

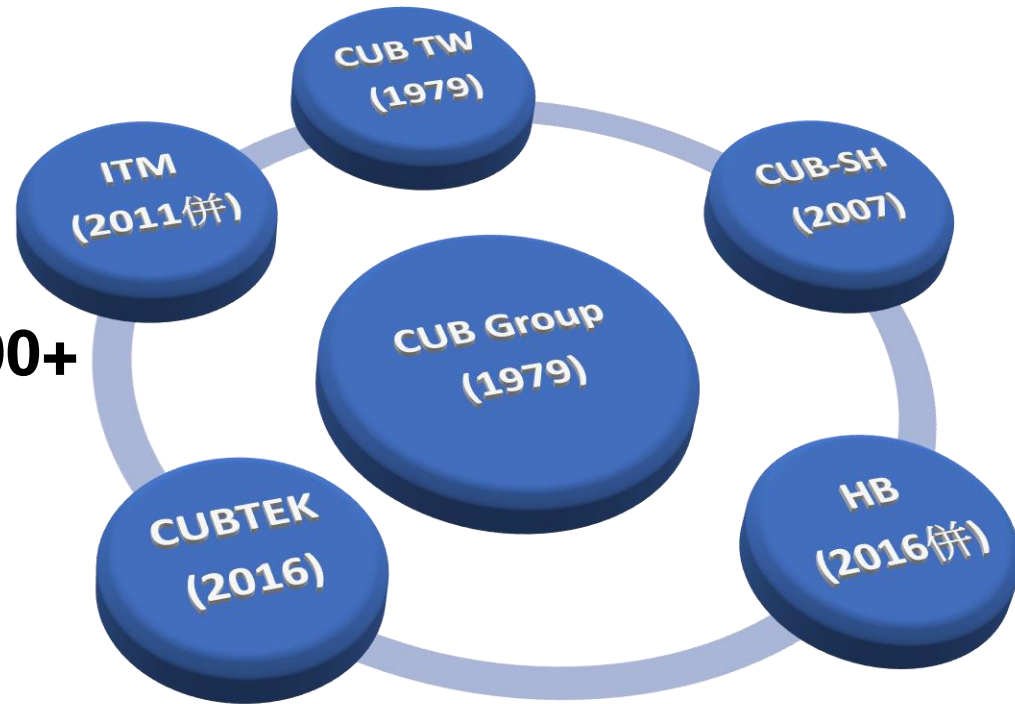
CUB ELECPART INC.(2231)

