

Test Specification Report

CoDeAs Team 2

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1. controllerTest

Test File Options

Close open figures	true
Store MATLAB figures	false
Generate report	false

1.1. No Charge

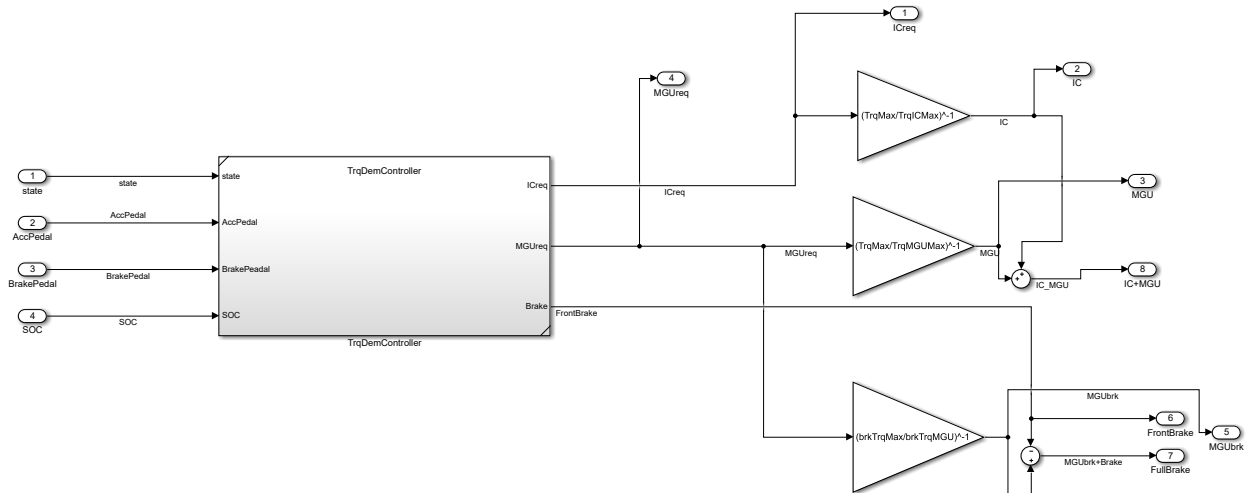
1.1.1. Scenario 10

Test Details

Description	State = no charge AccPedal = exponential growth and decay over time BrakePedal = 0 SOC = between 0 and 0.1
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs10.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs10.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			

Name	Source	Port Index	Plot Index
• ICreq	controllerModel/TrqDemController	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
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Logical and Temporal Assessments

Assessments

Enabled	Name	Definition	Requirements
True	Assessment1	At any point of time, ICreq <= AccPedal ICreq <= 1 must be true	

Symbols

Symbol	Scope	Metadata	
ICreq	Signal	Name	ICreq
		Path	controllerModel/TrqDemController
		Port Index	1
		Field/Element	
AccPedal	Signal		
		Name	AccPedal

Symbol	Scope	Metadata	
		Path	controllerModel/AccPedal
		Port Index	1
		Field/Element	

