Scenario 1 - Fault 1: Activation without driver request Parked at parking lot or garage

|  |  |
| --- | --- |
| Consequence of fault | Nothing. |
| Reason for Severity | Car is stationary. |
| Reason for Exposure | Cars spend most time parked. |
| Reason for Controllability | The malfunction does not affect the safe operation of the vehicle. |

Scenario 2 - Fault 1: Activation without driver request Parking car in parking garage

|  |  |
| --- | --- |
| Consequence of fault | Vehicle following may react to sudden brake light and be involved in a rear-end collision. |
| Reason for Severity | Vehicle is at low speed; injury level is low. |
| Reason for Exposure | Many drivers park their vehicle in driveways or open parking lots. |
| Reason for Controllability | The driver has no knowledge of the malfunction. |

Scenario 3 - Fault 1: Activation without driver request Stopped at crossing or red traffic light

|  |  |
| --- | --- |
| Consequence of fault | Nothing. |
| Reason for Severity | Car is stationary. |
| Reason for Exposure | Most commutes will involve being stopped at red lights. |
| Reason for Controllability | The malfunction does not affect the safe operation of the vehicle. |

Scenario 4 - Fault 1: Activation without driver request Driving on country road, overtaking

|  |  |
| --- | --- |
| Consequence of fault | Other vehicle may react to perceived braking, losing control of their vehicle. |
| Reason for Severity | A one-car accident is less likely to cause life-threatening injury. |
| Reason for Exposure | Overtaking on a highway is relatively uncommon. |
| Reason for Controllability | The other driver should be able to react to another vehicle braking. |

Scenario 5 - Fault 1: Activation without driver request Driving on highway at night

|  |  |
| --- | --- |
| Consequence of fault | Vehicle behind reacts erratically to perceived braking, loses control. |
| Reason for Severity | Vehicle collides with obstacles at high speed; severe injury is likely. |
| Reason for Exposure | Many commutes involve driving at night on major roads. |
| Reason for Controllability | Most drivers should be able to react to another vehicle braking safely. |

Scenario 6 - Fault 1: Activation without driver request Turning through an intersection

|  |  |
| --- | --- |
| Consequence of fault | Oncoming vehicle assumes braking, proceeds through and collides. |
| Reason for Severity | Vehicles collide at high speed; severe injury is likely. |
| Reason for Exposure | Many commutes involve driving at night on major roads. |
| Reason for Controllability | The driver has no knowledge of the malfunction. |

Scenario 7 - Fault 1: Activation without driver request Reversing at low speed

|  |  |
| --- | --- |
| Consequence of fault | Nothing. |
| Reason for Severity | Brake lights should be always activated while reversing. |
| Reason for Exposure | Vehicles reverse every day. |
| Reason for Controllability | The malfunction is not possible. |

Scenario 8 - Fault 1: Activation without driver request Stopping at a crossing

|  |  |
| --- | --- |
| Consequence of fault | Nothing. |
| Reason for Severity | Brake lights should be activated while slowing to a stop. |
| Reason for Exposure | Many commutes involve driving at night on major roads. |
| Reason for Controllability | The malfunction does not affect the safe operation of the vehicle. |

Scenario 1 - Fault 2: No activation when requested by driver Parked at parking lot or garage

|  |  |
| --- | --- |
| Consequence of fault | Nothing. |
| Reason for Severity | Car is stationary. |
| Reason for Exposure | Cars spend most time parked. |
| Reason for Controllability | The malfunction does not affect the safe operation of the vehicle. |

Scenario 2 - Fault 2: No activation when requested by driver Parking car in parking garage

|  |  |
| --- | --- |
| Consequence of fault | Vehicle following may fail to notice vehicle and collide. |
| Reason for Severity | Vehicle is at low speed; injury level is low. |
| Reason for Exposure | Many drivers park their vehicle in driveways or open parking lots. |
| Reason for Controllability | The driver has no knowledge of the malfunction. |

Scenario 3 - Fault 2: No activation when requested by driver Stopped at crossing or red traffic light

|  |  |
| --- | --- |
| Consequence of fault | Driver behind believes vehicle is not braking, rear collision. |
| Reason for Severity | Vehicle is rear-ended at high speed; severe injury is likely. |
| Reason for Exposure | Most commutes will involve being stopped at red lights. |
| Reason for Controllability | The driver has no knowledge of the malfunction. |

Scenario 4 - Fault 2: No activation when requested by driver Driving on country road, overtaking

|  |  |
| --- | --- |
| Consequence of fault | Another vehicle may brake to allow overtake, causing a collision. |
| Reason for Severity | High speed side collision, severe injury is likely. |
| Reason for Exposure | Overtaking on a highway is relatively uncommon. |
| Reason for Controllability | The other driver should maintain speed when another vehicle is overtaking. |

Scenario 5 - Fault 2: No activation when requested by driver Driving on highway at night

|  |  |
| --- | --- |
| Consequence of fault | Vehicle behind doesn’t notice, collides at high speed. |
| Reason for Severity | Vehicle collides with obstacles at high speed; severe injury is likely. |
| Reason for Exposure | Many commutes involve driving at night on major roads. |
| Reason for Controllability | Most drivers should be able to react to another vehicle braking safely. |

Scenario 6 - Fault 2: No activation when requested by driver Turning through an intersection

|  |  |
| --- | --- |
| Consequence of fault | Oncoming vehicle assumes braking, proceeds through and collides. |
| Reason for Severity | Vehicles collide at high speed; severe injury is likely. |
| Reason for Exposure | Vehicles turn through intersections every day. |
| Reason for Controllability | The driver has no knowledge of the malfunction. |

Scenario 7 - Fault 2: No activation when requested by driver Reversing at low speed

|  |  |
| --- | --- |
| Consequence of fault | A vehicle fails to perceive vehicle reversing, resulting in a collision. |
| Reason for Severity | If the vehicle is reversing onto a rural road, impact at high speed could cause serious injury, even if only the rear of the vehicle is impacted. |
| Reason for Exposure | Vehicles reverse every day. |
| Reason for Controllability | Drivers should be aware of their surroundings and not reversing when there is a possibility of a collision. |

Scenario 8 - Fault 2: Not activate when requested by driver Stopping at a crossing

|  |  |
| --- | --- |
| Consequence of fault | Vehicle behind believes the target vehicle is not slowing, resulting in a rear-end collision. |
| Reason for Severity | If the driver fails to perceive the slowing of the driver in front of them, they could collide at high-speed. Severe injury is likely. |
| Reason for Exposure | Vehicles come to a stop at intersections every day. |
| Reason for Controllability | The driver has no knowledge of the malfunction, and if they brake suddenly then the driver behind them has less ability to react without the lights as an indicator. |