

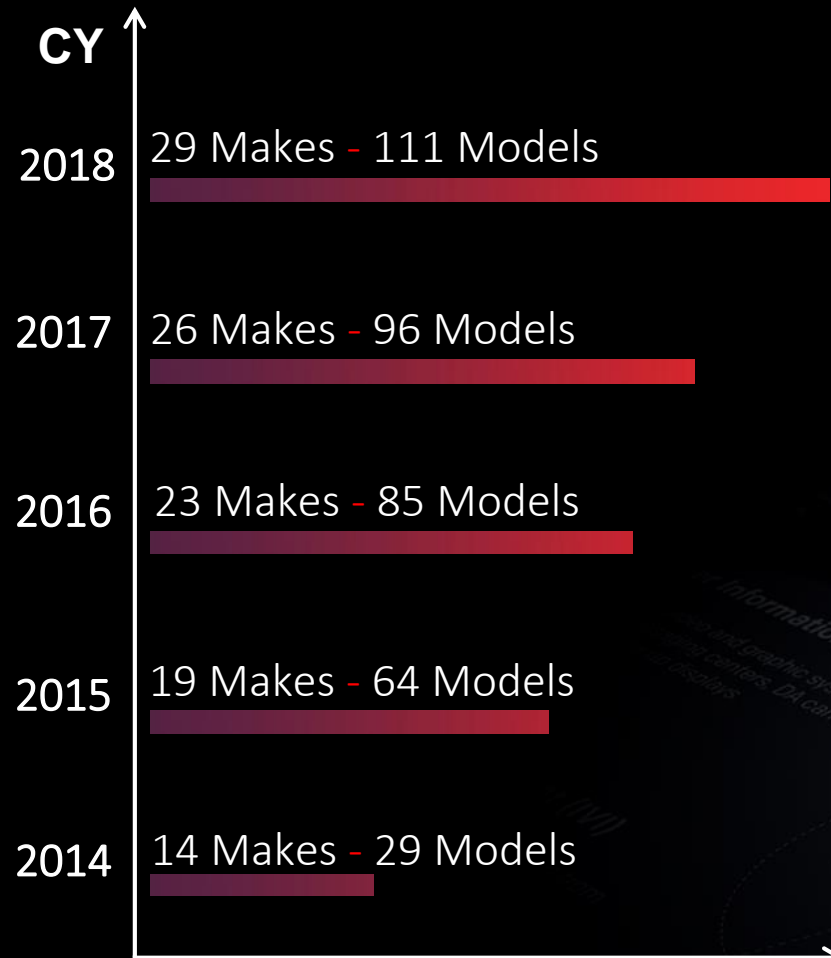
Xilinx Announces The World's Highest Performance Adaptive Devices For Advanced ADAS and AD Applications

Wayne Lyons
Director, Automotive and Strategic Customer Marketing



Xilinx's Solid Growth in Automotive

Shipments: 167M total, 67M ADAS



Note: Packaging shown is an illustration. For detailed package information refer to datasheet

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MPSoC Part Of The Redefinition Of The Automobile

- **ADAS**

Gradual transition from Computer Vision to AI for object detection, tracking and collision avoidance using edge sensors, cameras, RADAR and LiDAR

- **In-Cabin Experience**

In-vehicle monitoring relying more on AI inference to identify occupants' alertness, gestures, preferences

- **Automated Driving**

Adoption over next decade of conditional vehicle automation to full autonomous vehicles and Transportation-as-a-Service (TaaS)

The Race to Car 2.0 is Driving Change in Automotive

Sensors & ADAS

- Higher volumes

Car 2.0

Transportation as a Service

- Lower volumes

ADAS Domain Controllers



In-Cabin



Surround View

Car 1.n

Car 1.3

Car 1.2

Car 1.1

Traditional Vendors

System Arch
&
Technical
Implications

Business
&
Ecosystem
Implications

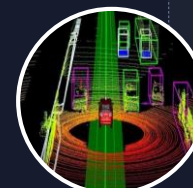
Edge sensors
Complex Signal Process + Perception (AI)



