KPIT

Enabling and Validating AD L3 Program at Honda with IPG tool landscape

11.09.2024
Version 1.0

Reimagining Mobility with *YOU*

AD/ADAS Simulation and Validation

IPG Carmaker usage journey with Honda

80+
Peak Team Size

20+
Carmaker Licenses

Top 3 challenges faced

- Black box Model – No clear requirements of AD functions
- Execution of millions of scenarios
- Synchronization of Catalogue and scenarios between OEM and KPIT

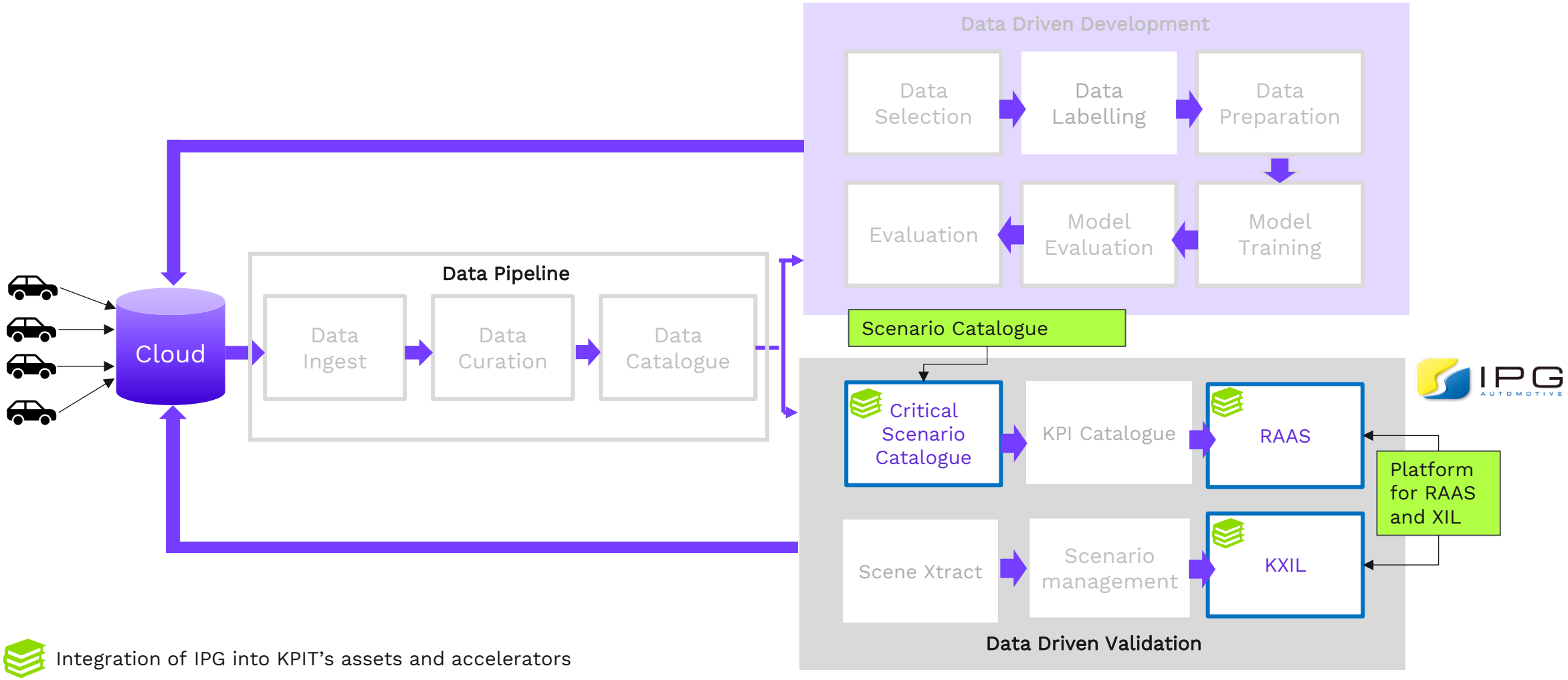
Solution delivered

- Reverse engineered Black box model and derived requirements of OEM AD functions
- Setting up HPC Environment for millions of scenario execution

