type 1	Units 1	Sample Time 1	Data Type 2	Units 2	Sample Time 2	Interp	Sync
MGU	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

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
MGUreq	1e-06	1e-06	0	0	0	double		Continuous	double		Continuous	linear	union





Back to Report SummaryBack to Criteria Results

Input Data

Input Information

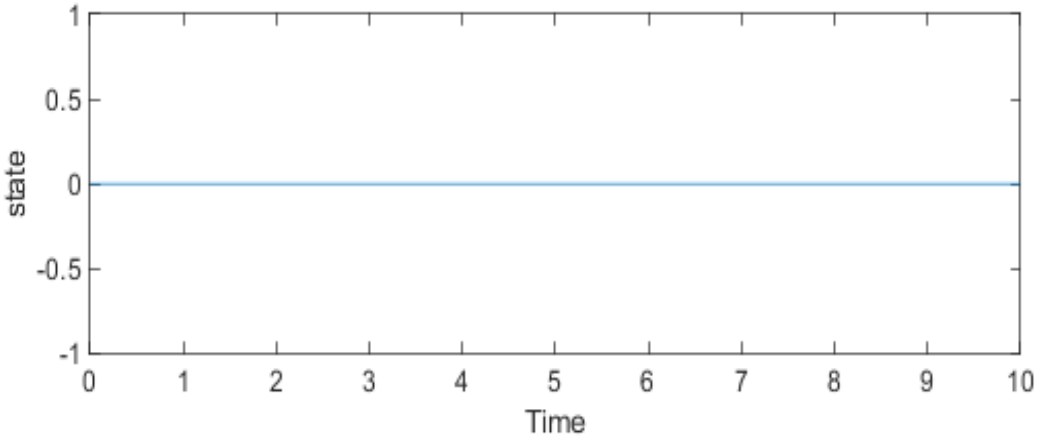
External Input Name: controllerInputs9.mat

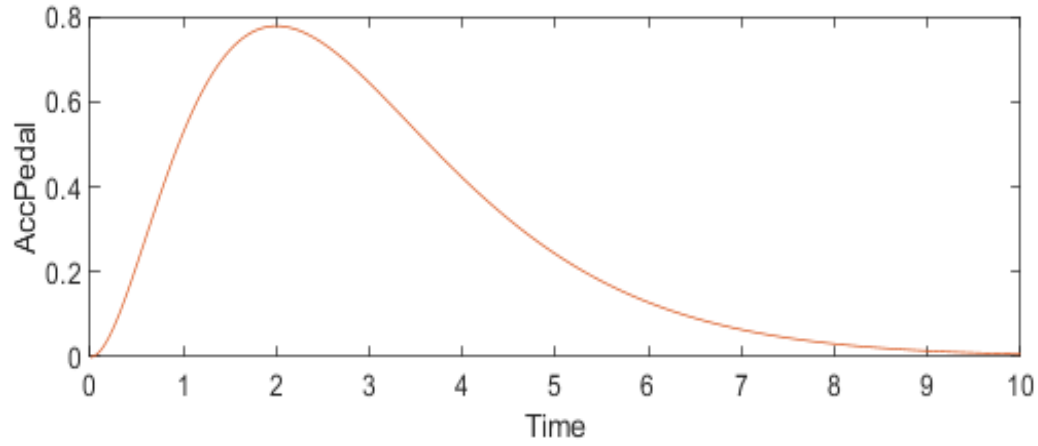
External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-

controller\Test\ControllerTest\testScenarios\controllerInputs9.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

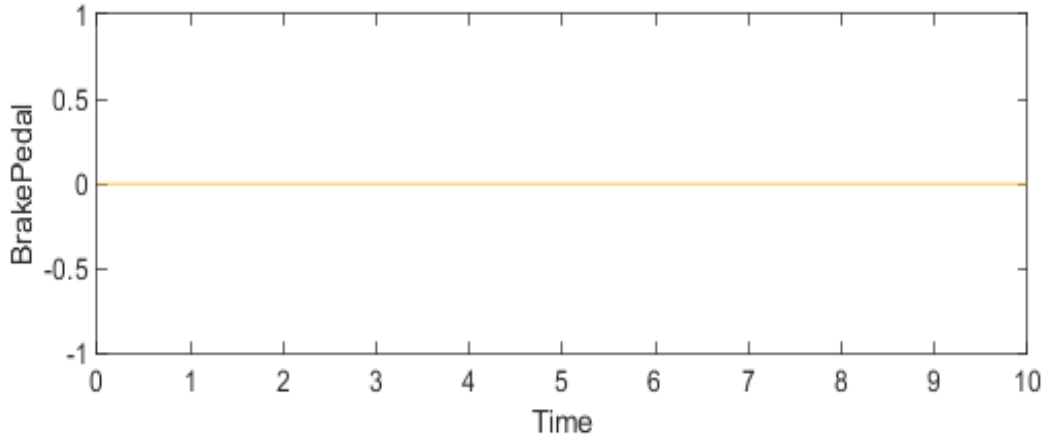
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

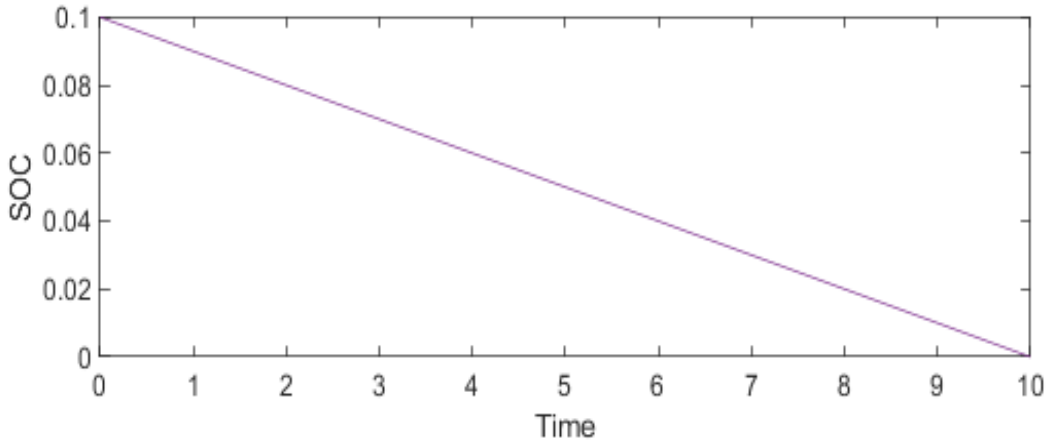




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

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

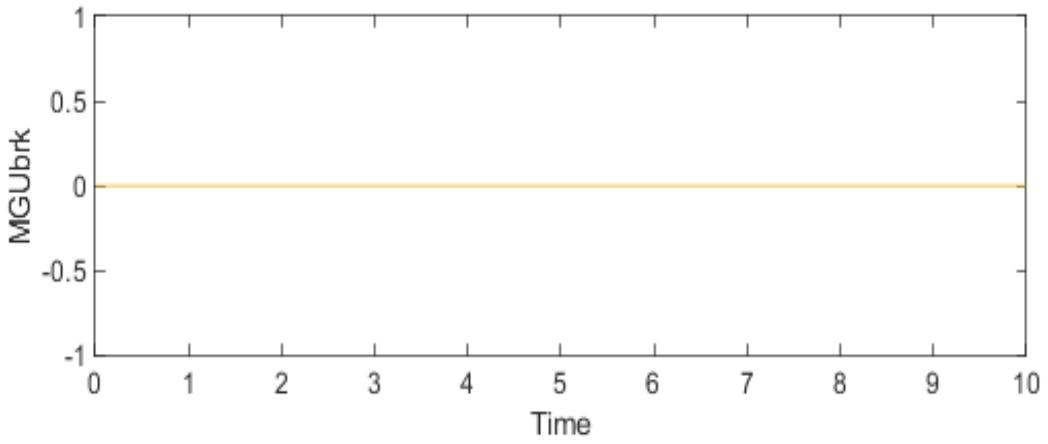
Configuration Set:	Configuration
External Input Name:	controllerInputs9.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs9.mat
Start Time:	0
Stop Time:	10
Checksum:	1287163782 373983747 439209516 3247550277
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:06
Simulation Stop Time:	2021-02-11 19:57:07
Platform:	PCWIN64

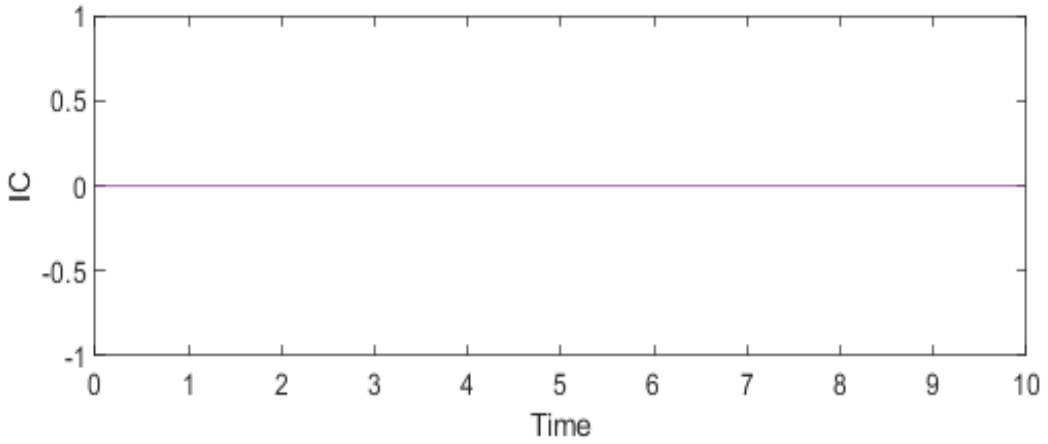
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link

MGUreq	double		Continuous	linear	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

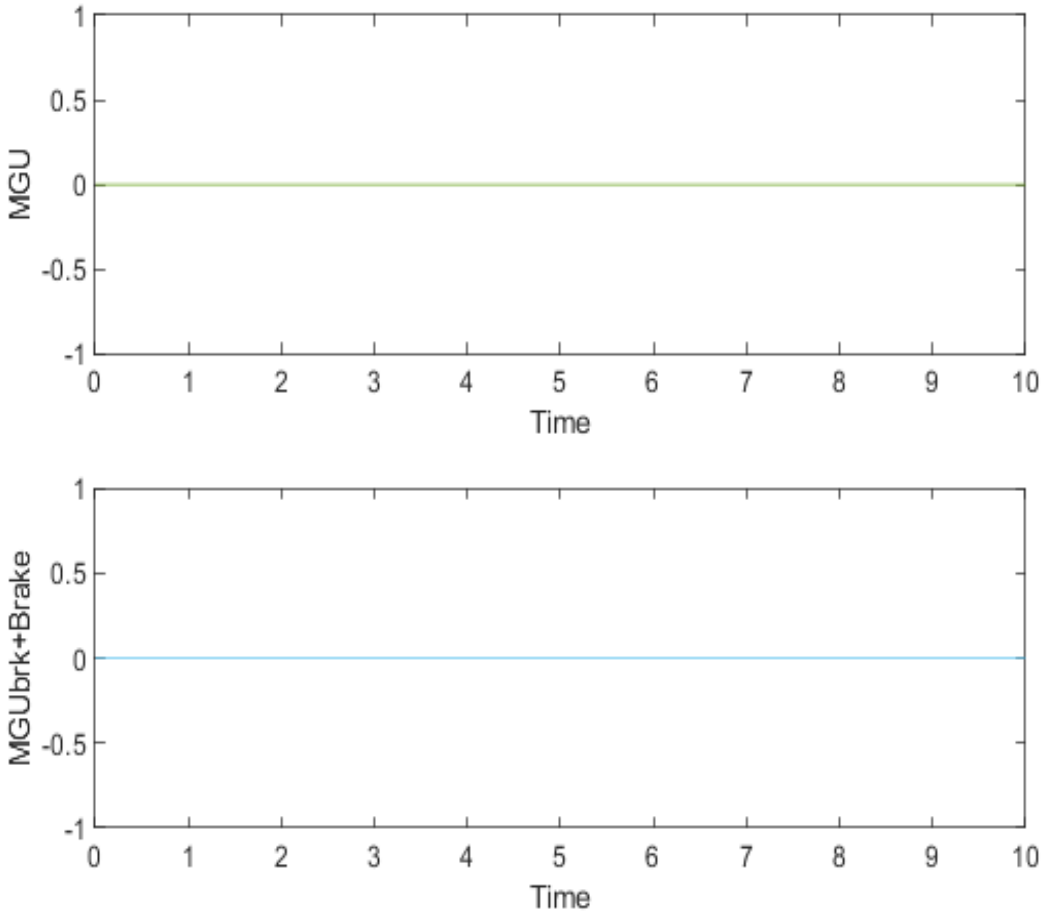




Back to Report SummaryBack to Signal Summary

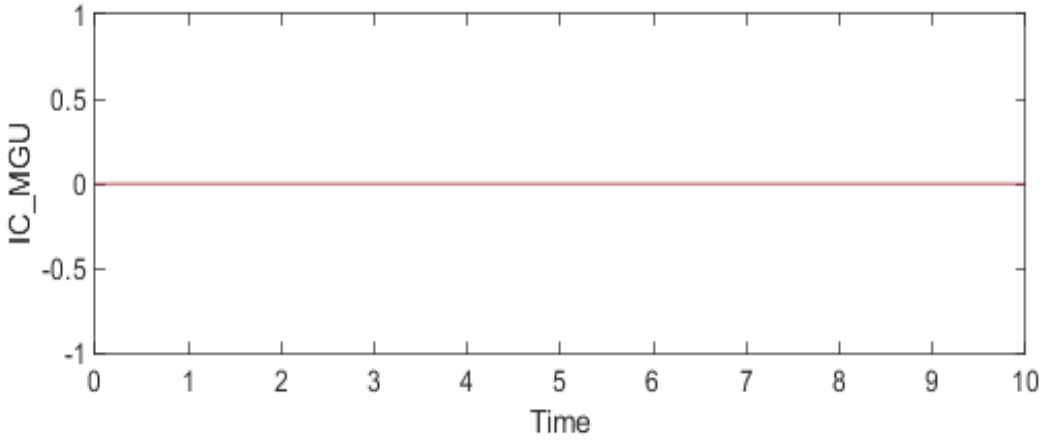
Name	Data Type	Units	Sample Time	Interp	Sync

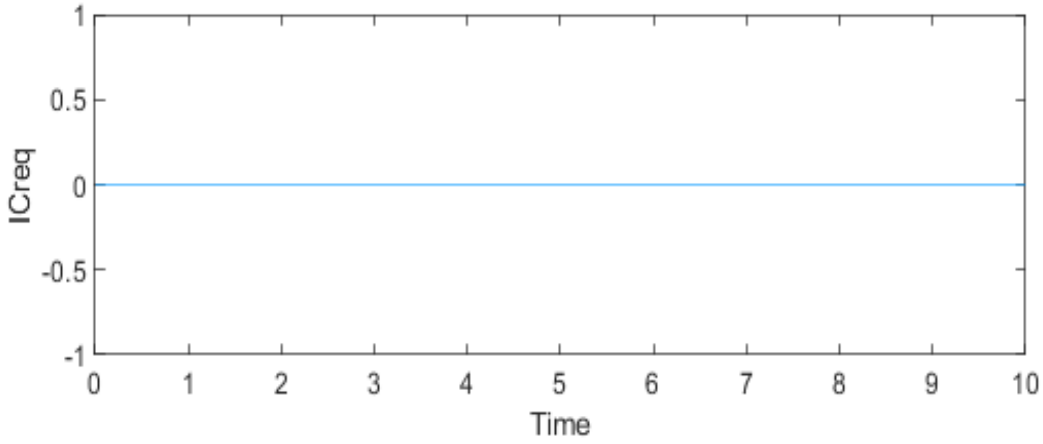
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

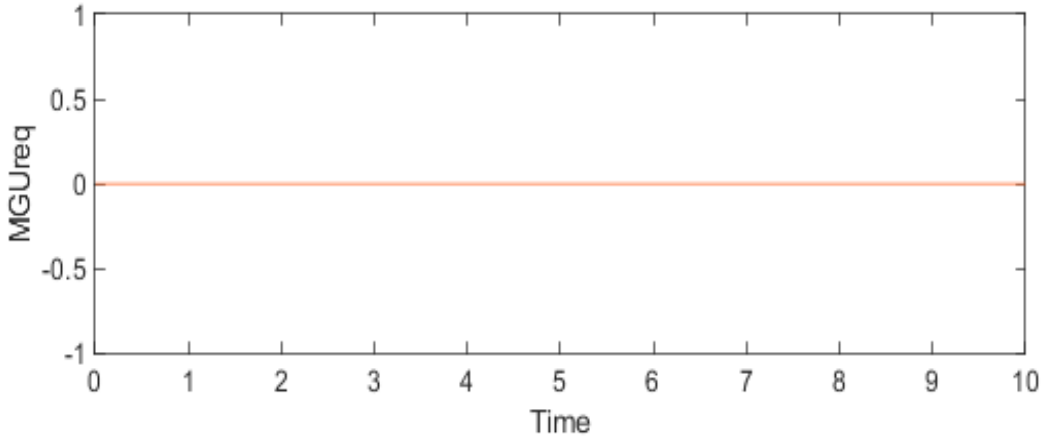
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

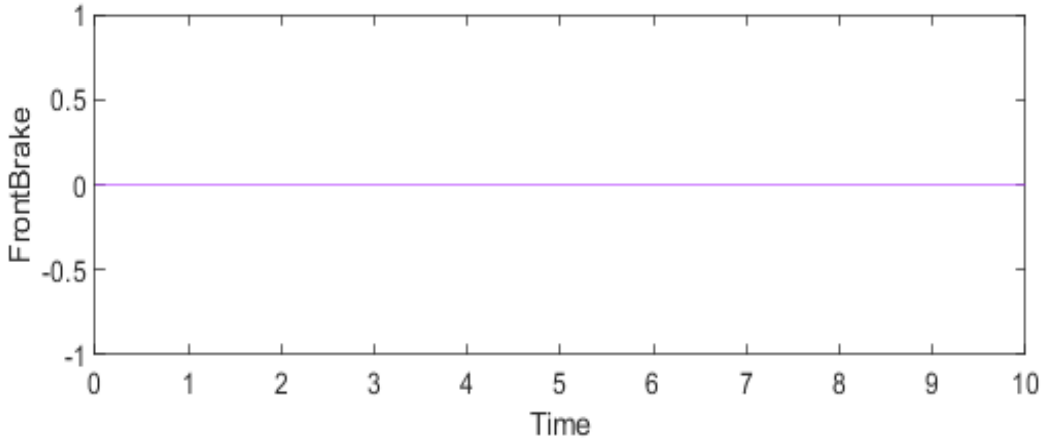




Back to Report SummaryBack to Signal Summary

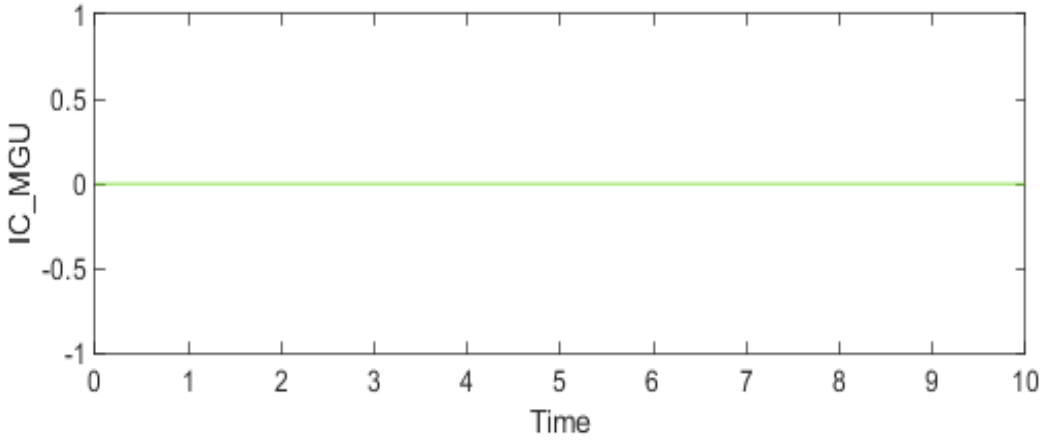
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union

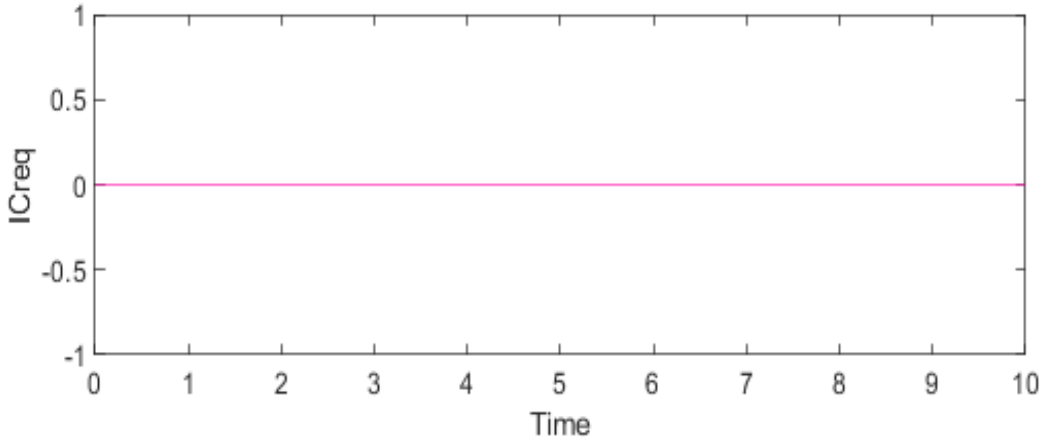




Back to Report SummaryBack to Signal Summary

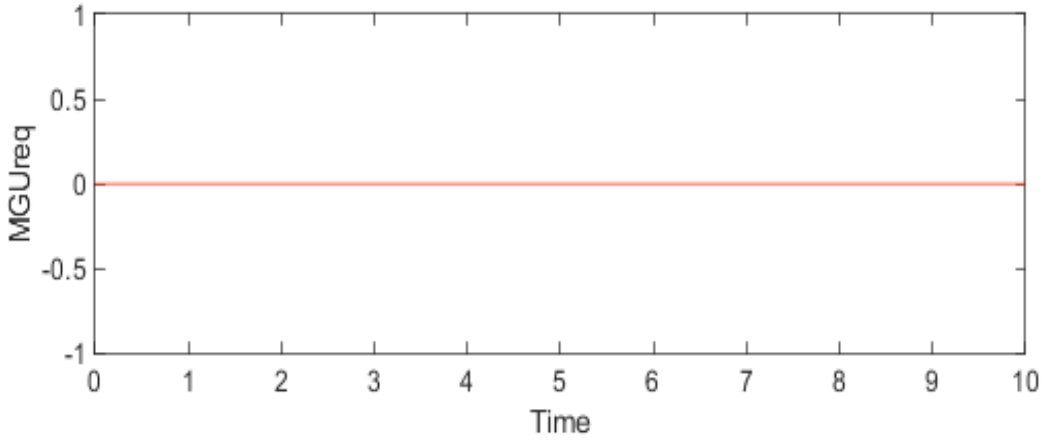
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Test Logs:
Some of the signals specified in baseline criteria were not found in the file located at 'C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Dead_baseline.mat':
Name: MGUreq **Data Source:** data.getElement(7).Values.Data
Name: MGUbrk **Data Source:** data.getElement(8).Values.Data
Name: FrontBrake **Data Source:** data.getElement(9).Values.Data
Name: MGUbrk+Brake **Data Source:** data.getElement(10).Values.Data
You may have updated the baseline file with new set of signals. Try to add the baseline file again to the test to get the updated signal list.

Back to Report Summary

Combined

Test Result Information

Result Type:	Test Suite Result
Parent:	controllerTest
Start Time:	11-Feb-2021 19:57:07
End Time:	11-Feb-2021 19:57:13
Outcome:	Total: 4, Passed: 4
Description:	

Combined case suite of tests

Test Suite Information

Name:	Combined

Back to Report Summary

Scenario 1

Test Result Information

Result Type:	Test Case Result
Parent:	Combined
Start Time:	11-Feb-2021 19:57:07
End Time:	11-Feb-2021 19:57:08
Outcome:	Passed
Description:	

Scenario 1:

State = combined

AccPedal = pulse signal of amplitude 0.5, width 0.5 and period 10 seconds

BrakePedal = 0

SOC = 50%

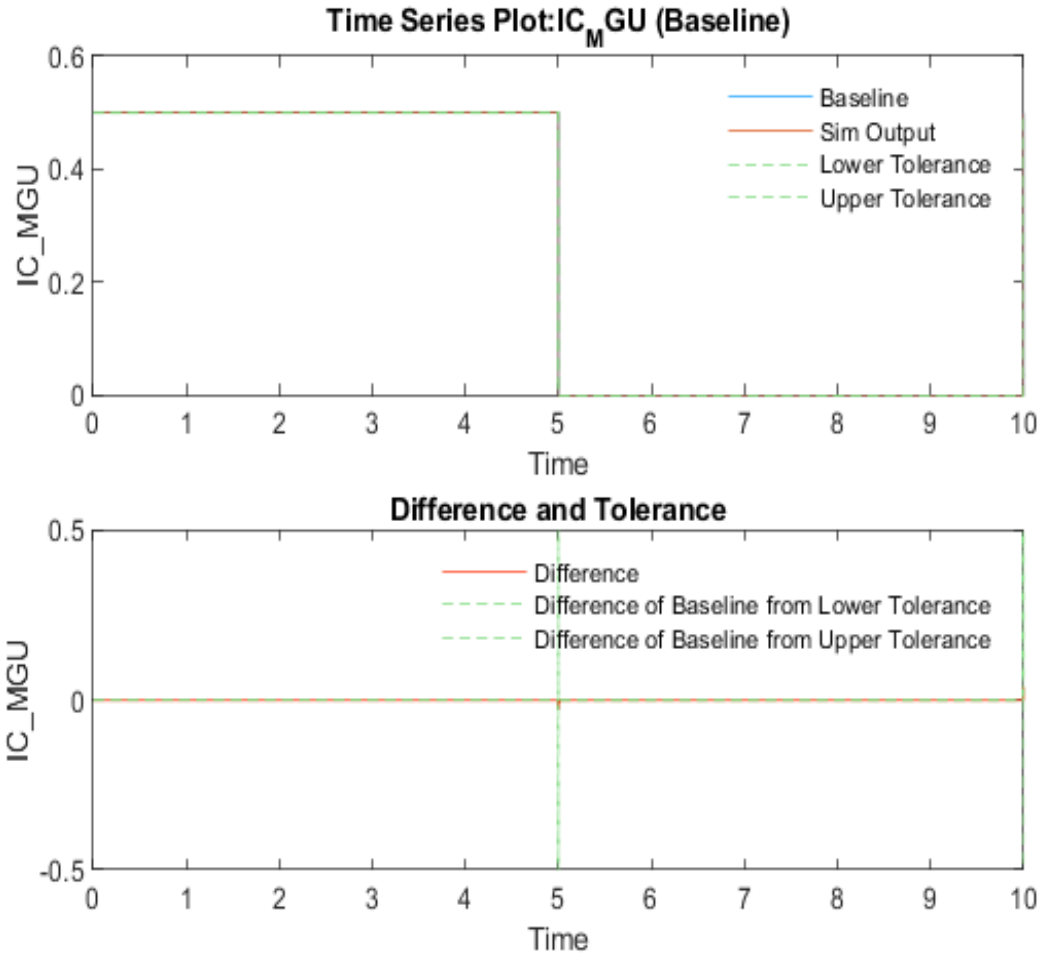
Test Case Information

Name:	Scenario 1
Type:	Baseline Test
Baseline Name:	Combined_Baseline1.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Combined_Baseline1.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
IC_MGU	1e-05	0.001	0.001	0.001	0.0376	double		Continuous	double		Continuous	linear	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
IC_MGU	1e-05	0.001	0.001	0.001	0.0376	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

Input Information

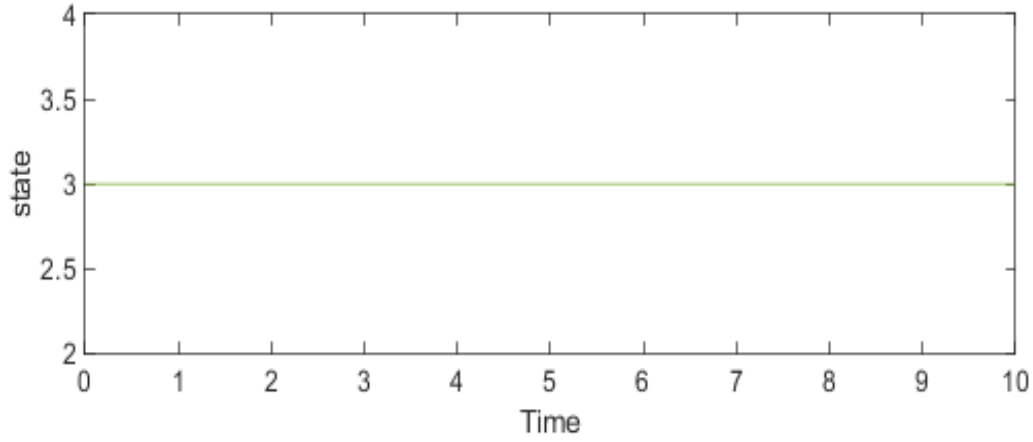
External Input Name: controllerInputs1.mat

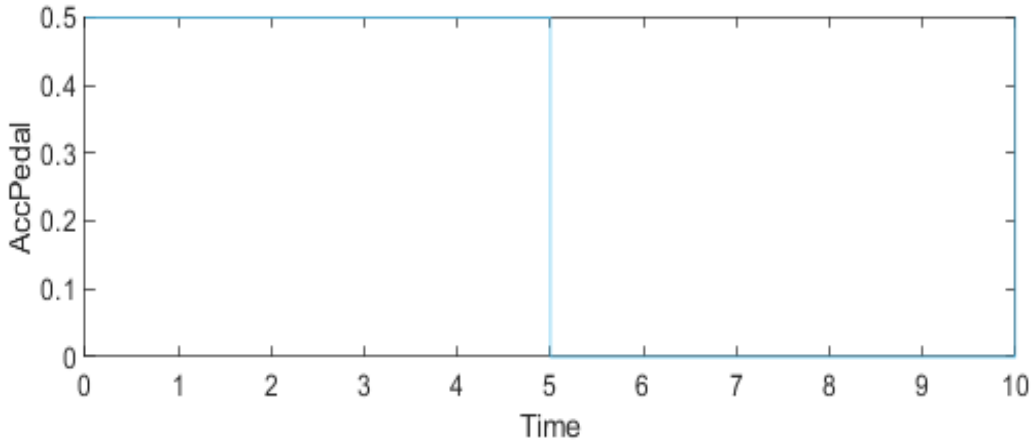
External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-

controller\Test\ControllerTest\testScenarios\controllerInputs1.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