Camera

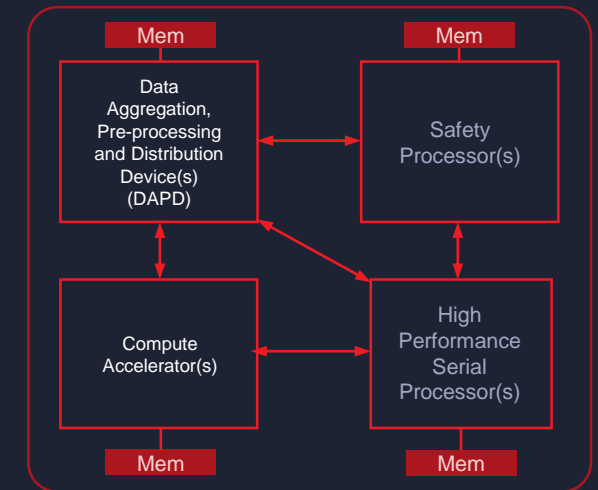


4D Imaging
RADAR



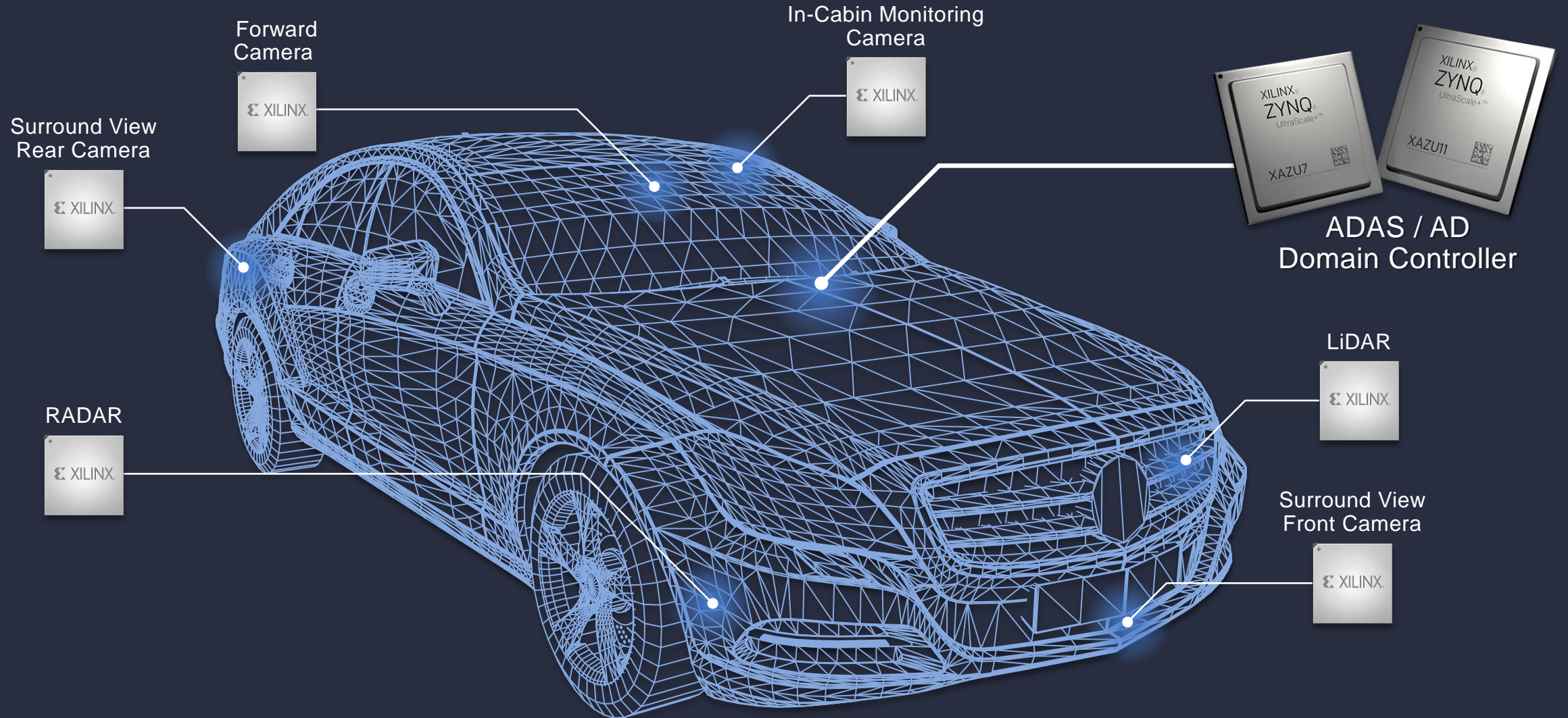
LiDAR

