

AB DYNAMICS™



AB DYNAMICS™ Halo™ Steering Robot

MAX 9.0 Nm

JOYSTICK MKII



AB Dynamics P7903

Performance driven

AB Dynamics plc Preliminary results presentation – 24 January 2024

Agenda

Highlights

Financial results

Business review

Strategy update

Summary and outlook



Dr James Routh, Chief Executive Officer



Sarah Matthews-DeMers, Chief Financial Officer

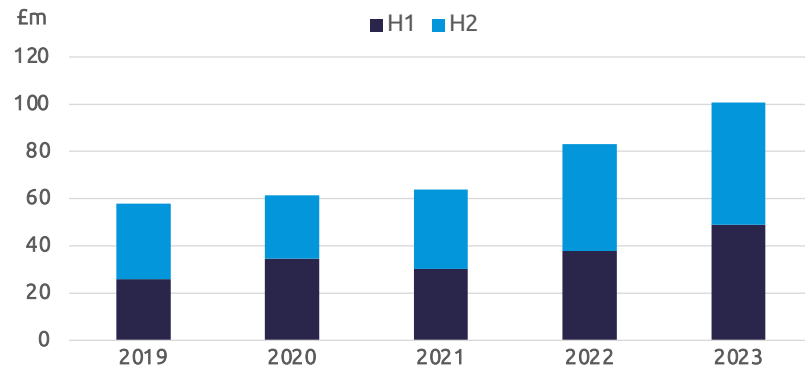
Highlights

Dr James Routh, Chief Executive Officer

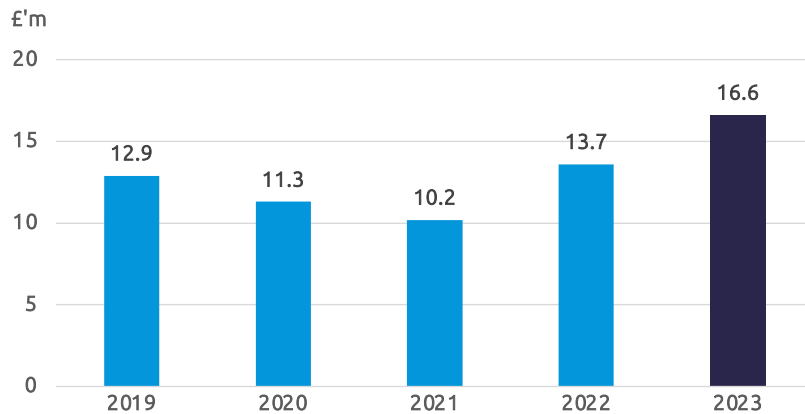


Continued strong financial performance, strategic progress and sustainable growth

Revenue



Adjusted operating profit



Financial highlights

- Record revenue up 21% to £100.8m
- Adjusted operating profit up 21% to £16.6m
- Net cash £32.0m

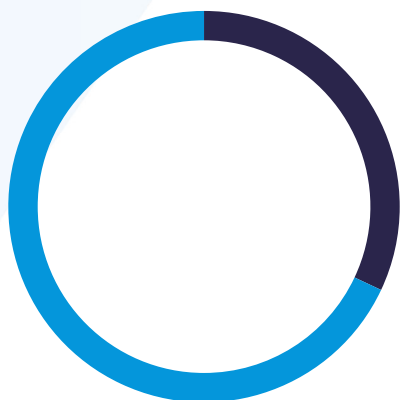
Operational highlights

- Continued progress in ABD Solutions moving from development to commercialisation
- New contract awards and contract extensions in VadoTech
- Integration of Ansible Motion complete and the business delivered a solid performance since acquisition

Results overview

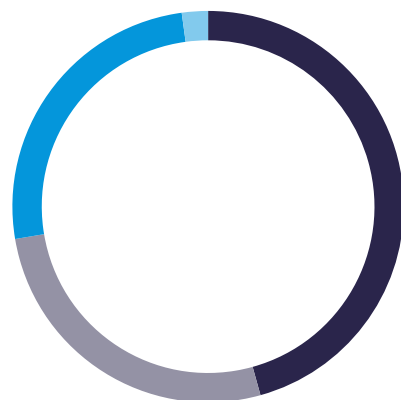
2023 revenue of £100.8m +21%

Revenue by sector



	£m	% of revenue
Laboratory testing and simulation	£32.2m	32%
Track testing	£68.6m	68%

