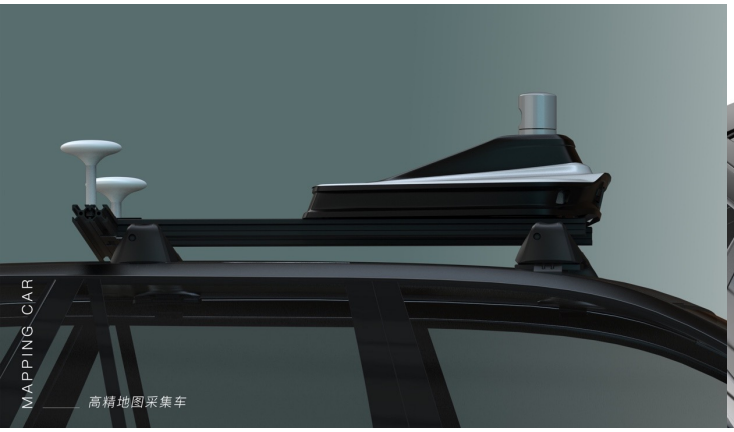
whale dynamic
惠尔智能

Product Reference

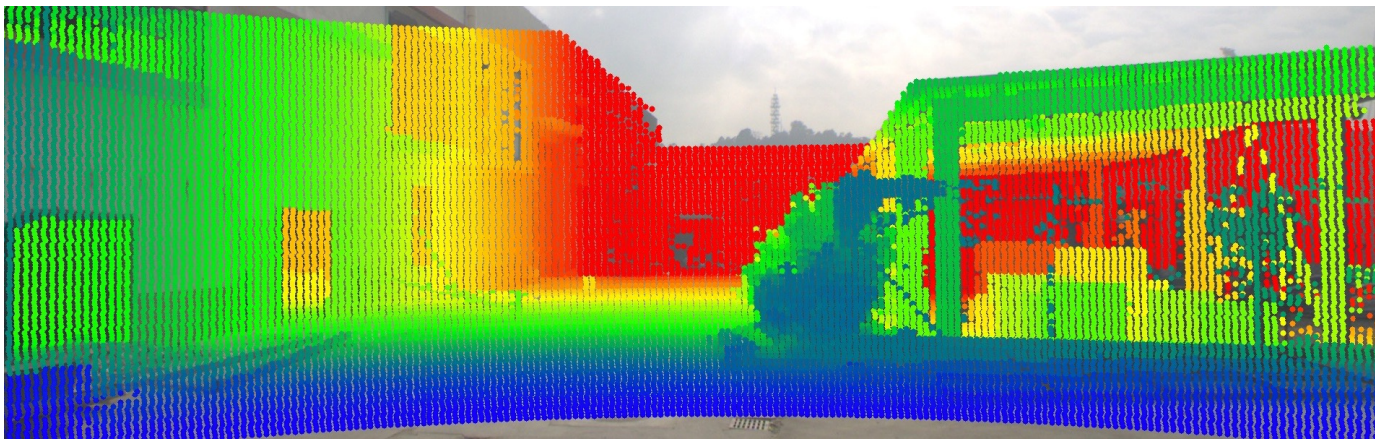
MAPPING TOOL

Whale Dynamic's mapping tools include the mapping hardware kit and software toolchain, which enables the end-to-end process of data collection, point cloud generation to semantic HD map generation. The accuracy and quality of generated HD map is competitive with that generated by map service provider, and support various formats. This enables the independence of HD map creation from a 3rd party to launch the autonomous mobility-related services, and the generated HD map can be applied for various applications.

MAPPING HARDWARE



The mapping hardware kit leverages the early-fusion technology from passenger vehicle autonomous driving, and use Whale Dynamic's proprietary fusion box hardware to provide spatial-temporal synchronization, and fuse sensor data inputs from GNSS, Lidar, camera, and IMU sensors. Thanks to the accurate data fusion, high-quality raw dataset for HD map generation could be collected.

