Mobileye. D.R.I.V.E.S

Inaugural Investor Relations Summit

Israel, Nov. 5, 2019
Mobileye in Numbers

EyeQ Shipped (Million units)

Over 50M EyeQs shipped to date

44% revenue CGAR Since 2014

110% HC growth Since acquisition


2.7 4.4 6 8.7 12.4 17.4

46% CAGR
2019 in Numbers

**45** Running programs
- Globally across 26 OEMs

**22** Design wins
- 16M units over life
- Including 4 high-end L2+ programs with 2 major EU OEMs and two major Chinese OEMs

**16** Product launches
- Industry first 100° camera with Honda
- VW large-volume launch (Golf, Passat)

---

Number of project by OEM
The Evolution of AV Technology

Why Robotaxi is a necessary corridor towards consumer-AV?

- **SDS Cost** and complexity in the first years- not acceptable for privately owned cars constraints
- **Regulation** and Validation- RT is easier to govern
- **Geographic scale** at low-cost- mapping vast areas is a prerequisite for AV proliferation
The Evolution of AV Technology

Mobileye’s strategy

- ALL-IN ON THE GLOBAL ROBOTAXI OPPORTUNITY
- Maximize learnings from robotaxis to be ready for consumer AV phase

Enablers

- **ADAS** is our validation space for AV technology and the key for sustaining AV development for the long run
- Camera centric SDS backbone with **True Redundancy** is the key to a scalable solution
- **REM** HD mapping technology to allow global coverage at scale
- Using our **Responsibility-Sensitive Safety (RSS)** formal model of safe driving to facilitate the regulatory discussion
Significantly Expanding our Business Since Acquisition

- Open Compute
- AV Core SW
- MaaS for Robotaxi
- EyeC Sensors
- SDS as a Product
- REM Data
  - Automotive
  - Non-Automotive

New investment/business line since acquisition
# Mobileye’s Business Lines

<table>
<thead>
<tr>
<th>Components</th>
<th>ADAS</th>
<th>REM AV Maps</th>
<th>Robotaxi</th>
<th>Consumer AV</th>
<th>Sensors L4/L5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L1/L2, L2+, REM L2+</td>
<td>Map licensing for consumer AV</td>
<td>E2E MaaS provider</td>
<td>SDS to OEMs (privately owned cars)</td>
<td>Developing Lidars for our AV kit</td>
</tr>
<tr>
<td></td>
<td>“Vision Zero”</td>
<td></td>
<td>SDS to MaaS operators</td>
<td></td>
<td>Selling to AV manufacturers</td>
</tr>
<tr>
<td></td>
<td>Monitization of data from front cameras</td>
<td></td>
<td>SDS as a product</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeline</td>
<td>Current</td>
<td>2024</td>
<td>2022</td>
<td>2025</td>
<td>2023</td>
</tr>
<tr>
<td>TAM</td>
<td>2024 - $5B</td>
<td>2030 - ~$3.5B</td>
<td>MaaS 2030 - $160B</td>
<td>2030 - ~$40B</td>
<td>2030 - ~$12B</td>
</tr>
<tr>
<td></td>
<td>2030 - ~$7-8B</td>
<td></td>
<td>SDS 2030 - ~$10B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mobileye’s Business Lines

Total Potential TAM by 2030 (Excluding MaaS) $72.5B

Total Potential MaaS TAM by 2030 $160B
## EuNCAP Driver assistance achievements

### 2018 5 stars rated vehicles

<table>
<thead>
<tr>
<th>Make and Model</th>
<th>Mobileye inside</th>
<th>Safety Equipment</th>
<th>Overall Rating</th>
<th>Make and Model</th>
<th>Mobileye inside</th>
<th>Safety Equipment</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volvo XC40</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Mazda 6</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Lexus ES</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Hyundai NEXO</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Peugeot 508</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Hyundai Santa Fe</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Mercedes-Benz A-Class</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Volkswagen Touareg</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Audi A6</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Jaguar I-PACE</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Volvo S60</td>
<td></td>
<td>Standard</td>
<td></td>
<td>BMW X5</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Volvo V60</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Nissan LEAF</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Audi Q3</td>
<td></td>
<td>Standard</td>
<td></td>
<td>Ford Focus</td>
<td></td>
<td>Standard</td>
<td></td>
</tr>
</tbody>
</table>

