LeddarTech®

DEMYSTIFYING LIDAR TECHNOLOGY AND BUSINESS MODELS

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## DVN conference on LiDAR

NOV. 20, 2018

IN TODAY'S PRESENTATION

## What is a LiDAR

- Different types of LiDAR configurations
- Levels of automation and LiDAR suitability

## LeddarTech's Technology and Platform Offering

- What is the LeddarEngine
- Different LiDAR supply chain models
- Leddar Development Platform

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## LEDDAR BLOCK DIAGRAM

### BLOCK DIAGRAM

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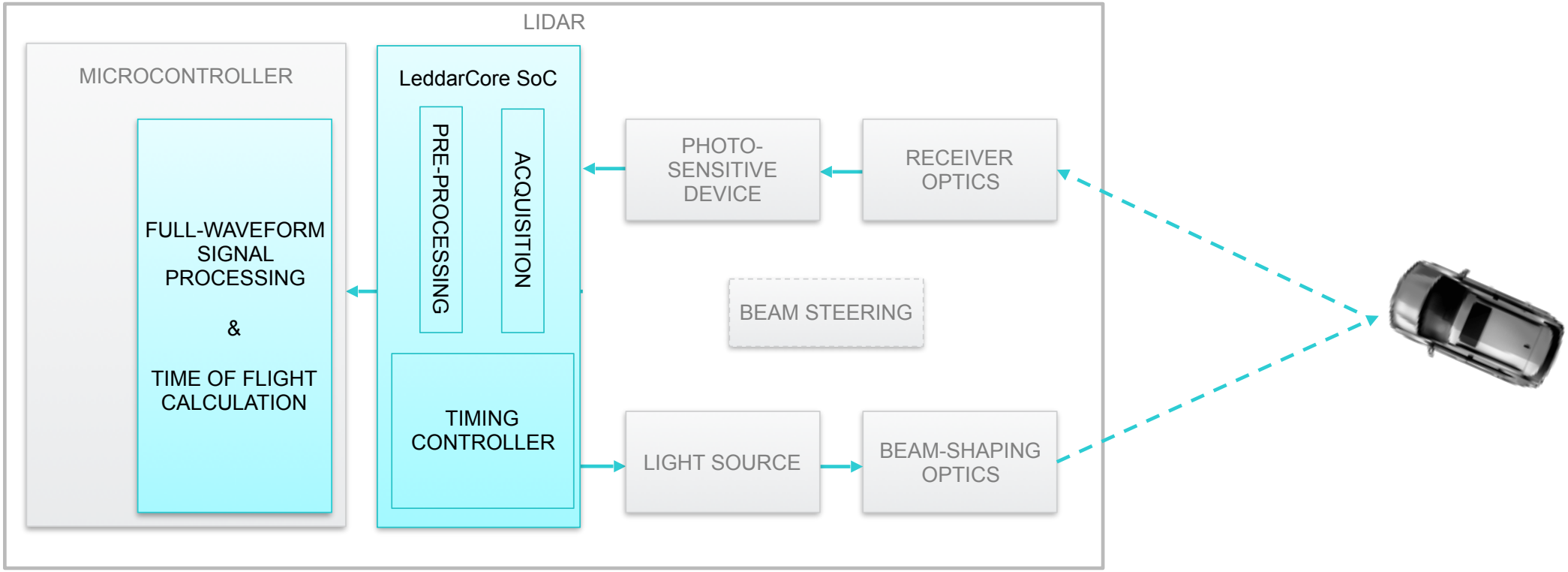
Leddar® ECOSYSTEM



