

ID	Location	Road Conditions	Environment	Traffic and People	Item Usage	Vehicle Speed	Further
HE-006	normal road	paved dry road	no impact by env...	no impact by traffic condi...	stopped (ignition on)	not moving	<ul style="list-style-type: none"> • stee • park
HE-011	normal road	any road condition	any environment...	stopping at traffic lights o...	braking	city speed (<50 km/h)	<ul style="list-style-type: none"> • n-le
HE-016	normal road	any road condition	any environment...	backing-up	any item usage	low (<30 km/h)	none
HE-029	normal road	paved dry road	no impact by env...	no impact by traffic condi...	stopped (ignition on)	not moving	<ul style="list-style-type: none"> • stee • park
HE-031	normal road	any road condition	any environment...	any traffic condition	general driving	city speed (<50 km/h)	<ul style="list-style-type: none"> • n-le
HE-033	normal road	any road condition	any environment...	pedestrians; skater/skate ...	general driving	city speed (<50 km/h)	<ul style="list-style-type: none"> • n-le
HE-034	normal road	any road condition	any environment...	stopping at traffic lights o...	braking	city speed (<50 km/h)	<ul style="list-style-type: none"> • n-le
HE-035	normal road	any road condition	any environment...	turning right	general driving	city speed (<50 km/h)	<ul style="list-style-type: none"> • bike
HE-036	normal road	any road condition	any environment...	changing lanes	general driving	city speed (<50 km/h)	none
HE-041	country road	paved	any environment...	any traffic condition	general driving	medium (<80 km/h)	<ul style="list-style-type: none"> • narr
HE-042	country road	slippery (leaves, oil e...	any environment...	any traffic condition	general driving	medium (<80 km/h)	none

Situation Properties	Function	Malfunctioning Behaviour	Hazard	Potential Effect	Accident Type
•p downgrade •ing structure	[F-001] Lock Steering	[MF-004] Lock locks too early ...	[HZ 1] Steering blocked	crash into structure	<ul style="list-style-type: none"> • collision w/ fixed object (g • collision w/ building • collision w/ guardrail • collision w/ traffic barrier • collision w/ curb
g-crossing	[F-001] Lock Steering	[MF-004] Lock locks too early ...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
•p downgrade •ing structure	[F-001] Lock Steering	[MF-004] Lock locks too early ...	[HZ 1] Steering blocked	crash into structure or o...	<ul style="list-style-type: none"> • collision w/ fixed object (g • car2car collision (general)
•p downgrade •ing structure	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into structure	• collision w/ fixed object (g
g-crossing	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
g-crossing	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
g-crossing	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
•road crossing	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
•road crossing	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ pedestrian • collision w/ cyclist • car2car collision (general)
•ow curve (r<120m)	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicles	• car2car collision (general)
•ow curve (r<120m)	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ curb • collision w/ embankment • car2car collision (general)
•ow curve (r<120m)	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	• collision w/ curb

	Severity	Severity Comment	Exposure	Exposure Comment	Controllability	Controllability Comment
eneral)	S1	low speed	E2	Stopped in entrance/exit of parking ...	C2	distance to structure
ict (general)	S2	medium speed	E4	Stopping at traffic lights etc in cities	C2	distance to other vehicles or pe
eneral)	S1	very low speed	E2	Backing-up in city traffic	C1	distance to structure
eneral)	S1	low speed	E2	Stopped in entrance/exit of parking ...	C2	distance to structure
ict (general)	S2	medium speed	E4	General: city driving	C2	distance to other vehicles or pe
ict (general)	S3	medium speed	E3	Traffic inside city (pedestrians, bicyc...	C2	distance to other vehicles or pe
ict (general)	S2	medium speed	E4	Stopping at traffic lights etc in cities	C2	distance to other vehicles or pe
ict (general)	S2	medium speed	E3	Turning into side-road; crossing bik...	C2	distance to other vehicles or pe
	S2	medium speed	E4	Changing lanes in city traffic	C3	distance to other vehicles
	S3	high speed	E3	General driving on country road wit...	C3	distance to other vehicles, sma
	S3	high speed	E3	General driving on slippery country ...	C3	distance to other vehicles, sma

