INSTRUCTIONS:
Fill out the hazard analysis and risk assessment below.
HA-001 should be for the lane departure warning function as discussed in the lecture.
HA-002 should be for the lane keeping assistance function as discussed in the lecture.
Then come up with your own situations and hazards for the lane assistance system. Fill in the HA-003 and HA-004 rows.
When finished, export your spreadsheet as a pdf file so that a reviewer can easily see your work.

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	Driving on wet roads occur quite frequently but not daily.	S3 - Life-threatening or fatal injuries	High speeds	C3 - Difficult to control or uncontrollable	This hazard is basicly a loss of steering capabilities and thus very difficult to control.	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		IU02 - Incorrectly used	Normal driving on a county road druing normal conditions with high speed and an incorrectly used system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	The LKA does not time limit for applying torque and might therefor be treated as a fully autonomous vehicle.	EV00 - Collision with other vehicle	Usages outside of the intended capabilities of the LKA could lead to vehicle collision as situations it can not handle might occur.	The LKA does not have time limitation.	E2 - Low probability	Misuse of this function is deemed to be uncommon.	S3 - Life-threatening or fatal injuries	High speeds	C2 - Difficult to control or uncontrollable	No hands on the steering wheels makes this situation difficult to control.	B	The lane keeping assistance function shall be time limited and 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	EN01 - Normal conditions	SD02 - High speed		IU01 - Correctly used	Normal driving on a highway during normal conditions 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	DV19 - Sensor detection is wrong	Incorrect lane detection - the LDW gives haptic feedback in the middle of the lane.	EV00 - Collision with other vehicle	Suprising / annoying haptic feedback can affect driver's ability to steer as intended. Focus might be placed on deactivating the function. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	The LDW function makes an incorrect lane dection.	E4 - High probability	Driving on the highway during normal conditions happens more or less daily for many drivers.	S3 - Life-threatening or fatal injuries	High speeds	C1 - Simply controllable	The function is annoying and takes focus from the driving task, but changing the radio station or answering a call should be of similar difficulty and more than 99% of the drivers can handle that.	B	The LDW shall not active on incorrect lane detections.
HA-004	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	Normal driving on a highway 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 ego lane	DV19 - Sensor detection is wrong	Incorrect lane detection - the LKA starts steering out of the lane.	EV00 - Collision with other vehicle	The LKA steers the vehicle into another lane.	The LKA function makes an incorrect lane dection.	E2 - Low probability	Misuse of this function is deemed to be uncommon.	S3 - Life-threatening or fatal injuries	High speeds	C2 - Difficult to control or uncontrollable	No hands on the steering wheels makes this situation difficult to control.	B	The LKA shall not active on incorrect lane detections.