

Ary Frigeri: An Overview of co-simulation using CarMaker and VISSIM software

Abstract

Simulation is an essential part of the development and validation process of automated driving features. Some tools are focused on the specific behavior and interaction of the main vehicle and the near Environment (CarMaker), while others on the macroscopic scenario, e.g. interaction between different vehicles, pedestrians, and urban infrastructures (VISSIM).

The combination of such tools in a co-simulation environment, while each tool can perform their specialized models, brings the development and validation of autonomous driving functions a step further, since the virtual models are closer the reality.

As a proof of concept, a small network model of Chemnitz was developed and used as a base Environment for simulation to verify the interaction between both software's objects and their behavior.

The results are promising, since all the objects in the co-simulation environment can interact with each other, however, since the integration of the aforementioned tools is still in progress, improvements are necessary, mainly on the network conversion tools.