IPG Carmaker usage

1) Simulation & Scenario Creation
2) MIL/SIL/HIL (Incl. Cloud)
3) Reprocessing & Digital Twins
4) Carmaker plugins
   - Physical Sensor Models (PSM)
   - CarSim Data Converter

Integration of IPG into KPIT's Data Driven Development and Validation Framework

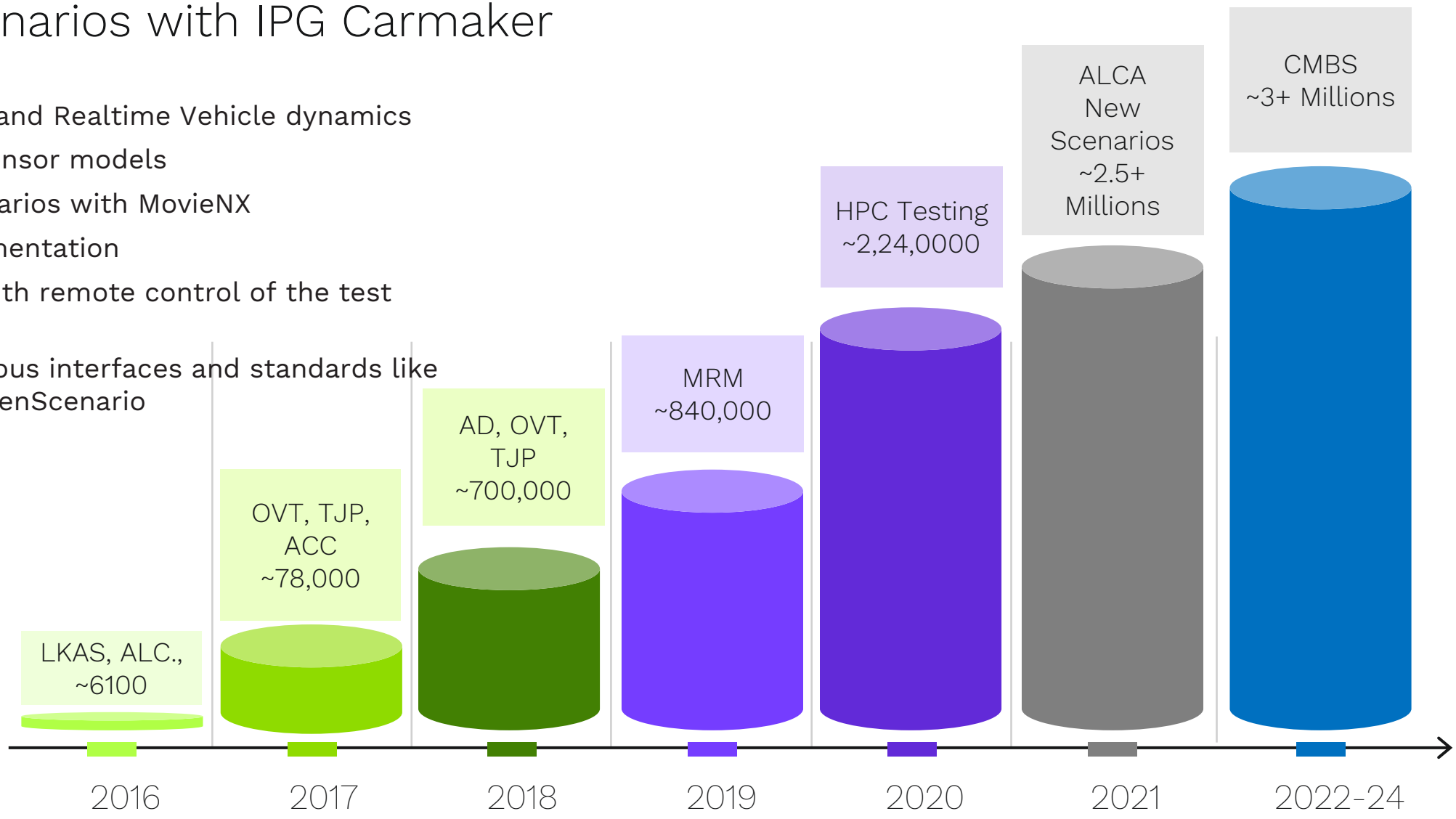


Integration of IPG into KPIT's assets and accelerators

AD/ADAS Simulation and Validation