為升電裝工業



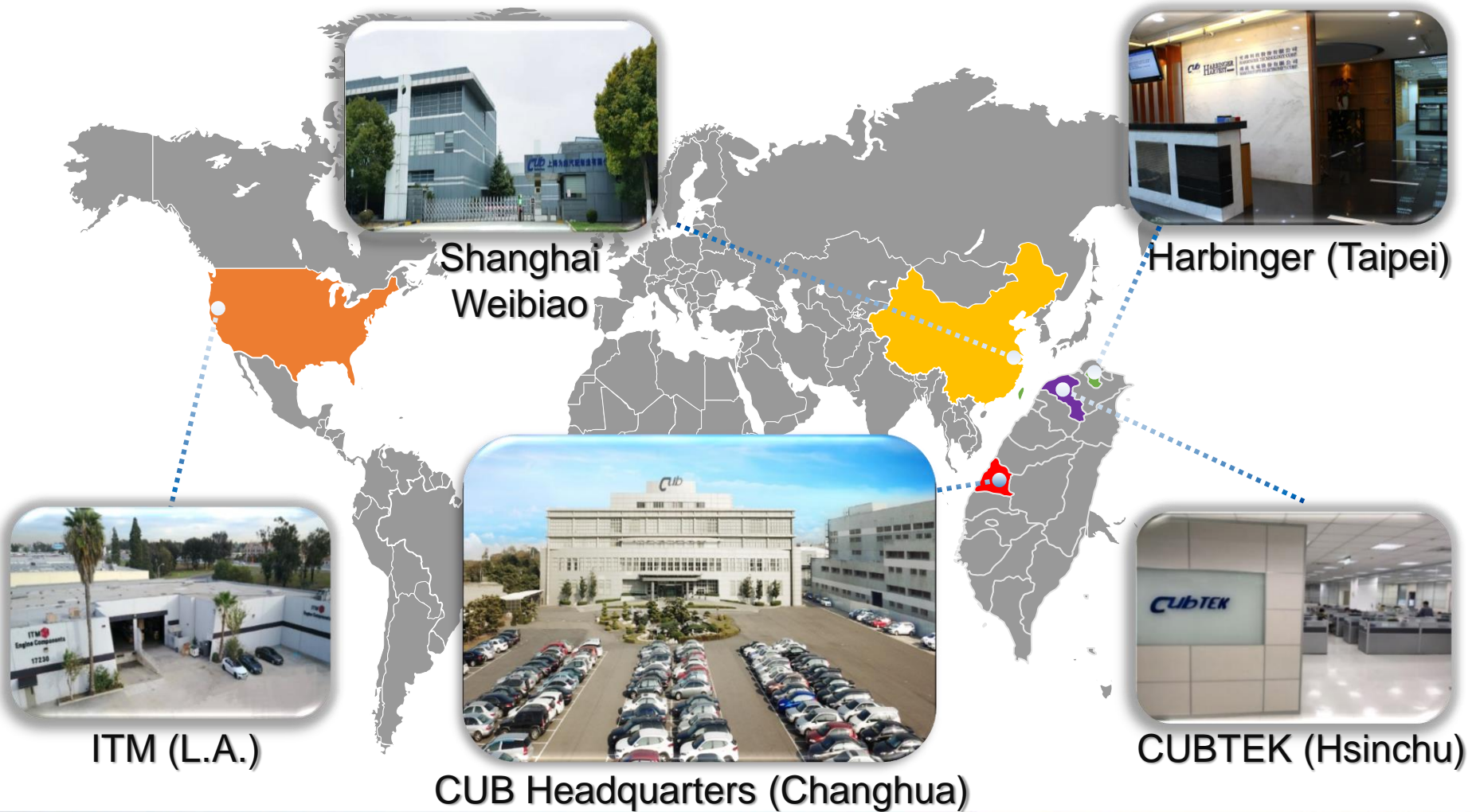
ADAS SOLUTION

- Established: 1979
- IPO: 2010
- Stock Symbol: 2231
- Capital : NT\$ 1.012B
- CEO: Mr. S.C. Yu
- Number of Employees:800+



