

# **Safety Evaluation Report of MOBATSim -AEB**

**according to ISO 26262, ISO 21448, EuroNcap**



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## Chapter 1. Introduction

This is a safety evaluation report for MOBATSim which according to three standards and generate a case study.

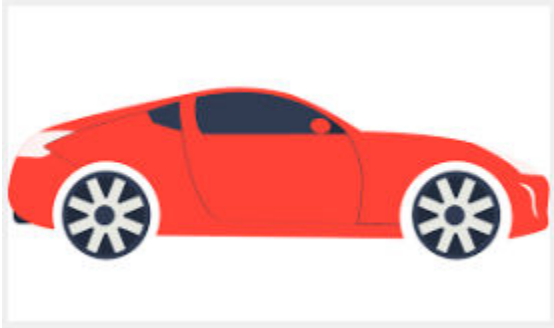


Figure 1.1. Style of the test vehicle.

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## Chapter 2. HARA

### 2.1. Scenario definition -laneMerge

The test scenario shows below which contains two traffic participants drive on a merged road, the trajectories of two vehicles are distinguished with different color .

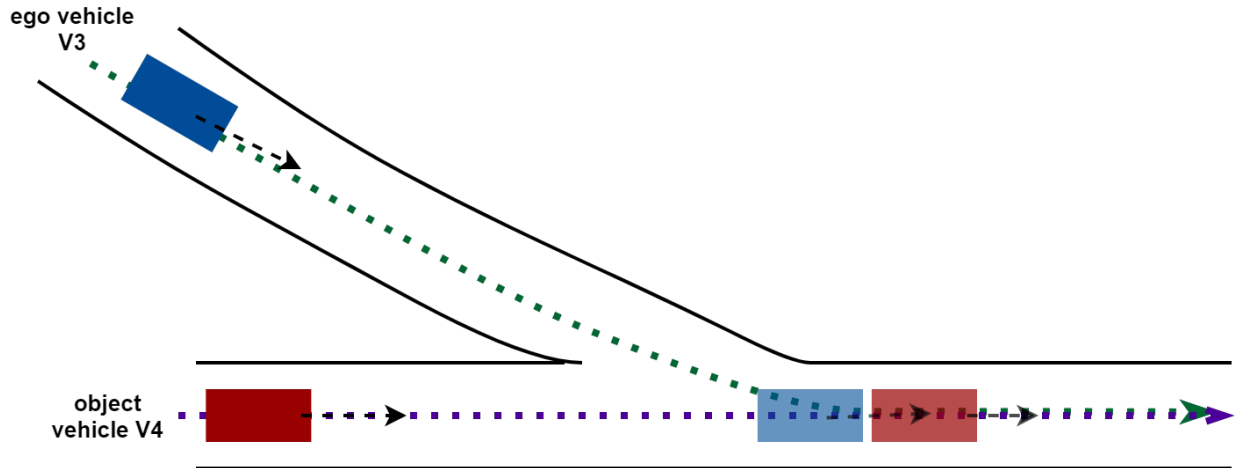


Figure 2.1. Test Scenario in MOBATSim

The road features of the test scenario are listed below:

