Report Generated by Test Manager

Title: MPC-L - Test 0.01
Author: Gianvincenzo Daddabbo, Gaetano Gallo, Alberto Ruggeri, Martina Te desco, Alessandro Toschi
Date: 22-Jun-2021 21:27:45

Test Environment

Platform: PCWIN64
MATLAB: (R2019b)

Summary

Name	Outcome	Duration (Seconds)
MPC_L Setup	1 ✓ 6 ✗	701.093
Iteration1	✗	160.89
Iteration2	✗	89.562
Iteration3	✗	81.49
Iteration6	✗	67.979
Iteration7	✗	72.793
Iteration10	✓	122.161
Iteration12	✗	105.588

MPC_L Setup

Test Result Information

Result Type:	Test Case Result
Parent:	None
Start Time:	22-Jun-2021 20:57:12
End Time:	22-Jun-2021 21:08:53
Outcome:	Failed
Cause of Failure:	Test failed as iteration failed
Description:	

This test is aimed to try to find a feasible and stable configuration for the MPC when it comes to slow speed scenarios

Test Case Information

Name:	MPC_L Setup
Type:	Baseline Test

Iteration1

Test Result Information

Result Type:	Test Iteration Result
Parent:	MPC_L Setup
Start Time:	22-Jun-2021 20:57:12
End Time:	22-Jun-2021 20:59:53
Outcome:	Failed
Cause of Failure:	Failed criteria: Verification

Test Case Information

Name:	Iteration1
Type:	Baseline Test

Iteration Settings

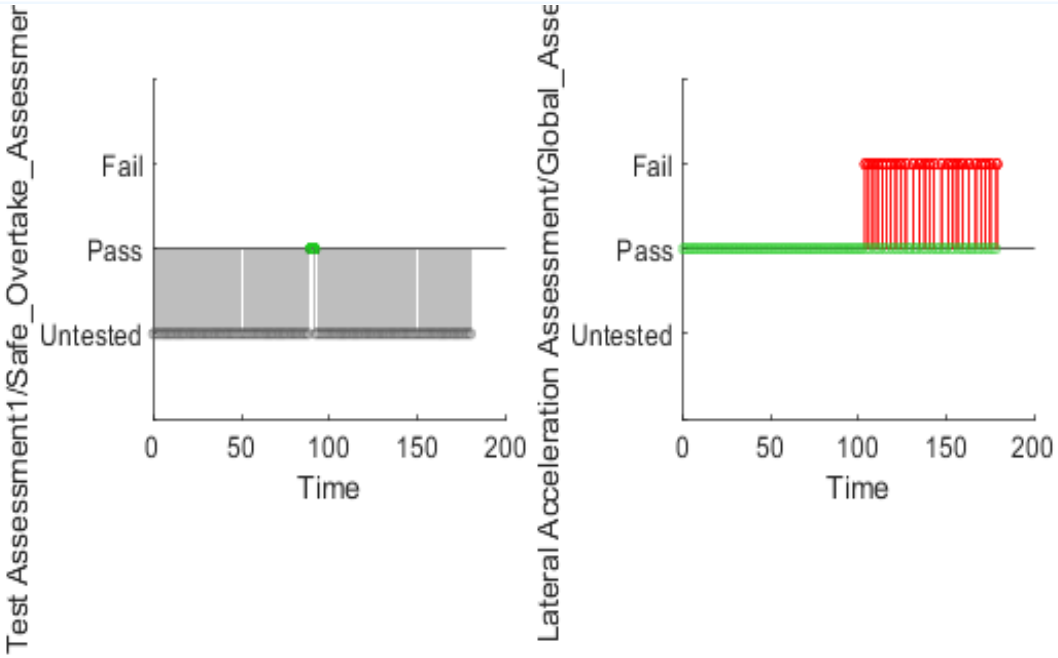
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 1

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	1197919449 279651288 1984720095 3681203342
Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 20:57:17
Simulation Stop Time:	2021-06-22 20:59:49
Platform:	PCWIN64

Parameter Overrides

Workspace Variable	Value	Source	Model Element
Parameter Set 1			
Ts	*0.01*	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calcu

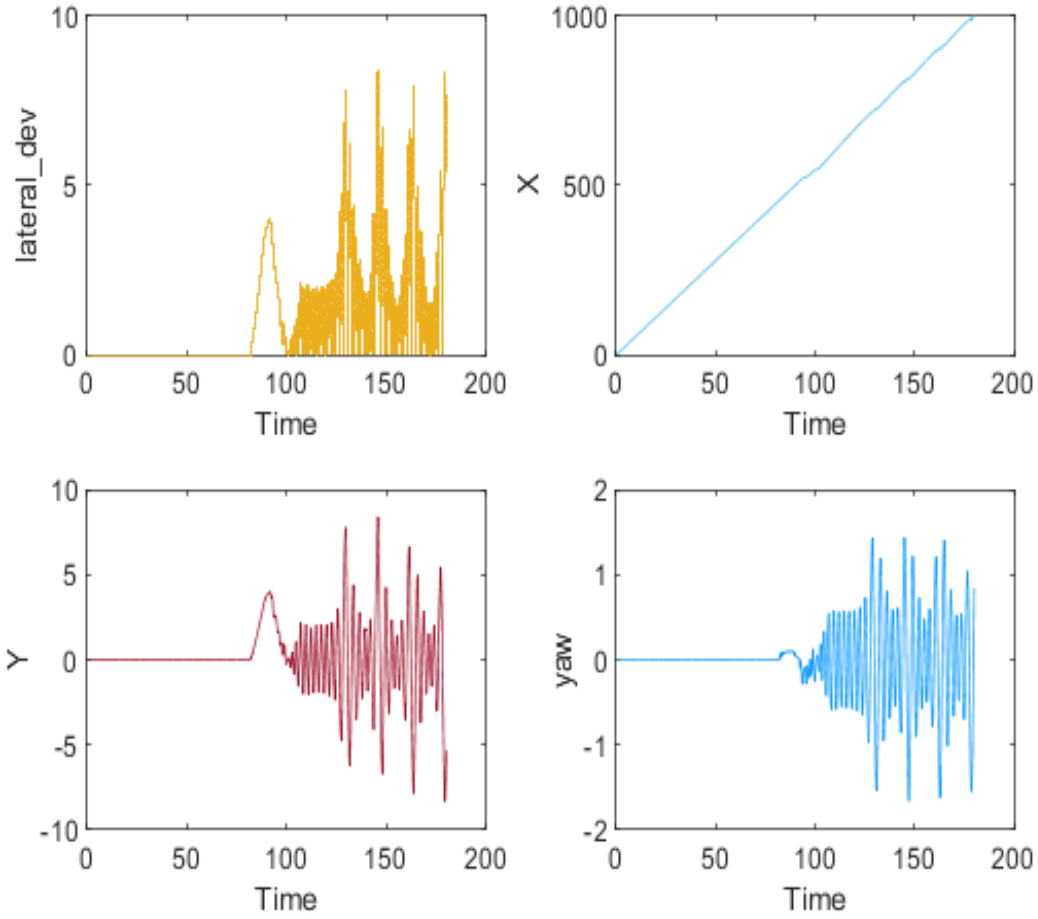
				lating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsyste

			m/Subsystem/MATLAB Function
WOV	[30 30 8 30]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	10	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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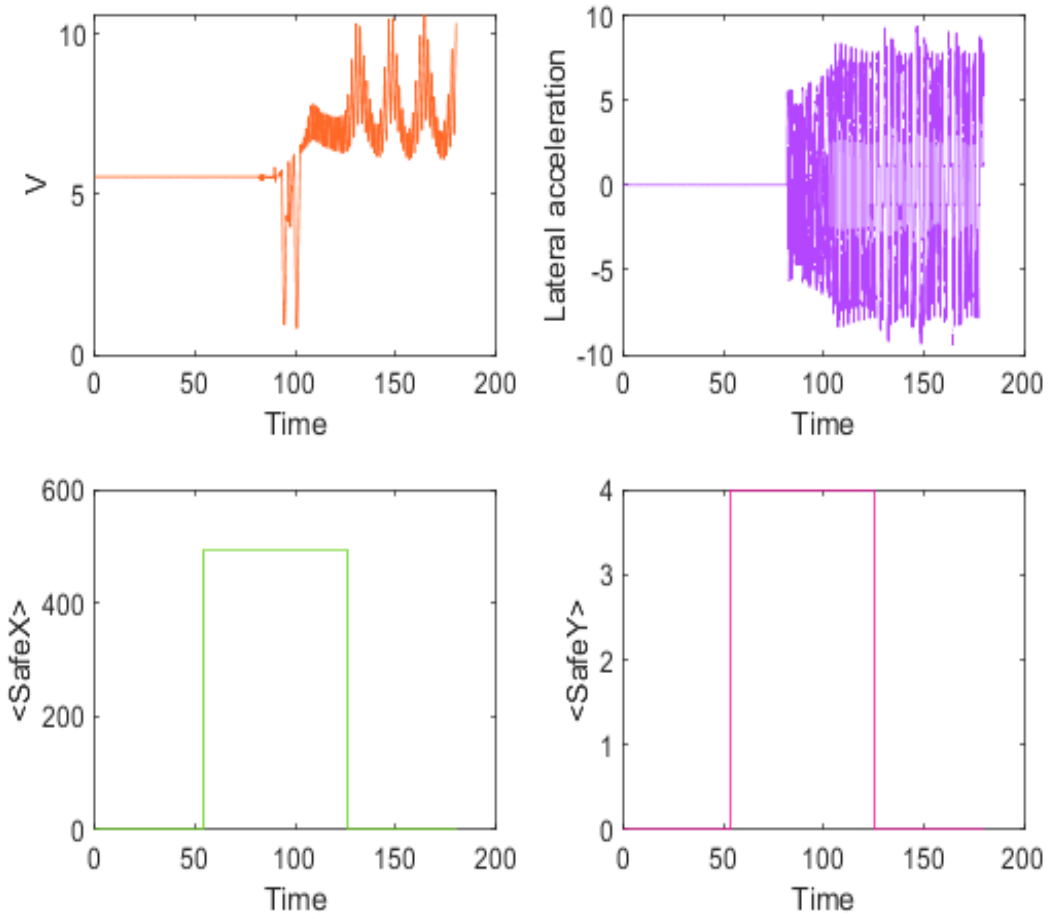
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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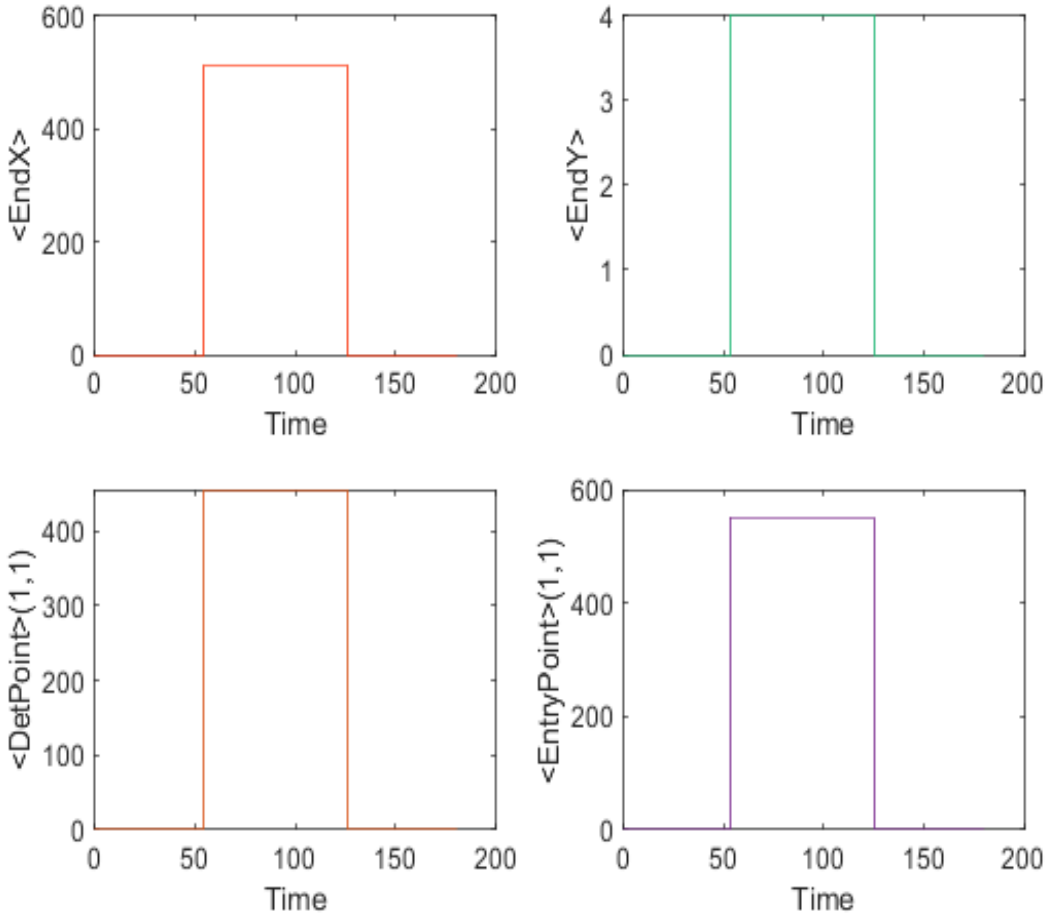
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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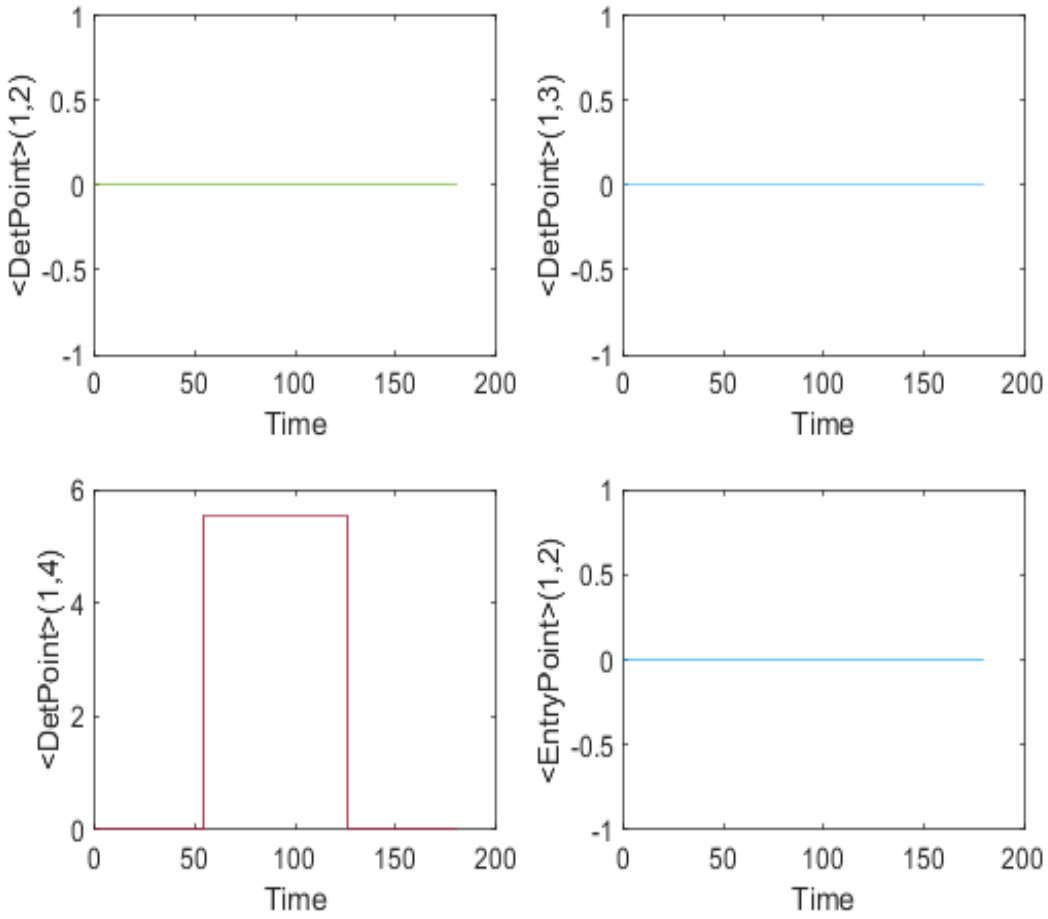
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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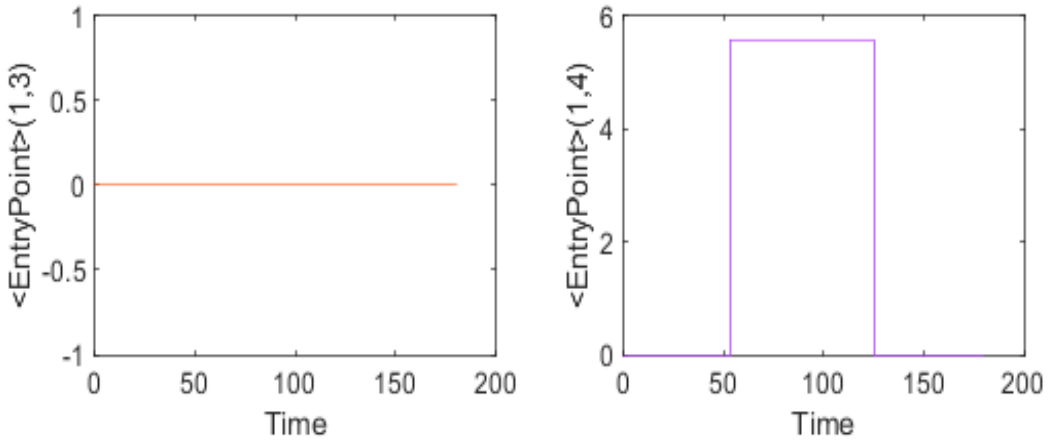
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration2