Centralized Domain Controller



Non-traditional Vendors

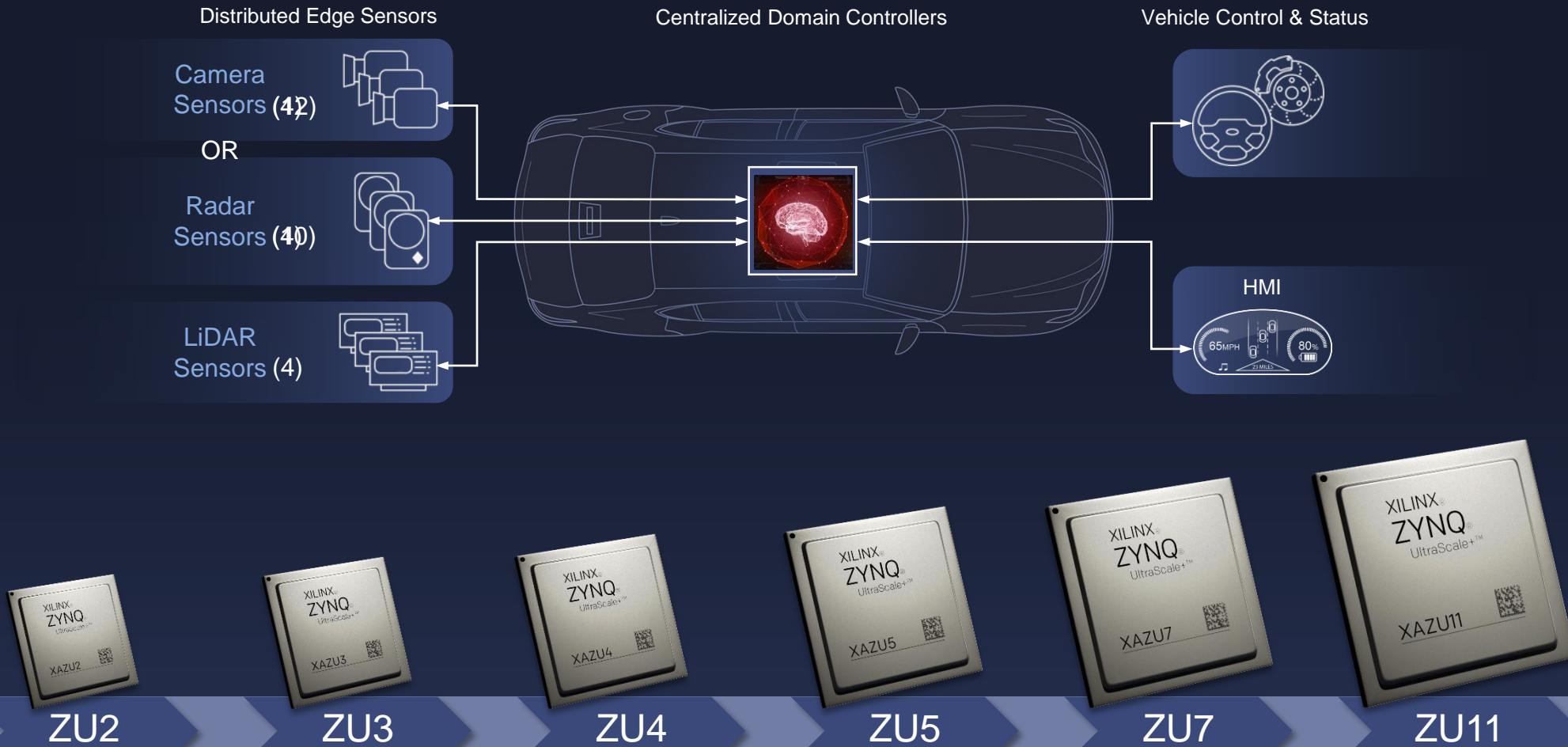
Automotive Solutions To Enable Autonomous Drive



