



ThemeDay **AUTONOMOUS MOBILITY**



2021

TechShow

Around the World. **Mobility.** Our Heartbeat for 150 Years.

Virtual Driving Experience

LiDAR – Next Era Sensor for Autonomous Driving

Today's Subject Matter Experts



Gunnar Juergens

VP and Head of LiDAR
Segment



Jordan Greene

Co-founder, VP of Corporate
Development & Partnerships



Shanvir Dhinsa

FAE Team Lead



LiDAR – Requirement for Safe Automated Driving

Full Range LiDAR Portfolio

Short-range LiDAR



Solid-State 3D Flash LIDAR™

Highlights

- › Patented technology
- › No gaps in image/data; No motion distortion
- › High accuracy object and free space detection

Target application:

Urban, traffic jam, robo-taxis

SOP 2021

L2+
L3



Long-range LiDAR

Strategic cooperation with LiDAR pioneer



MEMS* Scanning LiDAR

Highlights

- › Patented novel advanced MEMS technology
- › Dynamic spatial resolution enabling concurrent far range, high resolution and high sensitivity at minimized power consumption

Target application:

Highway

SOP 2024

L3



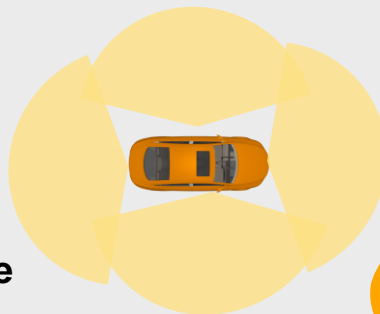
*Micro-Electro-Mechanical System

HFL110 Solid-State 3D Flash LiDAR

SOP 2021

Short Range (50m) Sensor KPIs

- › Automotive grade, solid-state LiDAR
- › IP6k9k robust packaging
- › Wide field of view (120°) for surrounding vehicle
- › High frame rate (25Hz)
- › Instant point cloud data capture
- › Contiguous pixels
- › Degraded visual environments operation
- › Premium OEM launch
- › Non-automotive, autonomous applications engagements