Revenue by geography



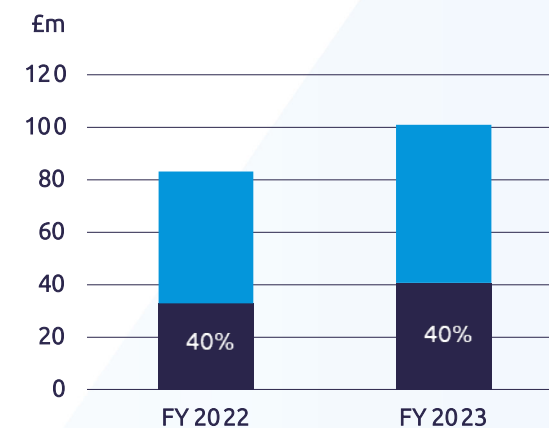
	£m	% of revenue
APAC (+13%)	£46.4m	46%
UK/EU (+29%)	£27.0m	27%
North America (+23%)	£25.2m	25%
ROW (+214%)	£2.2m	2%

Revenue by customer category



	% of revenue
Automotive OEMs	70%
Service providers	26%
Tier 1 suppliers and technology	4%

Proportion of recurring revenue



■ Recurring
■ Original equipment

Financial results

Sarah Matthews-DeMers, Chief Financial Officer

Highlights

	2023	**Restated 2022	Change
Revenue	£100.8m	£83.2m	↑ 21%
Gross margin	59.5%	56.6%	↑ 290 bps
EBITDA*	£20.5m	£17.3m	↑ 18%
Adjusted* operating profit	£16.6m	£13.7m	↑ 21%
Adjusted* operating margin	16.5%	16.4%	↑ 10 bps
Adjusted* profit before tax	£16.3m	£13.3m	↑ 23%
Tax charge*	£2.2m	£2.2m	-
Tax rate*	13.2%	17.1%	↓ 390 bps
Adjusted* diluted earnings per share	60.8p	48.1p	↑ 26%
Dividend per share	6.36p	5.30p	↑ 20%
Cash flow from operations*	£23.5m	£20.7m	↑ 14%
Cash conversion	114%	119%	
Net cash	£32.0m	£29.2m	

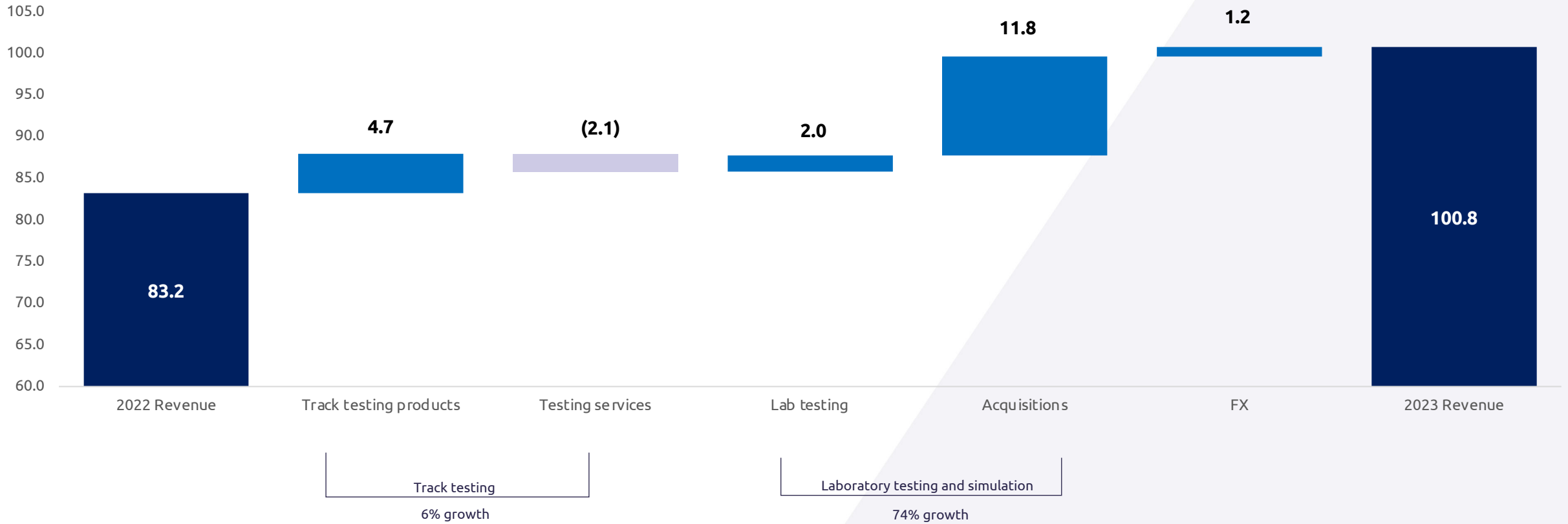
* Before amortisation of acquired intangibles, acquisition related charges and exceptional items.