- **Mobileye inside** in 75% of models that won 5 stars in 2018
- **80% of ME-inside models achieved 5 stars rating in 2019**
- The single camera-only solution to achieve 5 stars rating

![EuNCAP Driver assistance achievements](image)
Crowdsourcing data from our vast ADAS footprint for
Creating HD mapping for AV and ADAS applications
Providing smart city eco system with Safety/Flow Insights and foresights
SoC technology: The EyeQ® Family
Tight SW/HW co-design for unparalleled compute efficiency

EyeQ® 3
- Series prod since 11/2014
- 0.25 TOPs @ 3W

EyeQ® 4
- Series prod from 3/2018
- Launches by 4 OEMs in 2018,
  12 OEMs in 2019 & onwards
- 2.5 TOPs @ 6W

EyeQ® 5
- Sampled Dec 18
- 4 Design wins, >8Mu
- 3rd party programmability
- Series production 3/2021
- 24 TOPs @ 10W

EyeQ® 6
- Samples e/20
- ADAS and AD
- On-road 2023
- 128 TOPs @ 40W
The AV/ADAS Interplay

The Building blocks of Autonomous Vehicles
- Sense / Plan / Act
- Perception computer vision
- Other sensors processing
- Mapping

Component Qualification

The Building blocks of ADAS
- Front sensing
- Wide-angle front sensing
- Surround perception
- Mapping

Revolution in Transportation

Transition of Technologies

Making “Vision Zero” a reality
Revolution in Saving Lives
The ADAS Segment
Continue at the forefront of ADAS to provide the financial “fuel” to sustain AV activity for the long run.

- **ADAS penetration rate**
  - is constantly increasing: 2019- 32% → 2024- 60%

- **Growing adoption**
  - in emerging markets

- **L2+- A Rapidly Growing Segment**
  - with higher profitability margins

- **L2+ “Vision Zero”**
  - Full surround+ RSS safety shield for ADAS

- **ADAS (L1/2) Revenue Forecast**
  - 2018
  - 2019
  - 2020
  - 2021
  - 2022
  - 2023
  - 2024
  - $1.9B

- **Base-ADAS sales exceed OEM plans**

*Assuming existing OEM client base
**Excluding REM
L2+ - A Rapidly Growing Segment

L2+ systems common attributes

- All-speed lane centering
- HD maps
- Hand-free driving

8 out of 11 L2+ systems running today are powered by Mobileye’s technology

For example:

Nissan ProPilot™ 2.0
VW Travel Assist™
Cadillac Supercruise™
Audi zFAS

Additional 12 active programs with L2+ variants and 13 open RFQs
100% nomination rate track record
Next Generation ADAS
Unlocking “Vision Zero” with RSS for Humans

ADAS Today
AEB, LKA | Emergency driven
ESC/ ESP | Prevention driven
Application of brakes
longitudinally & laterally

ADAS Future Potential
AEB, LKA, ESC | All in one
Prevention driven system
Formal Guarantees

Potential TAM expansion of $1.2B by 2024

- Scalable surround CV system
- RSS Jerk-bounded braking profile
  longitudinal & lateral
- Standard fitment/
  Rating
- Vision Zero
Vision Zero: Can Roadway Accidents be Eliminated without Compromising Traffic Throughput?

Shai Shalev-Shwartz, Shaked Shammah, Amnon Shashua

Mobileye, 2018

Abstract

We propose a new economical, viable, approach to challenge almost all car accidents. Our method relies on a mathematical model of safety and can be applied to all modern cars at a mild cost.

1 Introduction

In 1997 the Swedish Parliament introduced a “Vision Zero” policy that requires reducing fatalities and serious injuries to zero by 2020. One approach to reduce the number of serious car accidents, which has been advocated by the “Vision Zero” initiative, is to enlarge the tolerance to human mistakes by combining regulative and infrastructure changes. For example, installing speed bumps in urban areas, which reduces the common speed from 50 kph to 30 kph, may make the difference between a mild injury and a fatality when a car hits a pedestrian. Another example is not allowing a green light for two routes at the same time (like “turn right on red” scenarios). The disadvantage of this approach is that it compromises the throughput of the road system — for example, reducing the speed limit from 50 kph to 30 kph increases traveling time by 66%.

