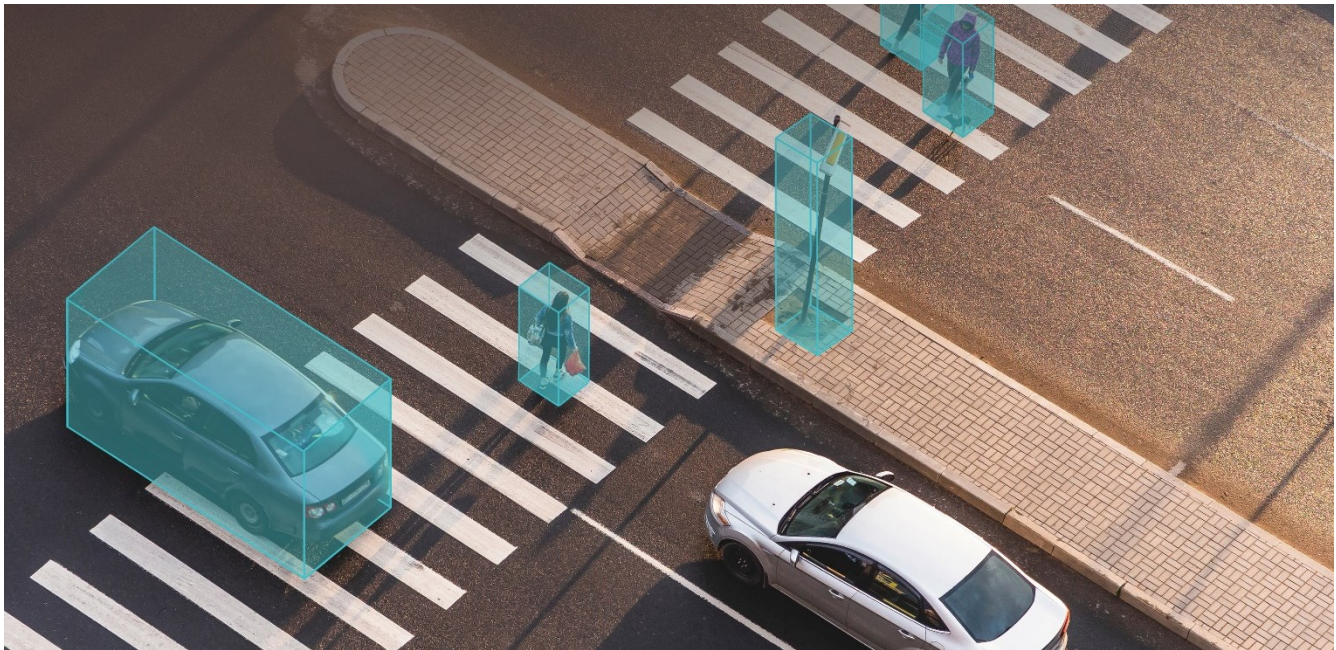




# LeddarVision

## Raw Sensor Fusion and Perception Platform for Automotive and Off-Road Industrial Vehicles



**LeddarVision™** is an advanced environmental perception solution for the automotive and mobility segments, from passenger light vehicles to off-road heavy industrial vehicles. LeddarVision software provides a comprehensive environment model delivering superior perception performance from any sensor set to enable and accelerate the development of high-performance solutions that are scalable from ADAS to highly automated driving (HAD).

Based on LeddarTech's comprehensive and demonstrated raw-data sensor fusion expertise, LeddarVision software processes sensor data to achieve a reliable understanding of the vehicle's environment required for navigation decision-making and safer driving.

LeddarVision resolves many limitations of legacy ADAS perception architectures by providing:

- Scalability to AD/HAD
- Flexible modularity to effectively handle a growing variety of use cases, features and sensor sets
- Centralized, sensor-agnostic object-level fusion, which optimally fuses all sensors for higher and more reliable performance.



**A single and effective fusion-perception architectural approach that scales from ADAS to highly automated driving (HAD)**



**A raw data sensor fusion-perception solution that provides superior performance, surpassing object-level fusion in adverse scenarios**



