OpenADx – xcelerate your Autonomous Driving development

EclipseCon 2020 – Community Day
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Product Manager Automated Driving
Who am I?

› Product Manager Automated Driving

› ~23 years at Bosch

› ~15 years experience in embedded software development

› Pushing Open Source development and business within Robert Bosch GmbH

› Interest in creating business with Open Source

Andy Riexinger
Robert Bosch GmbH
Chassis System Control – Automated Driving
Open Source has arrived in automotive

FEP – Functional Engineering Platform
launched to face the upcoming complexity in function development, considering all relevant aspects in simulation (MiL, SiL, HiL) and testing.
The OpenADx community provides a platform which …

… leverages open source to increase efficiency and create standards

Reason Why
AD requires a multifaceted process incorporating a variety of software tools

But none of these tools were ever designed to work together

This costs the industry time and money

We are mitigating this problem by creating the leading automated driving ecosystem ➢ OpenADx

RB launched OpenADx at BCW 2018 …

… and established an Eclipse hosted community

➤ 30 entities
➤ 60+ active contributors
➤ Initial projects:
  – Cloe (simulation kit for testing AD software components)
  – Iceoryx (true-zero-copy shared memory approach)

Targets
➤ Accelerate time to market
➤ Share costs
➤ Free up resources to focus on customers

Approach
➤ Define Industry-wide AD toolchain
➤ Ensure high interoperability
➤ Provide easy access
➤ Establish basis for reference arch.

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OpenADx targets reference architecture and ...

a wide ranging interoperable toolchain for PoV* and commercial applications

GOALS

› Industry-wide accepted definition of the AD toolchain
› Tool interface standardization
› Ensure efficient implementation and interoperability
› Foundation for reference architecture

Make a complex tool landscape more accessible for enterprise users

*PoV – privately owned vehicle
OpenADx: Leading to holistic functional approaches

Use Case: Leverage OpenADx to develop end-to-end solutions (with the community)
OpenADx lays the foundation for safety and standardization

- Measurement data
- Verifiable AI
- Urban Traffic Simulation
- Simulation
- Public funded projects
  - e.g. Simulation
- FMI Standard
- Automotive platform
- Design efficiency
- Exchange-platform for timing / performance simulation

OpenADx leverages open collaboration and open source to accelerate development of Automated Driving.
OpenADx: e.g. two major initiatives to address requirements for simulation and data transfer in real time (Cloe and iceoryx)

- Eclipse Cloe (closed loop simulation environment)
- Controller Binding
- User Interface

https://projects.eclipse.org/projects/technology.cloe

https://projects.eclipse.org/projects/technology.iceoryx
Speaker Spotlight

Autonomous Driving and Open Source - Is this a good idea?
Andreas Rixinger

Session Topic:
The Open Source Way

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A bit more in my talk ... ...

and in the whitepaper
OpenADx – some projects and ideas

Program Plan

Demonstrator

Development Workplace

What else?
Links

› OpenADx
  › Website: https://openadx.eclipse.org/
  › Wiki: https://wiki.eclipse.org/OpenADx
  › Mailing List: https://accounts.eclipse.org/mailing-list/openadx
  › OpenADx in Blogs: https://blog.bosch-si.com/developer/5-things-you-should-know-about-openadx
  › Eclipse iceoryx
    – https://github.com/eclipse/iceoryx
    – https://projects.eclipse.org/projects/technology.iceoryx
  › Eclipse Cloe: https://projects.eclipse.org/projects/technology.cloe
  › Eclipse APP4MC: https://www.eclipse.org/app4mc/
  › Eclipse Kuksa: https://www.eclipse.org/kuksa/
  › Panorama: https://panorama-research.org/
  › openMDM: https://www.openmdm.org/
  › openPASS: https://wiki.eclipse.org/OpenPASS-WG
  › openMobility: https://openmobility.eclipse.org/
  › openGENESIS: https://wiki.eclipse.org/OpenGENESIS_WG
Thank you!

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Find out more and join us
https://openadx.eclipse.org/
https://wiki.eclipse.org/OpenADx