

OpenADx – xcelerate your Autonomous Driving development

EclipseCon 2020 – Community Day
October 19th – 22nd, 2020

Andreas Riexinger | Robert Bosch GmbH
Product Manager Automated Driving

Who am I?



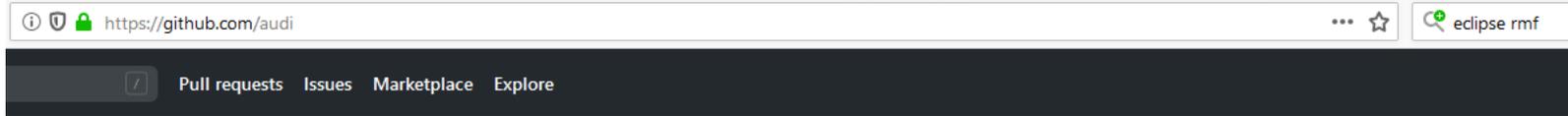
Andy Riexinger

Robert Bosch GmbH

Chassis System Control – Automated Driving

- › 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

Open Source has arrived in automotive



Audi
We are evolving a global interaction guideline for all Audi digital services.
http://www.audi.com

FEP – Functional Engineering Platform launched to face the upcoming complexity in function development, considering all relevant aspects in simulation (MiL, Sil, HiL) and testing.

Repositories 22 Packages People 3 Projects

Find a repository... Type: All Language: All

fep3_sdk
CMake 0 0 0 0 Updated 11 hours ago

fep3_system
C++ 0 0 0 0 Updated 11 hours ago

fep3_participant

Top languages
C++ Python CMake
JavaScript CSS

Most used topics
adtf cplusplus deep-learning
nucleus7 tensorflow

lgsvl / simulator
Code Issues 52

nucleus7
nucleus7 library
deep-learning
Python

A ROS/ROS2 Multi-robot Simulator
simulator unity apollo autonon
reinforcement-learning carla-simulator

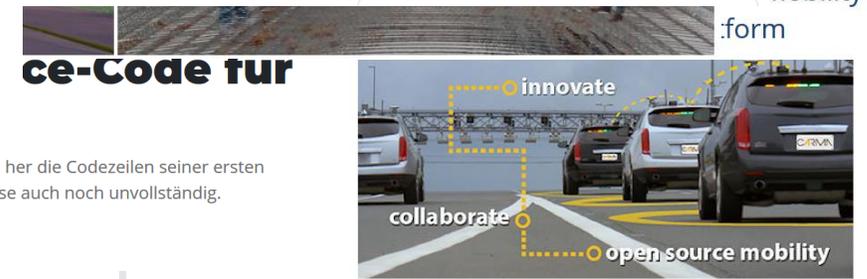
ncgenes7
ncgenes7 library with implementations for nucleus7 interfaces
deep-learning tensorflow nucleus7 ncgenes7

1,235 commits 1 branch

X und S Modelle

Da schon viele Linux-Nutzer sehnsüchtig darauf warten, hat Tesla nach langem hin und her die Codezeilen seiner ersten beiden Fahrzeuge als Open-Source-Projekt zur Verfügung gestellt. Doch bisher sind diese auch noch unvollständig.

von Vera Bauer am 2. Juni 2018
Email @ver_bloggt



The OpenADx community provides a platform which ...

... leverages open source to increase efficiency and create standards

Reason Why

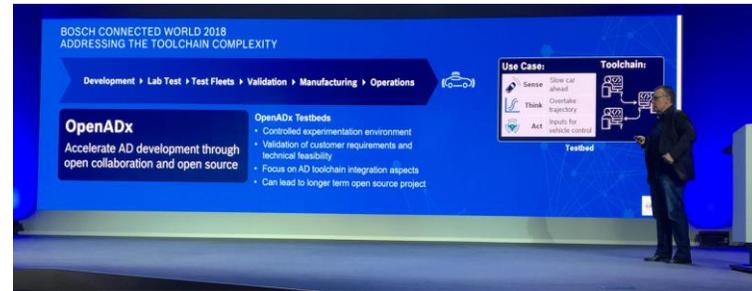
AD requires a multifaceted process incorporating a variety of software tools

