

INSTRUCTIONS:

Fill out the hazard analysis and risk assessment below.

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

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

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

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

Hazard ID			
	Operational Mode	Operational Scenario	Environmental Details
HA-001	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)
HA-002	OM03 - Normal driving	OS03 - Country Road	EN01 - Normal conditions
HA-003	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)
HA-004	OM03 - Normal driving	OS03 - Country Road	EN01 - Normal conditions

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e system. Fill in the HA-003 and HA-004 rows.
easily see your work.

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

Situation Description
Normal driving on a highway during rain (slippery road) with high speed and correct used system.
Normal driving on country roads during normal conditions with high speed
Normal driving on a highway during rain (slippery road) with high speed and correct used system.
Normal driving on country roads during normal conditions with high speed

Function	Deviation
Lane Departure	DV04 - Actor effect is too much
Lane Keeping	DV03 - Function always activated
Lane Departure	DV19 - Sensor detection is wrong
Lane Keeping	DV04 - Actor effect is too much

Deviation Details

The LDW function applies an oscillating torque with very high torque (above limit). The lane keeping assistance function is always activated.
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The LDW function fail to detect the lane
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The LKA turn the wheel too hard

Hazard Identification	
Hazardous Event (resulting effect)	Event Details
EV00 - Collision with other vehicle	High haptic feedback can affect dri Driver was misusing the function b
EV00 - Collision with other vehicle	
EV00 - Collision with other vehicle	The lane detection wrong lane
EV00 - Collision with other vehicle	The LKA turn the wheel too hard,

Hazardous Event Description

The LDW function applies too high an oscillating torque to the steering wheel (above limit).

The lane keeping assistance function is always activated.

The function doesn't work, but the driver trusts the system, so that the driver might be misguided by the LDW function

The LKA turns the wheel too hard, so the driver loses control

Exposure (of situation)
E3 - Medium
E2 - Low
E3 - Medium
E2 - Low

Rationale (for exposure)
Driving in a rainy night is a
The driver is on a country road and misusing the system. That combination probably does not happen often
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The driver is on a country road and misusing the system. That combination probably does not happen often

Hazardous Event Classification		
Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)
S3 - Life-threatening or fatal injuries	the driver is traveling at high speed	C3 - Difficult to control or
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Rationale (for controllability)
Slipery road is hard to handle
Because hands aren't on the wheel at high speeds, a vehicle accident would not be controllable.
Slipery road is hard to handle
The LKA add too much torque,so that the driver lose control

ASIL Determination
C
B
C
B

Determination of ASIL and Safety Goals
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Safety Goal

The oscillating steering torque from the lane departure warning function shall be limited

The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given

The system must warn the driver when the lane detection fails

The lane keeping assistance function shall close if the driver turns the wheel intentionally.