Another approach to reduce the number of car accidents is to rely on Advanced Driving Assistant Systems (ADAS)
Unique Differentiating Assets moving from ADAS towards Robotaxi and Consumer-AV
Unique Elements of Mobileye’s Approach

- **Camera centric approach to enable True Redundancy**
  - Cost-optimized ADAS and AV
  - Robust CV allows two separate sub-systems for AV

- **REM HD maps global coverage at scale**
  - Leveraging our strong position in ADAS
  - Already operational and is proving to be a true segment disruption

- **RSS formal model for safety**
  - Allowing useful and human-like driving experience
  - RSS for ADAS - “Vision Zero”
The Camera-centric Approach
The Perception Challenge

Breaking down the MTBF into $\prod_{i} MTBF_i$ of independent sub-systems

MTBF ≈ MTBF_1 \cdot MTBF_2

10^7 \quad 10^{3.5} \quad 10^{3.5}

Critical MTBF of $10^{3.5} \approx 3000$ hours is plausible.

How do we maximize independency?
To achieve True Redundancy for AVs:
- Cameras enable a comprehensive end-to-end operation
- Other sensors added for redundancy

**The Goal**

**The Means**

Pushing computer-vision sensing envelope
To empower cameras to deliver end-to-end AV performance

**The Challenge**

Extracting 3D information from cameras
The easiest thing to do - using indications from other sensors already in the low-level stage
The price- totally dependent subsystems

**The Outcome**

“The right AV”  Cost-optimized ADAS
With true redundancy  Relying on cameras- cheap and versatile
End-to-End AV powered by Camera-only

Separate sub-system of Radar/Lidar (“true redundancy”) will be added in the future
REM Data
REM Process

1. HARVESTING
   Collecting road and landmarks through EyeQ-equipped vehicles

2. Anonymizing & encrypting REM data

3. AGGREGATION
   Generating HD crowdsourced road-book for the autonomous vehicle

4. Map tile distributed to the car

5. LOCALIZATION
   Localizing the car within 10cm accuracy in the road book.

Also available via ME8
REM Process

RB data projected onto image space.
Road edge, lane marks, lane center, landmarks (in Yellow).

RB data projected onto Google Earth.
REM Applications

**AV Maps**
- Scalable solution for HD maps
- Ultra-high refresh rate with real-time updates

**L2+/3/4**
- Enhancing today’s ADAS with minimal cost

**Non-Automotive**
- Realtime data for “smart cities”
- Automatic infrastructure survey to aid city planning
Agreements with 6 major car makers to enroll millions of Harvesting vehicles in the next several years

Harvesting:
+ Over 1M Harvesting vehicles in EU by 2020
+ Over 1M Harvesting vehicles in US by 2021
+ Advanced discussions with additional 3 major OEMs

Localization:
+ Programs for using Roadbook™ for L2+: 2 OEMs, 2 OEMs, 2 OEMs
Maps are now created in a fully automated process based on data coming from production vehicles such as BMW X5, BMW 3 series, Nissan Skyline, VW Passat, and VW Golf.

**Game changing capability**

**Values**
- Scalability for AV (also L2+)
- Stickiness of complete ADAS offering
- Generates revenues on top of traditional ADAS
- Recurring revenues
- Service provider

**Perfect localization from production RSD**
REM-data Aggregation - Global Snapshot

Gained with 20K-40K vehicles

Coverage statistics:

- 2M KMs of roads are covered daily
- 300M KMs of roads were covered thus far

1st launch of series-production Harvesting fleet in December 18' with BMW.
REM-data Aggregation- Global Snapshot
REM Milestones

Mapping most of the US by the end of 2020

Mapping all of Europe by Q1 2020
REM in China

- China in the biggest light vehicles market in the world and the fastest growing market among the four major Geos
- Chinese OEMs accounts for >25% of Mobileye’s life time volume of programs won in 2019

