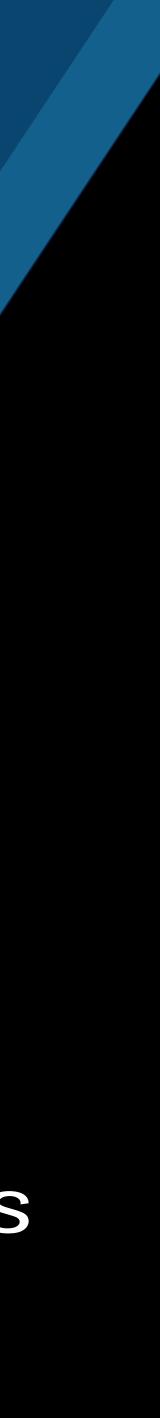
### Interim results presentation – April 2019

# Enabling safer mobility







### Introduction



Our market drivers



An evolved strategy

**James Routh** Chief Executive Officer

HY19 financials

**Robert Hart** Chief Financial Officer

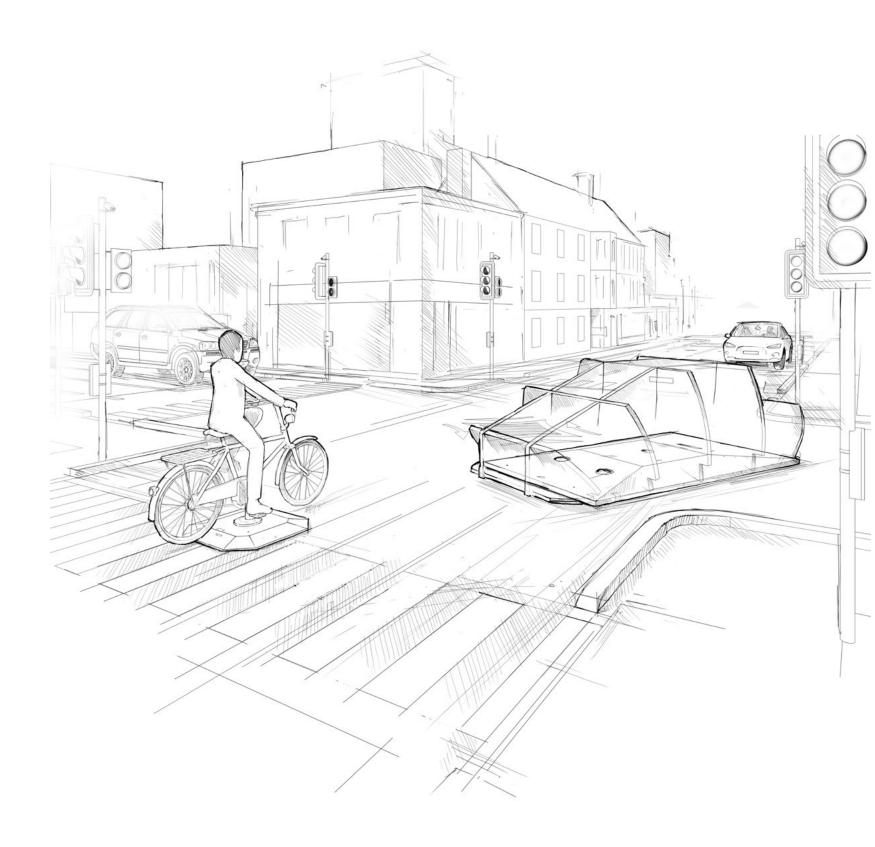
Summary and outlook

**James Routh** Chief Executive Officer

**AB Dynamics PLC** | Interim results presentation – April 2019

### James Routh Chief Executive Officer

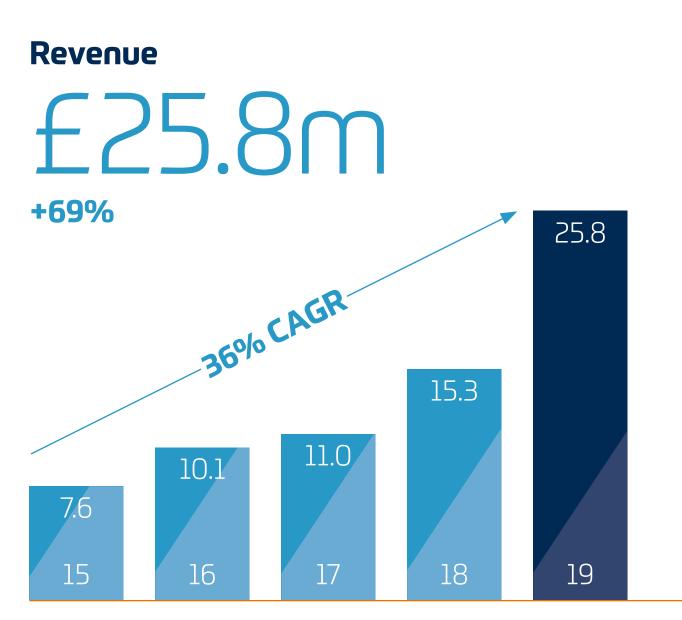
Matthew Hubbard Chief Technology Officer



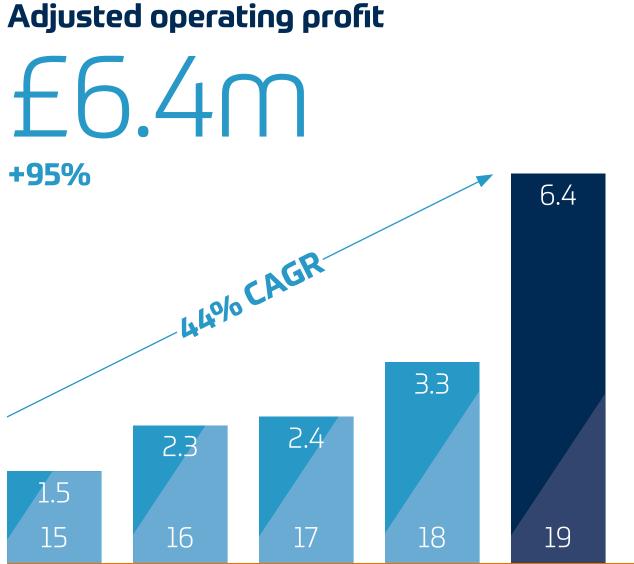
# Introduction

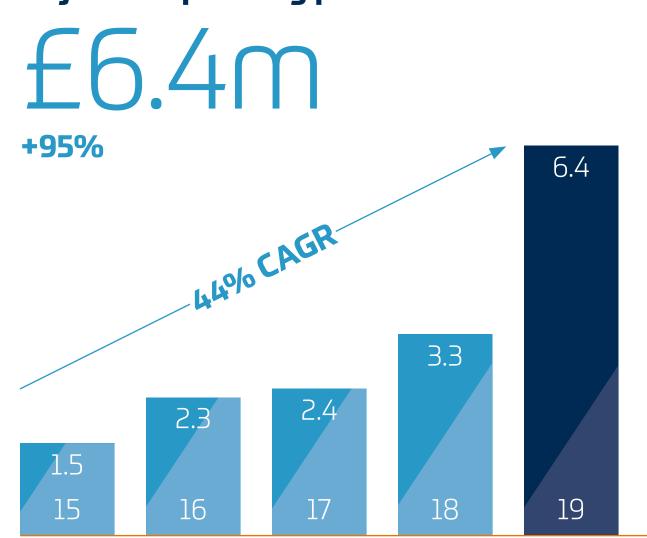


# 2019 HY Financial highlights



- Revenue growth driven by strong demand for track testing products, particularly driving robots
- Growth in H1 enhanced by reduction in delivery lead time
- Solid order book provides confidence for H2