CUB Group

CUB
Genuine Parts



www.cubautoparts.com



Product Roadmap



Transportation Communication System
道路通訊系統

Fleet Security Management System
車隊安全管理系統

Internet of Vehicle System
車聯網系統



★ **Switch**



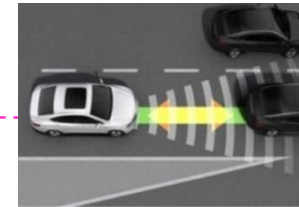
Sensor



★ **TPMS**



24GHz,77GHz Radar



Driverless

Total ADAS Solution

★ **The Best Universal
TPMS Solution
in World Wide**

★ **Leading ahead
in Cross-Strait
Market**

**Top 3 in World Wide
Competition**

1979

2007

2016

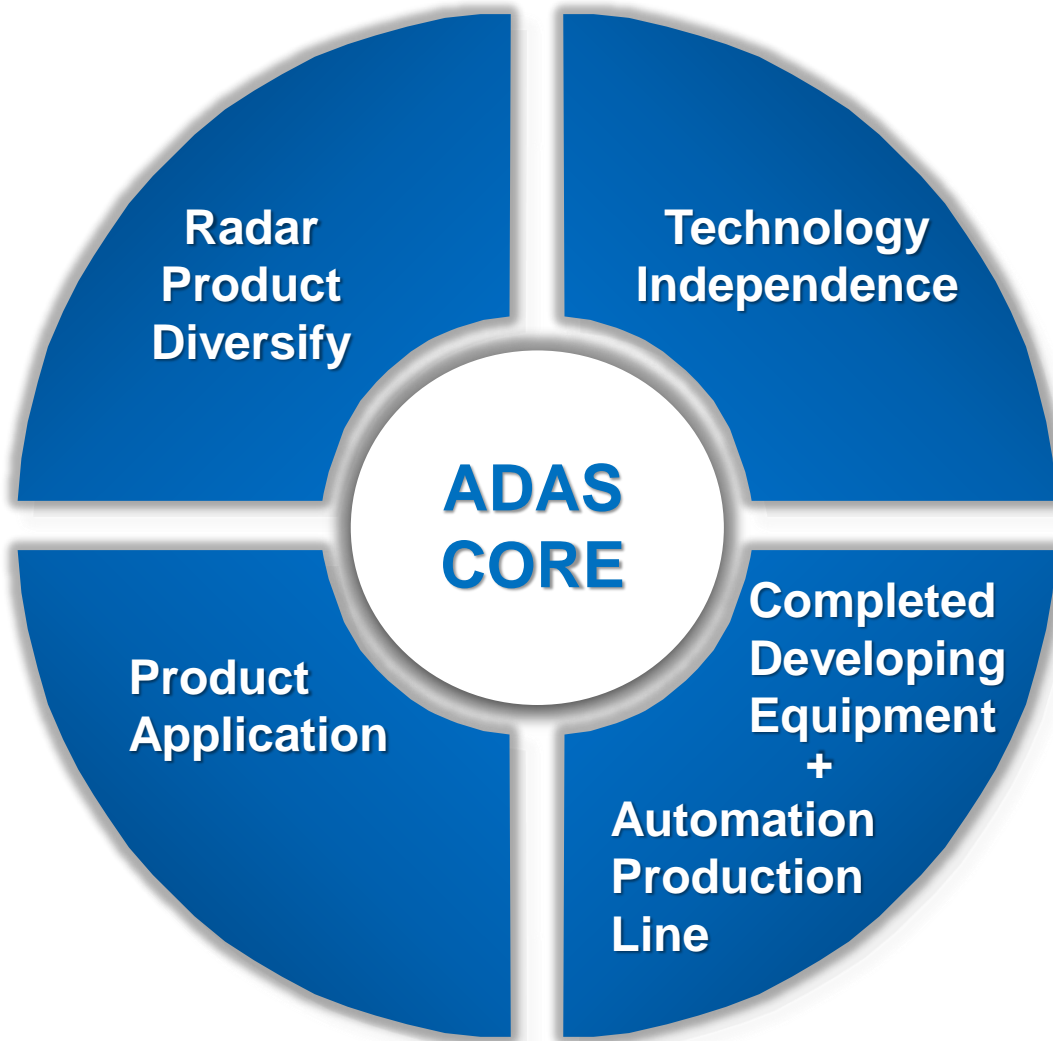
2019



Financial Statement (2012~2017)

Currency: NTD 1,000	2012		2013		2014		2015		2016		2017 (Announced)	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Net Revenue 銷貨收入	1,338,240	100	1,498,942	100	2,155,184	100	2,822,080	100	3,416,549	100	3,520,466	100
Gross Profit 營業毛利	517,085	39	646,850	43	1,086,876	50	1,562,163	55	1,854,911	54	1,874,618	53
OP Expenses 營業費用	215,642	16	234,544	16	265,874	13	313,049	11	499,848	15	-	-
OP Profit 營業利益	301,443	23	412,306	27	821,002	37	1,249,114	44	1,355,063	39	-	-
Profit before tax 稅前盈餘	294,335	22	430,804	28	880,519	39	1,303,897	46	1,341,336	39	1,153,171	33
Profit Attributable to Shareholders of the parent 本期淨利-業主	248,914	19	363,841	24	745,253	33	1,120,274	39	1,115,580	32	1,011,821	29
EPS (元) 基本每股盈餘	4.13	-	6.00	-	10.43	-	13.45	-	12.14	-	10.00	-
Capital 資本額	603(M)		605(M)		723(M)		833(M)		919(M)		1,012(M)	





