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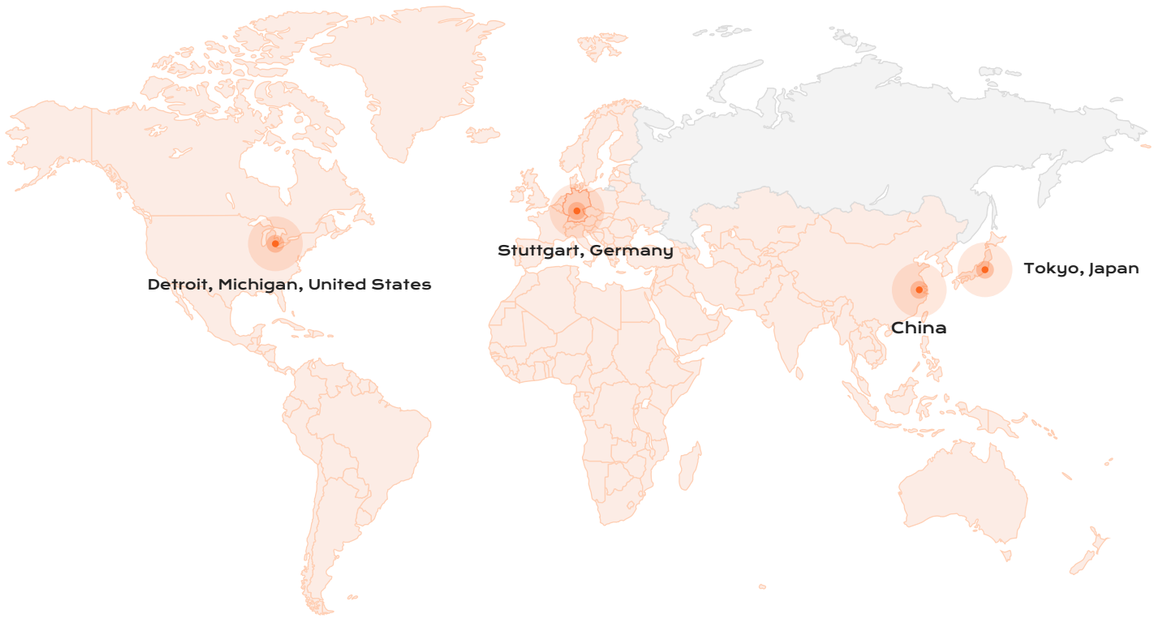