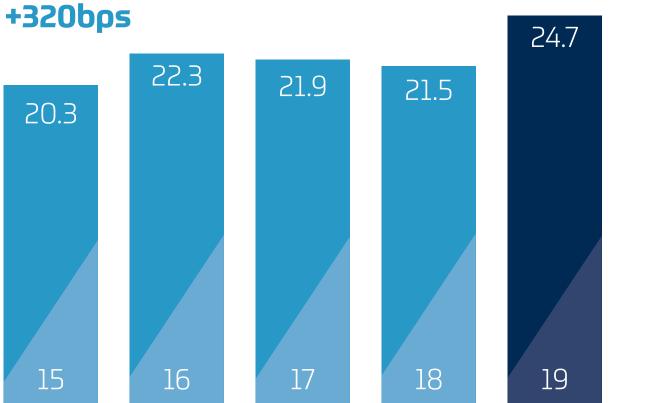




- Strong, sustainable gross margins
- Disciplined control of operating costs
- Largest proportion of anticipated 2019 increase in operating costs will be incurred in H2

### Adjusted operating margin





- Operating leverage providing significant increase in H1 operating margins
- Anticipated H2 operating margins to be in line with full year 2018



# 2019 HY Operational highlights

Reduction of customer lead time through improved manufacturing efficiency Reached milestone of 1,000th driving robot system

Second order for Advanced Driving Simulator (aVDS) for Kempten University, Germany AB Dynamics Inc legal entity established in USA

LaunchPad ADAS target platform continues to gain market traction

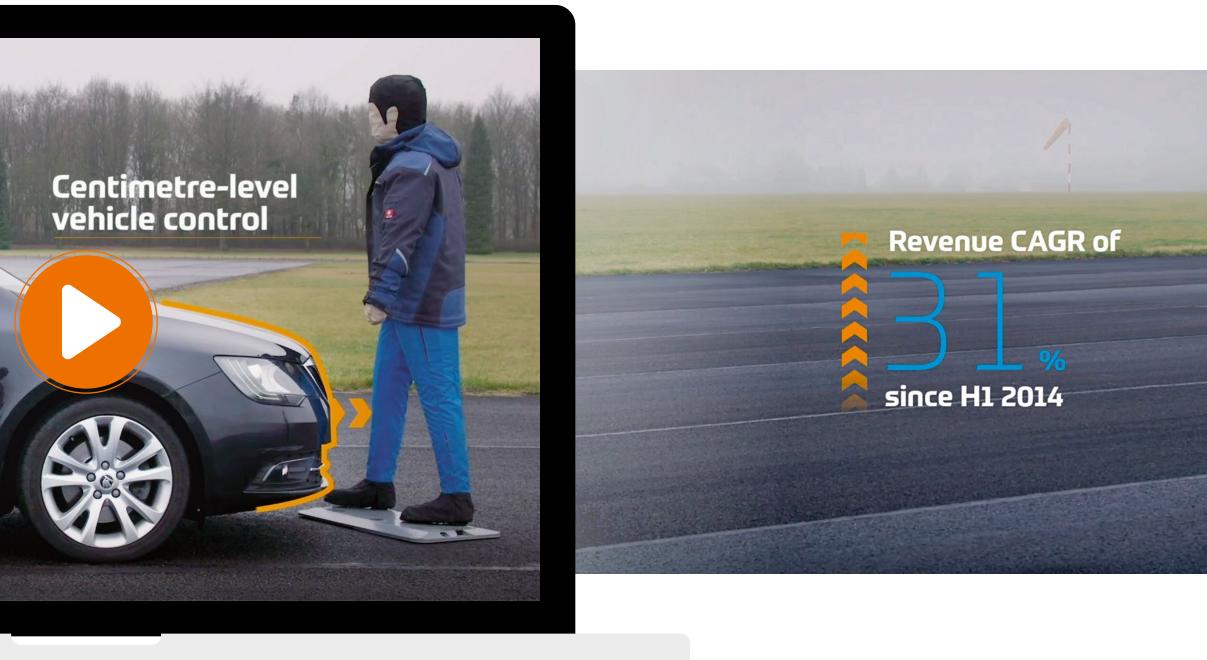
Order book remains strong and provides full visibility for 2019 and beyond



# Video

# Synergy of testing solutions

Abynamics





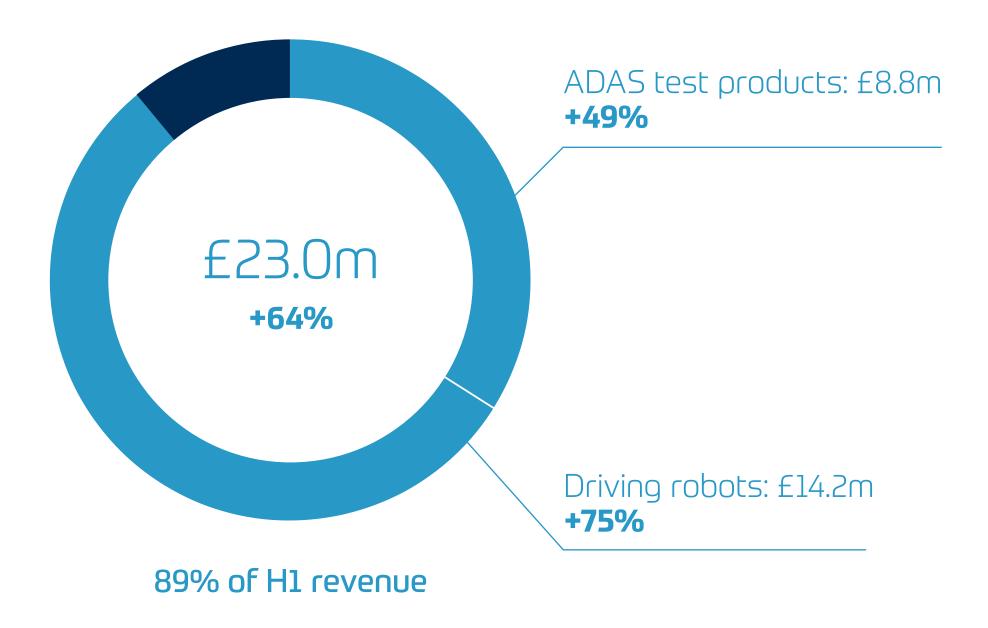


# Business overview



Products and services for the testing and development of Advanced Driver Assistance Systems ('ADAS'), autonomous vehicle technology and vehicle dynamics.

