

Hazard ID	Situational Analysis							Hazard Identification					Hazardous Event Classification						Determination of ASIL and Safety Goals		
	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)	Item Usage (function)	Situation Description	Function	Deviation	Deviation Details	Hazardous Event (resulting effect)	Event Details	Hazardous Event Description	Exposure (of situation)	Rationale (for exposure)	Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination	Safety Goal
HA-001	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed		IU01 - Correctly used	Normal Highway driving at High Speed in the Rain with a Slippery Road Surface and Correctly Used System	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 LDW function applies an oscillating torque with very high torque (above limit)	EV00 - Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure	The LDW function applies too high an oscillating torque to the steering wheel (above limit)	E3 - Medium probability	Driving on the highway and/or driving in wet road conditions happens a medium probability for the average driver	S3 - Life-threatening or fatal injuries	High speed driving introduces a greater risk to the driver's safety in the event of a collision. It is especially dangerous in regard to slippery road conditions.	C3 - Difficult to control or uncontrollable	The average driver would have a hard time controlling a malfunctioning high-torque motor.	ASIL C	The oscillating steering torque from the lane departure warning function shall be limited
HA-002	OM03 - Normal driving	OS03 - Country Road	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	Normal Country Road driving at High Speed in Normal conditions with Incorrectly Used System	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 – Function always activated	Lane keeping function is misused as a fully autonomous system and is therefore always active (no driver input)		Misuse of the lane keeping function as a fully autonomous system could cause collision if the system lost control or required driver input	The lane keeping function is always in control due to misuse	E2 - Low probability	The combination of being on a country road and misusing the LKA function has a low probability	S3 - Life-threatening or fatal injuries	High speed driving introduces a greater risk to the driver's safety in the event of a collision.	C3 - Difficult to control or uncontrollable	The driver would not be in control of the car in this situation, therefore making the collision uncontrollable	ASIL 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.
HA-003	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions	SD02 - High speed		IU01 - Correctly used	Normal Highway driving at High Speed and Correctly Used System	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 – Function always activated	LKA function does not deactivate on turn signal use due to software or electrical malfunction.	EV00 - Collision with other vehicle	LKA function not deactivating upon use of the turn signal could cause collision or unsafe driving as system tries to stay in ego lane	LKA function does not deactivate upon use of turn signal	E4 - High probability	Driving on the highway in normal conditions happens at a high probability for the average driver	S3 - Life-threatening or fatal injuries	High speed driving introduces a greater risk to the driver's safety in the event of a collision.	C3 - Difficult to control or uncontrollable	The driver may have a hard time recognizing the malfunction until an attempted lane change is made, which could present a dangerous situation if passing another car or avoiding hazards at high speeds	ASIL D	The LKA function shall be deactivated for the ego lane if the wheel is manually turned away from the center of it with enough force
HA-004	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions	SD02 - High speed		IU01 - Correctly used	Normal Highway driving at High Speed and Correctly Used System	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV05 - Actor effect is too less	The LDW function applies too little torque	EV-02 - Side collision with other traffic	LDW function providing too little torque to warn about lane departure could cause unsafe driving or collision with other cars/other obstacles	The LDW function applies too low an oscillating torque to the steering wheel	E4 - High probability	Driving on the highway in normal conditions happens at a high probability for the average driver	S3 - Life-threatening or fatal injuries	High speed driving introduces a greater risk to the driver's safety in the event of a collision.	C2 - Normally controllable	The majority of drivers should be able to recognize lane departure visually and steer back to lane. Those relying heavily on the system would likely be in danger.	ASIL C	The system shall provide adequate haptic feedback to warn about lane departure. The system shall also provide an auditory and visual warning upon lane departure.