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 20:59:53

End Time: 22-Jun-2021 21:01:23
Outcome: Failed
Cause of Failure: Failed criteria: Verification

Test Case Information

Name: Iteration2
Type: Baseline Test

Iteration Settings

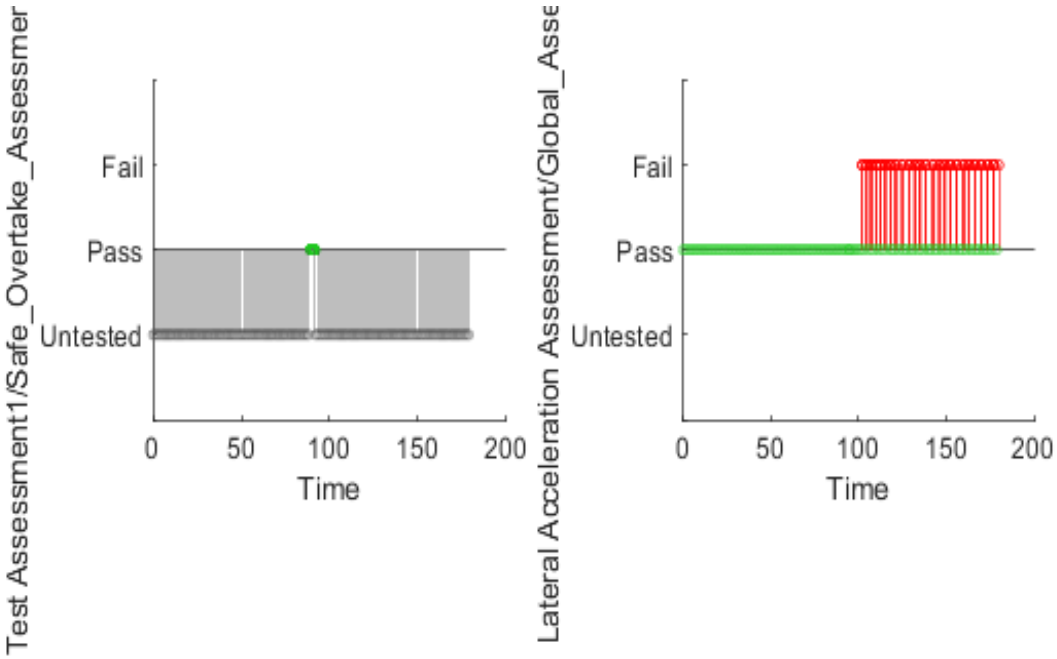
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 2

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	2900825053 1319595007 267058275 1529217599

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 20:59:54
Simulation Stop Time:	2021-06-22 21:01:21
Platform:	PCWIN64

Parameter Overrides

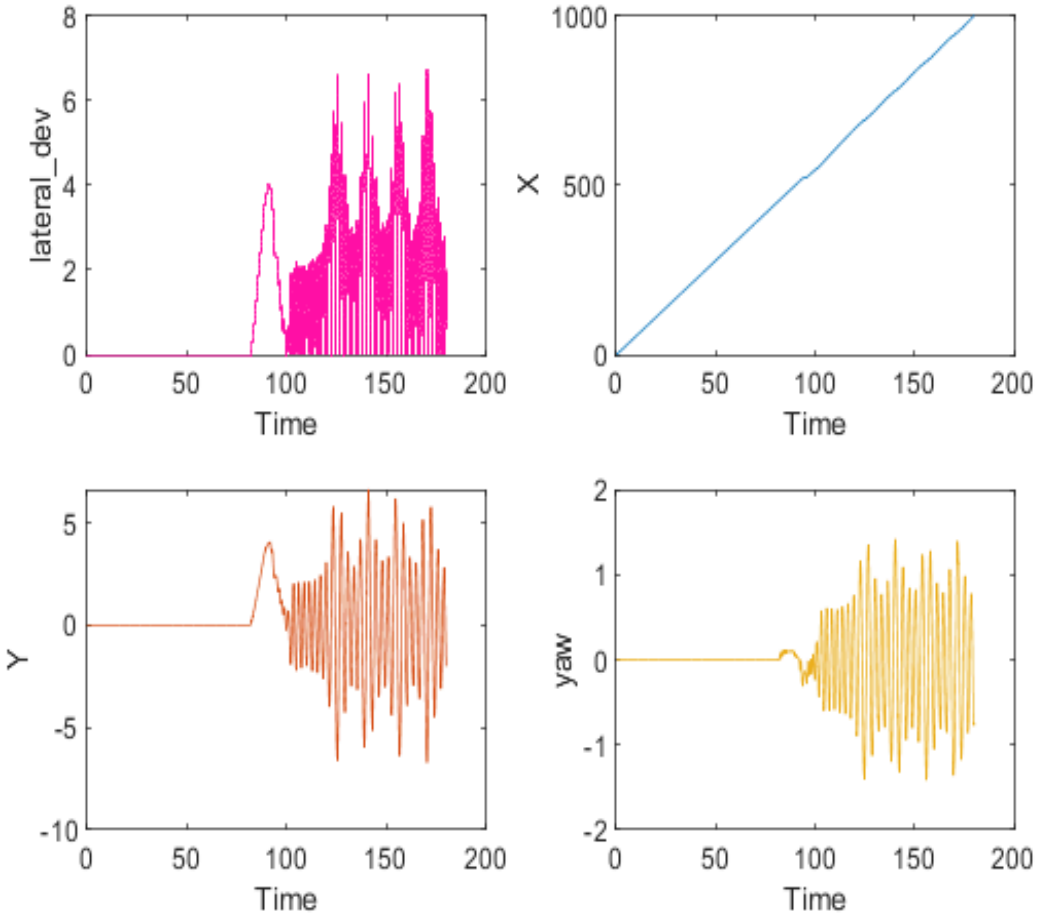
Workspace Variable	Value	Source	Model Element
Parameter Set 2			
Ts	*0.01*	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 5 30]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	8	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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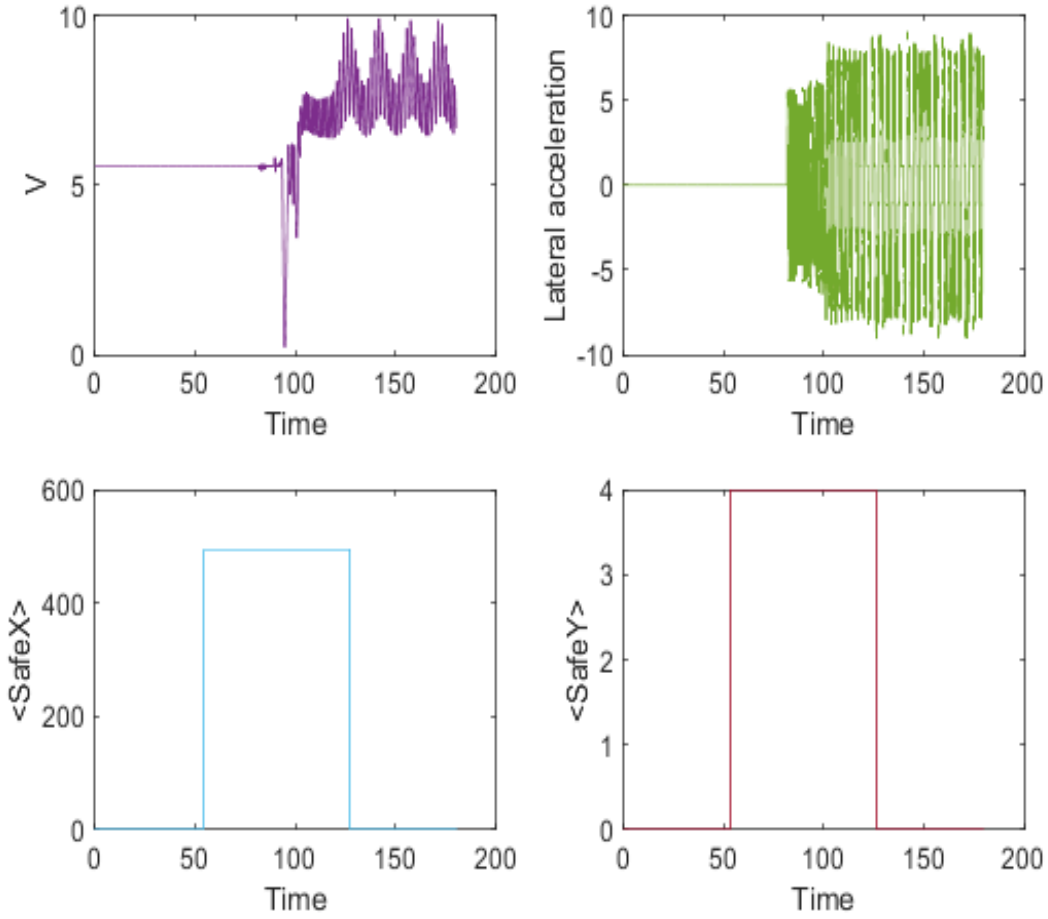
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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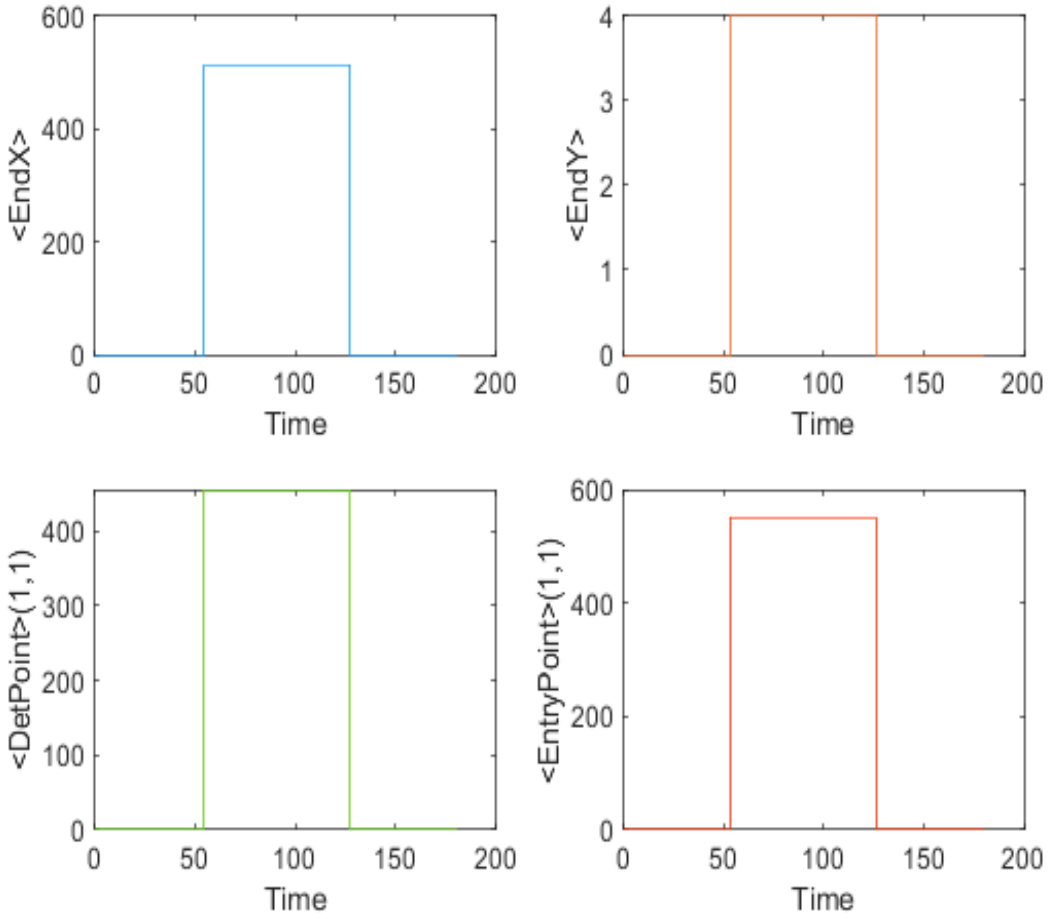
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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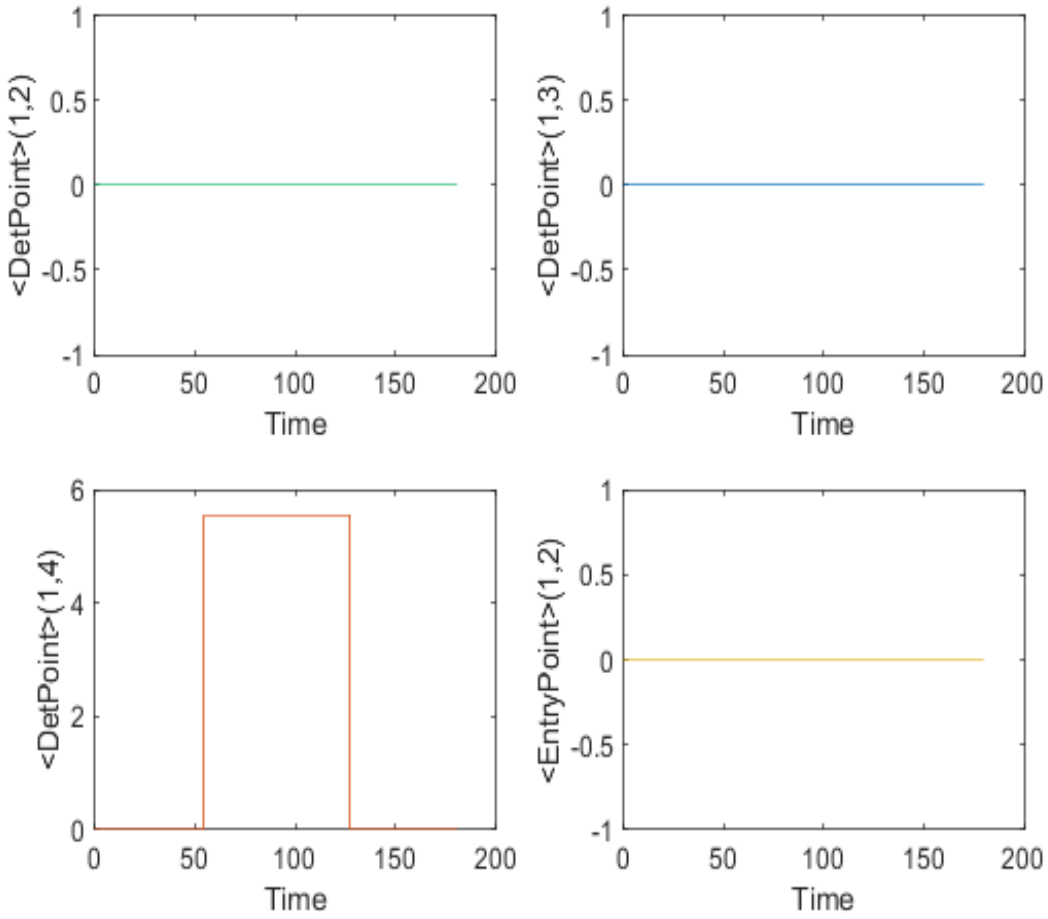
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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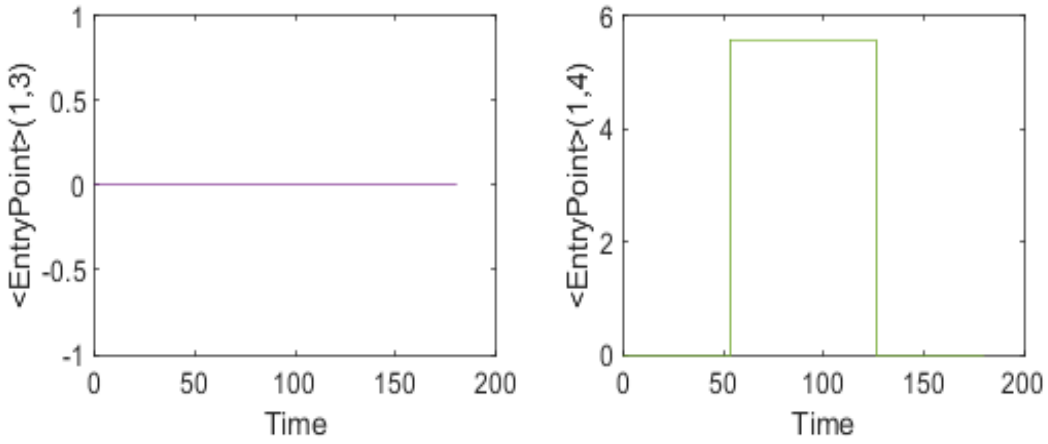
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration3

