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	OS03 - Country Road	EN01 - Normal conditions
HA-004	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions

Situational Analysis

Situation Details	Other Details (optional)	Item Usage (function)	Situation Description
SD02 - High speed		IU01 - Correctly used	Normal driving on a highway during rain (slippery road) with high speed and correctly used system
SD02 - High speed		IU02 - Incorrectly used	Normal driving on country roads during normal conditions with high speed and incorrectly used system
SD03 - Normal acceleration		IU02 - Incorrectly used	Normal driving on country roads during normal conditions with bad observable or absent lane markings and incorrectly used system
SD01 - Low speed		IU01 - Correctly used	Normal driving on a highway with high traffic and correctly used system

Hazard Identification			
Function	**Deviation**	**Deviation Details**	**Hazardous Event (resulting effect)**
Lane Departure Warning function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	Lane Departure Warning function applies an oscillating torque with very high torque (above limit)	EV00 - Collision with other vehicle
Lane Keeping Assistance function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	Lane Keeping Assistance function is always activated	EV00 - Collision with other vehicle
Lane Keeping Assistance function shall apply the steering torque when active in order to stay in ego lane	DV19 - Sensor detection is wrong	Camera sensor is not able to detect lane boundary and therefore to find correct position on the lane	EV04 - Car comes off the road
Lane Departure Warning function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV07 - Actor action too late	Lane Departure Warning function applies an oscillating torque too late (too close to the car in neighbour lane)	EV00 - Collision with other vehicle

Event Details	Hazardous Event Description	Exposure (of situation)
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	Lane Departure Warning function applies too high an oscillating torque to the steering wheel (above limit)	E3 - Medium probability
Driver treats the function like for fully autonomous driving and therefore loose driving attention and can’t react on critical situations	Lane Keeping Assistance function is always activated and the driver stops focusing on driving the car	E2 - Low probability
Driver didn't react in time to prevent leaving road	Lane Keeping Assistance function mixes up lane boundary due to bad quiality of lane marking/pavement	E2 - Low probability
The driver could disorient and lose control of the vehicle and collide with another vehicle or with road infrastructure	Lane Departure Warning function applies too late	E4 - High probability

Hazardous Event Classification			
Rationale (for exposure)	**Severity (of potential harm)**	**Rationale (for severity)**	**Controllability (of hazardous event)**
Driving on a highway during rain can happen once a month or more depending on driver's location and season of driving	S3 - Life-threatening or fatal injuries	Driver is traveling with high speed.	C3 - Difficult to control or uncontrollable
Driving on a country road and misusing the system can happen very rarely, only few times a year for the great majority of drivers	S3 - Life-threatening or fatal injuries	Driver is traveling with high speed.	C3 - Difficult to control or uncontrollable
Driving on a country road without lane markings and misusing the system can happen very rarely, only few times a year for the great majority of drivers	S3 - Life-threatening or fatal injuries	Coming off the road can cause collisions with road infrastructure or pedestrian	C2 - Normally controllable
Driving on a highway with high traffic can happen quite offen depending on time of driving	S3 - Life-threatening or fatal injuries	Traveling too close to the other cars in neighbor lane	C2 - Normally controllable

	Determination of ASIL and Safety Goals	
Rationale (for controllability)	**ASIL Determination**	**Safety Goal**
It is difficult for most of people to stay calm and react properly when the steering wheel is rotating too sharp	C	The oscillating steering torque from Lane Departure Warning function shall be limited
Lane Keeping Assistance is always on, driver could take hands off the wheel and therefore looses control	B	Lane Keeping Assistance function shall be time limited and the additional steering torque shall end after a given timer interval so that the driver can not misuse the system for autonomous driving
Driving with normal speed and controlling vehicle position driver can react when the car is moving from lane	A	Lane Keeping Assistance function shall be deactivated, when camera sensor is not able to detect lane boundary. Deactivated status shall be displayed to the driver
Driving with low speed (because of high traffic) driver can react in time	C	Lane Departure Warning function shall control not only lane boundaries, but also traffic in neighbor lanes