



We are the link
between the real and
the digital world.

Enabling safe & trusted mobility
towards automated driving by radar

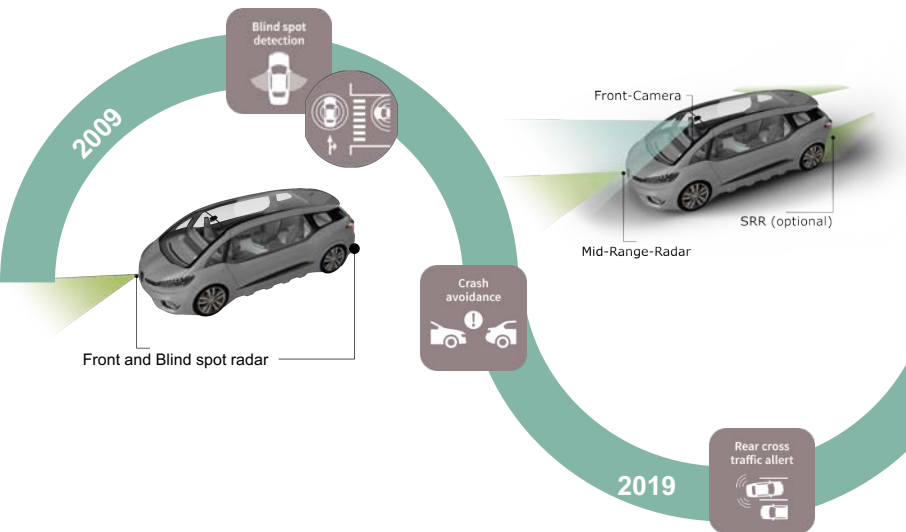


The evolution of ADAS/AD* demands for more radar

ADAS

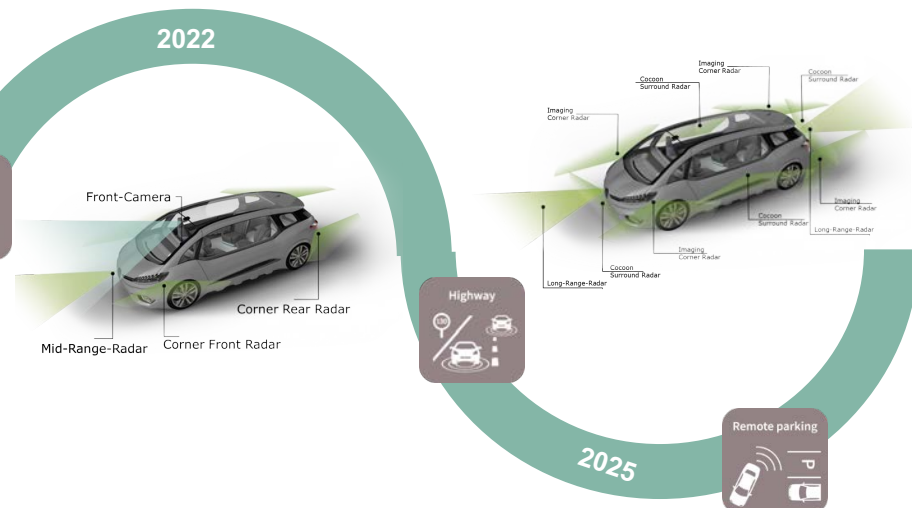
Making driving safer

Radar and camera sensors needed to support increasing number of use cases/test cases



AD

Driver becomes a (trustful) passenger



Additional sensors (as Lidar) and **multiple** radar sensors with higher performance are needed to support **complex** use cases

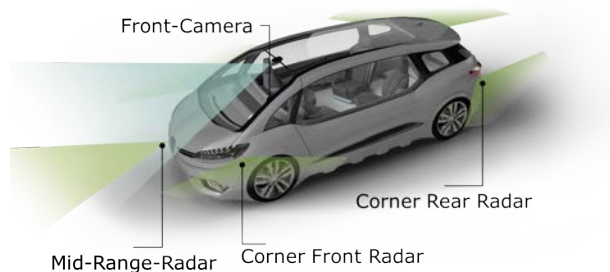
* ADAS = Advanced Driver Assistance Systems AD= Automated Driving

Why is the ADAS market growth accelerating?