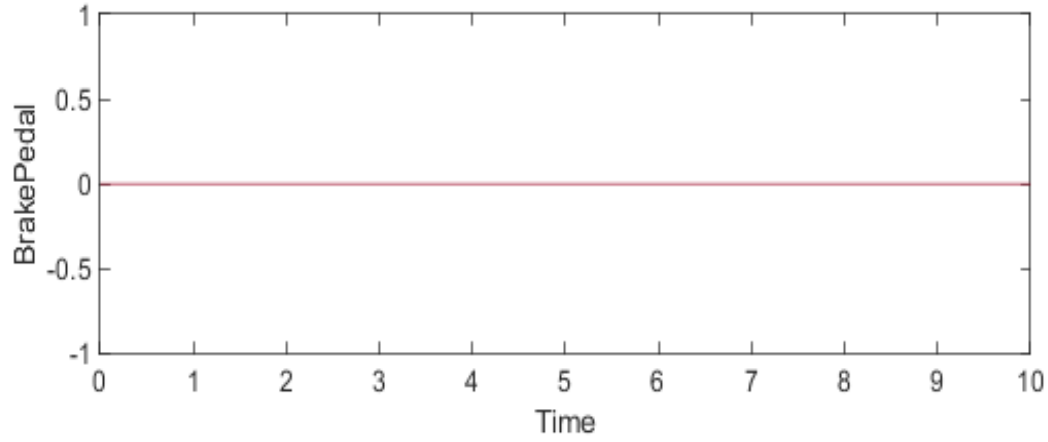
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

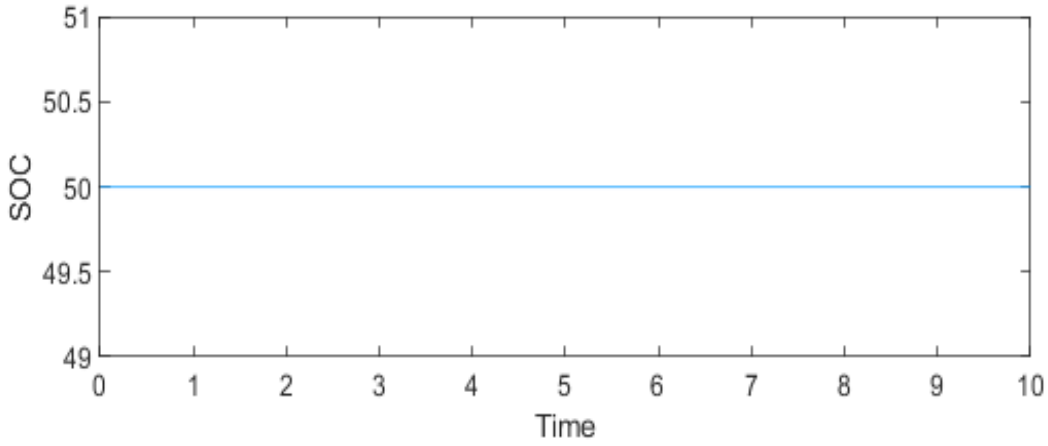




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

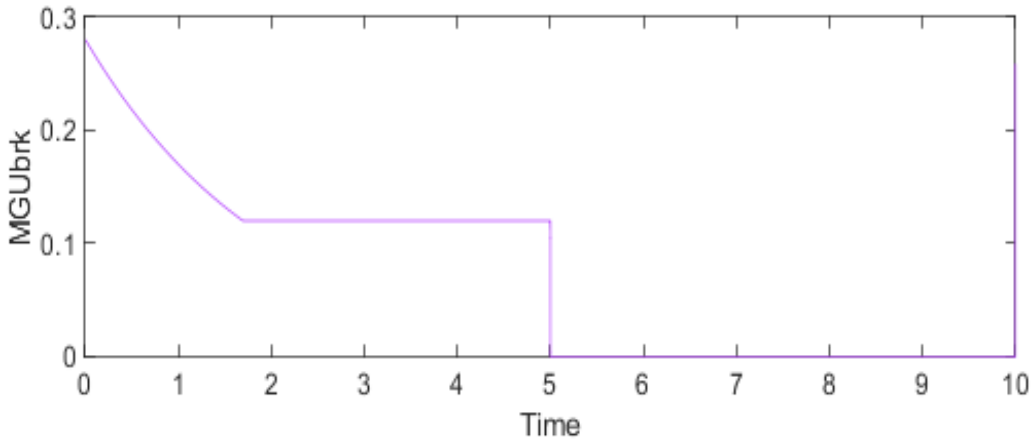
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

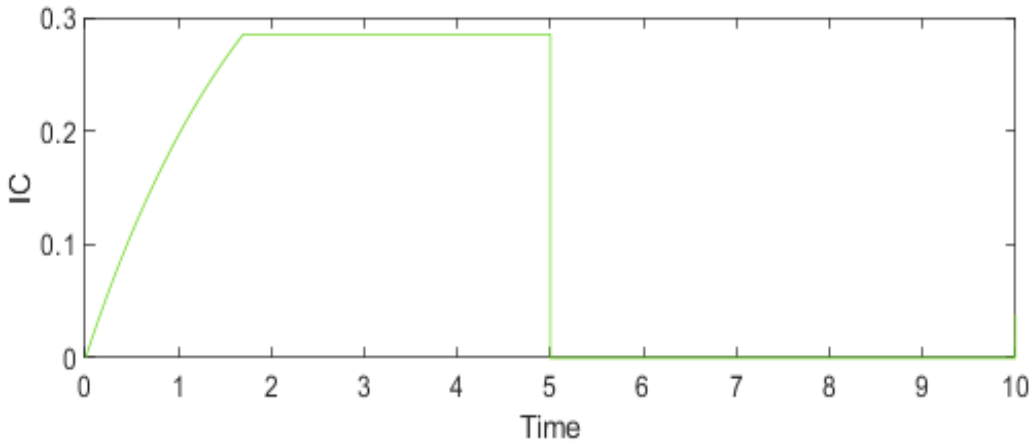
Configuration Set:	Configuration
External Input Name:	controllerInputs1.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs1.mat
Start Time:	0
Stop Time:	10
Checksum:	2693918124 1571846799 555791410 30976912
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:07
Simulation Stop Time:	2021-02-11 19:57:08
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link

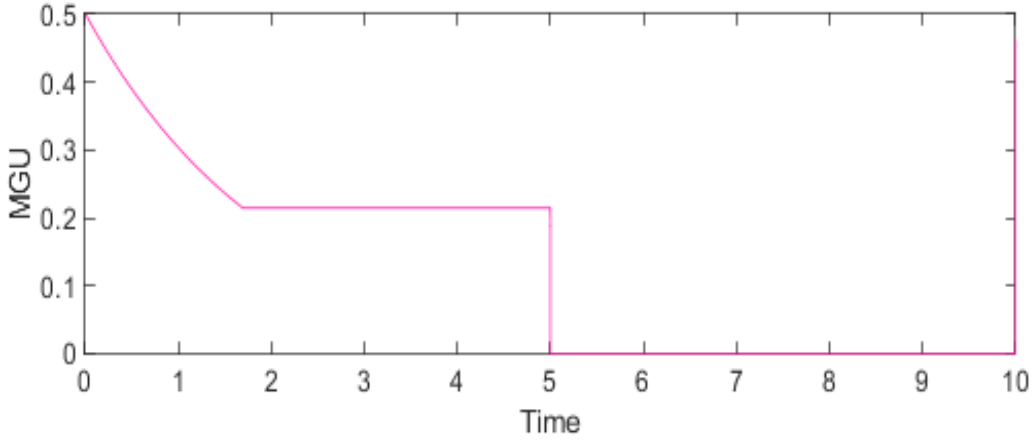
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

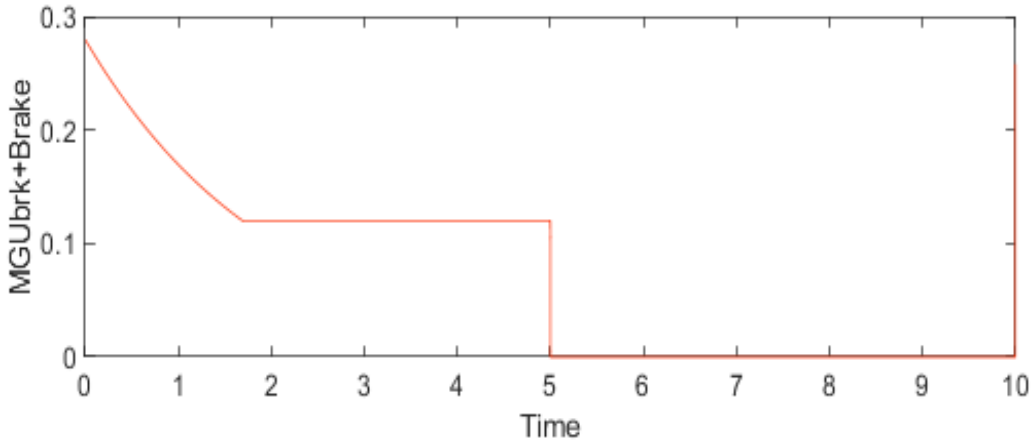




Back to Report SummaryBack to Signal Summary

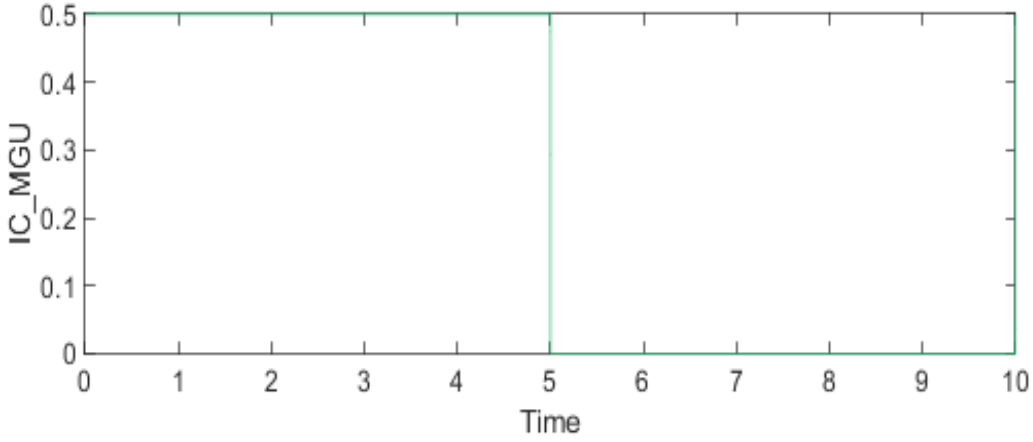
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

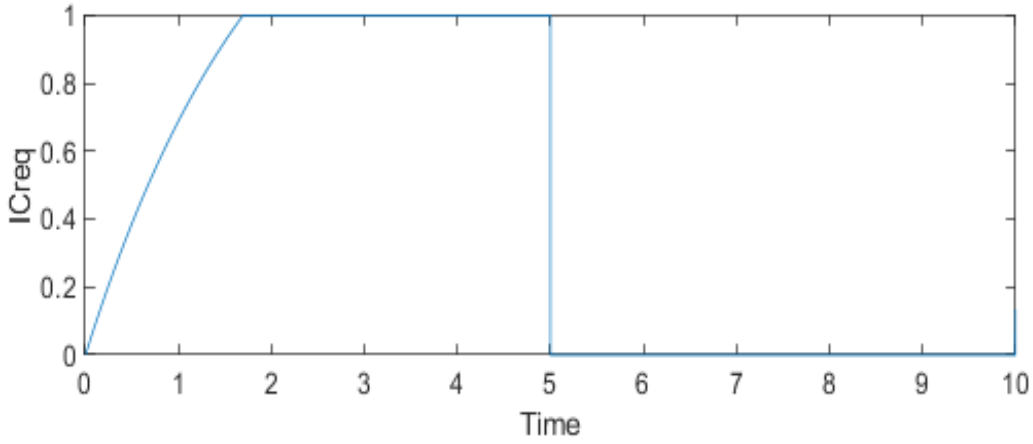




Back to Report SummaryBack to Signal Summary

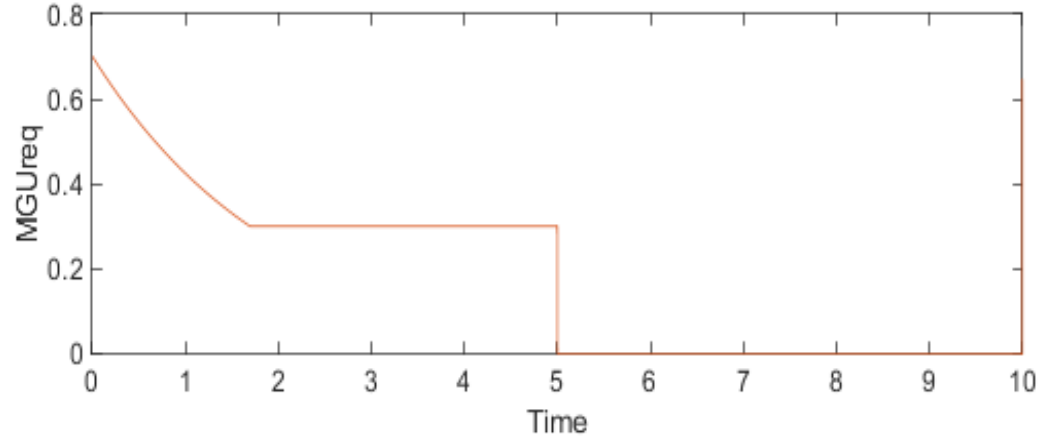
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

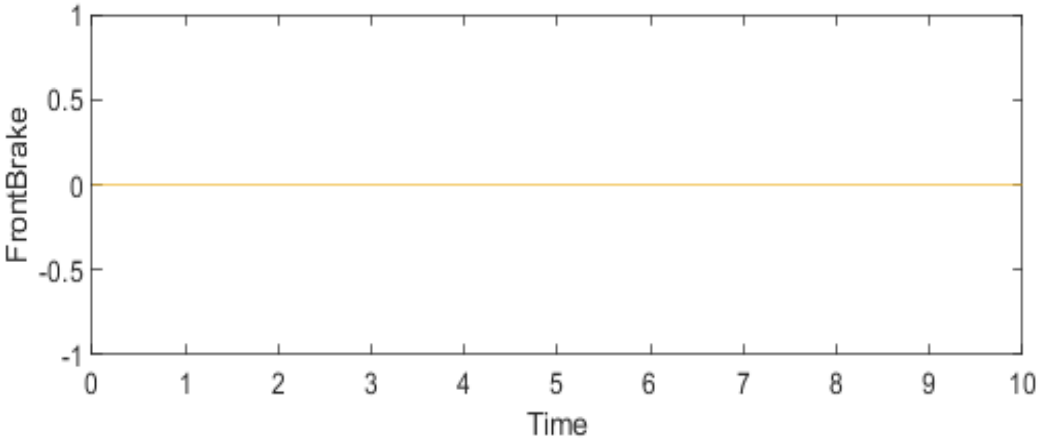




Back to Report SummaryBack to Signal Summary

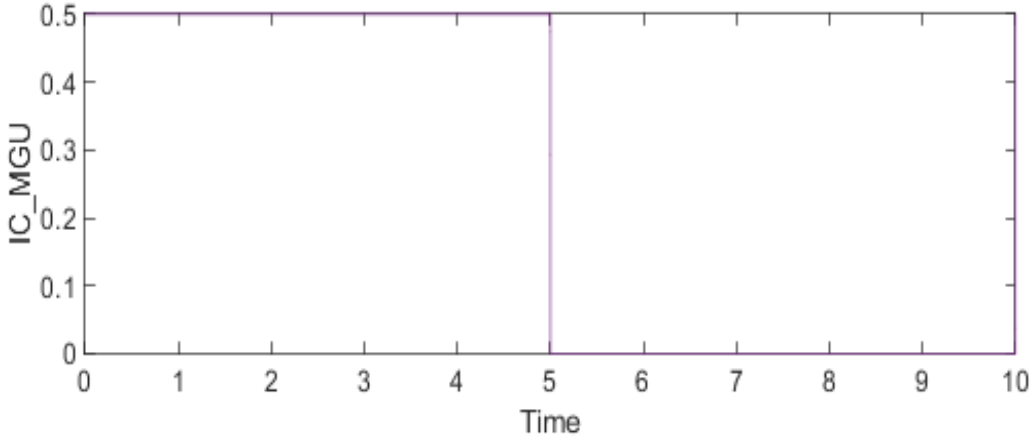
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario2

Test Result Information

Result Type:	Test Case Result
Parent:	Combined
Start Time:	11-Feb-2021 19:57:09
End Time:	11-Feb-2021 19:57:10
Outcome:	Passed
Description:	

Scenario 2:

State = combined

AccPedal = pulse signal of amplitude 0.1, width 0.5 and period 10 seconds

BrakePedal = 0

SOC = 50%

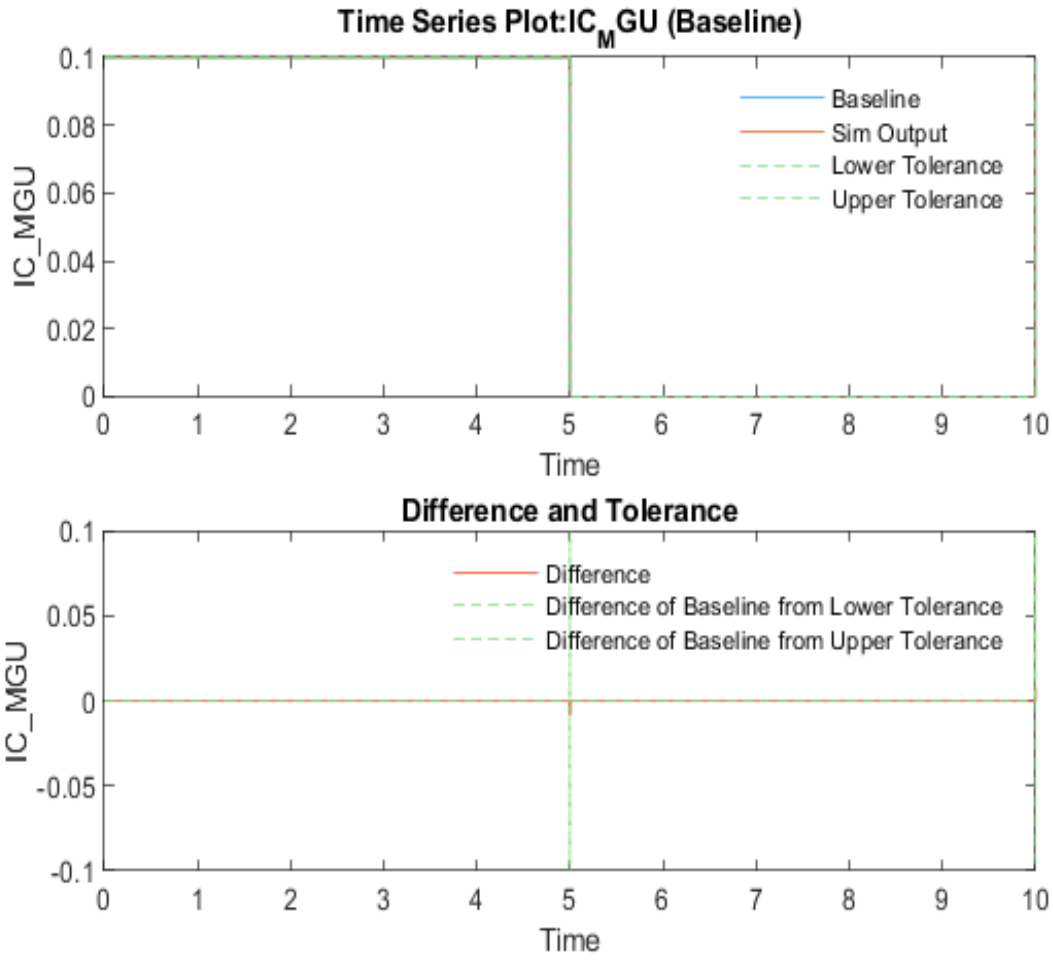
Test Case Information

Name:	Scenario2
Type:	Baseline Test
Baseline Name:	Combined_Baseline2.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Combined_Baseline2.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
IC_MGU	1e-05	0	0.001	0.001	0.00789	double		Continuous	double		Continuous	linear	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
IC_MGU	1e-05	0	0.001	0.001	0.00789	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

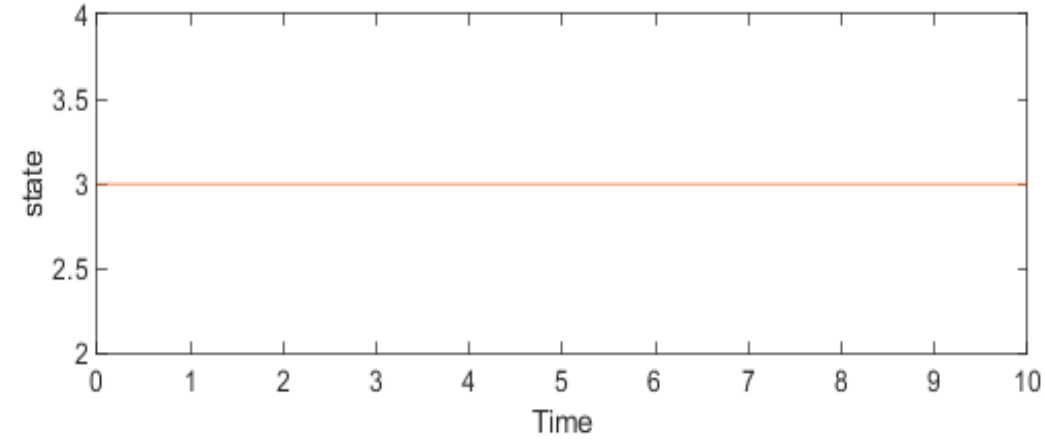
Input Information

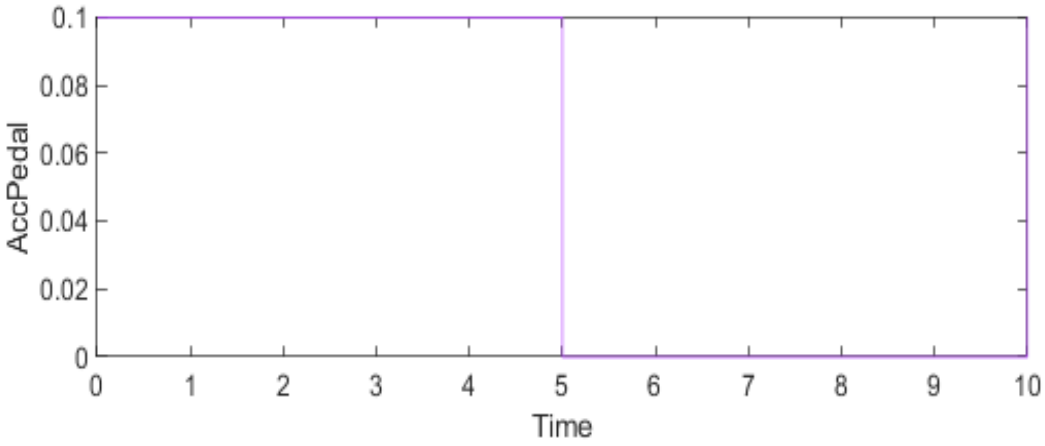
External Input Name: controllerInputs2.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs2.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

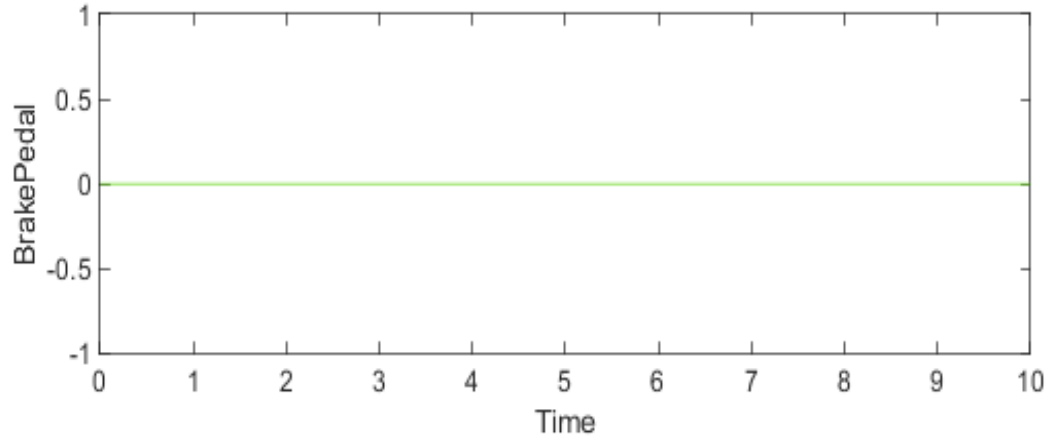
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

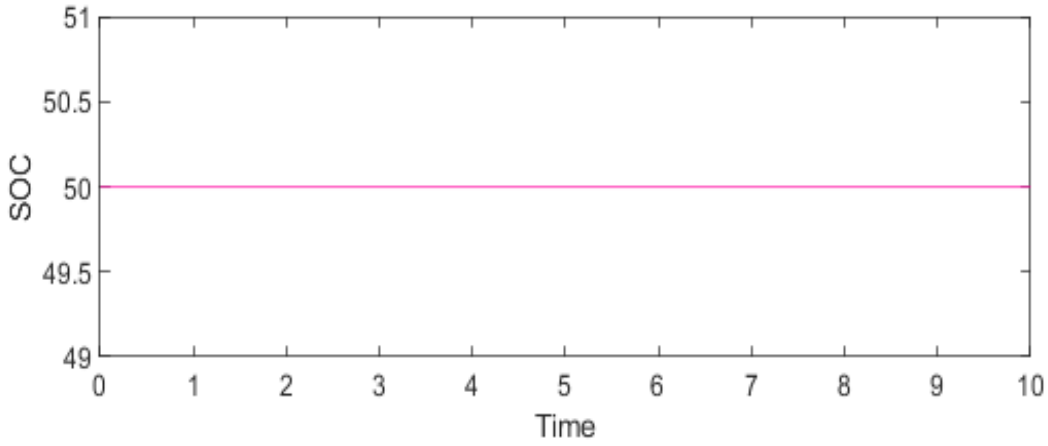




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

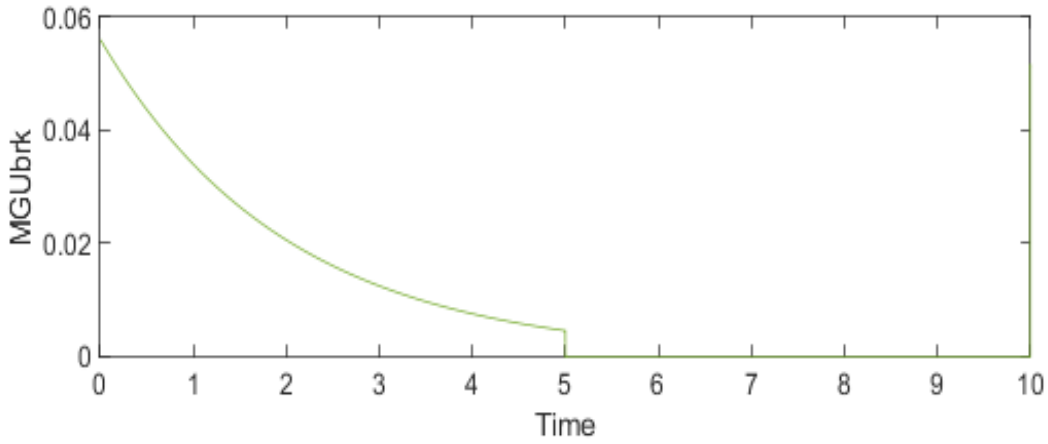
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

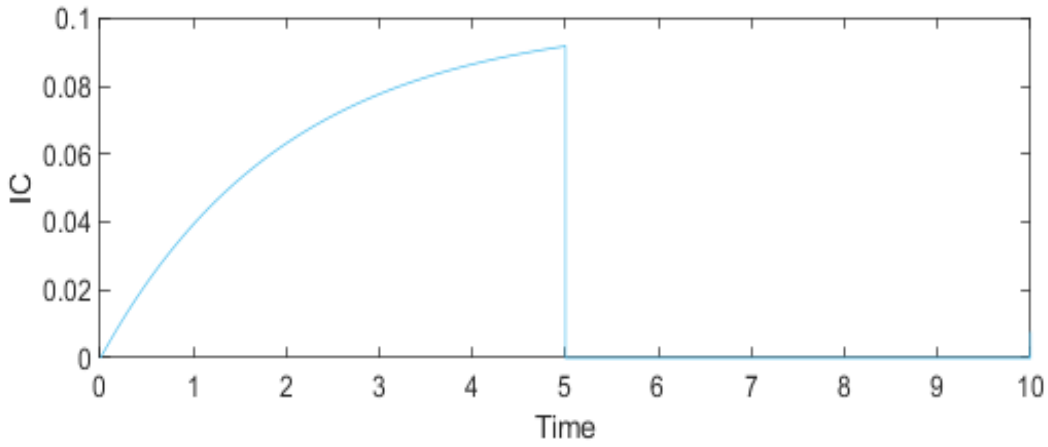
Configuration Set:	Configuration
External Input Name:	controllerInputs2.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs2.mat
Start Time:	0
Stop Time:	10
Checksum:	2693918124 1571846799 555791410 30976912
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:09
Simulation Stop Time:	2021-02-11 19:57:09
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link