## SSL VS MECHANICAL

### PROS / CONS

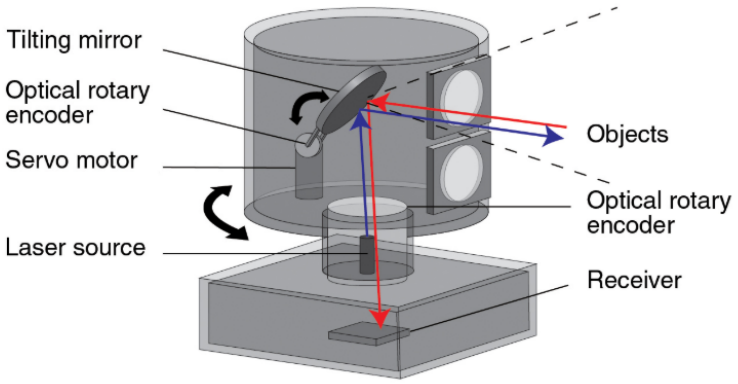
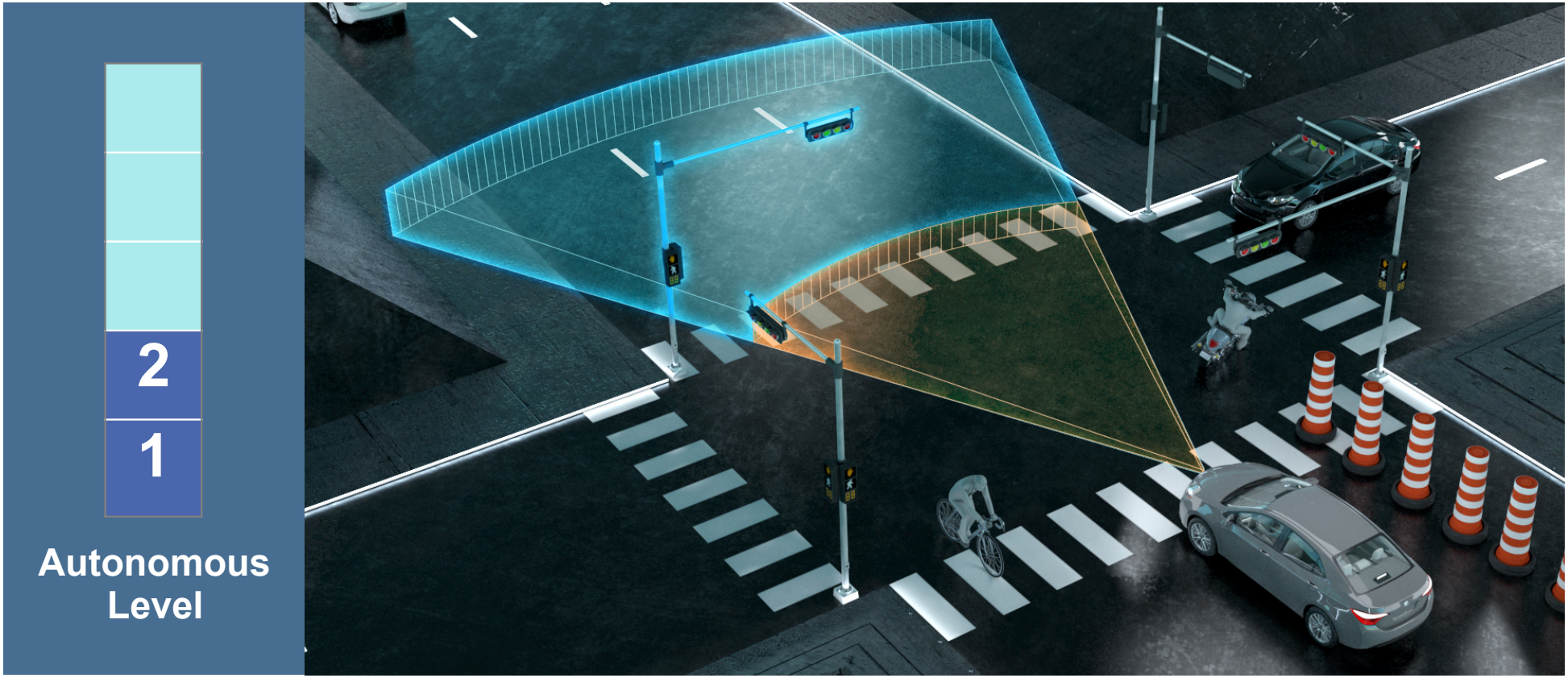


Image Source: https://www.renishaw.com/en/optical-encoders-and-lidar-scanning--39244