NCAP 5 Star 2025 (L1-2)

Addition of 2 front corner radars to handle junction crossing assist (JCA) test case

Rear Radar Upgrade to 77/79GHz (LCA/rear AEB pedestrian/cross traffic)

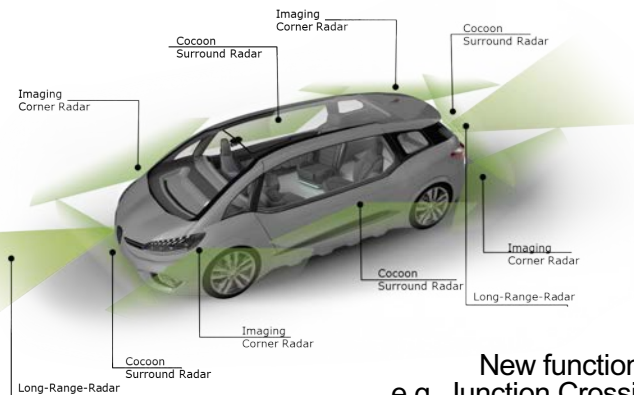


EURO NCAP and C NCAP AEB for Pedestrians & Cyclists

Level 3/4/5

L3+ environment perception requires different sensor set:

- › Cocoon/Surround Radar (>4)
- › High Performance Corner Radar (1-3)



New functions:
e.g. Junction Crossing Assist

2018

EU Legislation 24GHz to 79GHz

2020

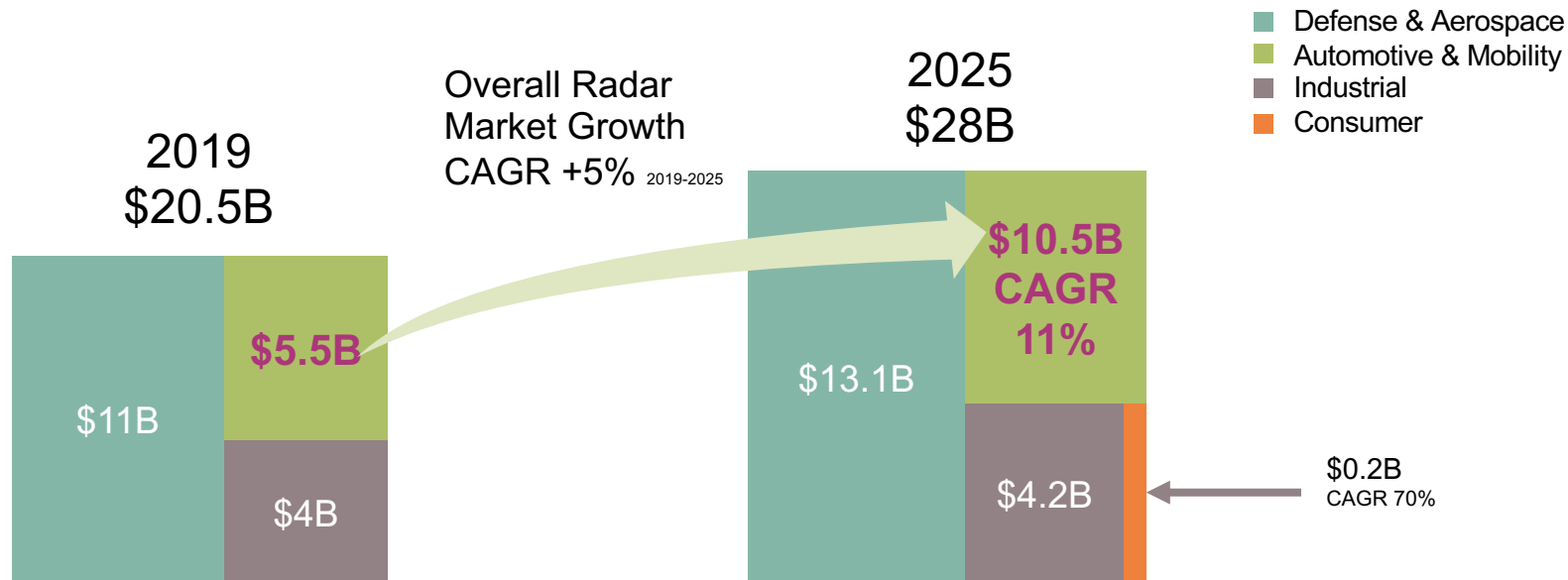
2022

NHTSA – 20 car makers in US voluntarily at 100% AEB

2024

AEB mandatory in EU

Radar market growth chart



01




Radar market dominated by Defense & Aerospace Automotive has a significant portion

