

Table E: List of Selected Scenarios for Safety Testing of ADS using  $D1 - O_{d1}$ 

Sr. #	Groups	Scenario Name	Identifier	Score	Priority
G3	Following Lead Vehicle	Ego vehicle approaching slower lead vehicle	$S_{17}$	28	1
		Turning lead vehicle	$S_{18}$	26	2
		Inattentive, Rear	$S_{19}$	23	3
		Stutter Stop	$S_{20}$	23	3
G5	Crossing Path	Oncoming vehicle turns right at signalized junction	$S_{25}$	28	4
		Sirens	$S_{29}$	28	4
		Entering a roundabout with another vehicle	$S_{28}$	27	5
		Left Turn Clip	$S_{30}$	26	6
		Wrong Driveway	$S_{31}$	26	6
		Run Red Into Left Turner	$S_{33}$	26	6
		Misjudgment, Left Turn	$S_{34}$	26	6
		Wave to Go	$S_{32}$	23	7
		Navigating on an empty roundabout	$S_{27}$	22	8
G2	Lane Change	Ego vehicle turns right with oncoming vehicle at signalized junction	$S_{26}$	21	9
		Cut-in in front of the ego vehicle	$S_4$	28	10
		Cut-out in front of the ego vehicle	$S_7$	28	10
		Vehicle swerving towards ego vehicle	$S_8$	28	10
		Vehicle backing up into the ego vehicle	$S_9$	28	10
		Impassable object on intended path	$S_{10}$	28	10
		Object road with incoming traffic	$S_{12}$	28	10
		Driving straight	$S_{13}$	28	10
		U-Turn	$S_{16}$	28	10
		Ego performing lane change with the vehicle behind	$S_5$	24	11
		Ego merging into an occupied lane	$S_6$	24	11
		Passable object on intended path	$S_{11}$	24	11
		Avoidance, Rear	$S_{14}$	24	11
		Lane Change, Rear.	$S_{15}$	24	11
G3	Opposite Direction	Oncoming vehicle swerving into ego vehicle's lane	$S_{64}$	28	12
		Oncoming vehicle	$S_{65}$	28	12
G7	Pedestrian Interaction	Jaywalking	$S_{36}$	27	13
		Pedestrian crossing at zebra crossing	$S_{37}$	27	13
		Pedestrian running a red light	$S_{41}$	27	13
		Struck Human	$S_{45}$	27	13
		Pedestrian stationary at road side	$S_{39}$	26	14
		Pedestrian walking along the road	$S_{40}$	26	14
		Pedestrian at left turn at signalized junction	$S_{42}$	25	15
		Pedestrian in same direction obstructed at ego left turn	$S_{43}$	25	15
		Zebra crossing	$S_{38}$	23	16
G8	Cyclist Interaction	Pedestrian at right turn at signalized junction	$S_{44}$	20	17
		Cyclist crossing from left side at signalized junction	$S_{46}$	25	18
		Cyclist crossing from right side at signalized junction	$S_{47}$	25	18
		Ego vehicle approaching cyclist riding in same direction	$S_{48}$	25	18
		Ego vehicle driving alongside a cyclist	$S_{49}$	25	18
		Cyclist and ego vehicle driving in opposite direction	$S_{50}$	25	18
		Cyclist turning left and ends up in lane of ego vehicle	$S_{56}$	25	18
		Cyclist turning right and ends up in lane of ego vehicle	$S_{57}$	25	18
		Entering a roundabout with a cyclist Interaction	$S_{54}$	24	19
		Leaving a roundabout with a cyclist	$S_{55}$	24	19
		Cyclist at left turn at signalized junction	$S_{51}$	23	20
		Cyclist driving in same direction obstructed at ego left turn	$S_{52}$	23	20
		Cyclist at right turn at signalized junction	$S_{53}$	18	21

Table F: List of Selected Scenarios for Safety Testing of ADS using  $D2 - O_{d2}$ 

