
# First Quarter 2021 Results

May 13, 2021

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**Forward looking statements**

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# Legal Disclaimer (Cont’d)

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# Agenda

## First Quarter 2021 Highlights

## Company and Technology Overview

## Business Updates and 2021 Objectives

## First Quarter 2021 Financial Results

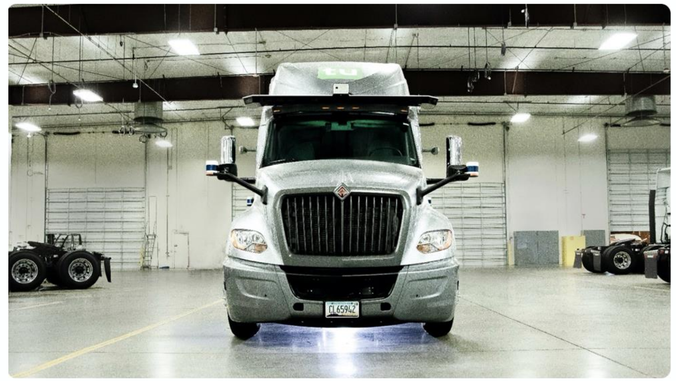
# First Quarter 2021 Highlights

## Successful Public Company Listing and Capital Raise

- Completed business combination with InterPrivate Acquisition Corp.
- Now trading on NYSE under ticker “AEVA”
- Net proceeds of $513m

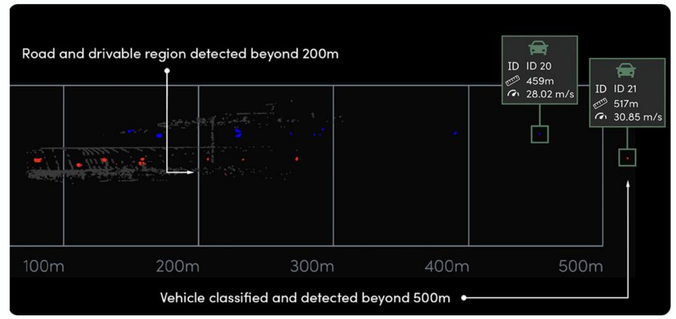

## Announced Partnerships with Industry Leaders

- Collaboration with TuSimple to deploy Aeva’s 4D LiDAR for self-driving trucking
- Collaboration with Tier-1 supplier Denso for consumer vehicle market



## Advancing Safety and Performance with Ultra Long Range

- Industry-leading detection range of beyond 500m
- Accomplished on current hardware, highlighting continuous improvements through proprietary FMCW technology and OTA updates




## Expanded Leadership Team to Commercialize Aeva’s 4D LiDAR

- Key executive hires with deep expertise in supply chain and advanced technologies
- Formed Advisory Board with veteran executives from Apple and Volkswagen

# Aeva Leadership

## Soroush Salehian

*CEO and Co-Founder*

- Head of Sensing Program Management at Apple SPG
- Led System Program Management for Apple Watch 1
- Founder at BlueLibris (Acq'd) - wearable health sensing Product
- Stanford Mechatronics

## Mina Rezk

*CTO and Co-Founder*

- Head of Optical Sensing - Apple SPG
- Led World's 1st Commercial Precision LiDAR at Nikon
- 17 years Developing Sensor Fusion Systems for Autos, Aero
- 25+ Patents on sensing technology design and commercialization

## Saurabh Sinha

*CFO*

- CFO / SVP & Chief Accounting Officer at JUUL Labs
- Corporate Controller & FP&A at InvenSense
- Sr. Director of Finance and Accounting at Symmetricom
- The Wharton School

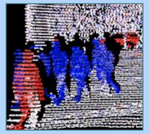
# Aeva's Rapid Pace of Breakthrough Technology To Market

## BUSINESS

**2017**

**Founded**
By Soroush Salehian and Mina Rezk

**2018**



**First 4D LiDAR Sample**
Initial Prototype Data

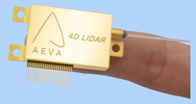
**Released A-Series 4D LiDAR to Key Partners**

**Aeva A-Series 4D LiDAR**
First 4D LiDAR with Long Range and Velocity

**2019**

Audi

**Revealed Audi AID Partnership**




**Aeva's 2nd Gen 4D LiDAR on Chip**
All LiDAR Optics Fully integrated on Silicon Photonics

**2020**

VOLKSWAGEN

**Revealed Investment from VW Porsche SE**

**Announced First 4D LiDAR Fully Integrated on Chip**

**Revealed ZF Production Collaboration** to bring first 4D LiDAR to auto mass scale

**Aeries Deployment**
120˚ Field of View
Long Range

**2021**

NYSE

**Closed business combination,** listing as "AEVA" and $513m in net proceeds

DENSO tusimple

**Revealed 2 Major Collaboration:**
**Denso** - 4D LiDAR for auto mass market
**TuSimple** – 4D LiDAR for self-driving trucks


**Ultra Long-Range 500m Detection**
Achieved with software updates on existing hardware

## TECHNOLOGY

## Key Partners and Investors

VOLKSWAGEN · ZF · DENSO · tusimple · Confidential · LUX+ · Canaan PARTNERS · Adage Capital Management · Sylebra Capital