** Restated for change in interpretation of revenue recognition increasing FY 2022 revenue and operating profit

- Strong growth in organic revenue across both laboratory testing and simulation and track testing
- Gross margin increased 290 bps due to operating efficiencies
- Operating margin improved by 10 bps as a result of increased activity levels and operational improvements offset by the continued investment in ABD Solutions
- Significant net cash at period end of £32.0m after funding the initial consideration for the acquisition of Ansible Motion

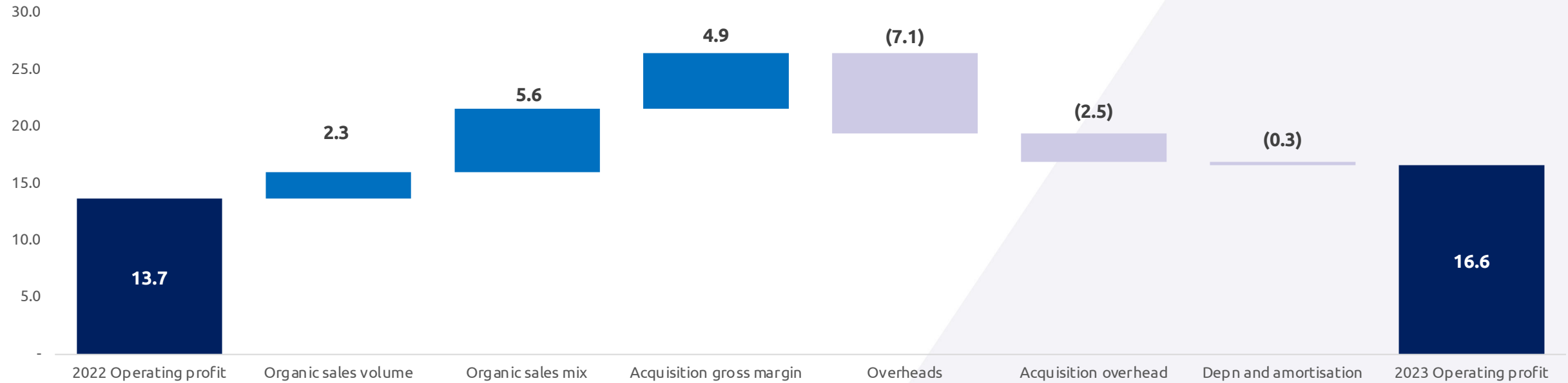
Revenue

£m



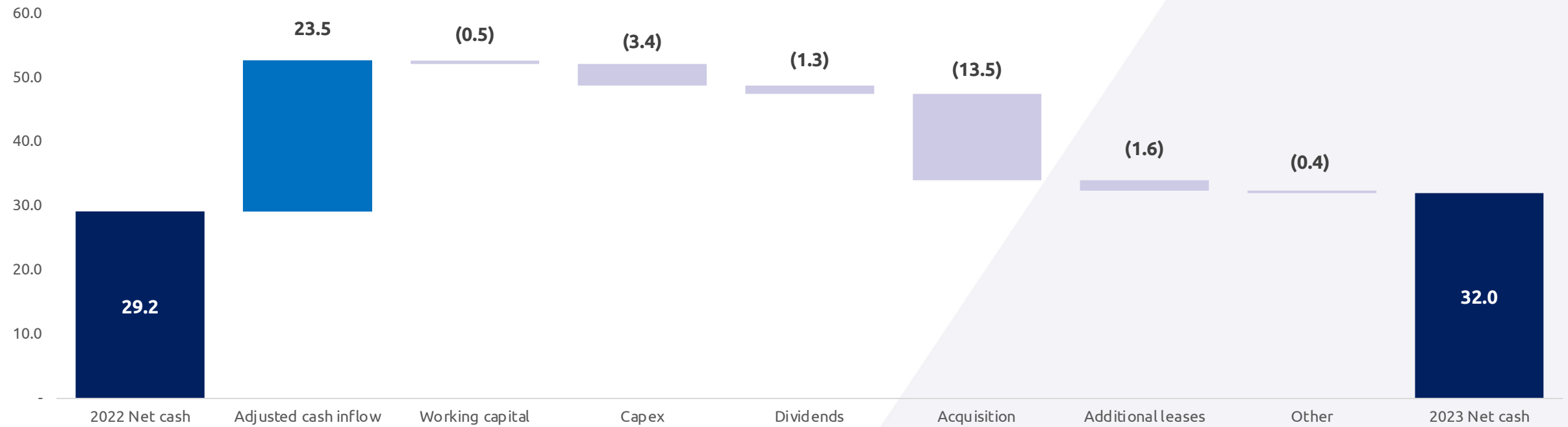
Operating profit bridge

£m



Net cash bridge

£m



Constant currency

Constant currency analysis	2023 As reported £m	2023 Restated at 2022 rates £m	2022 £m	Change %
Revenue	100.8	99.6	83.2	+20
Adjusted operating profit	16.6	16.7	13.7	+22