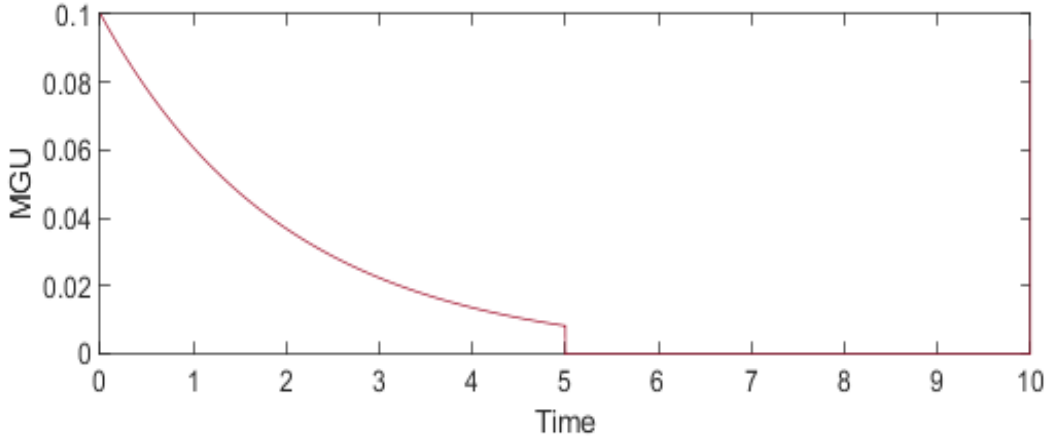
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

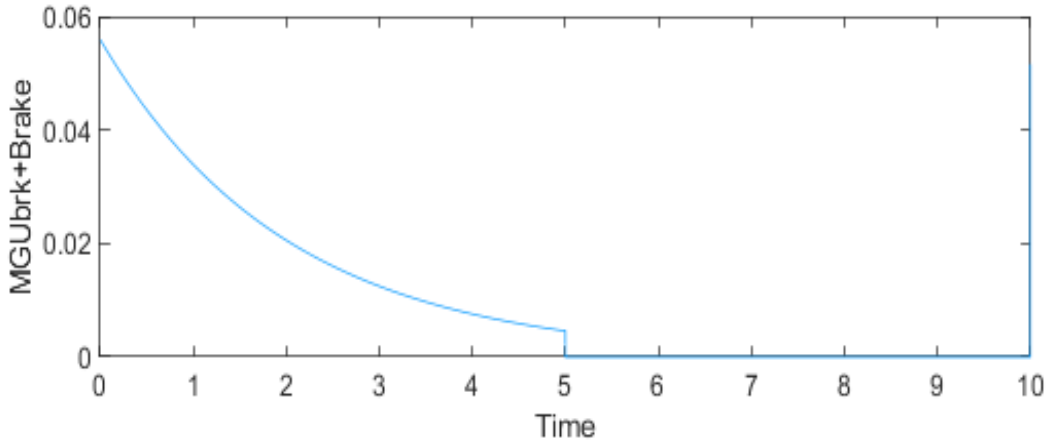




Back to Report SummaryBack to Signal Summary

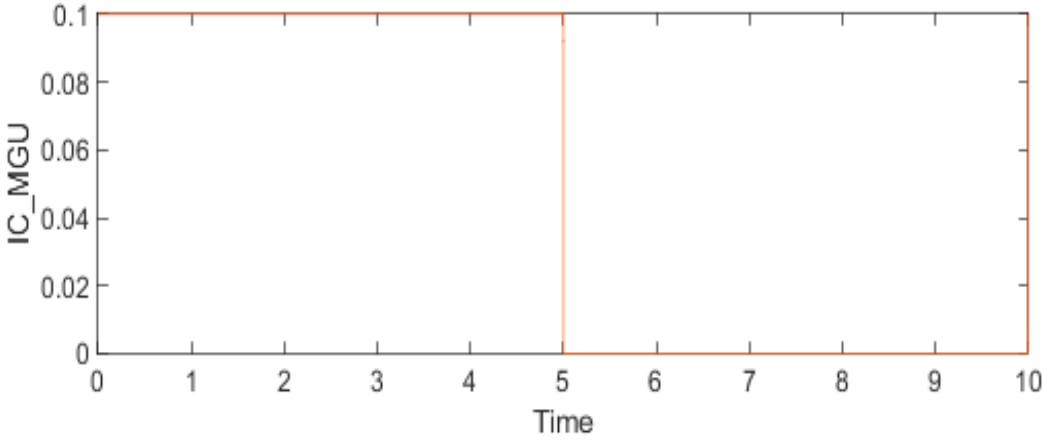
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

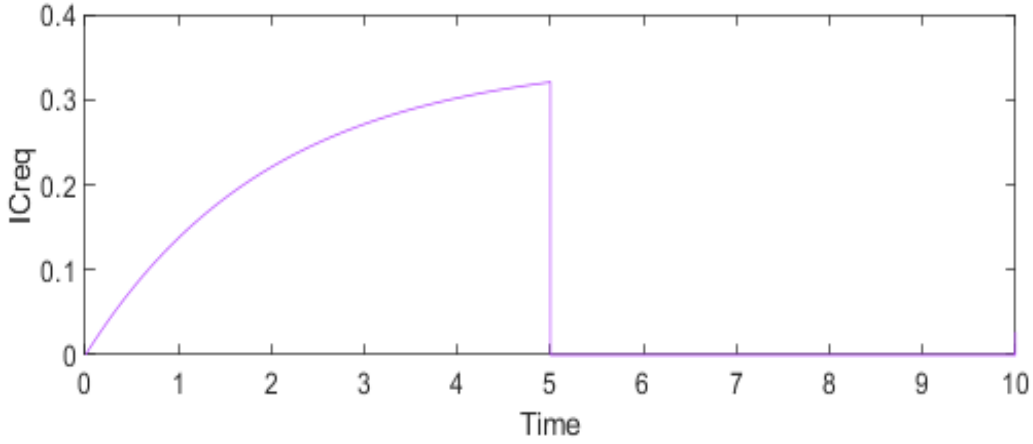




Back to Report SummaryBack to Signal Summary

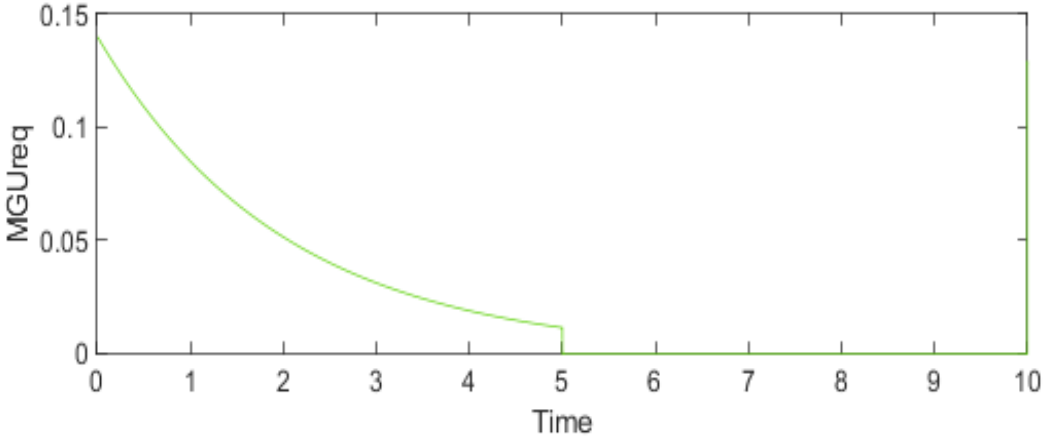
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

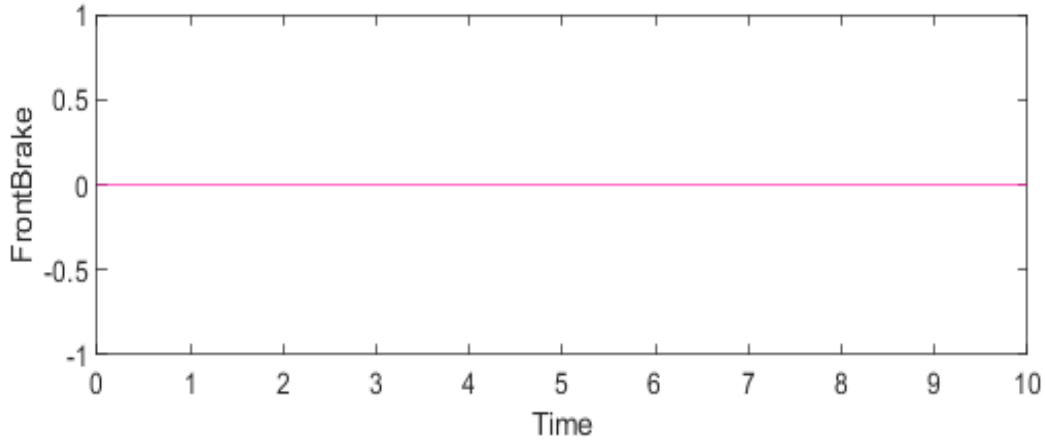




Back to Report SummaryBack to Signal Summary

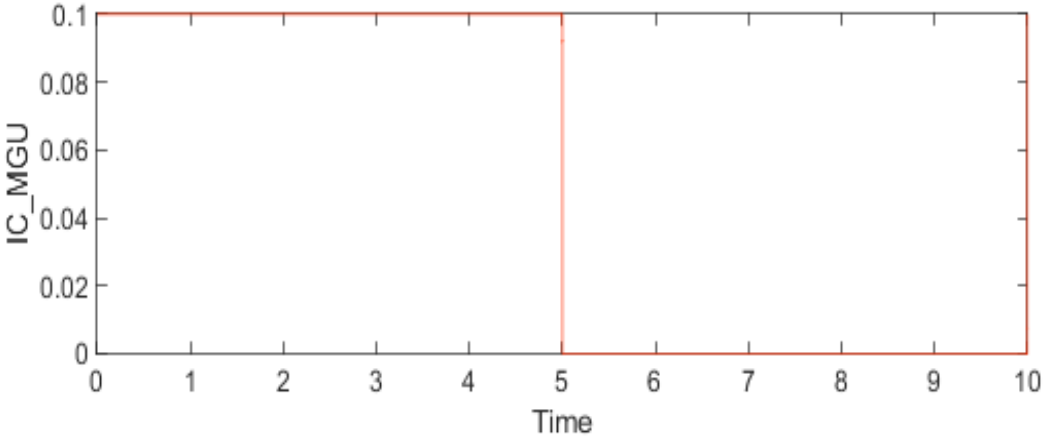
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario3

Test Result Information

Result Type:	Test Case Result
Parent:	Combined
Start Time:	11-Feb-2021 19:57:10
End Time:	11-Feb-2021 19:57:11
Outcome:	Passed
Description:	

Scenario 3:

State = combined

AccPedal = pulse signal of amplitude 0.9, width 0.5 and period 10 seconds

BrakePedal = 0

SOC = 50%

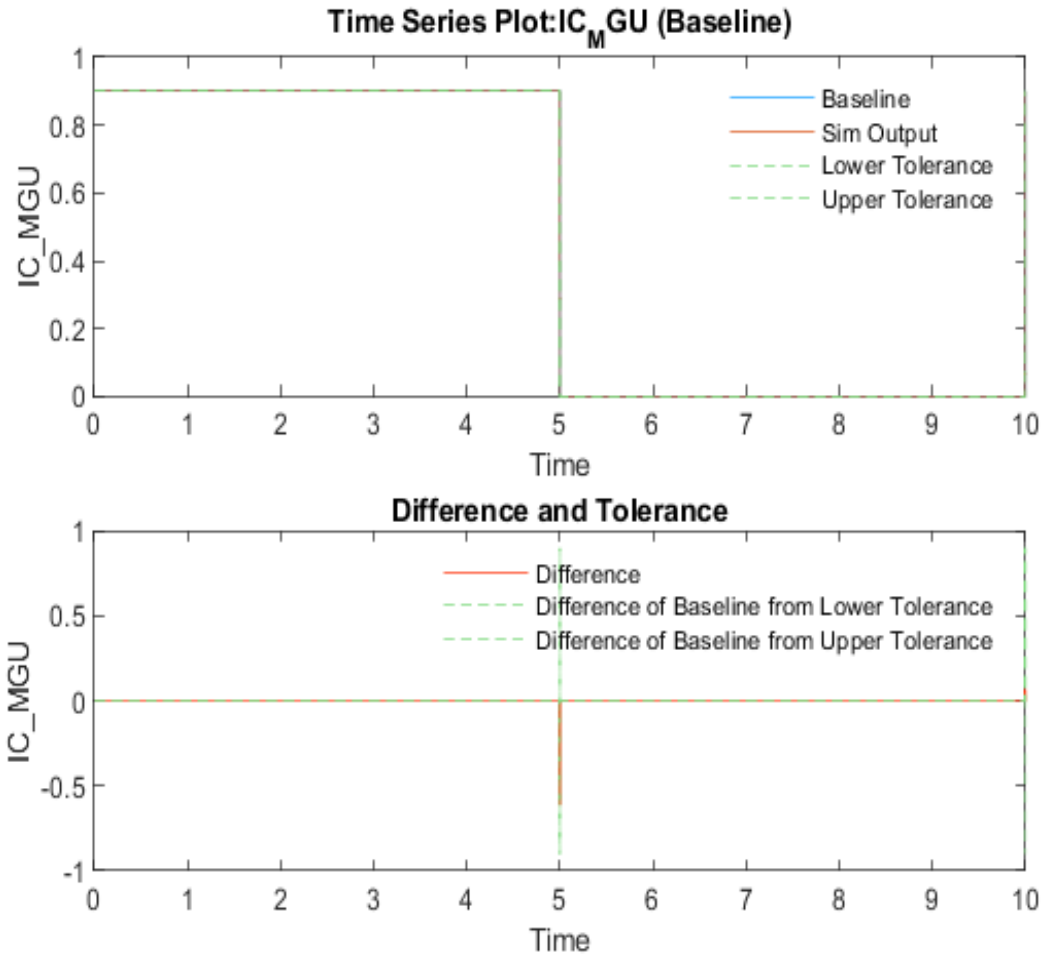
Test Case Information

Name:	Scenario3
Type:	Baseline Test
Baseline Name:	Combined_Baseline3.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Combined_Baseline3.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
IC_MGU	1e-05	0	0.001	0.001	0.61	double		Continuous	double		Continuous	linear	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
IC_MGU	1e-05	0	0.001	0.001	0.61	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

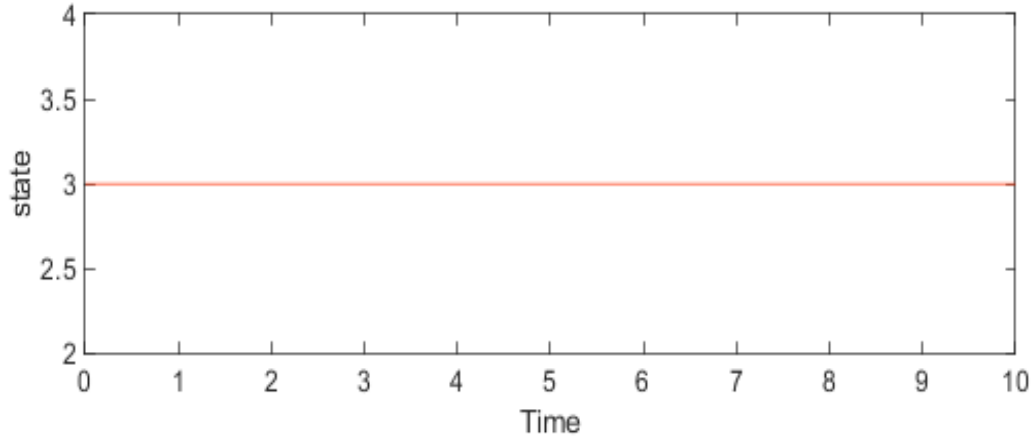
Input Information

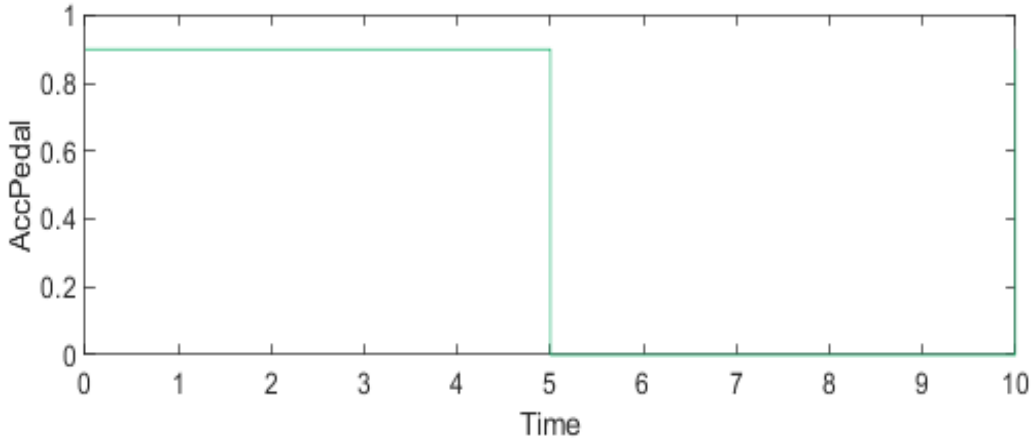
External Input Name: controllerInputs3.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs3.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

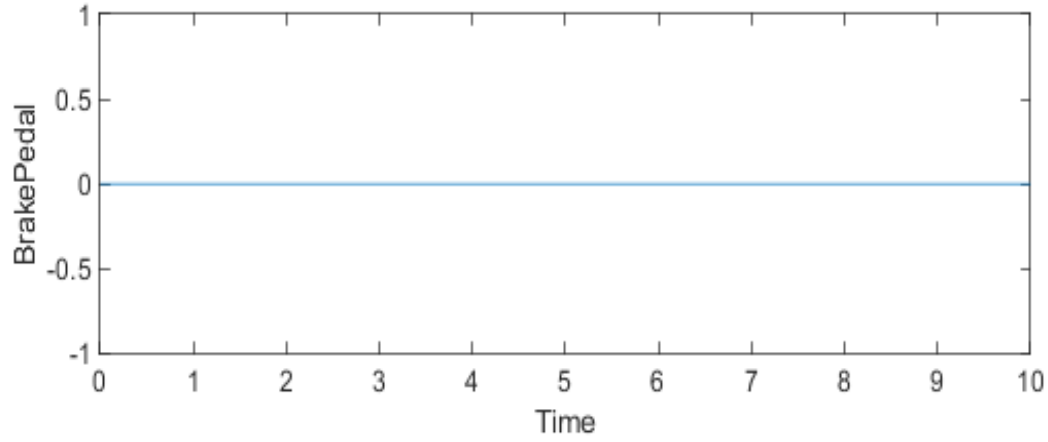
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

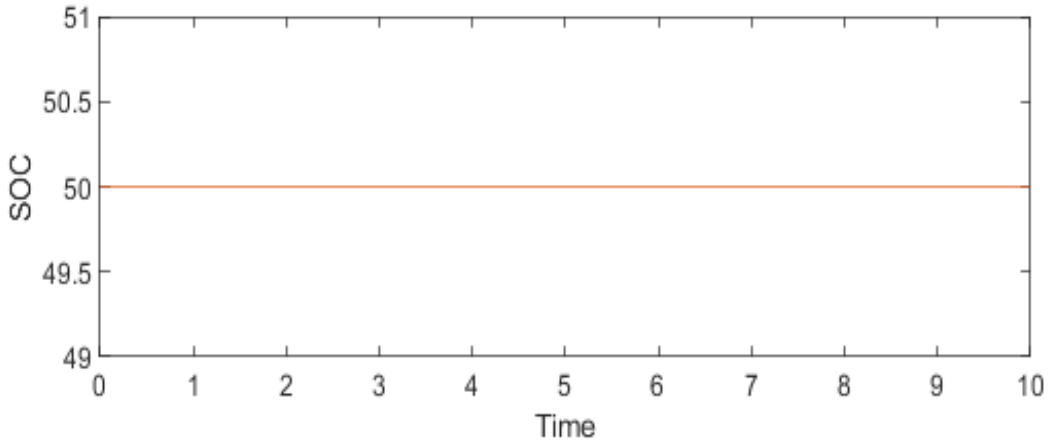




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

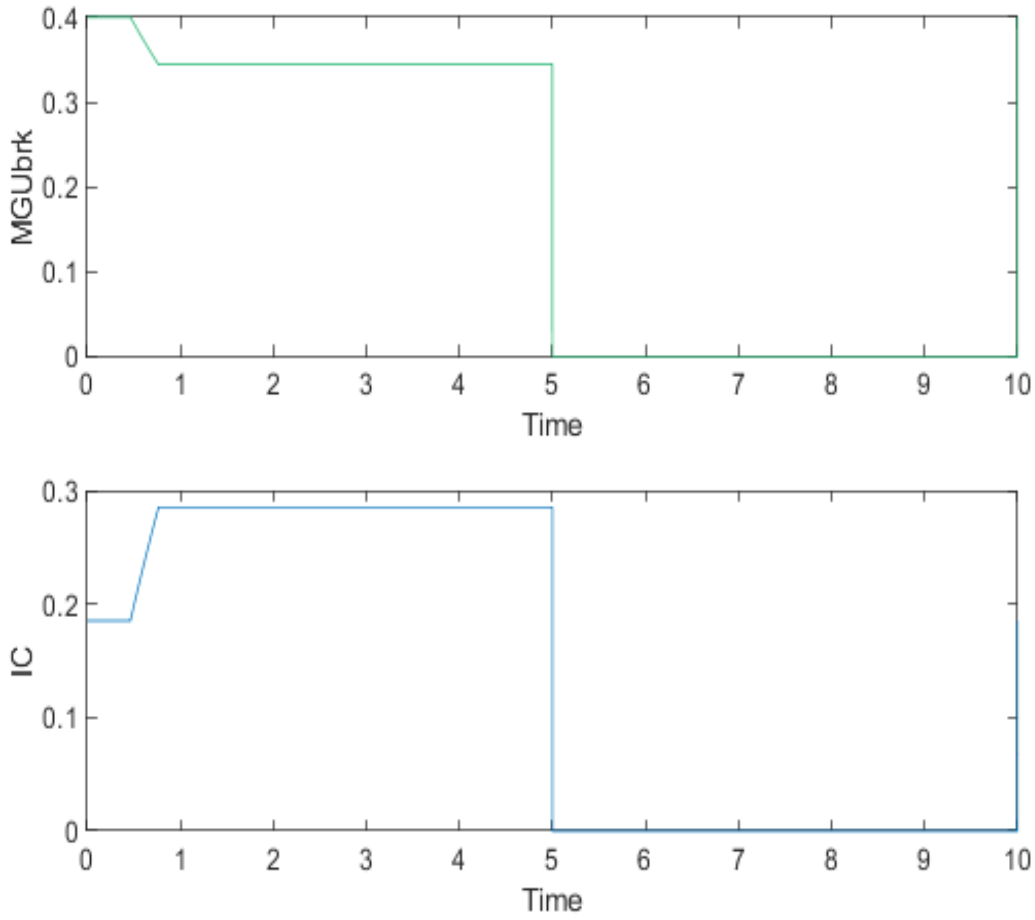
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

Configuration Set:	Configuration
External Input Name:	controllerInputs3.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs3.mat
Start Time:	0
Stop Time:	10
Checksum:	2693918124 1571846799 555791410 30976912
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:10
Simulation Stop Time:	2021-02-11 19:57:10
Platform:	PCWIN64

Simulation Output

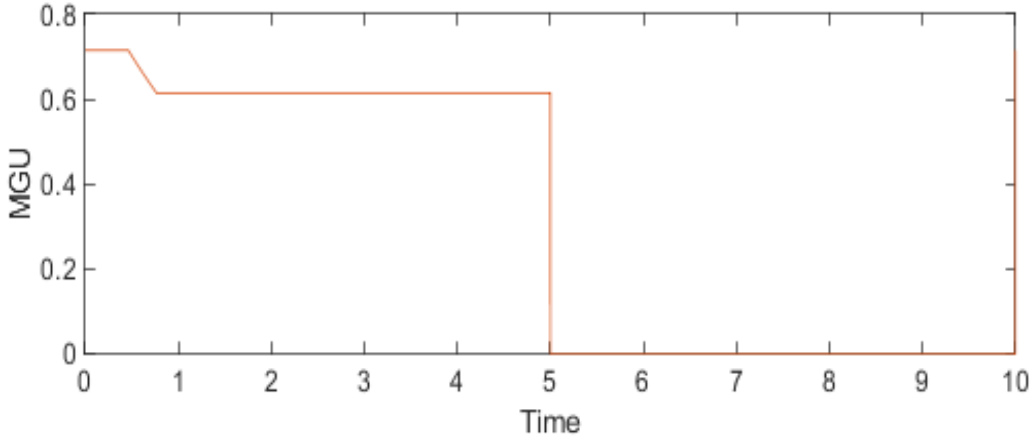
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link

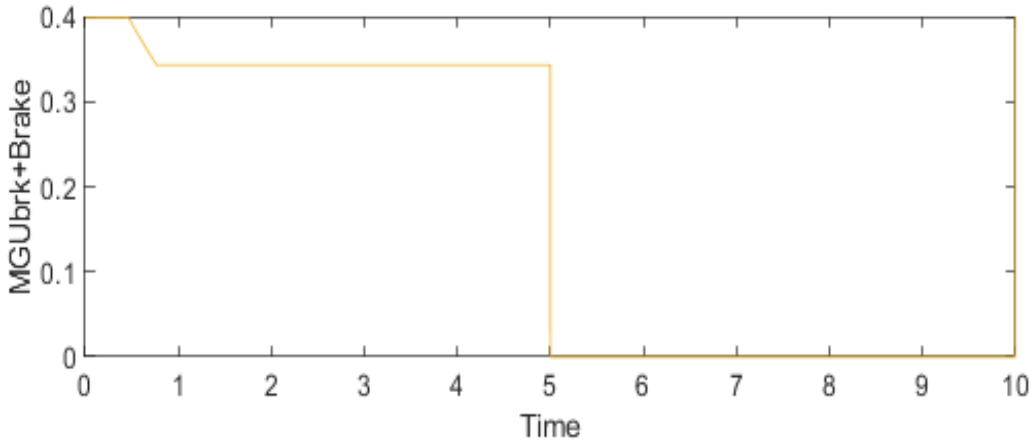
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

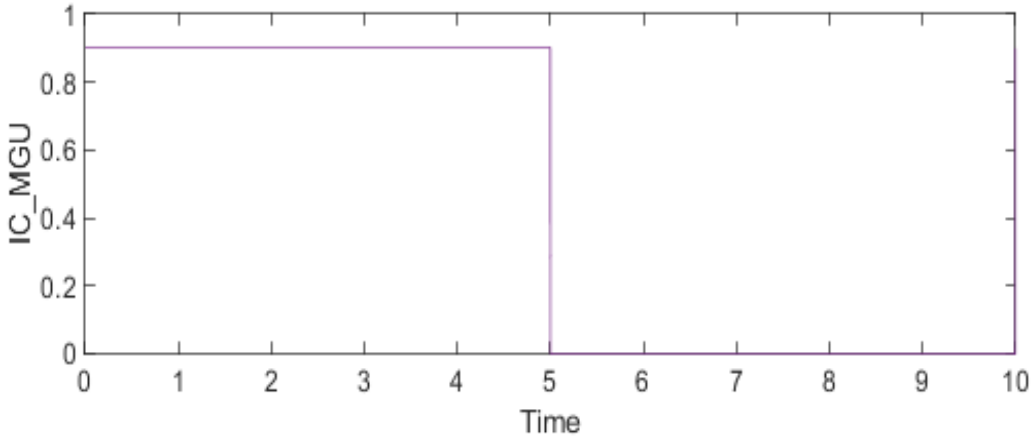
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

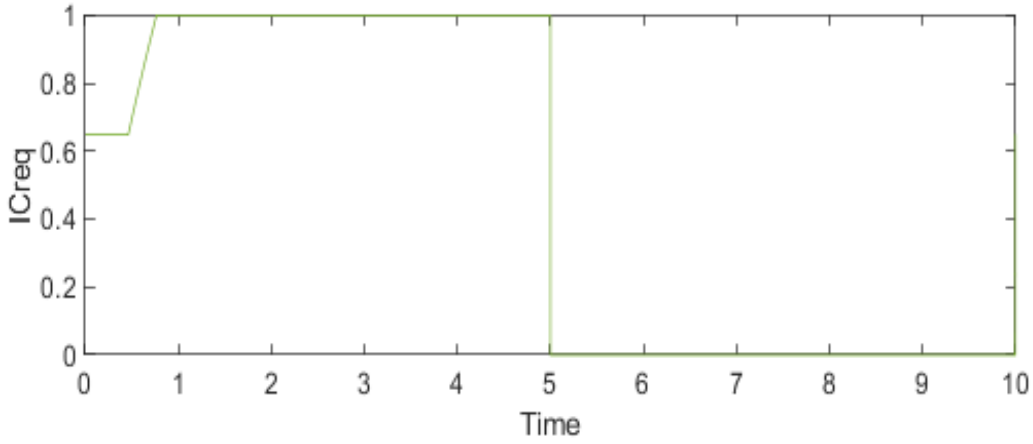




Back to Report SummaryBack to Signal Summary

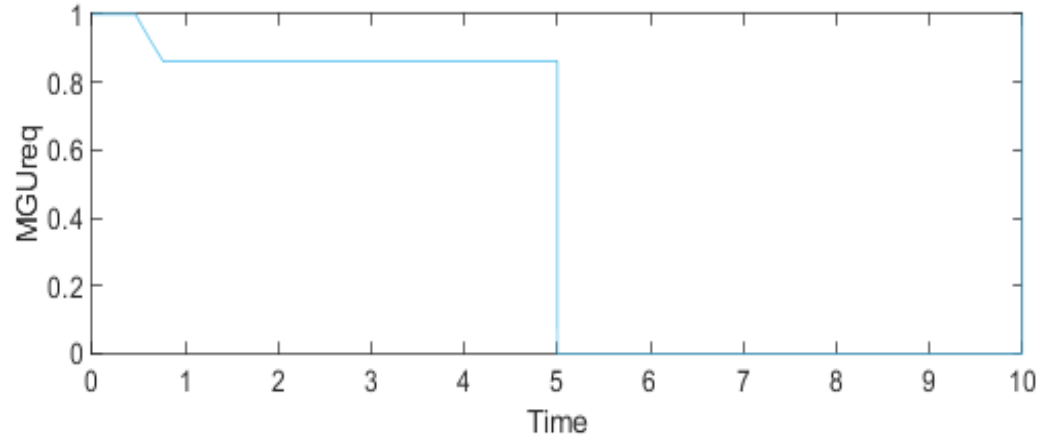
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