1.2. Dead

Test Details

Description	Dead case suite of tests
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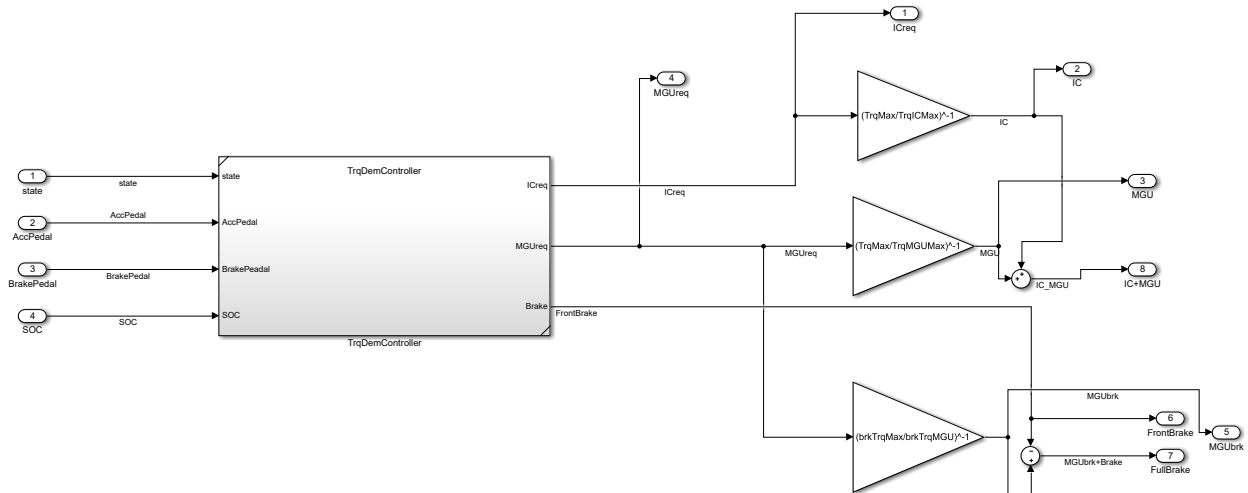
1.2.1. Scenario9

Test Details

Description	<p>Scenario 9:</p> <p>State = dead</p> <p>AccPedal = exp growth and decay</p> <p>BrakePedal = 0</p> <p>SOC = from 0.1 to 0</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs9.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs9.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			

Name	Source	Port Index	Plot Index
• ICreq	controllerModel/TrqDemController	1	
• MGUreq	controllerModel/TrqDemController	2	
• IC_MGU	controllerModel/Sum	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
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Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Dead_baseline.mat (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• IC_MGU (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• ICreq (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
• MGUreq (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• ICreq (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• IC (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• MGU (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• MGUreq (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• MGUbrk (Active)	9.99 9999 9999 9999	9.99 9999 9999 9999	0	0

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
	95e-07	95e-07		
• FrontBrake (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0
• MGUbrk+Brake (Active)	9.99 9999 9999 9999 95e-07	9.99 9999 9999 9999 95e-07	0	0

1.3. Combined

Test Details

Description	Combined case suite of tests
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1.3.1. Scenario 1

Test Details

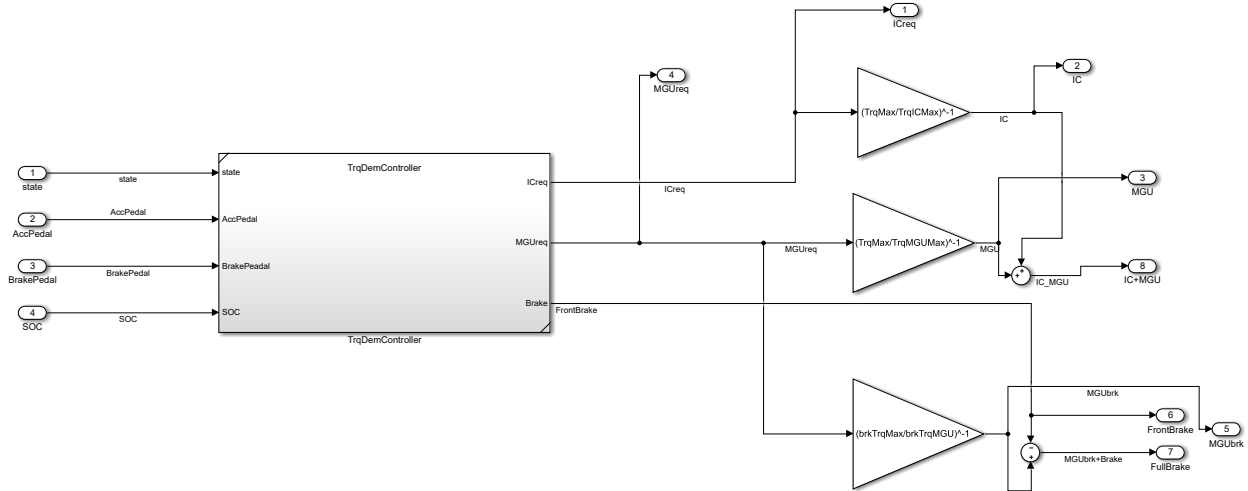
Description	<p>Scenario 1:</p> <p>State = combined</p> <p>AccPedal = pulse signal of amplitude 0.5, width 0.5 and period 10 seconds</p> <p>BrakePedal = 0</p>
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1. controllerTest