	ASIL	Safety Goal	Safe State	Assumptions and Comments
	QM			
adestr...	B	[SG-001] Prevent activation of steeri...	Steering Lock is open and disabled	
	QM			
	QM			
adestr...	B	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
adestr...	B	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
adestr...	B	[SG-001] Prevent activation of steeri...	Steering Lock is open and disabled	
adestr...	A	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	

ID	Location	Road Conditions	Environment	Traffic and People	Item Usage	Vehicle Speed	Further
HE-043	country road	paved wet road	rain and fog	any traffic condition	general driving	medium (<80 km/h)	none
HE-044	country road	any road condition	no impact by env...	passing/overtaking	general driving	medium (<80 km/h)	none
HE-048	freeway (general)	paved	any environment...	any traffic condition	general driving	medium (<80 km/h)	• con:
HE-049	freeway (general)	paved	any environment...	any traffic condition	general driving	very high (<200 km/h)	none
HE-050	freeway (general)	paved	any environment...	any traffic condition	general driving	high (<130 km/h)	none
HE-051	freeway (general)	paved	any environment...	changing lanes	general driving	high (<130 km/h)	none
HE-052	normal road	paved dry road	no impact by env...	no impact by traffic condi...	stopped (ignition on)	not moving	• steel • park
HE-064	country road	paved	any environment...	any traffic condition	general driving	medium (<80 km/h)	• narr
HE-199	any location	any road condition	any environment...	no impact by traffic condi...	stopped	not moving	none

Scenario Situation Properties	Function	Malfunctioning Behaviour	Hazard	Potential Effect	Accident Type
					<ul style="list-style-type: none"> • collision w/ embankment • car2car collision (general)
	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ curb • collision w/ embankment • car2car collision (general)
	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ curb • collision w/ embankment • car2car collision (general)
construction area	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into construction ...	<ul style="list-style-type: none"> • collision w/ pedestrian
	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into obstacle, leav...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ fixed object (g • collision w/ curb • collision w/ embankment
	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into obstacle, leav...	<ul style="list-style-type: none"> • collision w/ non-fixed obje • collision w/ fixed object (g • collision w/ curb • collision w/ embankment
	[F-001] Lock Steering	[MF-011] Locks when not req...	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ curb • collision w/ embankment • car2car collision (general)
up downgrade crossing structure	[F-001] Lock Steering	[MF-012] Instable locks/unlocks	[HZ 1] Steering blocked	crash into structure	<ul style="list-style-type: none"> • collision w/ fixed object (g
low curve (r<120m)	[F-001] Lock Steering	[MF-012] Instable locks/unlocks	[HZ 1] Steering blocked	crash into other vehicle...	<ul style="list-style-type: none"> • collision w/ curb • collision w/ embankment • car2car collision (general)
	[F-001] Lock Steering	[MF-051] Locked too strong	[QU 3] Noise and limite...	no harm to a person	

	Severity	Severity Comment	Exposure	Exposure Comment	Controllability	Controllability Comment
	S3	high speed	E3	General driving on slippery country ...	C3	distance to other vehicles, sma
	S3	high speed	E3	General: Overtaking on country road	C3	distance to other vehicles, sma
	S3	high speed	E2 (E3)	Freeway construction area Original Comment: General: Construction area	C3	distance to other vehicles, sma
ict (general) eneral)	S3	very high speed	E3	General: High-speed driving	C3	distance to other vehicles, sma
ict (general) eneral)	S3	high speed	E4	General: Driving at recommended s...	C3	distance to other vehicles, sma
	S3	high speed	E4	General: Changing lanes	C3	distance to other vehicles, sma
eneral)	S1	low speed	E2	Stopped in entrance/exit of parking ...	C2	distance to structure
	S3	high speed	E3	General driving on country road wit...	C3	distance to other vehicles, sma
	S0	no harm	E4	General: stopped car	C0	as no risk is involved

	ASIL	Safety Goal	Safe State	Assumptions and Comments
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	B	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	D	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
Il roa...	D	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
	QM			
Il roa...	C	[SG-002] Prevent activation of steeri...	Steering Lock is open and disabled	
	QM			