# Aeva's Mission: Bring the Next Wave of Perception for All Devices

**Singular Focus to Deliver the Best Perception Solution**

- Long-term view on the end-state of technology, not what's available today
- Breakthrough FMCW 4D LiDAR fundamentally changes sensing and perception paradigm

**Aligned with Highly Capable and Committed Partners**

- Strategic focus on industry leaders with capability to bring best-in-class technology to large scale
- Shared vision to advance new technology to market

**4D LiDAR on Chip Enables Scalability at Affordable Cost**

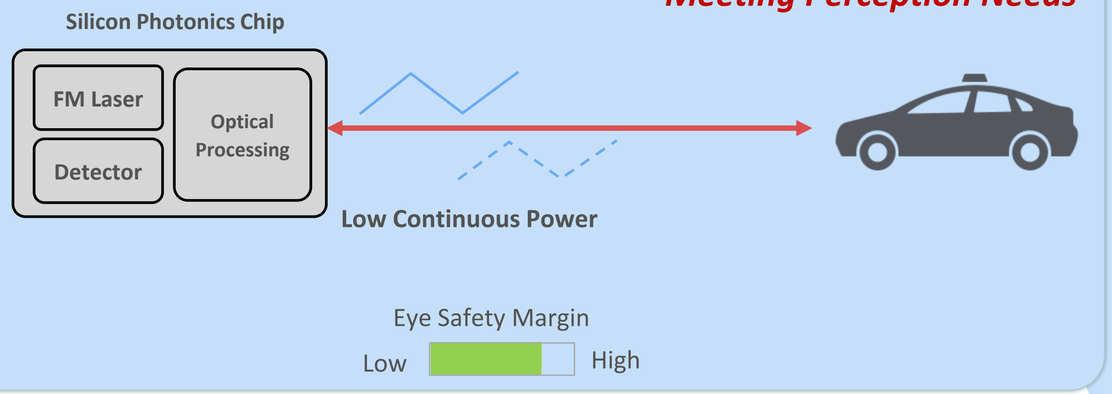
- LiDAR on chip integrates all core components on silicon photonics platform
- Built on proven manufacturing processes

# Differentiated 4D LiDAR

**Aeva 4D LiDAR**

**FMCW[1] / Coherent Detection**

***Aeva is the Only FMCW LiDAR Company Meeting Perception Needs***

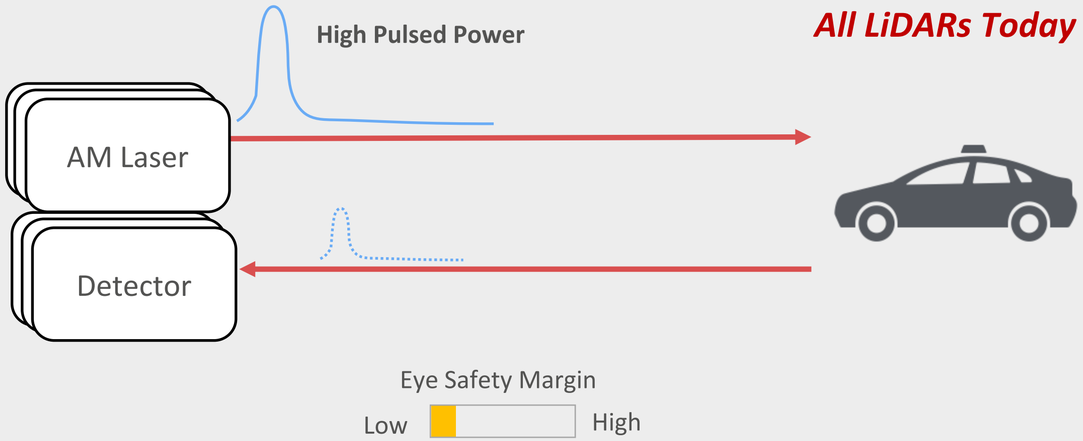



*vs*

**Legacy 3D LiDAR** (Time of Flight)

**AM / Direct Detection**

***All LiDARs Today***




## AEVA 4D LiDAR Superior Capability

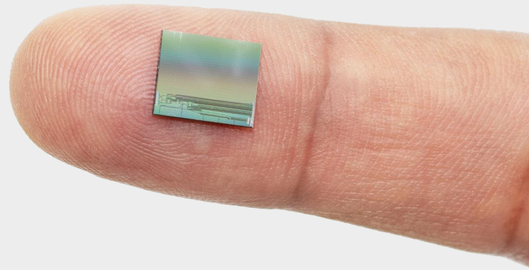
- ✓ **Instant Velocity for every pixel**
  - Provides unprecedented perception capability
- ✓ **Free from all interference (LiDAR or Sun)**
  - Drives mass market adoption
- ✓ **100x higher sensitivity**
  - Enables ultra long range of detection at a fraction of the power
- ✓ **First LiDAR Integrated on Silicon Photonics**
  - Enables large volume scalability at affordable cost

*Only Sensing Solution Built from the Ground Up on Silicon Photonics for Mass Scale Application in Automotive, Consumer Electronics and Beyond*

