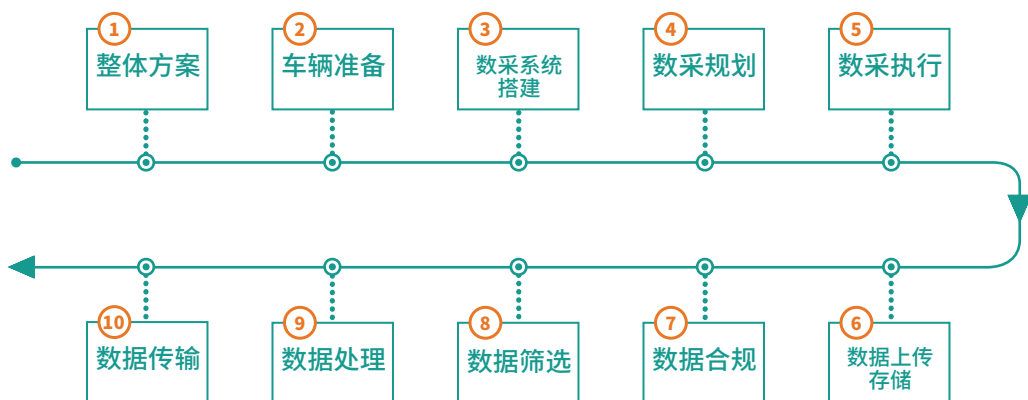# 亮道智能欧洲数据采集解决方案

智能驾驶汽车的出海之路,定制化开发适用海外的智驾功能,是第一步。海外驾驶场景数据,正是智能驾驶系统开发迭代的核心驱动力。

亮道智能欧洲数据采集解决方案,为中国车企出海提供从车辆准备、数采系统搭建、数据采集执行、数据合规到数据传输等全套数据方案,助力企业开拓全球市场。

全套欧洲数据采集方案

① 整体方案	② 车辆准备	③ 数采系统搭建	④ 数采规划	⑤ 数采执行

⑩ 数据传输	⑨ 数据处理	⑧ 数据筛选	⑦ 数据合规	⑥ 数据上传存储

核 心 优 势

5年+欧洲市场深耕 本土资源深厚

- 丰富的欧洲数据采集项目经验
- 50人+专业的执行团队,熟悉当地法律法规
- 华人管理和工程团队,沟通顺畅

完备的数据标定采集工具链

- 自研标定软件 LD Calibrator,多传感器时空同步,操作简单
- 自研采集软件 LD Logger,采集图像可视化,采集场景即时标记

一站式工程改装方案

- 专用的改装工程车间
- 10年+经验专业工程团队
- 200台+改装车丰富经验

全套安全的数据合规方案

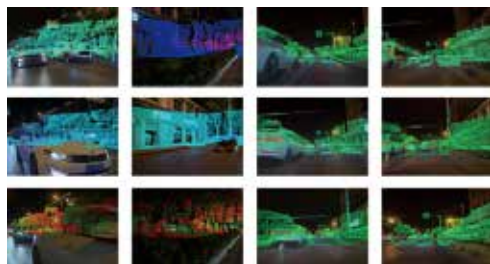- 依据欧盟GDPR(General Data Protection Regulation)要求,进行数据脱密、脱敏、匿名化处理等
- 多轮数据审核,保证数据安全与高质量

亮道自研数据工具链产品

数采传感器标定 LD Calibrator

LD Calibrator是一款自动化车辆传感器标定软件,用户可通过标定软件,将车辆上的传感器和车辆坐标系达成统一。

- 支持激光雷达一键精细配准,相机内外参一键标定。
- 支持激光雷达和摄像头的联合标定,让多传感器数据融合更准确可靠
- Web在线灵活部署,操作简单,即开即用。
- 支持多种数据格式输入输出,满足多种应用需求。

可视化数采软件 LD Logger

LD Logger是一款搭载在车端的数据采集软件,为用户提供传感器状态实时感知、采集数据实时可视化显示、采集场景实时标注等功能。

- 多传感器(激光雷达、相机、CAN)同时采集。
- 传感器采集可视化(点云图像、相机图像)。
- 采集设备状态实时监控并反馈用户。

大数据管理平台 LD DMS

LD DMS是一站式大数据管理及测评平台,打通数据预处理、场景挖掘、分析与管理等环节,可实现资源管理、数据采集管理、文件管理、流水线管理、场景管理、感知集合管理、物体库管理、场景标注及传感器KPI测评等功能。