02

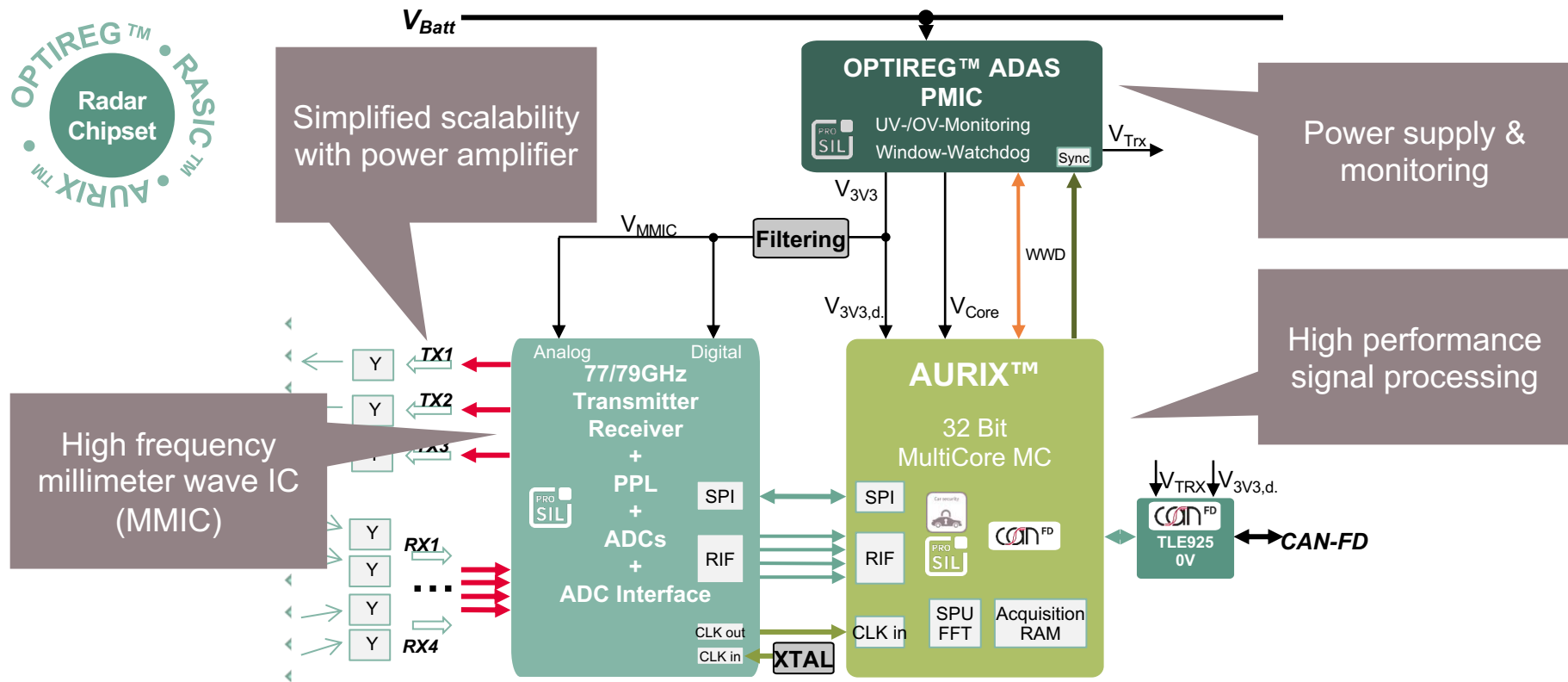
Automotive market growth twice that of overall radar market by and emergence of Consumer

Source: Yole Status of Radar Industry Report 2020

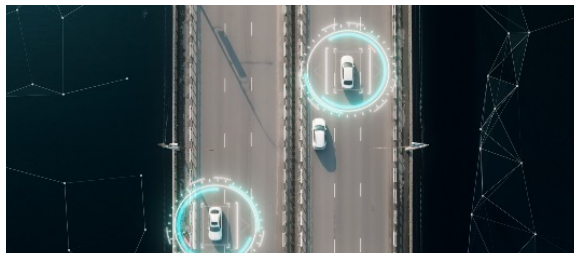
Why radar over other sensing technologies?

		Key strength		Environmental factors		Implementation cost	
	RADAR	Distance, velocity	✓	Minor limitations	✓	Mass production Mature tech. nodes	✓
	CAMERA	Object classification, angle, color, marking, & structure	✓	Rain, fog, ambient light	✗	Mass production Mature tech. nodes	✓
	LIDAR	High-resolution angle, lane marking, distance	✓	Rain, snow	✗	Solid state solutions Emerging phase	✗

What makes up a radar chipset?



