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Swarm data paves way for autonomous driving: Volkswagen and Mobileye sign agreement

- Cars learn how to see: Volkswagen and Mobileye create new 'super navigation data' for autonomous driving
- All for one and one for all: Volkswagen fleet is ideal for generating extended navigation data via crowd-sourcing
- Revolutionary navigation standard: data from cars of different carmakers merge in the swarm

Wolfsburg – Volkswagen and Mobileye are planning to implement a new navigation standard for autonomous driving starting in 2018. Future Volkswagen models will use the camera-based map and localisation technology Road Experience Management™ (REM™) from Mobileye. Representatives of the two companies signed an agreement to this effect on 10 February. The wide-ranging cooperation was approved by Professor Amnon Shashua, Chairman and Chief Technology Officer of Mobileye, and Dr Herbert Diess, Chairman of the Board of Management of the Volkswagen brand. Mobileye and Volkswagen are taking the next step towards autonomous driving. In the future, both will be jointly collecting data and utilising this for a new generation of highly intelligent maps.



Left to right: Prof. Amnon Shashua (Chairman Mobileye) and Dr. Herbert Diess (Chairman Volkswagen brand)

The Israel-based company Mobileye (NYSE: MBLY) is one of the world's leading manufacturers of technologies for accident prevention and autonomous driving. REM™ is one of the latest Mobileye systems. Using crowd-sourcing (data from many cars – the swarm) to generate real-time data for precise localisation and acquisition of high-definition track

data. This makes REM™ an elementary information level for autonomous driving. Here is how REM™ works in practice: the Volkswagen cars, which are equipped with front cameras, acquire lane markings and road information via optical sensor systems from Mobileye, and this information flows in compressed format into a cloud. This fleet data is used for continuous improvement of high-definition navigation maps with highly precise localisation capability. These, in turn, serve as a foundation for

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autonomous driving and advanced development of many assistance systems.

"The future of autonomous driving depends on the ability to create and maintain precise high-definition maps and scale them at minimal cost", said Professor Amnon Shashua, co-founder and Chief Technology Officer of Mobileye. Professor Shashua adds this: "The Volkswagen agreement is a turning point. It not only utilises crowd-sourcing technology to automatically generate high-definition maps and scale them cost-effectively. A much more important aspect is that the agreement provides a framework for industry-wide cooperation between automobile manufacturers to jointly produce the map contents that are needed for autonomous driving."

In fact, the agreement is the first of its kind to merge the data of different automobile manufacturers worldwide to create a single 'high-definition world map'. And this will form an industry-wide standard. Dr Frank Welsch, Member of the Board of Management Volkswagen Brand responsible for Development: "Every day millions of Volkswagen vehicles drive on our streets. Many of them are equipped with sensors to monitor the surroundings. We can now utilise this swarm to obtain various environmental data in anonymised related to traffic flow, road conditions and available parking places, and we can make these highly up-to-date data available in higher-level systems. More services are planned which will be able to utilise these data and make car driving and mobility easier with greater convenience and comfort overall. Not only our Volkswagen customers will benefit from this collaborative work."

About the Volkswagen brand: "We make the future real"

The Volkswagen Passenger Cars brand is present in more than 150 markets throughout the world and produces vehicles at over 50 locations in 14 countries. In 2016, Volkswagen produced about 5.99 million vehicles including bestselling models such as the Golf, Tiguan, Jetta or Passat. Currently, 218,000 people work for Volkswagen across the globe. The brand also has 7,700 dealerships with 74,000 employees. Volkswagen is forging ahead consistently with the further development of automobile production. E-mobility, Smart mobility and the digital transformation of the brand are the key strategic topics for the future.

About the Mobileye N.V.

Mobileye N.V. is the global leader in the development of computer vision and machine learning, data analysis, localization and mapping for Advanced Driver Assistance Systems and autonomous driving. The Company's technology keeps passengers safer on the roads, reduces the risks of traffic accidents, saves lives and has the potential to revolutionize the driving experience by enabling autonomous driving. The Company's proprietary software algorithms and EyeQ® chips perform detailed interpretations of the visual field in order to anticipate possible collisions with other vehicles, pedestrians, cyclists, animals, debris and other obstacles. The

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Company's products are also able to detect roadway markings such as lanes, road boundaries, barriers and similar items; identify and read traffic signs, directional signs and traffic lights; create a RoadBook™ of localized drivable paths and visual landmarks using REM™; and provide mapping for autonomous driving. The Company's products are or will be integrated into car models from more than 25 global automakers. The Company's products are also available in the aftermarket.