1. Single lane
2. Road length
3. lane width 3.7m
4. No traffic signal and traffic signal controller

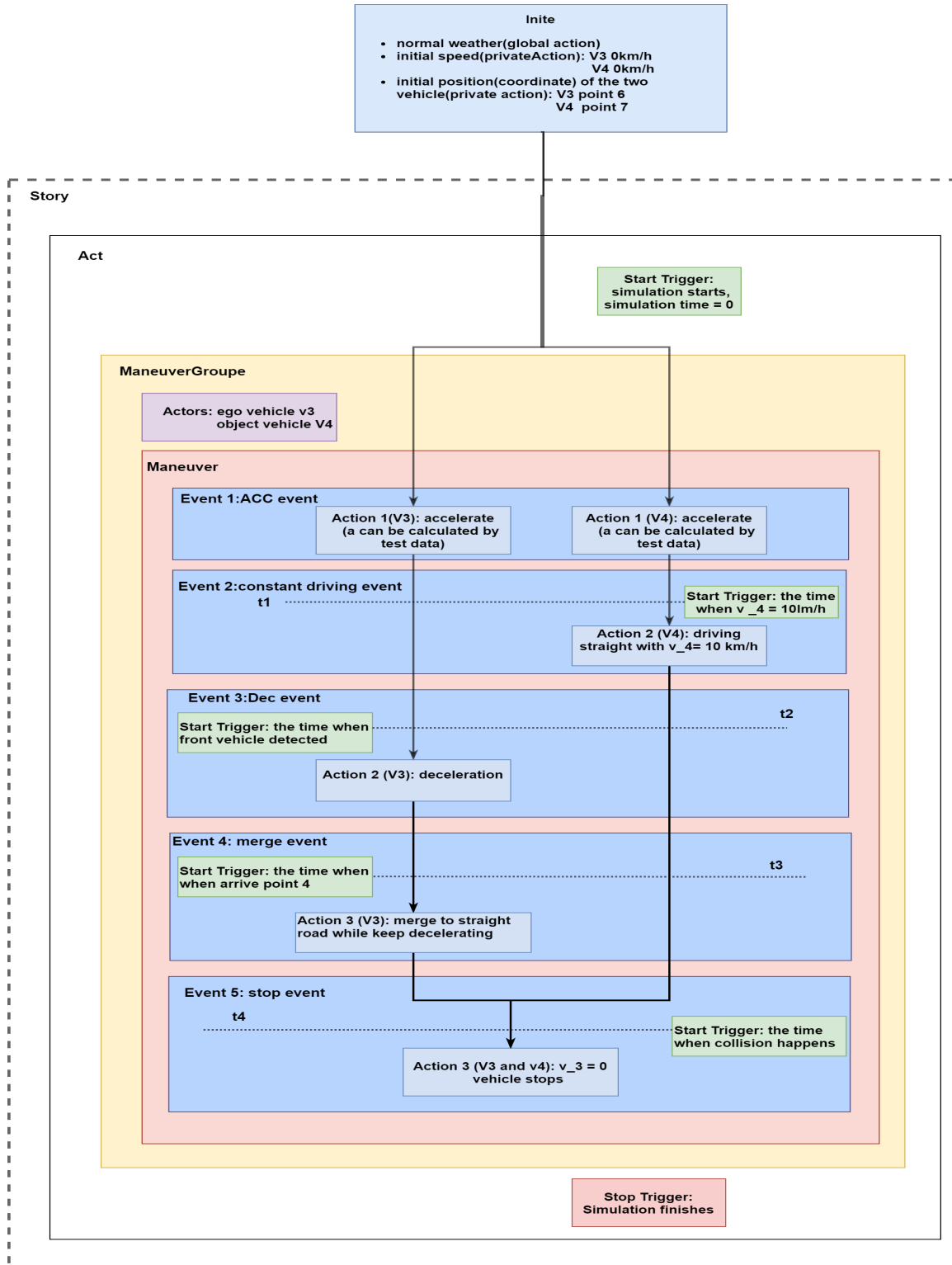
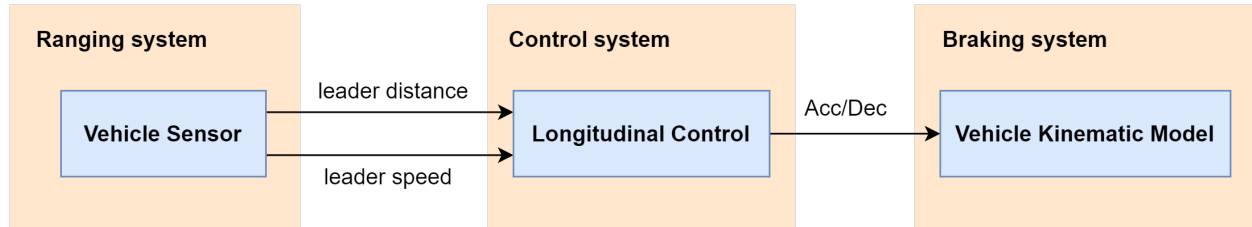


Figure 2.2. Scenario Definition under OpenScenario

## 2.2. Item Definition -AEB



1. Functionality: AEB detect leading vehicle with ranging system, with the calculation of the control system, gives the braking command to the braking system.
2. Operational design domain: This AEB function is only appropriate for the MOBATSim platform, in which most of the roads are single lanes and no other vehicles drive alongside the leading vehicle.

## 2.3. Situation analysis and Hazard identification

1. Operational mode: normal driving.
2. Operational scenario: Normal city road with single lane.
3. Environmental details: Normal weather (default)
4. Situational details: low speed (10km/h~30km/h)
5. Item usage: correctly used (default)

## 2.4. Hazardous event classification

The ASIL level is ASIL B.

## 2.5. Safety goal and functional safety requirement

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## Chapter 3. SOTIF

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## Chapter 4. Case study

The next table is an example of test data from the simulation. For the sake of simplicity, only the data from vehicle\_3 and vehicle\_4 is presented here, which is used to get score for AEB system when the collision happens .

The next figure shows the variation of the speed during the simulation time (30s) in which presents the time point that the collision happens.



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## Chapter 5. Chapter 5: Summary