Growth of scenarios with IPG Carmaker

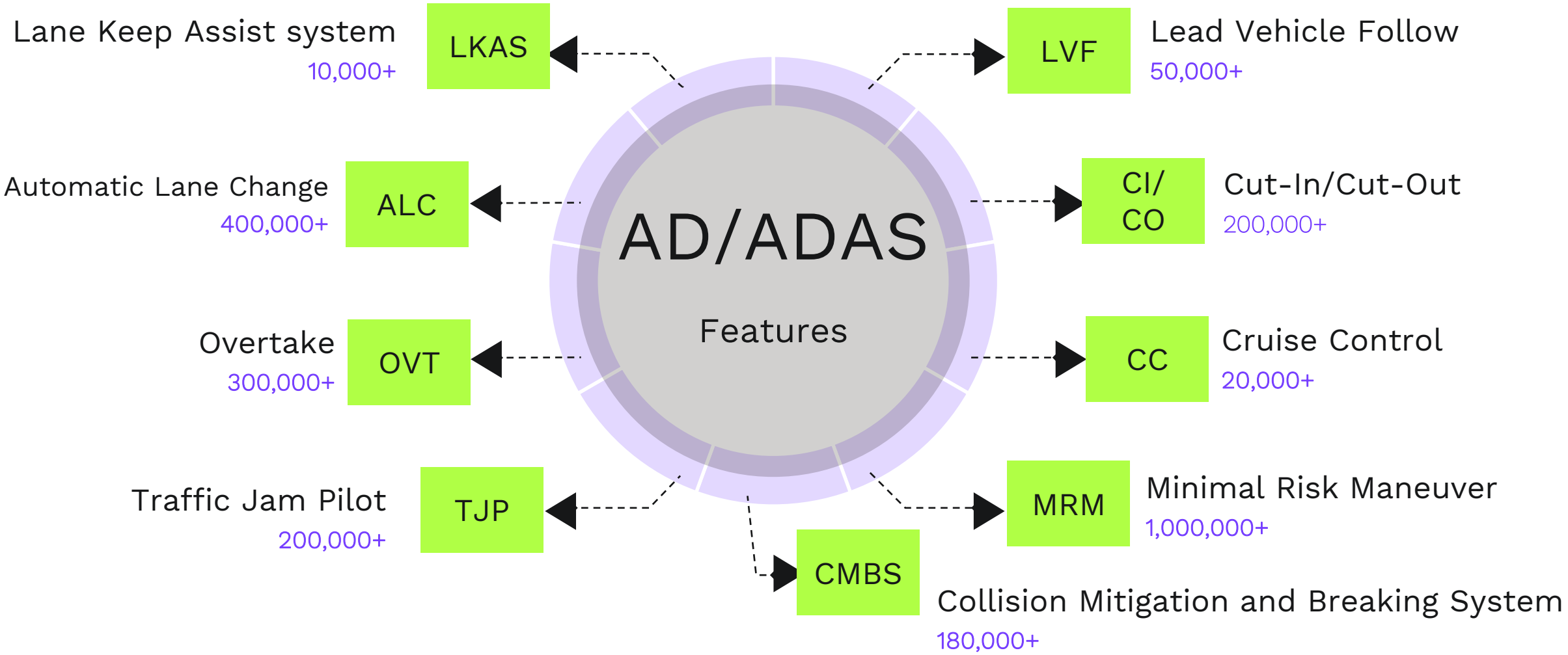
- High-performance and Realtime Vehicle dynamics
- Different fidelity sensor models
- Photorealistic scenarios with MovieNX
- Support and documentation
- Scaling on cloud with remote control of the test automation
- Support for numerous interfaces and standards like FMI, OpenDrive, OpenScenario