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 21:01:23

End Time: 22-Jun-2021 21:02:44
Outcome: Failed
Cause of Failure: Failed criteria: Verification

Test Case Information

Name: Iteration3
Type: Baseline Test

Iteration Settings

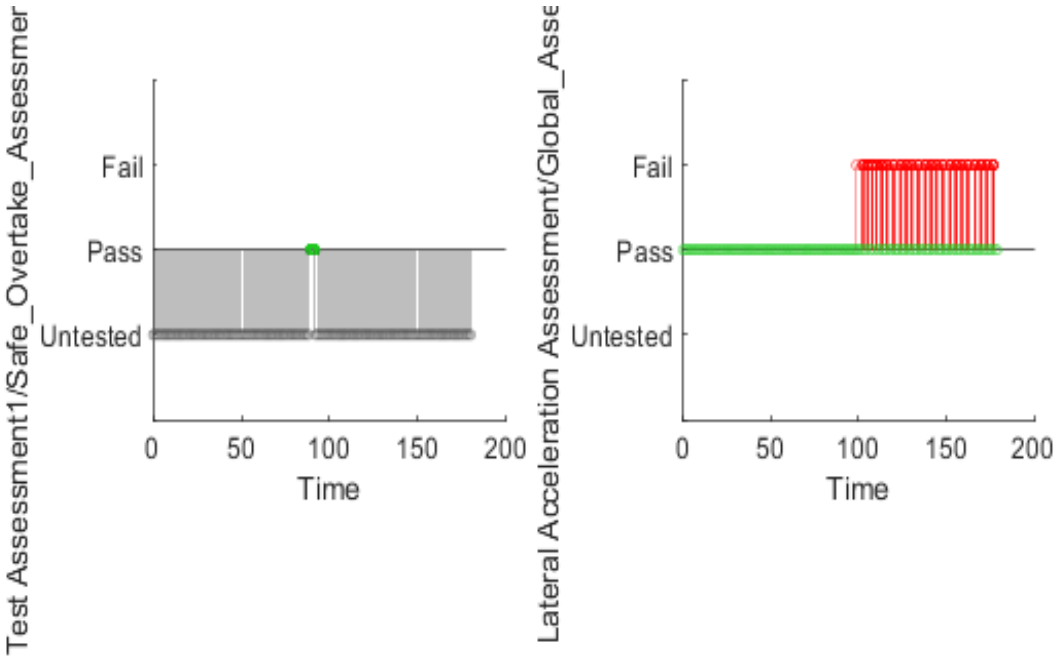
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 3

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	1197919449 279651288 1984720095 3681203342

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 21:01:24
Simulation Stop Time:	2021-06-22 21:02:43
Platform:	PCWIN64

Parameter Overrides

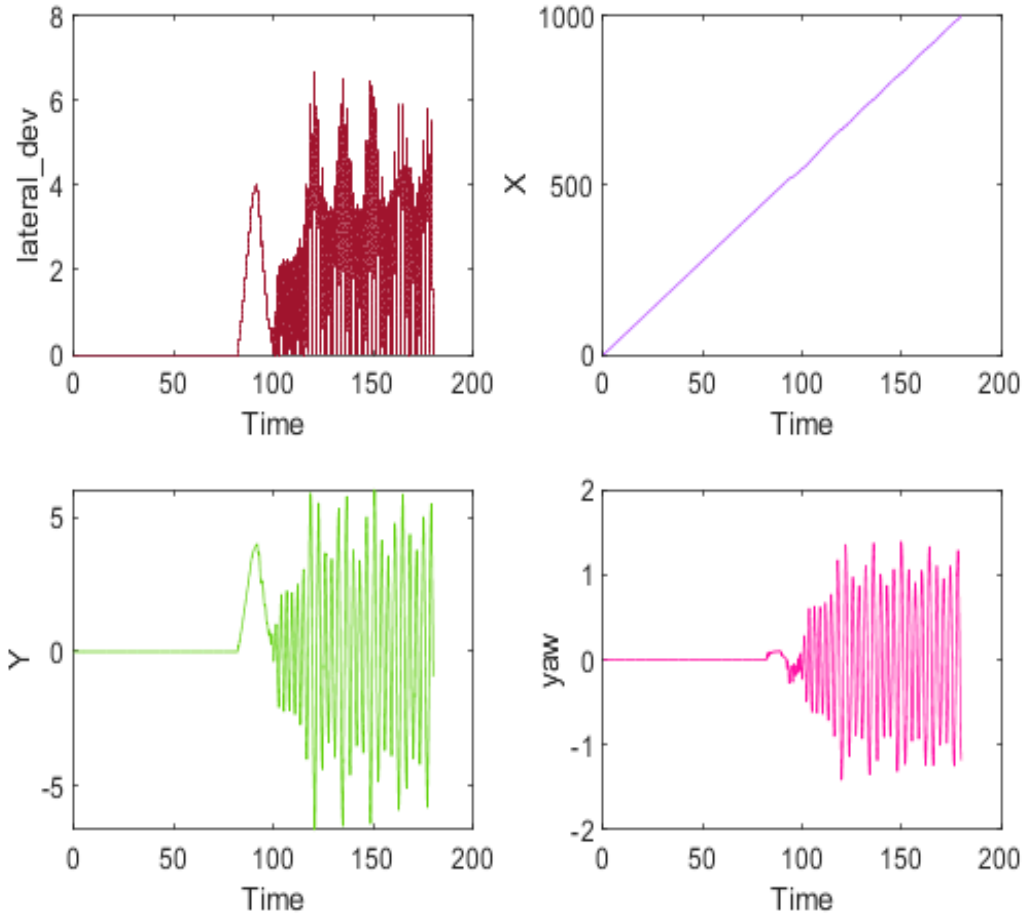
Workspace Variable	Value	Source	Model Element
Parameter Set 3			
Ts	*0.01*	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 0 30]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	10	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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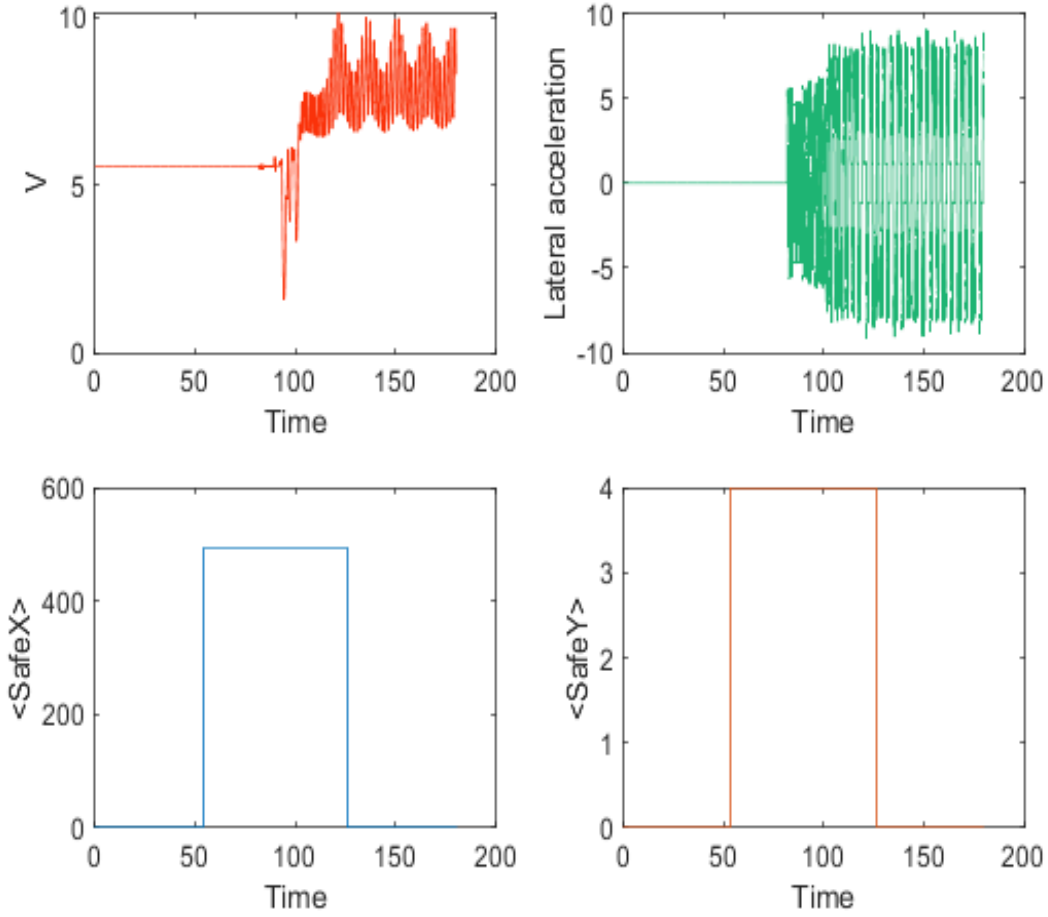
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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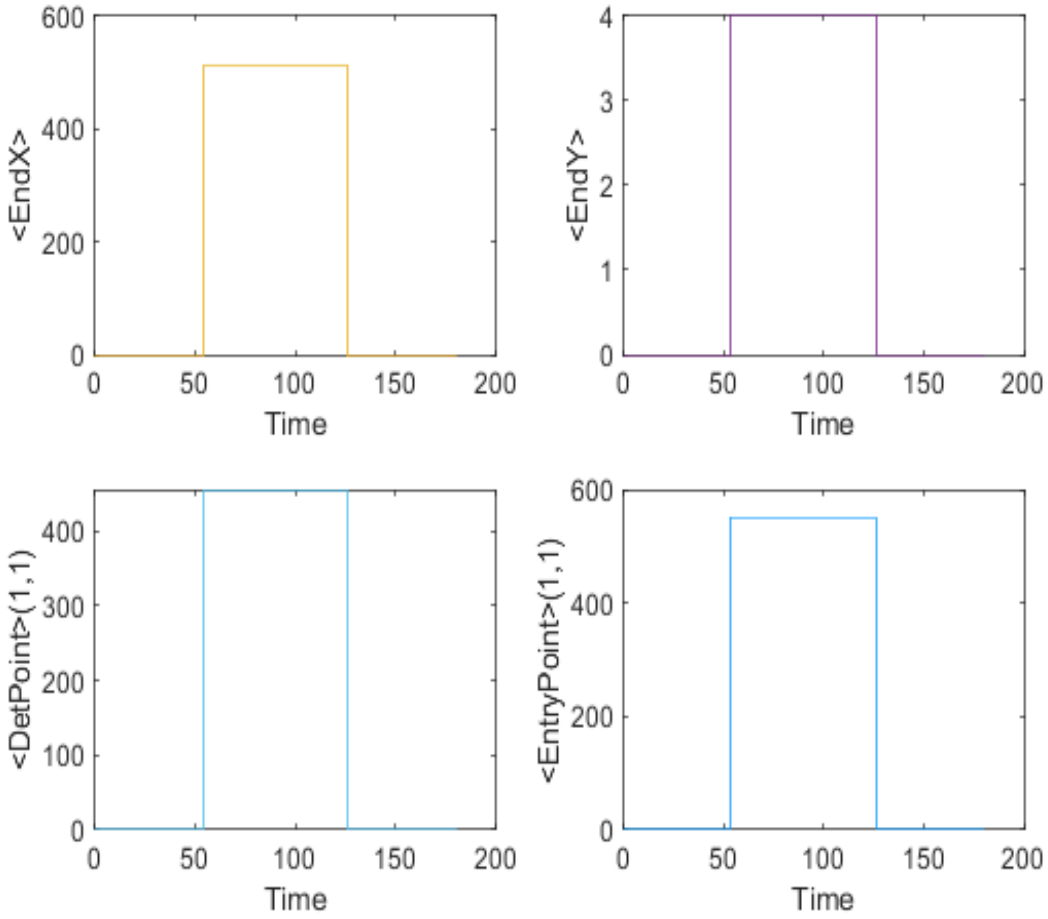
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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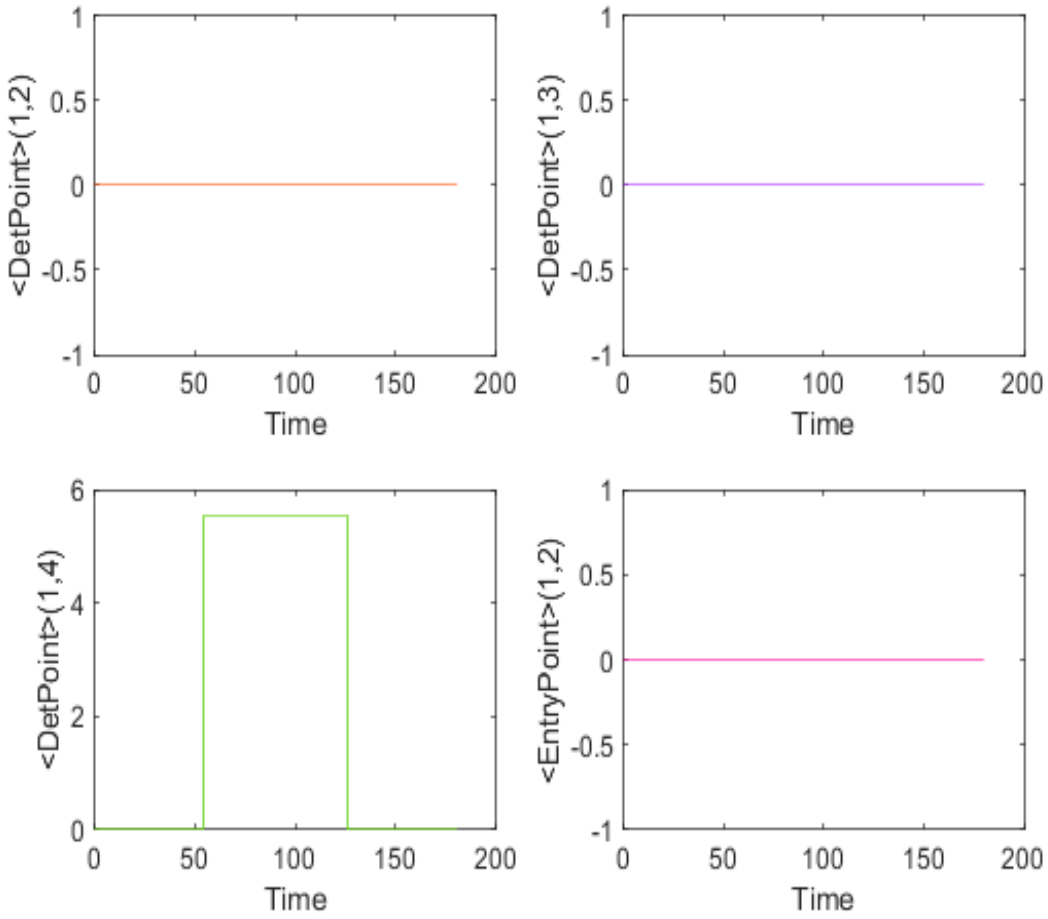
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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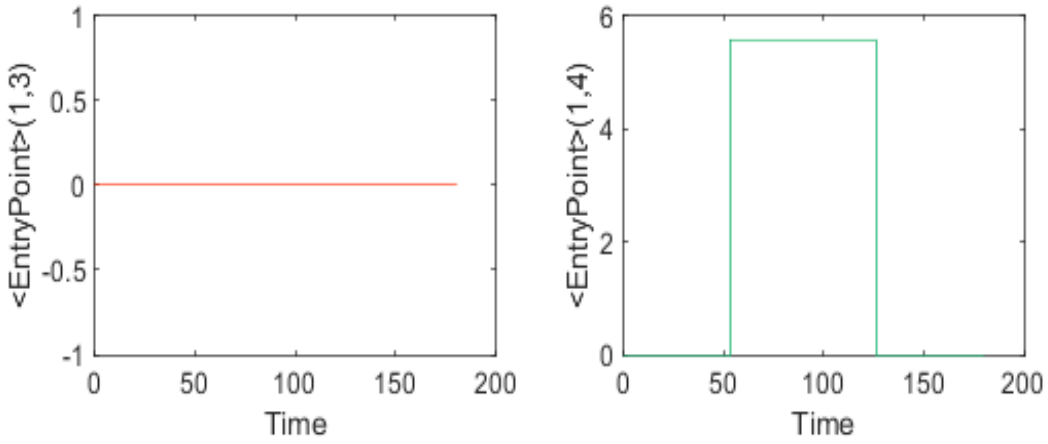
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration6