### **Revenue contribution to the Group**



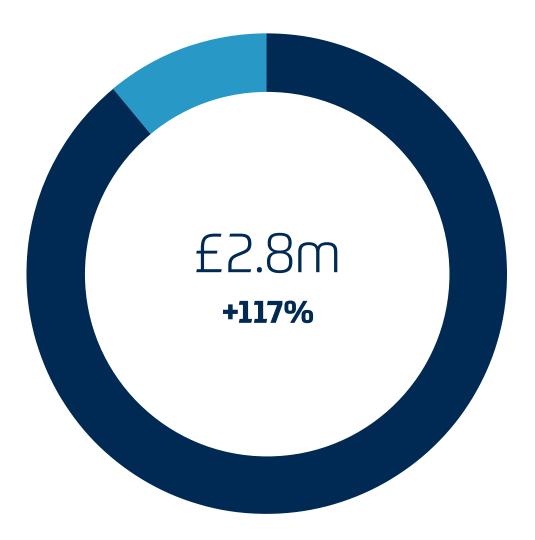




### Laboratory testing

Products and services for simulation of ADAS, autonomous vehicles, driving dynamics and Driver in the Loop ('DIL'). Quantitative testing systems for vehicle suspension characterisation.

### Revenue contribution to the Group



11% of H1 revenue





# H1 Revenue by geographical area



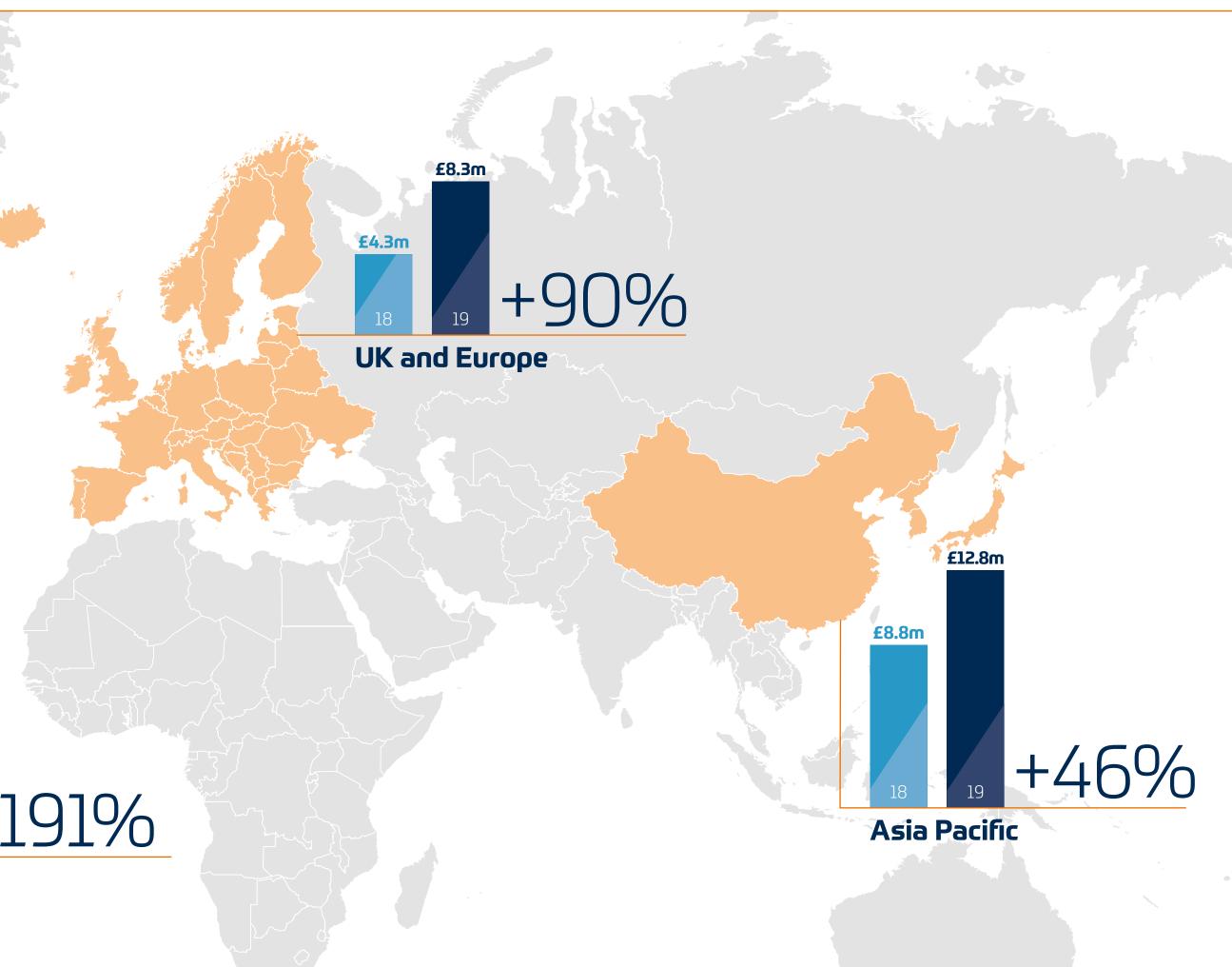
H1 2018 Group revenue £15.29m

### H1 2019 Group revenue

£25.81m

**EO.2m** 18

RoW







# Our market drivers



# Market drivers

### **Government & consumer**

- 1.35m annual road traffic fatalities globally<sup>1</sup>
- In Europe, ca.50% of fatalities are Vulnerable Road Users (VRUs)<sup>2</sup>
- US pedestrian fatalities highest since 1990<sup>3</sup>
- 1 Source: www.thenational.ae
- 2 Source: https://making-traffic-safer.com
- 3 Source: www.statista.com

### Regulatory

- Euro NCAP roadmap for Active Safety
- 40 countries including the EU have mandated all new cars must have minimum standards of ADAS by 2022
- Likely to be increased regulation of autonomous vehicle testing on public roads

of accidents due to driver error

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### Trend towards greater regulation of ADAS and autonomous systems