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

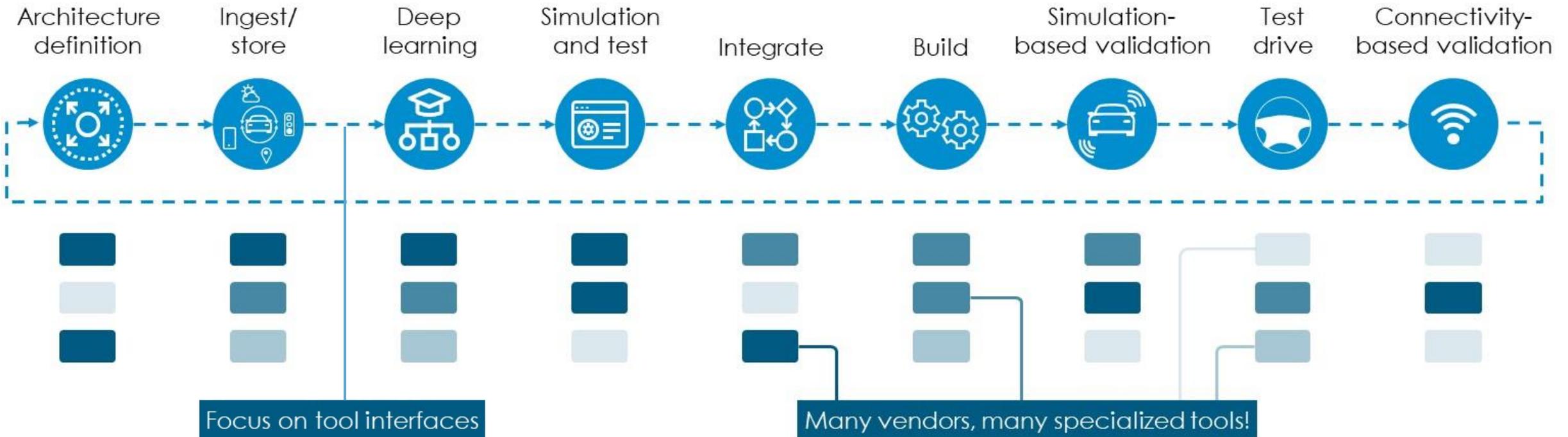
- ▶ 30 entities
- ▶ 60+ active contributors
- ▶ Initial projects:
 - Cloe (simulation kit for testing AD software components)
 - Iceoryx (true-zero-copy shared memory approach)

<h3>Targets</h3> 	<h3>Approach</h3> 
<ul style="list-style-type: none"> ▶ Accelerate time to market ▶ Share costs ▶ Free up resources to focus on customers 	<ul style="list-style-type: none"> ▶ Define Industry-wide AD toolchain ▶ Ensure high interoperability ▶ Provide easy access ▶ Establish basis for reference arch.



OpenADx targets reference architecture and ...