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 21:02:45

End Time: 22-Jun-2021 21:03:53
Outcome: Failed
Cause of Failure: Failed criteria: Verification

Test Case Information

Name: Iteration6
Type: Baseline Test

Iteration Settings

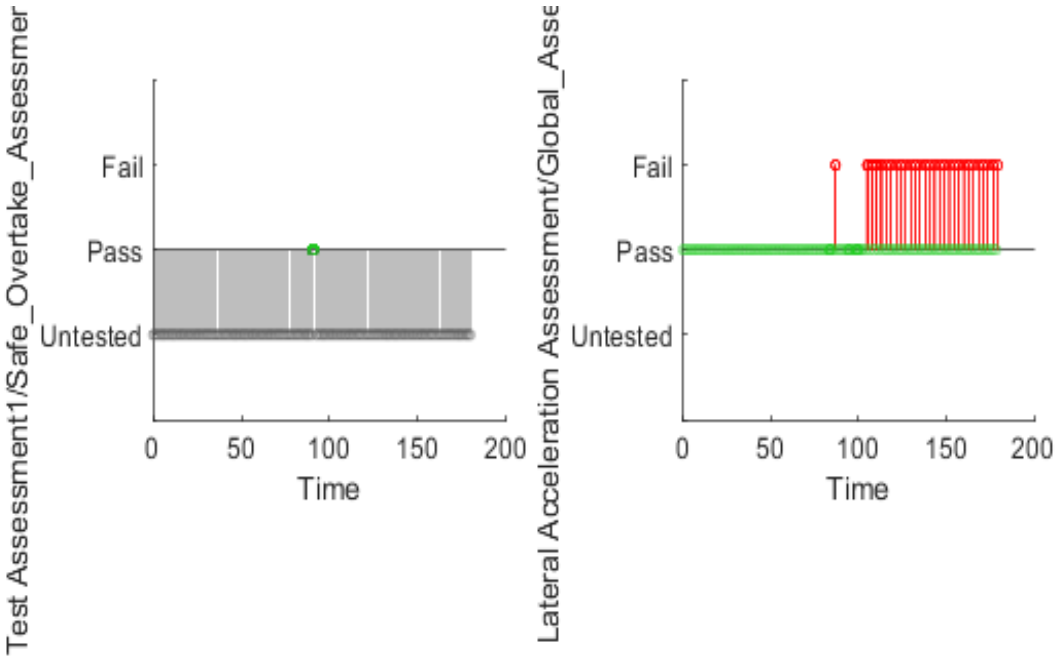
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 6

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	1197919449 279651288 1984720095 3681203342

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 21:02:45
Simulation Stop Time:	2021-06-22 21:03:52
Platform:	PCWIN64

Parameter Overrides

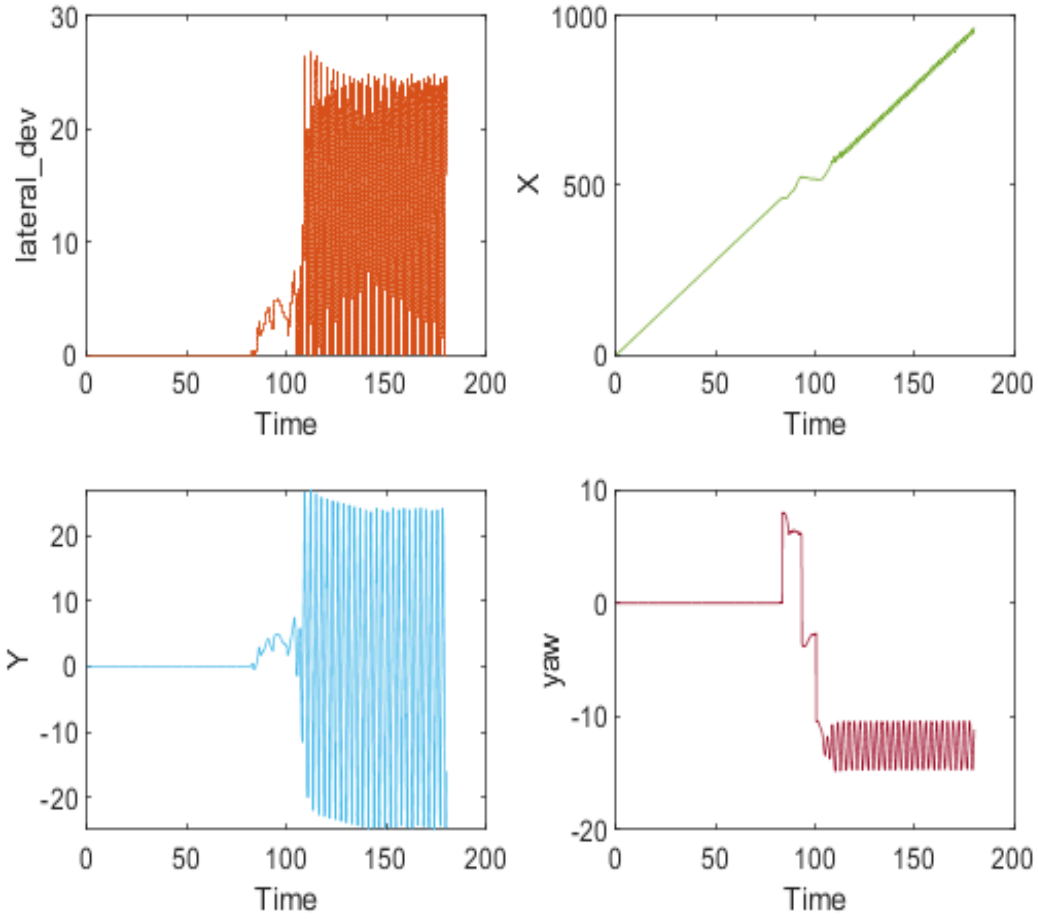
Workspace Variable	Value	Source	Model Element
Parameter Set 6			
Ts	*0.01*	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 0 0]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	10	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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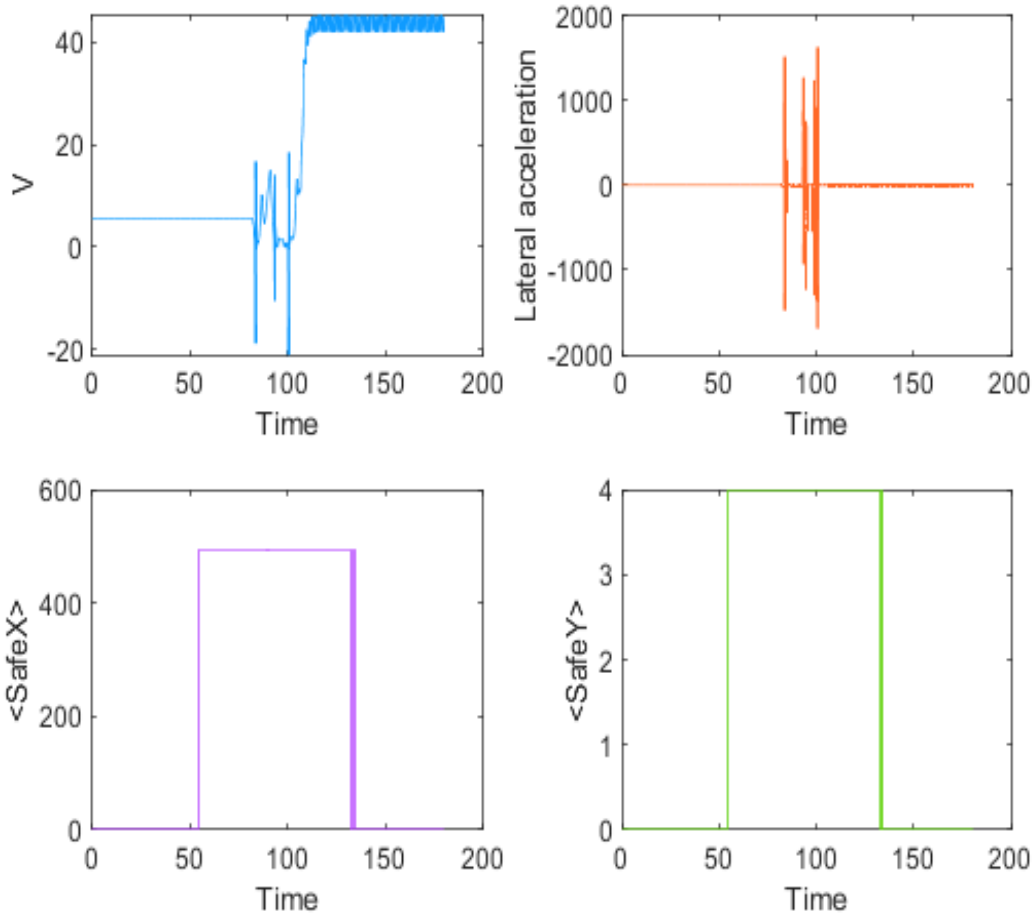
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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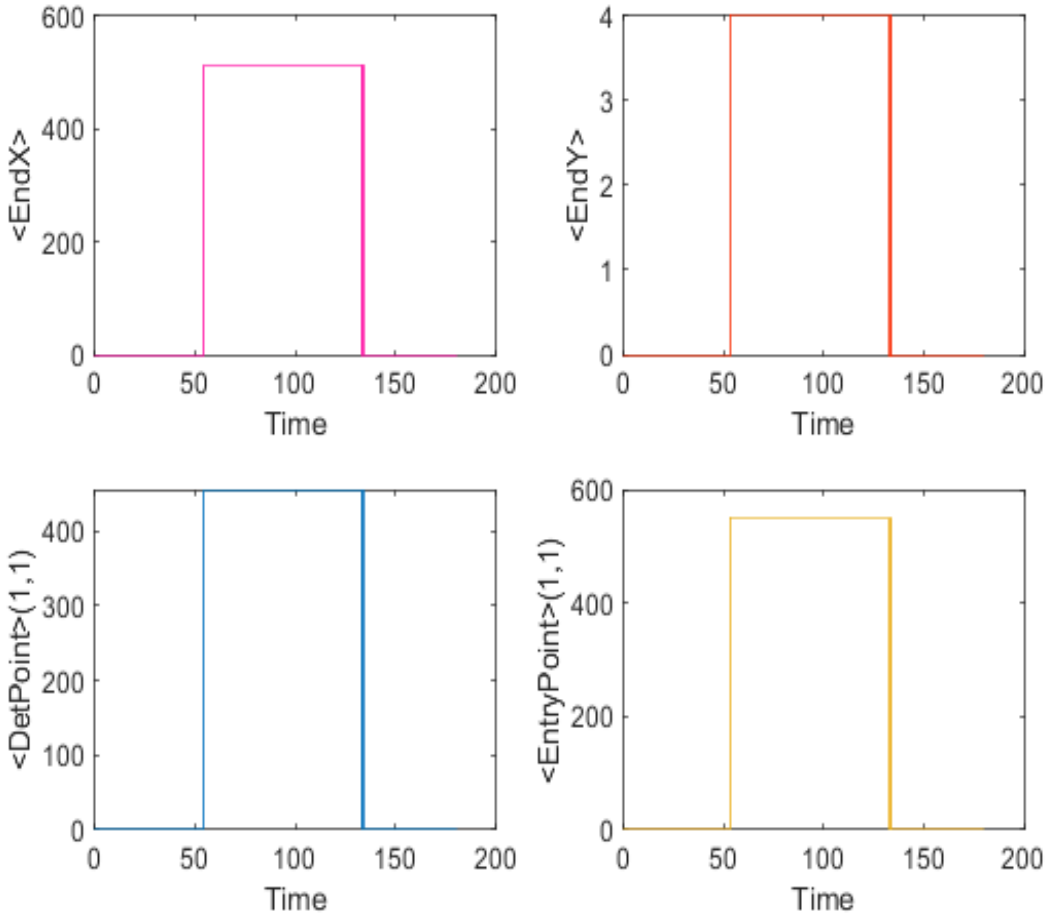
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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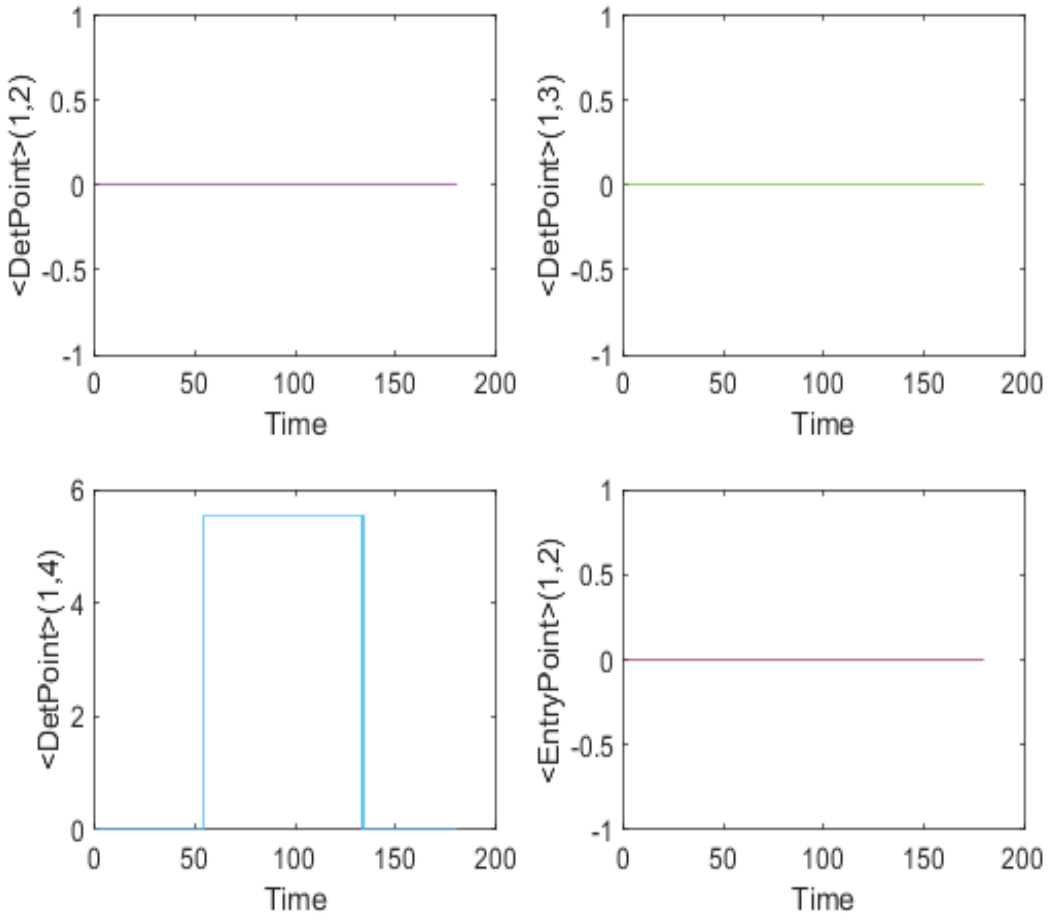
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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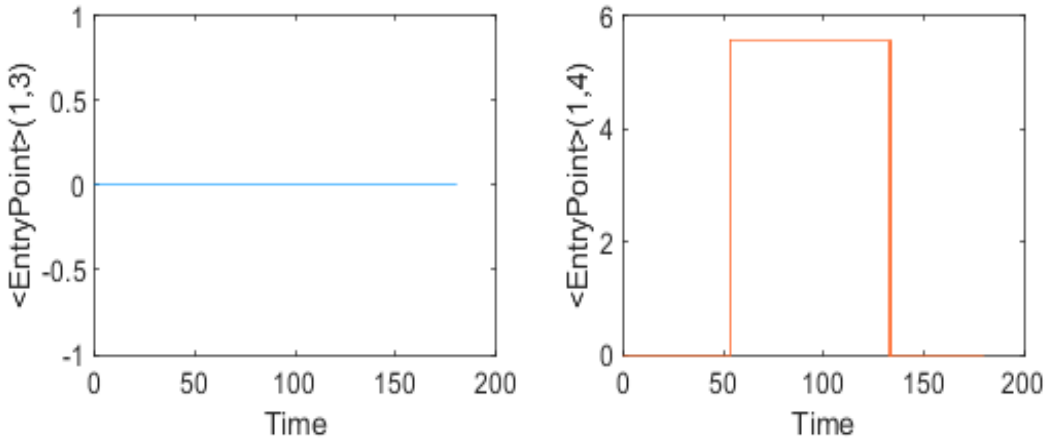
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration7

