Regional Awareness Raising Workshop on Main UN Road Transport Legal Instruments and Intelligent Transport Systems (ITS)

### Israel Ministry of Transport Delegation Brussels, July 2017







### **Israel on the Map**

#### Ministry of Transport and Road Safety





## **Israel - Facts & Figures**

- Driving license holders 3.7 M
- Motor vehicles 2.8 M
- private cars 345 per 1000





# Intelligent Transport **Systems (ITS)** in Israel



## **V2V & V2I Communication**



### **Connectivity Enhances Autonomous Driving**





## Adaptive Traffic signal light Research project ended 2015



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- Computerized vision as detector
- Fazi-logic controller algorithm





### Computerized Vision, Artificial Intelligence for pedestrian detection



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Automatic detection of pedestrian movements, counts, waiting time













 $\checkmark$ 





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In conjunction, Israel enable the import of vehicles according to US Federal Motor Vehicle Safety Standards (FMVSS) and the Canadian Motor Vehicle Safety Standards (CMVSS)







### Israel Ministry of Transport and Road Safety

Smart technologies and smart mobility systems for autonomous vehicles are being developed in Israel.

The Ministry of Transport is examining the possibility to allow vehicles with smart systems to move on the roads







## Smart Mobility Entrepreneurship in Israel – an Overview





#### Israel's automotive & smart mobility industry

#### Electrified, autonomous & smart

Authors: Dr. Wolfgang Bernhart, Philipp Leutiger, Dr. Christian-Simon Ernst December, 2016

Autonomous



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- > Electric vehicle
- > Batteries/storage/ e-powertrain
- > Charging infrastructure

15%

Electric

> Other



mobility

- > Automated & urban vehicle
- > Active safety & ADAS
- > Drones
- > Sensors
- > Others



Smart

- > Infotainment & connected car
- > Sharing mobility
- > Navigation & ITS > Fleet management/
- > Big Data



> Other

17%

- logistics
- > Parking





> Manufacturing

> Passive safety

23%

> Engines

> Security

> Other

> Energy efficiency





- > Alternative fuels
- > Infrastructure
- > Other

5%

>500 companies

40%









- Forward collision warning, Lane departure warning, Pedestrian & Cyclist Detection
- 15M+ vehicles worldwide equipped with Mobileye technology, 27 global automakers
- Acquired by Intel, April 2017







## **WAZE Mobile**





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- Crowdsourcing, community-driven, gathering data and traffic information from its users
- Acquired by Google in 2013





## **Gett on-demand Mobility**

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- Order a taxi by using the company's GPS-based smartphone app.
- #1 in Europe, Gett is
  available in more than 100
  cities worldwide including
  London, Moscow and NYC.







## <u>Moovit</u>





- Public transit app and mapping service
- Features: trip planning, Real-time information, local station maps, service alerts
- Most used transit app in the world: over 50 m users supporting +1,200 cities in 68 countries, 47 languages









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Payment for on-street parking and on parking lots

Collaboration with Local Governments Association







Tracking all active phones on the mobile network, **anonymously and passively**, with unique technology

- Traveler information
- Real time road management
- Congestion mitigation analysis
- Household travel survey
- Population mobility analysis







## ElectRoad – Inductive charging

- Dynamic wireless charging for electric buses
  - Carries electrical charge on when vehicle on-top
- Very fast and Economical installation









### Smart mobility test center - Road Map



Identifying and exploiting the relative advantage of Israel



## Learning the environment and background

- A review of existing test fields and capabilities around the world
- Review of test fields in parallel and similar fields in Israel – Lahav - Air industry - The experimental system of Rafael, IDF test field
- A review of various models for establishing and running a joint R&D infrastructure (Transport, Telem, etc.)
- Study and examination of existing regulation in the world for experiments and characterization of three types of experiments that require a different approach:
  - Simulated environment experiments
  - Sterile environment experiments
  - Open road testing



## **Market research**

- Implementation of several characterization experiments with different characteristics for a deeper understanding and learning the industry's needs and requirements.
- Will be performed over the next six months
- Holding many meetings with various companies and mapping the various requirements for experiments in the near future, medium and far
  - Examination of the ability / need for cooperation with the Ministry of Defense (IDF)
    - The combination of the use of means / knowledge during the characterization experiments will be examined



and Road Safety



## **Steps to continue**

- Expansion of the "Sites Portfolio" for implementation the characterization experiments and providing immediate solutions for industry
  - Completing the contract with the franchisee "Fast Track"
  - Meeting with private entities and local authorities to train "urban area"
- Formulation a list of primary equipment enabling the perform of experiments - fictitious, "Devices owned vehicle", communications, etc.
- An examination of various financial models and formulation of a suitable construction and operation model



# Thank you