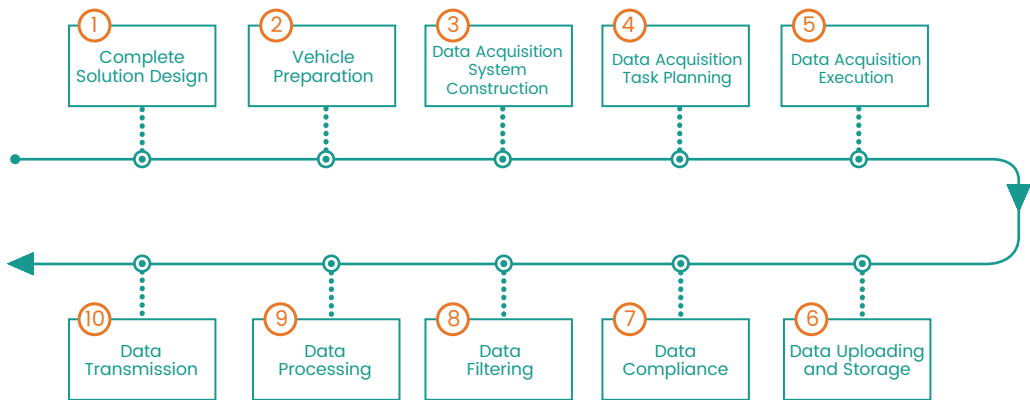- 一站式大数据管理平台,功能丰富。
- 高效管理海量数据,充分挖掘数据价值。

LiangDao European Data Acquisition Solution

The first step of intelligent driving vehicles going abroad is to customize and develop intelligent driving functions which must be applicable to local driving scenarios. The local driving scenario data is the core engine for the iteration of intelligent driving system development.

LiangDao European data acquisition solution provides a complete data services for Chinese automobile enterprises going overseas, including vehicle preparation, data acquisition system construction, data acquisition execution, data compliance, data transmission, etc., which supports customers in exploring the global market.

Complete European Data Acquisition Solution

1 Complete Solution Design	2 Vehicle Preparation	3 Data Acquisition System Construction	4 Data Acquisition Task Planning	5 Data Acquisition Execution

10 Data Transmission	9 Data Processing	8 Data Filtering	7 Data Compliance	6 Data Uploading and Storage

——— Core Advantages ———

More than 5 years of operation experience in the European market and deep local resources

- Rich experience in European data acquisition projects
- Over 50-person professional executive team, familiar with local regulations
- Chinese management and engineering team with no communication gaps

Complete calibration and acquisition software

- Self-developed calibration software LD Calibrator, spatio-temporal synchronization of multiple sensors and easy to use
- Self-developed acquisition visualization software LD Logger, supports visualization of point cloud and camera images and scenarios tagging in real time.

Excellent engineering modification Solution

- Exclusive workshop for modification engineering
- Professional team of modification with 10 years+ experience
- Over 200 modification projects experiences

Complete Data Compliance Solution

- Data decryption, desensitization, anonymization processing, etc. in accordance with the EU GDPR (General Data Protection Regulation)
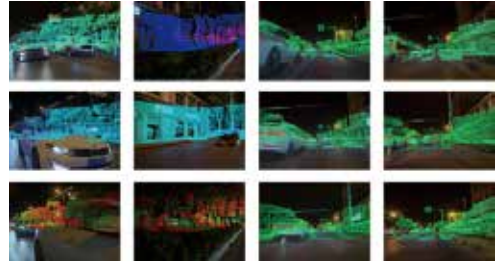- Multiple rounds of data auditing to ensure data security and high quality

Self-developed Intelligent Data Processing Toolchain

Accurate Sensor Calibration Software LD Calibrator

LD Calibrator is a self-developed automated vehicle sensor calibration software, which supports the calibration of multiple sensors in a vehicle coordinate system.

· supporting one-click precise alignment of LiDAR and one-click calibration of camera internal and external parameters.
· Supporting the joint calibration of LiDAR and camera to make the multi-sensors data fusion more accurate and reliable.
· flexible deployment online, user-friendly interface and quick to get started.
· Supporting multiple data input and output formats to meet various application requirements.

Data Acquisition Visualization Software LD Logger

LD Logger is a data acquisition visualization software deployed on the vehicle side, self-developed by LiangDao. It can support online timing and monitoring of sensor status, visualization of acquired data, scenarios tagging in real time, etc..

· Multi-sensors (LiDAR, camera, CAN) data acquisition at the same time.
· Real-time acquisition visualization of point cloud and camera images.
· Real-time monitoring of acquisition devices status and feedback to users.

LD Data Management System

LD Data Management System (DMS) is a one-stop big data management platform on cloud,which connects multiple data function modules including data pre-processing, data automatic labeling, scenario mining, analysis and management, etc., and can realize resource management, data acquisition management, file management, pipeline management, scenario management, perception set management, objective database management, scenario labeling and other functions.

· One-stop big data management platform with rich functions.
· Efficient management of big data and full exploitation of data value.