Unlocking strategic opportunities for harvesting data under regulatory constraints
REM in China

Ground braking agreement for data harvesting in China under regulatory constraints

Harvesting data in China as part of new collaboration with NIO on L4 synergy for Robotaxi and consumer AV

Strategic collaboration with major Chinese OEM for REM data harvesting
Potentially 300K vehicles
REM in China

Signing a strategic JV agreement with Unigroup China

Scope of Cooperation:
- Regulatory Clearance to enable the collection, processing, and monetization of data in China
- Aftermarket products distribution channels
- JV will focus on data commercialization – for Government and Fleet use
- Promotion of ADAS and AV standardization in China
REM Monetization

AV Maps
- Scalable solution for HD maps
- Ultra-high refresh rate with real-time updates

L2+/3/4
- Enhancing today’s ADAS with minimal cost

Non-Automotive
- Realtime data for “smart cities”
- Automatic infrastructure survey to aid city planning
Non-Automotive Data Story Opportunities

**Behavioral data for fleets**
- Driver Scoring (Insurance, Telematics)
  - Alerts
- Geo Scoring (Logistics, Routing)
  - Alerts
- Speed, congestion
  - Speed, Congestion, Road Conditions
- Geoscoring
  - Driver Alerts (‘Smart ADAS’)

**Static data**
- Asset Mapping
  - Lights
  - Signs
  - Telco boxes
- Highway Services (Operations, Planning)
  - Traffic per Lane
  - Predictive Maintenance
  - Construction Areas
  - Road Markings
- City Services (Operations, Planning)
  - Pedestrians
  - Construction Areas
  - Roads
  - Parking
  - Garbage
  - Road Markings

**Dynamic Big Data**
- Public Transport (Maas/Passenger Demand)
  - Pedestrians
  - Congestion Prediction
- Law Enforcement (Enforcement Prediction, Zoning)
  - Speeding, unusual behavior
  - Pedestrians
  - Dynamic Events – Road, Public Events
# Mobileye Data Story Opportunities

## Behavioral data for fleets
- **Driver Scoring** (Insurance, Telematics)
  - Alerts
- **Geo Scoring** (Logistics, Routing)
  - Alerts
  - Speed, Congestion, Road Conditions
- **Geoscore**
  - Driver Alerts ('Smart ADAS')

## Static data
- **Asset Mapping**
  - Lights
  - Signs
  - Telco boxes
  - Manhole
  - Drainage
  - Traffic per Lane
  - Predictive Maintenance
  - Construction Areas
  - Road Markings

## Highway Services
- **Highway Services** (Operations, Planning)
  - Pedestrians
  - Construction Areas
  - Roads
  - Parking
  - Garbage
  - Road Markings

## City Services
- **City Services** (Operations, Planning)
  - Public Transport (Maas/Pasenger Demand)
  - Pedestrians

## Dynamic Big Data
- **Public Transport** (Maas/Pasenger Demand)
  - Congestion Prediction
  - Speeding, unusual behavior
  - Pedestrians

## Law Enforcement
- **Law Enforcement** (Enforcement Prediction, Zoning,)
  - Dynamic Events – Road, Public Events

---

### Static data

**Behavioral data for fleets**
- **Driver Scoring** (Insurance, Telematics)
  - Alerts
- **Geo Scoring** (Logistics, Routing)
  - Alerts
  - Speed, Congestion, Road Conditions
- **Geoscore**
  - Driver Alerts ('Smart ADAS')

**Static data**
- **Asset Mapping**
  - Lights
  - Signs
  - Telco boxes
  - Manhole
  - Drainage
  - Traffic per Lane
  - Predictive Maintenance
  - Construction Areas
  - Road Markings

**Highway Services** (Operations, Planning)
- Pedestrians
- Construction Areas
- Roads
- Parking
- Garbage
- Road Markings

**City Services** (Operations, Planning)
- Public Transport (Maas/Pasenger Demand)
  - Pedestrians

**Dynamic Big Data**
- Public Transport (Maas/Pasenger Demand)
  - Congestion Prediction
  - Speeding, unusual behavior
  - Pedestrians