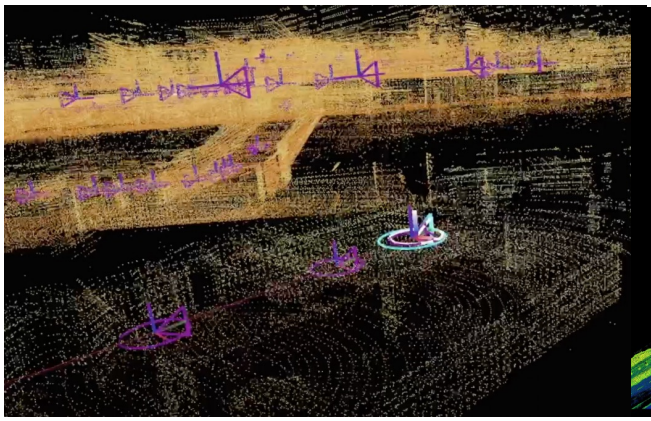
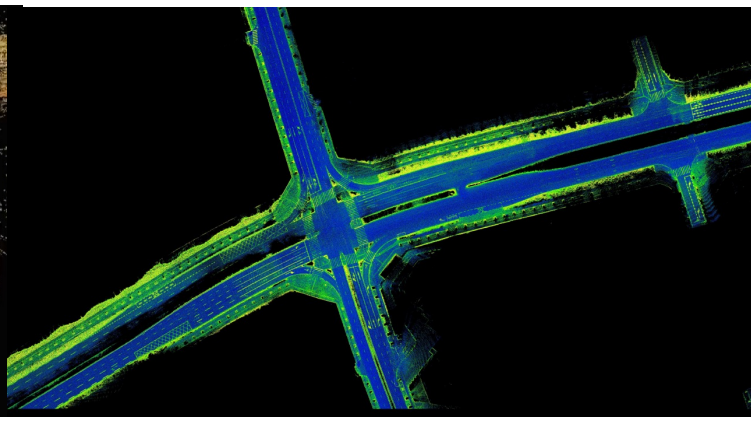
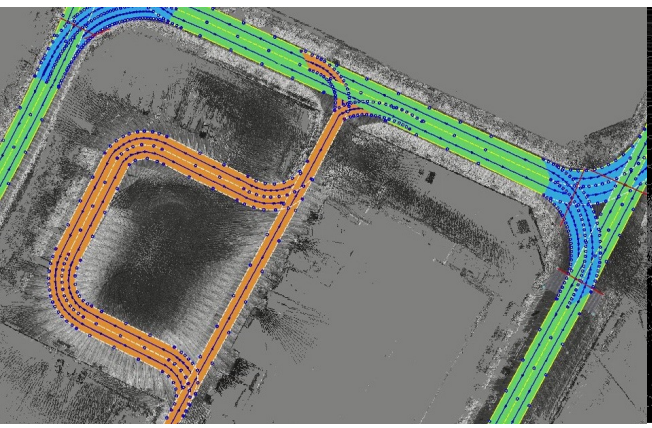
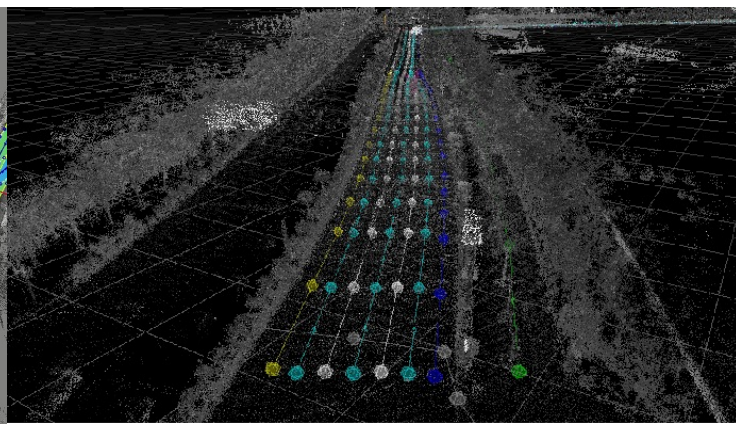