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 21:03:53

End Time: 22-Jun-2021 21:05:05
Outcome: Failed
Cause of Failure: Failed criteria: Verification

Test Case Information

Name: Iteration7
Type: Baseline Test

Iteration Settings

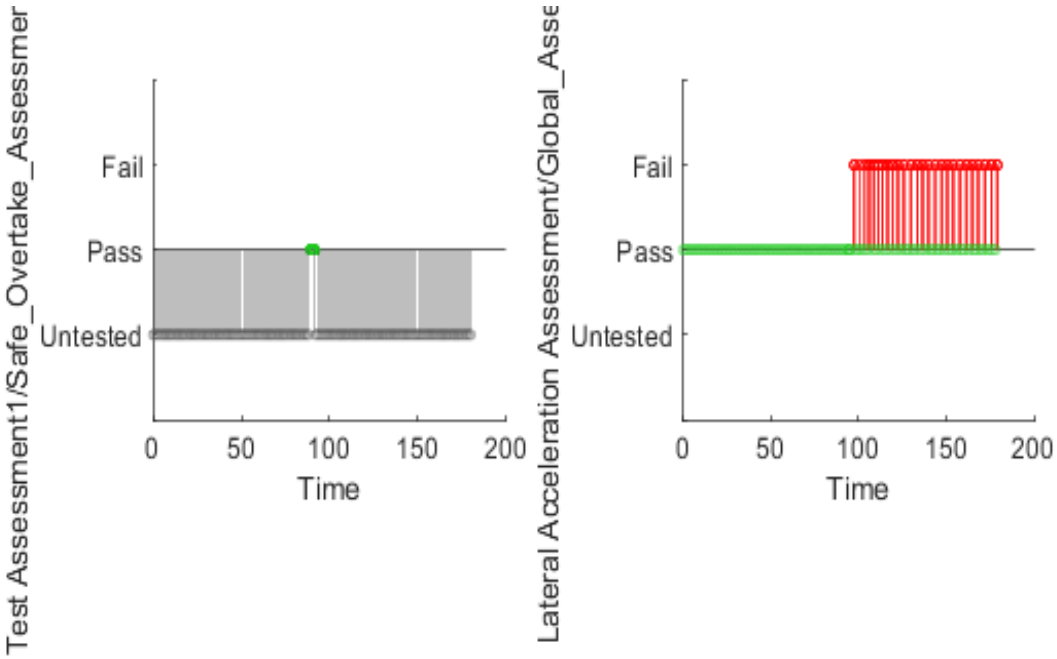
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 7

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	2900825053 1319595007 267058275 1529217599

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 21:03:53
Simulation Stop Time:	2021-06-22 21:05:05
Platform:	PCWIN64

