

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 driving on a highway during rain (slippery road) with high speed 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).	EV08 - 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 a highway during rain can happen multiple times a month depending on driver's location.	S3 - Life-threatening or fatal injuries	Collisions at high speed could cause fatal injuries.	C3 - Difficult to control or uncontrollable	Overreaction of wheel's vibration is very distracting and even surprising, so the most drivers won't be able to avoid harm.	ASIL C	The oscillating steering torque from the LDW function shall be limited.
HA-002	OM03 - Normal driving	OS03 - Country road	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	Normal driving on country roads during normal conditions with high speed and 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	The LKA function is always activated.	EV08 - Collision with other vehicle	The driver is misusing the LKA function as an autonomous function and collides with another vehicle or with road infrastructure.	The LKA function is always activated and the driver stops focusing on driving the car.	E2 - Low probability	Driving at a country road and simultaneously misusing the system should not happen often.	S3 - Life-threatening or fatal injuries	Collisions at high speed could cause fatal injuries.	C3 - Difficult to control or uncontrollable	LKA is always on, driver could take hands off the wheel and therefore loses control entirely.	ASIL B	The LKA 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	OS05 - Mountain pass	EN04 - Snowfall (degraded view)	SD03 - Normal acceleration		IU01 - Correctly used	Normal driving on a mountain pass during snowfall (degraded view) with normal acceleration and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV19 - Sensor detection is wrong	Camera sensor is not able to find correct lane position because of snow.	EV12 - Car comes off the road	Driver does not react fast enough to prevent car from leaving road, because of incorrect lane detection.	LKA mixes up lane line with edge of road / pavement due to fallen snow.	E2 - Low probability	Driving on a highway during snowfall can happen multiple times a year depending on driver's location.	S3 - Life-threatening or fatal injuries	Coming off the road can imply hitting static objects or pedestrians and therefore could cause fatal injuries.	C3 - Difficult to control or uncontrollable	When the driver loses control of the vehicle, it is very difficult to realize the situation and act accordingly.	ASIL B	The LDW function shall be deactivated when the camera sensors stop working.
HA-004	OM03 - Normal driving	OS10 - Road with construction site	EN05 - Cross-wind (lateral force)	SD06 - High braking		IU01 - Correctly used	Normal driving on a road with construction site during cross-wind (lateral force) with high braking and correctly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV07 - Actor action too late	The LKA applies the torque too late and thus the car gets off ego lane.	EV07 - Side collision with obstacle	In strong cross-wind conditions the driver may react too slow and depends on the help system. A slow reaction of the LKA can result in a side collision.	The LKA function reacts too late.	E2 - Low probability	Driving on a highway and encountering construction sites can occur in almost every drive, but strong cross-winds should not happen often depending on driver's location.	S3 - Life-threatening or fatal injuries	Coming off the road can imply hitting static objects or pedestrians and therefore could cause fatal injuries.	C2 - Normally controllable	Most drivers can control the vehicle when driving on a construction site with strong cross-winds.	ASIL A	The LDW function shall always react on time or inform the driver that it has a malfunction and turns itself off.