MAPPING TOOL

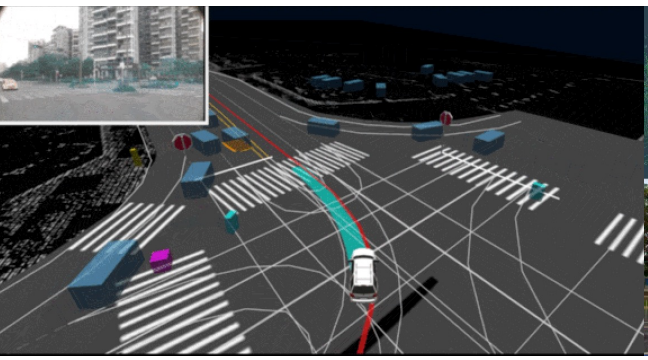
SOFTWARE TOOLCHAIN

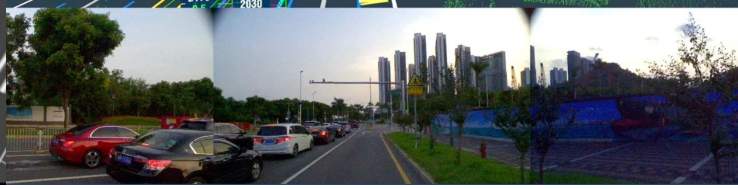
The software toolchain is capable of generating high accuracy, dense point cloud by leveraging SLAM technology, as well as conducting semantic annotation to extract semantic features such as lane lines, crosswalks, traffic lights etc.

As shown in the pictures below, the precise point cloud can be generated even in GNSS-denied, multi-floor environment, leveraging multi-sensor fusion and loop closure function. Furthermore, the map handling functionalities make point cloud merging or splitting easy.

The generated HD map can match perfectly with the perception engine, and be used in route planning and vehicle control tasks during autonomous operation.



MPAV – WD1

Whale Dynamic's Multi-Purpose Autonomous Vehicle (MPAV) WD1 relies on years of development experience in L4 autonomous robotaxis with extensive testing on public roads (urban traffic condition ODD). It includes perception hardware design, control-by-wire chassis, fusion perception algorithms, multi-sensor fusion localization and high-precision map full-stack technology. The vehicle design is led by designers from well-known North American automobile companies. The modular design from hardware to chassis combines aesthetics and practicality to meet the needs of autonomous vehicles in all scenarios.

Commercial Application

Long Range

Remote Battery Monitoring

Automobile Class BMS

In-wheel motor

Dual Ackman Chassis

Bi-directional

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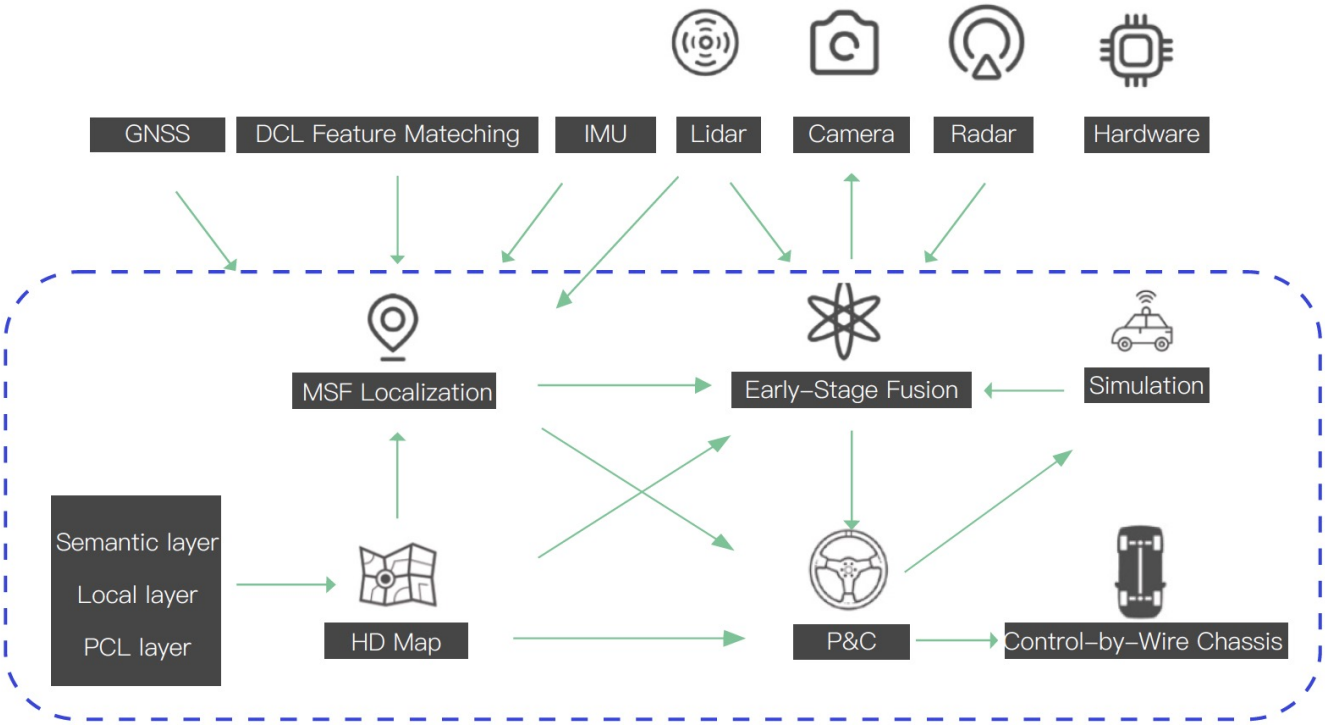
MPAV – WD1