Diversified Radar Products

● 24GHz Millimeter Wave Radar

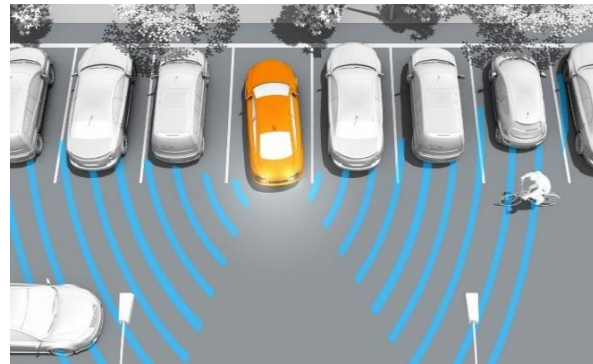
BSD- Blind Spot Detection

RCTA- Rear Cross Traffic Alert

DOW- Door Open Warning



BSD



RCTA



DOW

Diversified Radar Products

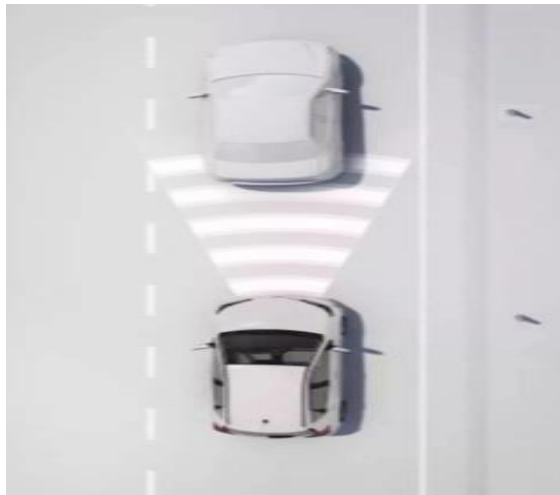
● 77 GHz Millimeter Wave Radar

FCW-Forward Collision Warning

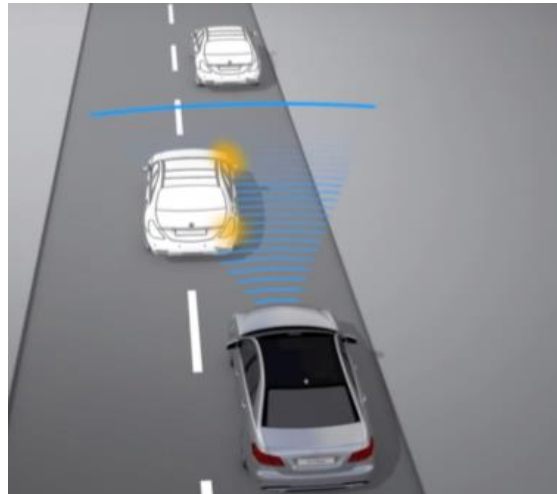
AEB-Autonomous Emergency Braking System

ACC-Adaptive Cruise Control

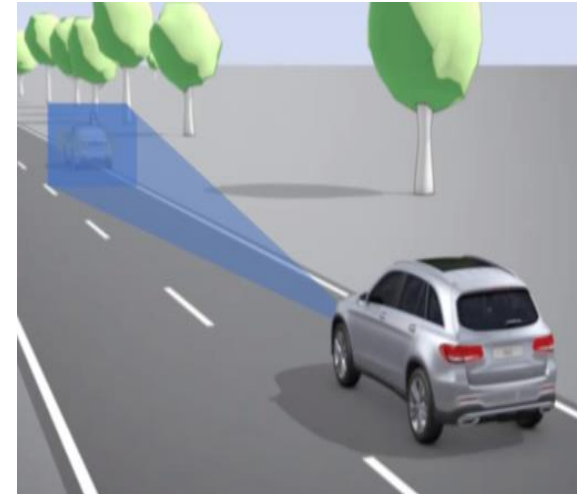
Stop-and-go



FCW Detection mode



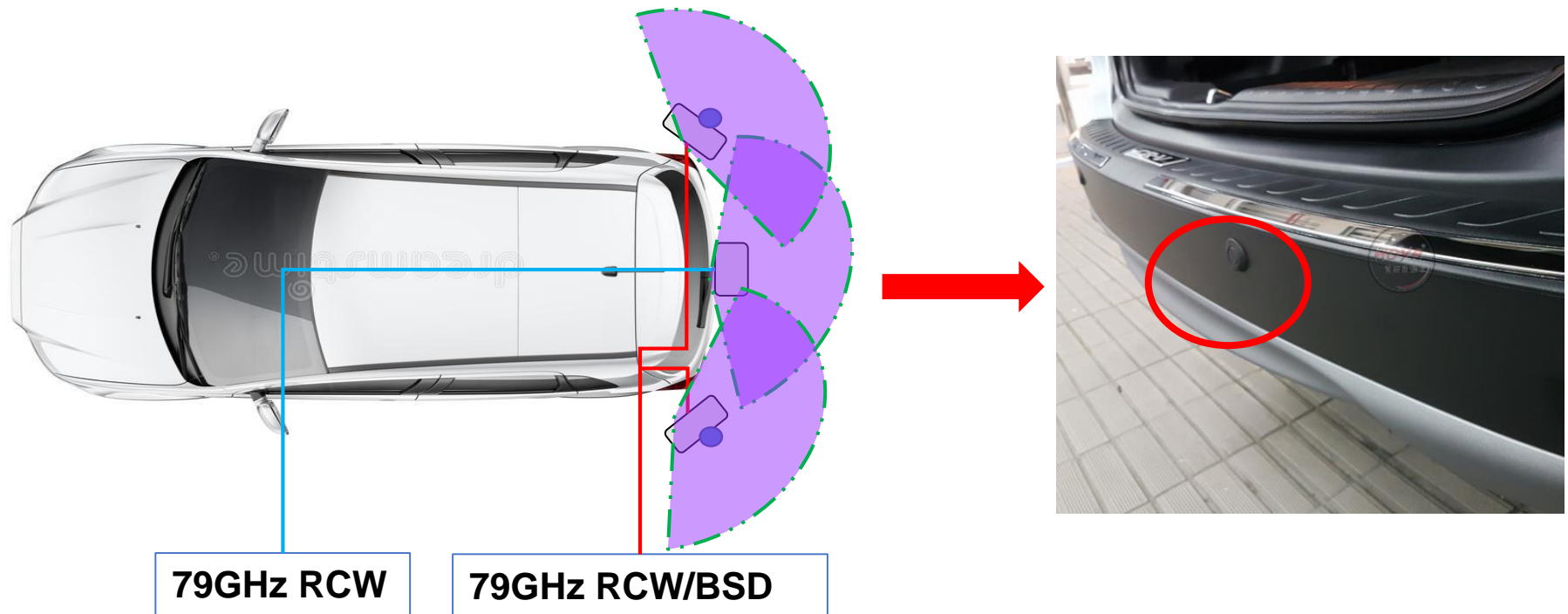
FCW- Wide-angle detection mode



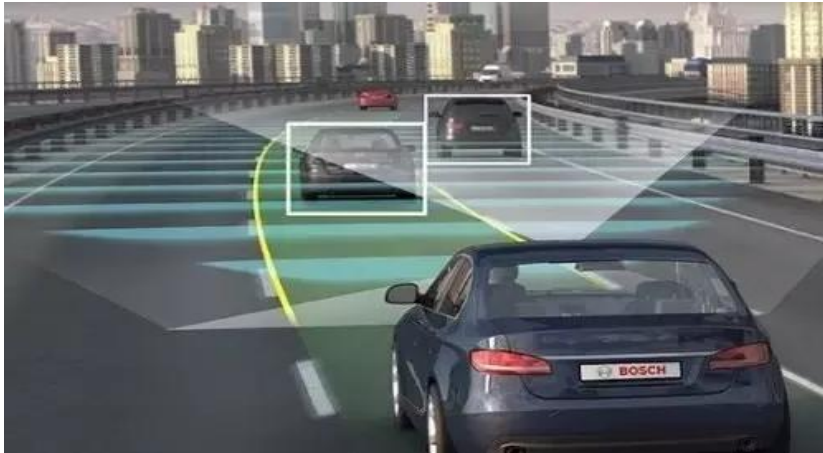
FCW- Altimetry mode



● 79GHz Radar New Technology Introduction



● Radar Integrated with Camera (FCW+LDW)