Parameter Overrides

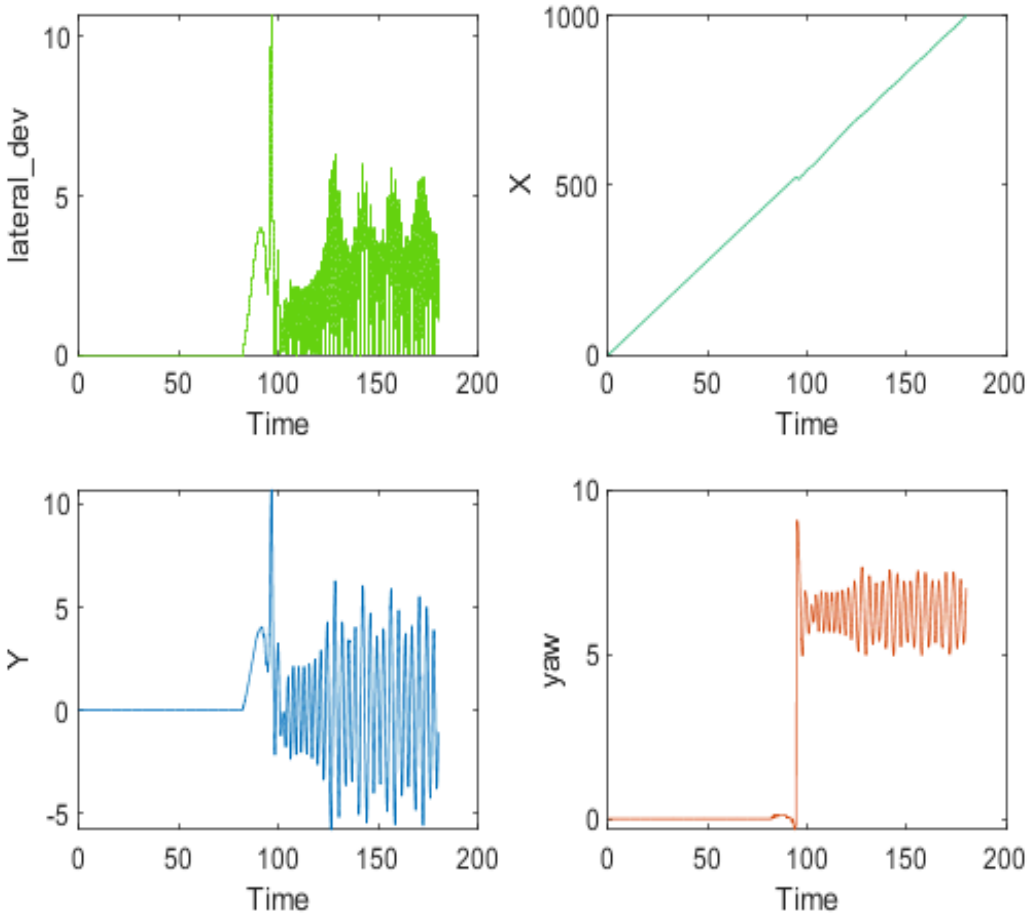
Workspace Variable	Value	Source	Model Element
Parameter Set 7			
Ts	*0.01*	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 0 30]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	8	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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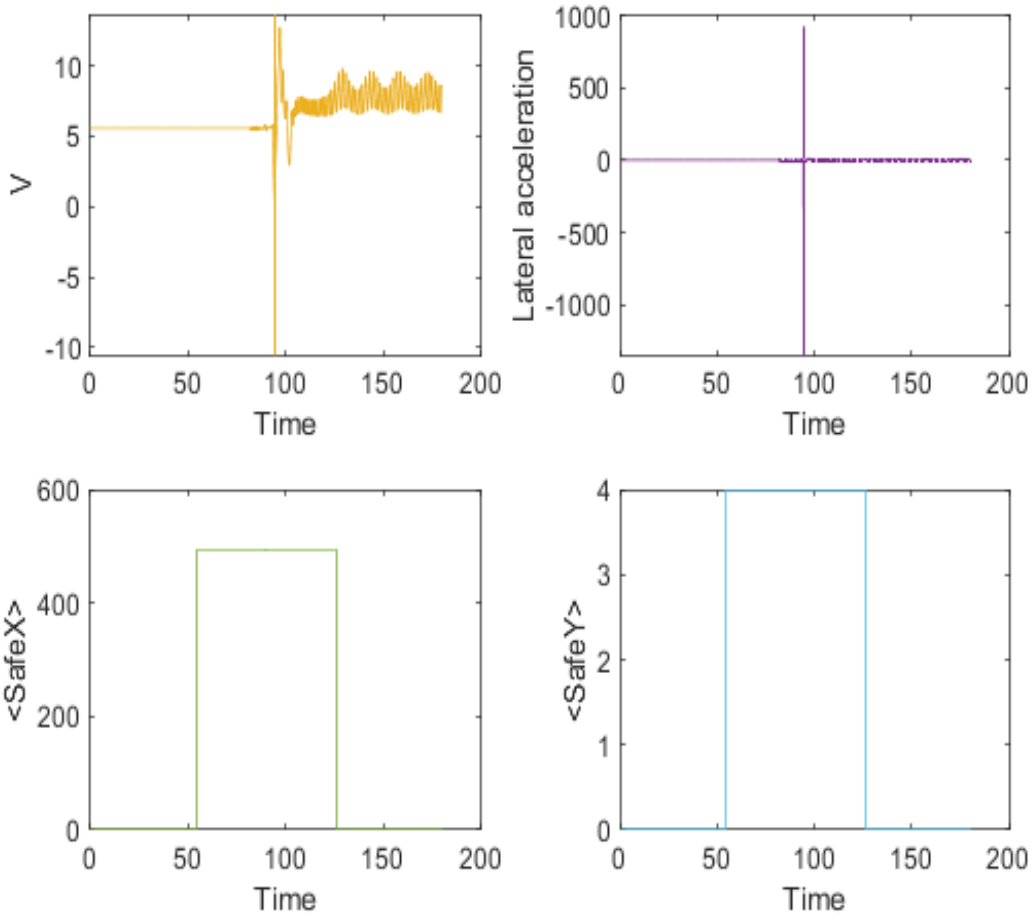
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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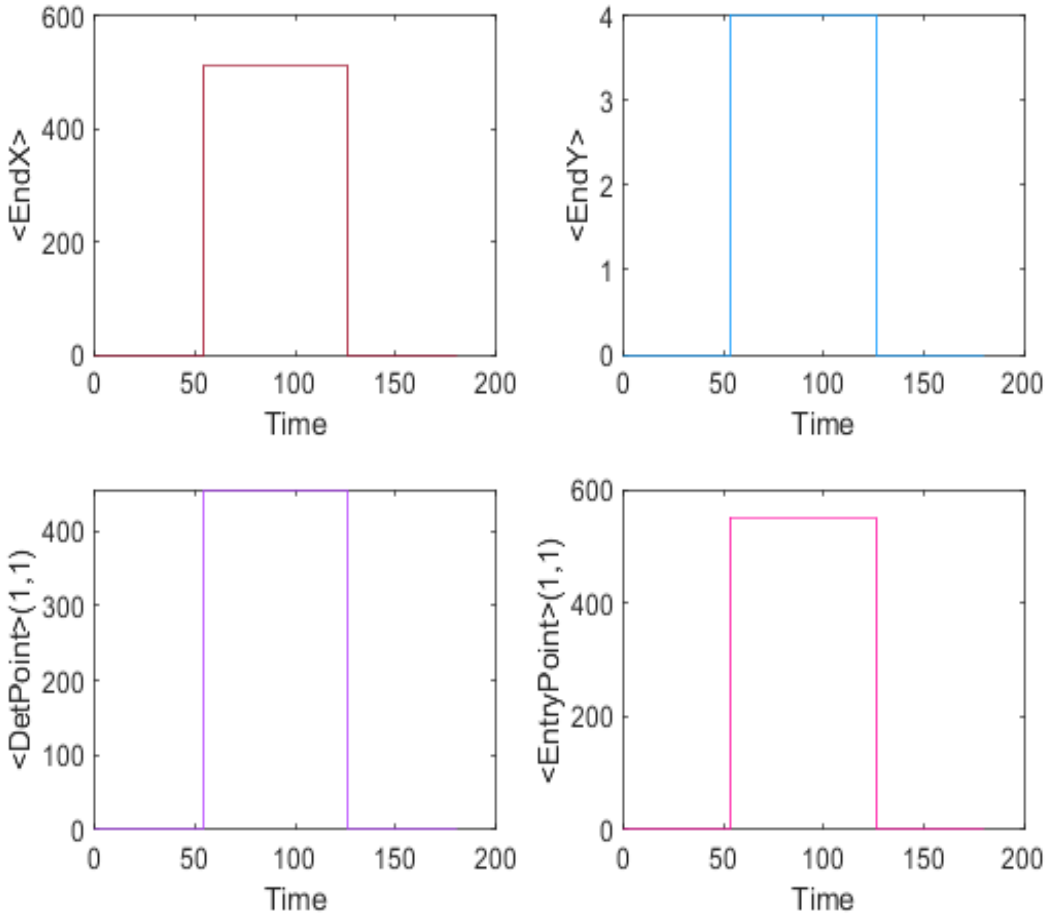
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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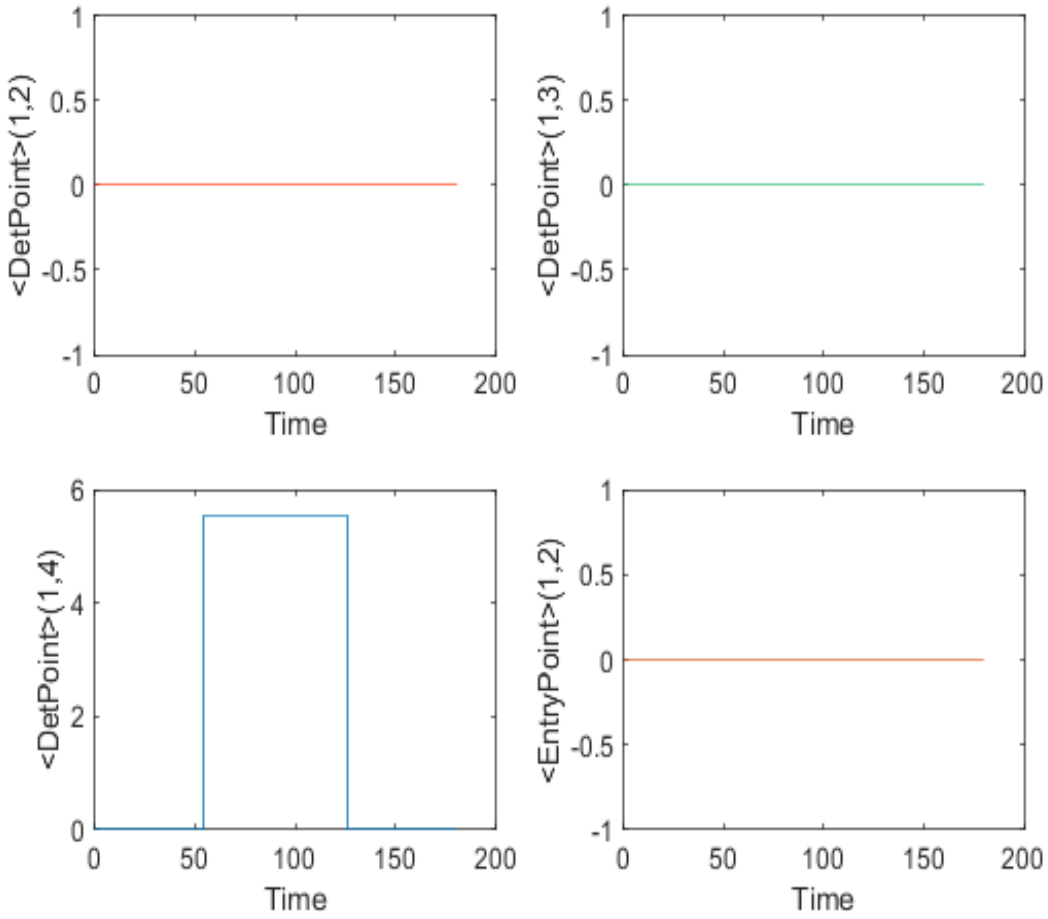
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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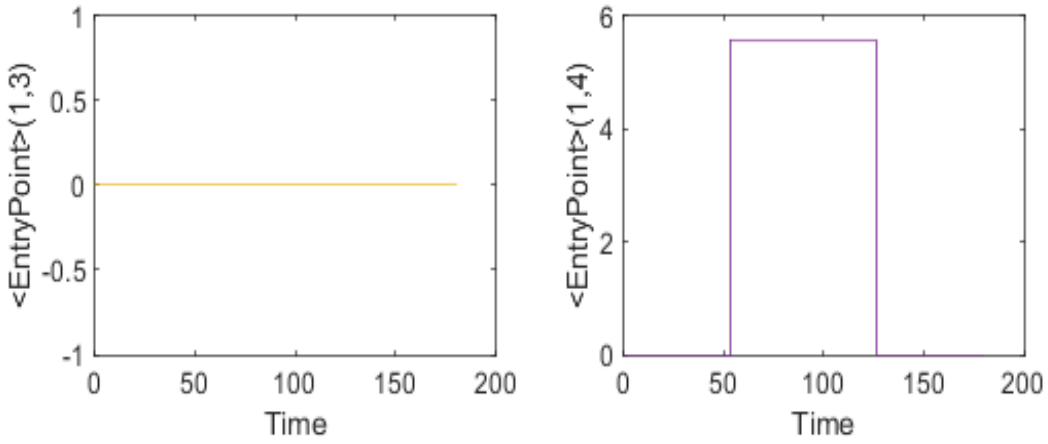
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration10

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 21:05:06

End Time: 22-Jun-2021 21:07:08
Outcome: Passed

Test Case Information

Name: Iteration10
Type: Baseline Test

Iteration Settings

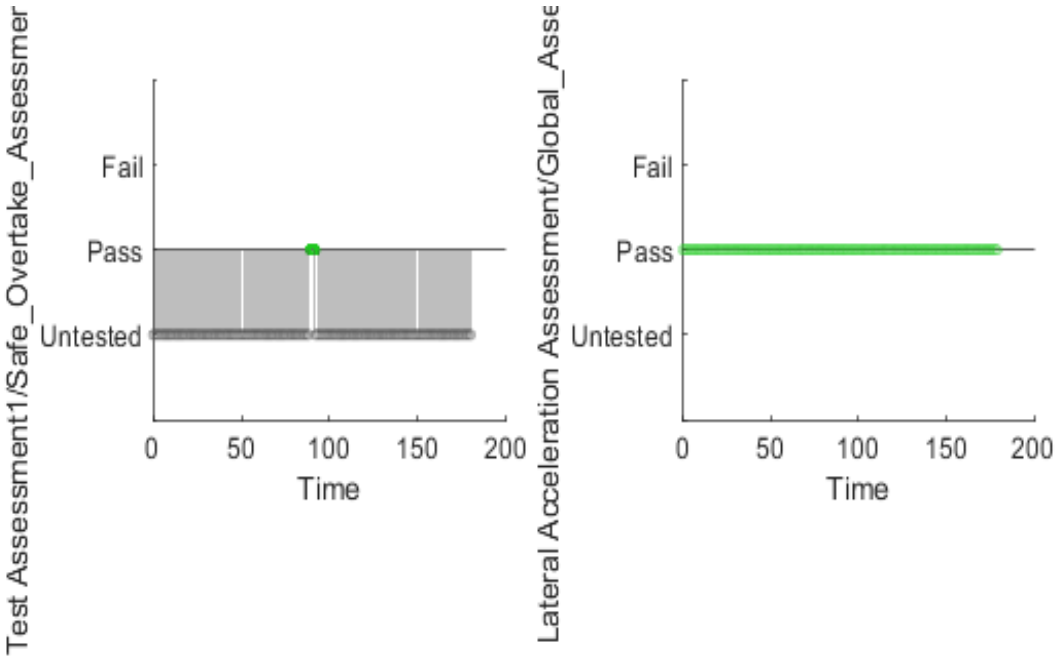
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 10

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	1228190385 1332200994 2047583879 165717677

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 21:05:06
Simulation Stop Time:	2021-06-22 21:07:07
Platform:	PCWIN64