**Law Enforcement** (Enforcement Prediction, Zoning,)
- Dynamic Events – Road, Public Events

---

### Specialized Data

**Behavioral data for fleets**
- **Driver Scoring** (Insurance, Telematics)
  - Alerts
- **Geo Scoring** (Logistics, Routing)
  - Alerts
  - Speed, Congestion, Road Conditions
- **Geoscore**
  - Driver Alerts ('Smart ADAS')

**Static data**
- **Asset Mapping**
  - Lights
  - Signs
  - Telco boxes
  - Manhole
  - Drainage
  - Traffic per Lane
  - Predictive Maintenance
  - Construction Areas
  - Road Markings

**Highway Services** (Operations, Planning)
- Pedestrians
- Construction Areas
- Roads
- Parking
- Garbage
- Road Markings

**City Services** (Operations, Planning)
- Public Transport (Maas/Pasenger Demand)
  - Pedestrians

**Dynamic Big Data**
- Public Transport (Maas/Pasenger Demand)
  - Congestion Prediction
  - Speeding, unusual behavior
  - Pedestrians

**Law Enforcement** (Enforcement Prediction, Zoning,)
- Dynamic Events – Road, Public Events

---

### Additional Notes

**Behavioral data for fleets**
- **Driver Scoring** (Insurance, Telematics)
  - Alerts
- **Geo Scoring** (Logistics, Routing)
  - Alerts
  - Speed, Congestion, Road Conditions
- **Geoscore**
  - Driver Alerts ('Smart ADAS')

**Static data**
- **Asset Mapping**
  - Lights
  - Signs
  - Telco boxes
  - Manhole
  - Drainage
  - Traffic per Lane
  - Predictive Maintenance
  - Construction Areas
  - Road Markings

**Highway Services** (Operations, Planning)
- Pedestrians
- Construction Areas
- Roads
- Parking
- Garbage
- Road Markings

**City Services** (Operations, Planning)
- Public Transport (Maas/Pasenger Demand)
  - Pedestrians

**Dynamic Big Data**
- Public Transport (Maas/Pasenger Demand)
  - Congestion Prediction
  - Speeding, unusual behavior
  - Pedestrians

**Law Enforcement** (Enforcement Prediction, Zoning,)
- Dynamic Events – Road, Public Events

---

### Conclusion

This infographic provides an overview of the various data story opportunities that can be explored within the Mobileye ecosystem. By leveraging both behavioral data and static data, organizations can gain valuable insights into traffic patterns, pedestrian movement, and other critical factors that impact safety and efficiency. The integration of Big Data analytics further enhances this capability, enabling more sophisticated predictions and decision-making processes.
The Utility Strikes Use Case (UK)

- **60K** utility strikes per year (UK)
- **$380M** Third party damage to utility assets (UK)
- **$1.5B** Indirect cost in London alone
- **12** deaths and **600** serious injuries per year
- **150** companies allowed to do underground excavating

As of 2016, 48% of the utilities were mapped. Of these, **84% were found to be inaccurately recorded.**

Digitization of utility infrastructure can enhance asset management, and **increase profitability by 20-30%** through reduction in strikes and construction duration*

---

ADAS and AV applications
- Road markings, Symbol marking on the road
- Road edge
- Signs, traffic lights
- Poles
- Construction area furniture
- Road surface

Asset management
- Poles classification- electricity/telco/streetlights
- Manholes sub categories classification
- Telco cabinets and electricity boxes
- Drainage
- Surface water and puddles
- Cracks and road surface quality

Future
- Front-Facing Camera as an “Intelligent Agent”

ME8 Aftermarket Solution
Collision avoidance, Data aggregation, Fleet management- All-in-one
Detection Features

Traffic lights

Road Signs

Road Markings
Detection Features

- Light poles
- Construction area
- Manholes
Detection Features

Drainage
Detection Features

Telco boxes
Above-surface data generated from REM is combined with sub-surface data to create reach HD assets map base

Continuously updated with zero overhead efforts

20 new utilities companies have joined the data evaluation trial

Global expansion beyond UK for 1st installations in Singapore, Hong Kong, and Dubai

Potential revenues from the UK alone (50 local customers) = $70M Per Year

2024 TAM for asset mapping (static data) - $750M
RSS Driving Policy and Driving Experience
Driving in the Real World

Merging into dense traffic requires significant “negotiation” amongst humans.
Autonomous Driving Cycle

**Sense**
- Perception of the environment

**Plan**
- Decision-making
- Driving Policy

**Act**
- Execute the plan
- Motion control cycle
The Driving Policy (Action) Challenge

• Do we allow an accident due to a “lapse of judgement” of Driving Policy?