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Note: Not representing actual vehicle architecture

Continuum From Edge Sensors To Domain Controllers



MPSoC Family: Adaptability and Scalability



	ZU2	ZU3	ZU4	ZU5	ZU7	ZU11
Logic Cells	103K	154K	192K	256K	504K	653K
Memory	6.5 Mb	9.4 Mb	21.1 Mb	26.6 Mb	44.2 Mb	52.7 Mb
DSP Slices	240	360	728	1056	1728	2928
Perf. IO / GTH12.5Gb/s	156/0	156/0	156/4	156/4	156/16	416/32

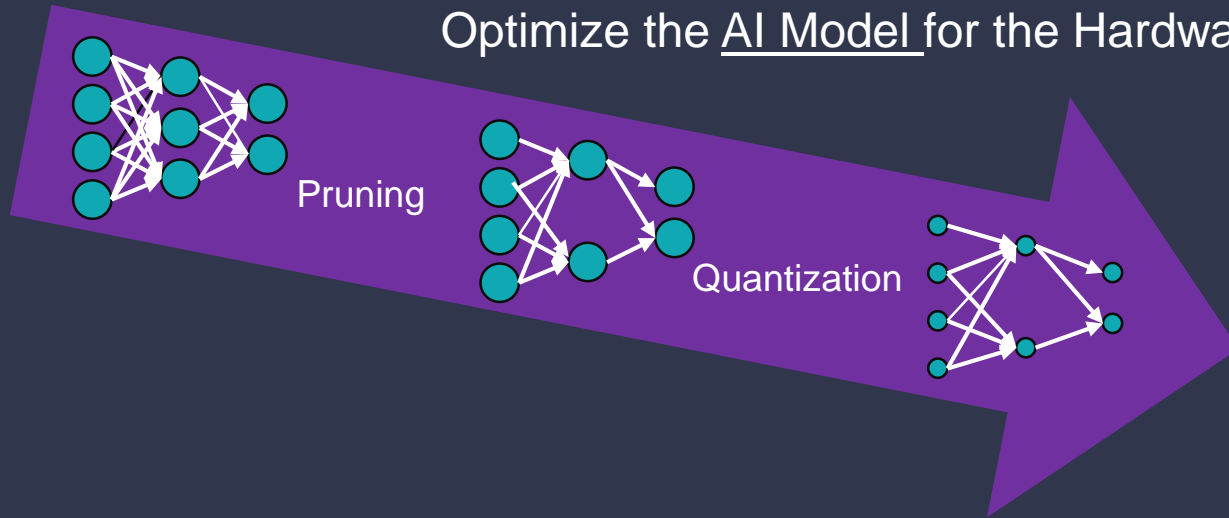
**World's Highest Performance
Adaptive Devices for Advanced
ADAS and AD Applications**

2x **2.5x**
Compared to the resources of ZU5

All devices share a common Processing System (PS) including Quad Cortex-A53, split-lock Cortex-R5 and GPU