Radar Integrated with Camera

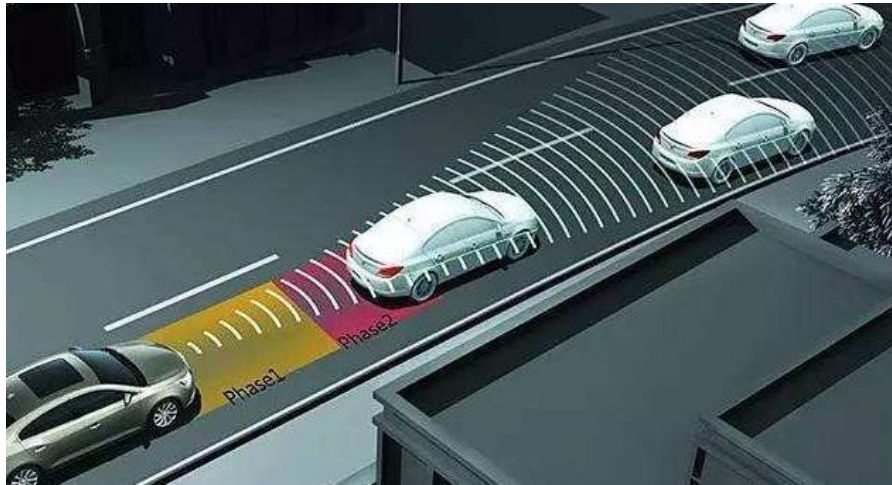


Interface of Display

● AEB & ACC

AEB-Autonomous Emergency Braking System

ACC-Adaptive Cruise Control



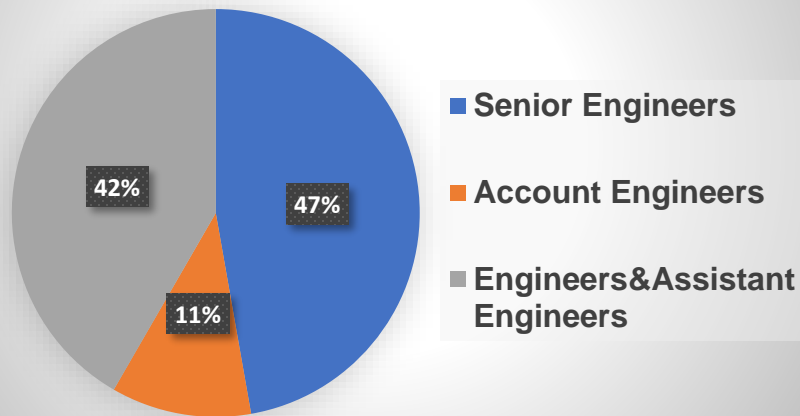
ACC



AEB

● Professional RD Team

Team Member Seniority Allocation

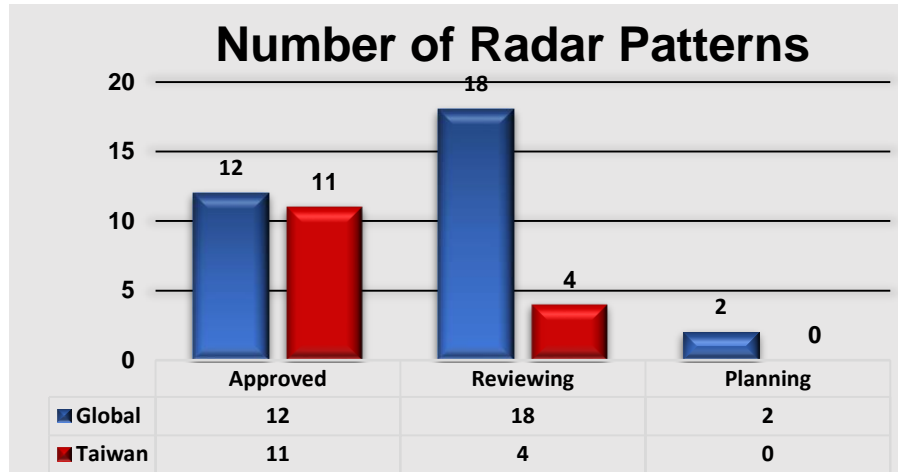


Function	Engineer Number	
	Taiwan	Shanghai
Hardware	19	2
Software	17	2
Algorithm	20	2
Mechanical	8	6
Manufacturing	11	5
PM	5	5
Total	80	22



Technical Independence

● Technical Independence Plus Robust Customized Capability



Status	Pattern Type	Q'ty
Approved	New type	9
	Invention	3
Reviewing	New type	3
	Invention	15
Planning	New type	0
	Invention	2