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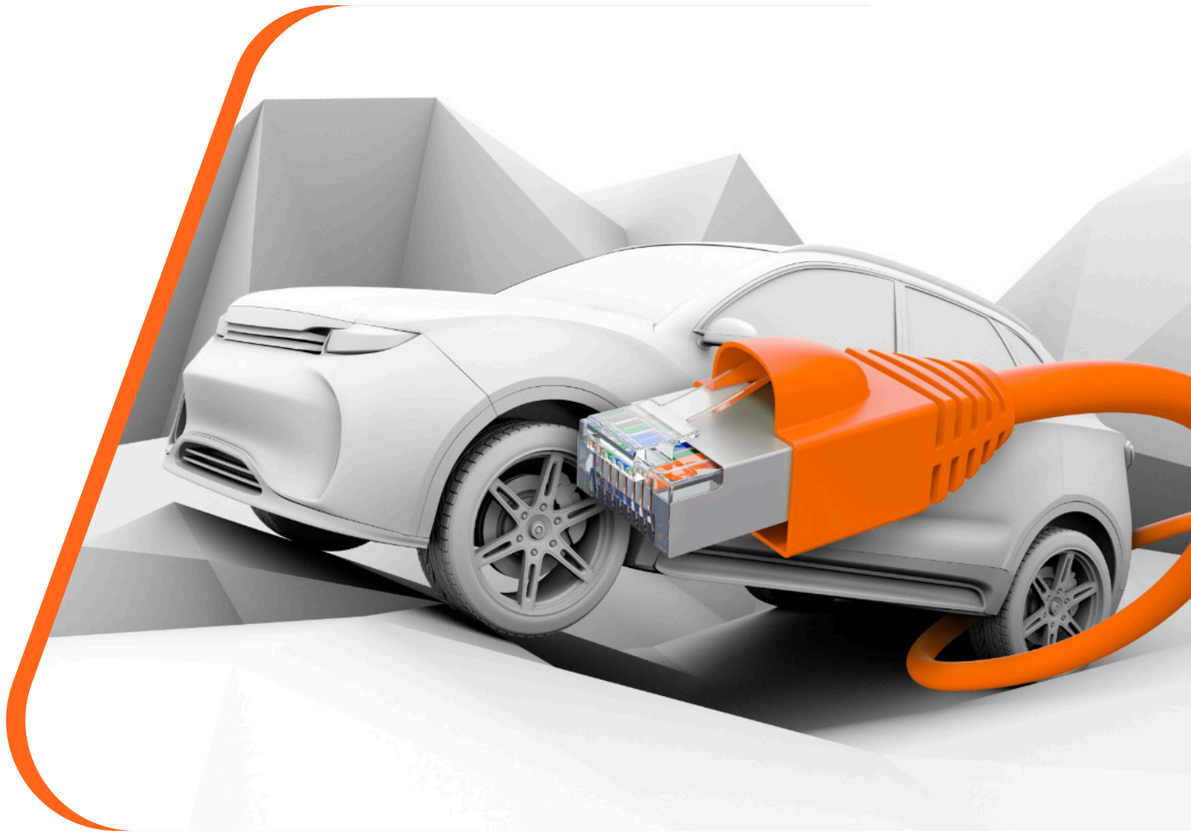
DATA DRIVEN TESTING FOR ADAS/AD



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Data driven testing for ADAS/AD

CONTENTS

ADAS/AD Data Logging

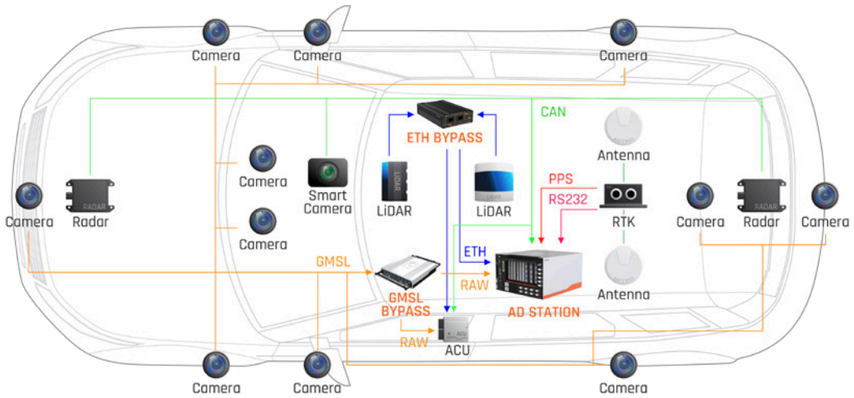
ADAS/AD system consists of an increasing number of high-bandwidth sensors, which requires a robust data logging system

01 To support a wide range of sensors and data types

02 Can provide high bandwidth、high synchronization accuracy and high data quality

03 To be flexible、scalable and cost-effective

Logging solution



High-bandwidth Data Logging With Data By-pass (optional)

Solution advantages

- Compatible with sensors of different models and brands
- High-bandwidth and real-time sensor data logging with < 1 ms sychronization accuracy.
- Highly reliable RAW compression and restoration capabilities, reducing storage and maintenance costs by up to 90%
- Easy to set up
- Over 400 customers
- Deliver within 8 weeks

