Hazard ID	Situational Analysis							Hazard Identification				
	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
HA-001	Normal Driving	Highway	Rain (Slippery Road)	High Speed		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	Actor Effect is too much	The LDW function applies an oscillating torque with very high torque (above limit).	Collision with other vehicles	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.
HA-002	Normal Driving	Country Road	Normal Conditions	High Speed		Incorrectly Used	Normal driving on country roads during normal conditions with high speed (the driver is misusing the lane keeping assistance function as an autonomous function).	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function always activated	The lane keeping assistance function is not limited in time duration which leads to misuse as an autonomous driving function	Collision with other vehicles	System is not desiged to drive the vehicle autonomously
HA-003	Normal Driving	City Road	Snowfall (degraded view)	Low speed		Correctly Used	normal driving on a city road during snow (degraded view) with low speed and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Function not activated	The LDW function fails to detect vehicle leaving lane because sensor is obscured by snow	Collision with other vehicles	Driver expects LDW function to work properly when activated
HA-004	Normal Driving	Off Road	Normal Conditions	Low speed		Correctly Used	normal driving off road during normal conditions with low speed and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Actor Effect is wrong	The LDW function inadvertnly activates and applies steering torque	Front collision with obstacle	An unexpected steering torque input can cause the driver to loose control of the vehicle

	Hazardous Event Classification						Determination of ASIL and Safety Goals	
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**
The LDW function applies too high an oscillating torque to the steering wheel (above limit).	E3	Driving on the highway in the rain is not an every day occurrence, but certainly happens more than a few times a year for the average driver	S3	the driver is traveling at high speed	C3	the steering wheel jerking back and forth violently would be difficult to control	ASIL C	the oscillating steering torque from the lane departure warning function shall be limited
The LKA function does not disengage when the driver removes his or her hands from the steering wheel	E2	The driver is on a country road and misusing the system. That combination probably does not happen often.	S3	the driver is traveling at high speed	C3	The malfunction was that the lane keeping assistance was always on and had no time limit, so drivers could take both hands off the wheel. Because hands aren't on the wheel at high speeds, a vehicle accident would not be controllable.	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.
The LDW does not function, i.e. a warning is not issued when the ego vehicle leaves the ego lane	E2	Snowfall cccurs a few times a year for the great majority of drivers	S1	the driver is traveling at low speed	C2	Driver has hands on wheel and vehicle is moving at a low speed; driver should be able to regain control	QM	the system shall be deactiveted if camera is obscured by snow
Driver does not expect a external steering torque input when system is disabled	E1	Average Driver rarely drives off road	S2	the driver is traveling at low speed, but off road. Therefore the presence of fixed obstsalces (large trees) to collide into is higher.	C2	Recovering controllability may be more difficult offroad	QM	design shall prevent system from inadvertently engaging