Sr. #	Groups	Scenario Name	Identifier	Score	Priority
G8	Cyclist Interaction	Ego vehicle approaching cyclist riding in same direction	$S_{48}$	19	1
		Ego vehicle driving alongside a cyclist	$S_{49}$	19	1
		Cyclist and ego vehicle driving in opposite direction	$S_{50}$	19	1
		Cyclist crossing from left side at signalized junction	$S_{46}$	18	2
		Cyclist crossing from right side at signalized junction	$S_{47}$	18	2
		Cyclist turning left and ends up in lane of ego vehicle	$S_{56}$	18	2
		Cyclist turning right and ends up in lane of ego vehicle	$S_{57}$	18	2
		Cyclist at left turn at signalized junction	$S_{51}$	17	3
		Cyclist driving in same direction obstructed at ego left turn	$S_{52}$	17	3
		Entering a roundabout with a cyclist Interaction	$S_{54}$	16	4
		Leaving a roundabout with a cyclist	$S_{55}$	16	4
G5	Crossing Path	Cyclist at right turn at signalized junction	$S_{53}$	14	5
		Oncoming vehicle turns right at signalized junction	$S_{25}$	21	6
		Sirens	$S_{29}$	21	6
		Left Turn Clip	$S_{30}$	20	7
		Wrong Driveway	$S_{31}$	20	7
		Run Red Into Left Turner	$S_{33}$	20	7
		Misjudgment, Left Turn	$S_{34}$	20	7
		Entering a roundabout with another vehicle	$S_{28}$	19	8
		Ego vehicle turns right with oncoming vehicle at signalized junction	$S_{26}$	17	9
		Navigating on an empty roundabout	$S_{27}$	14	10
G7	Pedestrian Interaction	Wave to Go	$S_{32}$	14	10
		Jaywalking	$S_{36}$	21	11
		Pedestrian crossing at zebra crossing	$S_{37}$	21	11
		Pedestrian running a red light	$S_{41}$	20	12
		Struck Human	$S_{45}$	20	12
		Pedestrian stationary at road side	$S_{39}$	19	13
		Pedestrian walking along the road	$S_{40}$	19	13
		Pedestrian at left turn at signalized junction	$S_{42}$	19	13
		Pedestrian in same direction obstructed at ego left turn	$S_{43}$	19	13
G3	Opposite Direction	Zebra crossing	$S_{38}$	18	14
		Pedestrian at right turn at signalized junction	$S_{44}$	16	15
G3	Following Lead Vehicle	Oncoming vehicle swerving into ego vehicle's lane	$S_{64}$	22	16
		Oncoming vehicle	$S_{65}$	22	16
G3	Following Lead Vehicle	Ego vehicle approaching slower lead vehicle	$S_{17}$	21	17
		Turning lead vehicle	$S_{18}$	20	18
		Inattentive, Rear	$S_{19}$	14	19
		Stutter Stop	$S_{20}$	14	19
G2	Lane Change	Cut-in in front of the ego vehicle	$S_4$	22	20
		Cut-out in front of the ego vehicle	$S_7$	22	20
		Vehicle swerving towards ego vehicle	$S_8$	22	20
		Vehicle backing up into the ego vehicle	$S_9$	22	20
		Impassable object on intended path	$S_{10}$	22	20
		Object road with incoming traffic	$S_{12}$	22	20
		Driving straight	$S_{13}$	22	20
		U-Turn	$S_{16}$	22	20
		Ego performing lane change with the vehicle behind	$S_5$	19	21
		Ego merging into an occupied lane	$S_6$	19	21
		Passable object on intended path	$S_{11}$	19	21
		Avoidance, Rear	$S_{14}$	19	21
		Lane Change, Rear.	$S_{15}$	19	21
G10	Reversing	Back Into Object	$S_{61}$	17	22
		Back into Roadway	$S_{62}$	17	22
		Back Track	$S_{63}$	17	22