SOC = 50%

System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs1.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs1.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• IC_MGU	controllerModel/Sum	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Combined_Baseline1.mat (Active)	1.00 0000 0000 0000 01e- 05	0	0.001	0.001
• IC_MGU (Active)	1.00 0000 0000 0000 01e- 05	0.00 1	0.001	0.001

1.3.2. Scenario2

Test Details

Description	Scenario 2:
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State = combined

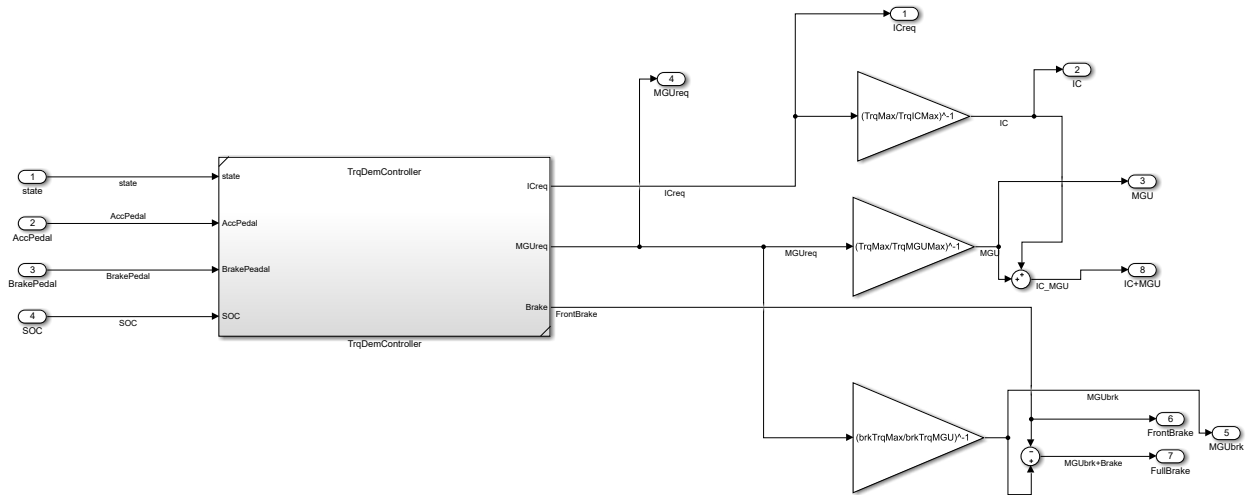
AccPedal = pulse signal of amplitude 0.1, width 0.5 and period 10 seconds

BrakePedal = 0

SOC = 50%

System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs2.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-	Successfully mapped inputs.

Name	File Path	Status
	controller\Test\ControllerTest\testScenarios\controllerInputs2.mat	

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• IC_MGU	controllerModel/Sum	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Combined_Baseline2.mat (Active)	1.0000000001e-05	0	0.001	0.001
• IC_MGU (Active)	1.0000000001e-05	0	0.001	0.001