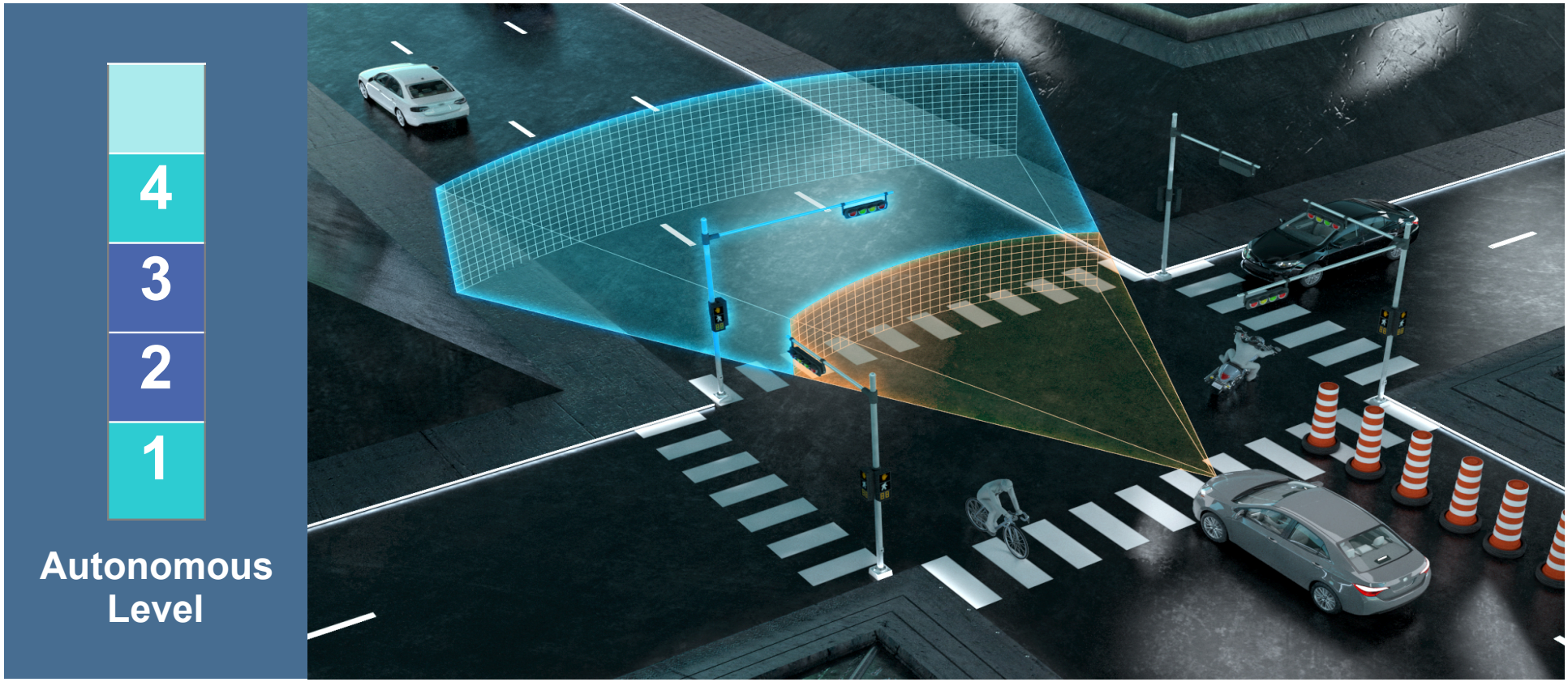
# LIDAR OVERVIEW: DIFFERENT TYPES OF LIDARS

## Solid-State 2D Flash LiDAR



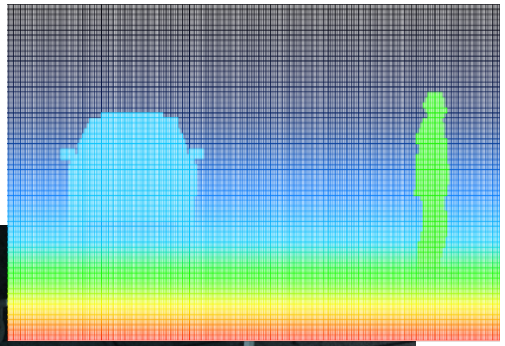
# LIDAR OVERVIEW: DIFFERENT TYPES OF LIDARS

