

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)	Risk rate (for assessment)	Severity (of potential harm)	Risk rate (for severity)	Controllability (of hazardous event)	Risk rate (for controllability)	ASIL Determination	Safety Goal
HA-001	OM03 - Normal Driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed		RJ01 - 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	Driving on slippery road can happen between 1% to 10% of the average operating time, i.e. it can occur once a month or more often for an average driver	S3 - Life-threatening or fatal injuries	Driving on high speeds on slippery road can cause accidents that may cause fatal injuries	C3 - Difficult to control or uncontrollable	More than 90% of drivers would find it difficult to control the steering vehicle when a very high oscillating torque is applied on the steering wheel at high speeds	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		RJ02 - 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 lane.	DV03 - Function always activated	The LKA function is always activated	EV00 - Collision with other vehicle	The driver treats the function as if it were meant for fully autonomous driving. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	The LKA function is always activated and the driver does not use the function as intended.	E2 - Low probability	Driving on a country road and not using the function properly may happen <1% of the average operating time	S3 - Life-threatening or fatal injuries	Driving on high speeds without proper function usage may cause accidents that can cause fatal injuries	C3 - Difficult to control or uncontrollable	As the driver is not using function properly and not paying attention, the driver will find it very difficult to control the vehicle	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	EN03 - Fog (degraded view)	SD01 - Low speed		RJ01 - Correctly used	Normal driving on a highway during fog (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.	DV19 - Sensor detection is wrong	The camera subsystem is not able to identify/incorrectly identifies lane lines due to degraded view	EV00 - Collision with other vehicle	Due to degraded view, the camera sensor is not able to identify lane lines or incorrectly identifies lane lines. The driver may get incorrect feedback and may cause vehicle collisions.	The camera subsystem in the LDW function provides incorrect feedback to the steering wheel due to degraded view.	E3 - Medium probability	Driving on a highway on degraded view such as fog may happen between 1% to 10% of the average operating time	S3 - Life-threatening or fatal injuries	Driving on degraded view even though in low speed can cause accidents that may cause fatal injuries	C3 - Difficult to control or uncontrollable	As the visibility is less and due to incorrect feedback, the driver gets incorrect information the driver may find it very difficult to control the vehicle if he finds in a hazardous event	ASIL C	The lane departure warning function shall be turned off with a warning to the user when operated in degraded driving conditions
HA-004	OM03 - Normal Driving	OS04 - Highway	EN05 - Cross-wind (lateral force)	SD02 - High speed		RJ01 - Correctly used	Normal driving on a highway road during cross-wind (lateral force) conditions with high speed and correctly used system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in lane.	DV05 - Actor effect is too less	The LKA function applies less torque when lateral forces exist	EV02 - Side collision with other traffic	As lesser torque is applied, the car may still be going out of the lane	The LKA function applies less torque	E3 - Medium probability	Driving on a highway when cross winds exist may happen between 1% to 10% of the average operating time	S2 - Severe and life-threatening injuries	Side-on collisions may happen that can cause severe injuries	C2 - Normally controllable	Since, the driver uses the function properly, he may be able to control the vehicle and apply the extra torque to the steering	ASIL A	The lane keeping assistance function shall apply extra torque when a lateral force exists on the vehicle