

TIM
TALTY

TECHNICAL FELLOW
GENERAL MOTORS

The Intersection Of Automotive, Electronics and Automation



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Warren Michigan Technical Center



MAJOR AUTOS IN MICHIGAN

More than 150,000 people employed by Michigan's automotive firms.



MAJOR AUTOS IN MICHIGAN

Epicenter of the North American Auto Industry

The Detroit region is the densest cluster of automotive design, engineering, R&D and manufacturing on the planet. Today, Michigan remains the center of the North American industry and is well positioned to drive the future.



16 automakers



12 assembly plants



23% of U.S.
auto production



1,800 suppliers, including
61 of the **100** top suppliers
to North America



76% of U.S. auto
R&D investment
(\$10 Billion annually)





GM'S WORLD VIEW

GM is committed to a future of:

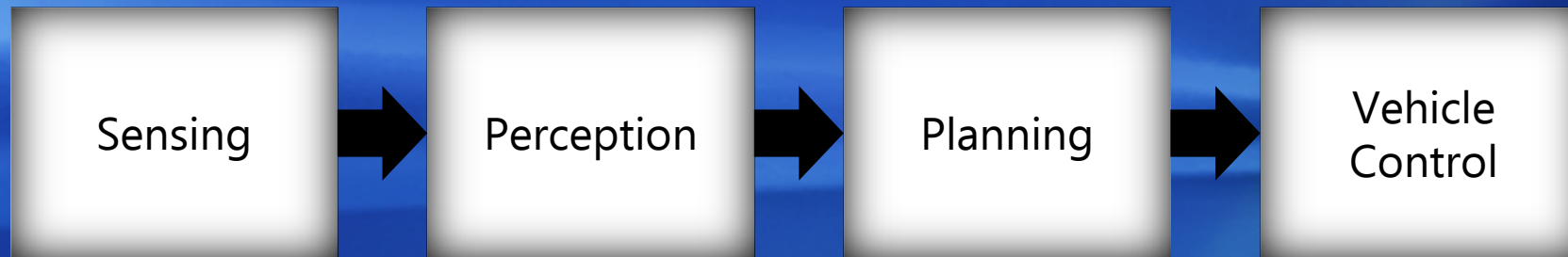
ZERO
CRASHES

ZERO
EMISSIONS




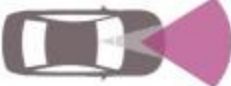




ZERO
CONGESTION

TECHNOLOGY WILL
HELP UNLOCK THIS FUTURE

Components of Vehicle Maneuvering

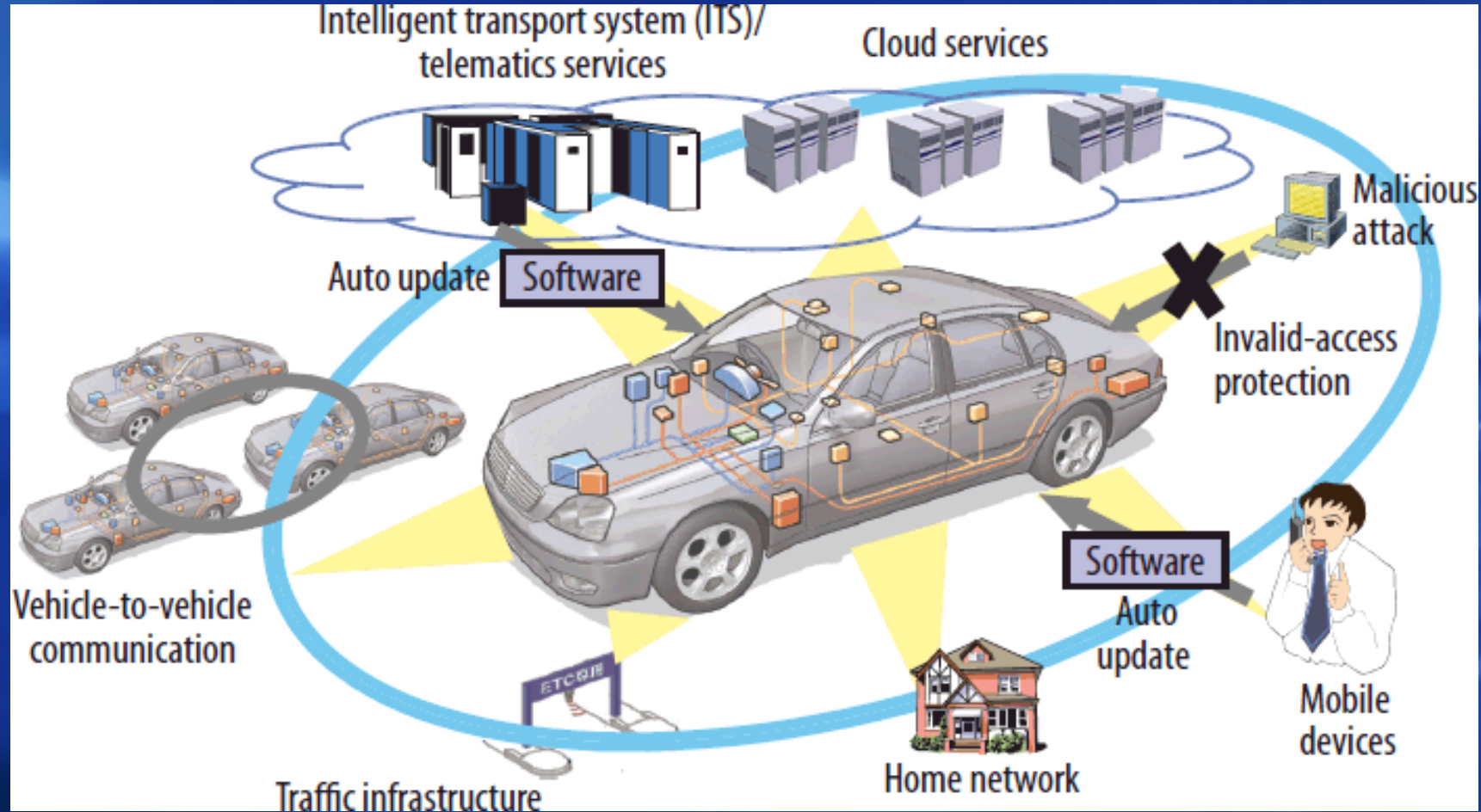


Evolution of Sensing

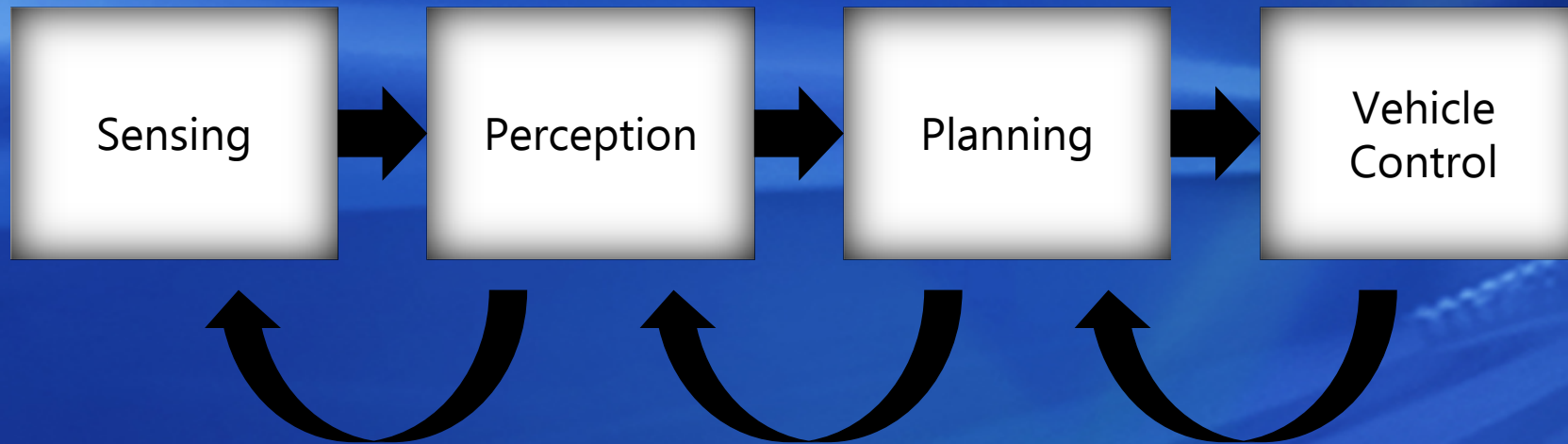
	Level of automation		
	Level 2	Level 3	Level 4/5
Application*	Automatic emergency brake/ forward collision warning		
	Parking assist		Valet parking
	Lane keep assist	Highway assist	Highway and urban chauffeur
Radar # of modules**	 ≥ 3	 ≥ 6	 ≥ 10
Camera # of modules**	 ≥ 1	 2	 ≥ 8
Lidar # of modules**	0	 ≤ 1	 ≥ 1
Others	Ultrasonic	Ultrasonic Interior camera	Ultrasonic Interior camera V2X

* Source: VDA (German Association of the Automotive Industry), Society of Automotive Engineers
 ** Market assumption;