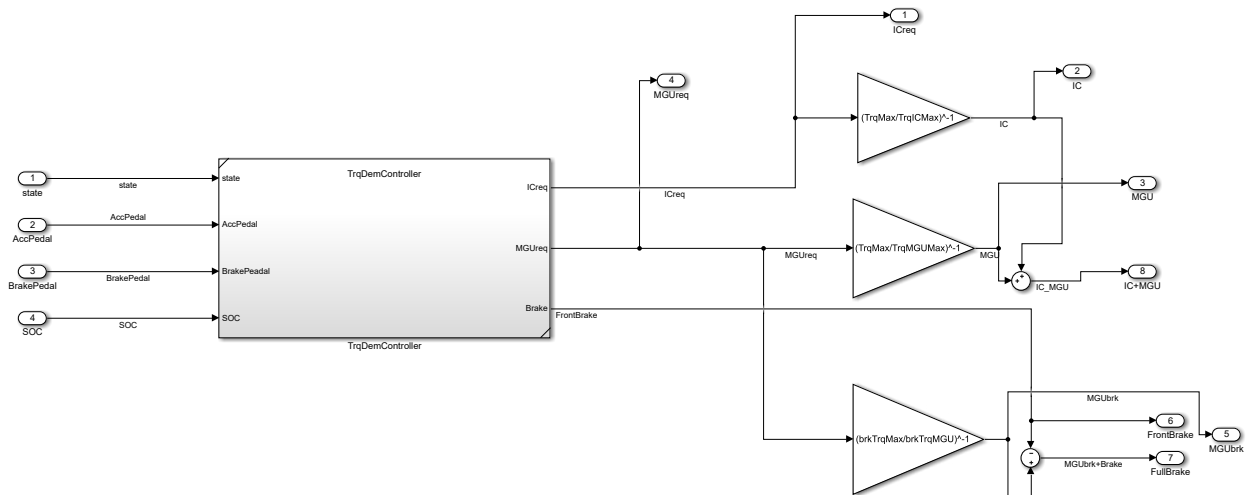
1.3.3. Scenario3

Test Details

Description	<p>Scenario 3:</p> <p>State = combined</p> <p>AccPedal = pulse signal of amplitude 0.9, width 0.5 and period 10 seconds</p> <p>BrakePedal = 0</p> <p>SOC = 50%</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs3.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs3.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• IC_MGU	controllerModel/Sum	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Combined_Baseline3.mat (Active)	1.0000000001e-05	0	0.001	0.001
• IC_MGU (Active)	1.0000000000000000	0	0.001	0.001

1. controllerTest

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
	01e-05			

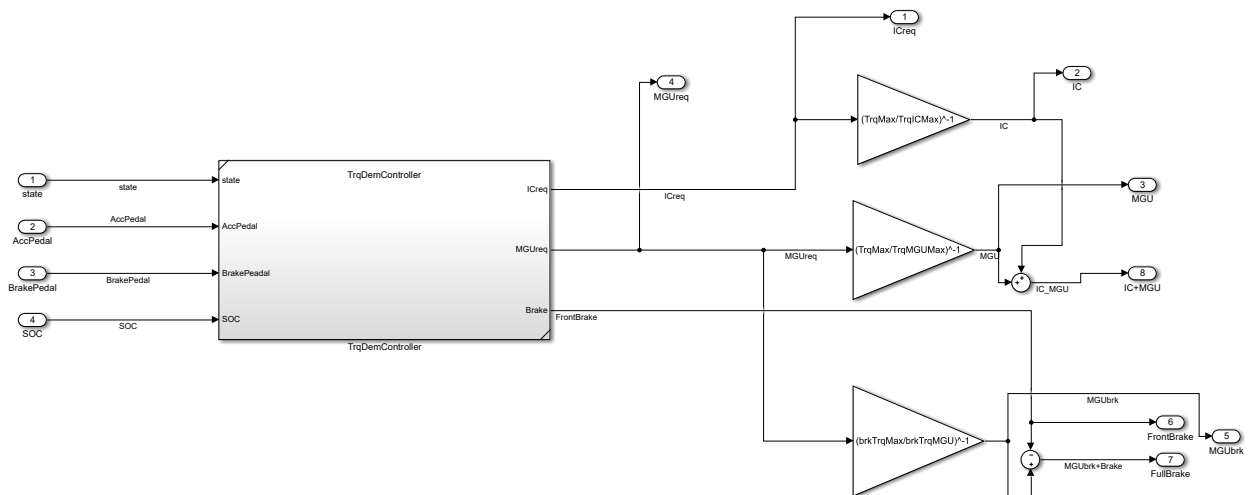
1.3.4. Scenario4

Test Details

Description	<p>Scenario 4:</p> <p>State = combined</p> <p>AccPedal = exponential growth and decay over time</p> <p>BrakePedal = 0</p> <p>SOC = 50%</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs4.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs4.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• IC_MGU	controllerModel/Sum	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Combined_Baseline4.mat (Active)	1.00 0000 0000 0000	0	0.001	0.001