Average exchange rate	2023	2022
US\$	1.21	1.31
Euro	1.15	1.19
Yen	165	158

Sensitivity analysis	% of revenue	10% movement impact on revenue £m	10% movement impact on operating profit £m
US\$	15%	1.5	0.3
Euro	20%	2.2	0.4
Yen	10%	0.9	0.1
Total	50%	4.6	0.8

- Future guidance based on \$1.25, €1.15, ¥165

Financial summary

- Strong organic revenue and profit growth
- Operating margin improvement
- Our robust balance sheet enables investment in continuing to strengthen the business
- Acquisition of Ansible Motion delivering as expected

Cash conversion

114%

**Operating margin
excluding ABD Solutions**

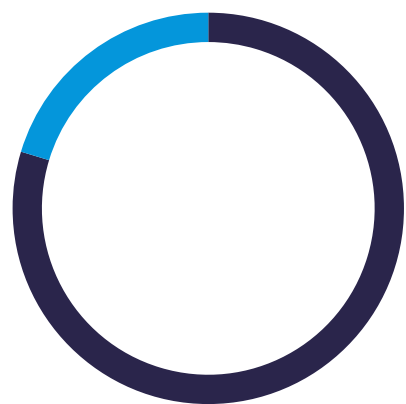
18.3%

Business review



Track testing

Revenue by sector

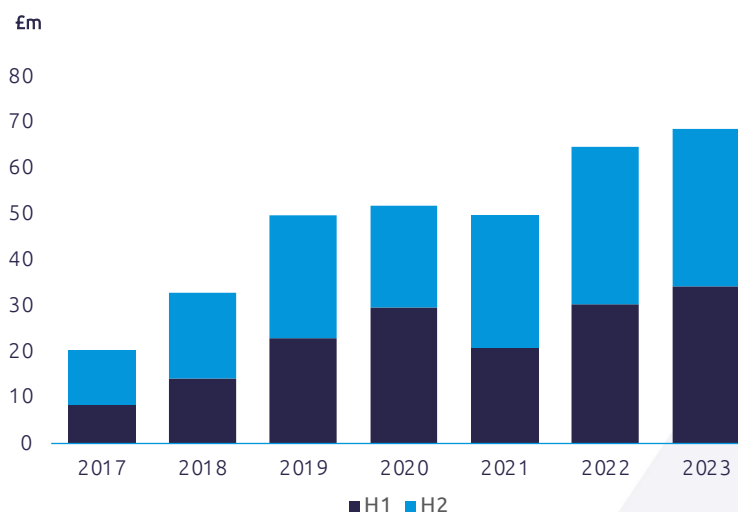


■ Track testing products:
£55.7m (+11%)
■ Testing services: £12.9m (-10%)