[1]Frequency Modulated Continuous Wave

# Underpinned by Proprietary Breakthrough Technology

| | |
|---|---|
| **Custom Semiconductor Fiberless Laser** | • Proprietary semiconductor laser based on proven processes<br>• **30x Lower costs vs Legacy 3D LiDAR** |
| **Custom Receiver** | • Proven CMOS based photodetector integrated on Silicon Photonics **without the use of exotic processes** |
| **Silicon Photonics Optical Engine** | • Key LiDAR components **integrated on Silicon Photonics** leveraging proven CMOS processes in telecom |
| **Super Pixel Density Per Beam** | • Unique modulation **breaks legacy 3D LiDAR dependency between max range and pixel density**<br>• Each beam capable of millions of pixels / second |
| **ASIC Processor with Unique DSP** | • **Custom ASIC built from ground up for 4D LiDAR** unique data stream qualified for automotive and beyond<br>• Proprietary DSP software algorithms for long range |
| **Perception Software** | • **Proprietary low power perception software** purpose built on Aeva ASIC to leverage unique raw 4D data<br>• **Multi-year on road testing and data validation** by key customers |



**First 4D LiDAR on Chip**

**Aeva Brings Perception to Broad Applications at Industry Leading Cost**

# Solves Traditional FMCW Limitations

| | 4D LiDAR | Conventional FMCW |
|---|---|---|
| Point density | Millions of pixels per second per beam | Up to ~0.2 million pixels per second per beam |
| Processing time | 5x faster object detection versus legacy 3D LiDAR | Longer than legacy 3D LiDAR (ToF) |
| Laser/transceiver count | Low beam count, fiberless semiconductor laser | Up to 10x more transceiver count needed to achieve required resolution |
| Power | Lower power due to lower transceiver count and core IP | High power due to higher number of transceivers and processing complexity |
| Manufacturing Scale | Proven semiconductor processes in millions / year | Not proven in scale |
| Cost | Affordable cost with visibility on cost trajectory | Higher cost due to optics and electronics complexity |

Meets Requirement  Unproven  Does Not Meet

*Aeva 4D LiDAR Addresses the Limitations of Conventional FMCW and 3D LiDARs*

Sources: Company public data and physics

AEVA

# Business Update and 2021 Objectives

# Aeries Product Update

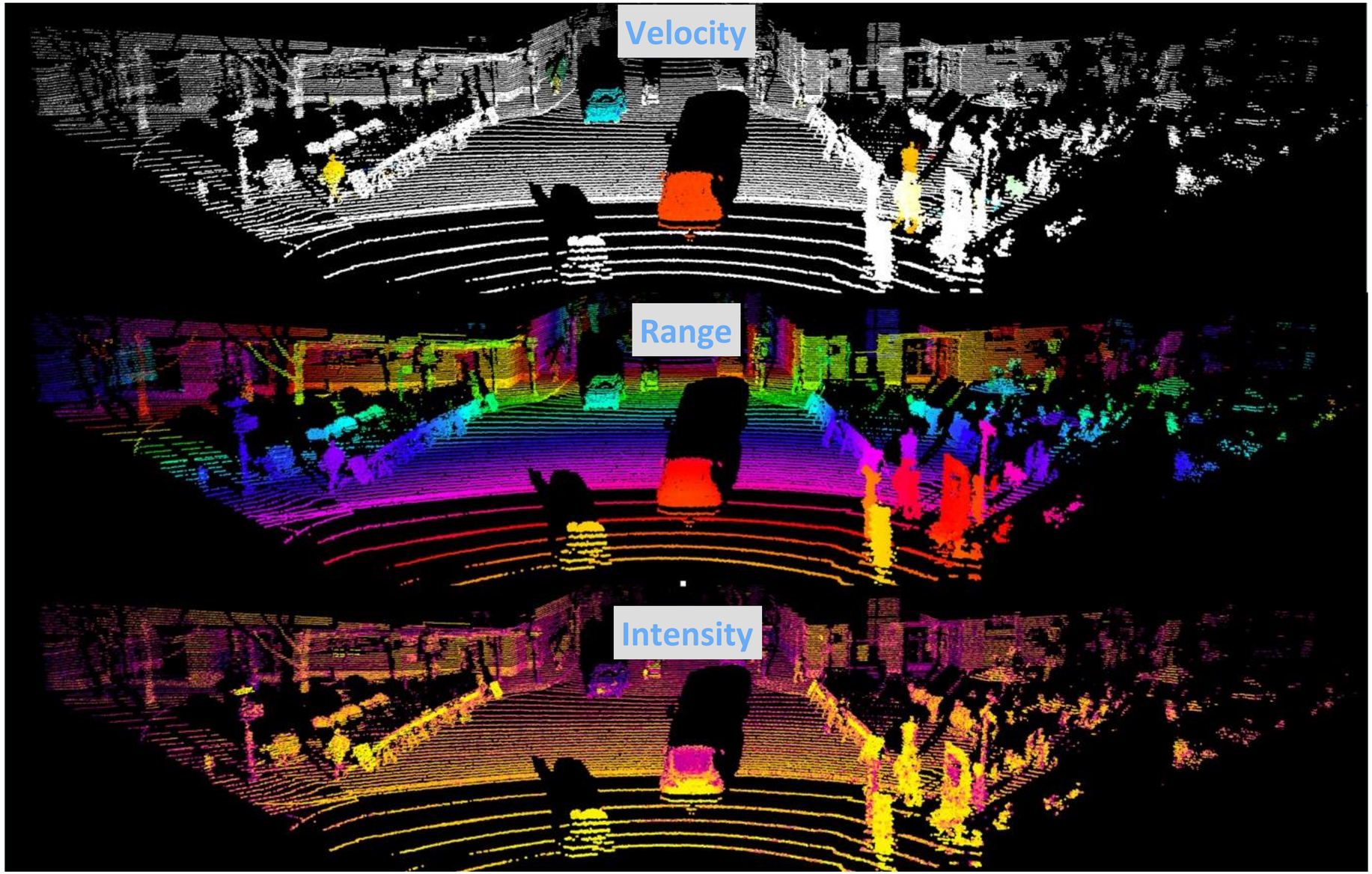
## Aeries – Industry Leading 4D LiDAR Ahead of Schedule and Outperforming Last Generation