PRODUCT ARCHITECTURE



PRODUCT AND SERVICE COMPONENT

Multi-Purpose Autonomous Vehicle

- Multi-sensor Fusion
- Early-fusion Algorithm
- Visual Perception Algorithm
- SLAM-based Localization
- Full-stack Hardware
- Embedded Computing Acceleration
- Chassis OEM/Adaption
- Path Planning / Control Module Design
- Control-by-wire/CAN
- HD Map Support

+

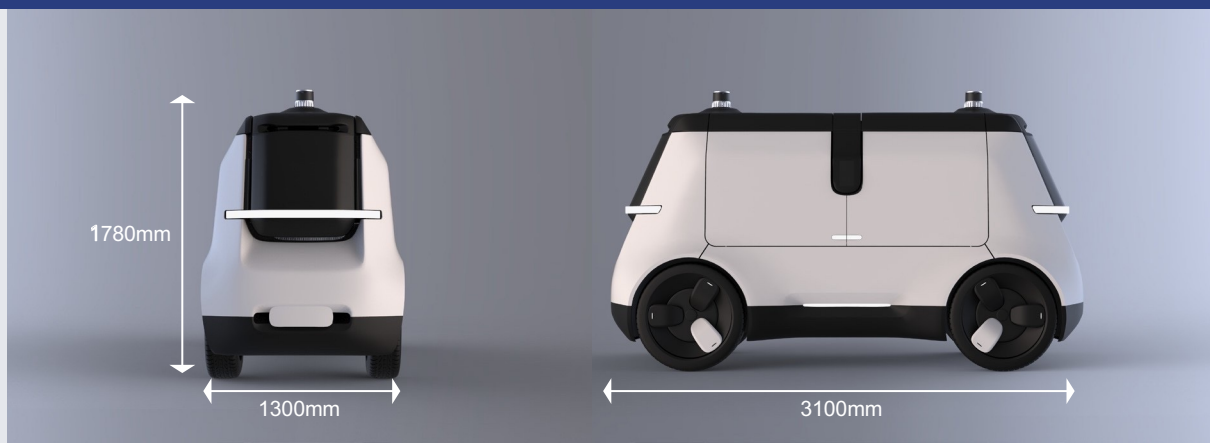
SaaS Service

- Map Updates
- Vehicle Firmware OTA Update
- Cloud Platform / Remote Support
- Operation Assistance