High-Bandwidth ADAS/AD data logger

Key specifications

Key specifications:			
Memory	4 × SO-DIMM slot, supports up to 128GB ECC/non-ECC DDR4 2133 memory	**Sensor**	Camera, Lidar, Radar, IMU, RTK, USS, etc.
Bus Protocol	CANFD/CAN, LIN, FlexRay, DSI3, Ethernet, Automotive Ethernet(T1) 100M/1G/10G,RS232,PPS	**Ethernet**	2×Gigabit Ethernet (expandable)
Display interface	1 × DVI-D interface, 1 × DP interface, 1 × VGA interface	**Serial port**	2×serial port
camera channel	12×GMSL/FPDLINK camera channels (up to 8M per channel)		
USB	4×USB3.1 Gen1(5Gbps) & 4×USB3.1 Gen2(10Gbps)	**CAN/CANFD**	16 channels
LIN	15 channels	**FlexRay**	2 channels
Audio interface	1×3.5mm interface microphone input and speaker output		
Storage interface			
SATA hard drive	2×Hot-swappable hard drive brackets for mounting 2.5"hard drives/solid state drives	**mini-PCIe**	2 × Full-length mini-PCIe slots
PCI Express	2 × PCIe × 16 slots @Gen3,8-lanes; 2 × PCIe × 8 slots @Gen3,4-lanes; 1 × PCIe × 4 slots @Gen3,1-lane		
Power			
DC Input	2 × 4 core plug-in terminal module provides 8~ 35V DC input		
Size			
Size	381×360×235(mm)		

ADAS/AD Data Processing & Management

Data management platform

ADAS/AD comes with large amount of data , which requires an efficient and effective platform for data management

Function

Automated data processing

- Data desensitization
- Automatic slicing

Scenario classification

Centralized data management

- Reduces the need for extra tools and systems
- User-Friendly Interface

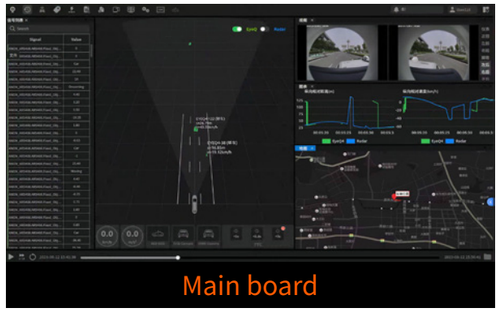
Data annotation

- Support efficient task and data management
- Semi-automated annotation,rapidly construct large-scale training datasets.
- Support workflow engine configuration to adapt to complex annotation review tasks.

L2/L2+ functional testing Solution

AdSoft — an ADAS/AD functional testing software

To accelerate the development process of ADAS/AD functions , AdSoft can be used to test L2/L2+ functions, such as AEB/FCW, LDW/LKA, ACC, APA and more



1. Visual interface

Real time display object information, bus signal values, LiDAR/camera image , etc.