Parameter Overrides

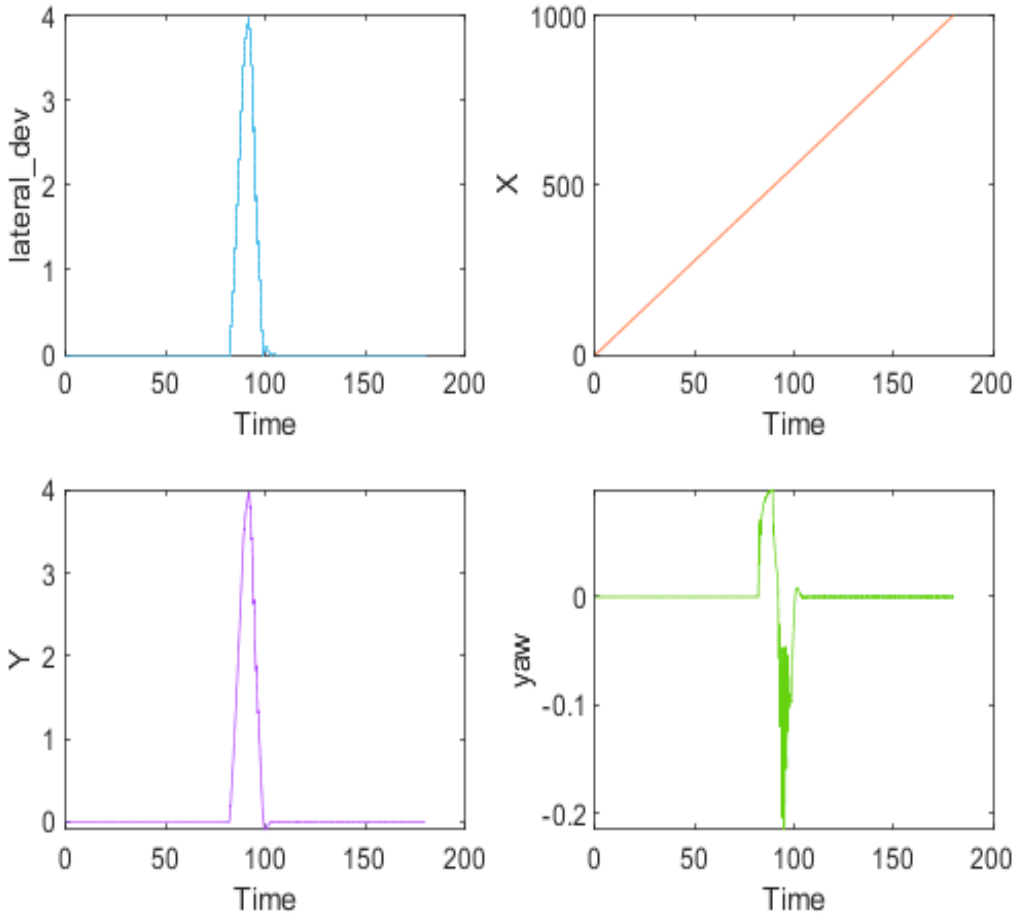
Workspace Variable	Value	Source	Model Element
Parameter Set 10			
Ts	0.01	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 8 30]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	15	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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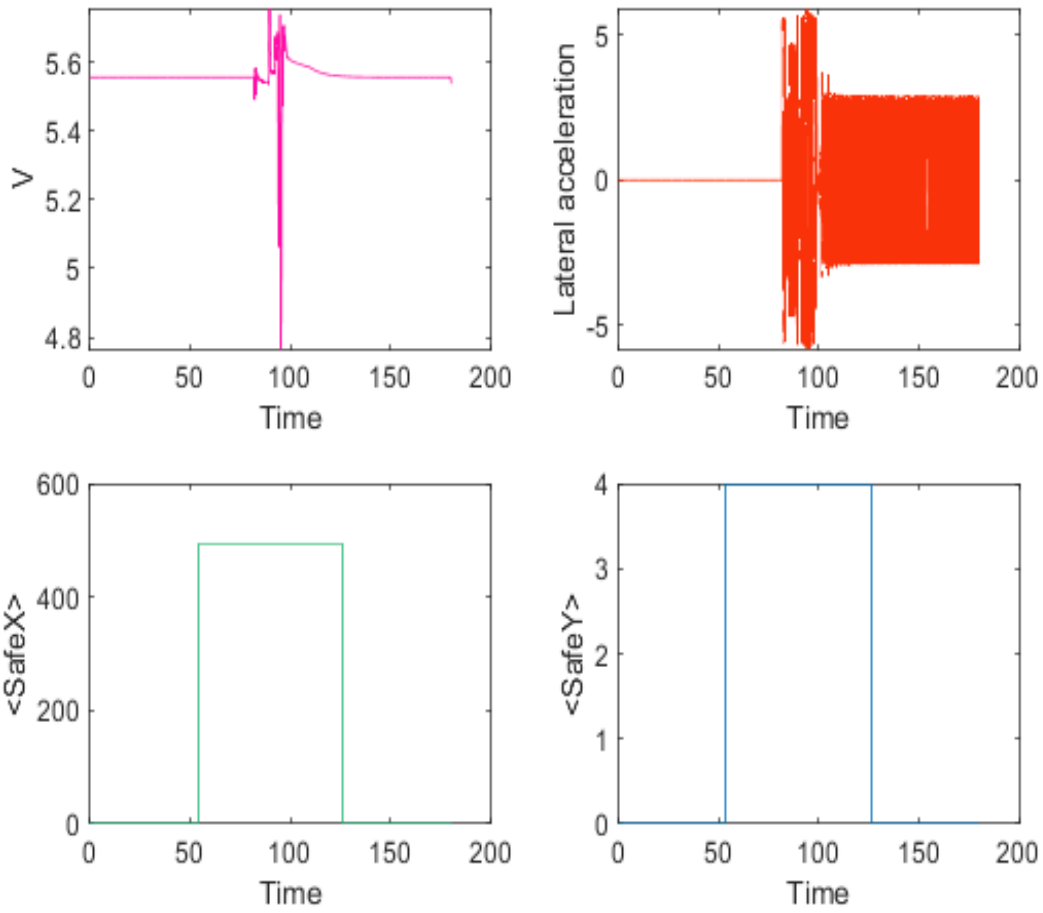
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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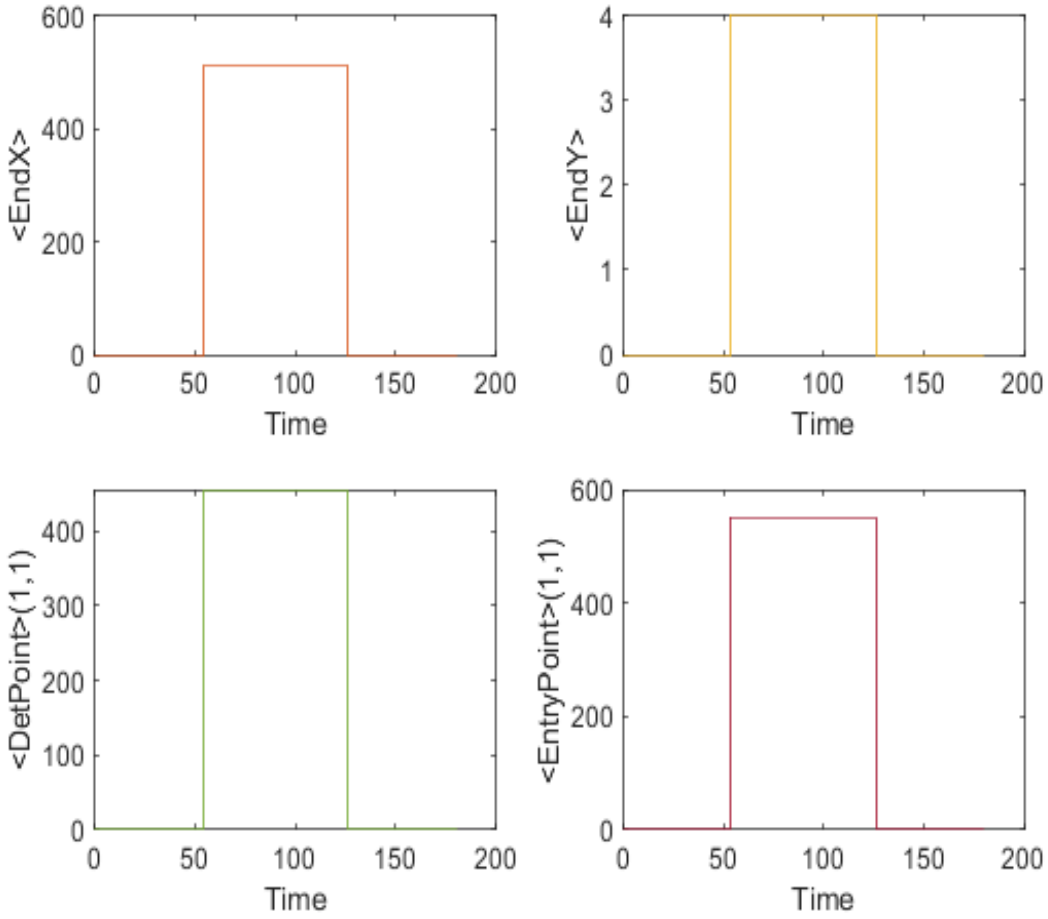
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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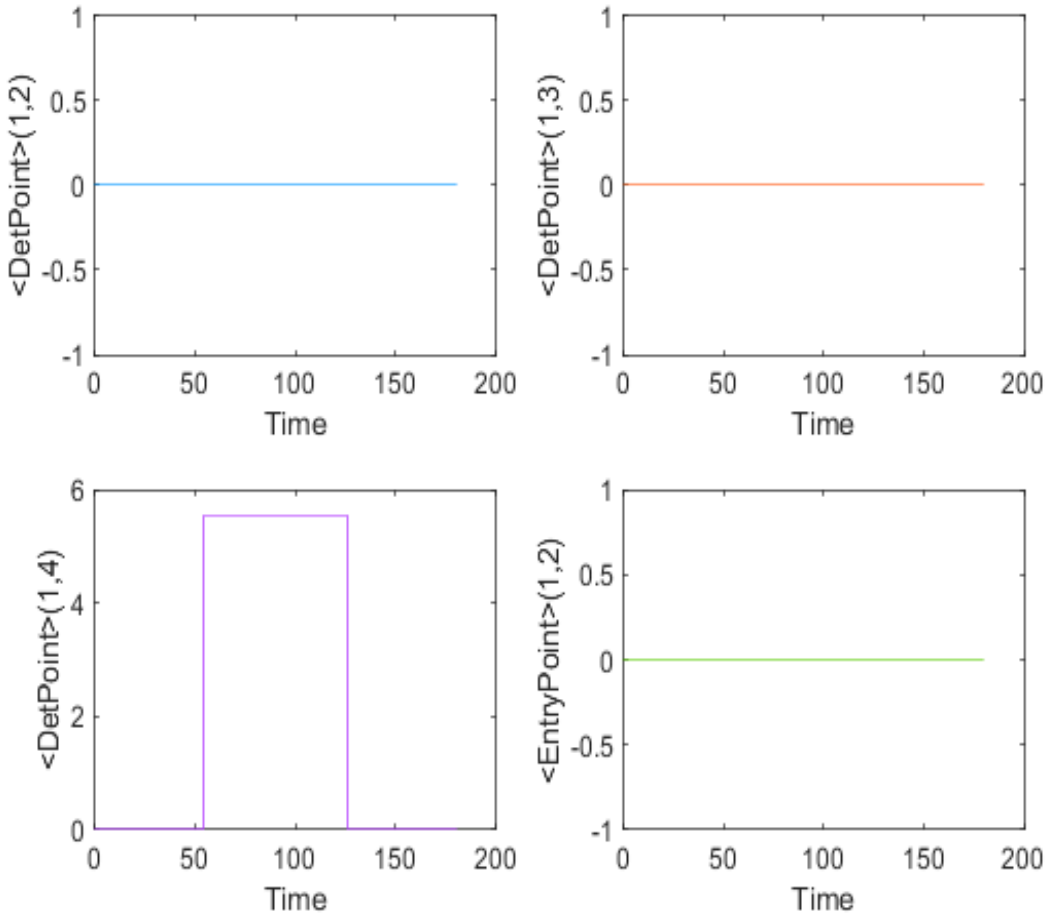
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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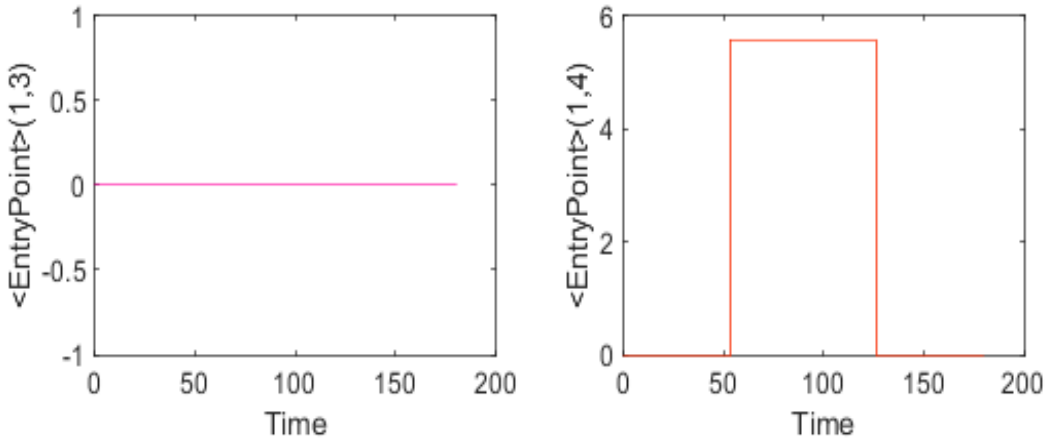
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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Iteration12

Test Result Information

Result Type: Test Iteration Result
Parent: MPC_L Setup
Start Time: 22-Jun-2021 21:07:08

End Time: 22-Jun-2021 21:08:53
Outcome: Failed
Cause of Failure: Failed criteria: Verification

Test Case Information

Name: Iteration12
Type: Baseline Test

Iteration Settings

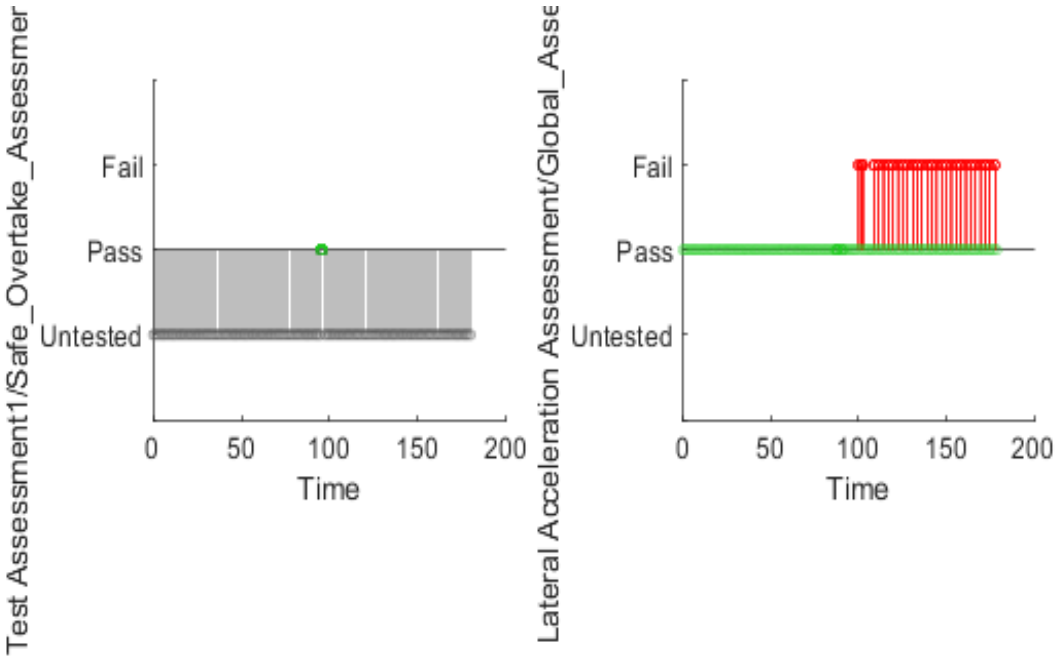
Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 12

Verify Result

Name	Link to Plot
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)	Link
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)	Link

Name
Test Assessment1/Safe_Overtake_Assessment:verify(duration(lateral_dev > 5 && lateral_dev < 3,sec)<1)
Lateral Acceleration Assessment/Global_Assessment:verify(duration(Lateral_acceleration>=2,sec)<=0.5)



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Simulation

System Under Test Information

Model:	Dynamic_obstacle_avoidance_L
Simulation Mode:	normal
Override SIL or PIL Mode:	0
Configuration Set:	Configuration
Start Time:	0
Stop Time:	180
Checksum:	1228190385 1332200994 2047583879 165717677

Simulink Version:	10.0
Model Version:	1.7
Model Author:	alber
Date:	Tue Jun 22 20:37:50 2021
User ID:	alber
Model Path:	D:\Documenti\GitHub\dynamic-obstacle-avoidance\Code\MPC_L\Dynamic_obstacle_avoidance_L.slx
Machine Name:	LAPTOP-OGD8JCHC
Solver Name:	ode45
Solver Type:	Variable-Step
Max Step Size:	0.001
Simulation Start Time:	2021-06-22 21:07:08
Simulation Stop Time:	2021-06-22 21:08:53
Platform:	PCWIN64

Parameter Overrides

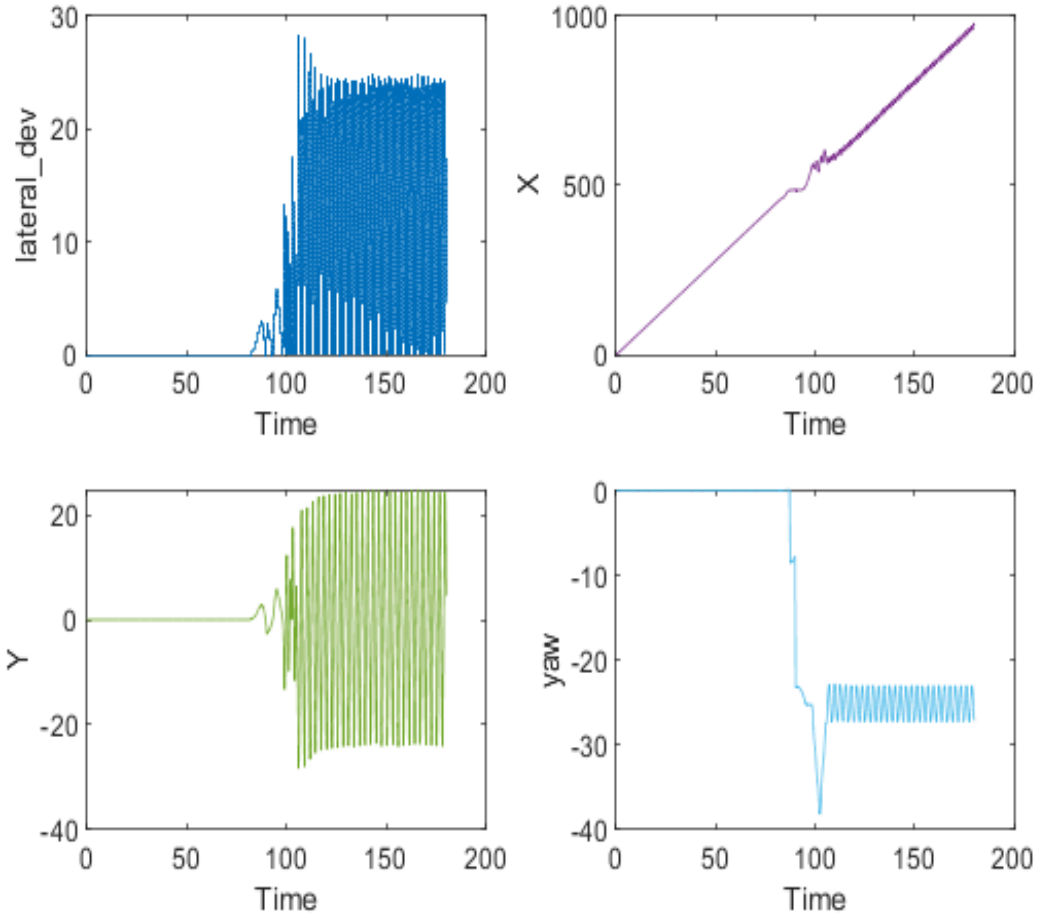
Workspace Variable	Value	Source	Model Element
Parameter Set 12			
Ts	0.01	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/ , Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/MATLAB Function, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/Sampling/Counter Free-Running1, Dynamic_obstacle_avoidance_L/Subsystem/Calculating deviation from reference/To Workspace2, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace1, Dynamic_obstacle_avoidance_