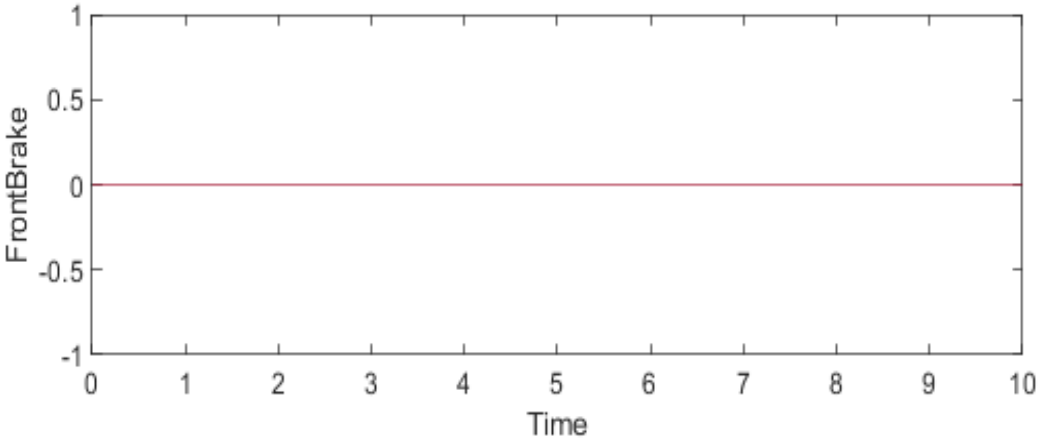




Back to Report SummaryBack to Signal Summary

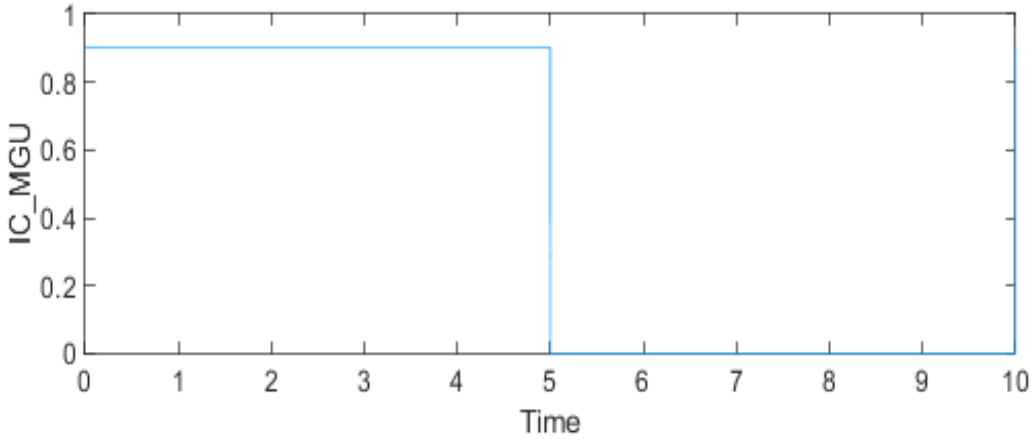
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario4

Test Result Information

Result Type:	Test Case Result
Parent:	Combined
Start Time:	11-Feb-2021 19:57:11
End Time:	11-Feb-2021 19:57:13
Outcome:	Passed
Description:	

Scenario 4:

State = combined

AccPedal = exponential growth and decay over time

BrakePedal = 0

SOC = 50%

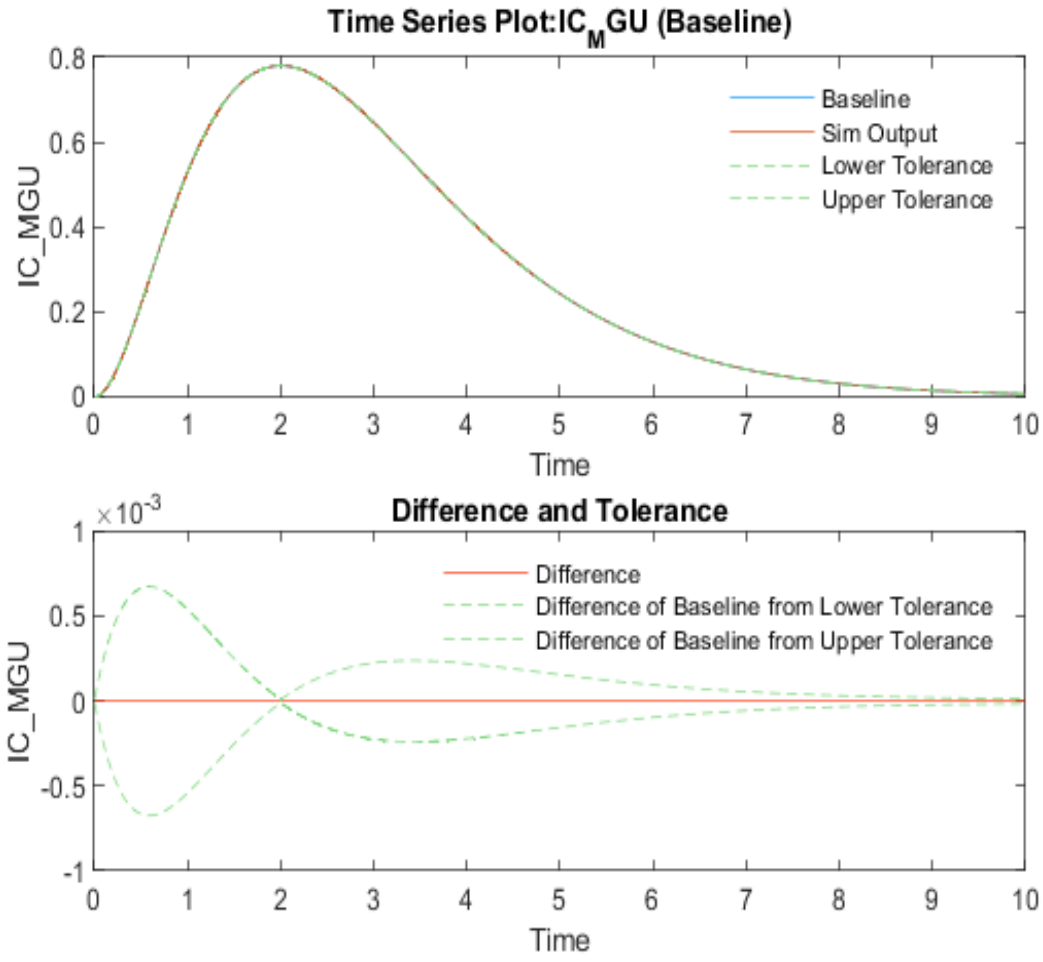
Test Case Information

Name:	Scenario4
Type:	Baseline Test
Baseline Name:	Combined_Baseline4.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Combined_Baseline4.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
IC_MGU	1e-05	0	0.001	0.001	1.11e-16	double		Continuous	double		Continuous	linear	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
IC_MGU	1e-05	0	0.001	0.001	1.11e-16	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

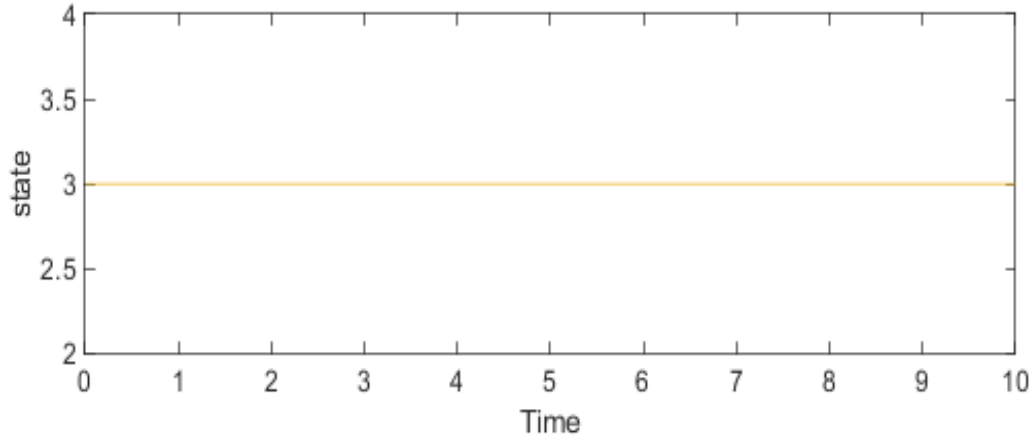
Input Information

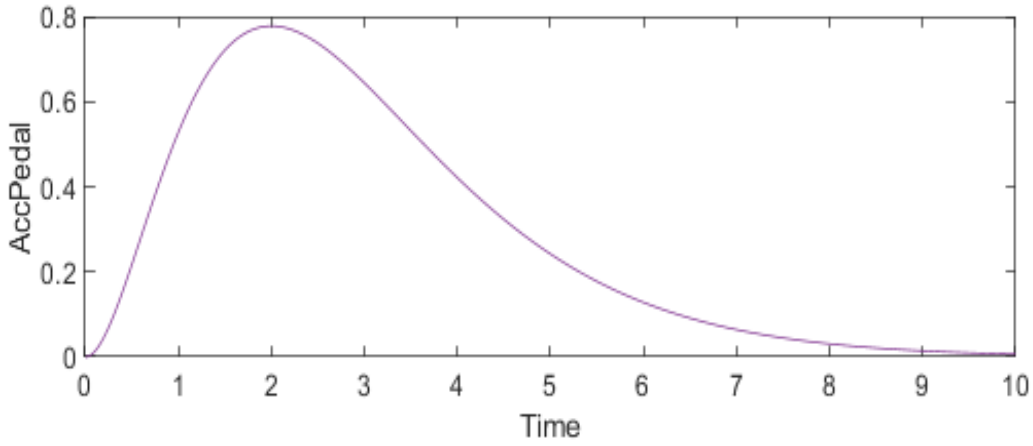
External Input Name: controllerInputs4.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs4.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

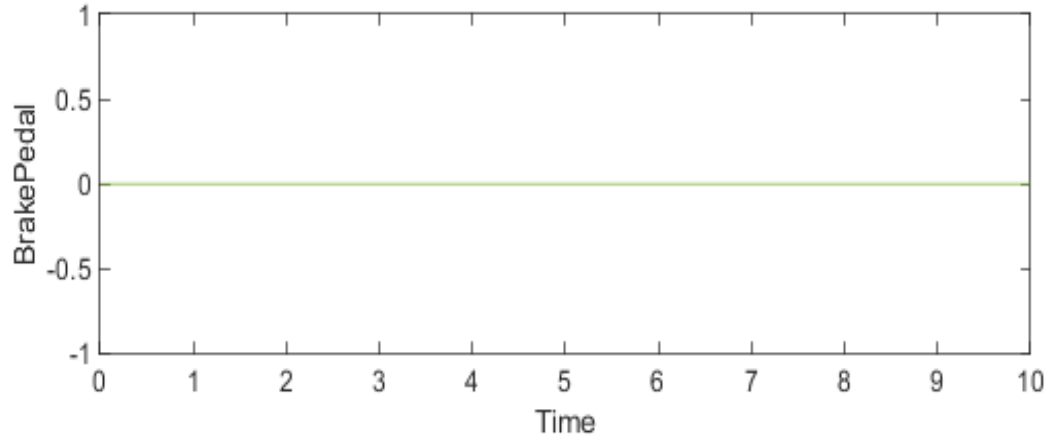
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

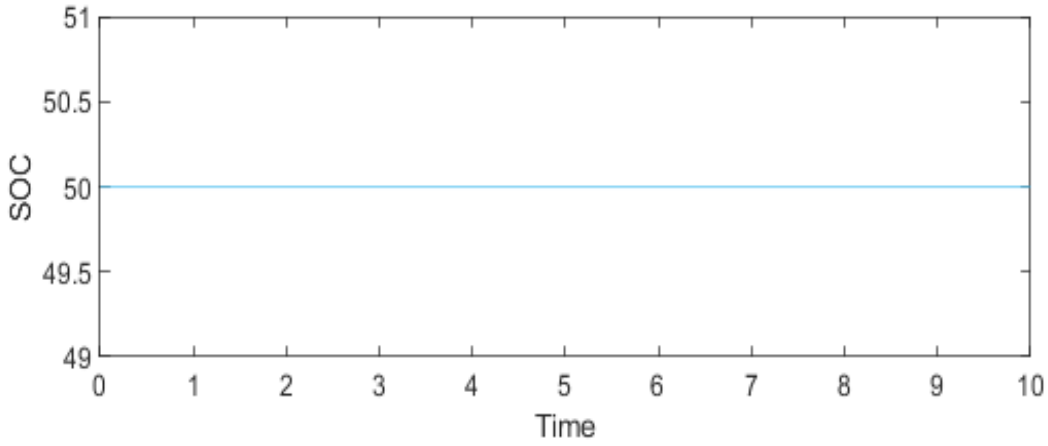




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

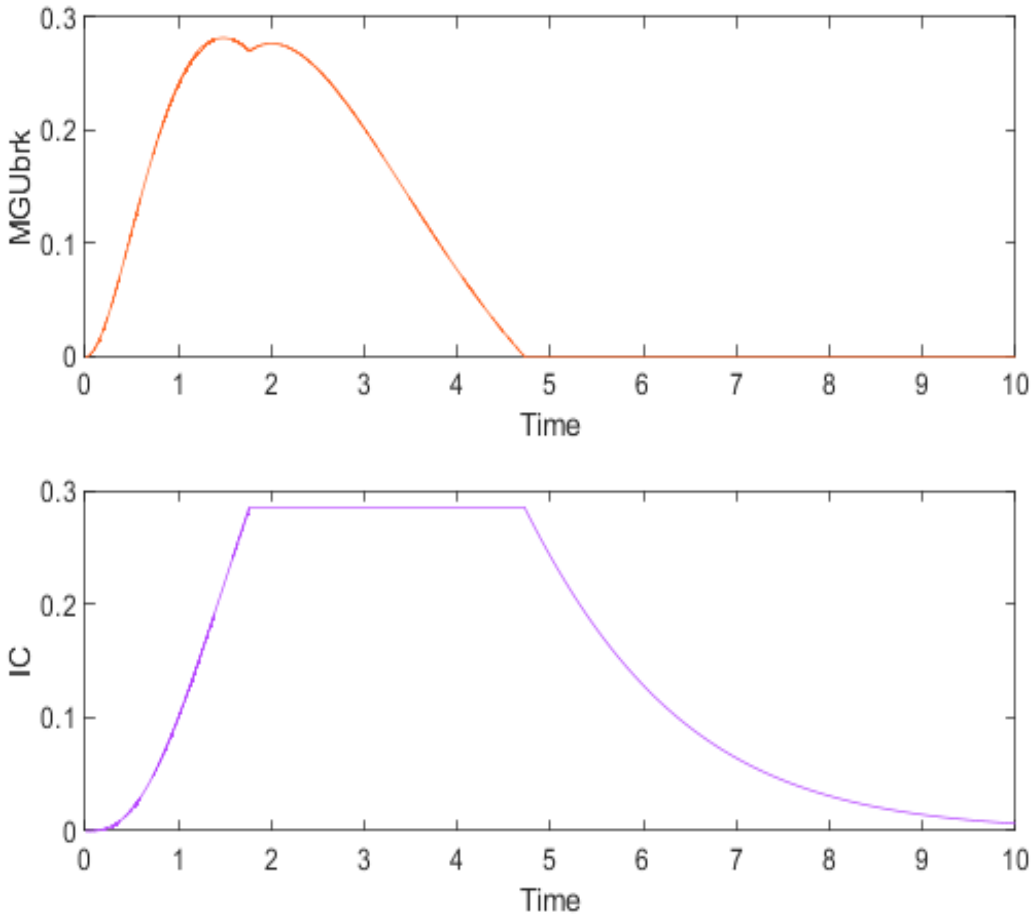
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

Configuration Set:	Configuration
External Input Name:	controllerInputs4.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs4.mat
Start Time:	0
Stop Time:	10
Checksum:	2693918124 1571846799 555791410 30976912
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:11
Simulation Stop Time:	2021-02-11 19:57:12
Platform:	PCWIN64

Simulation Output

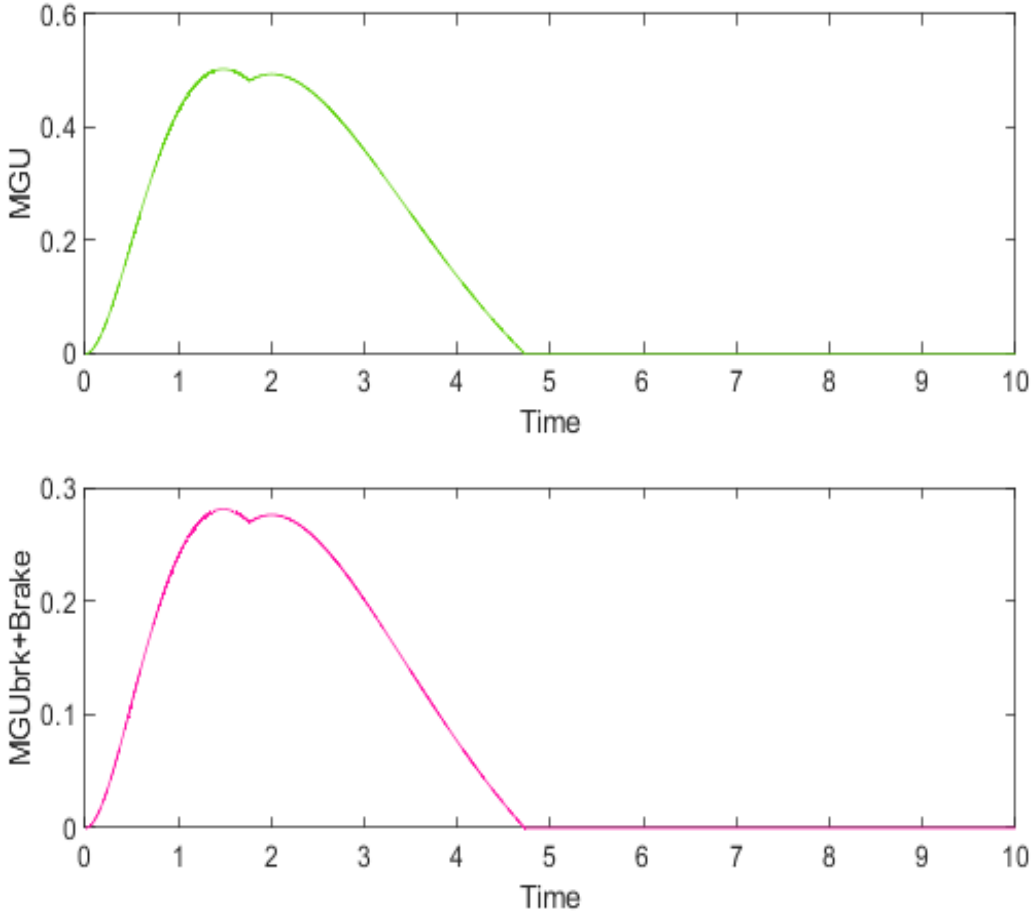
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union



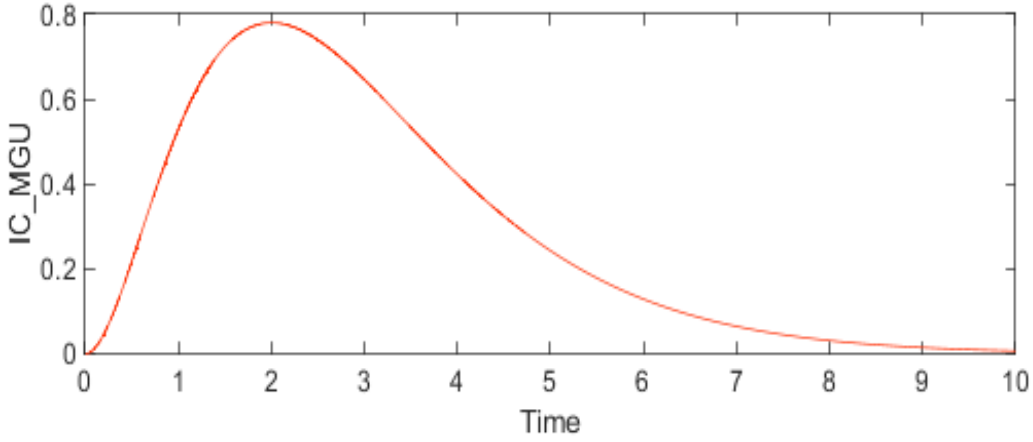
Back to Report SummaryBack to Signal Summary

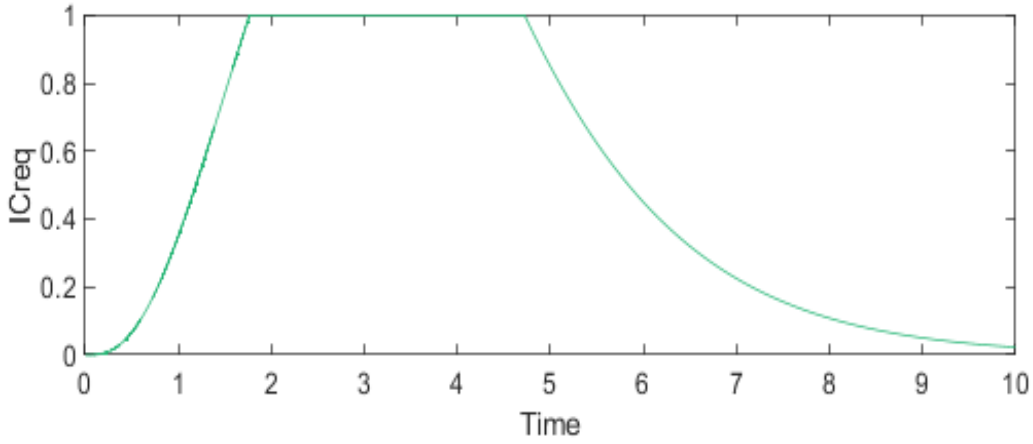
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

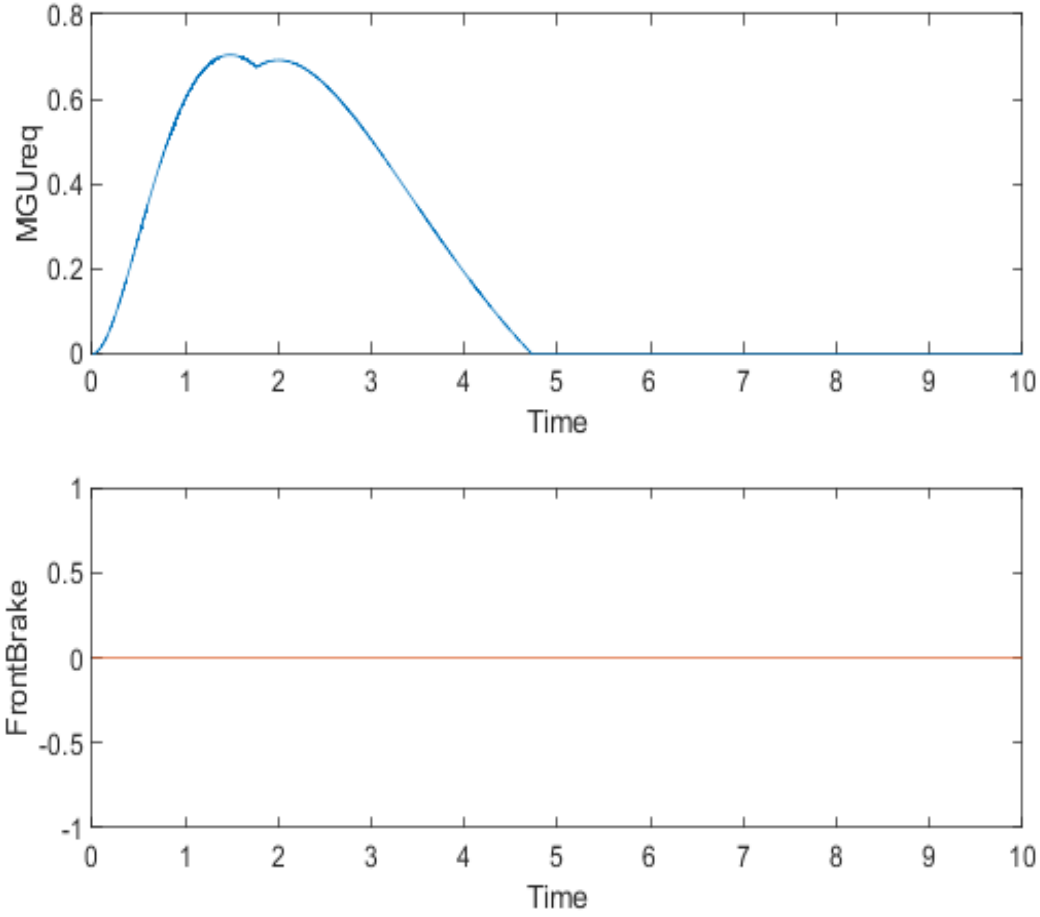
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union





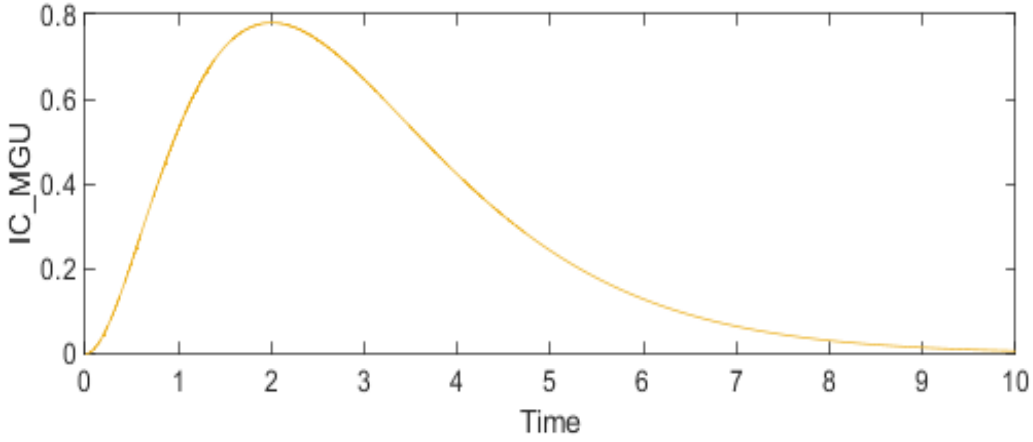
Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Regenerative Braking

Test Result Information

Result Type:	Test Suite Result
Parent:	controllerTest
Start Time:	11-Feb-2021 19:57:13
End Time:	11-Feb-2021 19:57:18
Outcome:	Total: 4, Passed: 4
Description:	

Regenerative Braking case suite of tests

Test Suite Information

Name:	Regenerative Braking

Back to Report Summary

Scenario5

Test Result Information

Result Type:	Test Case Result
Parent:	Regenerative Braking
Start Time:	11-Feb-2021 19:57:13
End Time:	11-Feb-2021 19:57:14
Outcome:	Passed
Description:	

Scenario 5:

State = regenerative braking

AccPedal = 0

BrakePedal = pulse signal of amplitude 0.5, width 0.5 and period 10 seconds.