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
	01e-05			
<ul style="list-style-type: none"> IC_MGU (Active) 	1.0000000001e-05	0	0.001	0.001

1.4. Regenerative Braking

Test Details

Description	Regenerative Braking case suite of tests
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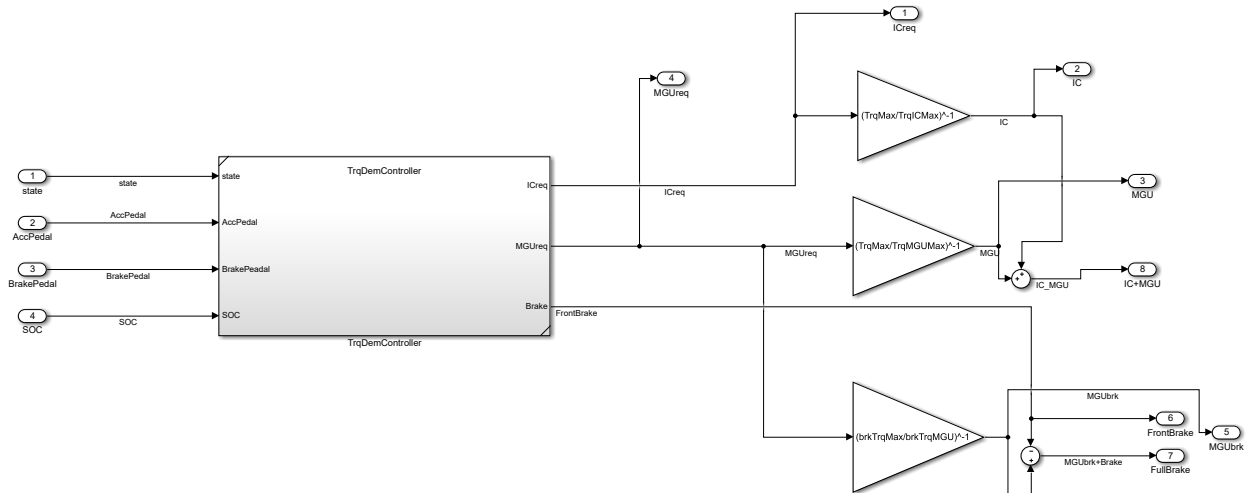
1.4.1. Scenario5

Test Details

Description	<p>Scenario 5:</p> <p>State = regenerative braking</p> <p>AccPedal = 0</p> <p>BrakePedal = pulse signal of amplitude 0.5, width 0.5 and period 10 seconds.</p> <p>SOC = 50%</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs5.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs5.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			

Name	Source	Port Index	Plot Index
• MGUbrk+Brake	controllerModel/Sum1	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Regen_Baseline1.mat (Active)	1.00 0000 0000 0000 01e-05	0	0.001	0.001
• MGUbrk+Brake (Active)	1.00 0000 0000 0000 01e-05	0	0.001	0.001