●State-Of-The-Art Equipment



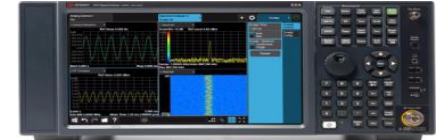
頻譜分析儀



網路分析儀



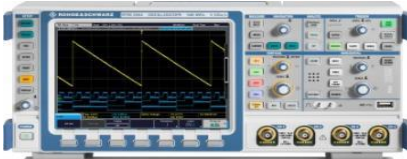
微波類比訊號發動機



信號分析儀



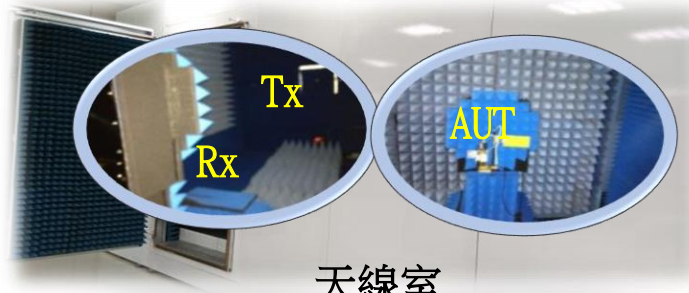
R&S RTO 數字振盪器



R&S RTM 數字振盪器



ARTS 雷達模擬器

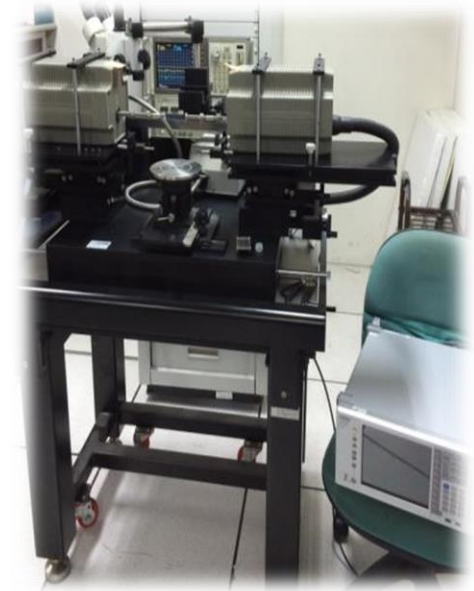


天線室

L7xW3xH3 (m)