a wide ranging interoperable toolchain for PoV* and commercial applications



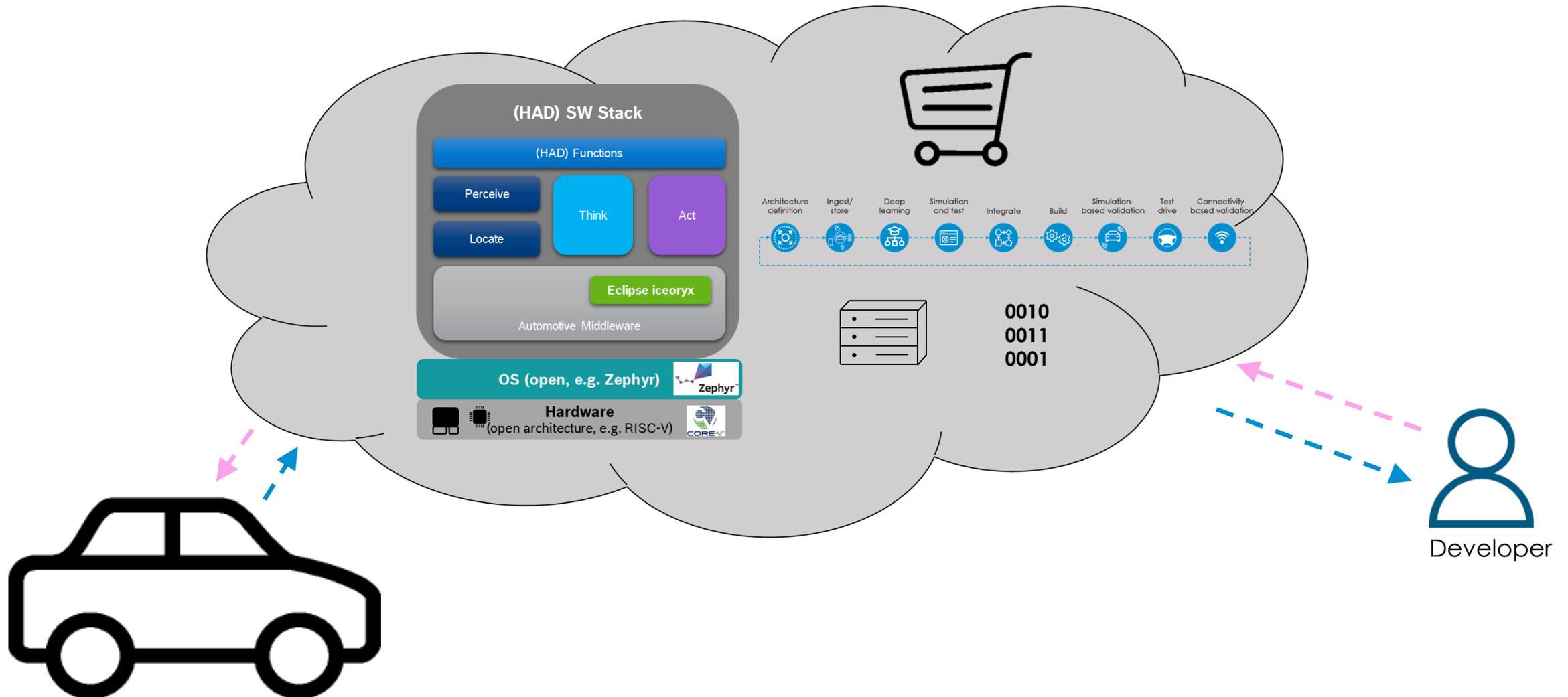
GOALS

- › 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