1.4.2. Scenario6

Test Details

Description	<p>Scenario 6:</p> <p>State = regenerative braking</p> <p>AccPedal = 0</p>
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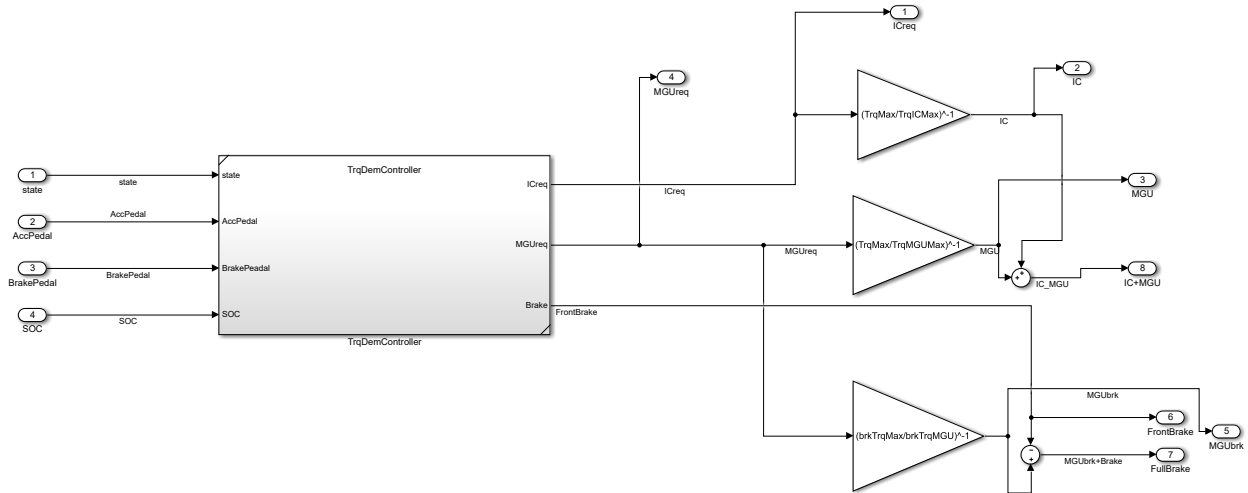
1. controllerTest

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

SOC = 50%

System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs6.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs6.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• MGUbrk+Brake	controllerModel/Sum1	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
------------------------	--------------------------------

Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Regen_Baseline2.mat (Active)	1.00 0000 0000 0000 01e- 05	0	0.001	0.001
• MGUbrk+Brake (Active)	1.00 0000 0000 0000 01e- 05	0	0.001	0.001

1.4.3. Scenario7

Test Details

Description	Scenario 7:
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1. controllerTest

State = regenerative braking

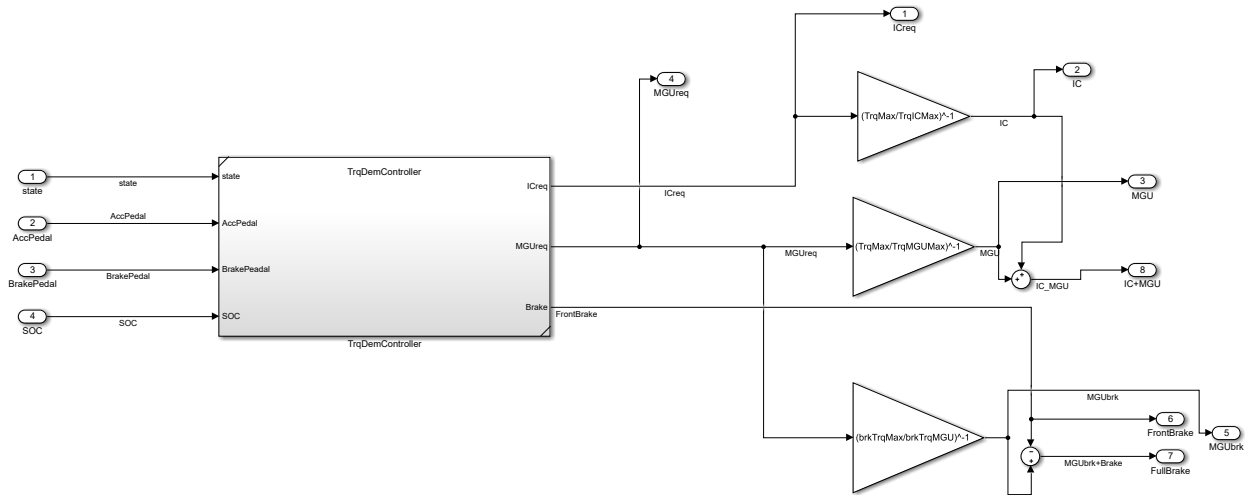
AccPedal = 0

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

SOC = 100%

System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs7.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-	Successfully mapped inputs.