### Market dynamics

- Traditional OEMs face significant transformational market change
- Technology companies have significant funds to invest in mobility development
- Reducing cost and power consumption of embedded computing enabling ADAS and level 3 autonomy to be implemented
- Realisation that ADAS are still far from optimal and prone to false positives
- Realisation that FULL autonomy is not easily achievable and will take many years to implement
- Relatively low consumer demand for autonomy



# Growth drivers – Euro NCAP active safety

### Vehicle to Vehicle ("V2V") features being tested:

- Autonomous
  Emergency Braking ('AEB')
- Lane Support Systems

### Vulnerable Road User ("VRU") features being tested:

2018

 Autonomous
 Emergency Braking (pedestrians and cyclists)

### Vehicle to Everything ("V2X") features being tested:

Scenario interactions with many other objects



2024+



# Growth opportunities

### **ADAS**

- Scenario testing will require more ADAS objects
- Future testing will require more realism in ADAS objects
- Pipeline of products with increased speed, enhanced endurance and higher load capacity

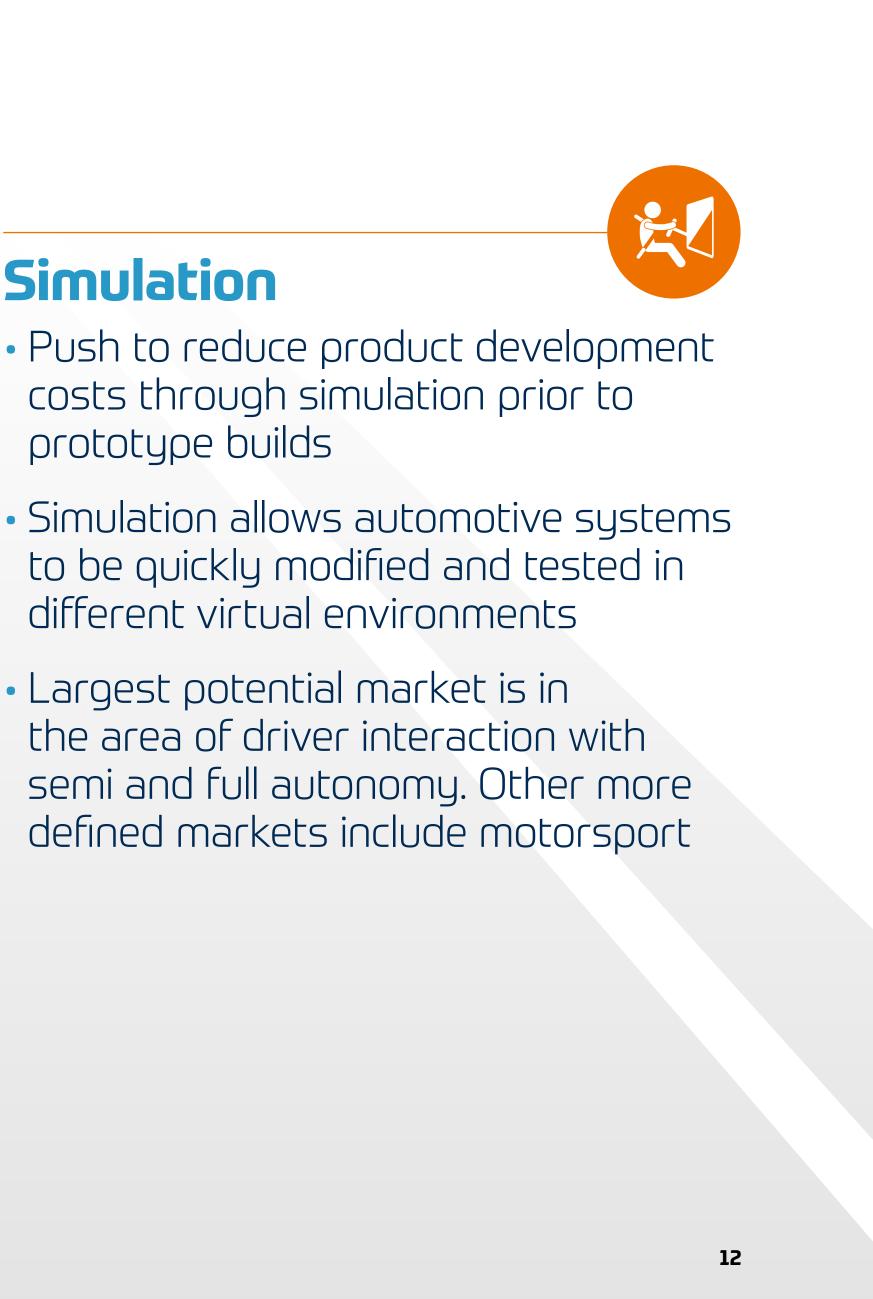


### **Driving robots**

- Continued demand from all markets, particularly from emerging markets for additional driving robot equipment
- Robots are currently primarily used for ADAS testing, but there are also opportunities for vehicle dynamics and durability testing
- Base technology is relatively mature, but software is still evolving quickly, and there are opportunities for new actuators and electronics



### Simulation



- Simulation allows automotive systems to be quickly modified and tested in different virtual environments
- Largest potential market is in the area of driver interaction with semi and full autonomy. Other more defined markets include motorsport