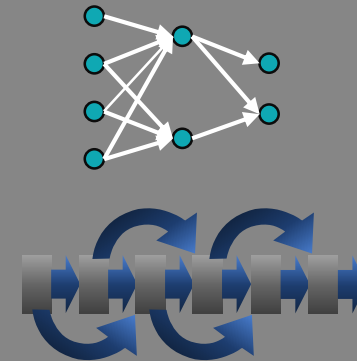
MPSoC Delivers Dual Optimization For AI

Optimize the AI Model for the Hardware

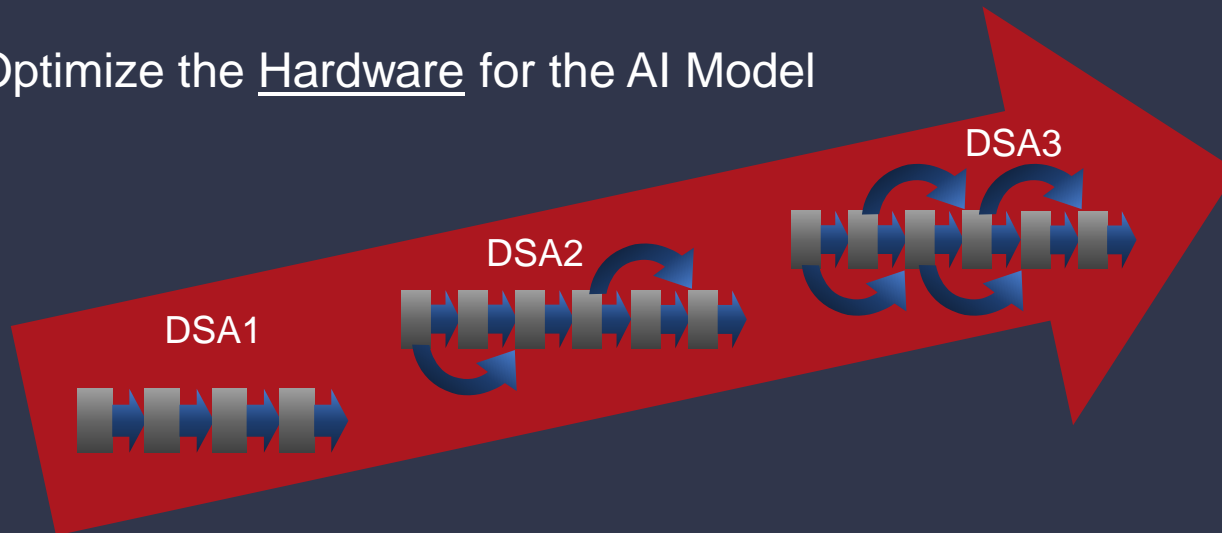


Dual optimization provides industry-leading real-time AI inference performance