Name	File Path	Status
	controller\Test\ControllerTest\testScenarios\controllerInputs7.mat	

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• MGUbrk+Brake	controllerModel/Sum1	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
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Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Regen_Baseline3.mat (Active)	1.0000000001e-05	0	0.001	0.001
• MGUbrk+Brake (Active)	1.0000000001e-05	0	0.001	0.001

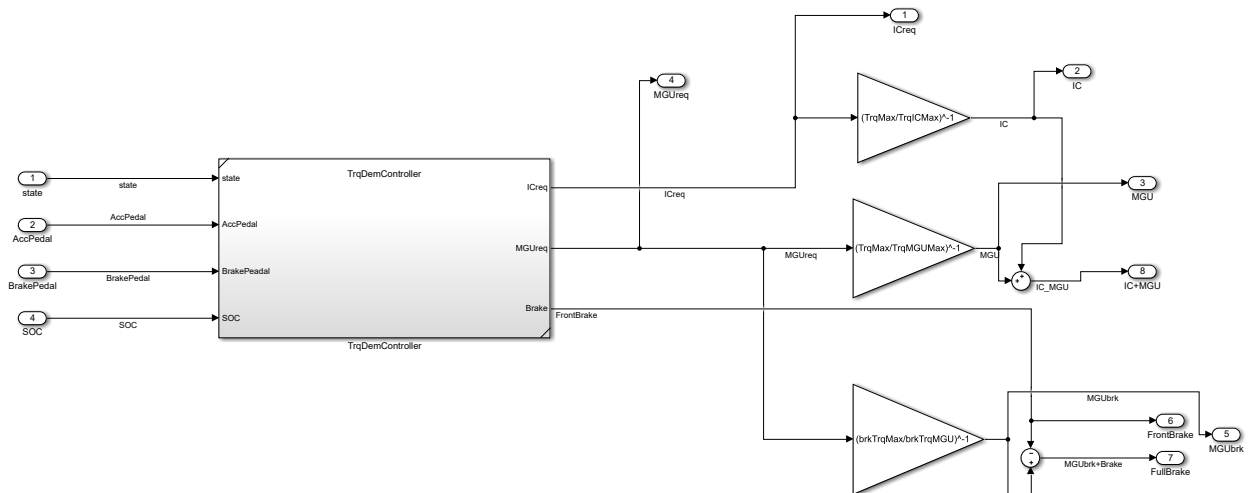
1.4.4. Scenario8

Test Details

Description	<p>Scenario 8:</p> <p>State = regenerative braking</p> <p>AccPedal = 0</p> <p>BrakePedal = exponential growth and decay over time</p> <p>SOC = 50%</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs8.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs8.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			
• MGUbrk+Brake	controllerModel/Sum1	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
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Baseline Criteria

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
Regen_Baseline4.mat (Active)	1.0000000001e-05	0	0.001	0.001
• MGUbrk+Brake (Active)	1.0000000000000000	0	0.001	0.001

Signal Name	Abs Tol	Rel Tol	Leading Tol	Lagging Tol
	01e-05			

1.5. Electrical Drive

Test Details

Description	Electrical Drive case suite of tests
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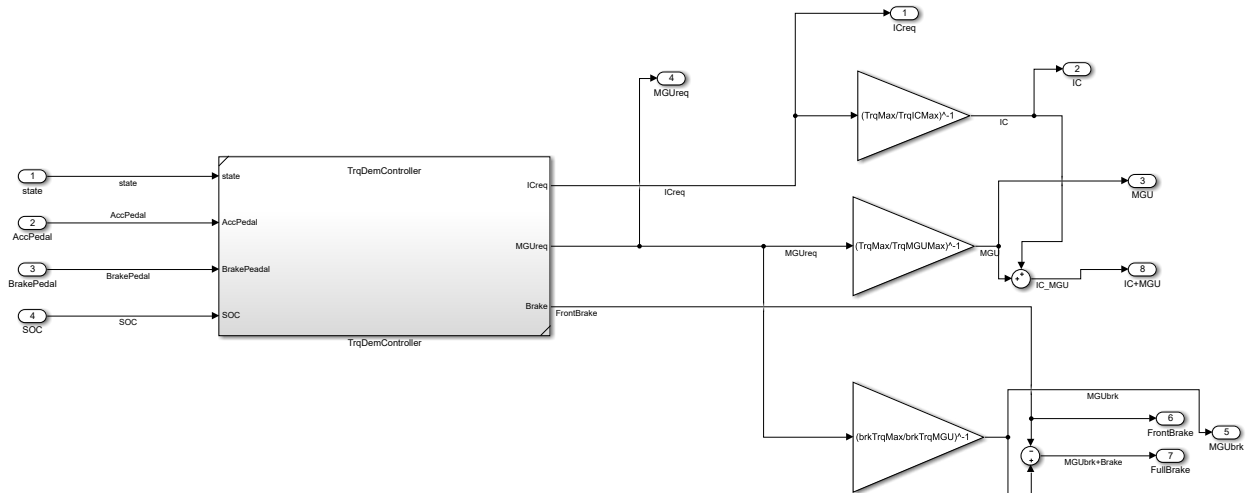
1.5.1. Scenario11