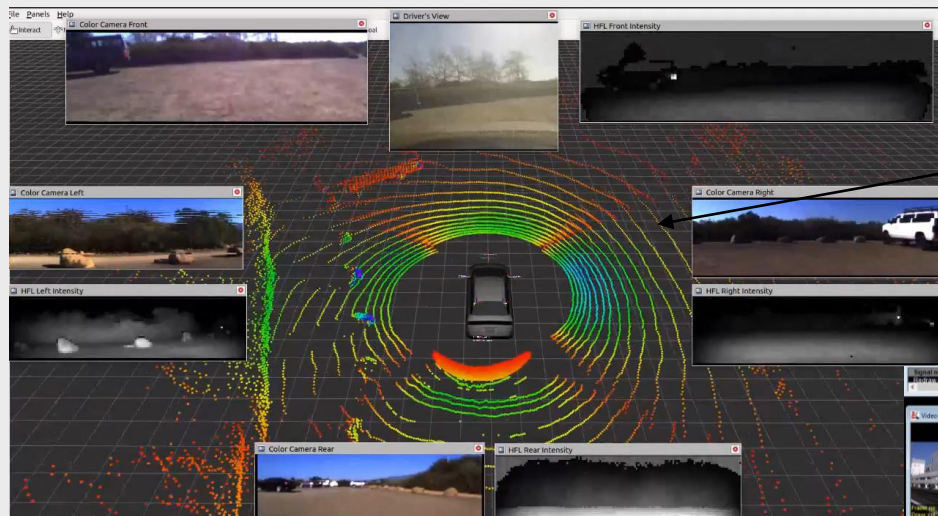


HFL110 Short-range LiDAR

1st to SOP for High-resolution Automotive Grade LiDAR



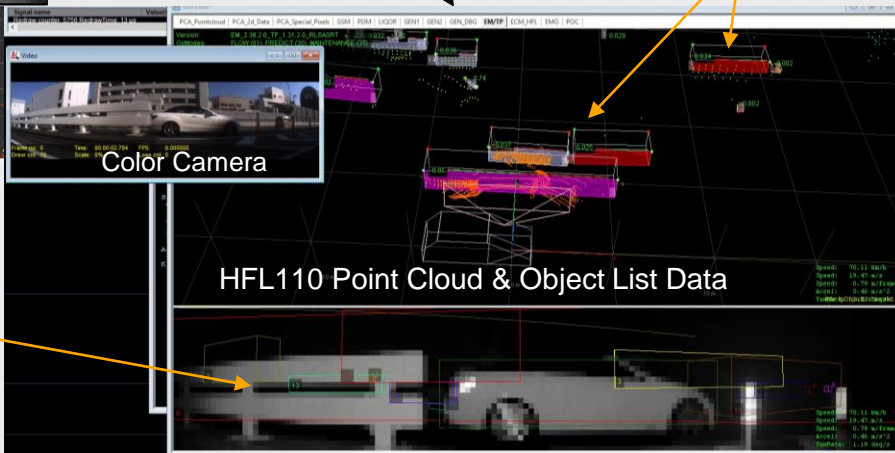
Existing Product!



HFL Solid-state Surround

Point Cloud

Objects
(List)