• Should the occurrence of “lapse of judgement” be measured statistically?

Safety is a technological layer living outside of Machine Learning. It is like “Ethics” in AI - a set of rules.

• It all boils down to a formal definition of “what it means to be careful”

There is a need for “regulatory science and innovation”. Technological innovation is not sufficient.
RSS adheres to three basic criteria:

- Usefulness
- Completeness
- Efficiently verifiable

What is RSS?

A mathematical model, formalizing a “common sense” interpretation of what it means to drive safe

- What is a dangerous situation?
- What is the proper response to a dangerous situation?
- What does it mean to be reasonably cautious?
- What assumptions a driver can make on the unknown behavior of other road users?

RSS adheres to three basic criteria:

- Usefulness
- Completeness
- Efficiently verifiable
On a Formal Model of Safe and Scalable Self-driving Cars

Shai Shalev-Shwartz, Shaked Shammah, Amnon Shashua

Mobileye, 2017

Abstract

In recent years, car makers and tech companies have been racing towards self driving cars. It seems that the main parameter in this race is who will have the first car on the road. The goal of this paper is to add to the equation two additional crucial parameters. The first is standardization of safety assurance — what are the minimal requirements that every self-driving car must satisfy, and how can we verify these requirements. The second parameter is scalability — engineering solutions that lead to unleashed costs will not scale to millions of cars, which will push interest in this field into a niche academic corner, and drive the entire field into a “winter of autonomous driving”. In the first part of the paper we propose a white-box, interpretable, mathematical model for safety assurance, which we call Responsibility-Sensitive Safety (RSS). In the second part we describe a design of a system that adheres to our safety assurance requirements and is scalable to millions of cars.
RSS deterministic and mathematical safety definitions allow better drivability and assertive driving behavior

- “Give-way”/“Take-way” decision
- Actively creating the proper gap rather than waiting for the perfect moment
- Assuming plausible worst-case behavior on other road users
SDS as a Product
SDS-as-a-Product

Manufacture an integrated SDS

• Build our SDS for Robotaxi (manufacture at scale or through a partner)
• Sale SDS to Robotaxi fleets
• Prepare for passenger car autonomy

TAM in 2030- ~$40 (10M* cars, $4K/SDS)

*3rd party estimations
AV Kit HW Generations

**EPM 44**
- In deployment
- Up to 4x EQ4H
- Up to 12x1.3MP
- Up to 10 TOPs

**EPM 52**
- Deployed this month
- Up to 2x EQ5H
- Up to 7x8MP + 4x1.3MP
- Up to 48 TOPs

**EPM 59**
- Jan 2020
- Up to 9x EQ5H
- Up to 7x8MP + 4x1.3MP
- E2E support in all aspects - fusion, policy, control
- 2H 2020 - automotive grade
- Up to 216 TOPs
Nio-Mobileye Collaboration

New collaboration with NIO for synergy on L4 HW+SW dev for robotaxi and consumer AV

- AV kit HW design+ SW
- HD maps

Benefits
- Full access to Nio’s RT + battery swap capabilities
- AV kit modules for use on other RT platforms
- China footprint- mapping and dev
- Consumer AV rev stream with industry-first

- AV kit “production house+ integration
- Mapping licenses in China

- Reducing dev burdens
- Scalable proposition for Nio’s L4 passenger cars
MaaS – the larger scope
Cost differentiation:
- RSS – formal safety translates to insurance advantages and shorter trip times
- True redundancy - minimizes validation costs, & broadening ODD to minimize teleoperation overheads
- REM: seamless geo-scaling leveraging our unmatchable ADAS proliferation and automatic map aggregation technology

Value differentiation:
- RSS: riders safety-perception
- Policy: ride Agility resulting in short travel times, Human-like overall ride experience