HFSS 工作站



晶圓毫米波探測站

Completed Developing Equipment & Automation Production Lines

●Automation Radar Production Lines for Both TW/SH

Taiwan

- ▶ Automation Production Lines x1
- ▶ Capacity : 80Kpcs/ month

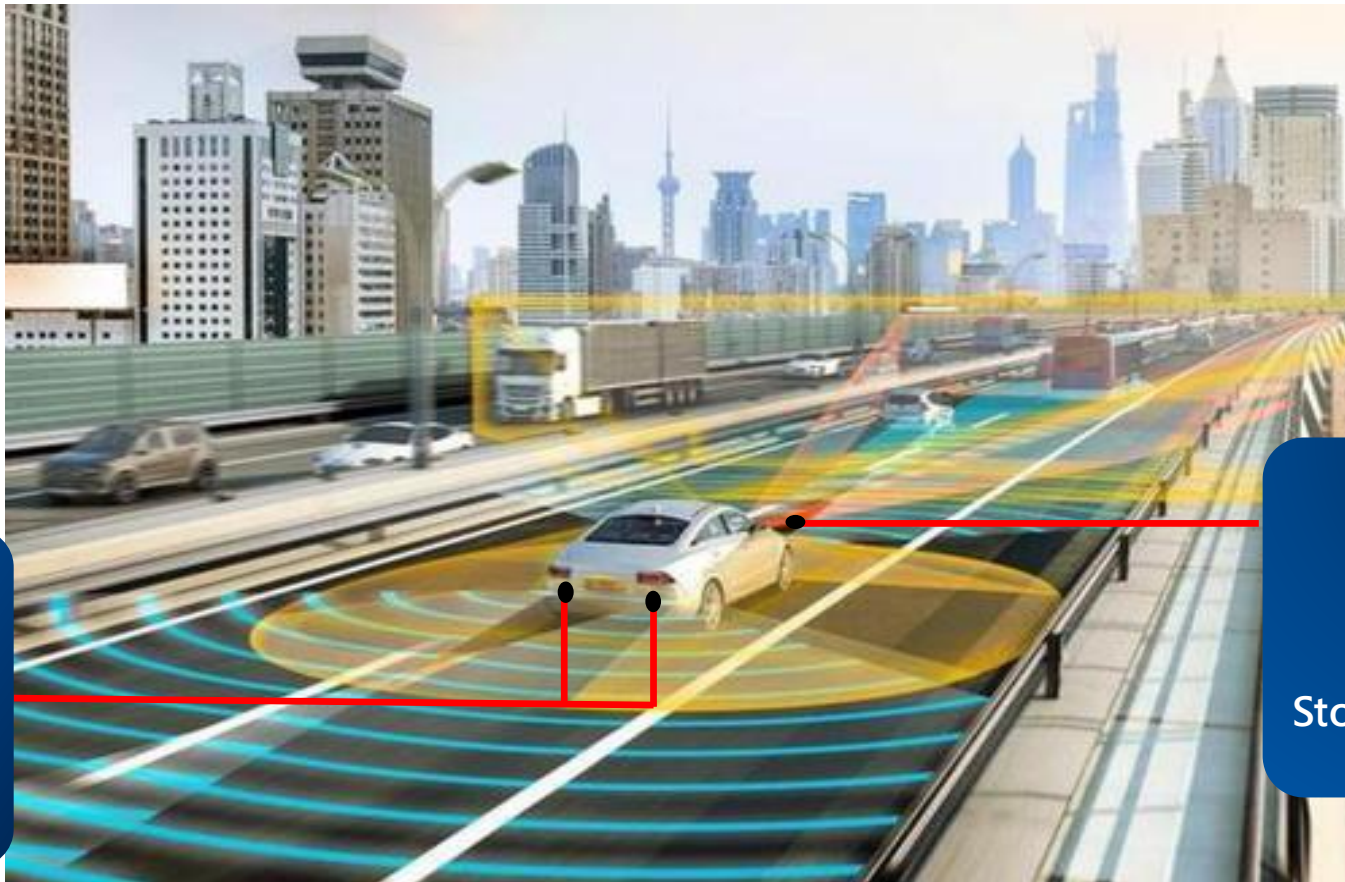
Shanghai

- ▶ Automation Production Lines x1
- ▶ Capacity : 80Kpcs/ month



Radar Application Field

● Application for Automobiles -OEM



BSD
LCA
RCTA
DOW

FCW
AEB
ACC
Stop & Go

Radar Application Field



Recreational Vehicles



Trucks



School Buses



Garbage Trucks

Application for Automobiles And Motorcycles AM



Construction Vehicles



Motorcycles



Fire Trucks



Ambulances



Police Cars



Radar Application Field

◆ For Agriculture

- Drones (For Spraying Pesticide)



◆ For Sea Transportation



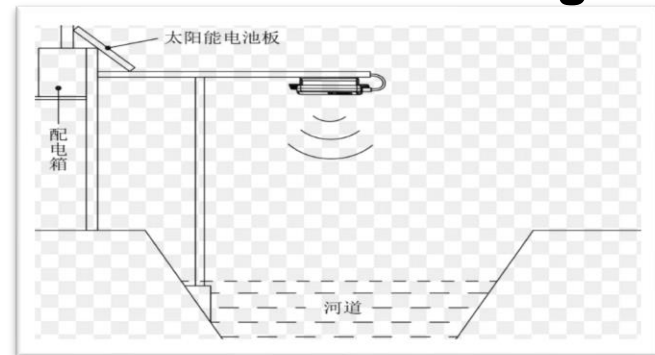
◆ For Public Transportation

- Railroad Crossing



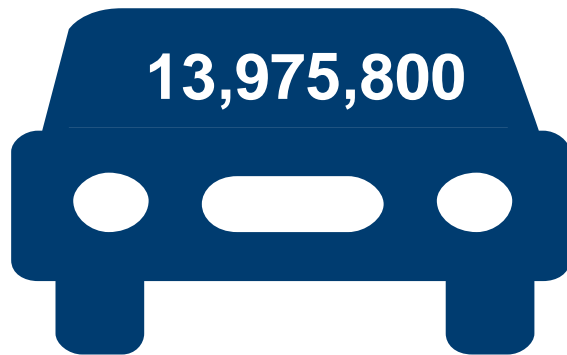
◆ For Other Fields

- River Monitoring

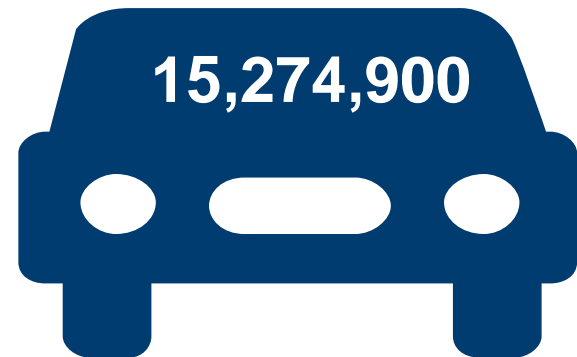


◆Automobiles OEM: Mainly Focus on China Car Manufacturers

On the basis of China Auto Association ,Chezhu Home data show that in 2016, the independent brand OEM sales of 13,975,800 vehicles, the joint venture brand sales of 15,274,900 vehicles, CUB actively seizes the business opportunities of OEM millimeter wave radar.



**Independent Brand
Sales**



**Joint Venture Brands
Sales**

◆Automobile ADAS Aftermarket

A Ducker Worldwide-Center for Automotive Research study released by 2017 SEMA found that retrofitting vehicles with advanced driver assistance systems could bring in 1.5 billion dollars to the aftermarket by 2021.

◆American School Buses

Based on CUB investigation, there is around 450,000 school buses on the road, 25 million students take buses for school. The annual production is about 46,000 units, this industry is growing stably.



