

INSTRUCTIONS:

Fill out the hazard analysis and risk assessment below.

HA-001 should be for the lane departure warning function as discussed in the lecture.

HA-002 should be for the lane keeping assistance function as discussed in the lecture.

Then come up with your own situations and hazards for the lane assistance system. If

When finished, export your spreadsheet as a pdf file so that a reviewer can easily see

Hazard ID			
	Operational Mode	Operational Scenario	Environmental Details
HA-001	OM03 - Normal Driving	OS01 - City Road	EN01 - Normal Conditions
HA-002	OM03 - Normal Driving	OS01 - City Road	EN04 - Snowfall (degraded view)
HA-003	OM03 - Normal Driving	OS04 - Highway	EN06 - Rain (slippery road)
HA-004	OM03 - Normal Driving	OS04 - Highway	EN01 - Normal Conditions

Fill in the HA-003 and HA-004 rows.
your work.

Situational Analysis		
Situation Details	Other Details (optional)	Item Usage (function)
SD03 - Low speed		IU01 - Correctly used
SD03 - Low speed		IU02 - Incorrectly used
SD02 - High speed		IU01 - Correctly used
SD02 - High speed		IU01 - Correctly used

Situation Description	Function	Deviation
Normal Driving on City Road during Normal	Lane Departure	DV04 - Actor effect is
Normal Driving on City Road during Snowfall	Lane Keeping	DV03 - Function
Highway driving at high speed during Rainfall	Lane Departure	DV01 - Function not
Highway driving at high speed during Normal	Lane Keeping	DV10 - Actor effect is

Hazard Identification		
Deviation Details	Hazardous Event (resulting effect)	Event Details
THE LDW function applies an	EV00 - Collision with	Vehicle crashes into side of other
The Lane Keeping function is	EV00 - Collision with	Driver uses the function
Does not activate	EV00 - Collision with	Vehicle crashes into side of other
The Lane Keeping function is	EV00 - Collision with	Vehicle crashes into side of other

Hazardous Event Description	Exposure (of situation)	Rationale (for exposure)
The LDW torque is too high,	E4 - High probability	Normal conditions
Incorrect use	E1 - Very low probability	Normal conditions under snowfall
The LDW does not warn the	E3 - Medium probability	High speed driving in rain
The Lane Keeping Assistance	E4 - High probability	Normal conditions

Hazardous Event Classification		
Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)
S1 - Light and moderate	In city traffic, speed of	C3 - Difficult to control or
S1 - Light and moderate	In city traffic, speed of	C1 - Simply controllable
S3 - Life-threatening or	High speed on the	C2 - Normally
S3 - Life-threatening or	High speed on the	C3 - Difficult to control or

	Determination of ASIL and Safety Goals	
Rationale (for controllability)	ASIL Determination	Safety Goal
Low speeds but high steering wheel torque	B	Limit the steering wheel torque
Low speeds	QM	Limit the time activation
High speeds but no other forces, normal	B	Stop any potential malfunctions
The steering wheel force is going the wrong way	D	The Lane Keeping Assistance should be