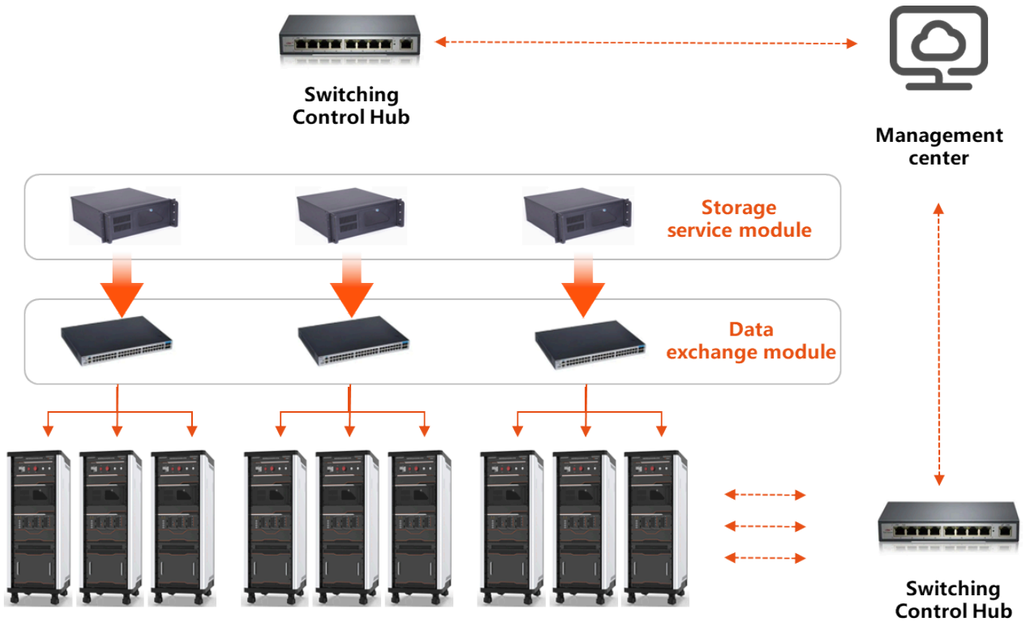
2. Offline data playback and tag

Fast identify the problem

3. Provide statistical analysis reports

ADAS/AD Data Replay Cluster

Vcarsystem ADAS/AD Data replay cluster — a scalable and cost-effective ADAS/AD testing system on real hardware with raw signal to deliver reliable results, save up to 90% testing time.

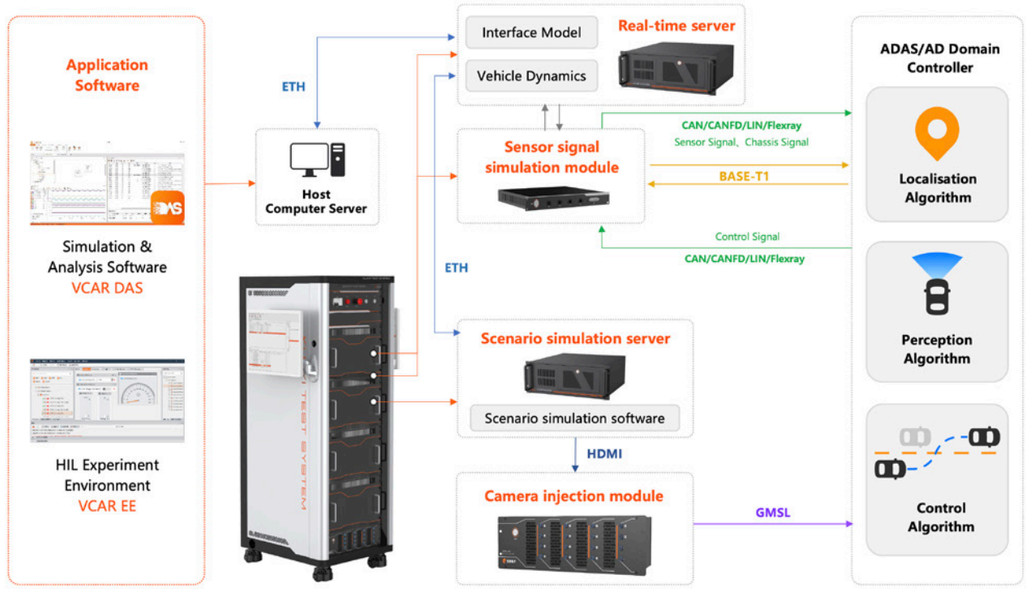


Key specifications

- Support simultaneous injection of multiple sensor data
- Each camera supports 8M maximum resolution and 30fps
- Support injection of RAW, YUV, and compressed RAW data
- Support fault injection
- Flexible and scalable configuration, easy deployment
- Cross function tests run in parallel , saving cost
- Hardware synchronization, high accuracy

ADAS/AD HIL

End-to-end simulation of real-world scenarios enables comprehensive testing of algorithms, sensors, and actuators in a safer, controlled, and repeatable environment.



Key specifications

- Partnership with IPG and other leading simulation software providers.
- Integration of extensively validated scenario simulation software, vehicle dynamics models, and sensor models.
- Test with real world data/constructed scenarios
- Support functionality test/ smoke test/stress test
- Support fault injection /corner case test/ scene generalization
- Support end-to-end simulation