

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).	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	Highway driving during rain occurs once a month or more often for an average driver	S3 - Life-threatening or fatal injuries	On highway speed of vehicle is expected to be high	C3 - Difficult to control or uncontrollable	When driving on a highway during rain on a slippery road, it will be difficult to regain control over the car	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 conditions		IU02 - Incorrectly used	Normal driving on country roads during normal conditions with high speed (the driver is misusing the lane keeping assistance function as a fully autonomous function)	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	The lane keeping assistance was always on and had no time limit	EV00 - Collision with other vehicle	The driver is misusing the lane keeping assistance function as a fully autonomous function. Because hands aren't on the wheel at high speeds, a vehicle accident would not be controllable	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.	E2 - Low probability	The driver is on a country road and misusing the system	S3 - Life-threatening or fatal injuries	Driving on countryroad with high speed	C3 - Difficult to control or uncontrollable	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.
HA-003	OM03 - Normal driving	OS10 - Road with construction site	EN01 - Normal conditions	SD01 - Low speed	Merged lanes and additional temporary lane boundaries in other color	IU01 - Correctly used	Normal driving on a highway with construction site under normal conditions, with low speed and correctly used system, and merged lanes and additional temporary lane boundaries in other color	Lane Keeping Assistance (LKA) function shall recognize lane lines and help to keep vehicle inside ego lane	DV19 - Sensor detection is wrong	The LKA misrecognizes the lanes lines and steers the vehicle out of ego lane	EV-02 - Side collision with other traffic	The LKA steers the car onto an other lane.	The LKA misrecognizes lanes in construction sites and steers the car out of the ego lane.	E4 - High probability	Construction sites on public roads are very common.	S2 - Severe and life-threatening injuries	Low speed when driving through construction sites	C1 - Simply controllable	Simply controllable due to conditions and straight forward traffic on highway	ASIL A	If the system detects contradictory lane lines the LKA shall disable the function and give a warning to the driver.
	OM03 - Normal driving	OS02 - City Road	EN07 - Snow (slippery road)	SD01 - Low speed	Lane lines not available or visible	IU01 - Correctly used	Normal driving on city road during snow (slippery road and lane lines not visible) 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	DV02 - Function unexpectedly activated	Due to patches of snow on the street the system activates unexpectedly.	EV03 - Car spins out of control	Unexpected activation of the haptic feedback can lead to the driver losing control of the vehicle.	The LDW activates unexpectedly and surprises the driver until he loses control of the vehicle.	E2 - Low probability	City roads with snow are only found in winter	S1 - Light and moderate injuries	Low speed in city traffic	C2 - Normally controllable	Normally controllable due to low speed on slippery road	QM	The LDW shall detect consistent lane lines before warning the driver about a lane departure.
HA-004																					