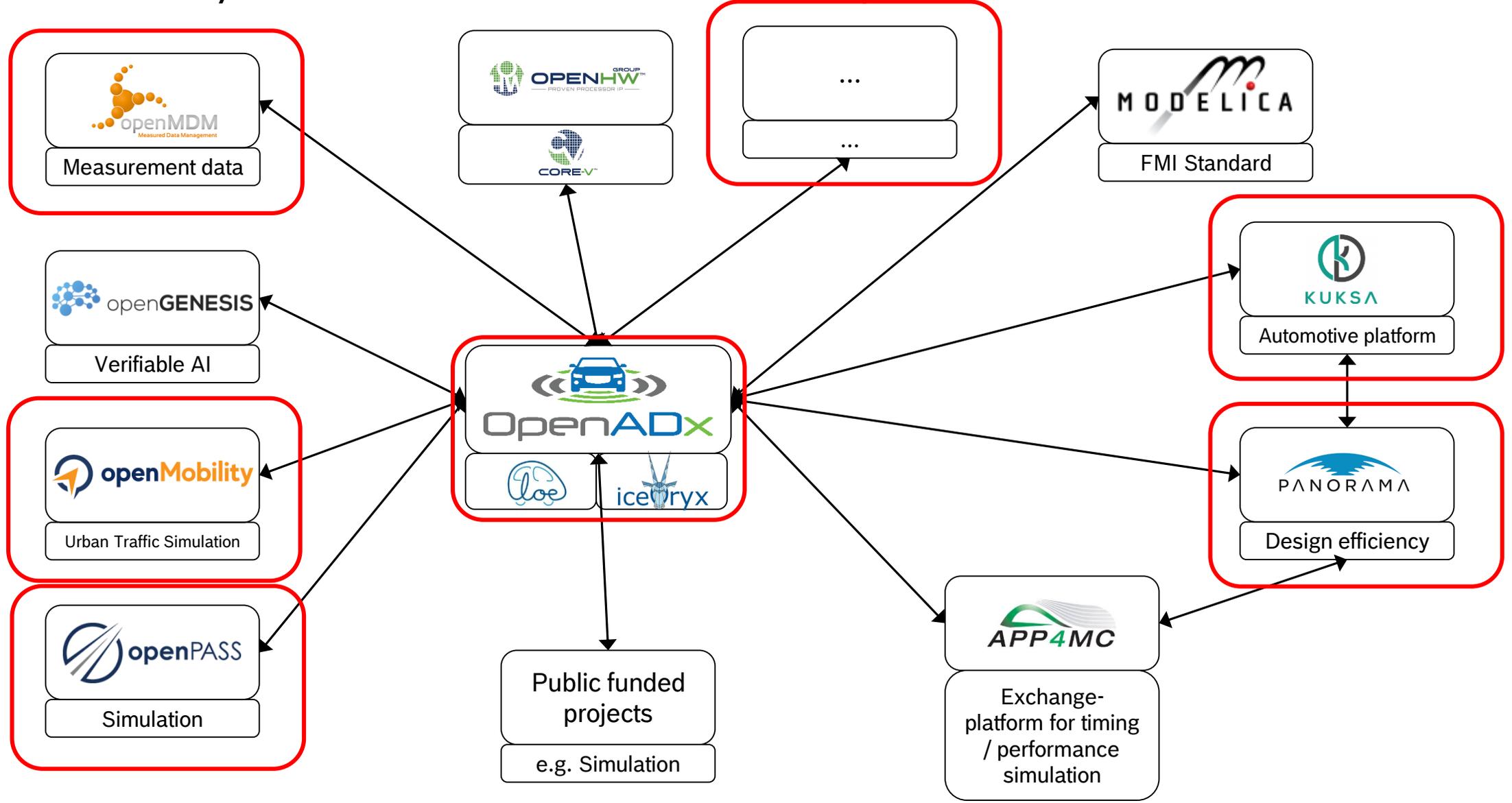
OpenADx: Leading to holistic functional approaches

Use Case: Leverage OpenADx to develop end-to-end solutions (with the community)