**A comprehensive, unified and modular environmental model**

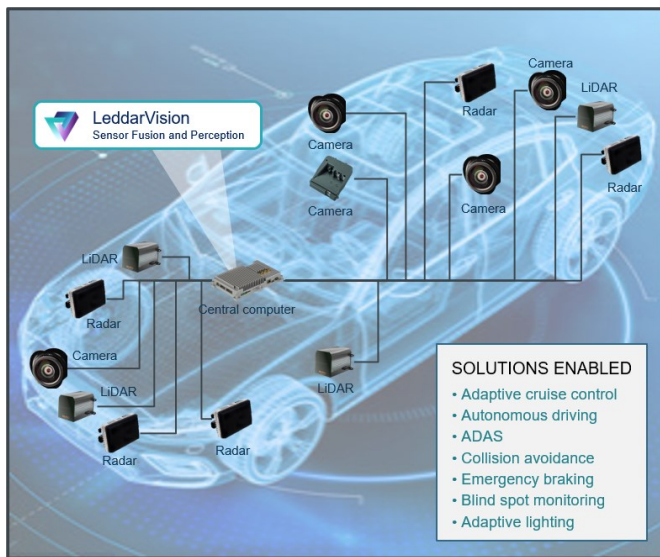


**Built-in redundancy for more reliable operation**



**Strong domain expertise, work process and field experience bringing technology from concept to reality**

**LeddarVision software processes data from all main sensor types to provide optimal understanding of the vehicle's environment required for navigation decision-making and safer driving**



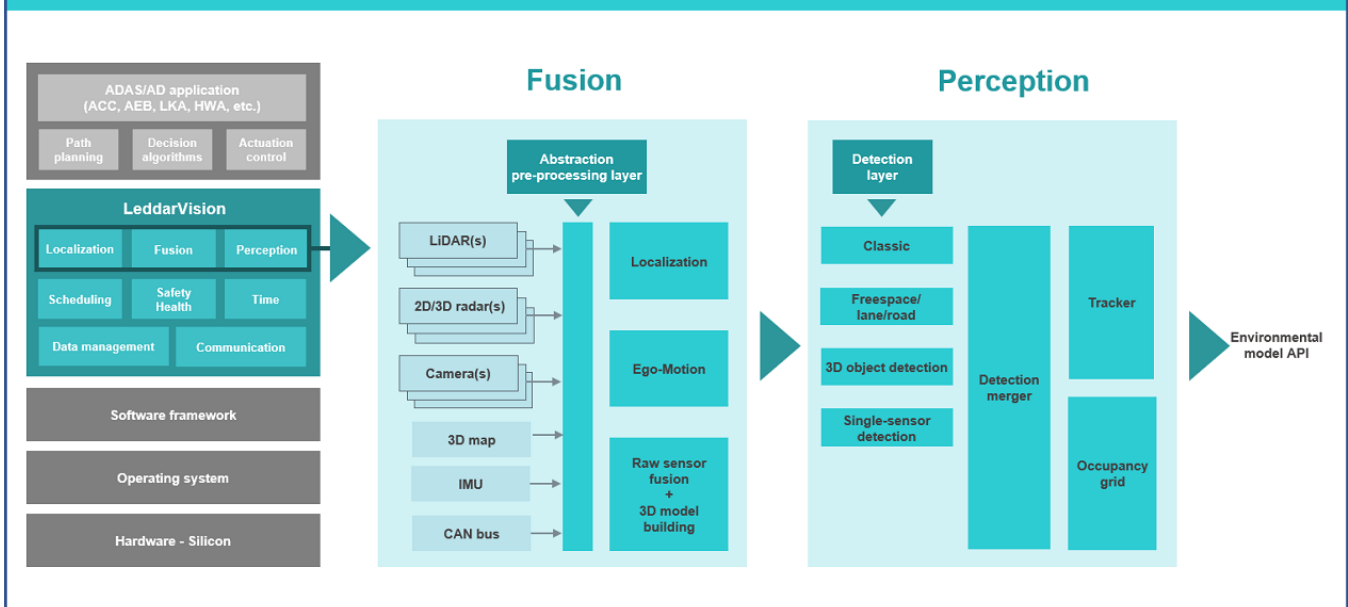
**A comprehensive, unified and modular environmental model**

- ✓ 3D object detection
- ✓ Object classification
- ✓ Unidentified and small object detection
- ✓ 3D object trajectories and tracking
- ✓ Semantic segmentation
- ✓ Lane detection
- ✓ Free-space detection
- ✓ Occupancy grid

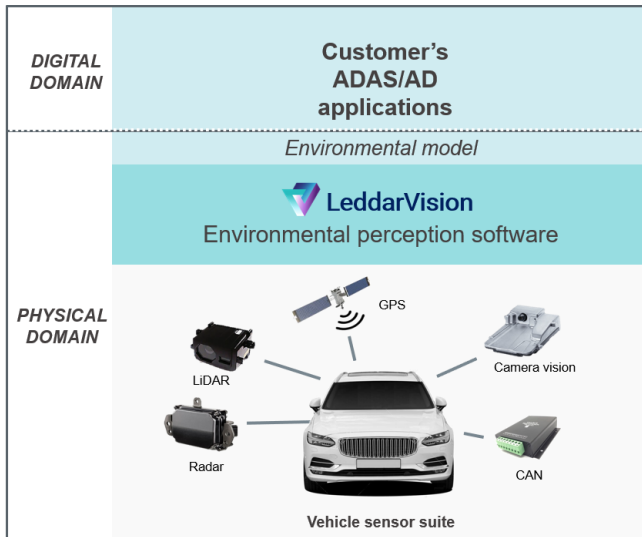
**A single and effective fusion and perception architectural approach that scales from ADAS to HAD**