£68.6m

+6%

Track testing revenue

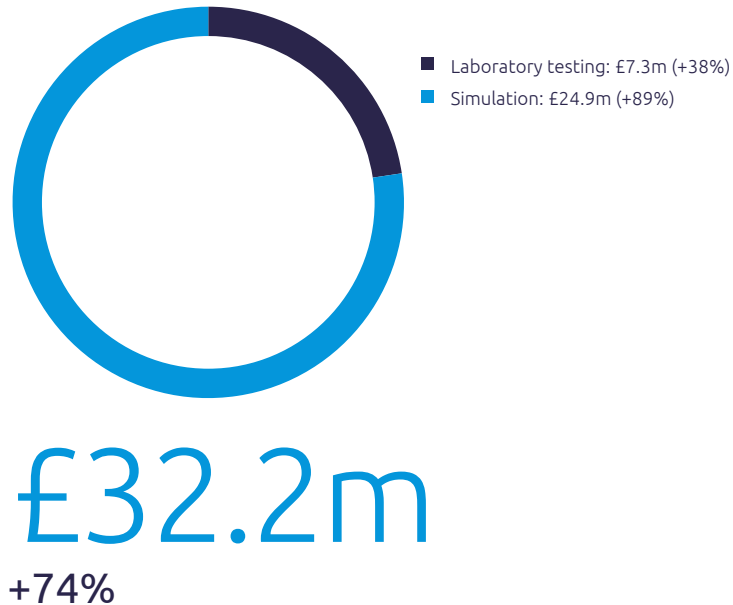


Highlights

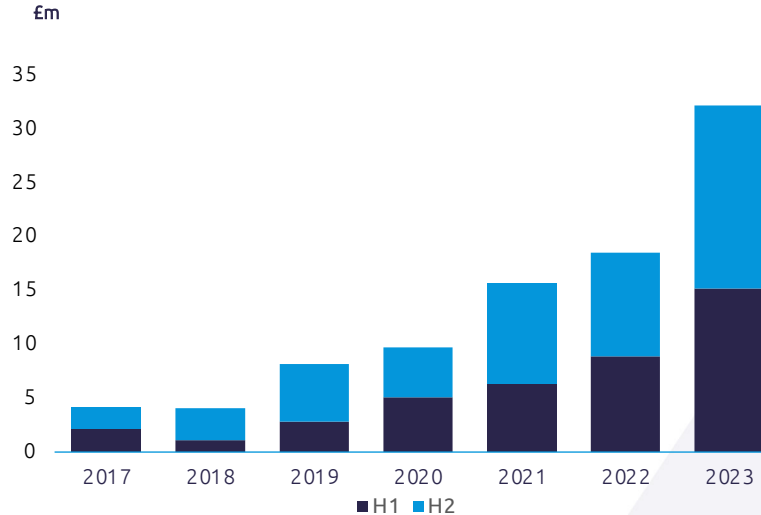
- Market drivers continue to support track testing activity levels
- Strong growth in driving robots with moderate growth in ADAS test products
- Weaker performance in testing services due to supply chain issues and China lockdowns during H1
- Market launch of new LaunchPad Spin product and SM360/SP360 ADAS target products
- New simplified track testing software for NCAP applications

Laboratory testing and simulation

Revenue by sector



Laboratory testing and simulation

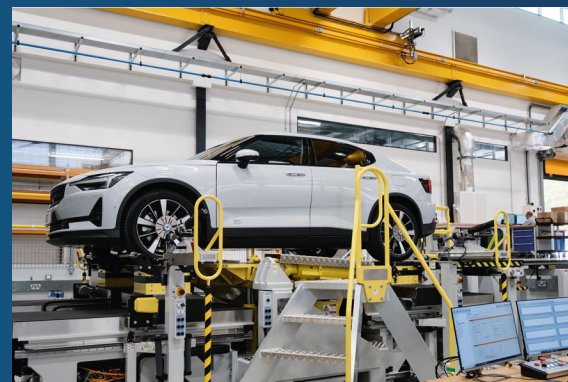


Highlights

- Very strong growth in simulation driven by contribution from Ansible Motion and a very good performance at rFpro
- rFpro released Ray Tracing capability for simulation software
- Development of Alpha simulator technology on schedule
- Successful integration of Ansible Motion, performing well and in line with expectations
- Laboratory testing revenues increased strongly due to delivery of large SPMM contracts and strong order backlog

Strategy update

AB Dynamics today



Track Testing Products and Services

- Driving Robots
- ADAS testing platforms
- Advanced track testing software
- ADAS testing dummies
- Track testing services
- Road based vehicle evaluation

68% of revenue

Laboratory Testing and Simulation

Simulation

- Full motion driving simulators
- Static simulators
- Physics based simulation software for ADAS, autonomy and sensor integration

Laboratory Testing Equipment

- Suspension Parameter Measurement Machine (SPMM)
- Large scale machine used to evaluate vehicle kinematics and compliance
- Steering testing systems
- Suspension NVH testing systems

32% of revenue

ABD Solutions

- Diversification into mining, defence and specialist vehicles
- Conversion of off-highway equipment to automated function
- Technology development largely complete
- Digital twin developed providing operational environment validation in simulation

Diversification

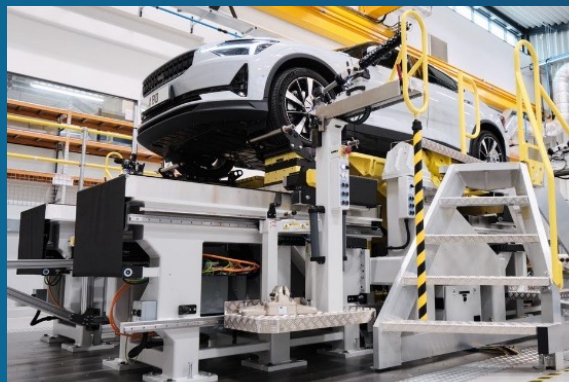
Vehicle development end to end toolchain

AB Dynamics tomorrow



Testing products

- Leading track testing products for used primarily for the test and verification of ADAS, autonomous systems and vehicle dynamics
- Laboratory testing equipment used in the development and testing of suspension and steering systems
- Continuous new product development drives organic revenue growth



Testing services

- Testing services includes off-highway physical testing and measurement
- On road/ real world testing services including EV environmental and high voltage testing
- US laboratory testing facility



Simulation

- Significantly enhanced simulation and software capabilities
- Expanded product range created through the acquisitions of rFpro and Ansible Motion
- Continued technology investment will drive organic growth



Solutions

- Diversification into adjacent sectors to automotive: mining, specialist vehicles and defence
- Bringing autonomy to existing vehicles for safer more efficient fleets
- Commercial systems in active use with end user customers and generating recurring revenues

Sustainable growth, margin improvement and value creation

Compelling near- and longer-term growth drivers underpin resilient business model

