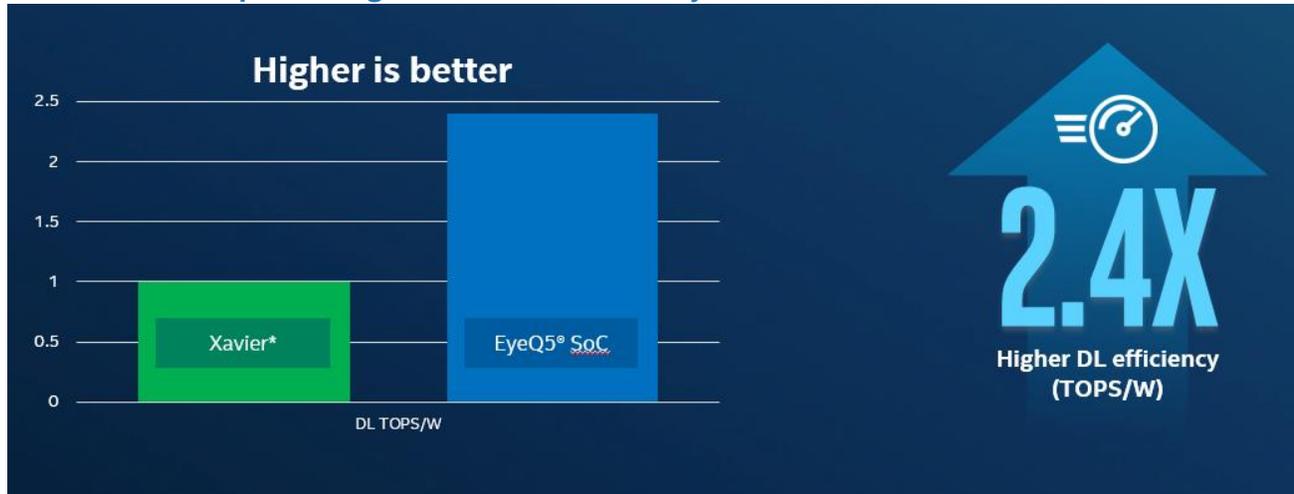


## Mobileye® EyeQ5™ Offers Better Deep Learning Performance Efficiency Than NVIDIA's Xavier\*

Intel recently presented data comparing deep learning performance efficiency for Mobileye® EyeQ5™ versus NVIDIA's Xavier\*, showing the Mobileye SoC will offer superior deep learning performance efficiency. Intel expects the Mobileye EyeQ5 to deliver 2.4 DL TOPS per Watt – 2.4 times more efficient than what NVIDIA has publicly claimed for Xavier.<sup>1</sup>

### Best in Class Deep Learning Performance Efficiency<sup>2</sup>



### A Crucial Metric for Autonomous Vehicles

Artificial intelligence (AI) workloads (or deep learning) will play a crucial role in any autonomous vehicle "brain." This does not mean AI everywhere. Rather, Intel and Mobileye advocate a smarter approach to AI where specific workloads are handled in the most efficient manner.

Computing efficiency is important in every environment, but especially in the car, where there is limited real estate to accommodate the cooling systems needed for very high performance computers. Meanwhile, the brains inside autonomous vehicles will necessarily be high performance systems. Delivering a high performance system while meeting stringent cooling requirements is the ultimate goal.

Tera Operations Per Second (TOPS) is a common performance metric used for high-performance SoCs; TOPS per watt extends that measurement to describe performance efficiency. The higher the TOPS per watt the better.

Higher TOPS/watt systems produce less heat, are easier and less expensive to cool and consume less power leading to greater fuel economy or longer range in for an EV. For Intel and Mobileye customers, this ultimately translates to lower vehicle and operating costs and more design choices and greater flexibility in terms of where you place the compute box inside an autonomous vehicle.

<sup>1</sup> Based on Mobileye EyeQ5 TOPS performance expectations vs. NVIDIA claimed Xavier platform DL Performance of 30 TOPS at 30W. Source: <http://www.nvidia.com/object/drive-px.html>

<sup>2</sup> Deep learning Tera Operations Per Second (DL TOPS) - Typically 1 multiply-accumulate operation = 2 DL OPS. The widths of the integer matrix multiplication vary by architecture, dedicated hardware and supported topologies. Any claimed DLTOPS number depends on several assumptions such as frequency, number of MACs and various other hardware specifications.

## Availability

The EyeQ5 will be Mobileye's fifth-generation SoC for vision central computer sensor fusion for fully autonomous (L4/5) driving vehicles. First silicon for the EyeQ5 will be in 2018 and volume production by 2020.

## About Intel

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- Results have been simulated and are provided for informational purposes only. Results were derived using simulations run on an architecture simulator. Any difference in system hardware or software design or configuration may affect actual performance.