Table G: List of Selected Scenarios for Safety Testing of ADS using  $D1_{overlap} - O_{d1_{overlap}}$ 

Sr. #	Groups	Scenario Name	Identifier	Score	Priority
G3	Following Lead Vehicle	Ego vehicle approaching slower lead vehicle	$S_{17}$	18	1
		Turning lead vehicle	$S_{18}$	16	2
		Inattentive, Rear	$S_{19}$	11	3
		Stutter Stop	$S_{20}$	11	3
G5	Crossing Path	Oncoming vehicle turns right at signalized junction	$S_{25}$	18	4
		Sirens	$S_{29}$	18	4
		Entering a roundabout with another vehicle	$S_{28}$	17	5
		Left Turn Clip	$S_{30}$	16	6
		Wrong Driveway	$S_{31}$	16	6
		Run Red Into Left Turner	$S_{33}$	16	6
		Misjudgment, Left Turn	$S_{34}$	16	6
		Ego vehicle turns right with oncoming vehicle at signalized junction	$S_{26}$	14	7
G2	Lane Change	Navigating on an empty roundabout	$S_{27}$	11	8
		Wave to Go	$S_{32}$	11	8
		Cut-in in front of the ego vehicle	$S_4$	18	9
		Cut-out in front of the ego vehicle	$S_7$	18	9
		Vehicle swerving towards ego vehicle	$S_8$	18	9
		Vehicle backing up into the ego vehicle	$S_9$	18	9
		Impassable object on intended path	$S_{10}$	18	9
		Object road with incoming traffic	$S_{12}$	18	9
		Driving straight	$S_{13}$	18	9
		U-Turn	$S_{16}$	18	9
		Ego performing lane change with the vehicle behind	$S_5$	15	10
		Ego merging into an occupied lane	$S_6$	15	10
		Passable object on intended path	$S_{11}$	15	10
		Avoidance, Rear	$S_{14}$	15	10
		Lane Change, Rear.	$S_{15}$	15	10
G3	Opposite Direction	Oncoming vehicle swerving into ego vehicle's lane	$S_{64}$	18	11
		Oncoming vehicle	$S_{65}$	18	11
G7	Pedestrian Interaction	Jaywalking	$S_{36}$	17	12
		Pedestrian crossing at zebra crossing	$S_{37}$	17	12
		Pedestrian running a red light	$S_{41}$	17	12
		Struck Human	$S_{45}$	17	12
		Pedestrian stationary at road side	$S_{39}$	16	13
		Pedestrian walking along the road	$S_{40}$	16	13
		Pedestrian at left turn at signalized junction	$S_{42}$	15	14
		Pedestrian in same direction obstructed at ego left turn	$S_{43}$	15	14
		Zebra crossing	$S_{38}$	14	15
G8	Cyclist Interaction	Pedestrian at right turn at signalized junction	$S_{44}$	13	16
		Cyclist crossing from left side at signalized junction	$S_{46}$	15	17
		Cyclist crossing from right side at signalized junction	$S_{47}$	15	17
		Ego vehicle approaching cyclist riding in same direction	$S_{48}$	15	17
		Ego vehicle driving alongside a cyclist	$S_{49}$	15	17
		Cyclist and ego vehicle driving in opposite direction	$S_{50}$	15	17
		Cyclist turning left and ends up in lane of ego vehicle	$S_{56}$	15	17
		Cyclist turning right and ends up in lane of ego vehicle	$S_{57}$	15	17
		Entering a roundabout with a cyclist Interaction	$S_{54}$	14	18
		Leaving a roundabout with a cyclist	$S_{55}$	14	18
		Cyclist at left turn at signalized junction	$S_{51}$	13	19
		Cyclist driving in same direction obstructed at ego left turn	$S_{52}$	13	19
		Cyclist at right turn at signalized junction	$S_{53}$	11	20

Table H: List of Selected Scenarios for Safety Testing of ADS using  $D2_{overlap} - O_{d2_{overlap}}$ 