SOC = 50%

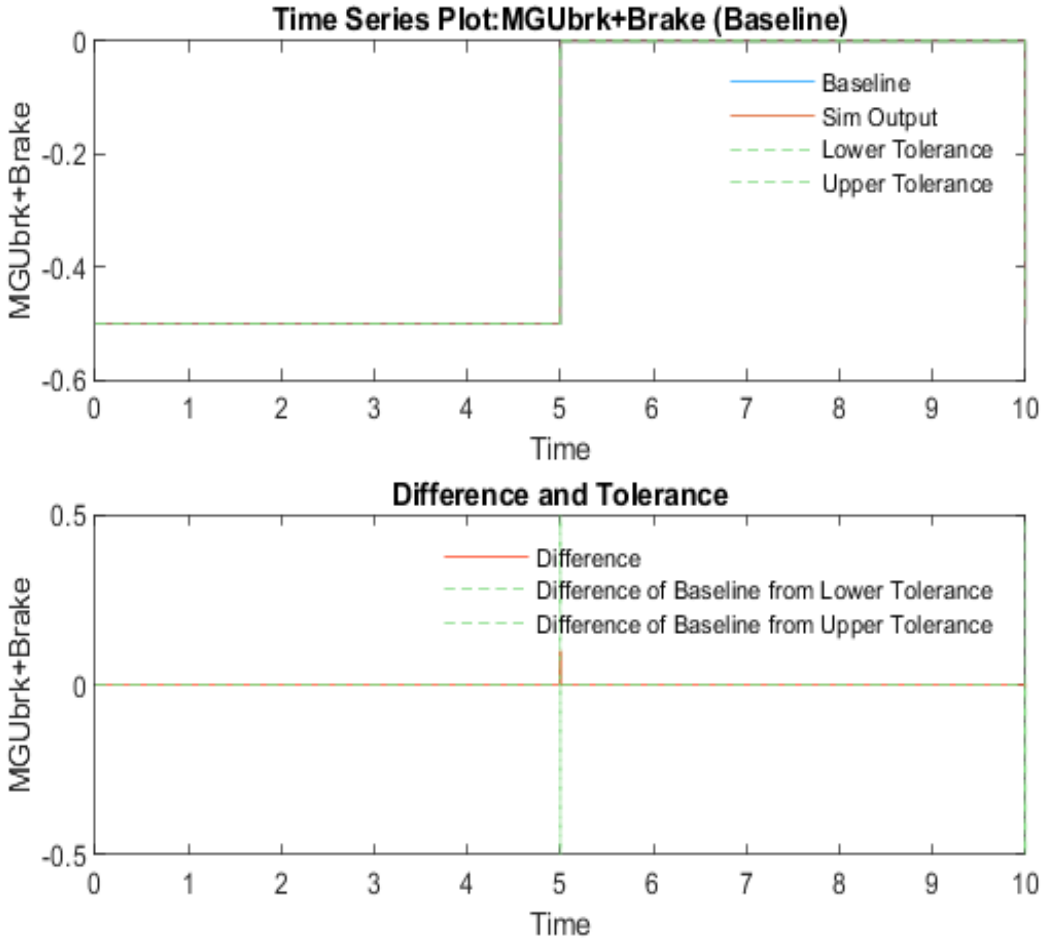
Test Case Information

Name:	Scenario5
Type:	Baseline Test
Baseline Name:	Regen_Baseline1.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Regen_Baseline1.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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.0998	double		Continuous	double		Continuous	linear	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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.0998	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

Input Information

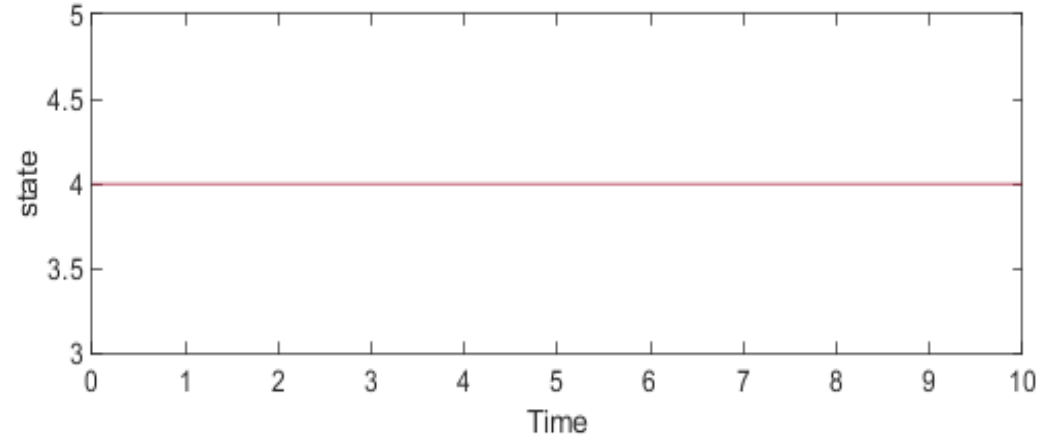
External Input Name: controllerInputs5.mat

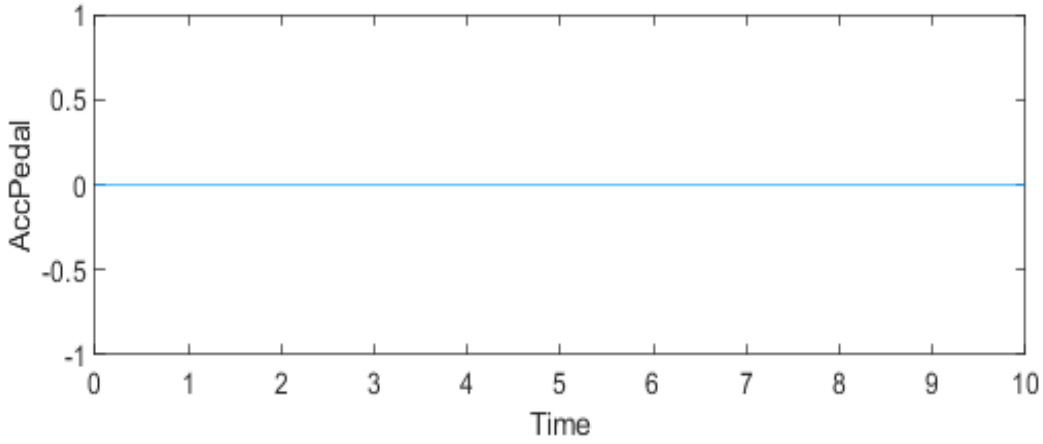
External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-

controller\Test\ControllerTest\testScenarios\controllerInputs5.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

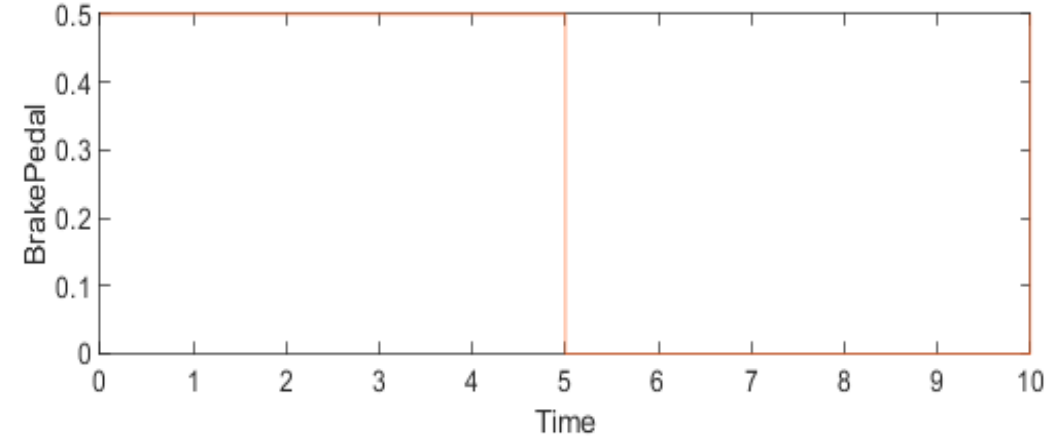
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

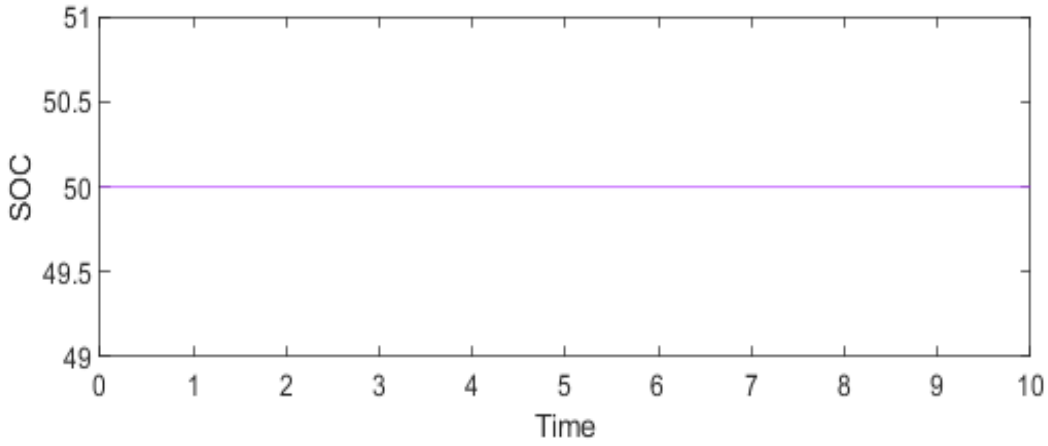




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

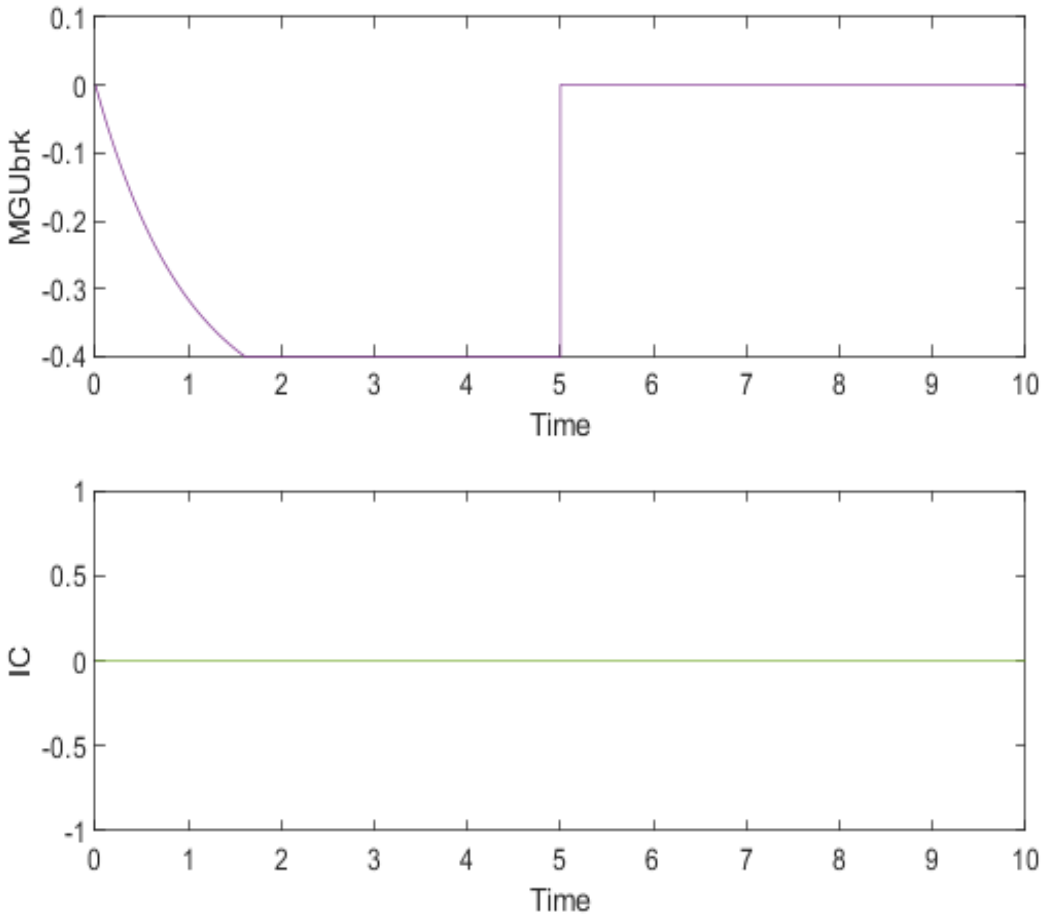
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

Configuration Set:	Configuration
External Input Name:	controllerInputs5.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs5.mat
Start Time:	0
Stop Time:	10
Checksum:	838192833 3751127671 4267247710 2037611767
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:13
Simulation Stop Time:	2021-02-11 19:57:13
Platform:	PCWIN64

Simulation Output

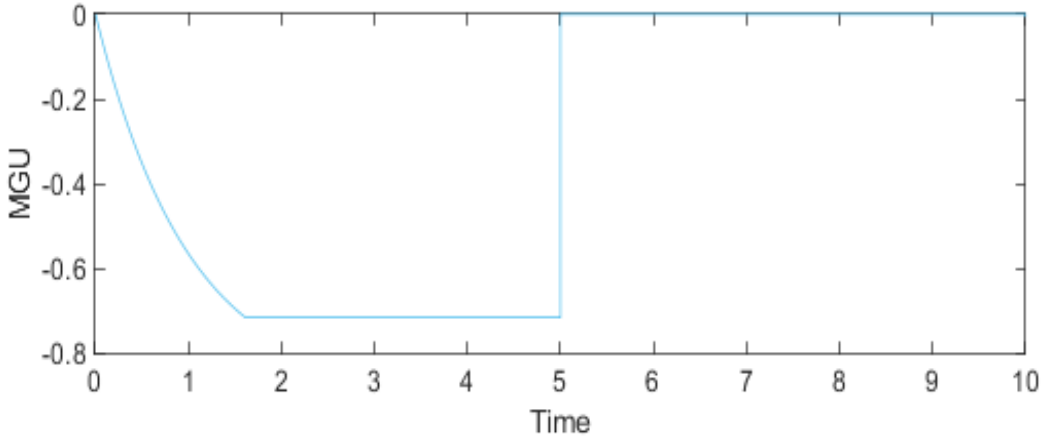
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link

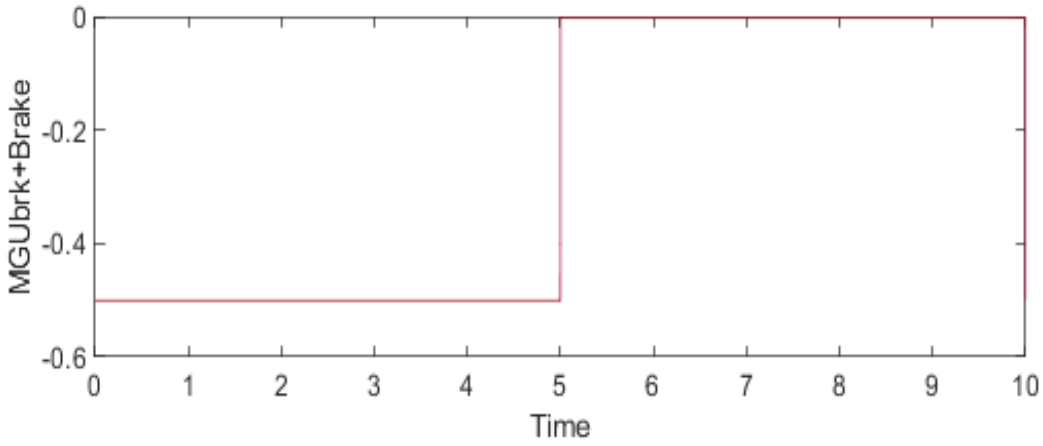
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

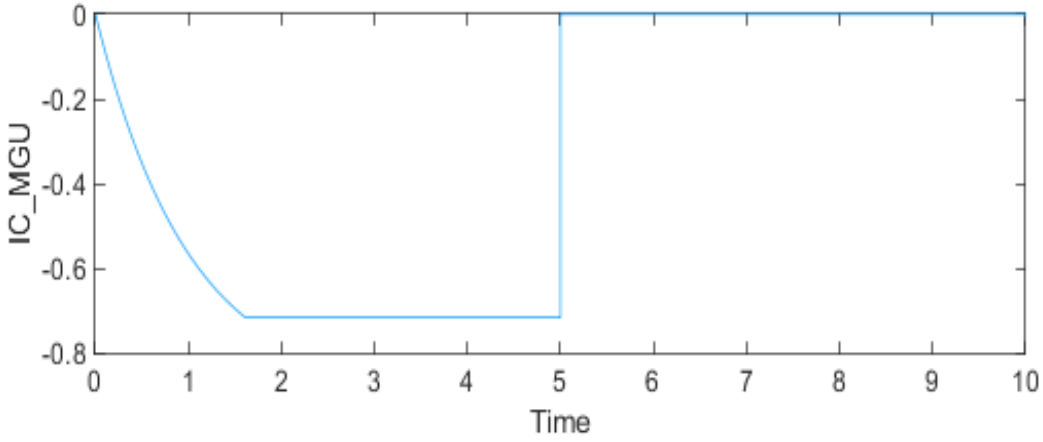
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

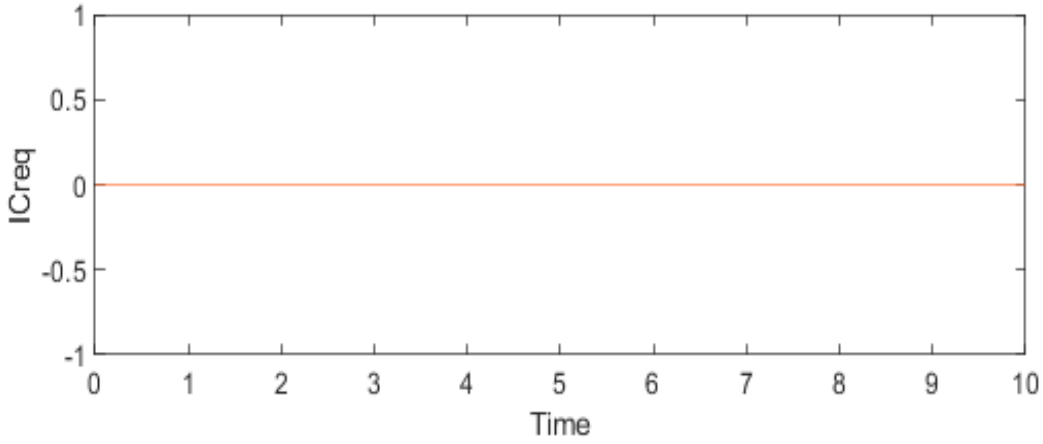




Back to Report SummaryBack to Signal Summary

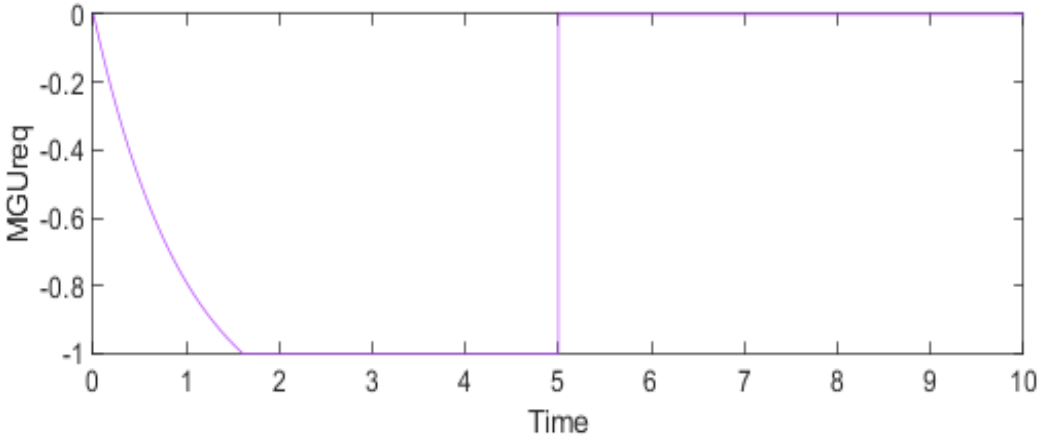
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

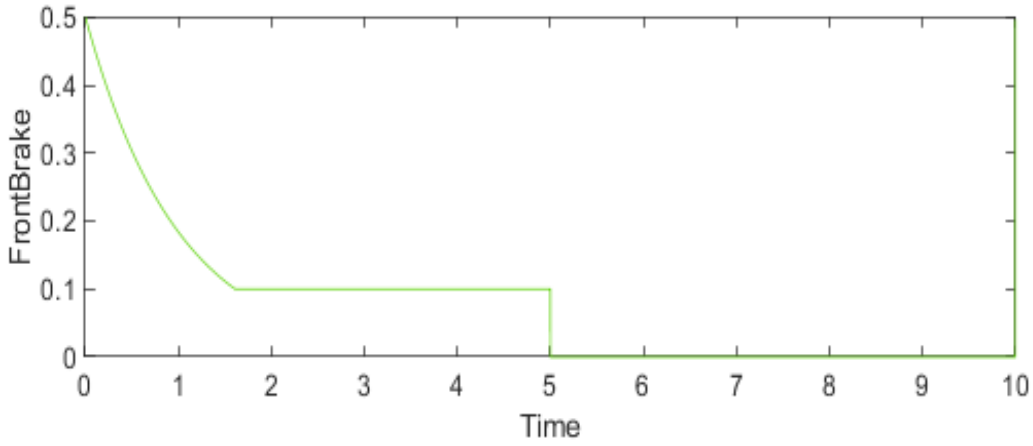




Back to Report SummaryBack to Signal Summary

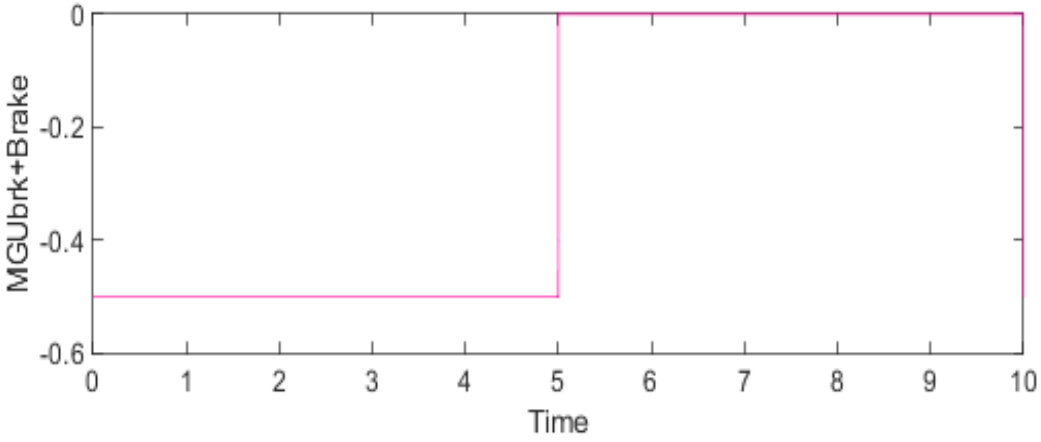
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario6

Test Result Information

Result Type:	Test Case Result
Parent:	Regenerative Braking
Start Time:	11-Feb-2021 19:57:14
End Time:	11-Feb-2021 19:57:15
Outcome:	Passed
Description:	

Scenario 6:

State = regenerative braking

AccPedal = 0

BrakePedal = pulse signal of amplitude 0.1, width 0.5 and period 10 seconds.

SOC = 50%

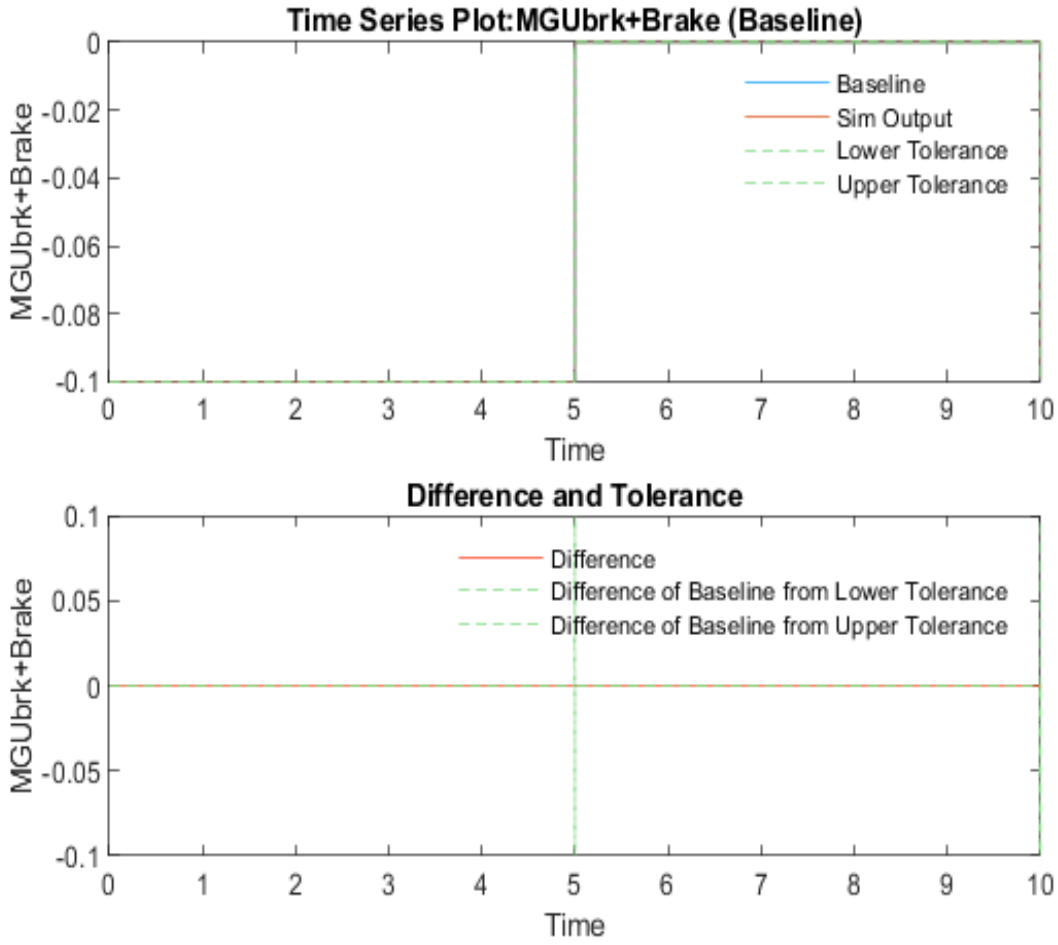
Test Case Information

Name:	Scenario6
Type:	Baseline Test
Baseline Name:	Regen_Baseline2.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Regen_Baseline2.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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.000673	double		Continuous	double		Continuous	linear	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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.000673	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

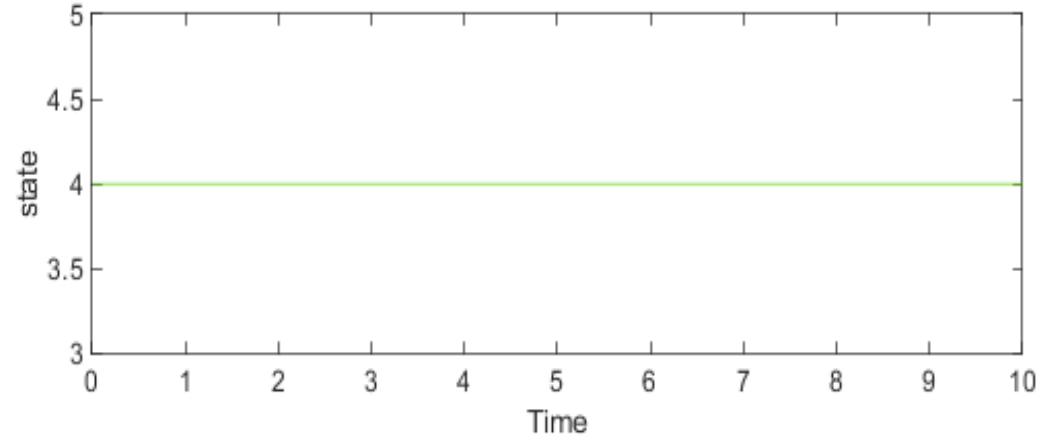
Input Information

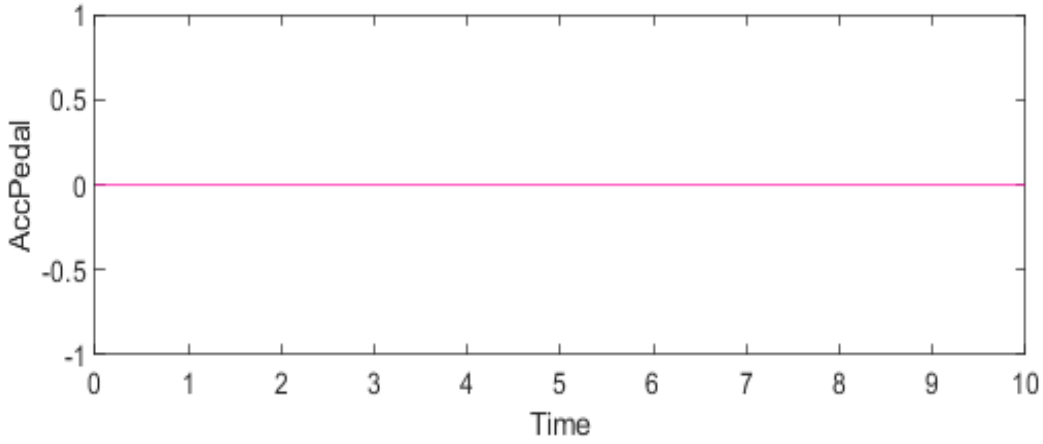
External Input Name: controllerInputs6.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs6.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

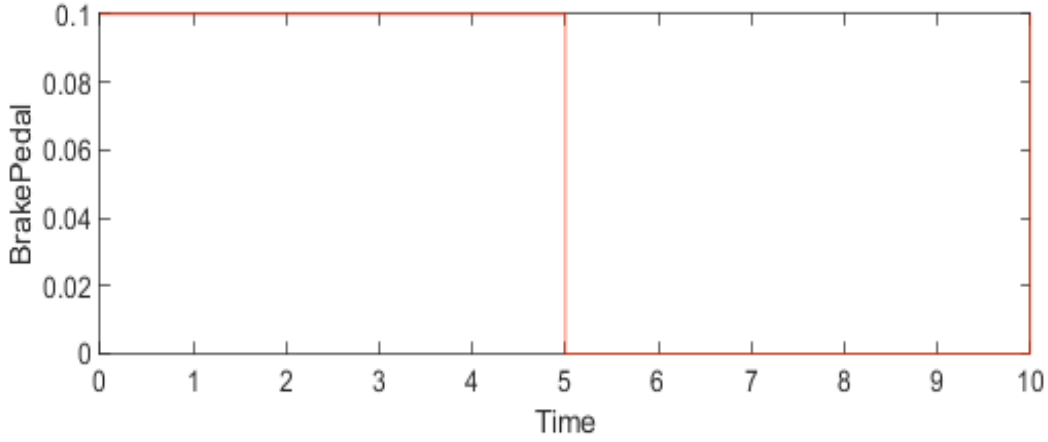
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

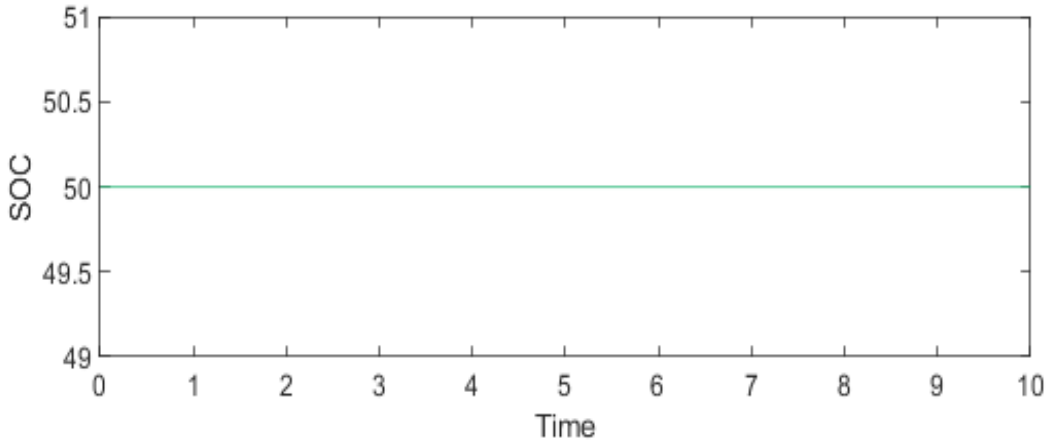




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

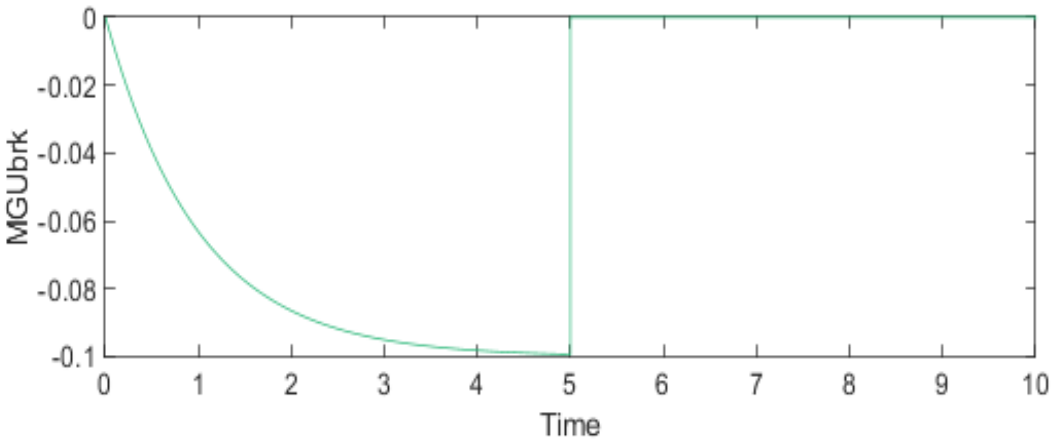
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