- Improved resolution to best-in-class over 350 points/square degree through software updates
- 30% size reduction from previous sample

## Completed Reliability and Compliance Testing

- Temperature step
- Vibration and shock
- Water and dust ingress

# Aeries Product Update



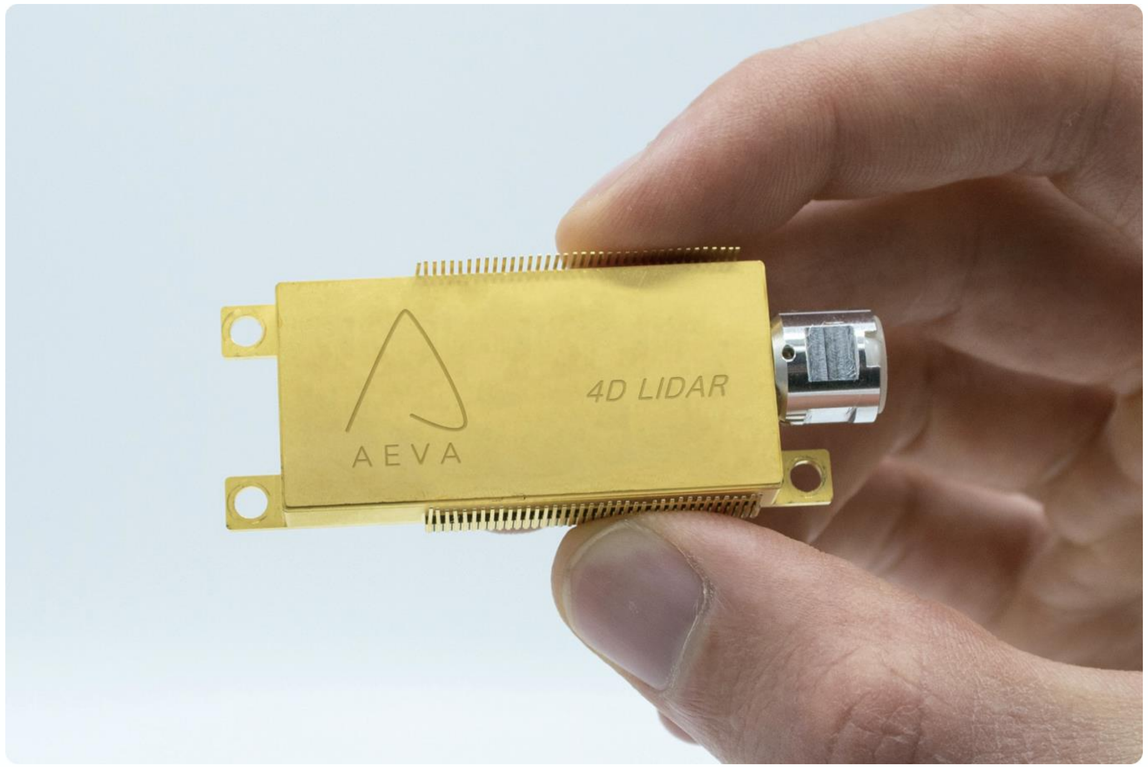
# 4D LiDAR Chip Update

## 3rd Generation LiDAR Chip Module Completed

- One quarter ahead of schedule
- Enables final cost structure and form factor
- Improved reliability by eliminating all fiber optics
- Already being produced at production intent factory

## Completed Initial Reliability Testing

- Temperature step
- Random vibration
- Thermal shock



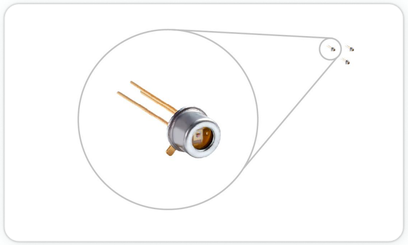
# Aeva 4D LiDAR Integrates All Key Components onto Chip