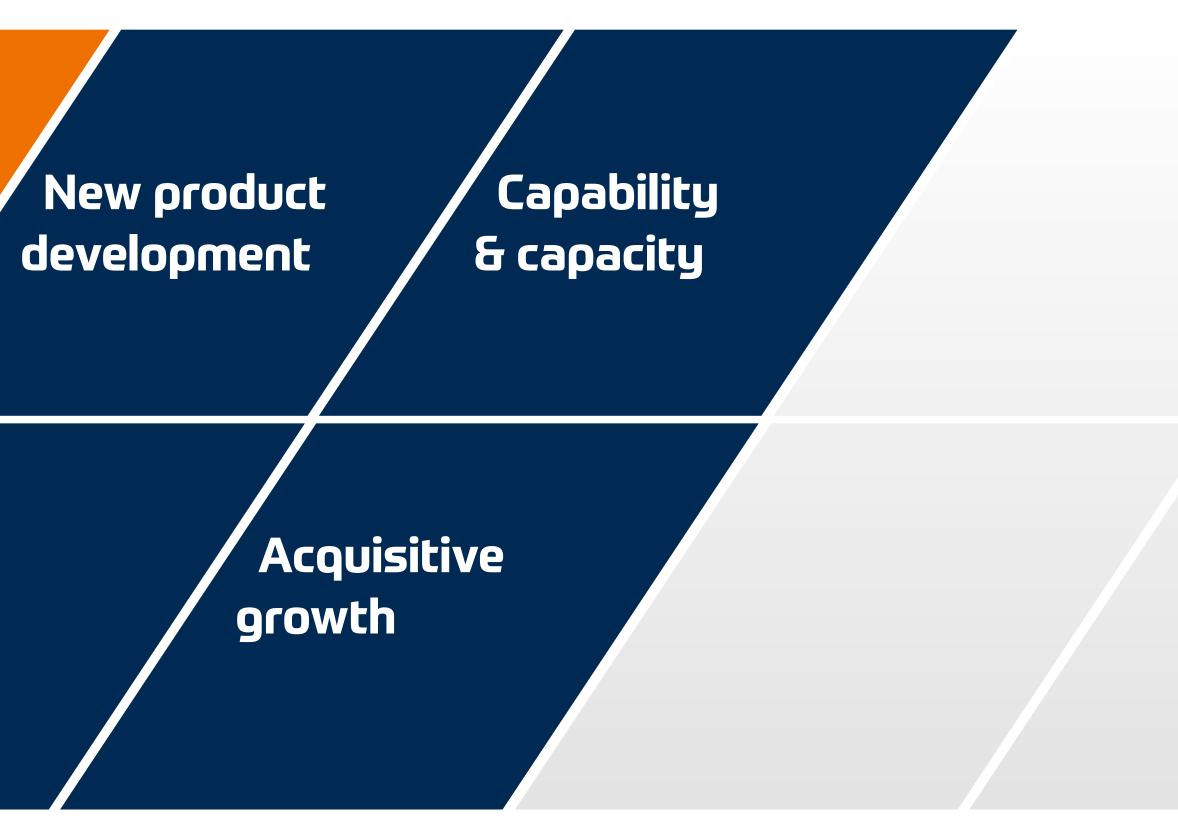
# An evolved strategy



# Strategy overview

Our five strategic New product development

International footprint Service & support





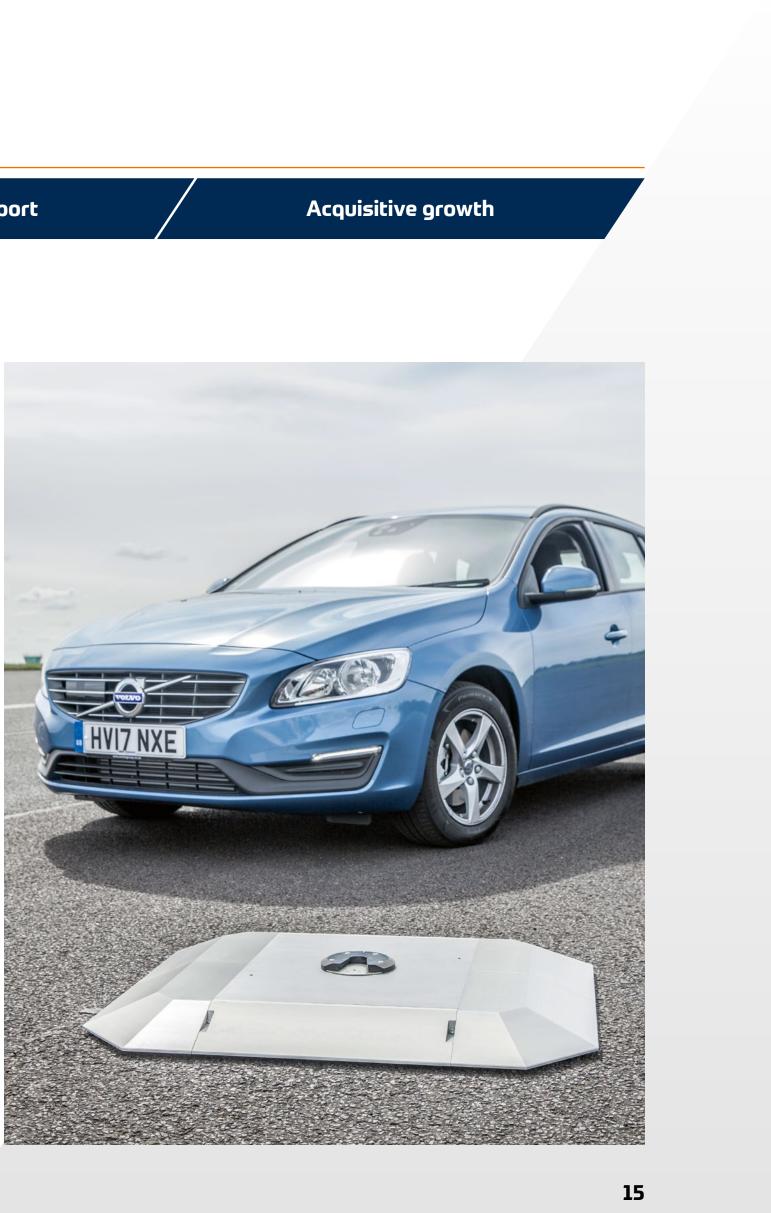
# New product development



- Continued innovation and product development to meet current and future market requirements
- Comprehensive Product & Technology roadmap developed based on market trends, drivers and needs
- Investment levels and resources/skills established to deliver the Product & Technology roadmap
- Multiple new product launches across laboratory and track testing planned over the strategic review cycle