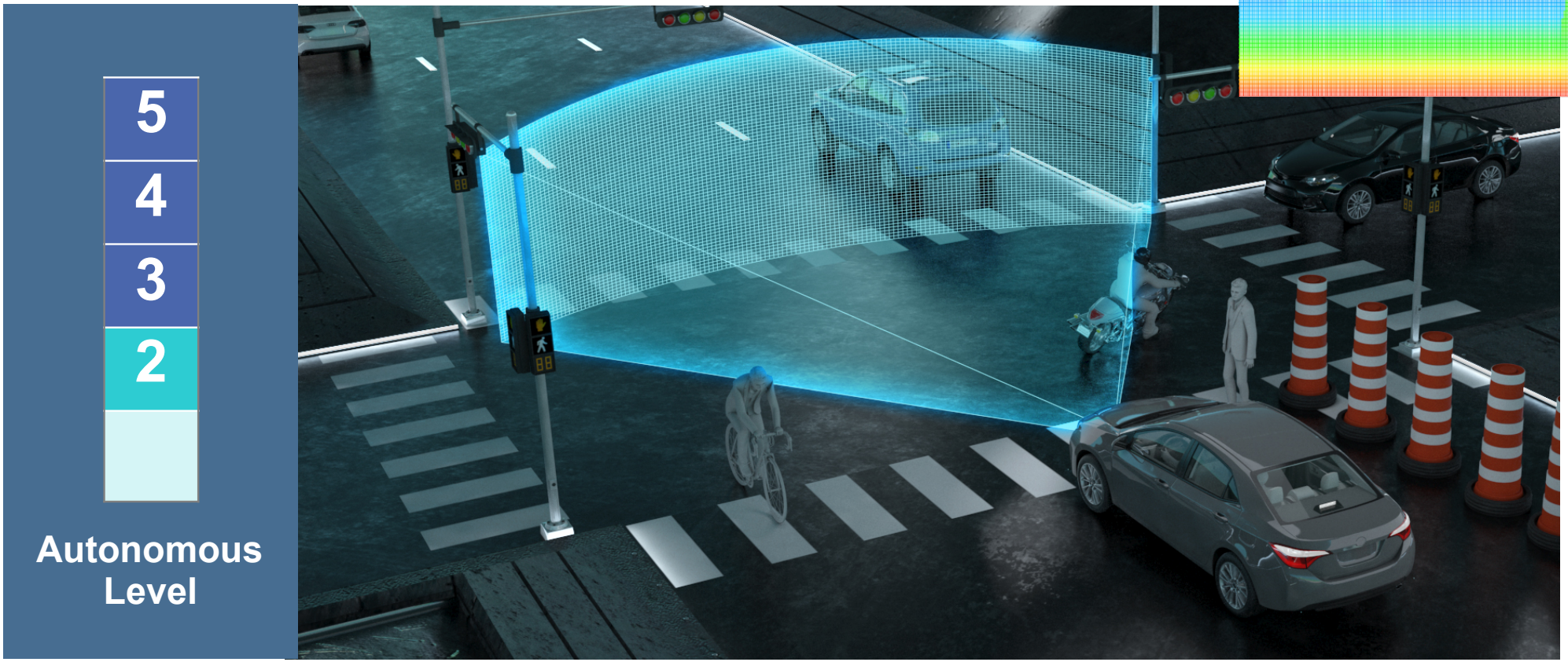
## Solid-State 3D Flash LiDAR



# LIDAR OVERVIEW: DIFFERENT TYPES OF LIDARS

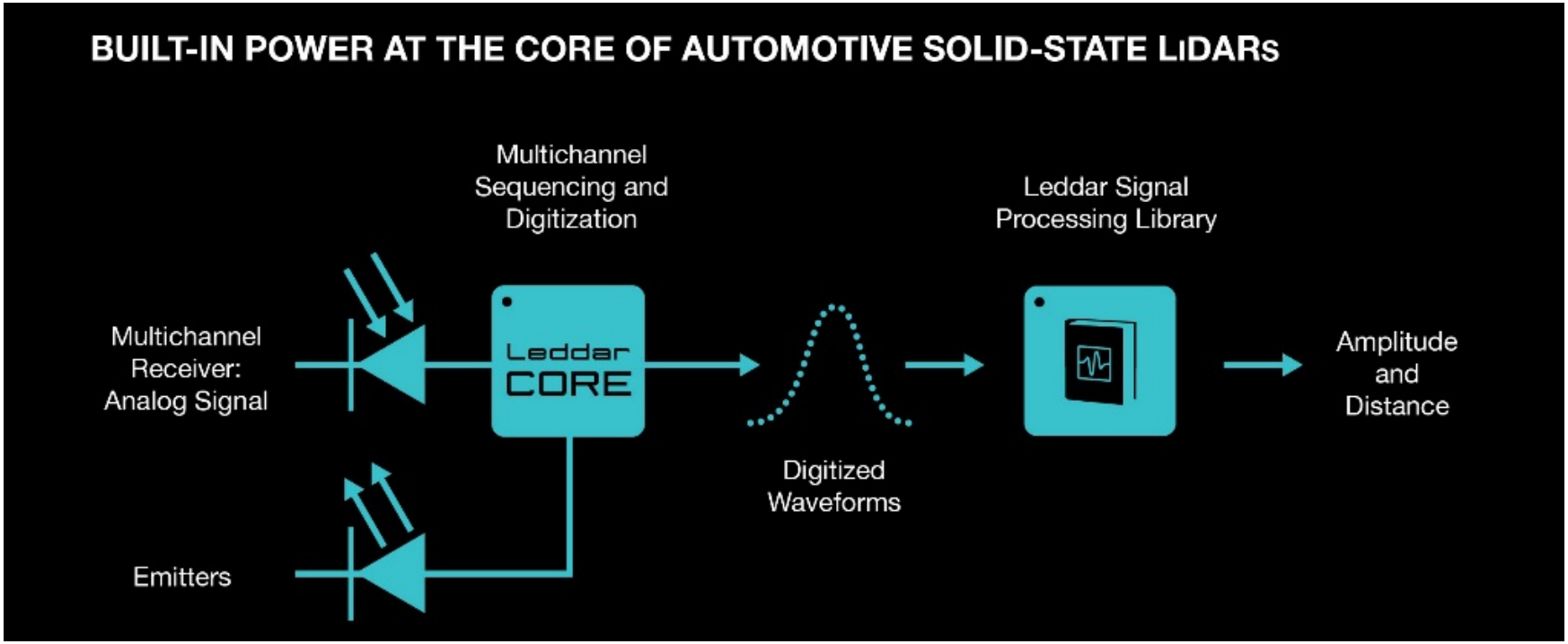
## Solid-State Scanning LiDAR (Hybrid Flash with MEMS)





# TECHNOLOGY OVERVIEW

## LEDDAR TECHNOLOGY—SOLVING COST AND RANGE CHALLENGES




Leddar-patented signal acquisition and processing generates a **cleaner signal** that enables **lower detection thresholds** for significantly **increased range and sensitivity** over other solid-state LiDAR (SSL) methods