Sr. #	Groups	Scenario Name	Identifier	Score	Priority
G8	Cyclist Interaction	Cyclist crossing from left side at signalized junction	$S_{46}$	16	1
		Cyclist crossing from right side at signalized junction	$S_{47}$	16	1
		Ego vehicle approaching cyclist riding in same direction	$S_{48}$	16	1
		Ego vehicle driving alongside a cyclist	$S_{49}$	16	1
		Cyclist and ego vehicle driving in opposite direction	$S_{50}$	16	1
		Cyclist turning left and ends up in lane of ego vehicle	$S_{56}$	16	1
		Cyclist turning right and ends up in lane of ego vehicle	$S_{57}$	16	1
		Cyclist at left turn at signalized junction	$S_{51}$	15	2
		Cyclist driving in same direction obstructed at ego left turn	$S_{52}$	15	2
		Entering a roundabout with a cyclist Interaction	$S_{54}$	14	3
		Leaving a roundabout with a cyclist	$S_{55}$	14	3
		Cyclist at right turn at signalized junction	$S_{53}$	12	4
G5	Crossing Path	Oncoming vehicle turns right at signalized junction	$S_{25}$	18	5
		Sirens	$S_{29}$	18	5
		Left Turn Clip	$S_{30}$	17	6
		Wrong Driveway	$S_{31}$	17	6
		Run Red Into Left Turner	$S_{33}$	17	6
		Misjudgment, Left Turn	$S_{34}$	17	6
		Entering a roundabout with another vehicle	$S_{28}$	16	7
		Ego vehicle turns right with oncoming vehicle at signalized junction	$S_{26}$	14	8
		Navigating on an empty roundabout	$S_{27}$	11	9
		Wave to Go	$S_{32}$	11	9
G7	Pedestrian Interaction	Jaywalking	$S_{36}$	17	10
		Pedestrian crossing at zebra crossing	$S_{37}$	17	10
		Pedestrian running a red light	$S_{41}$	17	10
		Struck Human	$S_{45}$	17	10
		Pedestrian at left turn at signalized junction	$S_{42}$	16	11
		Pedestrian in same direction obstructed at ego left turn	$S_{43}$	16	11
		Pedestrian stationary at road side	$S_{39}$	15	12
		Pedestrian walking along the road	$S_{40}$	15	12
		Zebra crossing	$S_{38}$	14	13
		Pedestrian at right turn at signalized junction	$S_{44}$	13	14
G3	Opposite Direction	Oncoming vehicle swerving into ego vehicle's lane	$S_{64}$	18	15
		Oncoming vehicle	$S_{65}$	18	15
G3	Following Lead Vehicle	Ego vehicle approaching slower lead vehicle	$S_{17}$	18	16
		Turning lead vehicle	$S_{18}$	17	17
		Inattentive, Rear	$S_{19}$	11	18
		Stutter Stop	$S_{20}$	11	18
G2	Lane Change	Cut-in in front of the ego vehicle	$S_4$	18	19
		Cut-out in front of the ego vehicle	$S_7$	18	19
		Vehicle swerving towards ego vehicle	$S_8$	18	19
		Vehicle backing up into the ego vehicle	$S_9$	18	19
		Impassable object on intended path	$S_{10}$	18	19
		Object road with incoming traffic	$S_{12}$	18	19
		Driving straight	$S_{13}$	18	19
		U-Turn	$S_{16}$	18	19
		Ego performing lane change with the vehicle behind	$S_5$	15	20
		Ego merging into an occupied lane	$S_6$	15	20
		Passable object on intended path	$S_{11}$	15	20
		Avoidance, Rear	$S_{14}$	15	20
		Lane Change, Rear.	$S_{15}$	15	20
		Back Into Object	$S_{61}$	13	21
G10	Reversing	Back into Roadway	$S_{62}$	13	21
		Back Track	$S_{63}$	13	21