Unique business model:
- ADAS revenue stream creates a Self-Funded Global Robo-Taxi activity
Intel-Mobileye MaaS Key Differentiators in MaaS

Cost differentiation:
- **RSS** – formal safety translates to insurance advantages and shorter trip times
- **True redundancy** - minimizes validation costs, & broadening ODD to minimize teleoperation overheads

Value differentiation:
- **RSS**: riders safety-perception
- **Policy**: ride Agility resulting in short travel times, Human-like overall ride experience

Unique business model:
- **ADAS revenue stream** creates a Self-Funded Global Robo-Taxi activity

Sustainable, scalable, self-funded global autonomous robotaxi fleet
PINTA: “sandbox” for a full-stack SDS
Project PINTA
Bringing MaaS to Israel by 2022

The project consortium partners across all layers of the layer model of Mobility-as-a-Service with self-driving electric vehicles.
Project Phases
The service covers the most relevant urban area of Israel by 2022

2019 Phase 1
Pre-Development
15 km

2020 Phase 1.1
Development
33 km

2021 Phase 2 2022
Phase 3 Pre-Commercial
111 km
(13,4 km²)

2023 Phase 4 Scaling

Scaling approaches
- Scale into Metropolitan area
- Increase granularity of existing area
- Add additional special routes
RATP collaboration: The first hook for Robotaxi in Europe
MaaS Go-to-Market Engagements

Deal with world-leading mobility operator

The scope:
- Gov. funded project to run AV in Paris for a trial period
- To be done based on our current AV config
- Initial deployment mid 2020
- Long term- deployment of commercial robotaxi fleet
- Foot in the door for regulatory engagement
MaaS Scale-up Plan

- **2023**
  - **USA**
  - Independent rollout

- **2022**
  - **France**
  - First Hook

- **2022**
  - **Israel**
  - Pinta

- **2022**
  - **China**
  - Consumer AV
  - REM harvesting
### Summary of Achievements and Milestones

#### REVENUE TODAY THROUGH ADAS
- > 50M EyeQ® chips shipped
- ME in 8 out of 11 L2+ systems that are in production
- High-volume program launch with VW (Golf, Passat, etc.) including REM harvesting
- 22 New DWs in 4 major markets:
  - 4 million units in France;
  - DW with largest OEM in India;
  - 2 new wins in China with leading OEMs
  - 4Mu with leading Asian OEM

#### MAPPING / DATA
- Automatic map creation based on data arriving 3 major OEMs, 3 more in the pipeline
- EU will be fully mapped by Q1 2020, and the majority of the U.S. before year-end 2020.
- > 20 additional customers joined Mobileye’s OS trial for assets mapping

#### MAAS
- JV with VW and Champion Motors is on track for 2022 deployment in Tel Aviv.
- TAM for robotaxis at $160 billion by 2030
- Level 4 collaboration with NIO:
  - L4 for consumer AV
  - exclusivel L4 for Mobileye’s for global deployment of robotaxi
- RATP cooperation for a robotaxi shuttle to start testing in Paris in 2020.
Summary of Achievements and Milestones

Total Potential TAM by 2030
(Excluding MaaS)

- > 50M EyeQ® chips shipped
- ME in 8 out of 11 L2+ systems that are in production
- High-volume program launch with VW (Golf, Passat, etc.) including REM harvesting
- 22 New DWs in 4 major markets:
  - 4 million units in France;
  - DW with largest OEM in India;
  - 2 new wins in China with leading OEMs
  - 4Mu with leading Asian OEM
- Automatic map creation based on data arriving from 3 major OEMs, 3 more in the pipeline
- EU will be fully mapped by Q1 2020, and the majority of the U.S. before year-end 2020.
- > 20 additional customers joined Mobileye’s OS trial for assets mapping

Total Potential MaaS TAM by 2030

- TAM for robotaxis at $160 billion by 2030
- Level 4 collaboration with NIO:
  - L4 for consumer AV
  - Exclusively L4 for Mobileye’s for global deployment of robotaxi
- RATP cooperation for a robotaxi shuttle to start testing in Paris in 2020.

$72.5B

$160B
Thank you