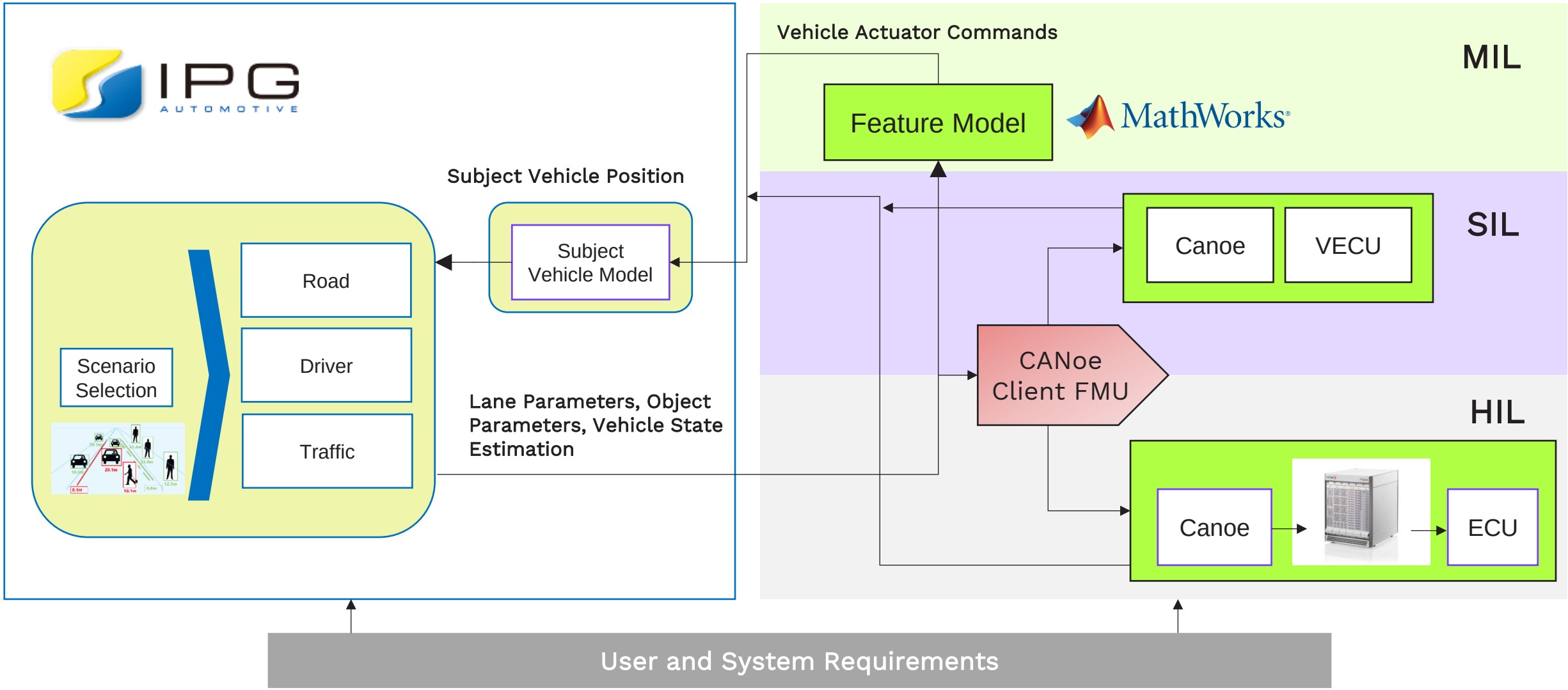
AD/ADAS Scenario Database

Feature Variations Database with IPG Carmaker

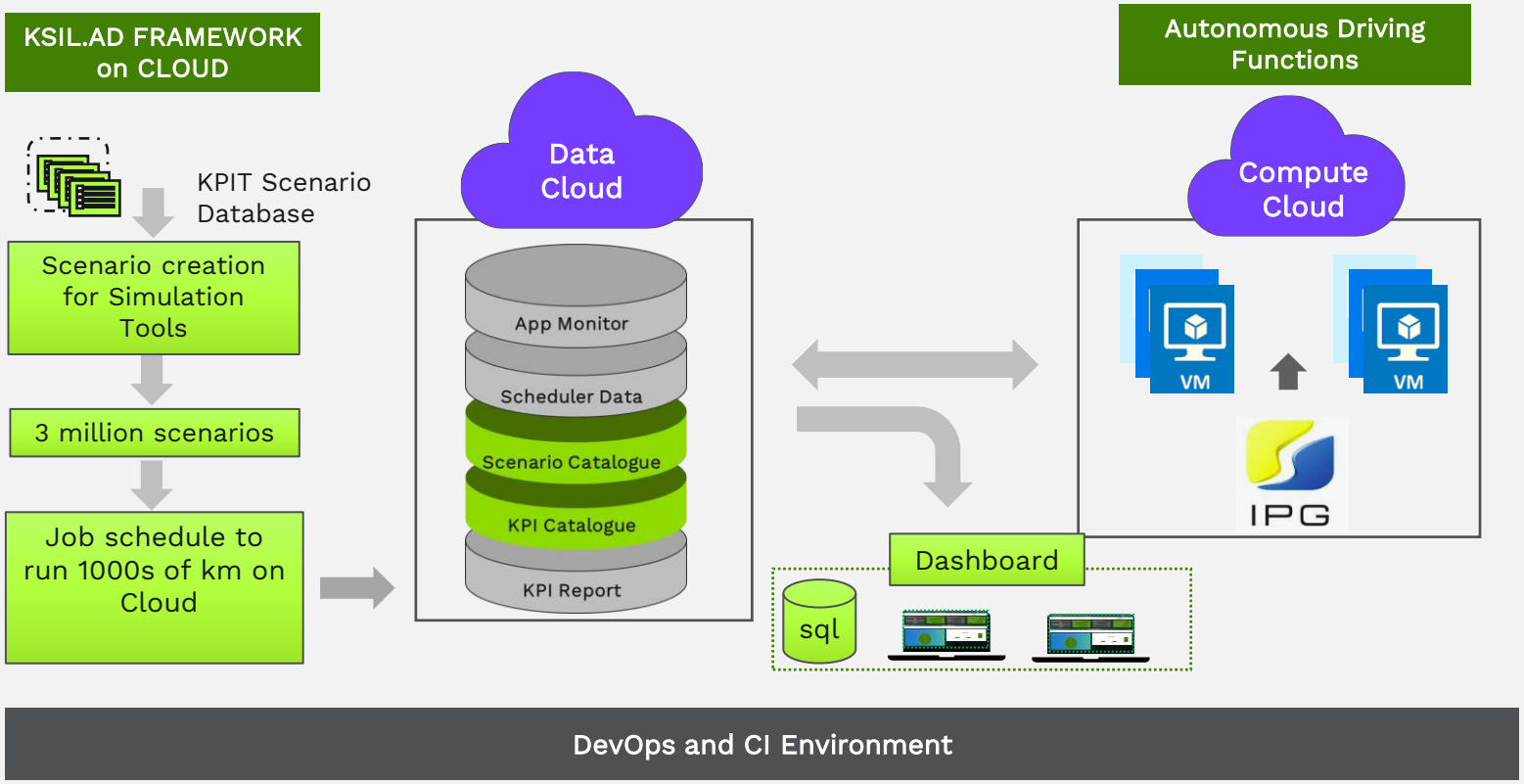
3 Million scenario variations



MILS/SILS/HILS



Simulation KSIL on Cloud



Execution Time
To simulate 1 Million scenarios, it takes 1000 days to execute on a GPU machine.
With The help of the KSIL framework, the execution of 1 Million+ Scenario takes 1 week on the cloud

Cost Savings
The KSIL on-cloud solution provides 50% cost savings to simulate 1 Million scenarios as compared on-premise data center

