

File Edit Navigate Search Project SOTIFA Run Window Help

SOTIF assessment under uncertain environment Ctrl+6

Click the button to complete the SOTIF risk assessment for ADS under uncertain environment ✓

Project Explorer

env-self-driving-car

case-study

ADSHighAggressive.aadl

ADSLowAggressive.aadl

EnvAADL

EnvAADLAnalysis

analysisResults

currentXML

productAutomaton

ADSHighAggressiveProduct.xml

specifications

100-ADSHighAggressive-H1.1.1.cfg

101-ADSHighAggressive-H1.1.1.cfg

102-ADSHighAggressive-H1.1.1.cfg

103-ADSHighAggressive-H3.2.1.cfg

104-ADSHighAggressive-H3.2.1.cfg

105-ADSHighAggressive-H3.2.1.cfg

106-ADSHighAggressive-H3.1.4.cfg

107-ADSHighAggressive-H3.1.4.cfg

108-ADSHighAggressive-H3.1.4.cfg

109-ADSHighAggressive-H4.3.1.cfg

10-ADSHighAggressive-H4.3.1.cfg

EnvAADL model of ADS

ADSHighAggressive.aadl

```
package ADSHighAggressive
public
  with Data_Model;
  with Base_Types;
  with EnvAADL;
  with Dynamics_Types;
  with VehiclePhysics;
  with MathLib;

  system ADSHighAggressive
  properties
    Period => 3 sec;
    EnvAADL::Sampling_Time => 10ms .. 30ms;
    EnvAADL::Response_Time => 40ms .. 60ms;
```

Tasks Console Properties Analysis Results

EnvAADL Console

EnvAADL folder already exists and we update it...

Generate AADL model from ADSHighAggressive.xml...

Parsed aadl xml to model by jdom

process component ADSHighAggressive...

process component Environment...

process component ControlProcess...

process component ADSControllerHighAggressive...

process component Plant...

Generate Hybrid Automaton model from AADL model...

Product all automata...

Write xml model to: ADSHighAggressiveProduct.xml...

Parse the EnvAADL file ...

Tree Demo

systemScore System evaluation--0.8153931260187056

L1 Loss of life or personal injury--0.8362788310828562

- H5 Non-adherence to best practices--1.0
- H4 Non-compliance to traffic regulations--0.7142198520972727
- H3 Failure to keep minimum separation leads to traffic conflicts--0.7495899796236749
- H2 Violation of assuring cleared distance ahead--1.0
- H1 Failure to maintain vehicle stability--0.7175843236933332

L2 Lost or damaged means of transportation--0.8362788310828562

- H5 Non-adherence to best practices--1.0
- H4 Non-compliance to traffic regulations--0.7142198520972727
- H3 Failure to keep minimum separation leads to traffic conflicts--0.7495899796236749
- H2 Violation of assuring cleared distance ahead--1.0
- H1 Failure to maintain vehicle stability--0.7175843236933332

L3 The mission failed and caused financial loss--0.7142198520972727

- H4 Non-compliance to traffic regulations--0.7142198520972727

L4 Loss or damage of items outside the vehicle--0.8747949898118375

- H3 Failure to keep minimum separation leads to traffic conflicts--0.7495899796236749
 - H3.2 Failure to maintain a lateral separation--0.5018657491856833
 - H3.2.1 Failure to maintain a lateral Distance gap--1.0
 - H3.2.2 Failure to maintain a lateral Time gap--0.003709642163133336

Hazard Analysis Tree with SOTIF risk score

Experimental results files