FPGA/ACAP

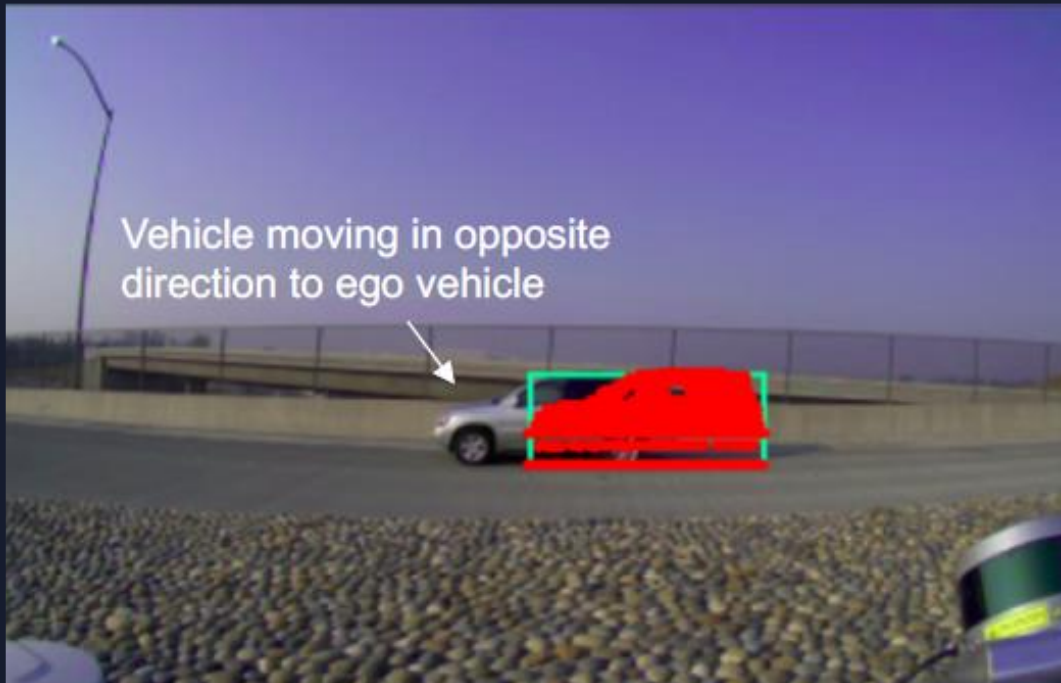


Optimize the Hardware for the AI Model

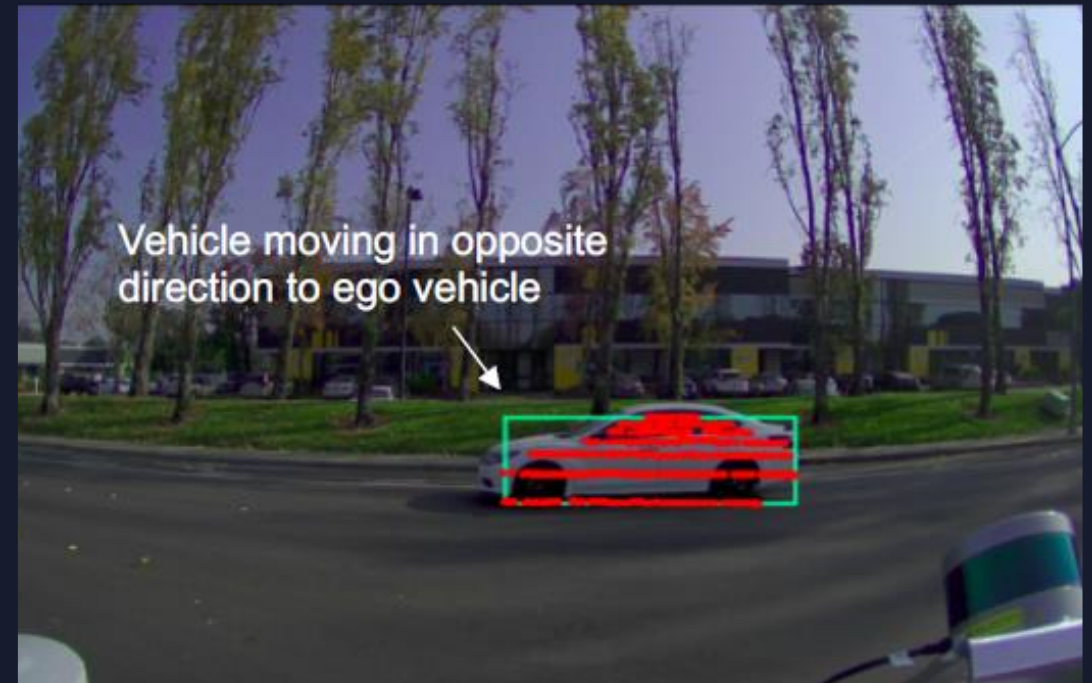


“Real Life” Example Of Latency With Level 4 AV

Without Xilinx



With Xilinx