International footprint

Service & support



# Capability & capacity

New product development

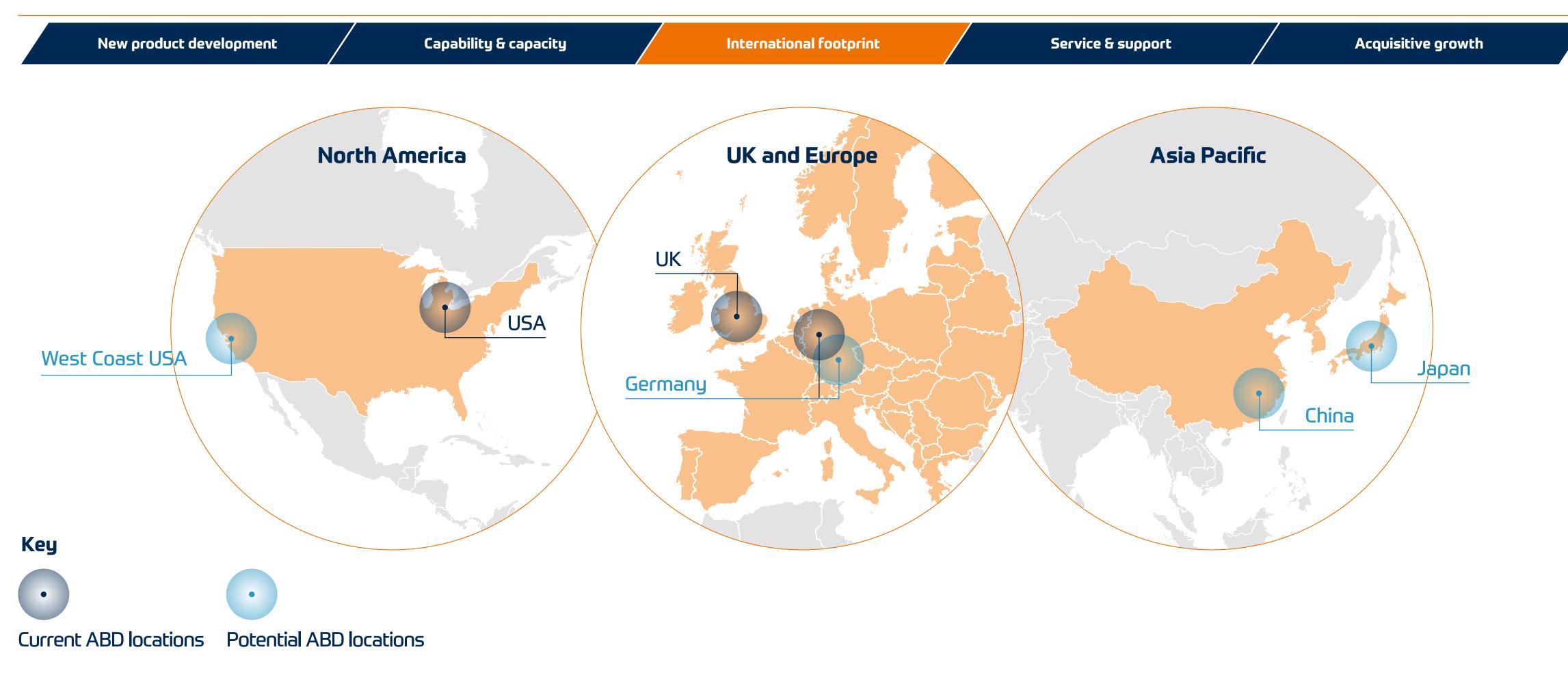
**Capability & capacity** 

- Facilities plan established with manufacturing and engineering space requirements defined for next five years
- New 'North Site' will be used as a simulator centre of excellence with demonstration facilities and full engineering R&D area
- Organisation structure redesigned to ensure scalability.
- A rolling resource plan is in place which defines people requirements and skills
- A review of our business systems has highlighted the need for a new business management system incorporating ERP, CRM, finance and operations

Service & support



# International footprint







# Service & support

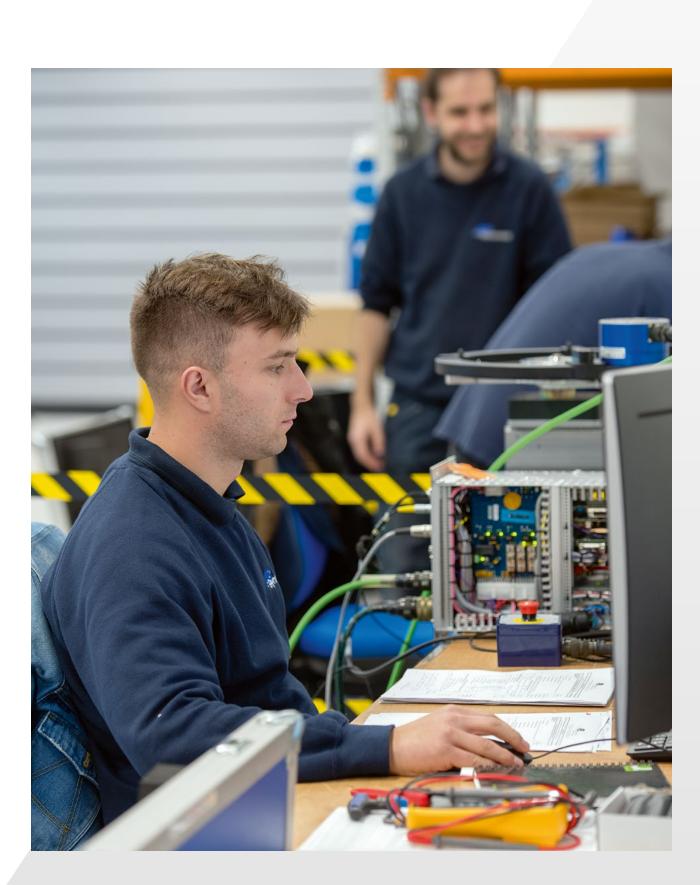
New product development

Capability & capacity

- Will become increasingly important as test requirements become more complex
- Customers expect the highest levels of service and support
- Need for local spares and support services and timely response to support calls (appropriate time zone)
- Increased proportion of recurring revenue

Service & support

### Acquisitive growth





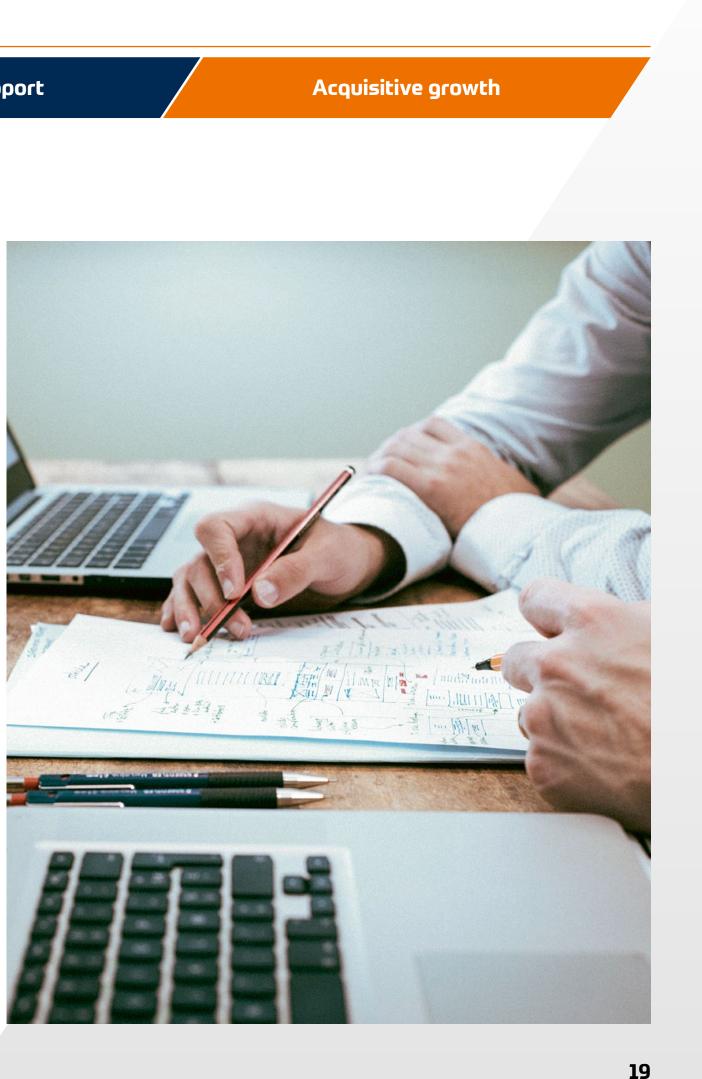
# Acquisitive growth

New product development

Capability & capacity

- Acquire carefully selected, value-enhancing companies if appropriate
- Potential to facilitate delivery of the strategy, e.g. international growth, service/support and technology development
- Clearly defined strategic, operational, financial and cultural criteria established
- Developing the organisational skills required to enable potential acquisition processes to be efficiently managed
- Current pipeline of potential acquisition targets meeting above criteria.