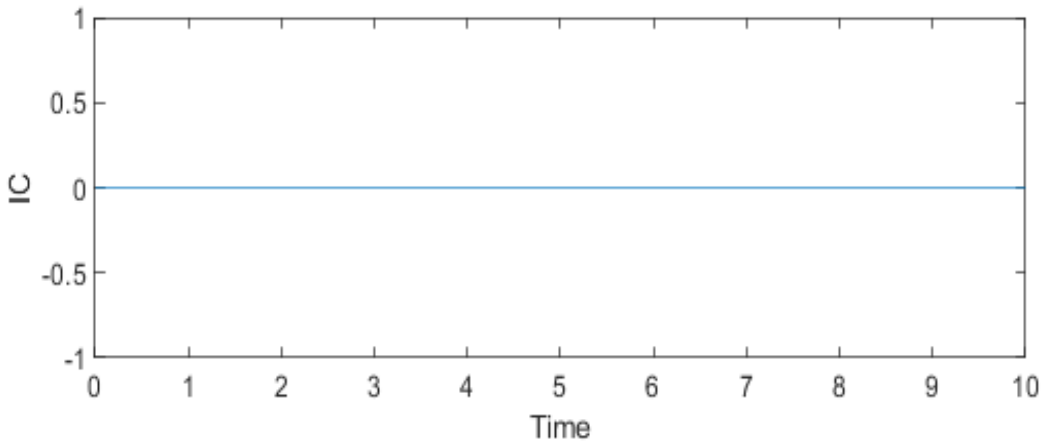
Configuration Set:	Configuration
External Input Name:	controllerInputs6.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs6.mat
Start Time:	0
Stop Time:	10
Checksum:	838192833 3751127671 4267247710 2037611767
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:14
Simulation Stop Time:	2021-02-11 19:57:15
Platform:	PCWIN64

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link

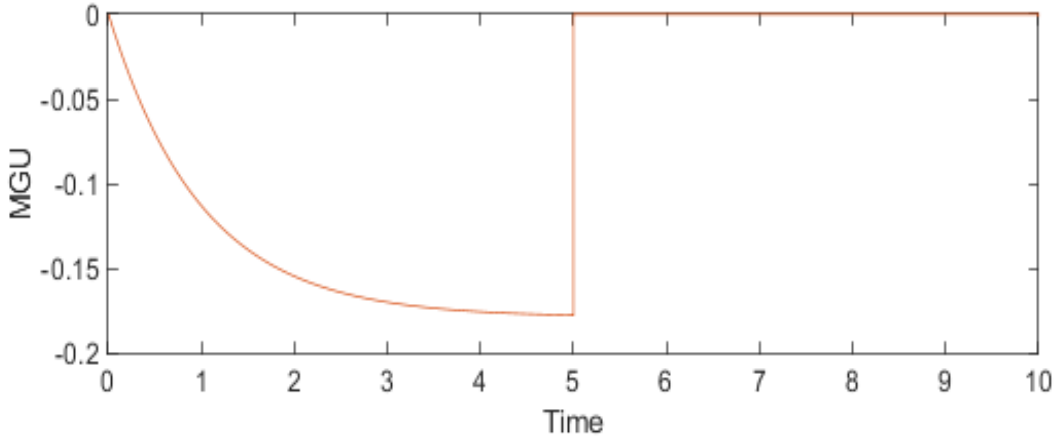
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

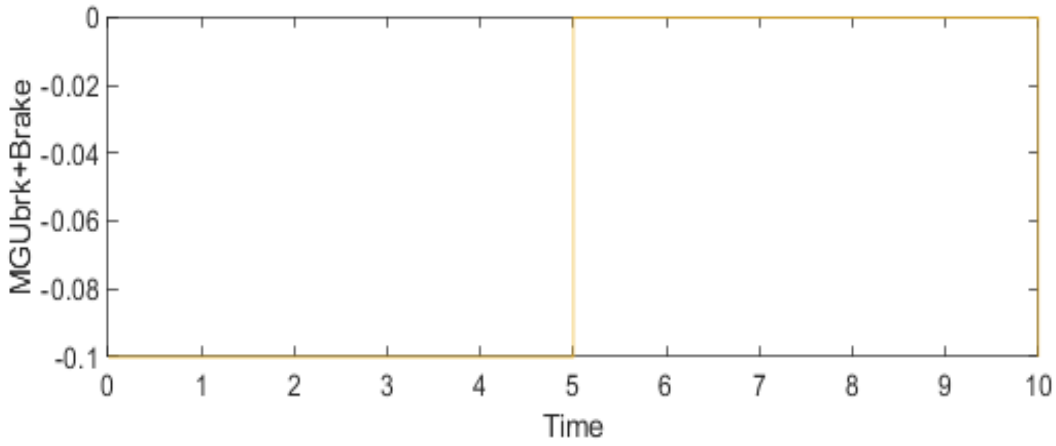




Back to Report SummaryBack to Signal Summary

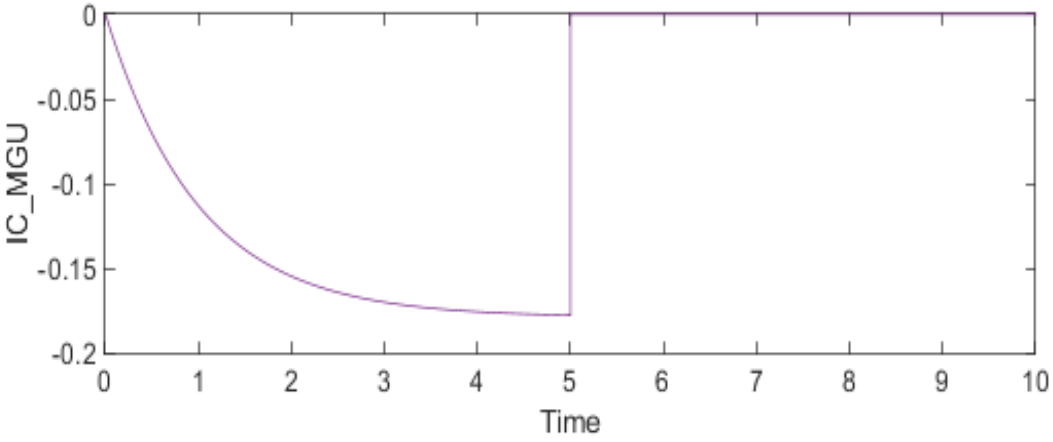
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

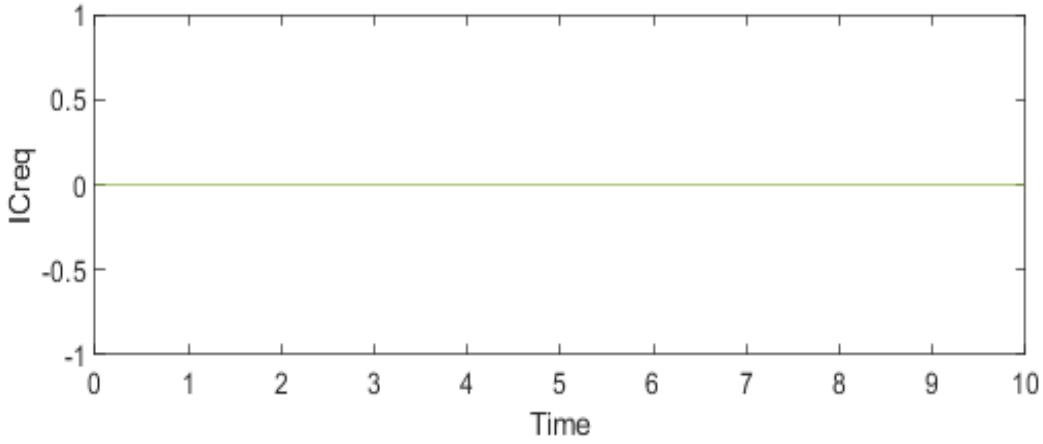




Back to Report SummaryBack to Signal Summary

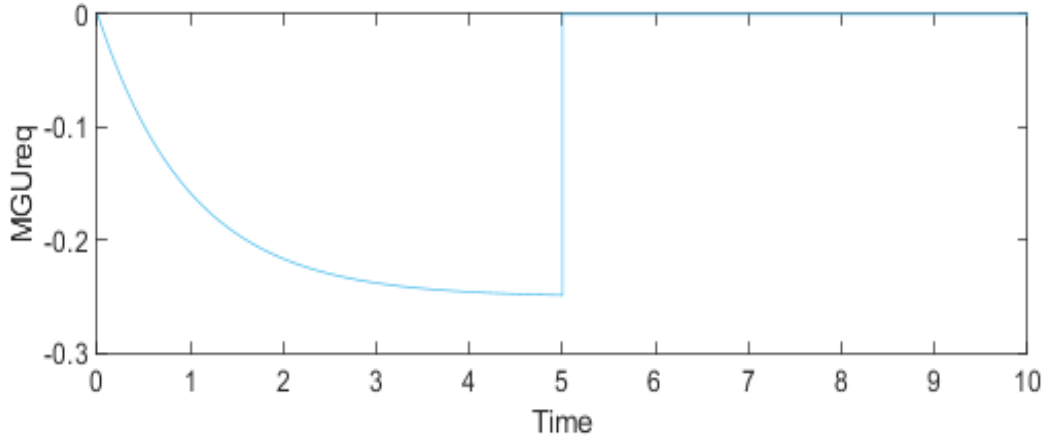
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

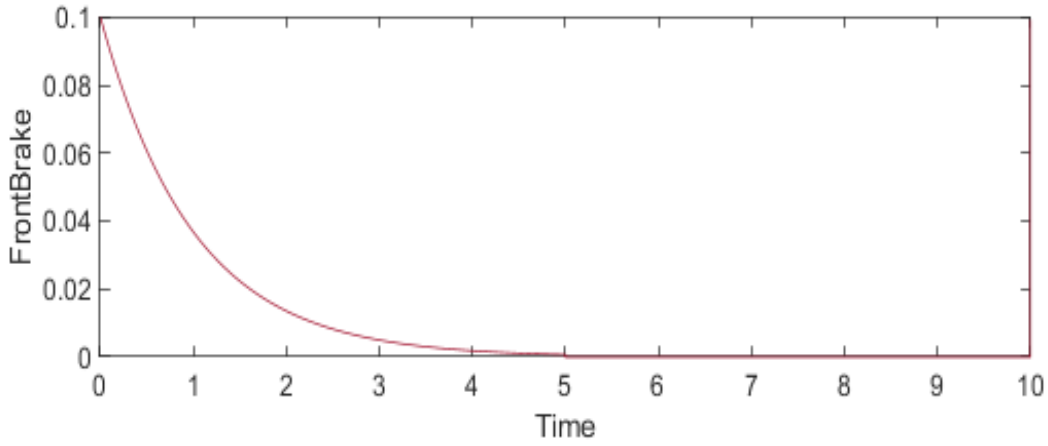




Back to Report SummaryBack to Signal Summary

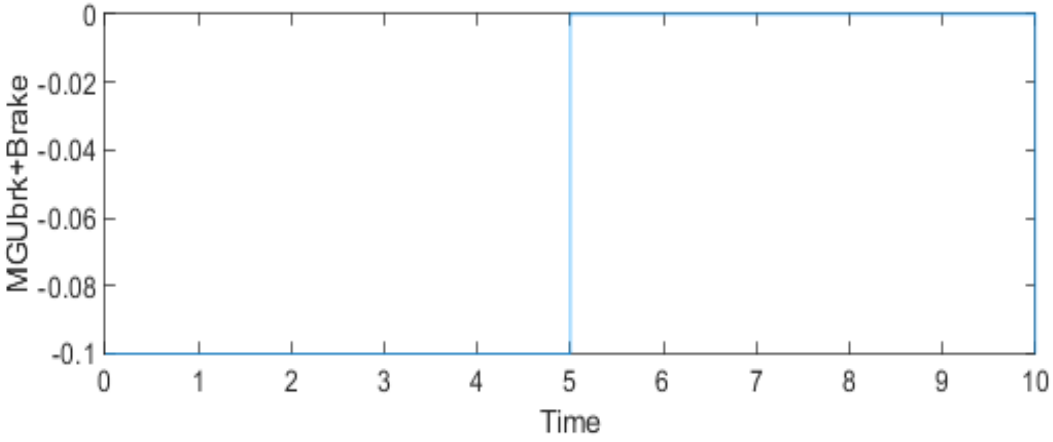
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario7

Test Result Information

Result Type:	Test Case Result
Parent:	Regenerative Braking
Start Time:	11-Feb-2021 19:57:15
End Time:	11-Feb-2021 19:57:16
Outcome:	Passed
Description:	

Scenario 7:

State = regenerative braking

AccPedal = 0

BrakePedal = pulse signal of amplitude 0.9, width 0.5 and period 10 seconds.

SOC = 100%

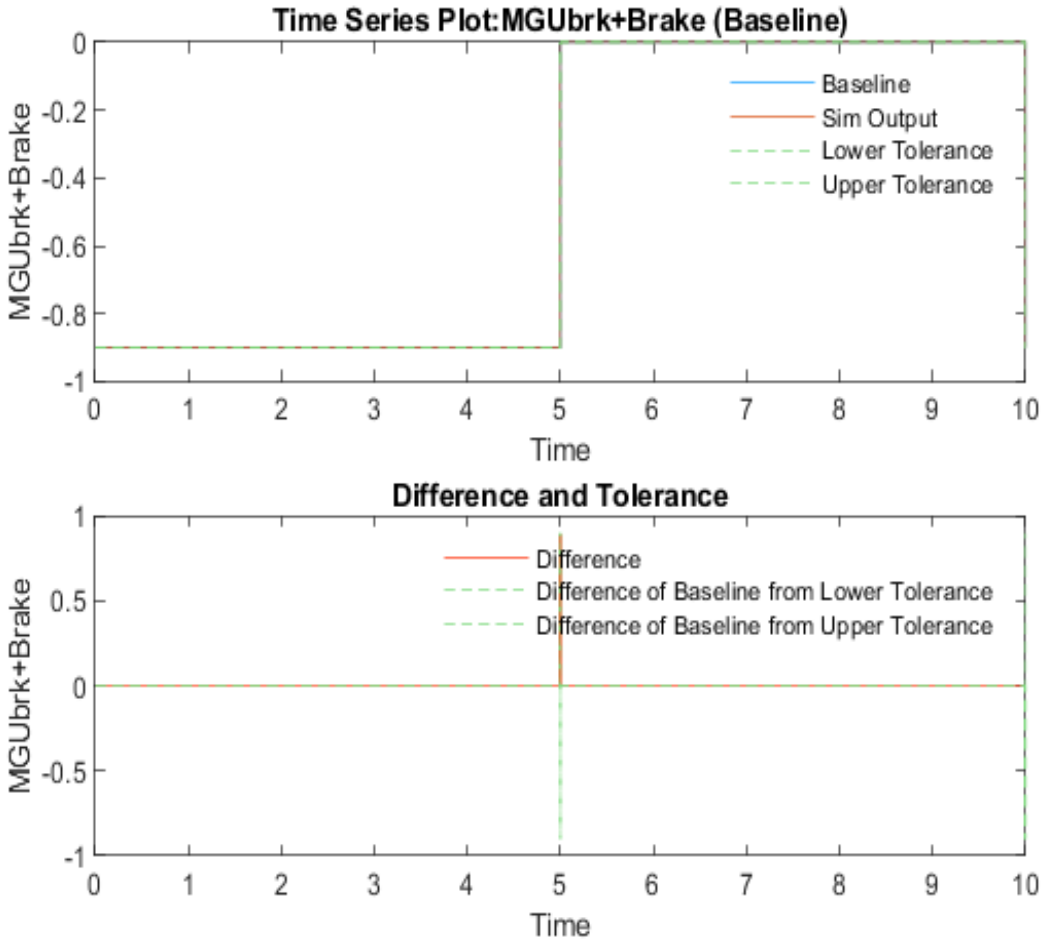
Test Case Information

Name:	Scenario7
Type:	Baseline Test
Baseline Name:	Regen_Baseline3.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Regen_Baseline3.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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.891	double		Continuous	double		Continuous	linear	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
MGUbrk+Brake	1e-05	0	0.001	0.001	0.891	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

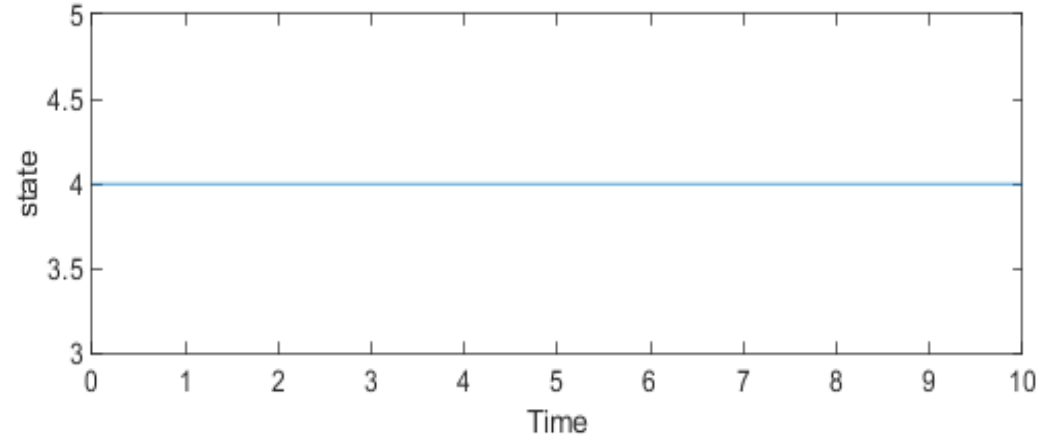
Input Information

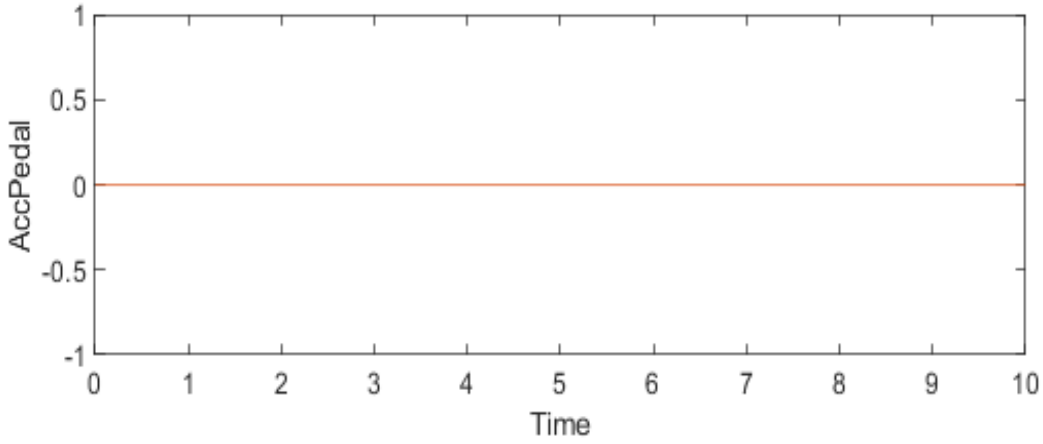
External Input Name: controllerInputs7.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs7.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

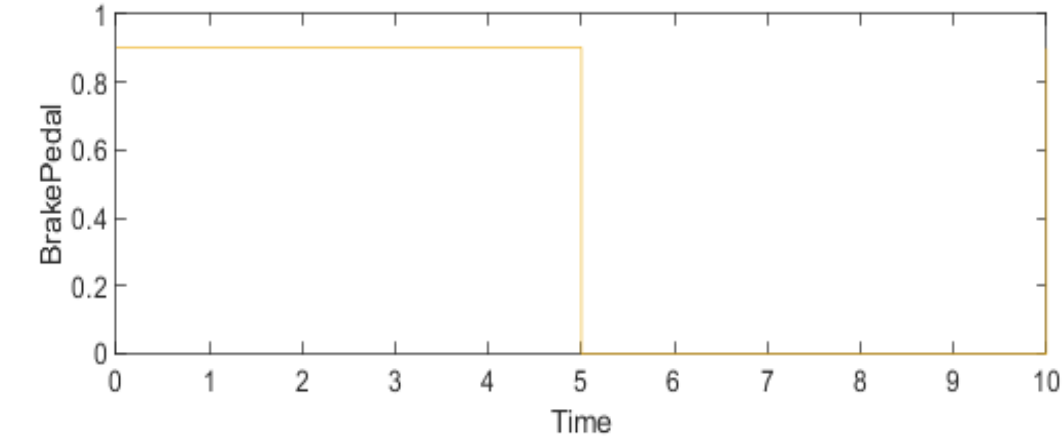
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

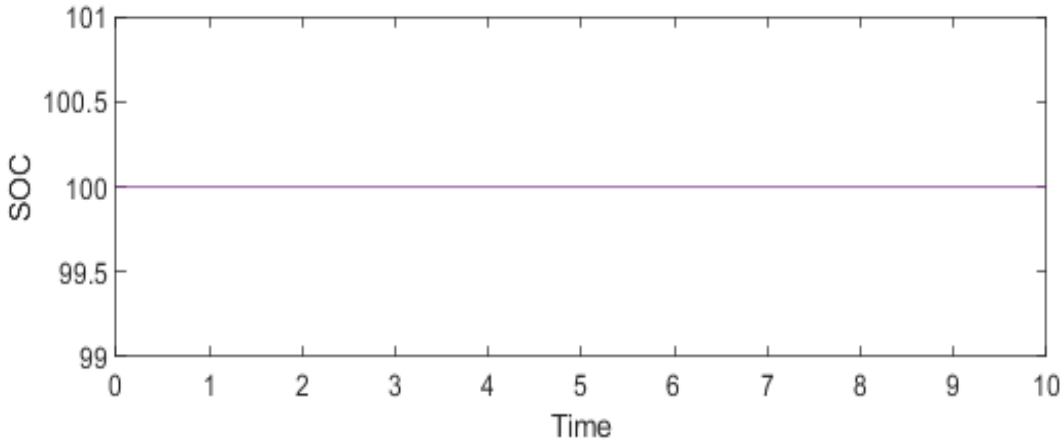




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

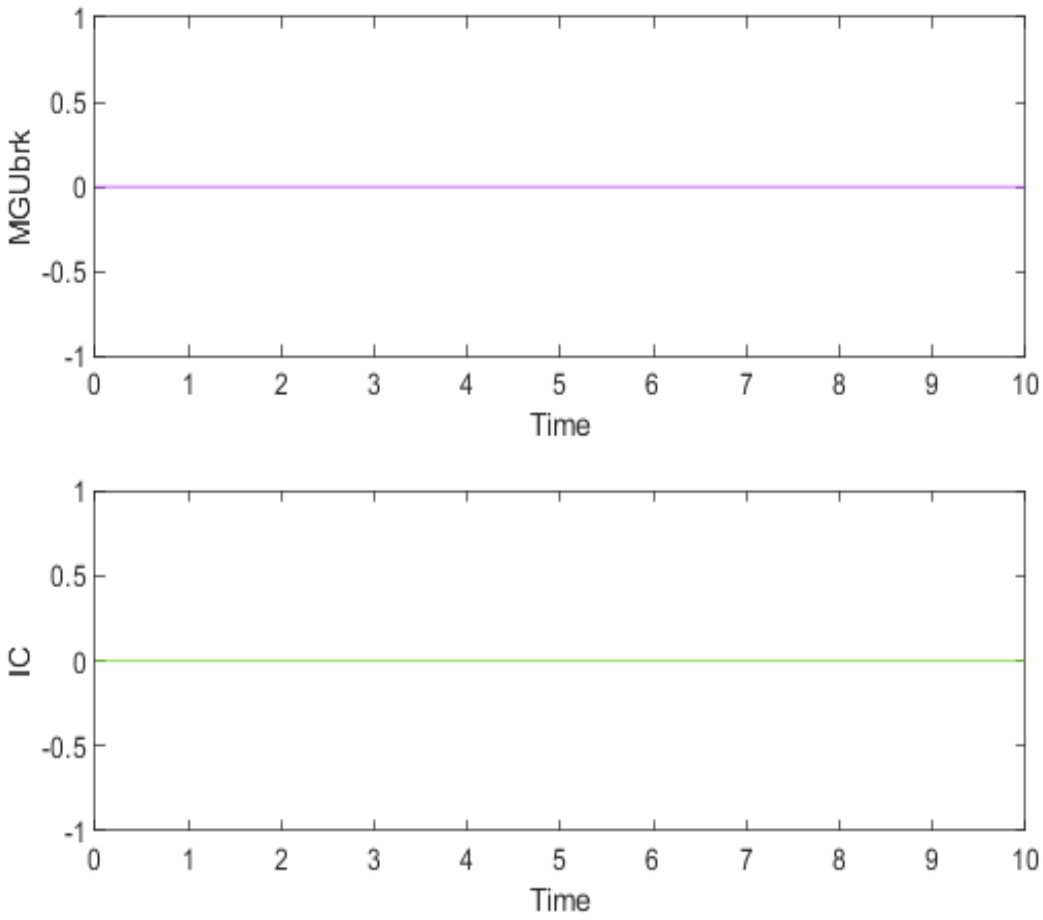
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

Configuration Set:	Configuration
External Input Name:	controllerInputs7.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs7.mat
Start Time:	0
Stop Time:	10
Checksum:	838192833 3751127671 4267247710 2037611767
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:15
Simulation Stop Time:	2021-02-11 19:57:16
Platform:	PCWIN64

Simulation Output

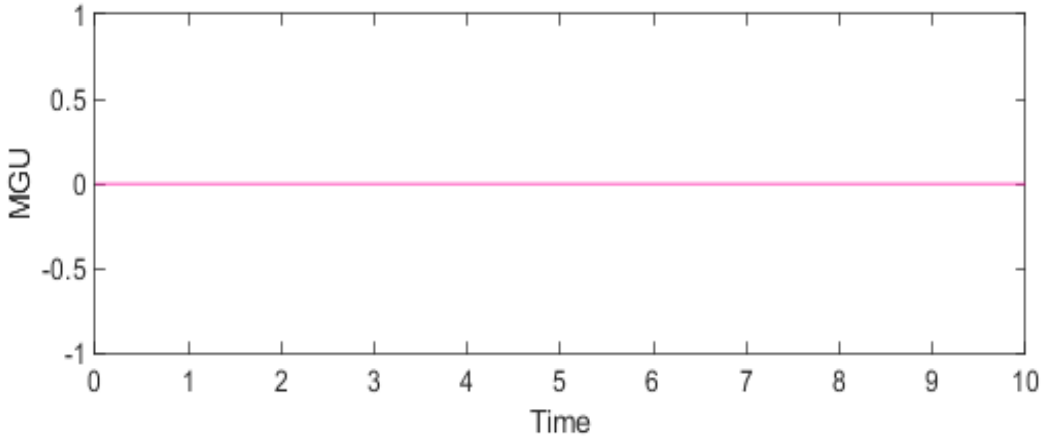
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link

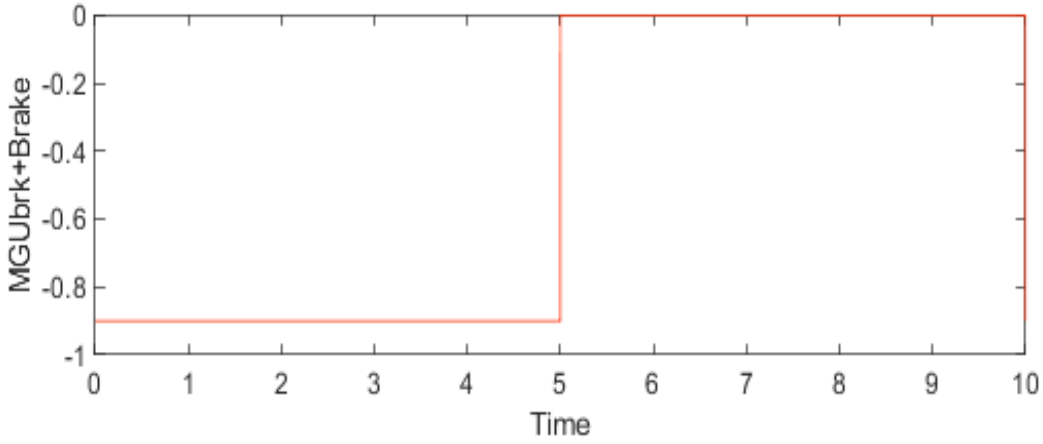
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

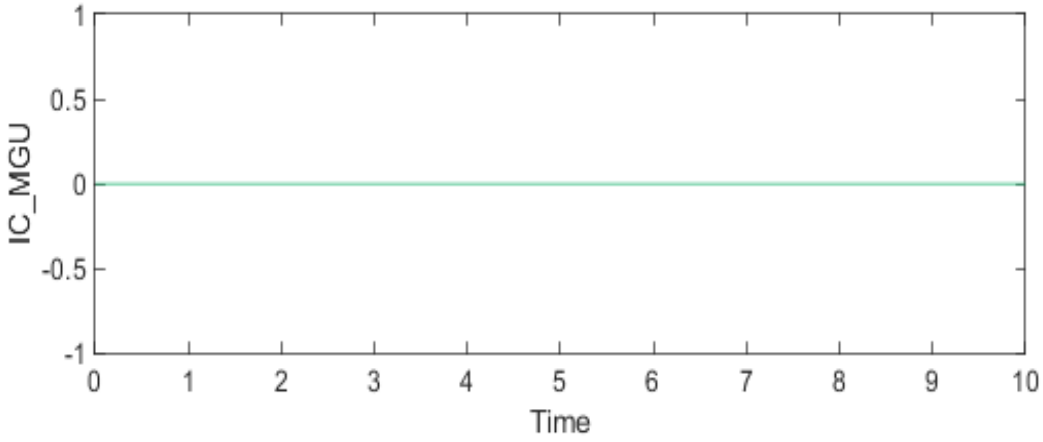
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