Data shared from Pony.AI

Similar relative speed between ego and other vehicle in both scenarios

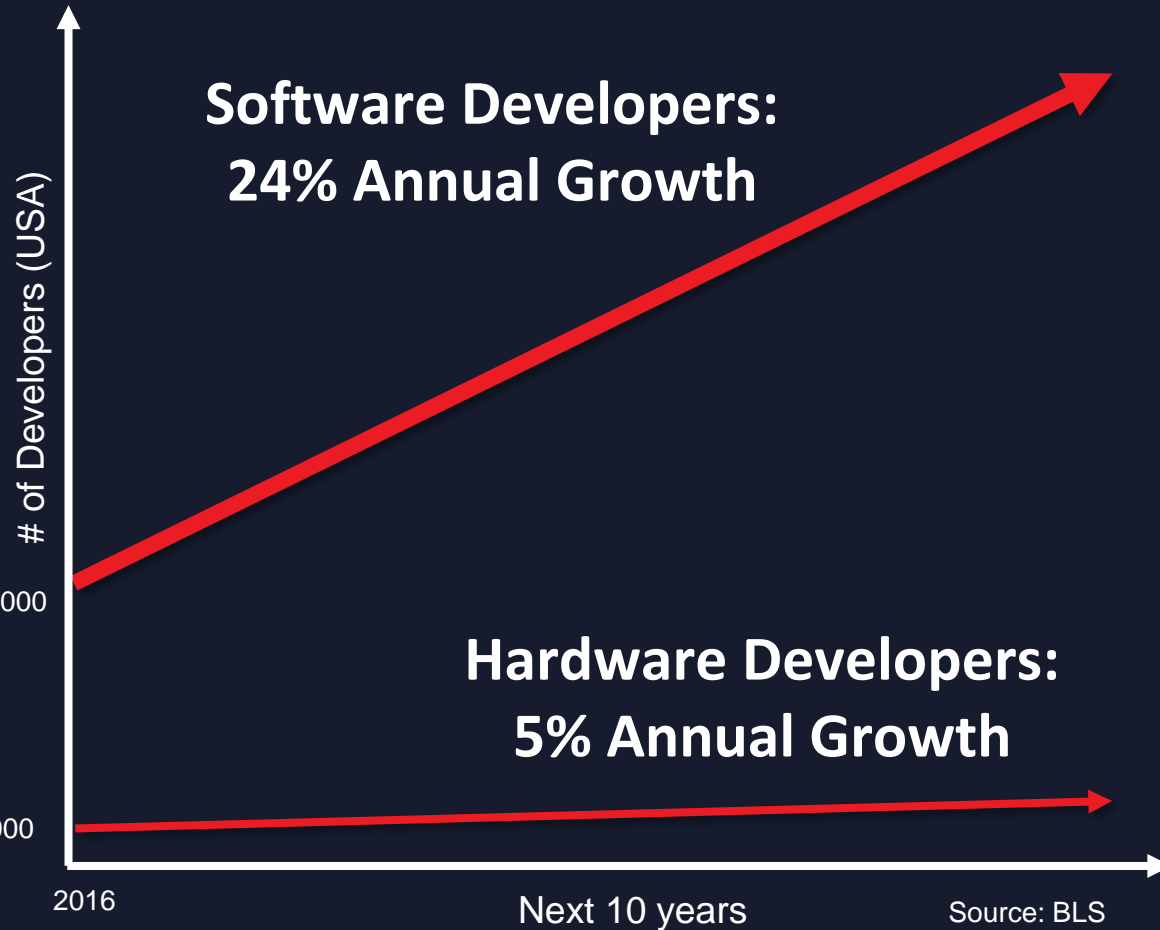
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... So, How Do We Enable Developers ?