- ✓ Single hardware-agnostic software architecture
- ✓ Supports multiple ECUs and sensors
- ✓ Adaptable to different ADAS levels
- ✓ Adaptable to any sensor sets
- ✓ Single training set format
- ✓ Single verification process
- ✓ Unified network infrastructure

## LeddarVision Software Stack



## Bringing raw data sensor fusion from theory to reality



### LeddarVision Key Applications

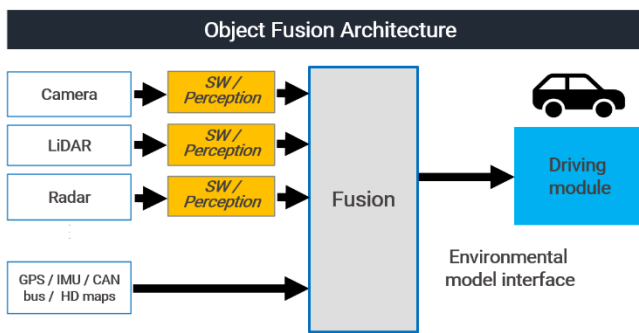
- ✓ L2/L2+ automotive ADAS
- ✓ L3 conditional automated driving
- ✓ L4-5 autonomous vehicles
- ✓ Off-road commercial vehicles

Implementing a complete perception process based on raw data sensor fusion is known to be challenging for the automotive market and for the commercial and industrial vehicle segments.

LeddarTech has strong domain expertise and a complete, demonstratable work process to bring your technology integration from concept to practice.

## Raw Data Sensor Fusion Outperforms Object-Level Fusion

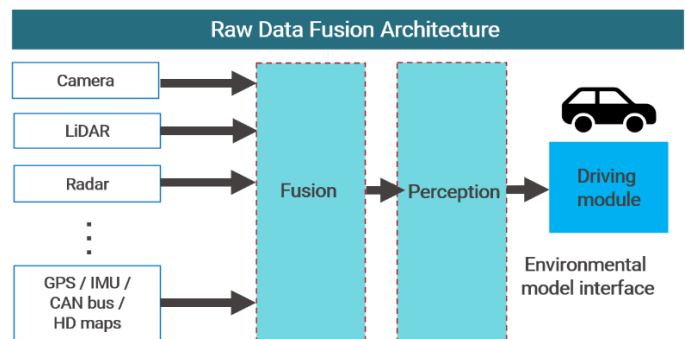
Raw-data sensor fusion utilizes information from all sensors for better and more reliable operation. As a result, a raw-data sensor fusion and perception solution provides superior performance, surpassing object-level fusion limitations in adverse scenarios like occluded objects, objects separation, camera/radar false alarms, blinding light (sun, tunnel) or distance/heading estimation.



Each sensor detects and classifies objects. Sensors' decisions are then fused. Raw information from the sensors is lost.



- Increased missed detections and false positives.
- Conflicting sensor output and false alarms require complex heuristics.
- Higher-cost sensors and higher efforts required for modifying sensors.



Raw data from sensors is first fused together. Detection and classification algorithms then run on the fused model.

Decision is based on all sensors' input.



- Sensors complement each other for better detection and less false positives.
- Conflicting and degraded sensor output is inherently solved, with built-in redundancy and more reliable operation.
- Hardware/software decoupling for cost savings.

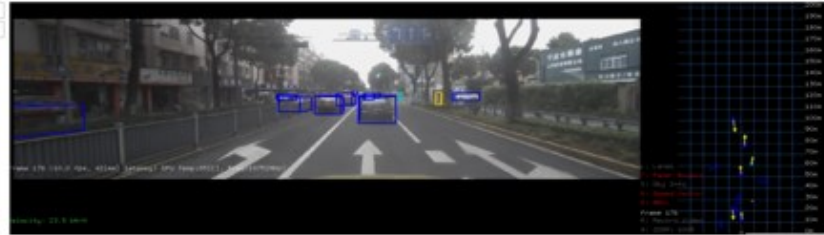


## Support Multiple Sensor Configurations From a Single Architecture

Radar /  
Camera  
Fusion  
(RCF)



LiDAR/  
Camera  
Fusion  
(LCF)



LiDAR/  
Radar/  
Camera  
Fusion  
(LRCF)



**LeeddarVision Demo Kit with comprehensive sensor suite available today!**

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