	Hazard ID	HA-001	HA-002	HA-003	HA-004
Situational Analysis	Operational Mode	OM03 - Normal driving	OM03 - Normal driving	OM03 - Normal driving	OM03 - Normal driving
	Operational Scenario	OS04 - Highway	OS04 - Highway	OS10 - Road with construction site	OS01 - Any Road
	Environmental Details	EN06 - Rain (slippery road)	EN01 - Normal conditions	EN01 - Normal conditions	EN01 - Normal conditions
	Situation Details	SD02 - High speed	SD02 - High speed	SD02 - High speed	SD02 - High speed
	Other Details (optional)	Driving on any marked Roads	Driving on any marked Roads	Driving off the marked Roads	Driving on any marked Roads
	Item Usage (function)	IU01 - Correctly used	IU02 - Incorrectly used	IU01 - Correctly used	IU01 - Correctly used
	Situation Description	Normal Driving on Any Road during Snow conditions with Low speed and Hands on Steering	Normal Driving on Any Road during Normal conditions with High speed and Incorrectly used for autonomous driving	Normal Driving on under repair roads during normal conditions with High speed and Hands on Steering	Normal Driving on Any Road during Normal conditions with High speed and Hands on Steering
Hazard Identification	Function	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Object Detection & Tracking (ODT) function shall detect and track all vehicles and objects that can potentially come on our
	Deviation	DV04 - Actor effect is too much	DV03 - Function always activated	DV19 - Sensor detection is wrong	DV19 - Sensor detection is wrong
	Deviation Details	The LDW function applies an oscillating torque with very high torque (above limit).	The LKA function auto applies lane correction for continous periods of time.	The LKA function applies lane correction based on wrong lane markings.	The ODT function fails to register a vehicle (eg Tesla 1st SDC fatal accident).
	Hazardous Event (resulting effect)	EV00 - Collision with other vehicle	EV00 - Collision with other vehicle	EV-01 - Side collision with obstacle	EV00 - Collision with other vehicle
	Event Details	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.	Driver leaves the steering wheel for autonomous driving, and imperfect ADAS vehicle hits other vehicles on road.	LKA function is dangerously applied on incorrect lane marking, and hits road-repair obstables.	A car on autopilot fails to detect a vehicle & collides with it at high speed. (eg Tesla 1st SDC fatal accident)

	Hazardous Event Description	The LDW function applies too high an oscillating torque to the steering wheel (above limit).	System creating over reliance on vehicle to maintain lanes, can lead to major accidents.	System creating over reliance on vehicle to maintain lanes, can lead to major accidents.	Due to unique image situation, the ODT function fails to register a vehicle on the road & collides with it.
Hazardous Event Classification	**Exposure (of situation)**	E3 - Medium probability	E2 - Low probability	E3 - Medium probability	E1 - Very low probability
	Rationale (for exposure)	High driving is part of regular driving, however, wet roads occurs quite frequently	The driver is on a country road and misusing the system. That combination probably does not happen often,	Road repairs occur quite frequently	Image perception for identified objects is generally 99.9%+ safe.
	Severity (of potential harm)	S3 - Life-threatening or fatal injuries	S3 - Life-threatening or fatal injuries	S3 - Life-threatening or fatal injuries	S3 - Life-threatening or fatal injuries
	Rationale (for severity)	Because the driver is traveling at high speed	Because the driver is traveling at high speed	Because the driver is traveling at high speed	Because the driver is traveling at high speed
	Controllability (of hazardous event)	C3 - Difficult to control or uncontrollable	C3 - Difficult to control or uncontrollable	C2 - Normally controllable	C3 - Difficult to control or uncontrollable
	Rationale (for controllability)	Steering oscillating during high speed driving, on slippery road, a vehicle accident would not be controllable.	Because hands aren't on the wheel at high speeds, a vehicle accident would not be controllable.	The driver would need to consciously disable LKA function while driving in the repair section, or the vehicle accident would be completely uncontrollable.	Steering oscillating can be controlled as long as the tyres maintain grip on the dry roads.
	ASIL Determination	C	B	B	A
Determination of ASIL and Safety Goals	**Safety Goal**	The oscillating torque to the steering wheel from the lane departure warning function shall be limited.	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 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.	Improve object detection for vehicles on the road to beyond just 6*sigma; Increase sensor sensitivity to over detect instead of under detect.