## Long Range Time-of-Flight LiDAR

Fiber Lasers

High Power, Low
Reliability, High Costs

Avalanche InGaAs Detectors

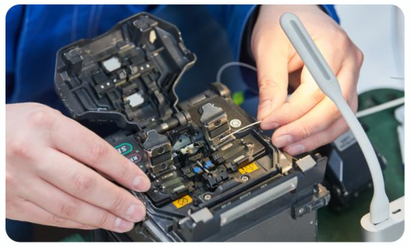


Low Yields
Increased Costs

Multiple Large
Aperture Lens

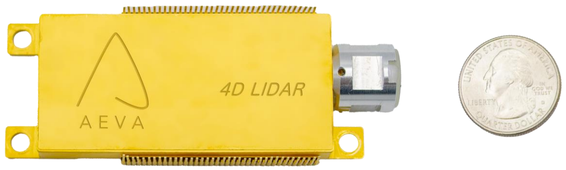
Limits Size
Increased Costs

Manufacturing Assembly



Complex
Manual Labor limited

## Replaced By

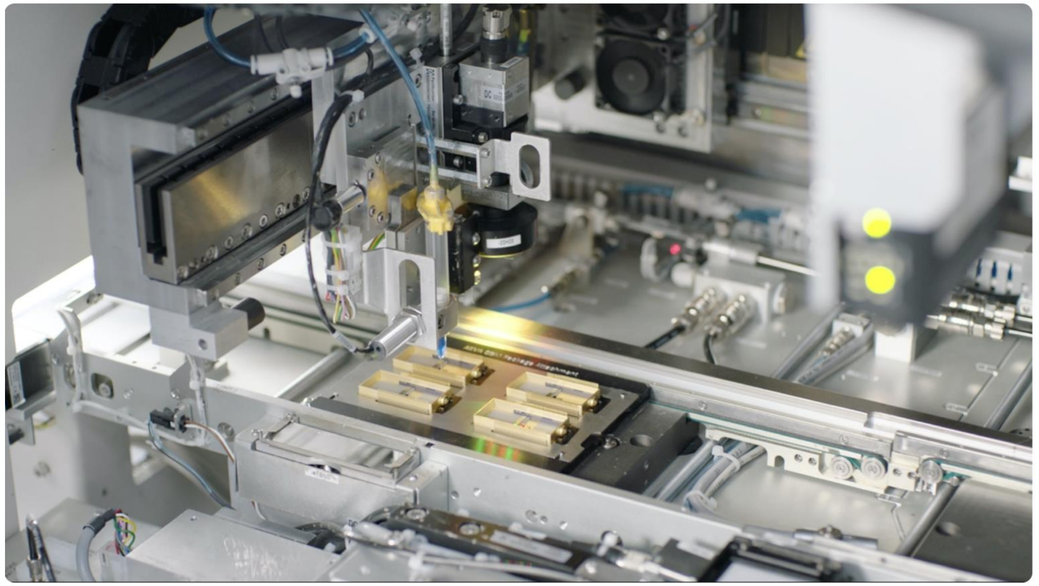


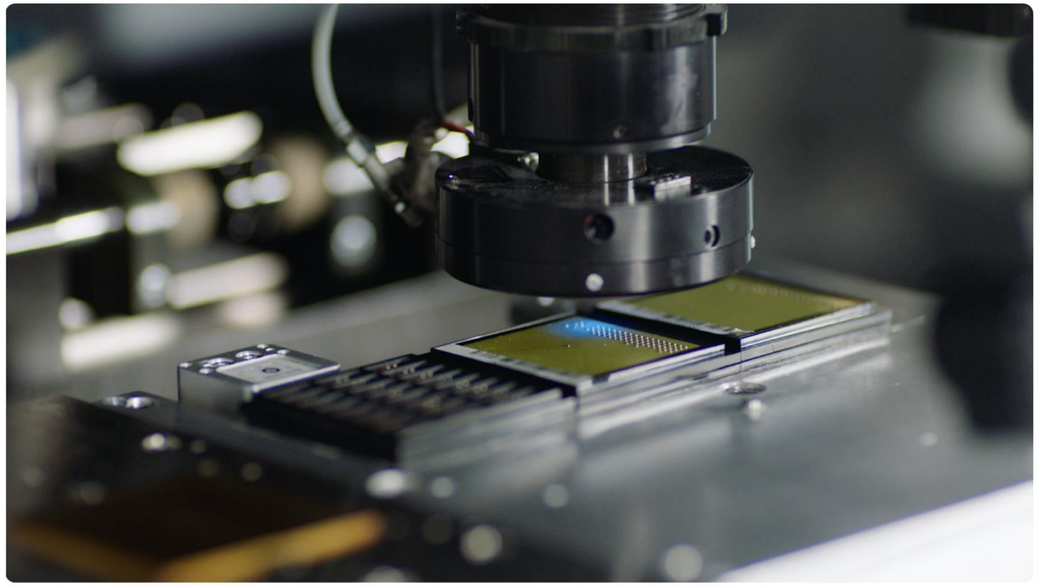

**Only LiDAR to Integrate All Core Components onto Silicon Chip Module**

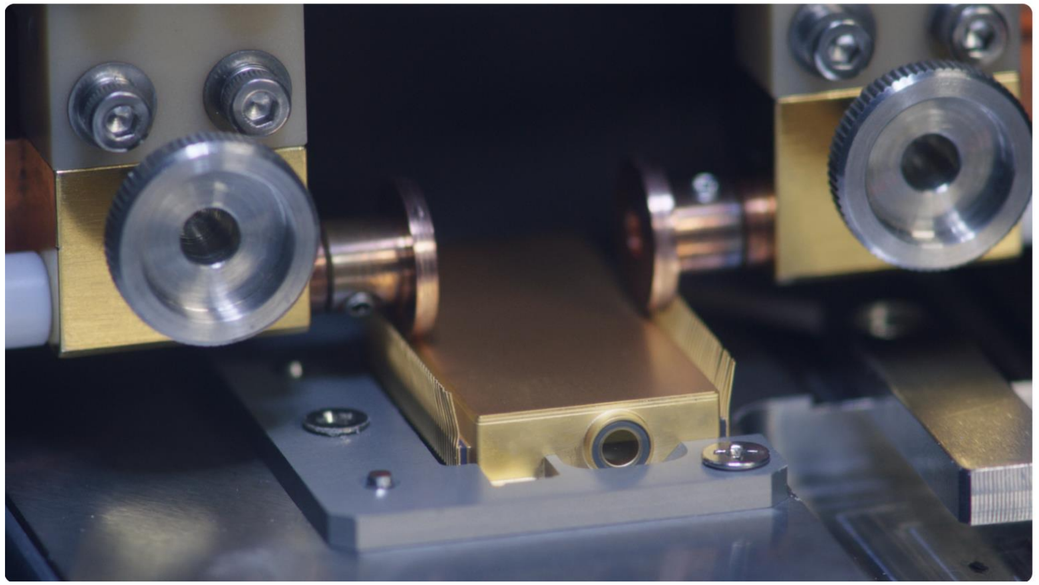
### 4D LiDAR Chip Module

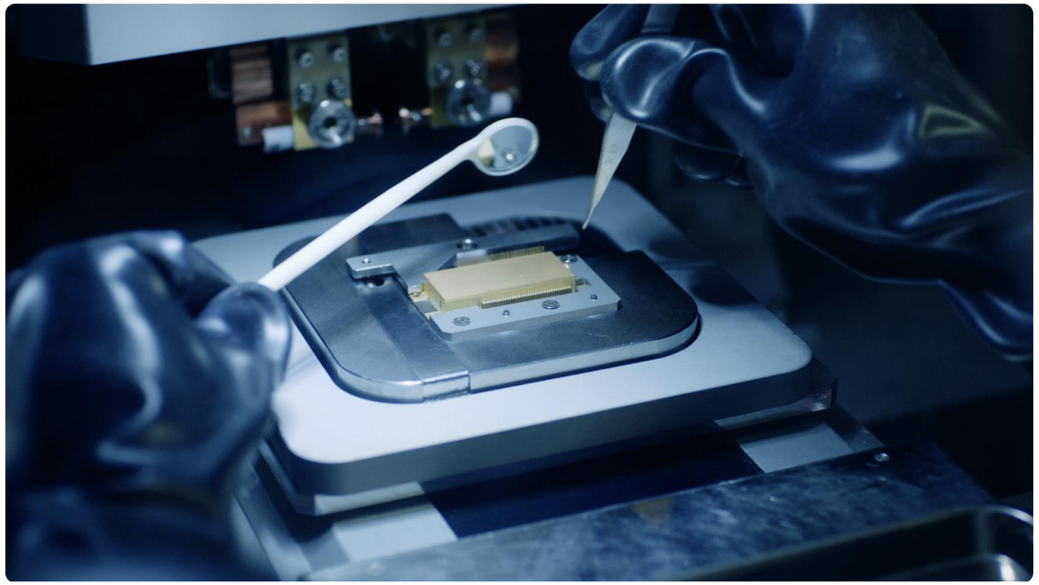
- Low cost, highly reliable laser
- All core components integrated on a silicon photonics chip module
- Small and simple low-cost lens
- Highly automated assembly with high yields

# 4D LiDAR Chip









# Expanding Technology Leadership with Ultra Long Range Detection

## Industry Leading 500m Detection

- Step change in performance enables safer automated driving
- Detection range validated by automotive customers
- Ground and road drivable region beyond 200m

*"We see Aeva's groundbreaking **long range** LiDAR technology as a promising component to autonomous driving system for trucks."*