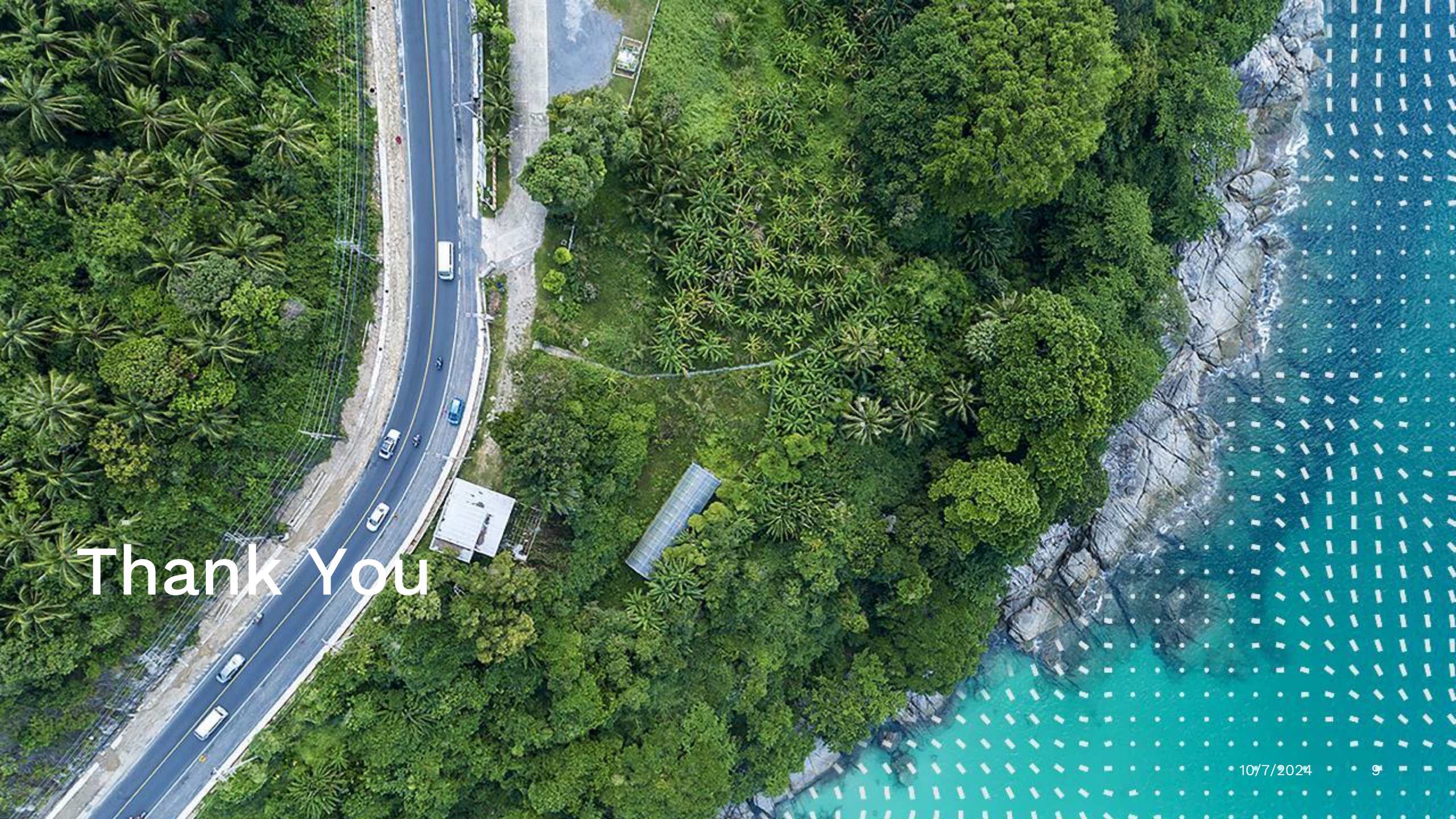
Scalability
KSIL provides a hyper scaled solution for ADAS/AD scenario validation on cloud

Analytical & Performance Dashboard
Real-time dashboards for KPI evaluation and analysis

Scenario and KPI catalogue
A large in-build catalogues contain hundreds of scenarios created from ODDs recommended by ISO ad NITSHA like regulations

Security
Secure data and infrastructure level protection with Role-based authentication mechanism

- KPIT SIL platform provides end to end solution for ADAS and Autonomous Driving Homologation
- This is a Virtual platform for both open loop and closed loop simulation
- Deployed in more than 3 OEM Programs
- The platform includes all steps that are recommended by regulations to meet homologation requirements


Thank You