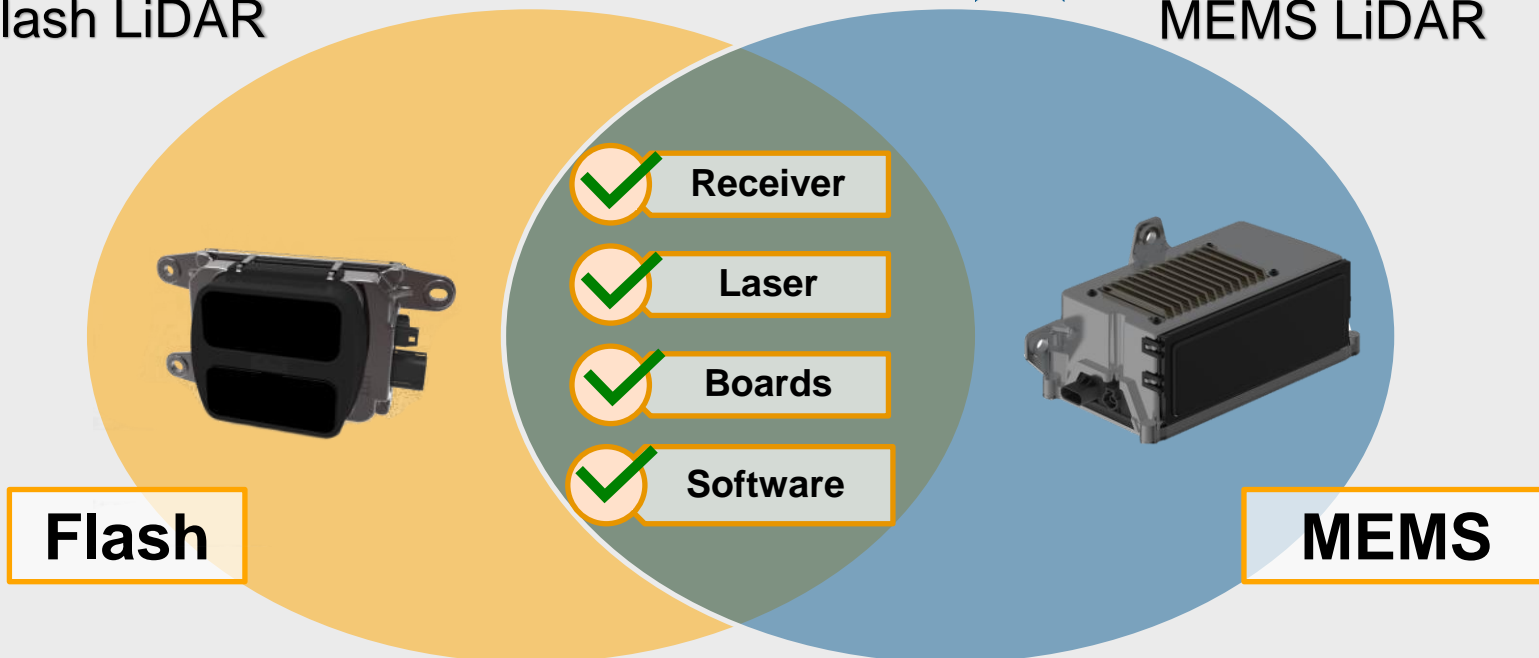
Intensity Video

LiDAR Collaboration

Pattern for Success

Series Production
Flash LiDAR

 **AEEYE** - based
MEMS LiDAR



HFL → HRL LiDAR Synergies

HRL131 Long-range, High Performance LiDAR

Use Cases



Ground obstacles



Pedestrians



Lateral entry of vehicles



Complex/dense traffic



Lane markings



Adverse weather

HRL 131 Long-range LiDAR

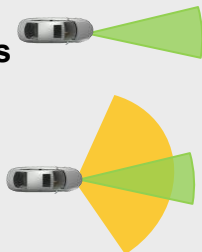
High performance, Intelligent Sensor

Ultra-Long-range, High Performance Scanning LiDAR

Automotive and Commercial Vehicle Applications

“Acquires” Objects at Long Ranges

- › Overpasses and signage at 1000m
- › Vehicles at 300m+
- › Tires, bricks, debris, etc. at 160m+



Intelligent Software & Firmware

- › Software configurable to customize OEM's Use Cases and mounting locations
- › Instantaneous resolution improving detection probability and reducing false positive rate

Incorporated bi-static architecture provides flexible, low-power design for integration ease:

- › Flexible mounting location options: Grill, windshield, roof



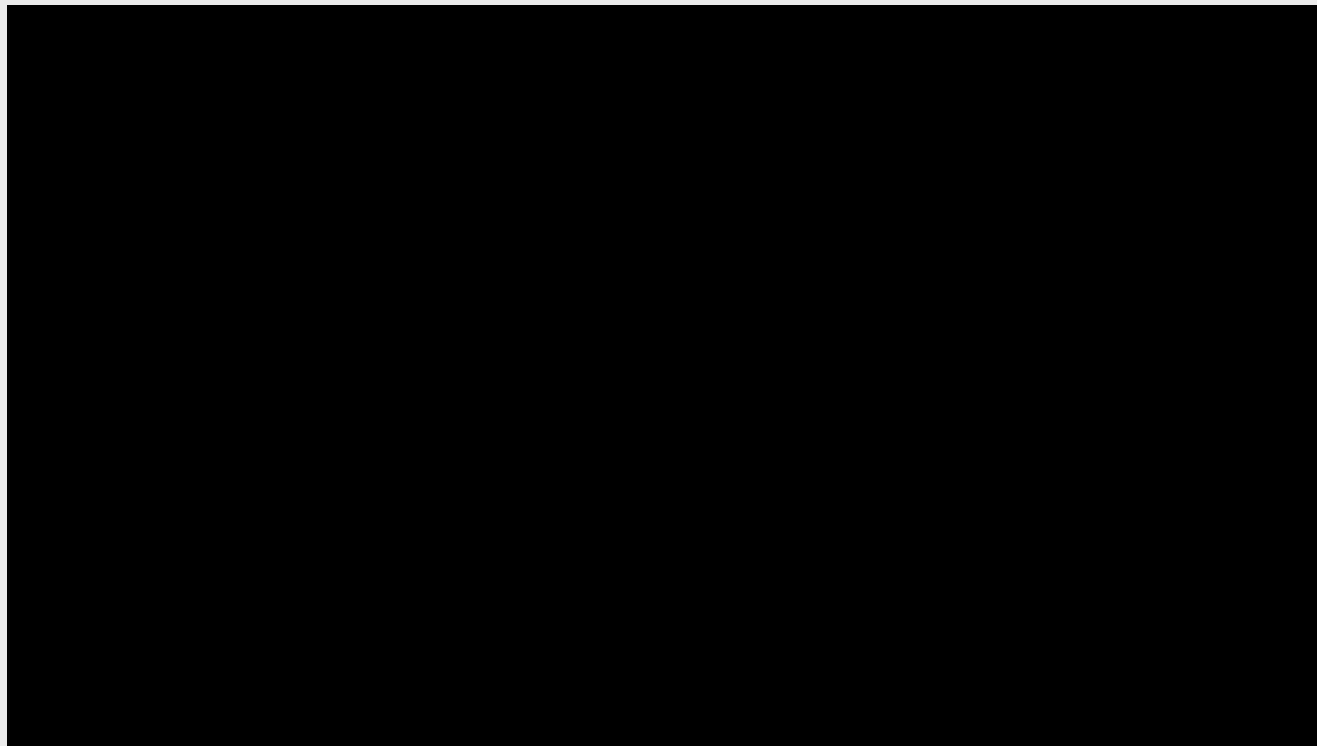
SOP 2024

L3/L4



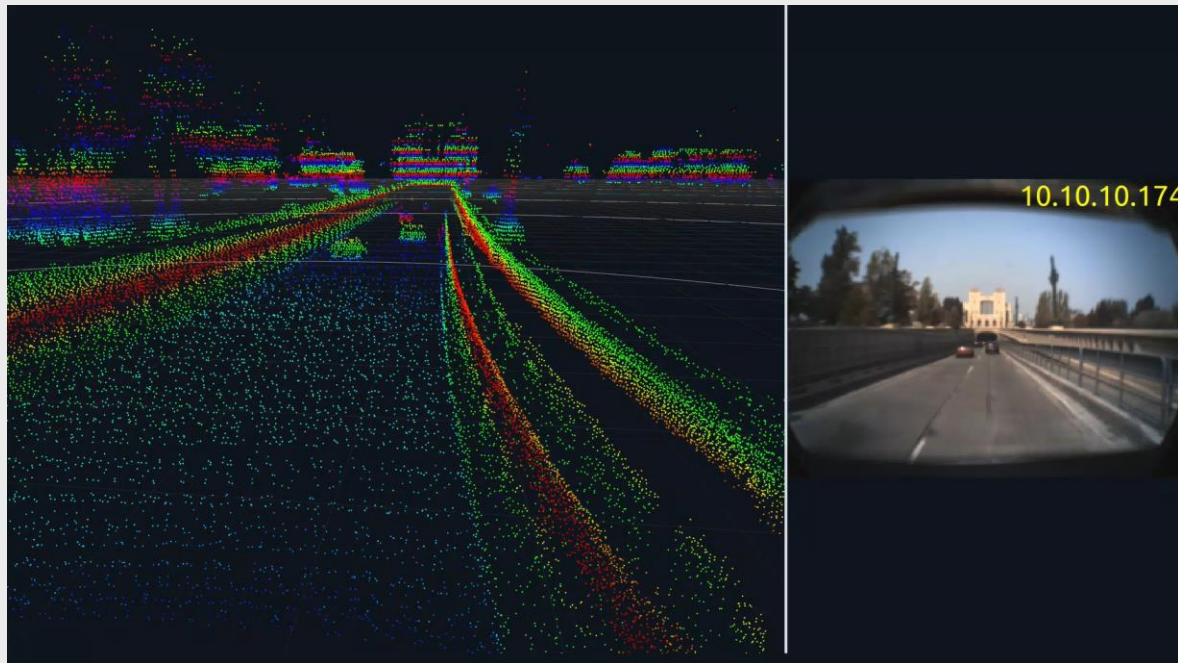
HRL131 Sample Study

Long-range Driving Demonstration – 1,000-meter detection

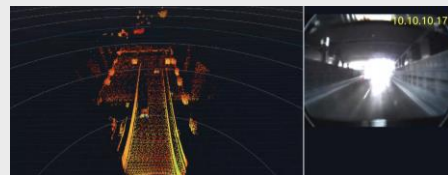


HRL131 Navigating Complex Environments

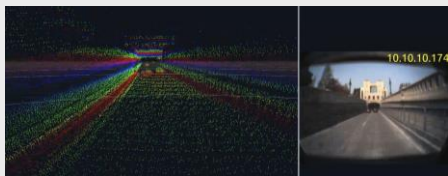
High Performance LiDAR – The Final Piece of the Puzzle



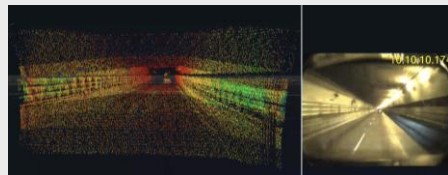
Sunlight Saturation: Camera limitation



Under-drive-ability: RADAR limitation



Multipath (reflector): RADAR limitation



Live Demonstration



Enabling the Next Levels of Autonomy

Continental-AEye HRL131



Leveraging the **flexibility** of AEye's **long range, high performance LiDAR** to address OEM use cases

Carrying over **automotive expertise** and **HFL learnings** for the Continental-AEye HRL product to expand Continental's LiDAR portfolio

Strategic cooperation accelerates delivery of automotive grade, MEMS-based LiDAR solutions for **Safe, Autonomous Driving**

Tier 1 ADAS strength combined with world-class innovation ensures timely development and **path to mass production**

Enabling **L3-L5 ADAS / AD** functionality for **automotive and commercial vehicles**

Delivering the HRL131 with a **start of production in 2024**

THANK YOU!