Near term growth drivers

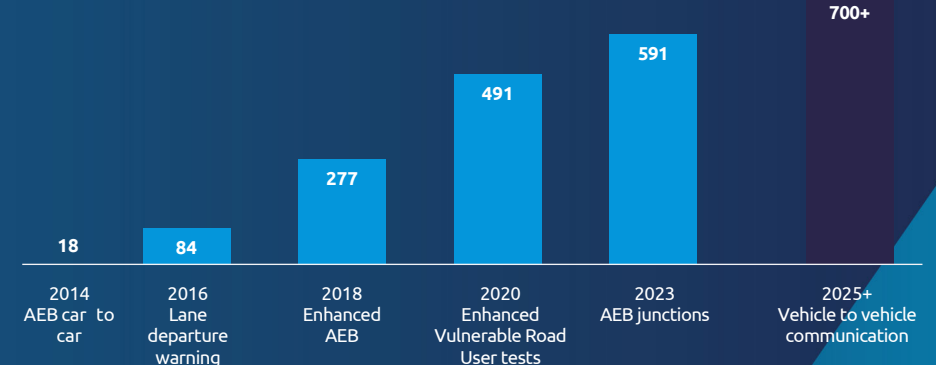
Continued organic demand driven by:

- Favourable regulatory requirements
- Consumer preference via Global NCAPs and US regulator NHTSA
- Providing solutions for customer’s sustainability challenges
- Increased demand from new entrants into the EV market
- OEMs introducing higher levels of automated driving functions

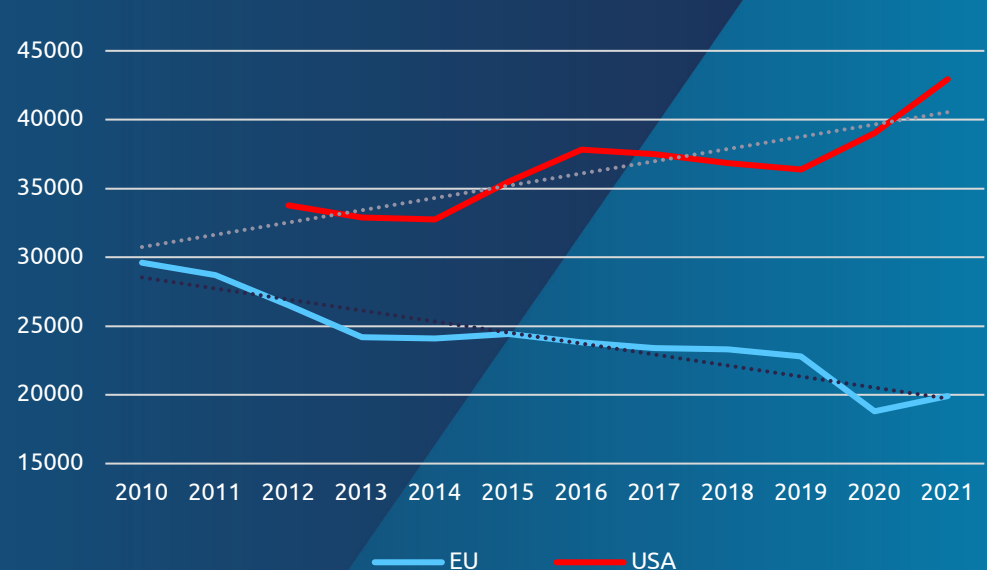
Longer term growth drivers

- Attractive structural and regulatory growth drivers underpin all of our markets
- Increase in US regulation given commitment to road safety
- Growing use of simulation for ADAS development and preliminary testing
- Differentiated products and long-term relationships with customers support strong margins with a clear strategy for expansion
- Highly skilled sales teams adept at identifying our customers’ unrecognised needs and presenting cross-sell solutions to solve their business challenges
- Significant incremental revenue opportunity from ABD Solutions
- Extensive pipeline of value enhancing acquisitions

Euro NCAP test scenario volumes



Road Based Fatalities – USA & EU



Sources
 NHTSA Traffic Safety Facts 2021 Data – published October 2023
 European Commission Mobility & Transport – Road Safety Annual Statistical Report 13 March 2023

Differentiated product and long-term relationships with customers underpin strong and resilient margins with clear strategy for expansion

Portfolio

- Operating leverage from ongoing strong organic growth
- Ability to increase prices enables maintenance of gross margins during inflationary periods
- Continued investment in innovation that results in differentiated products and drives strong gross margins
- ABD Solutions and testing services expansion will provide positive contribution

Platform

- UK ERP implementation now substantially complete and commencement of global roll out programme underway
- Transformation of business processes to enhance operating efficiencies and the customer experience
- Innovation in product design, lean manufacturing and supply chain improvements will all deliver further expansion

People

- Investment in talent and capabilities to support growth plan with associated economies of scale benefits