**Software Developers:
24% Annual Growth**

**Hardware Developers:
5% Annual Growth**



SENSOR DATA
AGGREGATION

POINT CLOUD
PRE-PROCESSING

HIGH SPEED DATA
DISTRIBUTION

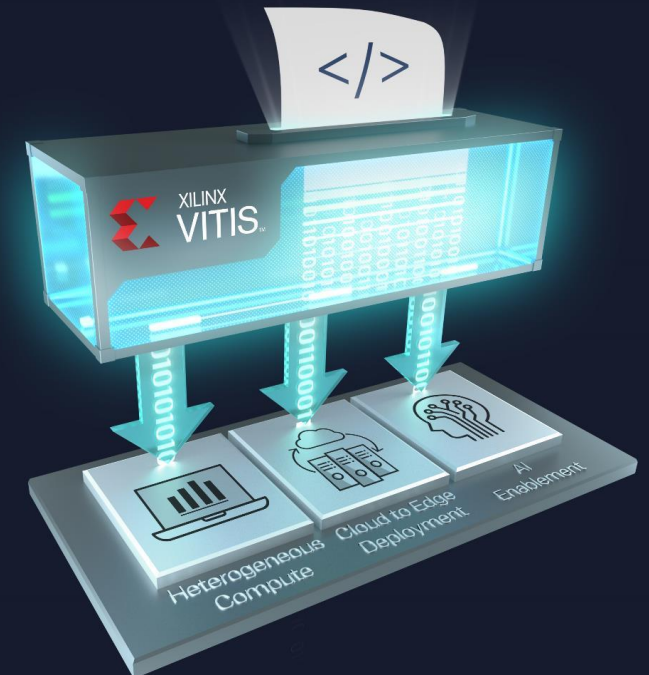
DEEP LEARNING
ACCELERATION



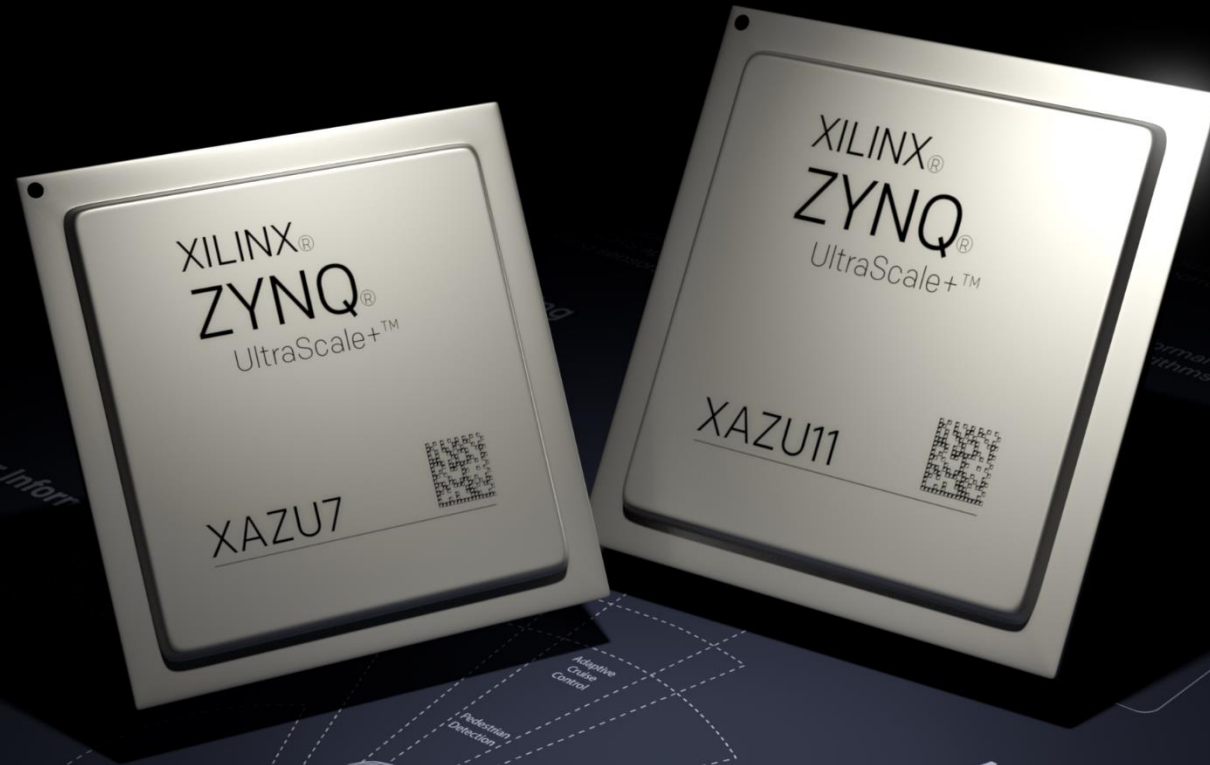
python™



TensorFlow



Announcing Two New Automotive Devices



The world's highest performance adaptive devices for advanced ADAS and AD applications

Automotive-grade portfolio expanded to include devices with highest capacity, performance and I/O

Scalable product family powering edge sensors to domain controllers

Enables high-speed data aggregation, pre-processing and distribution as well as compute acceleration



Building the Adaptable, Intelligent World