*Chuck Price, CPO at TuSimple*

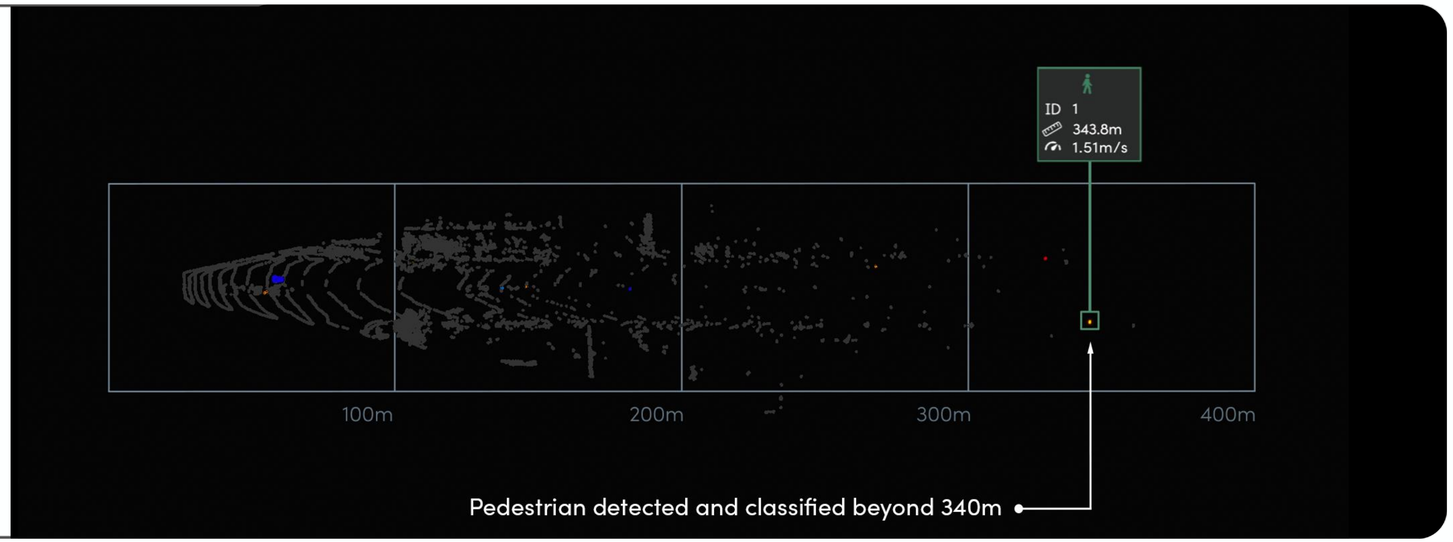
## Driven by Aeva's Proprietary FMCW Technology

- Instant velocity per pixel enables longer distance at higher confidence than legacy ToF
- Simultaneous high resolution and long range capability
- Achieved through software updates on existing hardware

# Expanding Technology Leadership with Ultra Long Range Detection

**350m**

**Pedestrian Detection and Classification**

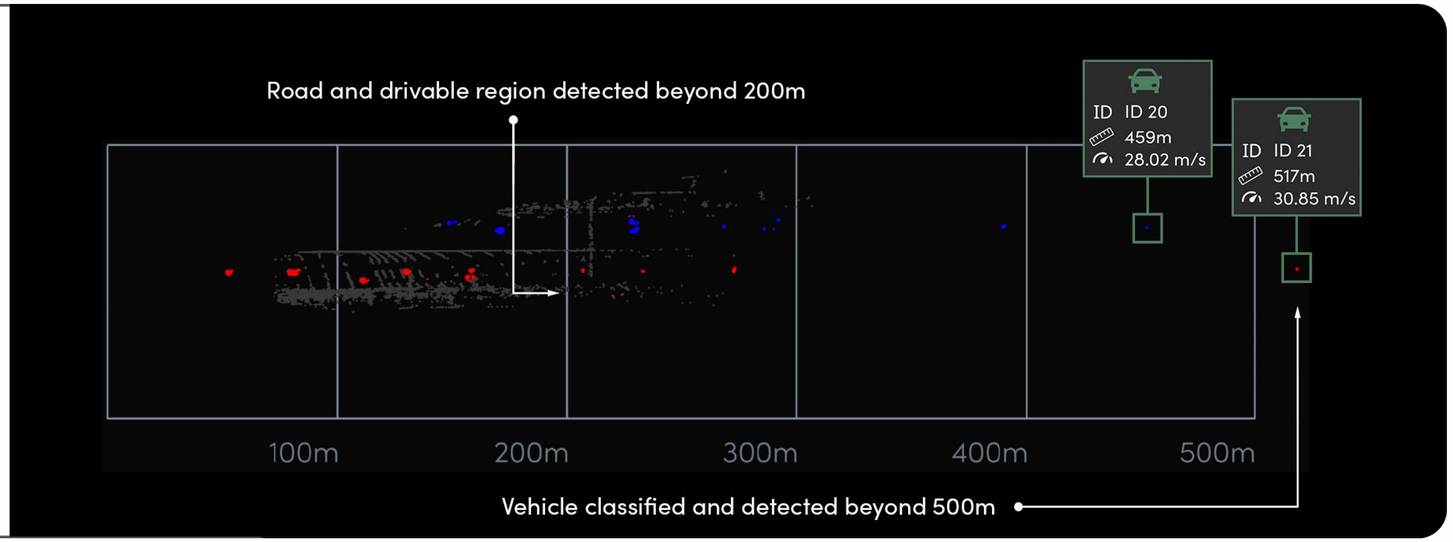



**500m**

**Vehicle Detection and Classification**

**200m**

**Ground and Road Drivable Region**



# Foundational Agreement with Undisclosed Customer

**Strong Validation of Aeva's Unique FMCW Technology**

**Deploying Aeva 4D LiDAR for Autonomous Program**

**Development and Validation Through Production**

image for illustration purposes only

# Validation for Aeva's Performance and Scalability

## VW Group

*"LiDAR is a key enabling technology when it comes to providing sensing and perception capability required to achieve highly automated driving at scale. However, a LiDAR that is high enough performance to meet the requirements for autonomy and at affordable cost has been historically very challenging.*