Strategic acquisitions have created global footprint enabling cross-sell opportunities



- Acquired in 2019
- rFpro is a pioneering developer and provider of engineering grade simulation software
- Bought to enable the expansion and acceleration of the simulator product line as well as simulation-based ADAS & autonomous system verification



- Acquired in 2019
- DRI is a leading supplier of automotive engineering products and services to the US automotive market
- Bought to amplify the Group's access to the US ADAS and autonomous vehicle testing markets and provide a West Coast location



- Acquired in 2022
- Ansible is a leading provider of advanced simulators to the global automotive sector
- Bought to increase the product range and capacity in the simulation market with R&D synergies



- Acquired in 2021
- VadoTech is a prominent supplier of vehicle testing services in the APAC region with strong connections to the German automotive market
- Bought to expand the reach into strategically important territories & expand high margin testing services business

Cross-sell in action

A highly successful example of how AB Dynamics' existing routes to market in Asia have enabled the cross-sale of Ansible Motion Simulators to China



Acquired in Sep-22

Fully integrated by Spring 23

AB Dynamics' highly skilled sales team begin identifying our customers' unrecognised needs and solutions to solve their business challenges



Existing routes to market in APAC have enabled order intake of two Ansible Motion simulators to China during FY23 with more international opportunities in the pipeline

ABD Solutions

- Transitioning from product development to commercialisation
- Indigo Drive - market leading functionally safe and cyber secure autonomy solution development on plan with final system testing, validation and certification ongoing
- Digital twin developed providing operational environment validation and a platform for accelerated product testing
- Prototype products demonstrated and delivered for a pedestrian detect and warn solution contract for a global construction equipment provider
- Commercial team engaged with in country business development resources in Japan and Australia



Indigo Drive site architecture



Radio Network Base Station

Connecting the vehicle supervisory system to the network - whether in an office, site cabin or vehicle.



Server Room

High-availability servers manage vehicle fleets and site operations.

Provided on or offsite as preferred.



Radio Network Repeater Station

Comprehensive coverage and redundancy across even the largest site.



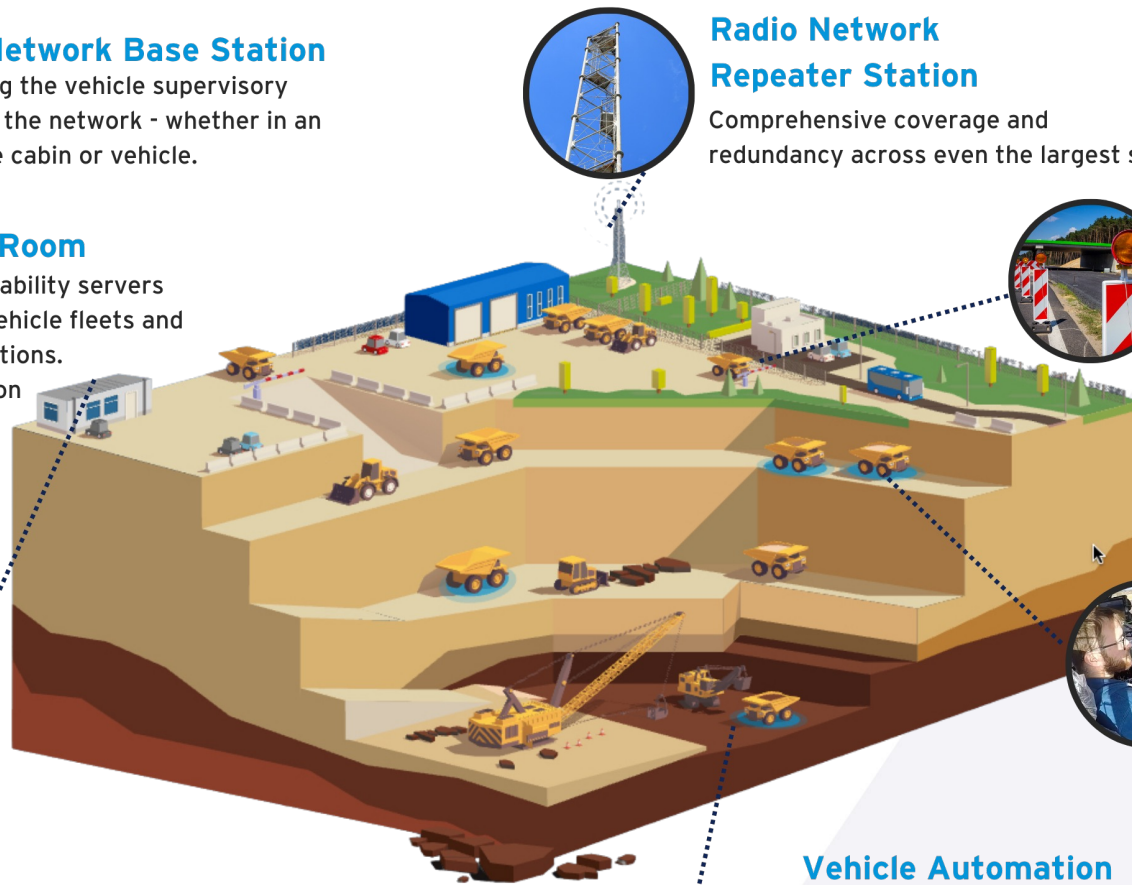
Site Traffic Management System

Keep personnel and the public out of harm's way with automated traffic lights, barriers and other site safety systems.