Test Details

Description	<p>Scenario 11:</p> <p>state = electrical drive</p> <p>AccPedal = exponential growth and decay</p> <p>BrakePedal = 0</p> <p>SOC = from 70% to 15%</p>
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System Under Test

Model Name: controllerModel



Simulation Settings Overrides

Simulation Mode	Model Settings
Releases	Current

External Inputs

Name	File Path	Status
controllerInputs11.mat (Active)	C:\Users\mordi\Desktop\Materiale Università\Compliance\hybrid-controller\Hybrid-controller\Test\ControllerTest\testScenarios\controllerInputs11.mat	Successfully mapped inputs.

Logged Signals

Name	Source	Port Index	Plot Index
Signal Set 1			

Name	Source	Port Index	Plot Index
• MGUreq	controllerModel/TrqDemController	2	
• ICreq	controllerModel/TrqDemController	1	
• MGUbrk+Brake	controllerModel/Sum1	1	
• SOC	controllerModel/SOC	1	

Configuration Settings Overrides

Configuration settings	Do not override model settings
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Logical and Temporal Assessments

Assessments

Enabled	Name	Definition	Requirements
True	Assessment1	At any point of time, SOC >= 15 & Brake-Pedal == 0 & (MGUreq <= AccPedal MGUreq <= 1) must be true	

Symbols

Symbol	Scope	Metadata	
SOC	Signal		
		Name	SOC
		Path	controllerModel/SOC

Symbol	Scope	Metadata								
		<table><tr><td>Port Index</td><td>1</td></tr><tr><td>Field/Element</td><td></td></tr></table>	Port Index	1	Field/Element					
Port Index	1									
Field/Element										
BrakePedal	Signal	<table><tr><td>Name</td><td>BrakePedal</td></tr><tr><td>Path</td><td>controllerModel/BrakePedal</td></tr><tr><td>Port Index</td><td>1</td></tr><tr><td>Field/Element</td><td></td></tr></table>	Name	BrakePedal	Path	controllerModel/BrakePedal	Port Index	1	Field/Element	
Name	BrakePedal									
Path	controllerModel/BrakePedal									
Port Index	1									
Field/Element										
MGUreq	Signal	<table><tr><td>Name</td><td>MGUreq</td></tr><tr><td>Path</td><td>controllerModel/TrqDemController</td></tr><tr><td>Port Index</td><td>2</td></tr><tr><td>Field/Element</td><td></td></tr></table>	Name	MGUreq	Path	controllerModel/TrqDemController	Port Index	2	Field/Element	
Name	MGUreq									
Path	controllerModel/TrqDemController									
Port Index	2									
Field/Element										
AccPedal	Signal	<table><tr><td>Name</td><td>AccPedal</td></tr><tr><td>Path</td><td>controllerModel/AccPedal</td></tr></table>	Name	AccPedal	Path	controllerModel/AccPedal				
Name	AccPedal									
Path	controllerModel/AccPedal									

Symbol	Scope	Metadata	
		Port Index	1
		Field/Element	