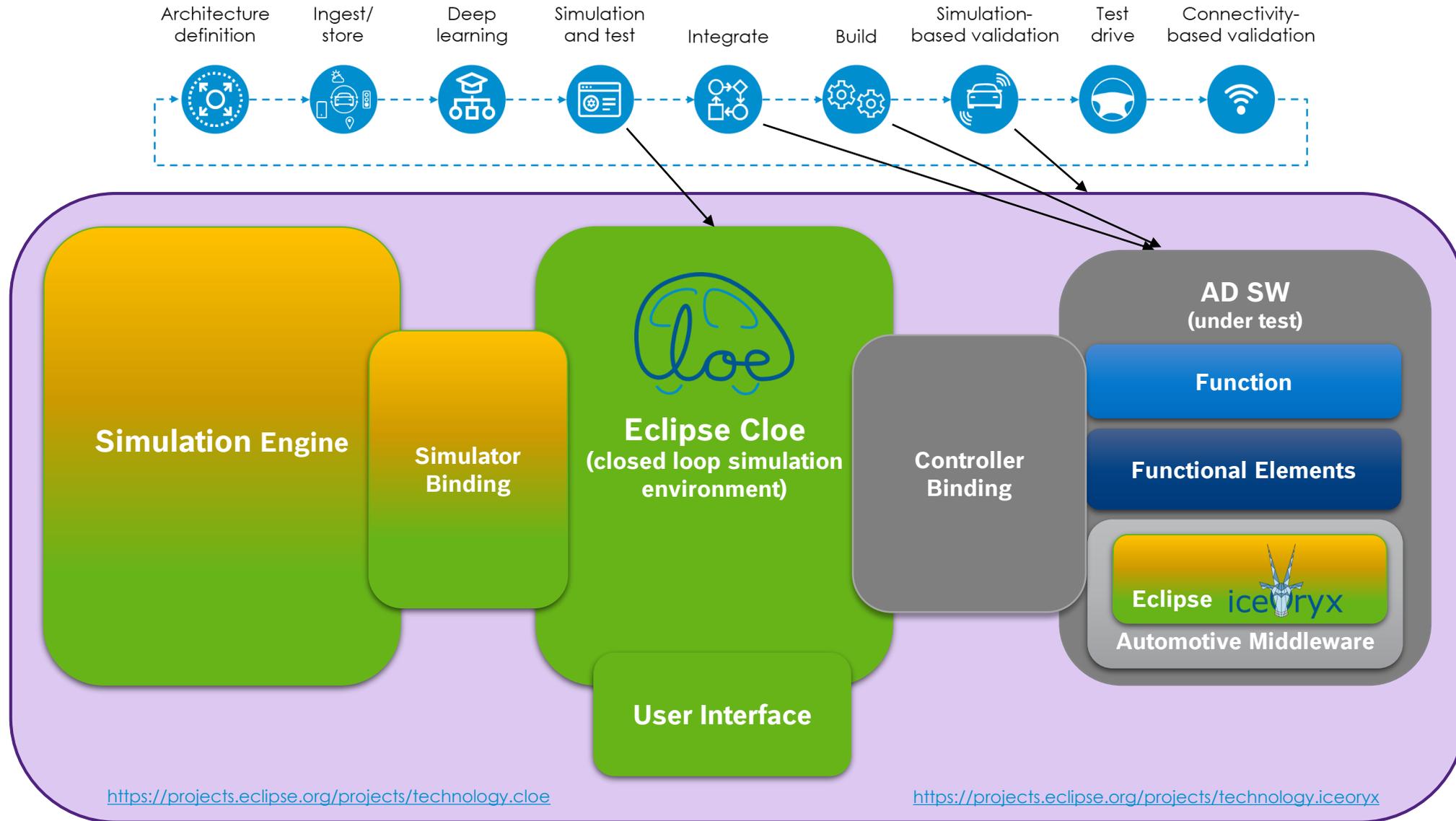




OpenADx lays the foundation for safety and standardization



OpenADx: e.g. two major initiatives to address requirements for simulation and data transfer in real time (Cloe and iceoryx)



Speaker Spotlight

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

Andreas Riexinger



Session Topic:
The Open Source Way



NDAY
19

TUESDAY
20

WEDNESDAY
21

THURSDAY
22

2:45 PM
3:15 PM

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



Work in the field of highly automated driving and autonomous mobility introduces a new complexity into the development of embedded systems in...