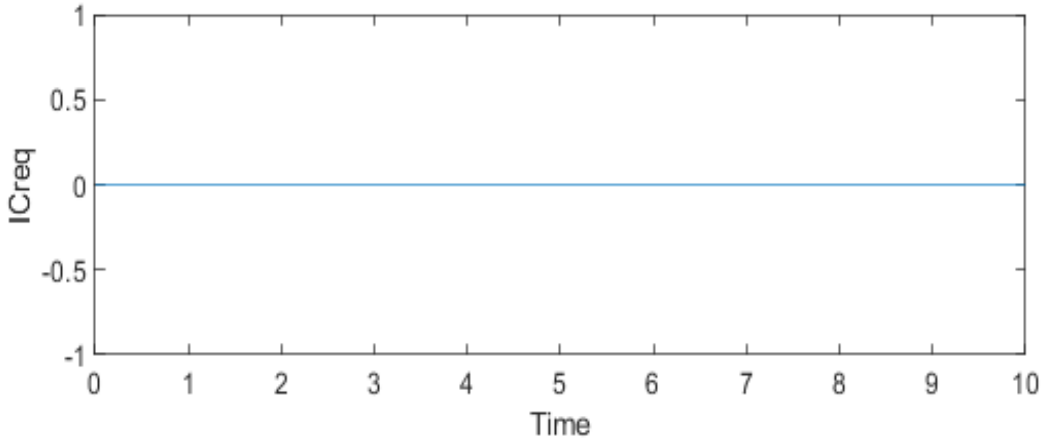




Back to Report SummaryBack to Signal Summary

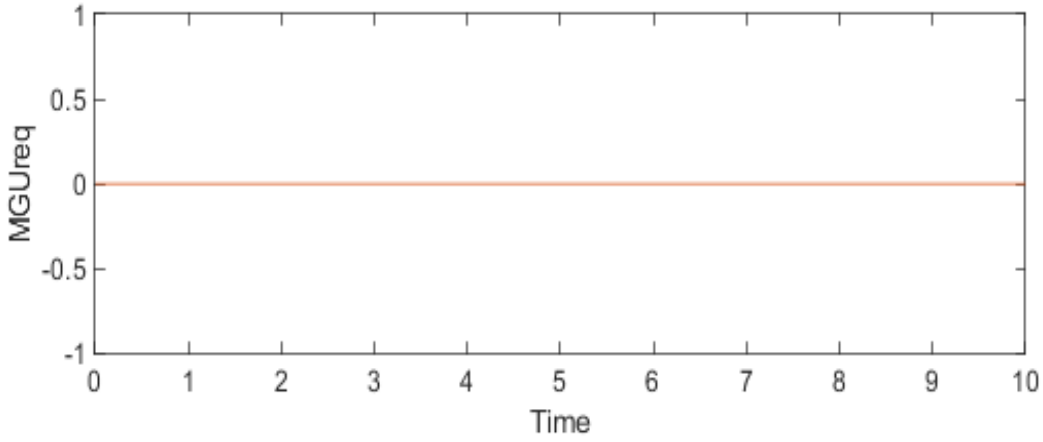
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

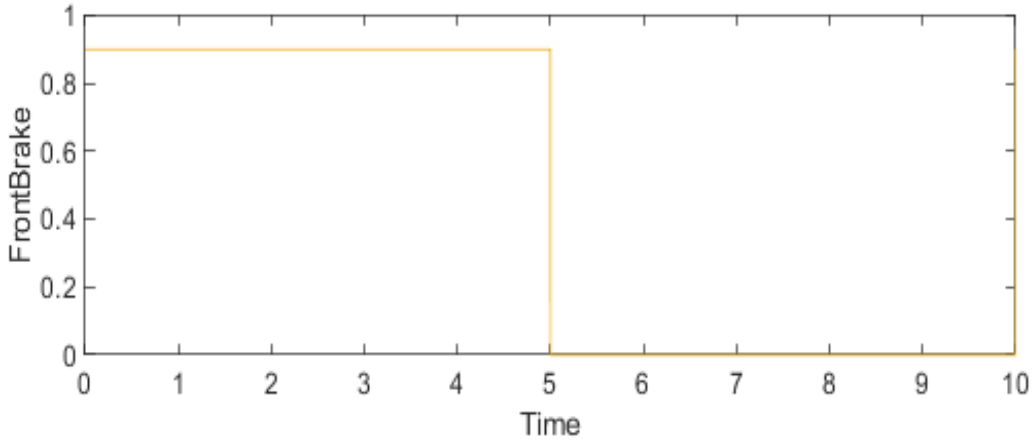




Back to Report SummaryBack to Signal Summary

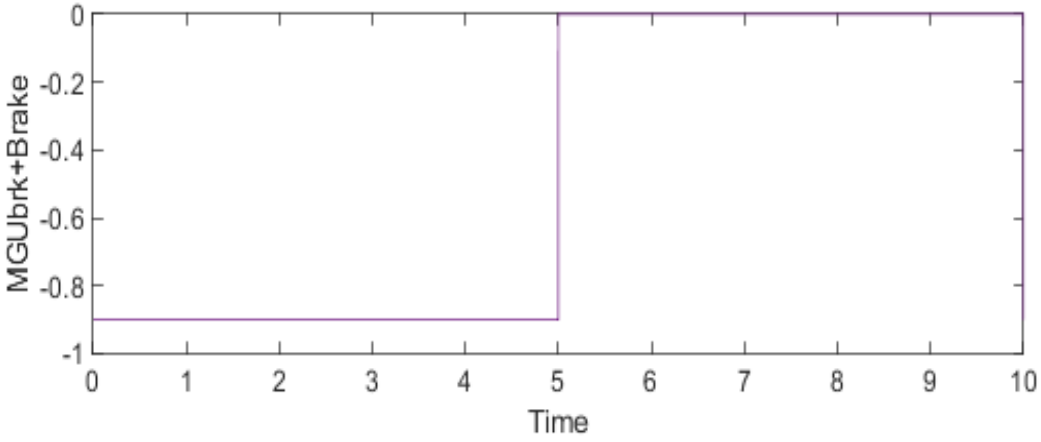
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Scenario8

Test Result Information

Result Type:	Test Case Result
Parent:	Regenerative Braking
Start Time:	11-Feb-2021 19:57:16
End Time:	11-Feb-2021 19:57:18
Outcome:	Passed
Description:	

Scenario 8:

State = regenerative braking

AccPedal = 0

BrakePedal = exponential growth and decay over time

SOC = 50%

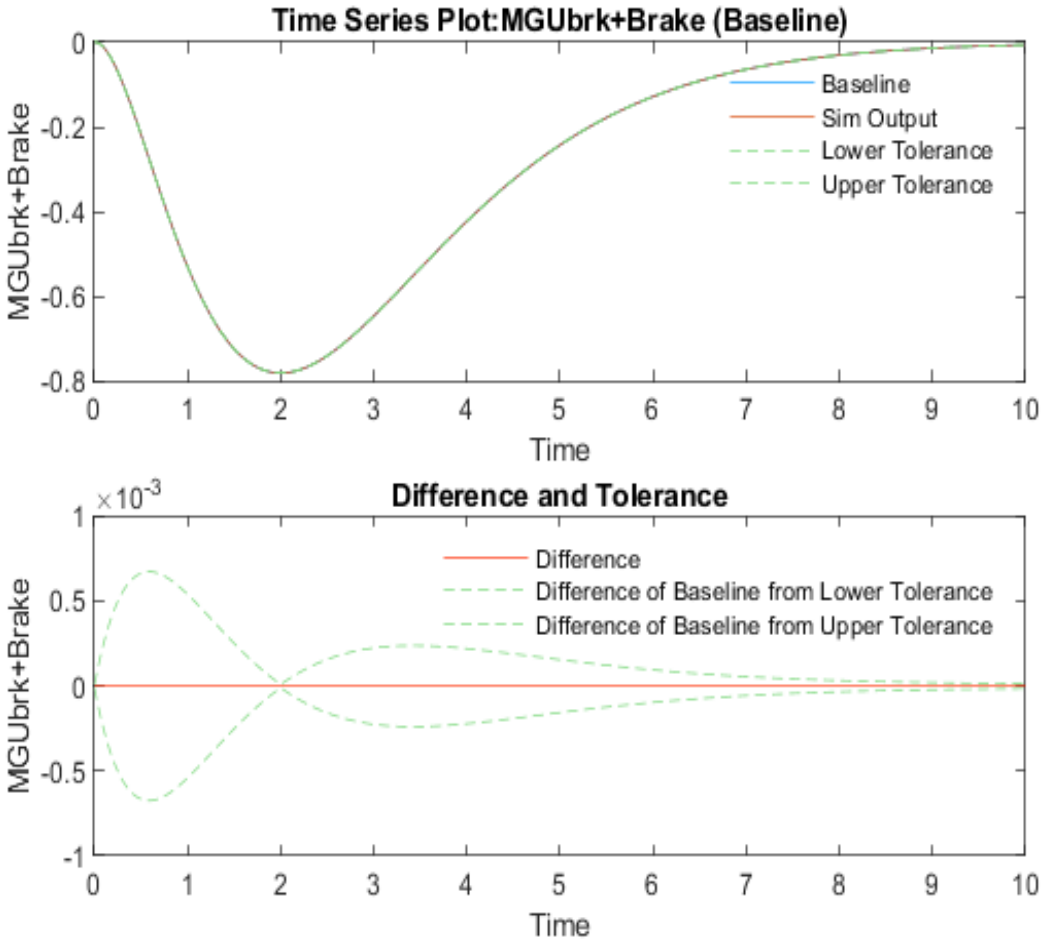
Test Case Information

Name:	Scenario8
Type:	Baseline Test
Baseline Name:	Regen_Baseline4.mat
Baseline File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\Baselines\Regen_Baseline4.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
MGUbrk+ Brake	1e-05	0	0.001	0.001	5.55e-17	double		Continuous	double		Continuous	linear	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
MGUbrk+Brake	1e-05	0	0.001	0.001	5.55e-17	double		Continuous	double		Continuous	linear	union



Back to Report SummaryBack to Criteria Results

Input Data

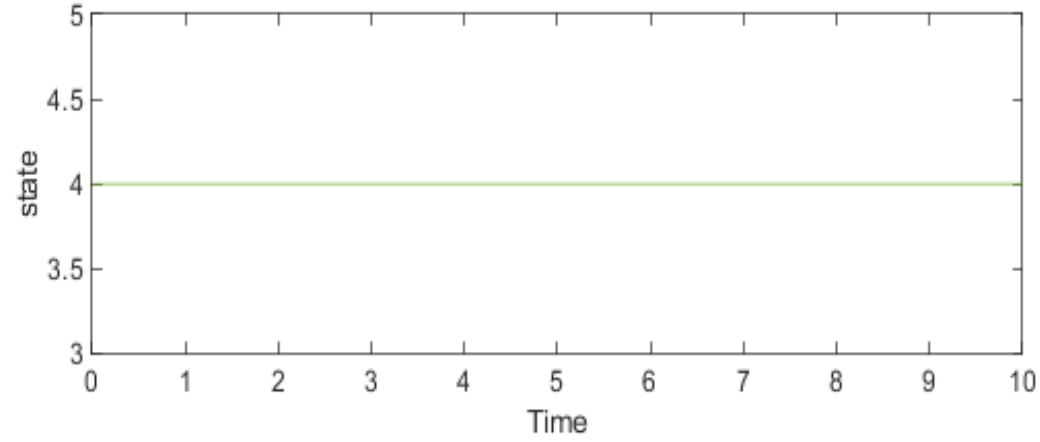
Input Information

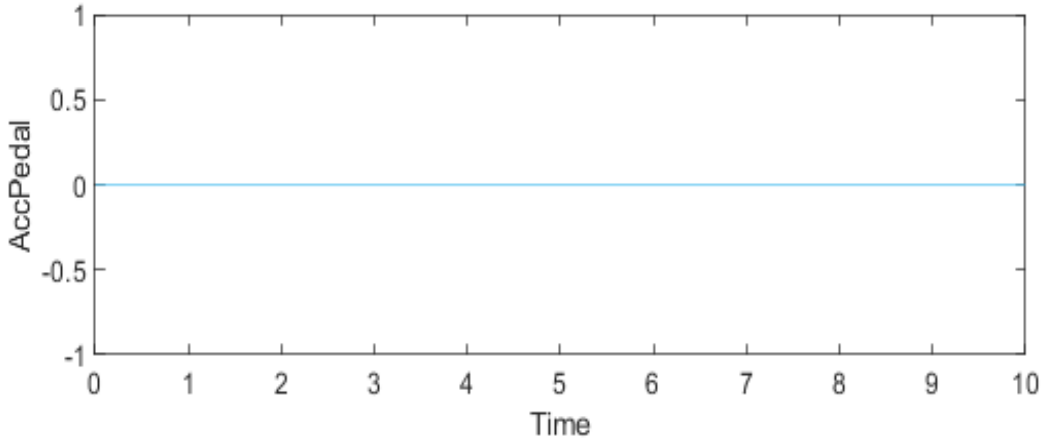
External Input Name: controllerInputs8.mat

External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs8.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

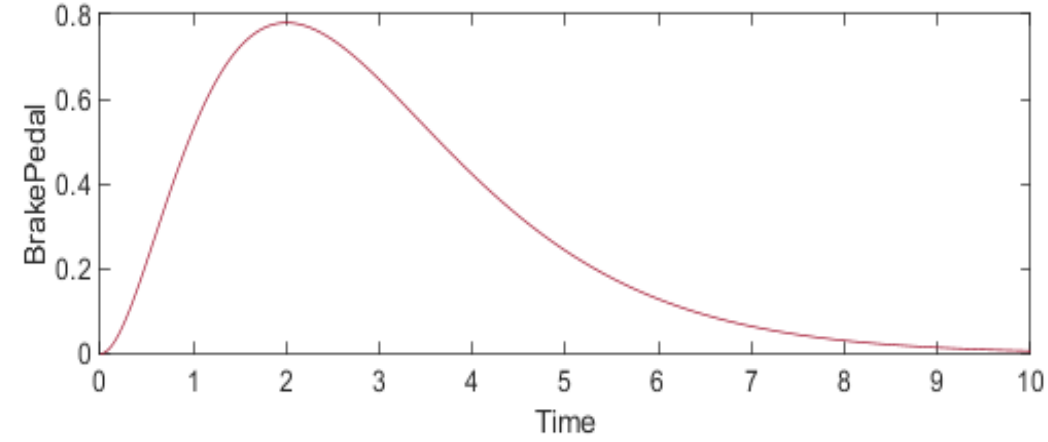
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

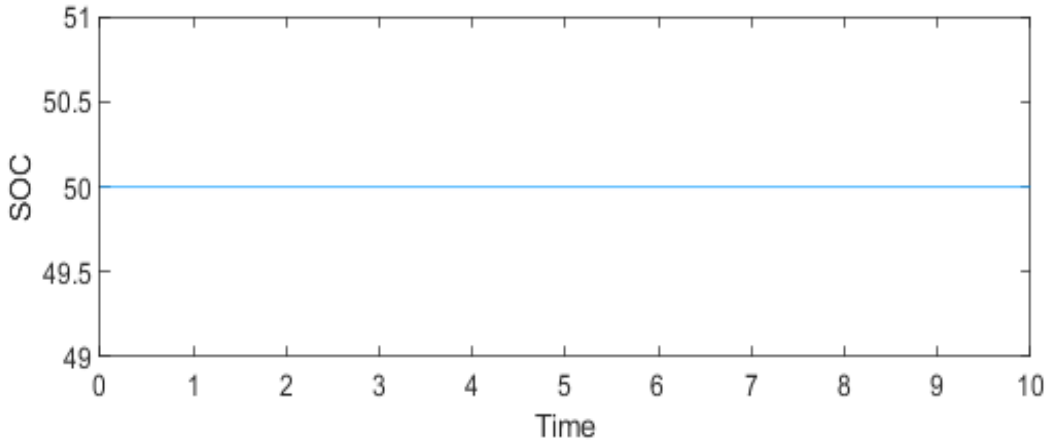




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

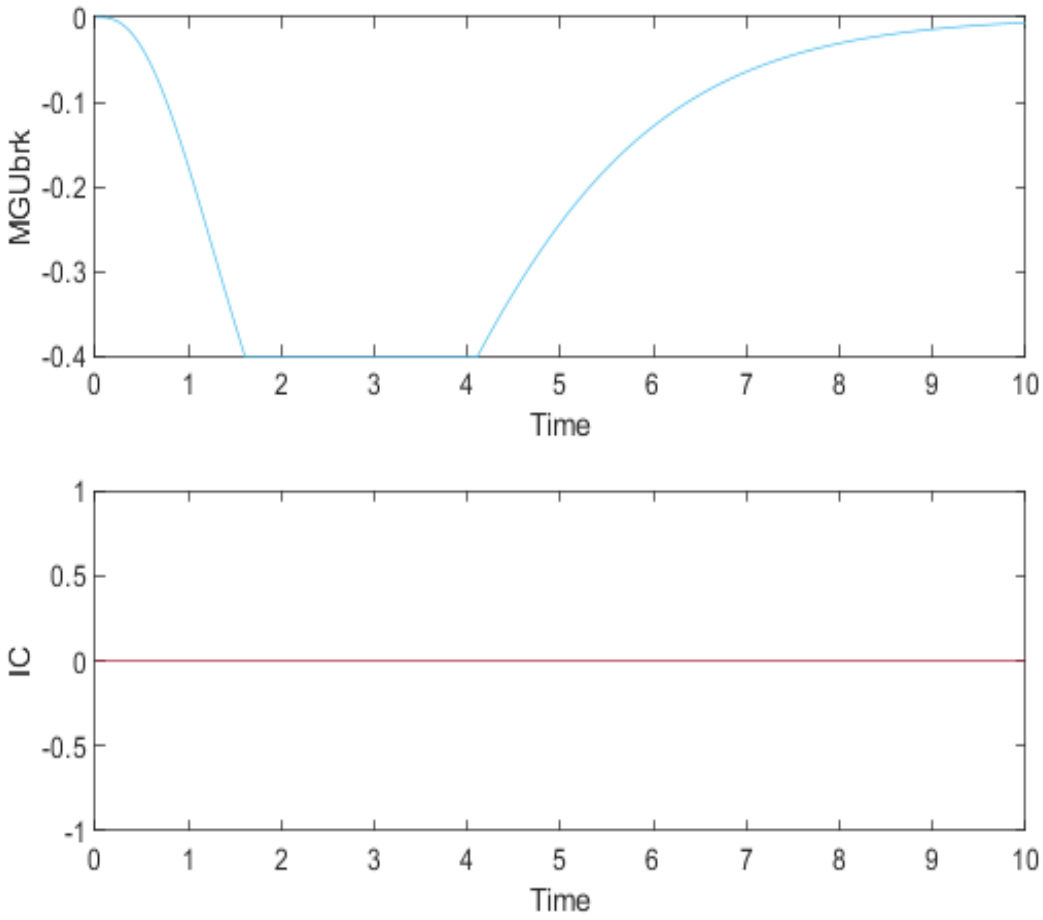
Model:	controllerModel
Release:	Current
Simulation Mode:	normal
Override SIL or PIL Mode:	0

Configuration Set:	Configuration
External Input Name:	controllerInputs8.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs8.mat
Start Time:	0
Stop Time:	10
Checksum:	838192833 3751127671 4267247710 2037611767
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:16
Simulation Stop Time:	2021-02-11 19:57:17
Platform:	PCWIN64

Simulation Output

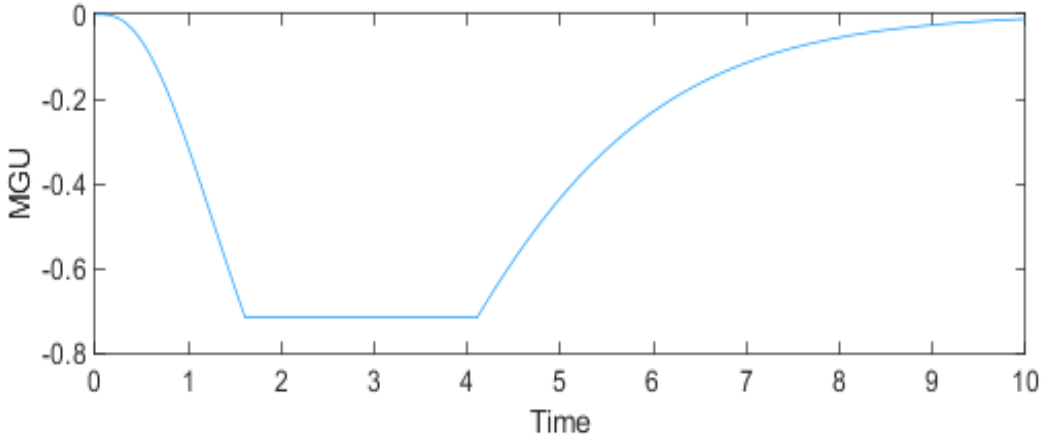
Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link

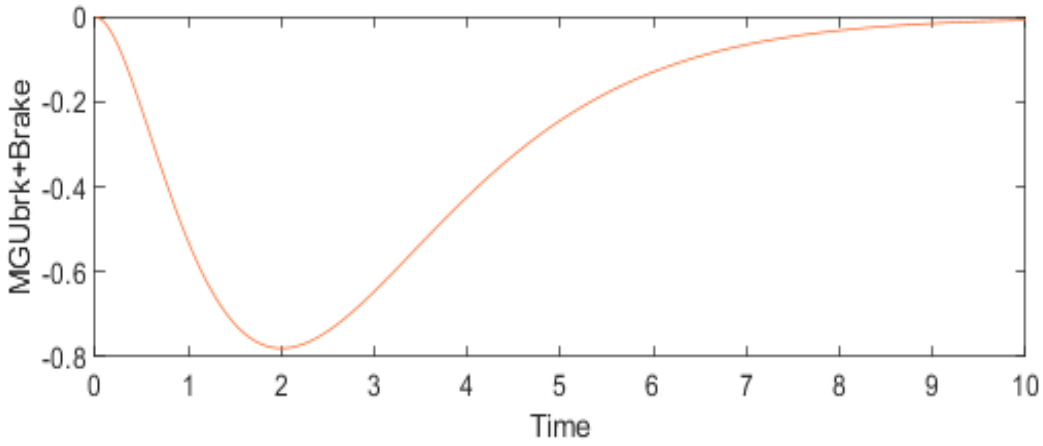
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

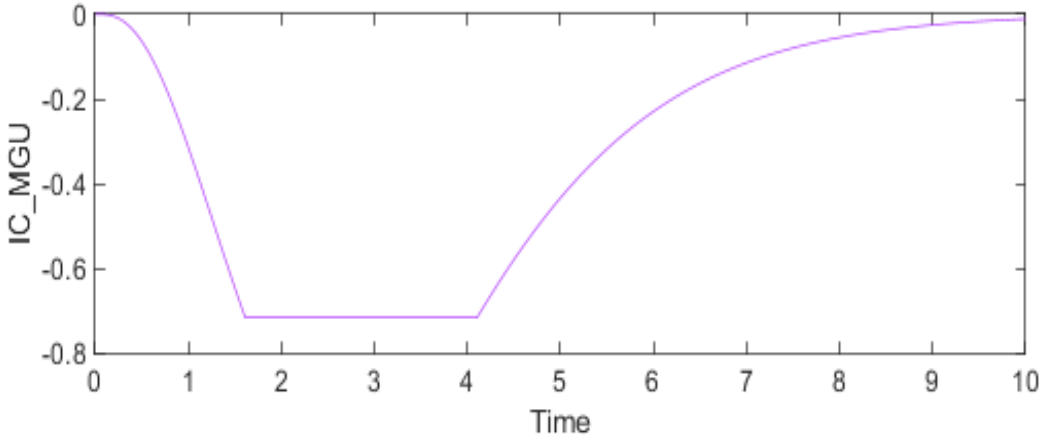
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

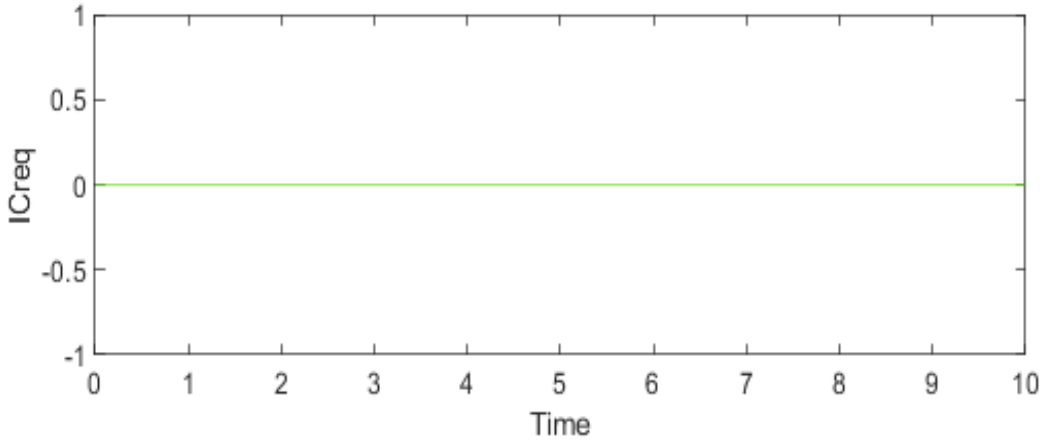




Back to Report SummaryBack to Signal Summary

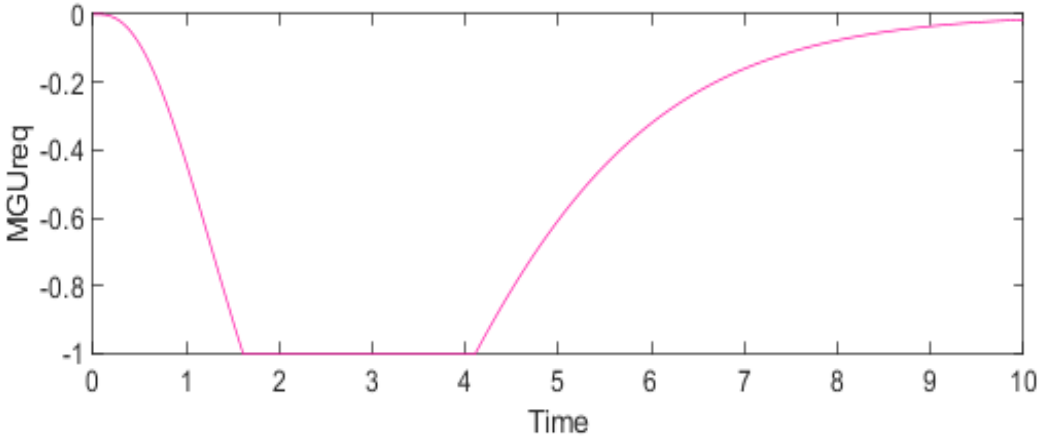
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

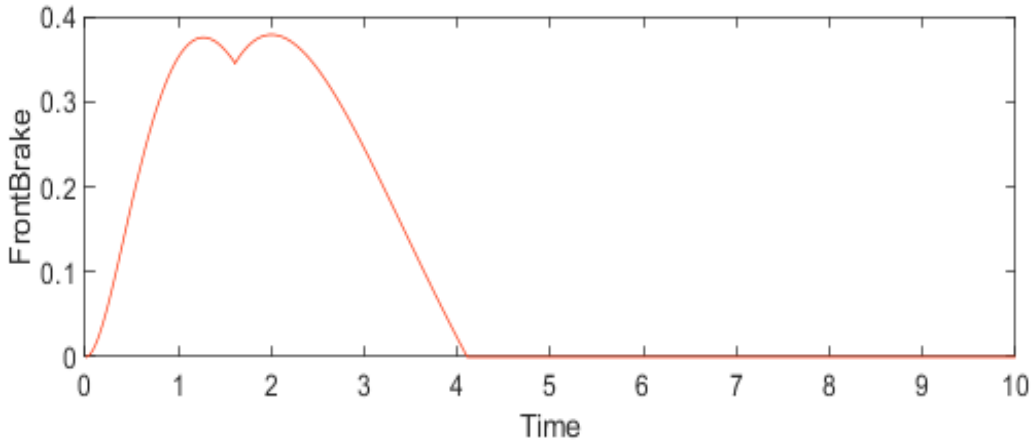




Back to Report SummaryBack to Signal Summary

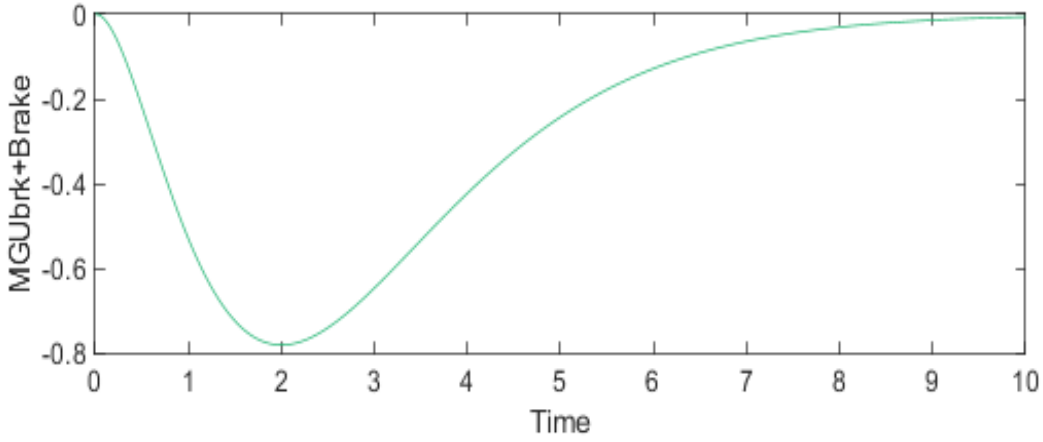
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk+Brake	double		Continuous	linear	union



Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Electrical Drive

Test Result Information

Result Type:	Test Suite Result
Parent:	controllerTest
Start Time:	11-Feb-2021 19:57:18
End Time:	11-Feb-2021 19:57:19
Outcome:	Total: 1, Passed: 1
Description:	

Electrical Drive case suite of tests

Test Suite Information

Name:	Electrical Drive

Back to Report Summary

Scenario11

Test Result Information

Result Type:	Test Case Result
Parent:	Electrical Drive
Start Time:	11-Feb-2021 19:57:18
End Time:	11-Feb-2021 19:57:19
Outcome:	Passed
Description:	

Scenario 11:

state = electrical drive

AccPedal = exponential growth and decay

BrakePedal = 0

SOC = from 70% to 15%

Test Case Information

Name: Scenario11
Type: Baseline Test

Logical and Temporal Assessments

Name	Assessment
Assessment1	At any point of time, (((SOC >= 15) & (BrakePedal == 0)) & ((MGUreq <= AccPedal) | (MGUreq <= 1))) must be true

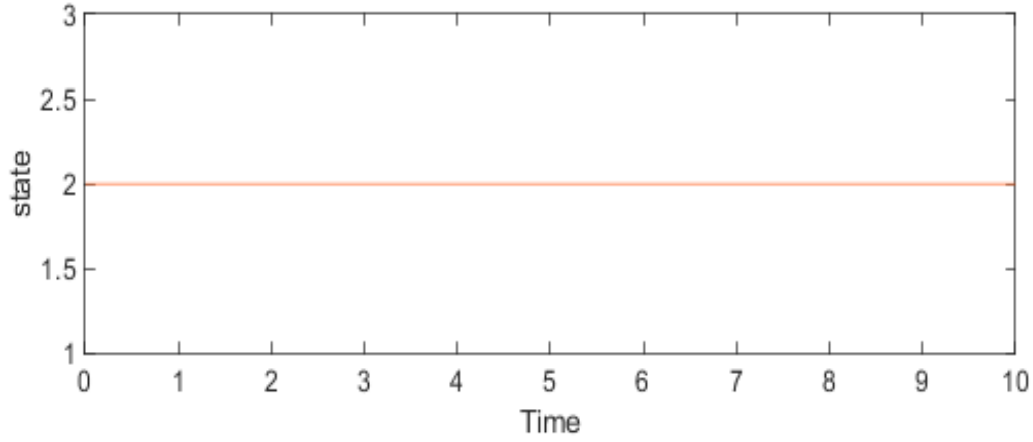
Input Data

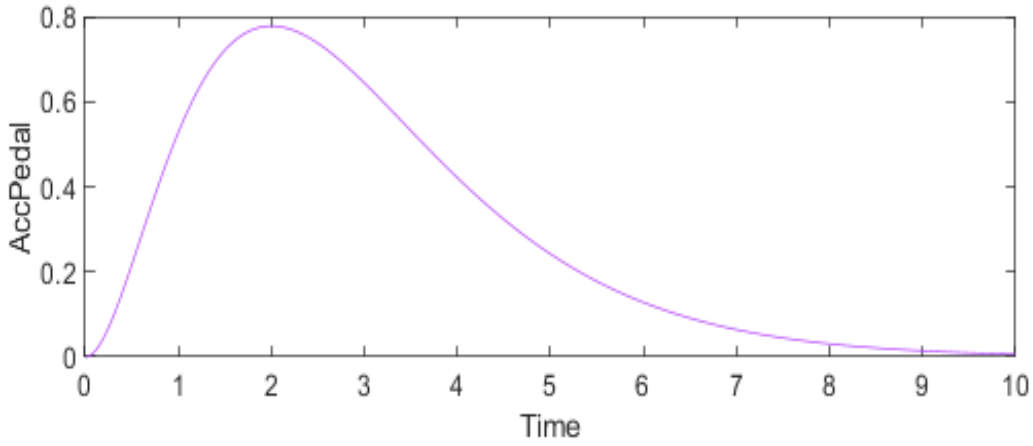
Input Information

External Input Name: controllerInputs11.mat
External Input File: C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs11.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
state	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link
SOC	double		Continuous	linear	union	Link

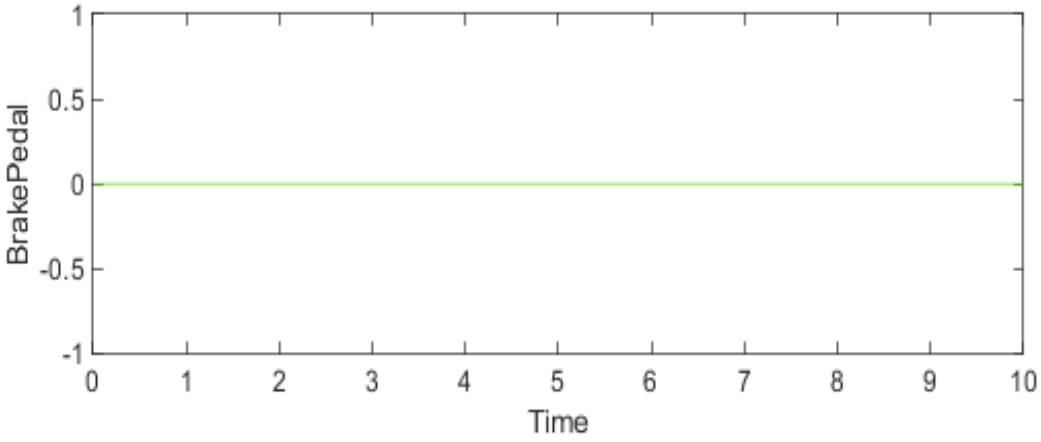
Name	Data Type	Units	Sample Time	Interp	Sync
state	double		Continuous	linear	union
AccPedal	double		Continuous	linear	union

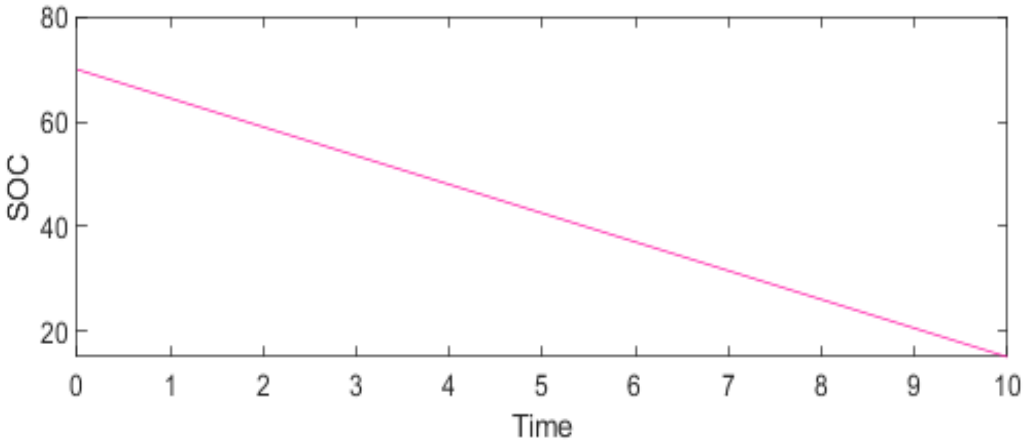




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
BrakePedal	double		Continuous	linear	union
SOC	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation

System Under Test Information

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

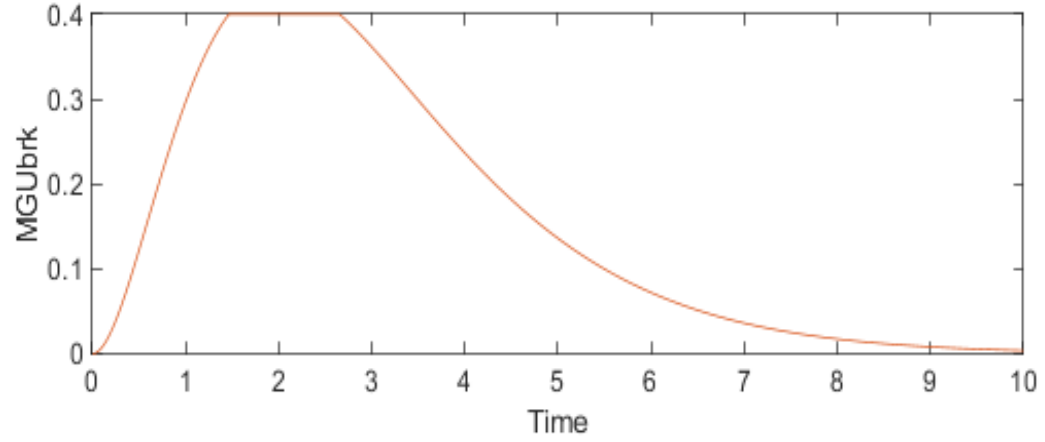
Configuration Set:	Configuration
External Input Name:	controllerInputs11.mat
External Input File:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs11.mat
Start Time:	0
Stop Time:	10
Checksum:	2665756964 2540176594 24359503 183443390
Simulink Version:	10.2
Model Version:	1.12
Model Author:	mordi
Date:	Thu Feb 11 19:54:47 2021
User ID:	mordi
Model Path:	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\controllerModel.slx
Machine Name:	DESKTOP-PM6NB79
Solver Name:	VariableStepDiscrete
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-02-11 19:57:18
Simulation Stop Time:	2021-02-11 19:57:18
Platform:	PCWIN64

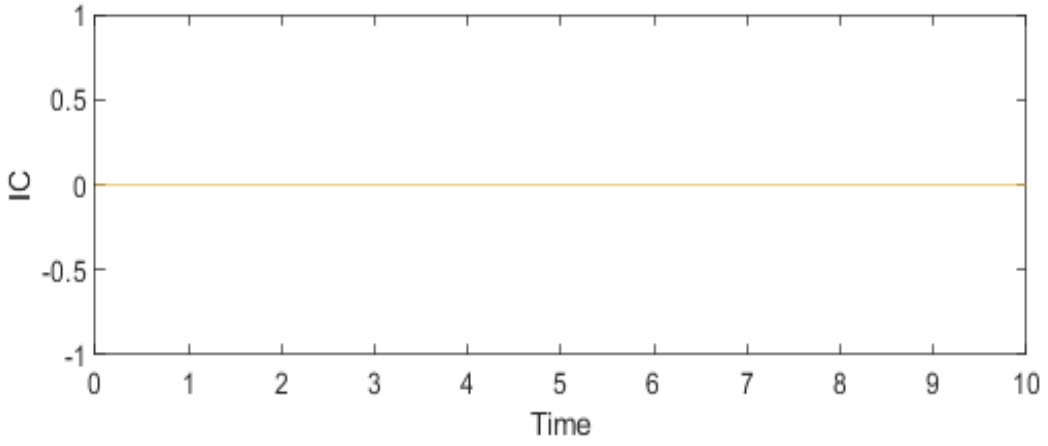
Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
MGUbrk	double		Continuous	linear	union	Link
IC	double		Continuous	linear	union	Link
MGU	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
IC_MGU	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link
FrontBrake	double		Continuous	linear	union	Link
AccPedal	double		Continuous	linear	union	Link
BrakePedal	double		Continuous	linear	union	Link

SOC	double		Continuous	linear	union	Link
MGUbrk+Brake	double		Continuous	linear	union	Link
ICreq	double		Continuous	linear	union	Link
MGUreq	double		Continuous	linear	union	Link

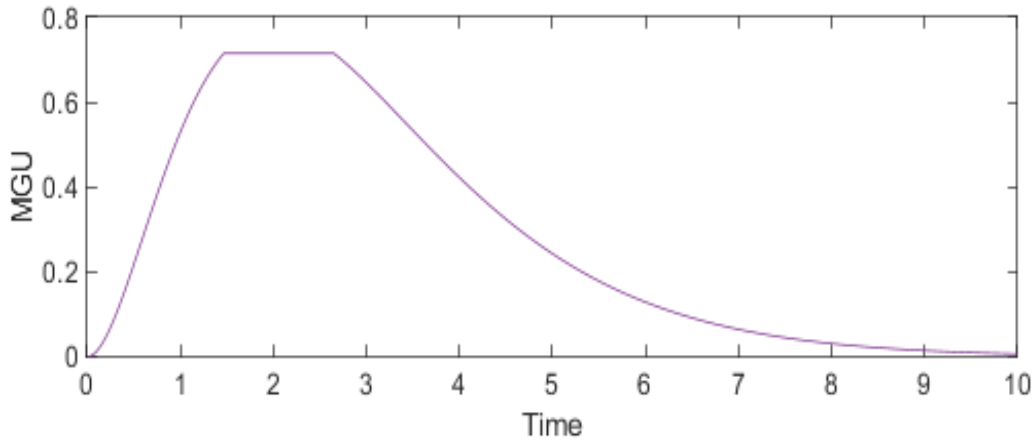
Name	Data Type	Units	Sample Time	Interp	Sync
MGUbrk	double		Continuous	linear	union
IC	double		Continuous	linear	union

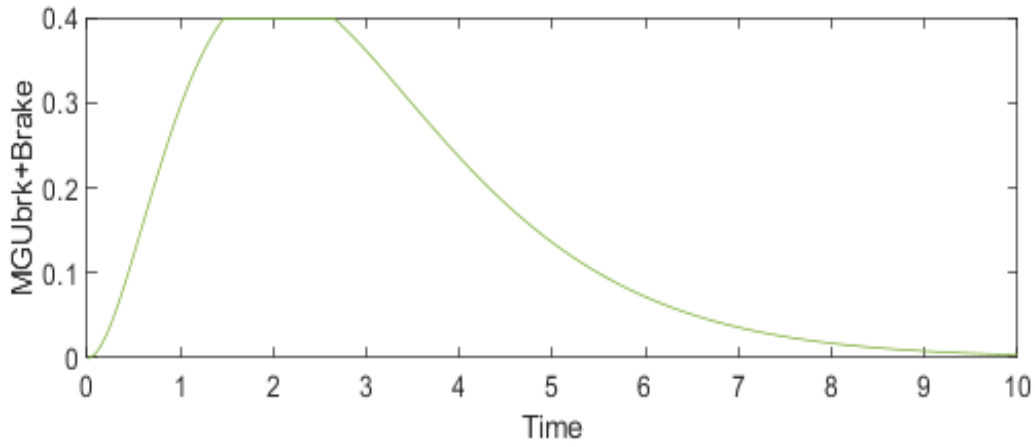




Back to Report SummaryBack to Signal Summary

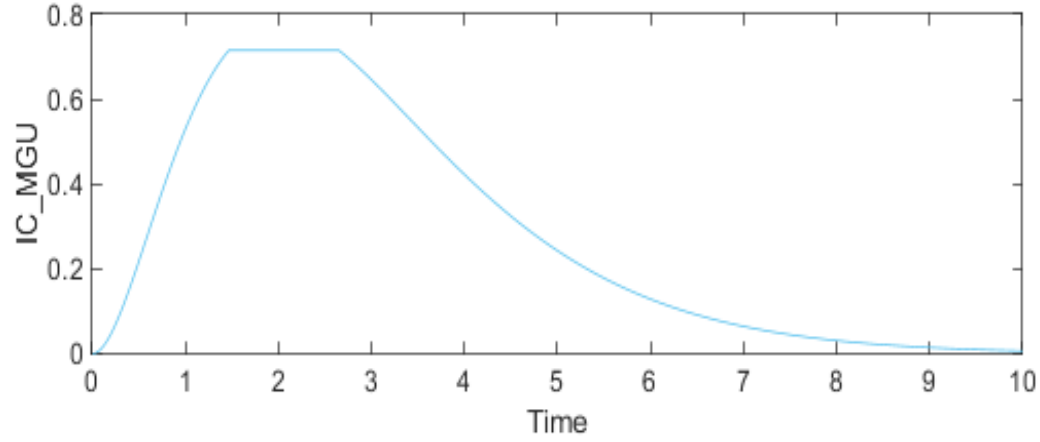
Name	Data Type	Units	Sample Time	Interp	Sync
MGU	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

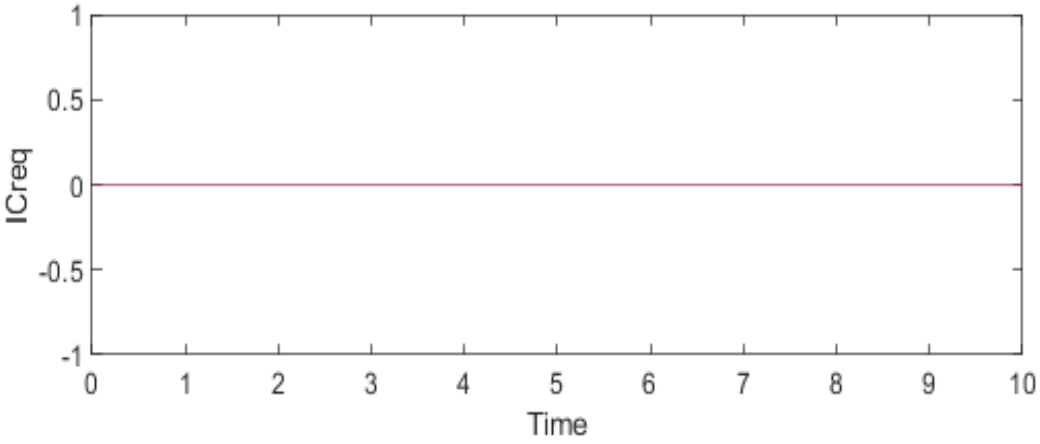




Back to Report SummaryBack to Signal Summary

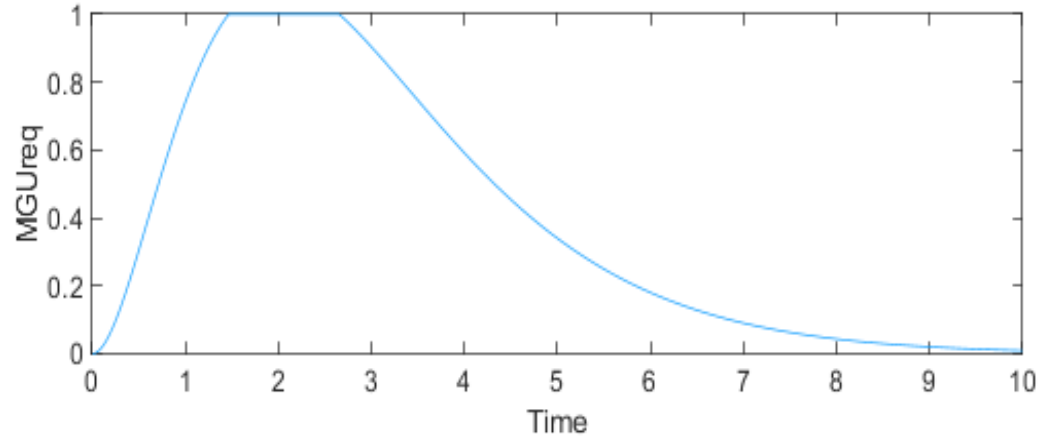
Name	Data Type	Units	Sample Time	Interp	Sync
IC_MGU	double		Continuous	linear	union
ICreq	double		Continuous	linear	union

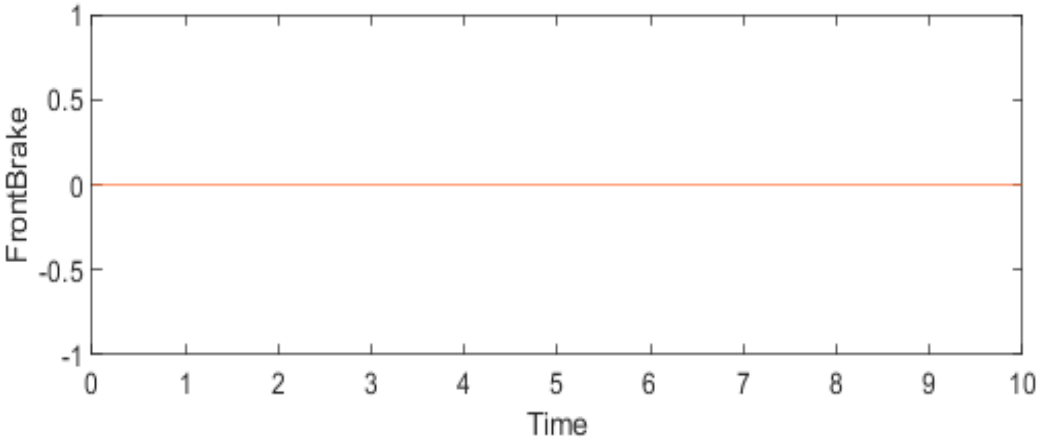




Back to Report SummaryBack to Signal Summary

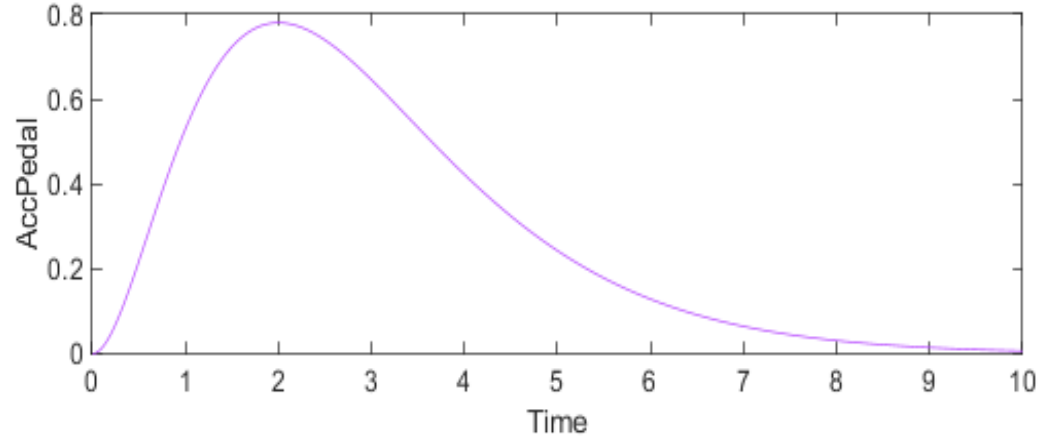
Name	Data Type	Units	Sample Time	Interp	Sync
MGUreq	double		Continuous	linear	union
FrontBrake	double		Continuous	linear	union

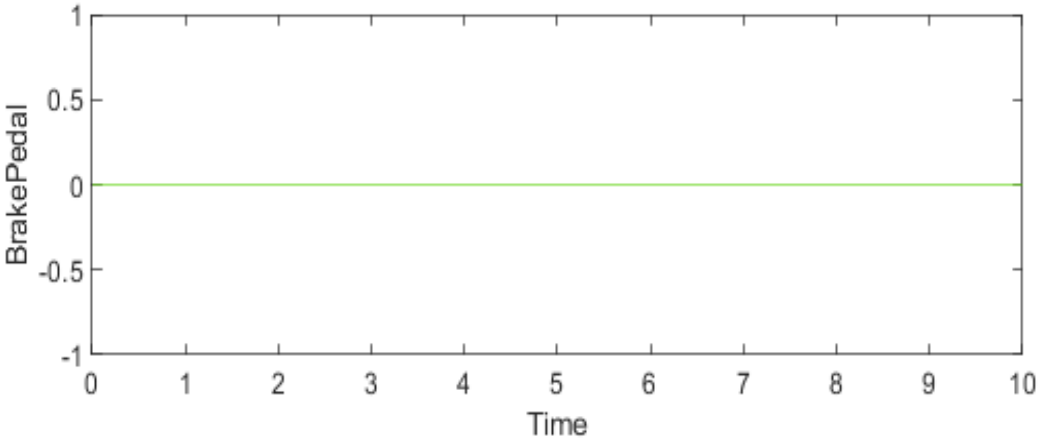




Back to Report SummaryBack to Signal Summary

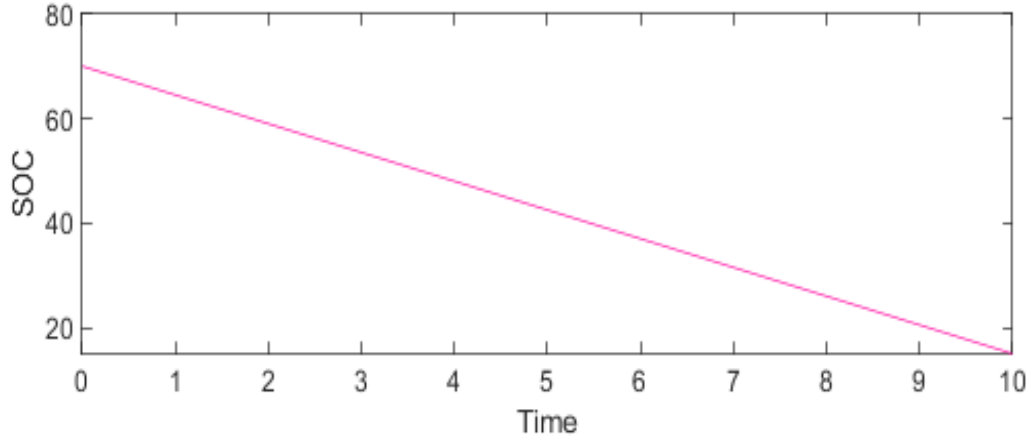
Name	Data Type	Units	Sample Time	Interp	Sync
AccPedal	double		Continuous	linear	union
BrakePedal	double		Continuous	linear	union

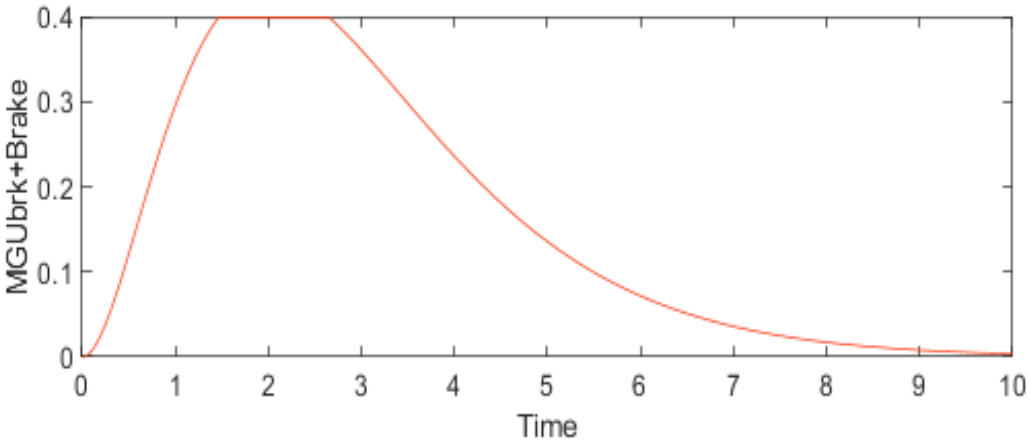




Back to Report SummaryBack to Signal Summary

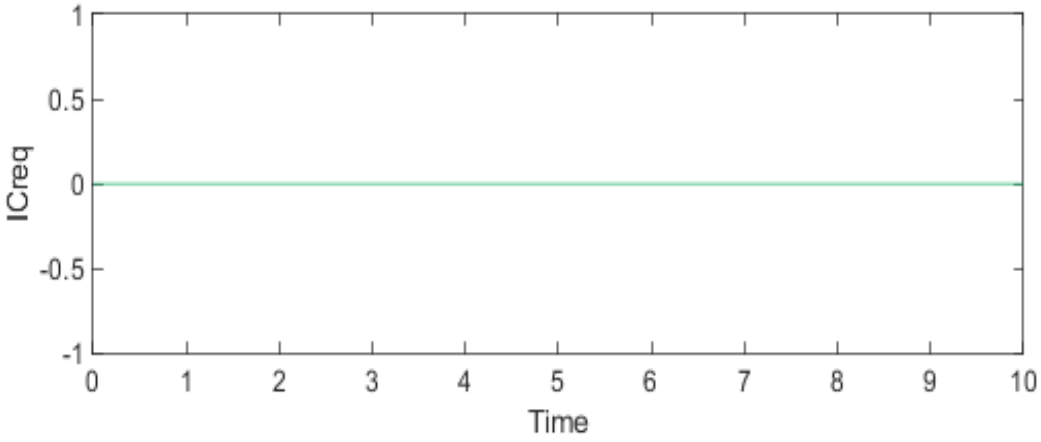
Name	Data Type	Units	Sample Time	Interp	Sync
SOC	double		Continuous	linear	union
MGUbrk+Brake	double		Continuous	linear	union

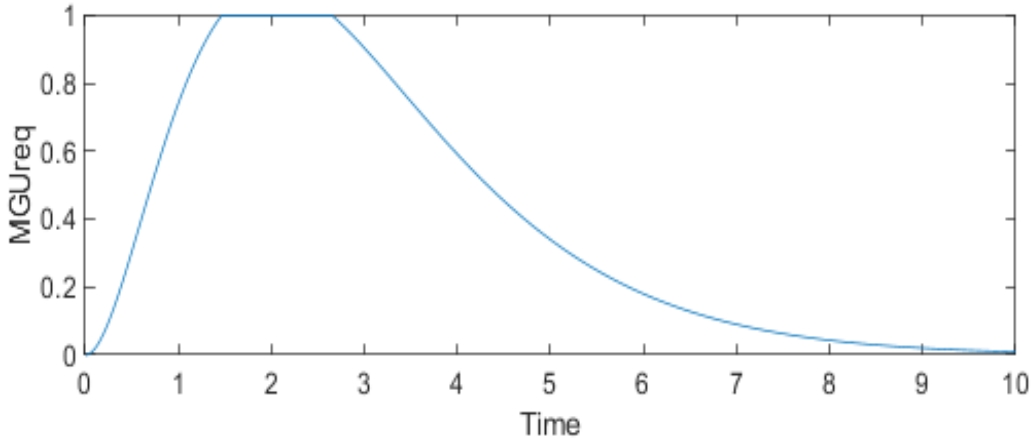




Back to Report SummaryBack to Signal Summary

Name	Data Type	Units	Sample Time	Interp	Sync
ICreq	double		Continuous	linear	union
MGUreq	double		Continuous	linear	union





Back to Report SummaryBack to Signal Summary

Simulation Logs:
Simulation stopped at '10' because there is no input data after this time point.

Back to Report Summary

Test Logs:
No baseline criteria evaluation performed as no baseline data is available for this test.

Back to Report Summary