			L/Subsystem/Data to Workspace/To Workspace4, Dynamic_obstacle_avoidance_L/Subsystem/Data to Workspace/To Workspace5, Dynamic_obstacle_avoidance_L/Subsystem/Dynamic Model/C_r, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/Constant5, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/MATLAB Function1, Dynamic_obstacle_avoidance_L/Subsystem/Obstacle detector/To Workspace, Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/ , Dynamic_obstacle_avoidance_L/Subsystem/Plant generator/Plant Model Generator, Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Counter Free-Running, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/MATLAB Function
WOV	[30 30 0 0]	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant
p	15	base workspace	Dynamic_obstacle_avoidance_L/Subsystem/Sample map/Selector, Dynamic_obstacle_avoidance_L/Subsystem/Subsystem/Adaptive MPC Controller/Constant1

Simulation Output

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
lateral_dev	double		0.01	zoh	union	Link
X	double		Continuous	linear	union	Link
Y	double		Continuous	linear	union	Link
yaw	double		Continuous	linear	union	Link
V	double		Continuous	linear	union	Link
Lateral acceleration	double		Continuous	linear	union	Link
<SafeX>	double		0.01	zoh	union	Link
<SafeY>	double		0.01	zoh	union	Link
<EndX>	double		0.01	zoh	union	Link
<EndY>	double		0.01	zoh	union	Link
<DetPoint>(1,1)	double		0.01	zoh	union	Link
<EntryPoint>(1,1)	double		0.01	zoh	union	Link
<DetPoint>(1,2)	double		0.01	zoh	union	Link
<DetPoint>(1,3)	double		0.01	zoh	union	Link
<DetPoint>(1,4)	double		0.01	zoh	union	Link
<EntryPoint>(1,2)	double		0.01	zoh	union	Link
<EntryPoint>(1,3)	double		0.01	zoh	union	Link
<EntryPoint>(1,4)	double		0.01	zoh	union	Link

Name	Data Type	Units	Sample Time	Interp	Sync
lateral_dev	double		0.01	zoh	union
X	double		Continuous	linear	union
Y	double		Continuous	linear	union
yaw	double		Continuous	linear	union



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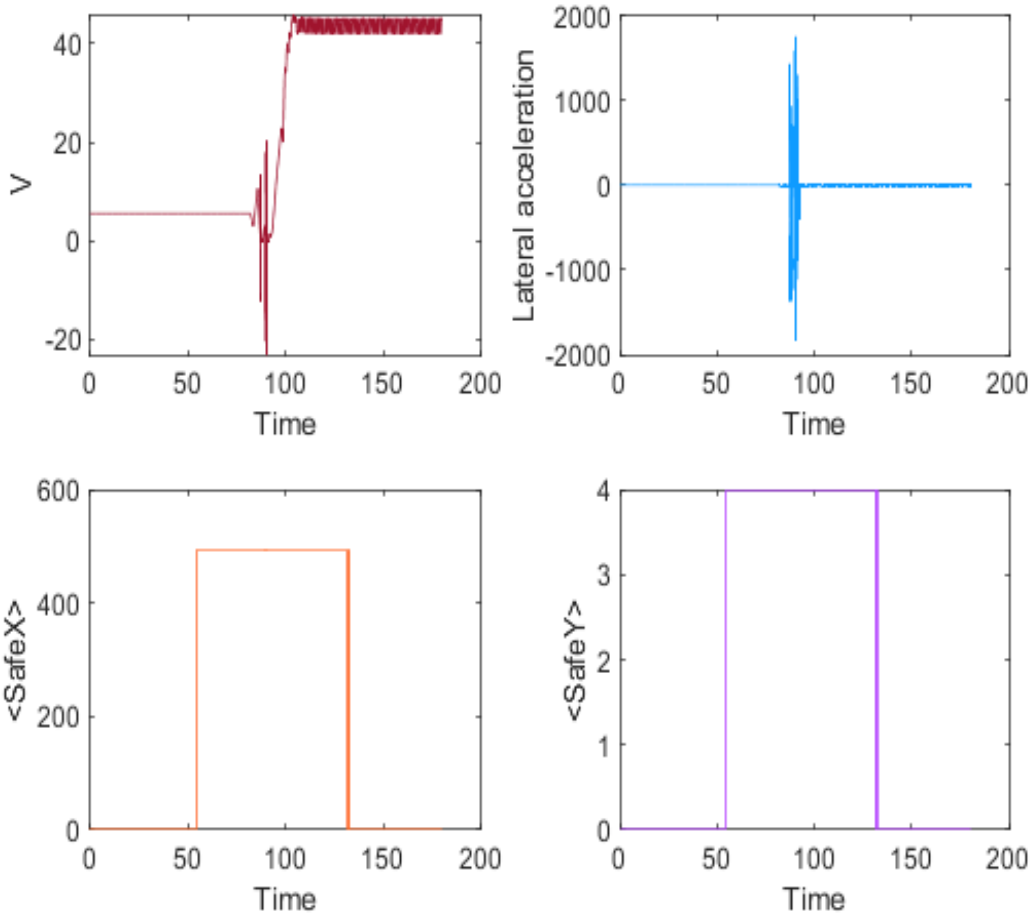
Name	Data Type	Units	Sample Time	Interp	Sync
V	double		Continuous	linear	union
Lateral acceleration	double		Continuous	linear	union
<SafeX>	double		0.01	zoh	union
<SafeY>	double		0.01	zoh	union



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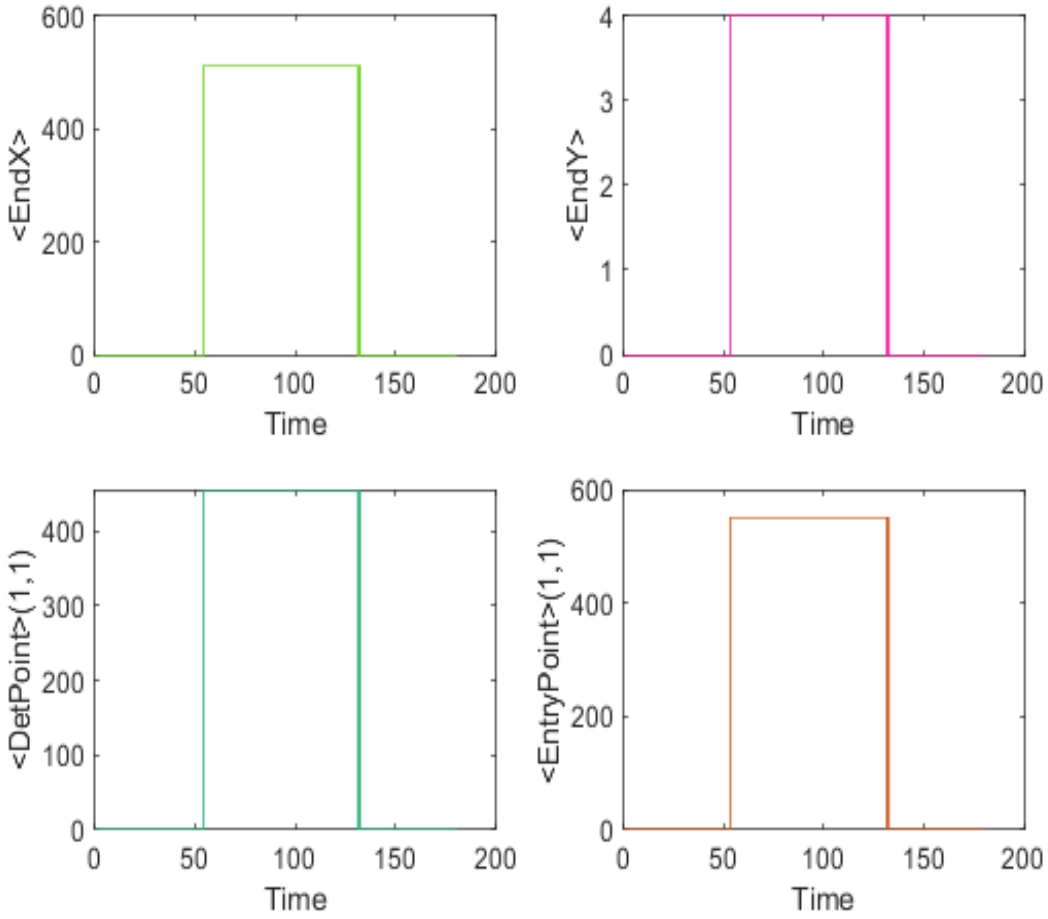
Name	Data Type	Units	Sample Time	Interp	Sync
<EndX>	double		0.01	zoh	union
<EndY>	double		0.01	zoh	union
<DetPoint>(1,1)	double		0.01	zoh	union
<EntryPoint>(1,1)	double		0.01	zoh	union



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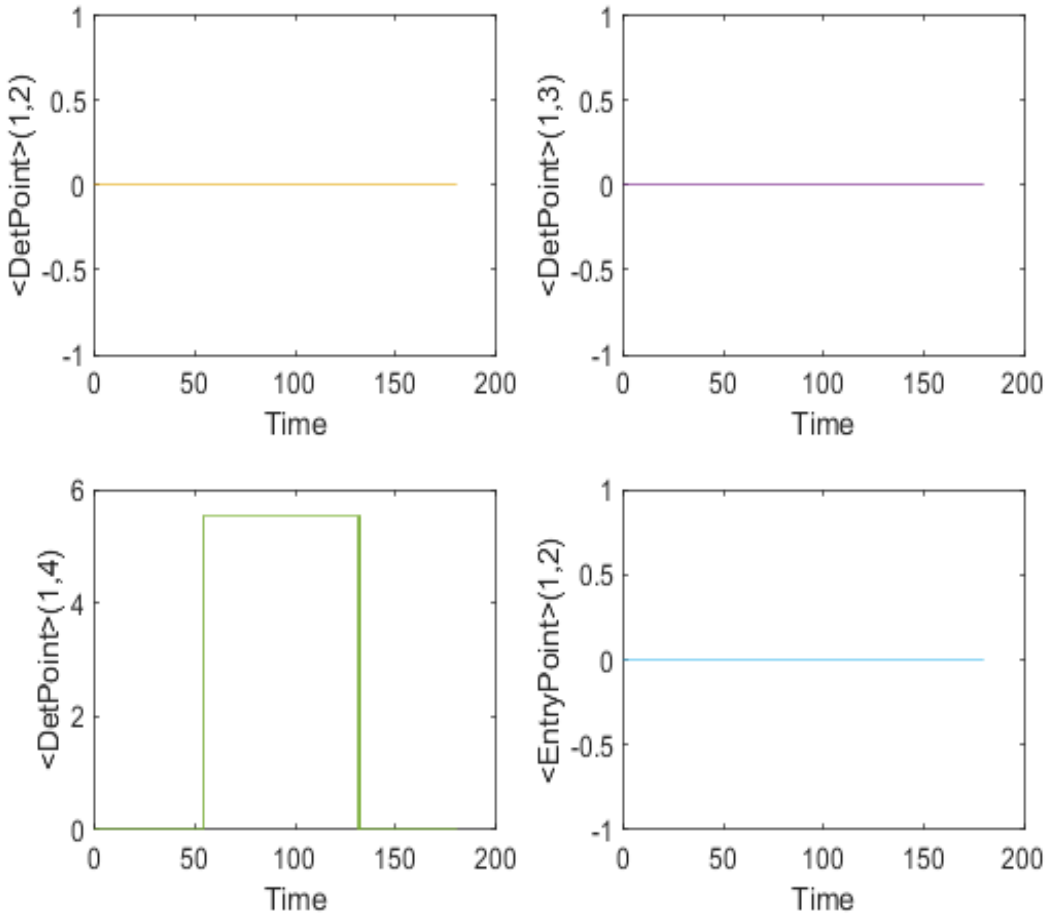
Name	Data Type	Units	Sample Time	Interp	Sync
<DetPoint>(1,2)	double		0.01	zoh	union
<DetPoint>(1,3)	double		0.01	zoh	union
<DetPoint>(1,4)	double		0.01	zoh	union
<EntryPoint>(1,2)	double		0.01	zoh	union



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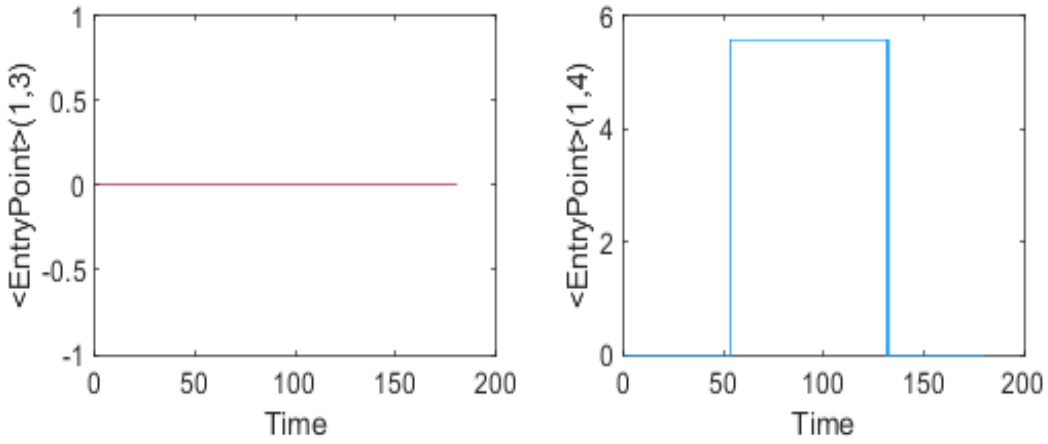
Name	Data Type	Units	Sample Time	Interp	Sync
<EntryPoint>(1,3)	double		0.01	zoh	union
<EntryPoint>(1,4)	double		0.01	zoh	union



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