Service & support



# HY19 Financials



# Half year results

Six months ende	ed 28 February
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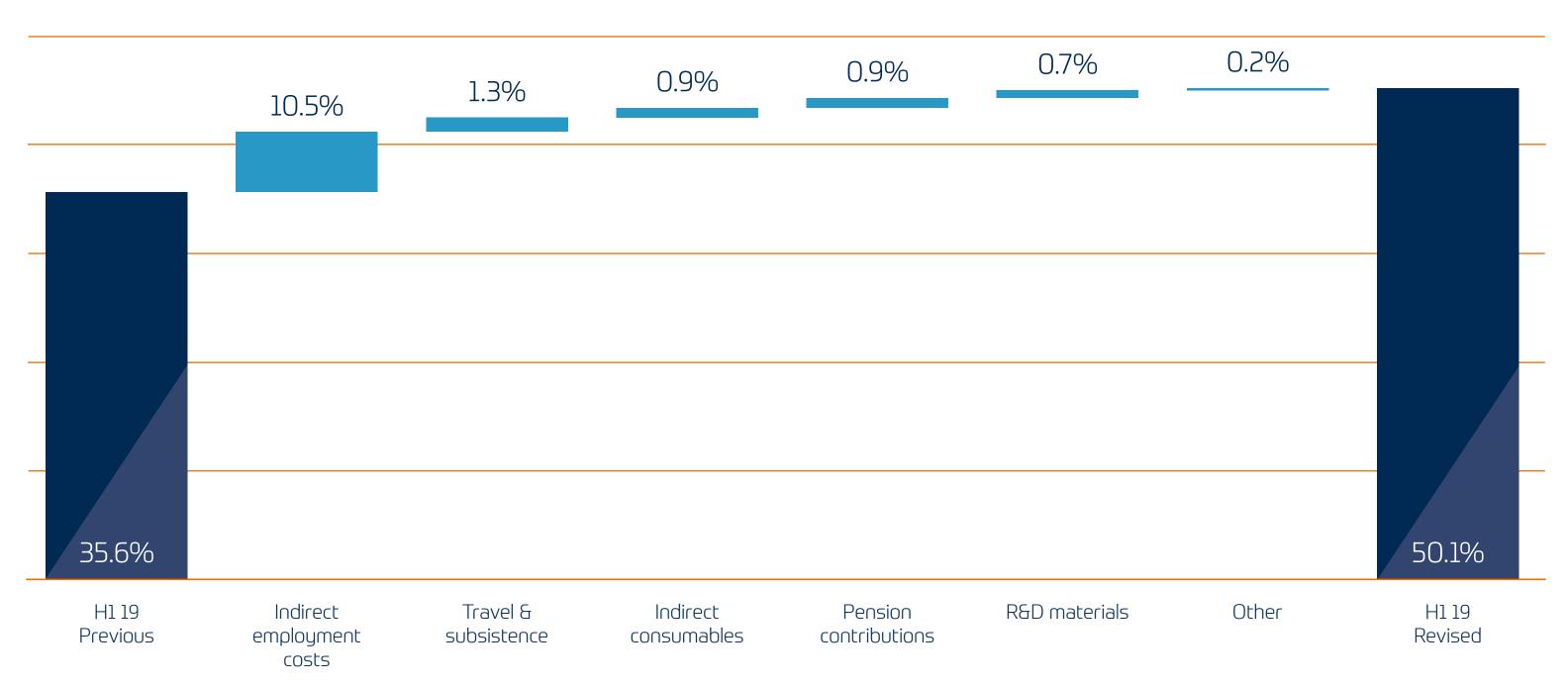
Revenue	
Adjusted operating profit	
Adjusted operating margin	
Adjusted profit before tax	
Cash flow from operations	
Capital expenditure	
Net cash	
Earnings per share – basic	
Earnings per share – diluted	
Total dividend per share	

2019	2018	Change
£25.81m	£15.29m	+69%
£6.38m	£3.28m	+95%
24.7%	21.5%	320bps
£6.44m	£3.30m	+95%
£5.41m	£5.54m	£(0.13)m
£1.84m	£2.70m	£(0.86)m
£18.94m	£12.90m	£6.04m
<b>28.36p</b>	12.35p	+130%
<b>27.61</b> ρ	12.03p	+130%
<b>1.612</b> ρ	1.465p	+10%



