Eclipse SUMO & openMobility Working Group

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German Aerospace Center (DLR)
Berlin, Germany
German Aerospace Center
Research Institution and Space Agency

- Research branches
  - Aeronautics / Space / Transport / Energy
  - Safety / Digitalization
- Around 8,000 employees working in 40 research institutes and facilities at 20 sites in Germany.
Simulation of Urban Mobility (SUMO) - A Real World Traffic Simulator
SUMO – What is it?

- DLR’s open source microscopic transportation system simulation software

- Under development since 2001, with the explicit goal to simulate even large cities / areas in more than real-time

- SUMO comes with a full-fledged suite of helper programs that do setting up, running, and controlling such a simulation
Eclipse SUMO Project

Simulation of Urban MObility

Welcome to Eclipse SUMO (Simulation of Urban MObility), an open source, highly portable, microscopic and continuous multi-modal traffic simulation package designed to handle large networks.

SUMO 1.7.0 for Windows 64bits
Latest Development Version (Nightly Snapshots)
Older releases

Registration is now open!
The SUMO User Conference 2020 takes place October 26-28, 2020. This year’s conference is going to be online and the participation will be free of charge. More info about the conference

http://eclipse.org/sumo
Open Source since the beginning

- Used world-wide, especially in the scientific community
- 26k hits on Google Scholar for 'sumo traffic'
- #Downloads 2019: > 50 000
SUMO – what can be run?

- (Almost) any moving object in a city can be simulated with SUMO
  - Cars,
  - Busses,
  - Passengers,
  - Bicycles,
  - Pedestrians,
  - Ships,
  - Goods traffic,
  - …
Example: City of Bologna
Driving Simulation
Virtual test driving in complex surrounding traffic with DYNA4 and SUMO

Integration of SUMO traffic simulation into DYNA4 vehicle and environment simulation for virtual development and testing of driver assistance systems (ADAS) and autonomous driving functions.

Applications

- Development and test of driver assistance systems
- Development of autonomous driving and Car2X
- Virtual validation of AI functions
- Development of intelligent transportation systems
ADD TRAFFIC AND PEDESTRIANS TO YOUR TESTING

For many types of testing it is important to populate your virtual test routes with accurately modelled traffic and pedestrians, for example, the testing of ADAS and Autonomous systems, or simulated RDE test runs.

rFpro allows you to populate the virtual test world with intelligent traffic, from swarm tools such as SUMO and PTV-Vissim. It also allows you to create specific scenarios, such as a potential collision at an intersection, using tools such as CarMaker Traffic, or even under direct control via Simulink IO Block. rFpro passes the details of the human test driver’s car to the traffic systems, so that the intelligent traffic avoids and gives way to the vehicle under test.
CARLA 0.9.8 release

CARLA and ROS Debian packages, night mode, weather extension, improvements on the traffic manager, new documentation, SUMO co-simulation and much more.

Posted by @sergi-e on March 09, 2020

The CARLA team is delighted to finally announce the release of CARLA 0.9.8!

This release makes for a new CARLA experience, bringing improvements to well established modules, along with a bunch of new features. Among these features we would like to highlight the new installation method using deb packages for Ubuntu. A new repository provides deb packages for the CARLA simulator and the ROS bridge, which can be easily installed using apt.
Automated Mobility District “Digital Twin” Provides Insights for Urban Transportation Systems
Sept. 15, 2020

“[...] Overall, the AMD modeling and simulation toolkit offers insights into a range of mobility options not covered by previous transportation analysis models. The toolkit builds on the existing open-source Simulation of Urban Mobility (SUMO) package and the Future Automotive Systems Technology Simulator developed at NREL.”

The Automated Mobility District Toolkit acts as a decision-making resource for implementing emerging mobility systems, such as this automated electric vehicle at the NREL campus. Photo by Dennis Schroeder, NREL

SUMO User Conference 2020

October 26-28 | From Traffic Flow to Mobility Modeling

Important notice
Registration is now open!
Participation at this year’s conference will be free of charge!
Due to the Coronavirus crisis and the measures imposed, the SUMO User Conference 2020 is going to be online.

https://eclipse.org/sumo/conference
openMobility Working Group
openMobility Working Group

OpenMobility Working Group

Driving the Evolution and Broad Adoption of Open Source Mobility Modelling and Simulation Technologies.

Eclipse SUMO  Become a Member  Contact

Our Members

AVL  BOSCH  DLR  Fraunhofer  itemis  VECTOR

https://openMobility.eclipse.org
User Stories on GitHub

- **Use customisable API in Traci/Sumolib to change vehicle parameters** - BOSCH
  - #13 opened on 20 Apr by ZoltanBaksa

- **Understand vehicle’s decisions** - SUMO, BOSCH, Uni Trento/Bolzano
  - #12 opened on 2 Sep 2019 by RobertHilbrich

- **Be able to use SUMO in an ASAM openX Standards environment** - SUMO, BOSCH, DLR, Vector
  - #11 opened on 2 Sep 2019 by RobertHilbrich

- **Create traffic surrounding an ego-vehicle “on-the-fly”** - SUMO, DLR, Vector
  - #10 opened on 2 Sep 2019 by RobertHilbrich

- **Run SUMO on SIL and HiL platforms (Software-/Hardware-in-the-Loop)** - SUMO, DLR, Vector
  - #9 opened on 2 Sep 2019 by RobertHilbrich

- **Use SUMO to evaluate my fleet scheduling** - SUMO, DLR
  - #8 opened on 2 Sep 2019 by RobertHilbrich
How to reach the openMobility Working Group?

https://accounts.eclipse.org/mailing-list/openMobility
Q & A

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