Trends in radar systems



Strong volume growth

More radar modules per car
(equipment rate)

Radar entering new car
markets and segments



New radar application areas

77GHz radar de-facto standard for **external** sensing (front, corners) extending to 76-81GHz

60GHz radar opening new **in-cabin** applications required for L2+ automation within the next 5 years



Preparing for complex urban driving scenarios

xCruise / xPilot configuration (from 1+2 to 1+4 radars)

Robo taxi & Robo delivery services

Areas of work for next generation Infineon solutions in radar



Increased angular resolution

More antenna means higher computing performance

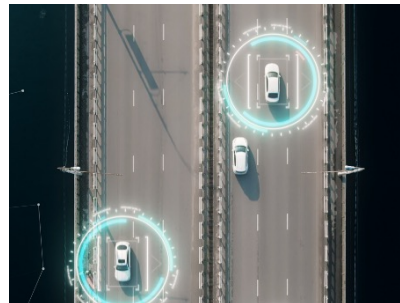
More complex beam forming (azimuth, elevation)



Interference mitigation

Increase width of shared, usable frequency band

Introduce numeric compensation + filtering methods



Faster reaction time

Provide more radar computational power

Enhance radar specific accelerators

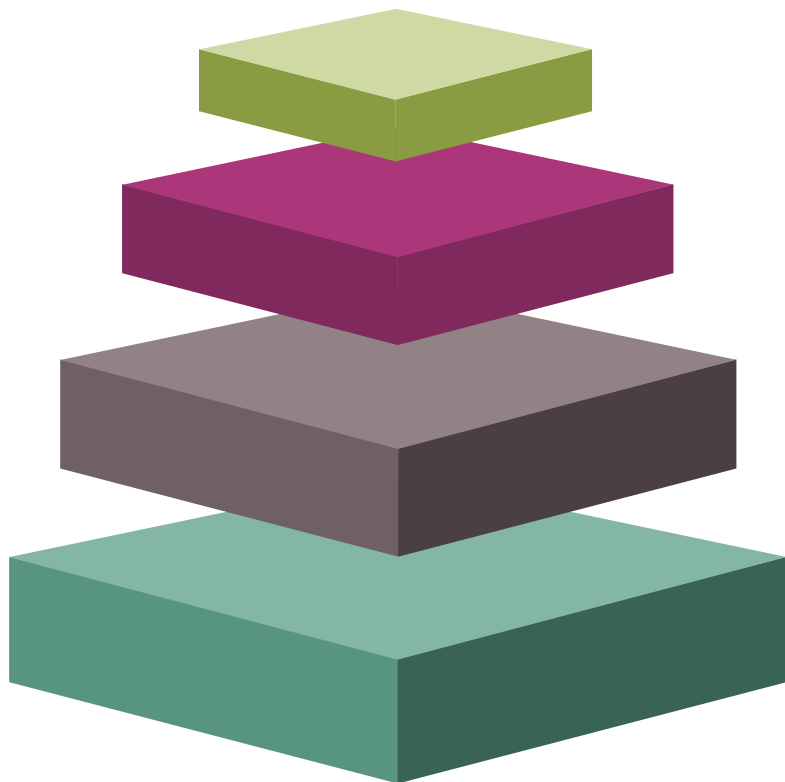


Busy environments for L3+ driving

Efficient filtering / detections in noisy environments

Machine learning support

Dependability-the foundation of trust



Successful Driver of the AD market

Having established trust enables you to become the default choice of many who want to try a proven and trusted technology for AD solutions.



Trusted Solution provider

Creating a dependable system and placing it in your vehicle wins you the trust of the market place. You become the market place's trusted choice.



Fast & Agile Development

Time to market decides who wins the race. Building fast and agile developments on a foundation of dependable electronics gives you the confidence in your design and frees you up to speed up your time to market.



Dependable Electronics

A foundational element of building a trusted system. It needs to meet the requirements, be scalable and enable a life time of working correctly.

Summary and key messages

- › ADAS is the foundation to automated driving
- › Radar is the **cornerstone** of ADAS sensor suite in most new cars
- › Infineon provides a scalable radar chipset which address the full range
- › Radar growth seen in two main directions:
 - High performance / comfort function
 - Increasing NCAP function support
- › With radar working invisibly in the background as an external "safety belt" around the car, we increase **safety**
- › Enabling new comfort functions that are **dependable** builds **trust** in the user base





Part of your life. Part of tomorrow.