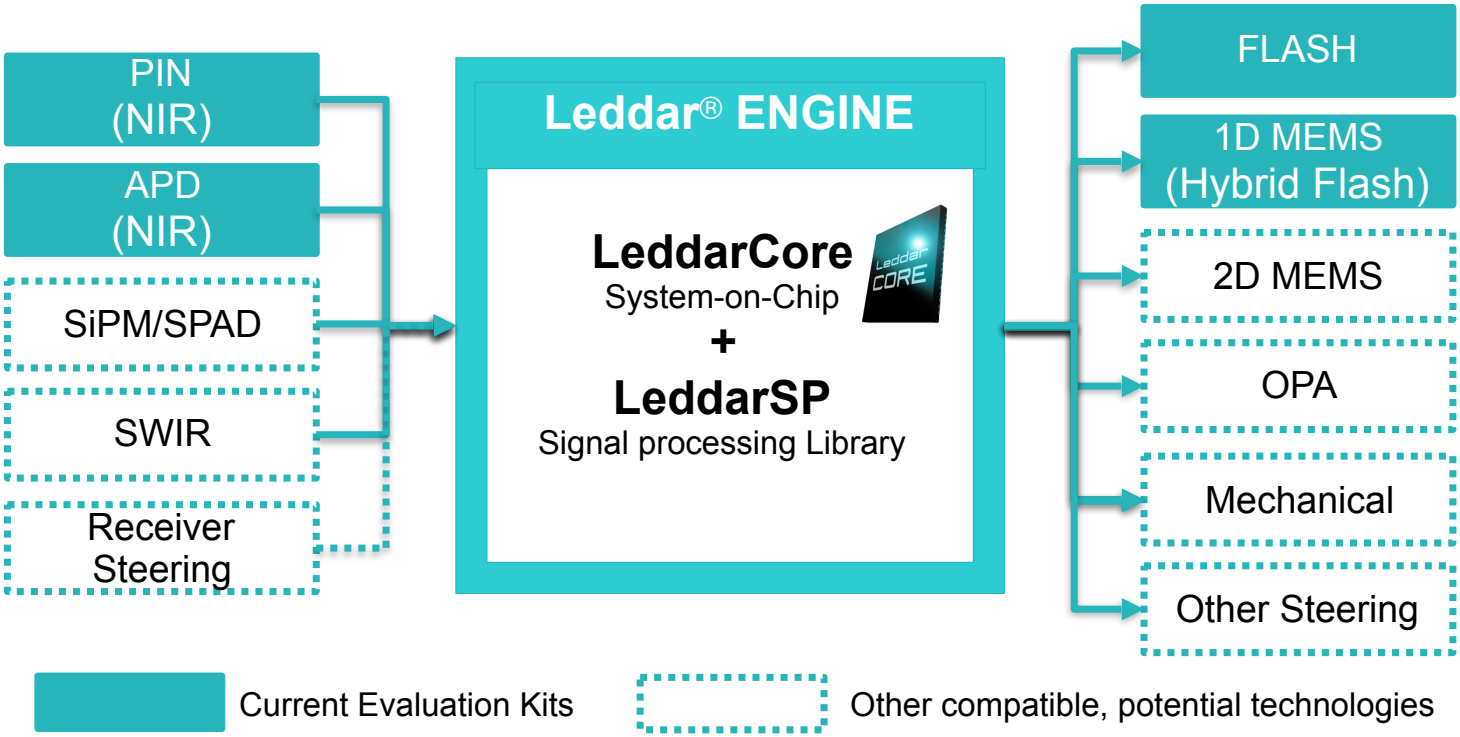
Allows SSL designs that use **lower-cost components** while meeting performance requirements (e.g., 905nm, Silicon-based).