*We have found Aeva's 4D LiDAR is the top solution on the market because it addresses these problems in a scalable way. Aeva has the unique ability to measure velocity at the pixel level with high resolutions, and at long ranges—all of which are critical to help enhance the factor of safety for automated driving.*

*These along with a compact form factor that is integrated at the silicon chip level, make Aeva the top solution to enable autonomous driving at production scale."*

*Alex Hitzinger, CEO of ARTEMIS, Volkswagen Group*

# Validation for Aeva's Performance and Scalability

## ZF

*"Aeva's unique FMCW 4D LiDAR combines direct velocity measurements with long range performance, and is built on silicon chip scale, making it the right choice for autonomous driving. 4D LiDAR is also immune to interference, which is important for the factor of safety and the scalability of self-driving cars."*

*Torsten Gollewski, EVP of Autonomous Mobility Solutions at ZF*

ZF is one of the world's largest automotive Tier-1 manufacturers and suppliers to most top OEMs

Collaboration with ZF to manufacture and distribute automotive-grade 4D LiDAR

# Validation for Aeva's Performance and Scalability

## DENSO

*"Aeva's FMCW 4D LiDAR solution addresses the missing link for perception in automated driving and advanced driver-assistance systems, with its unique ability to meet the stringent automotive performance and safety requirements."*

*Kazuma Natsume, Director of AD & ADAS Engineering Div. 2 at DENSO*

DENSO is one of the world's largest automotive Tier-1 suppliers with components in most car models and a leader in commercializing advanced technologies at affordable costs

Aeva's collaboration with DENSO is focused on bringing 4D LiDAR to mass vehicle market

# Validation for Aeva's Performance and Scalability

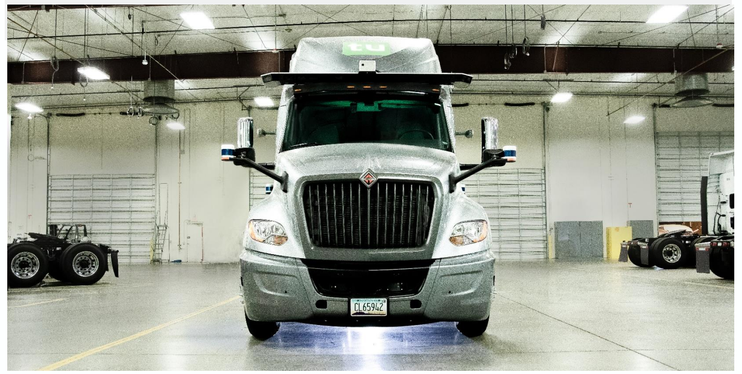
## TuSimple

*"Aeva's 4D LiDAR solution provides a unique ability to measure instant velocity along with distance, and at longer ranges, which when combined with the other sensors in our technology stack, provides complementary capabilities to our autonomous system. Aeva shares our strict standards for safety and reliability, making them a great partner for our LiDAR solutions."*

*Chuck Price, Chief Product Officer at TuSimple*

TuSimple is a leader in self-driving truck technology and has partnerships with the top trucking OEMs across US and Europe.

TuSimple has been working with Aeva since 2019 and is partnered with Aeva to deploy 4D LiDAR for autonomous trucking



# 2021 Objectives

## Complete Next Generation B Sample Development

- On schedule to complete next generation LiDAR development by end of year

## Build on Momentum with 2 Additional Programs Towards Production

- Focus will continue to be on aligning with industry leaders who are highly capable and well positioned to bring mass deployment of LiDAR to market

## Accelerate Engagements in Non-Automotive Applications

- Leverage synergies from common core chip architecture for non-automotive opportunities, including industrial and beyond

## Strengthen Supply Chain for Production to Bring Aeva 4D LiDAR to Scale

- Advance commercialization plan with production intent supply partners, including dual source strategy and securing capacity


# First Quarter 2021 Financial Results

# First Quarter 2021 Summary

## First Quarter 2021 Financial Results

| | Q1 2021 |
|---|---|
| Revenue | $0.3m |
| Non-GAAP operating loss[1] | ($15.6)m |
| Gross cash use (operating cash flow less capital expenditures)[2] | (15.5)m |

[1]Non-GAAP operating loss of $15.6m in Q1 2021 excludes stock-based compensation of $4.5m

[2]Capital expenditures were $0.7m in Q1 2021

## Highlights

- Anticipate second-half weighted revenue cadence in 2021, aligned with customer development milestones
- Strong cash, cash equivalents and marketable securities position of $523m as of March 31, 2021, following $513m net proceeds from business combination transaction
- Shares outstanding totaled 211.5m as of March 31, 2021


AEVA