

Hazard ID	Situational Analysis						
	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)	Item Usage (function)	Situation Description
HA-001	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed		IU01 - Correctly used	
HA-002	OM03 - Normal driving	OS03 - Country Road	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	The driver takes the hands off the steering wheel.
HA-003	OM03 - Normal driving	OS02 - City Road	EN03 - Fog (degraded view)	SD01 - Low speed		IU01 - Correctly used	General low visibility situation, in this case fog.
HA-004	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions	SD02 - High speed		IU01 - Correctly used	

Hazard Identification					
Function	Deviation	Deviation Details	Hazardous Event (resulting effect)	Event Details	Hazardous Event Description
Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	The torque applied to vibrate steering wheel is too strong	EV00 - Collision with other vehicle	High haptic feedback can affect the driver's ability to steer as intended. The driver could lose control and collide with another vehicle or road infrastructure.	The LDW applies too high an oscillating torque to the steering wheel (above limit)
Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	The system is on all the time, allowing the driver to misuse the system.	EV00 - Collision with other vehicle	The lane keeping assistance always veers the car back to the center of the lane, prompting the driver to treat it as a fully autonomous aid.	The LKA is on all the time
Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV02 - Function unexpectedly activated	The system is on although there are no conditions to identify the lane boundaries.	EV00 - Collision with other vehicle	The lane keeping assistance function activates when the sensor is not capable of identifying lane lines, causing unexpected torque to be applied to the steering wheel.	The LKA is on when visibility is low.
Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV04 - Actor effect is too much	The torque applied on the steering to return to the lane center is too high	EV00 - Collision with other vehicle	The lane keeping assistance function turns the steering too hard, startling the driver into applying a sudden counter steer that may cause the loss of control of the vehicle.	The LKA applies too high a correction torque to the steering wheel (above limit)

Hazardous Event Classification						Determination of ASIL and Safety Goals	
Exposure (of situation)	Rationale (for exposure)	Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination	Safety Goal
E3 - Medium probability	Wet road driving is expected to happen once a month for most drivers	S3 - Life-threatening or fatal injuries	On highway speed of vehicle is expected to be high	C3 - Difficult to control or uncontrollable	Steering wheel might be moving too wildly to control.	C	The oscillating steering torque from the lane departure warning function shall be limited.
E2 - Low probability	Country road driving is a common occurrence.	S3 - Life-threatening or fatal injuries	Speed on country roads is expected to be high.	C3 - Difficult to control or uncontrollable	Hands are not on the steering wheel	B	The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given time interval so that the driver cannot misuse the system for autonomous driving.
E2 - Low probability	Most drivers don't encounter fog very often.	S1 - Light and moderate injuries	Pileups are common in low visibility conditions.	C3 - Difficult to control or uncontrollable	Would require the driver to disengage the system before correcting the course.	QM	The lane keeping assistance function shall be disengaged if a lane can't be identified after a number of consecutive readings.
E4 - High probability	Highway driving in normal conditions is common for most drivers	S3 - Life-threatening or fatal injuries	Pileups are common in low visibility conditions.	C2 - Normally controllable	The driver need not react to the sudden application of torque.	C	The lane keeping assistance function shall apply the minimum torque necessary to return the car to the center of the lane