◆ American Heavy Duty Market

According to data released by Wardsauto, the annual sales of 4-8 level trucks in the United States are about 430,000 units.

CLASS 3
10,001 - 14,000 LB. 4.5-6.4tons



CLASS 6
19,501 - 26,000 LB. 8.8-11.8tons



CLASS 4
14,001 - 16,000 LB. 6.4-7.3tons



CLASS 7
26,001 - 33,000 LB. 11.8-15tons



CLASS 5
16,001 - 19,500 LB. 7.3-8.8tons



CLASS 8
33,001 LB. AND OVER 15tons over



◆ American RV Market

According to Recreation Vehicle Industry Association(RVIA)Information, 2017 totals for towable RVs are up 17.6% to 441,961 units.

2017 motorhome shipments finished at 62,638 units on 14.4% growth over the 54,741 units shipped during 2016.

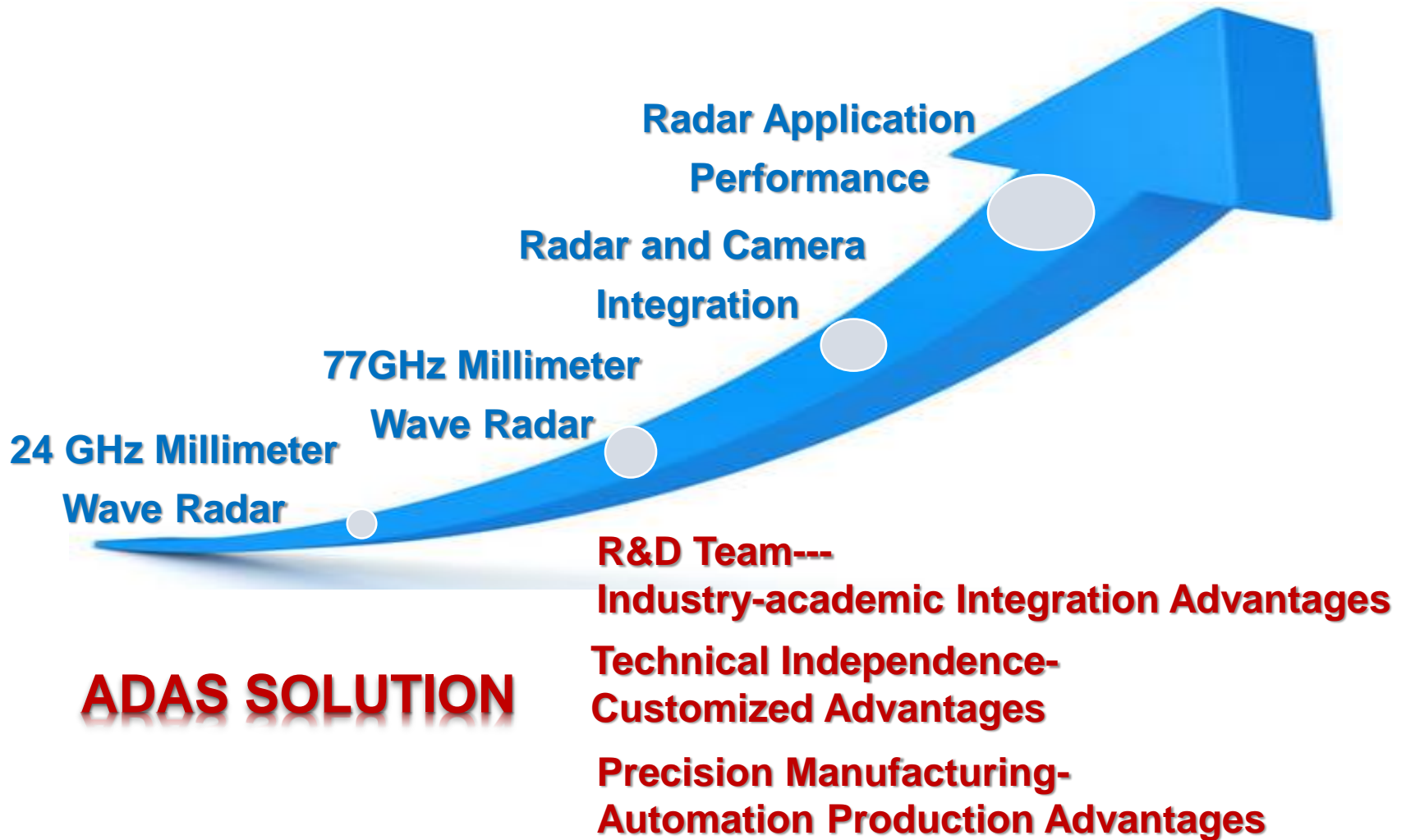
RV wholesale shipments finished 2017 with 504,599 units up 17.2% compared to the 430,691 units shipped in 2016.

◆ UAV Market

According to the UAV technology research and advisory firm, Gartner forecast: The global UAV production will be close to 3 million in 2017, an increase of 39% over 2016, with a total value of more than \$6 billion.



ADAS Solution –Star Products



Q & A