MPAV – WD1

PRODUCT SPECIFICATION

Model	Basic	Standard	Advance
			
Hardware			
Lidar	OS0	OS0*2	OS2*2
Chassis (2516*1546*616)	Single-direction 2WD Battery Capacity7000W.H	Single-direction 2WD Battery Capacity11000W.H	Single-direction 4WD Battery Capacity11000W.H
MM Radar	0	0	1
Camera	2	3	6
IPC	Single GPU	Single GPU	Dual GPU
Integrated Navigation	Whale Dynamic IR&D/M2	Whale Dynamic IR&D/M2	Whale Dynamic IR&D/M2
Fusion Box	1	1	1
Map			
Virtual Lane Line	○	○	○
HD Map	×	Optional	Optional
Size (unit: mm)			



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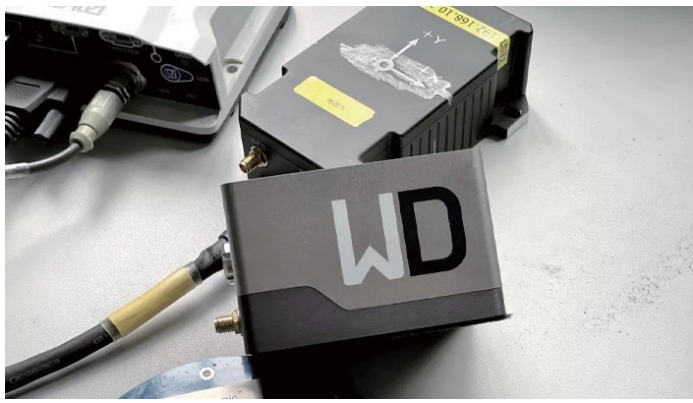
DTV

The Drivable Testing Vehicle (DTV) is a platform that enables both autonomous driving and manual driving in parallel. The vehicle is designed to carry out intensive on-road testing, algorithm deployment, and preliminary autonomous driving task. The DTV can provide all-round assistance to vocational education and academic research institutions, assist instructors, students, as well as enterprise R&D engineers to quickly get started with the vehicle-based test, and promote the rapid implementation of the autonomous driving solution at reasonable cost levels.

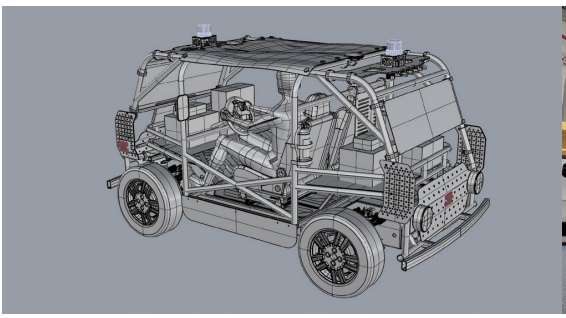
With rich experience in technology innovation, Whale Dynamic developed its own hardware equipment exclusively for autonomous driving, which ensures the integration and integrity of DTV and greatly reduces the risk of hardware supply chain and component adaptability issues.

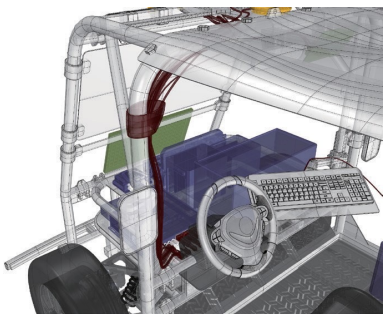


DTV

PRODUCT SPECIFICATION

The DTV is equipped with two 128 beans LiDARs, four mm-radars, and eight cameras. By taking point cloud and visual spatial-temporal synchronization, and coupled with the HD map, the DTV has the same function as Multi-Purpose Autonomous Vehicle (MPAV).





Human-machine Co-driving with Automobile-grade EV Chassis

Four-wheel steering, smaller turning radius, more flexible body movement

Integrated Multi-sensor Fusion

Dual high-resolution long-range lidar, support 360° lidar-visual perception

8 HD cameras, long and short focal length combination, clearer capturing of near and far images

Four 77GHz mm-radars for high-speed moving objects under all weather conditions

600KG Max Load

Four-wheel independent motor drive, more direct power