# TECHNOLOGY OVERVIEW

## LEDDAR TECHNOLOGY—SOLVING COST AND RANGE CHALLENGES

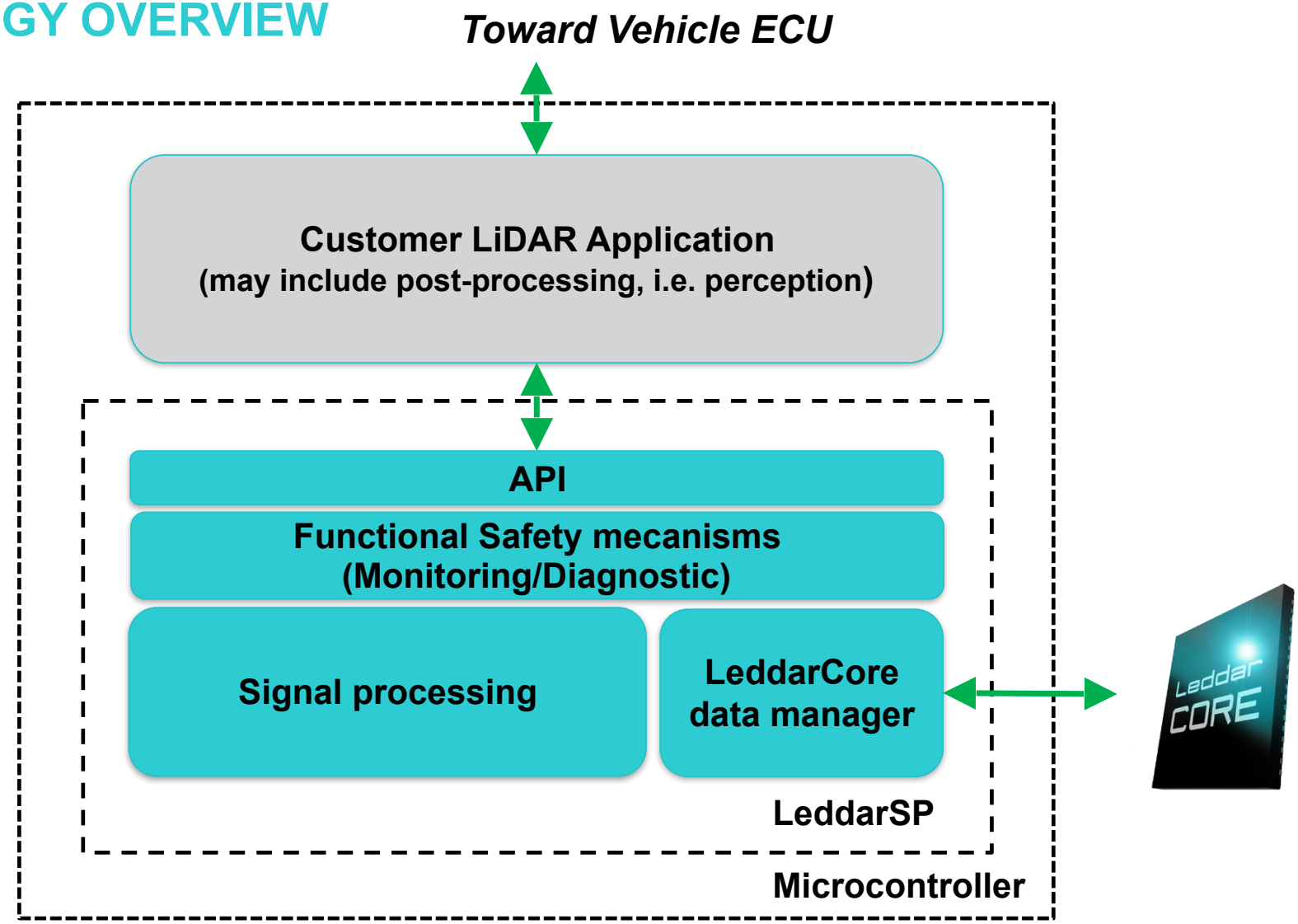
- Rather than working directly on an analog signal, Leddar samples the receive echo for the complete detection range of sensor
- Through patented methods, Leddar iteratively expands the sampling rate and resolution of this sampled signal, analyzes resulting discrete-time signal and recovers distance for every object utilizing advanced software algorithms