# Gross margin reconciliation

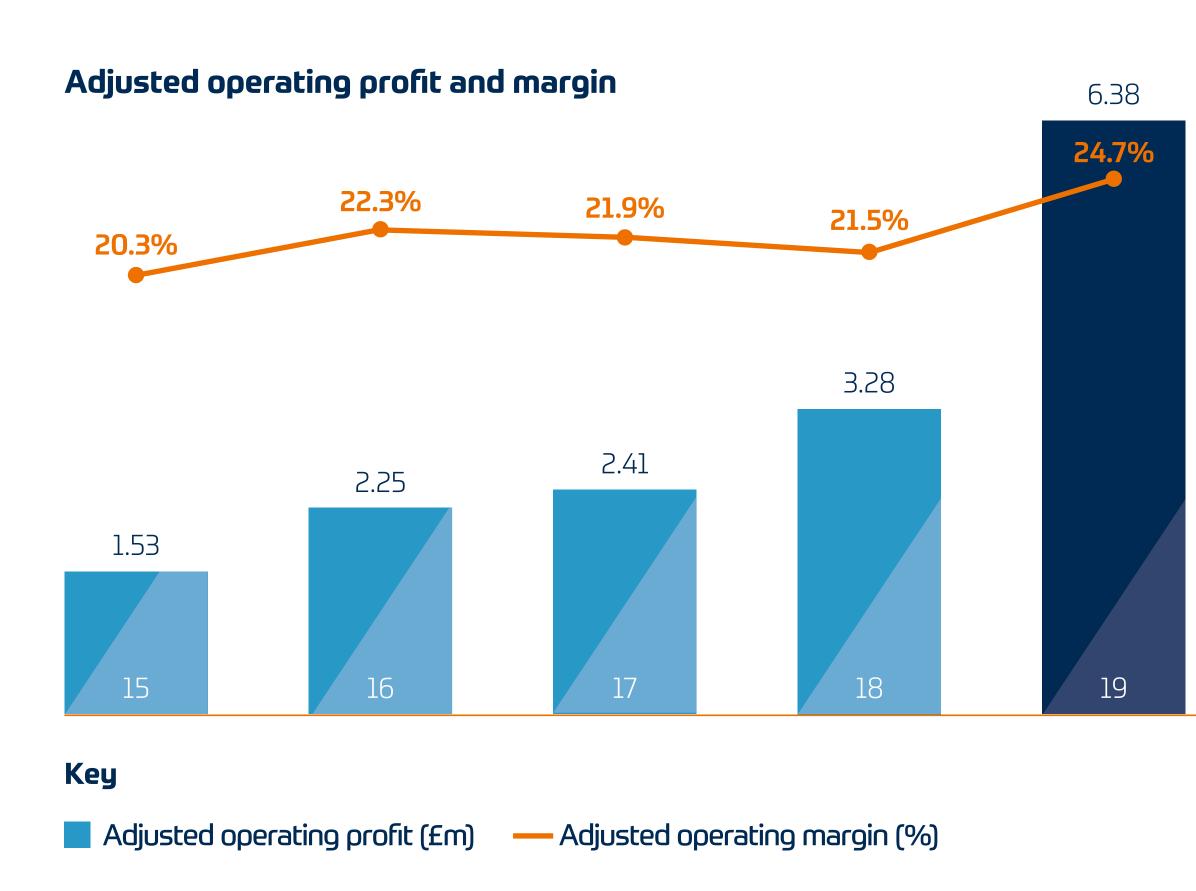
### Gross margin %



- Revised method of calculation of gross margin to provide a more representative analysis of product and service-related profitability
- Certain costs removed from cost of sales to operating costs

# H1 Adjusted operating profit

(excluding share-based payment costs)





- Reclassified certain operating costs
- Operating profit before SBP +95% to £6.38m
- Adjusted operating margin +320bps to 24.7%
- Anticipate increased operating costs in H2
- Investment in people, working capital and infrastructure to drive further growth
- Adjusted PBT increased by 95%, compared with the same period last year
- Effective tax rate was 11.6% (2018: 18.7%)



# Cash flow

### Six months ended 28 February

Cash flow from operations £m

Profit before tax

Adjustments for:

Depreciation/interest income, etc.

Share based payment

Operating profit before working capital changes

Increase in inventories

(Increase)/decrease in trade and other receivables

Increase in trade and other payables

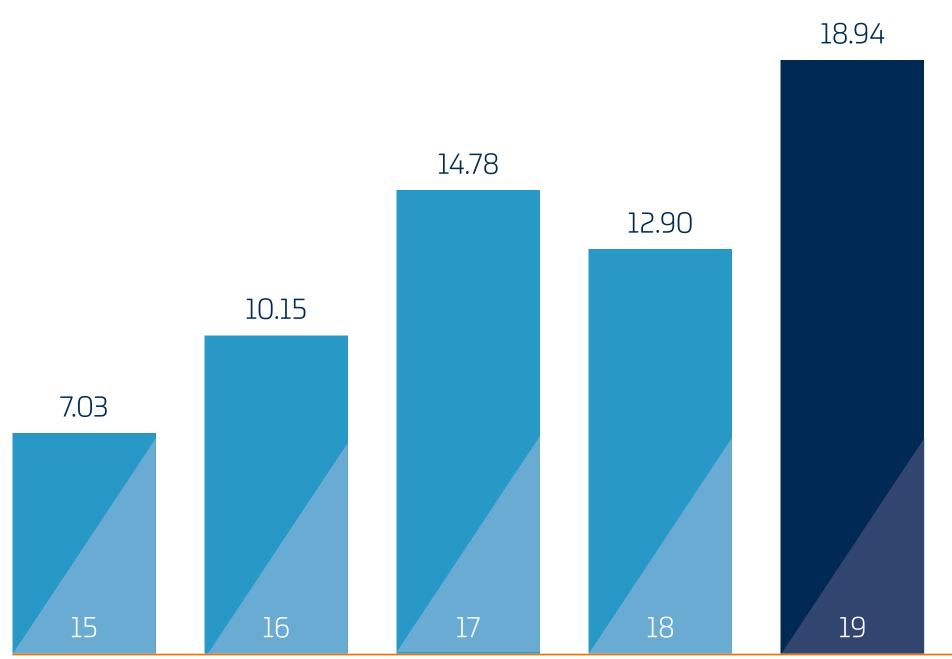
### Cash flow from operations

6.29    2.94      6.20    2.94      6.20    0.15      6.20    0.20      6.20    0.37      6.86    3.51      6.86    3.51      9    6.86      9    1.92      9    1.95      9    1.95      9    1.95      9    5.42		2019	2018
Image: Note of the second s		6.29	2.94
Image: Note of the second s			
6.86    3.51      (2.74)    (1.92)      (2.74)    (1.92)      (2.74)    (2.74)		0.42	0.20
(2.74)    (1.92)      es    (0.66)    1.45      1.96    2.51		0.15	0.37
es (0.66) 1.45		6.86	3.51
<b>1.96</b> 2.51		(2.74)	(1.92)
	25	(0.66)	1.45
<b>5.42</b> 5.54		1.96	2.51
		5.42	5.54



# H1 Cash position

### Cash at end of period £m



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### • Cash flow generated from operations of £5.4m

- Dividends paid £430k (2018: £384k)
- Proceeds from issue of share capital £566k (2018: £1,092k)
- New 'North Site' planning permission received in March 2019, work commences May 2019, ca.£9m capex over 24 months
- The Company's net cash position remains robust at £18.9m (2018: £12.9m)



# Financial metrics

Six months ended 28 February

Effective rate of tax

ROCE

Earnings per share – basic

Adjusted EPS – basic

Earnings per share – diluted

Adjusted EPS – diluted

2019	2018
11.6%	18.7%
14.1%	9.2%
28.36p	12.35p
29.11p	14.24p
27.61p	12.03р
28.34p	13.87p





# Summary and outlook



# Summary and outlook

### Business

- Delivery of updated strategy
- Continuation of demand for driving robots and ADAS test products
- Increasing interest and pipeline for simulation systems
- Initial international growth into US and Germany
- Evolution of existing product range and launch of new products
- New facilities and infrastructure to support growth
- Strengthening of management team
- Overall outlook for 2019 remains positive

### Market

- Structural growth drivers such as Euro NCAP and UN/EU regulation will drive demand for active safety systems
- Extended period of ADAS deployment in vehicles due to the realisation that autonomous vehicle technology will take longer to achieve than some predictions
- Market dynamics provide a positive backdrop for future growth





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