Room 4

The Open Source Way

Andreas Riexinger · Robert Bosch GmbH

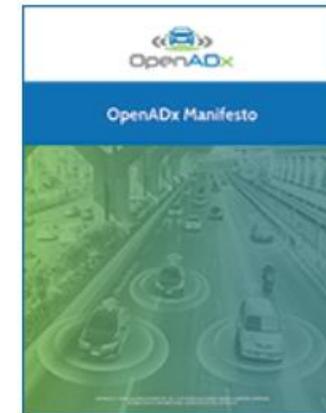
Beginner



A bit more in my talk ...
... and in the whitepaper

White Papers

OpenADx Manifesto

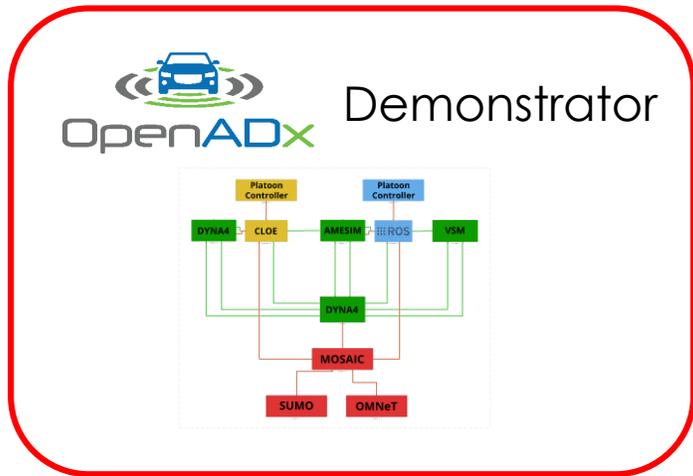
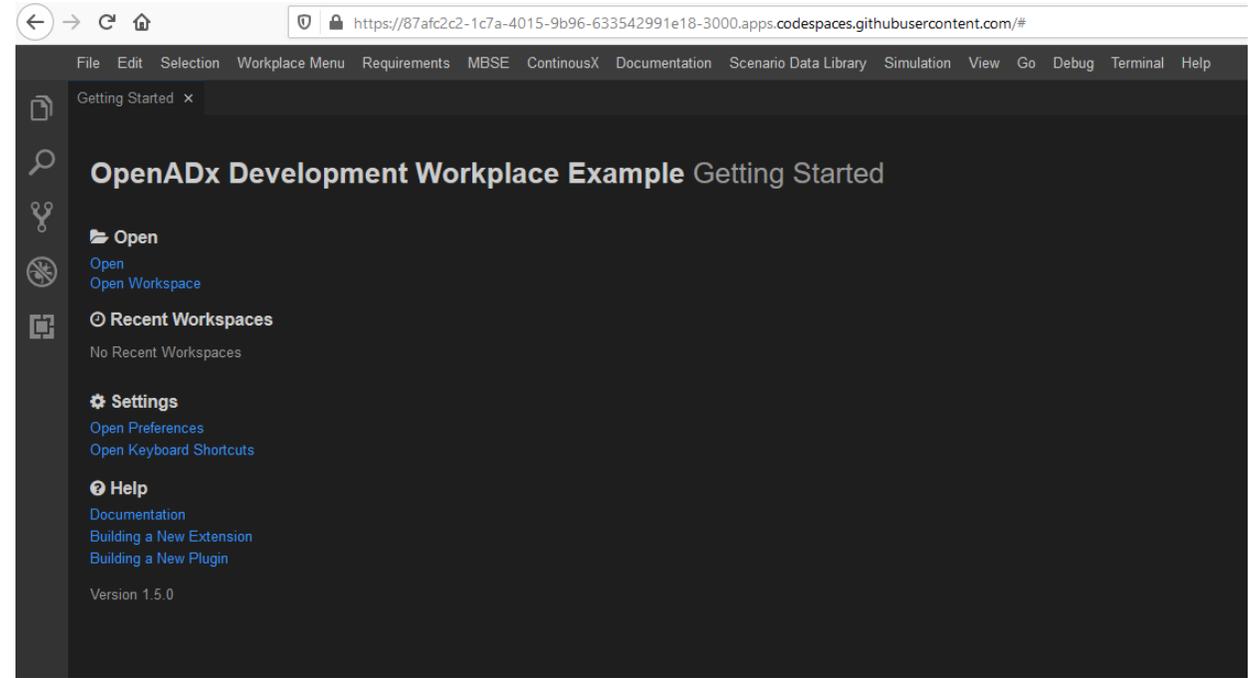
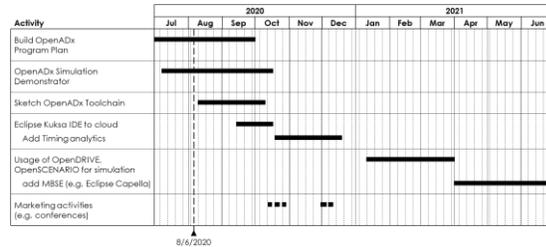


DOWNLOAD

OpenADx – some projects and ideas



Program Plan



Links

- › OpenADx
 - › Website: <https://openadx.eclipse.org/>
 - › Wiki: <https://wiki.eclipse.org/OpenADx>
 - › Mailing List: <https://accounts.eclipse.org/mailling-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!

Andreas Riexinger
andreas.riexinger@de.bosch.com

<https://wiki.eclipse.org/OpenADx>

Find out more and join us

<https://openadx.eclipse.org/>
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