# TECHNOLOGY OVERVIEW: LeddarEngine



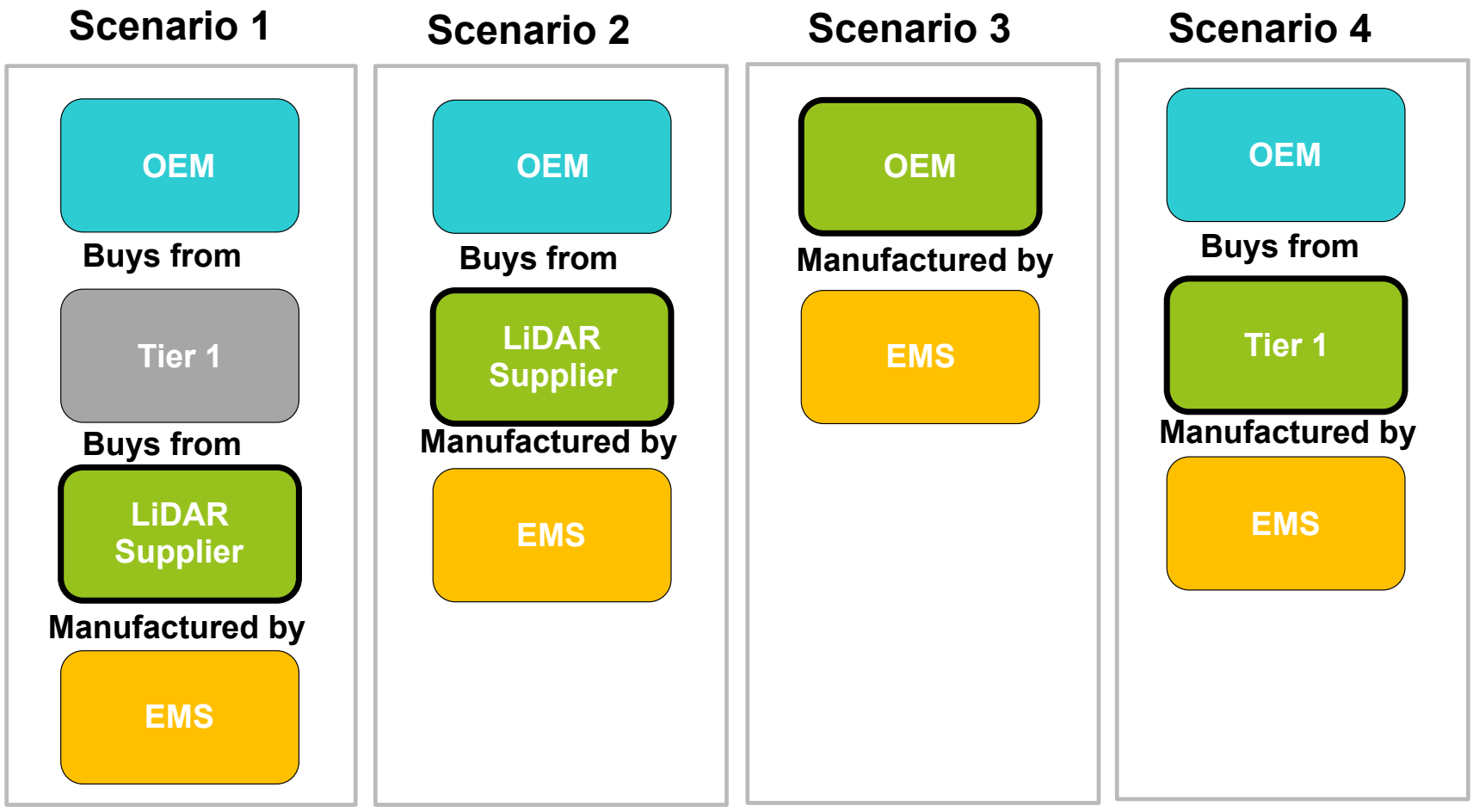

- **Agnostic to emitter, detector and steering/scanning technology**
- **Fastest and safest path to market (2020-2025) with NIR and Flash/MEMS steering**
- **Roadmap to increase performance and reduce costs via higher integration into SoC**
- **Optimal flexibility for the evolution of LiDAR solutions**

# TECHNOLOGY OVERVIEW
# LEDDARSP



# SUPPLY CHAIN BUSINESS MODELS

= Where the Most Value Resides




**The LiDAR Development Platform Supports All The Business Models**

## LEDDAR PLATFORM OVERVIEW

### SoC

LeddarCore™ Systems-on-Chip

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### Software

Digital Signal Processing

LeddarSP™

**LeddarEngine**

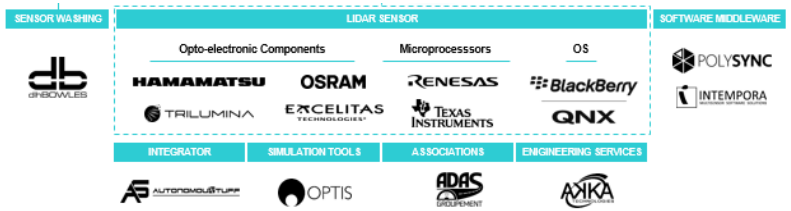
**Design Kit**

LiDAR Solution Architecture + Design Files & Documentation + Evaluation Kit & Development Tools

### Service + Support + Training

LeddarTech™ ENGINEERING SERVICES

### Supplier Ecosystem




*Used by various LiDAR Solution Providers*

APTIV · MAGNETI MARELLI · AL AUTOMOTIVE LIGHTING · Valeo (Others – confidential)

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