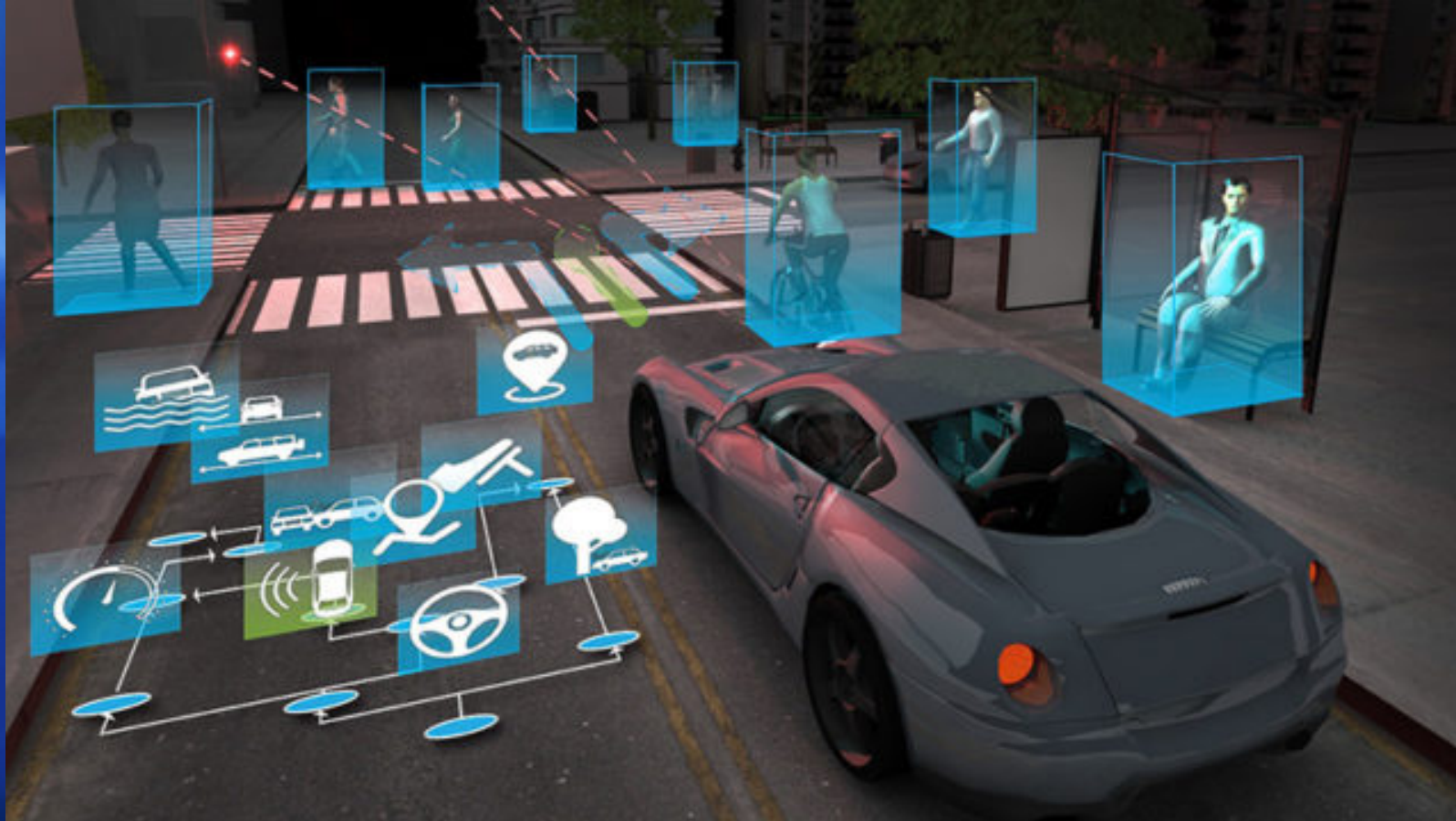
Evolution of Vehicle Features

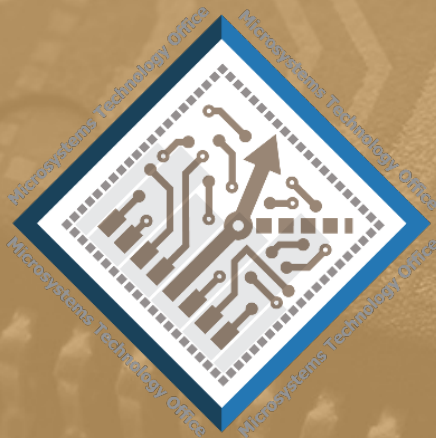


Components of Vehicle Maneuvering



Lifelong Learning Machines (L2M)





ERI **ELECTRONICS RESURGENCE INITIATIVE**

S U M M I T

2019 | Detroit, MI | **July 15 - 17**