Driver Connectivity System

In-cab driver system allows manual and autonomous vehicle operation.



Control Room

Manage multiple vehicles at once via a user-friendly software interface.



Vehicle Automation System

Create safer driving operations using our smart perception system (LiDAR, camera, and radar) and reliable vehicle control using robotic or Controller Area Network (CAN) technology.

A hand holding a white charging cable next to a blue car. The background shows a green field under a cloudy sky. The image is overlaid with a blue gradient.

Summary and outlook

Summary and outlook

- Strong revenue and operating profit growth of 21% respectively
- Particularly strong performance in Laboratory Testing and Simulation
- Continued investment in new product development, capabilities and operational improvements
- The Group has a solid order book providing visibility into H2 2024
- ABD Solutions delivering as per plan and transitioning to commercialisation
- Outlook
 - Long-term structural and regulatory growth drivers remain supportive of continued growth
 - Market drivers and operational improvement initiatives support future margin expansion
 - Continued trading momentum provides confidence for 2024
 - Strong balance sheet supports continued investment in innovation and value-enhancing acquisitions



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Appendix

Alternative performance measures

	Cash flow impact			
	2023 £m	2022 £m	2023 £m	2022 £m
Amortisation of acquired intangibles	7.2	5.5	–	–
Acquisition related costs	(4.4)	0.3	0.7	0.3
ERP development costs	1.3	1.7	1.4	1.7
Acquisition related finance costs	0.7	–	–	–
Acquisition related bonus payment	–	–	2.1	–
Total adjustments to profit before tax	4.8	7.5	4.2	2.0

Balance sheet

	2023 £m	Restated 2022 £m
Goodwill and intangibles	72.5	50.4
Property, plant and equipment	27.2	26.6
Fixed assets	99.7	77.0
Working capital	6.2	9.8
Asset held for sale	1.9	1.9
Net cash	32.0	29.2
Net current assets	40.1	40.9
Tax liabilities	(8.7)	(5.5)
Deferred consideration	(5.9)	–
Net assets	125.2	112.4

- Balance sheet remains robust demonstrating the Group's resilience to macroeconomic pressures
- Significant cash resources enable continued investment in growth opportunities, NPD and infrastructure
- Net cash position allows the Group to focus on its strategy for long-term sustainable growth
- Revolving credit facility extension to February 2026
- Impact of 2022 restatement totalled £421k in relation to a change in interpretation of the revenue recognition standard following a change in the Group's auditors to Grant Thornton

Simulator product range

Static Simulators



aVDS Static

Entry level simulator with active steering and brake for early model development



Theta Cube

Extremely high-quality self-contained transportable simulator



Sigma

Fully immersive static simulator, featuring a real or replica vehicle cockpit and projection vision system

Dynamic Simulators



Alpha Series

New range of high frequency, low latency simulators currently under development. Designed to specifically address the gap in the market for competitively priced high-performance simulators offering significant advantages over high-end hexapod systems

Under development



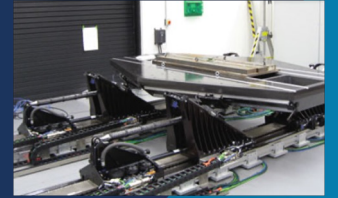
aVDS

High dynamic response simulator primarily for motorsport applications with a pedigree from F1



Delta S3

High fidelity simulator with exceptionally large motion envelope for sustained cueing (featuring 360° yaw and scalable surge and sway)



aVDS-HP

High dynamic response simulator with high payload capability (700 Kg) for automotive applications

Highly targeted acquisitions remain an important part of our value creation strategy

Approach



- The market in which the Group operates for acquisitions is relatively large and fragmented
- The Group is active in identifying opportunities within the existing core automotive market, in addition to adjacent market sectors
- Any acquisition made by the Group should contribute to one or more of the Group's stated strategic priorities and should be value enhancing

Evaluation



- Central resources to drive strategic development and specifically acquisitions
- Businesses should have a track record of sustainable revenue growth and strong gross margins, indicating a competitive market position with differentiated products and/or services
- Hybrid model of acquisitions operating as independent businesses whilst exploiting the synergies of being part of a larger Group

Progress



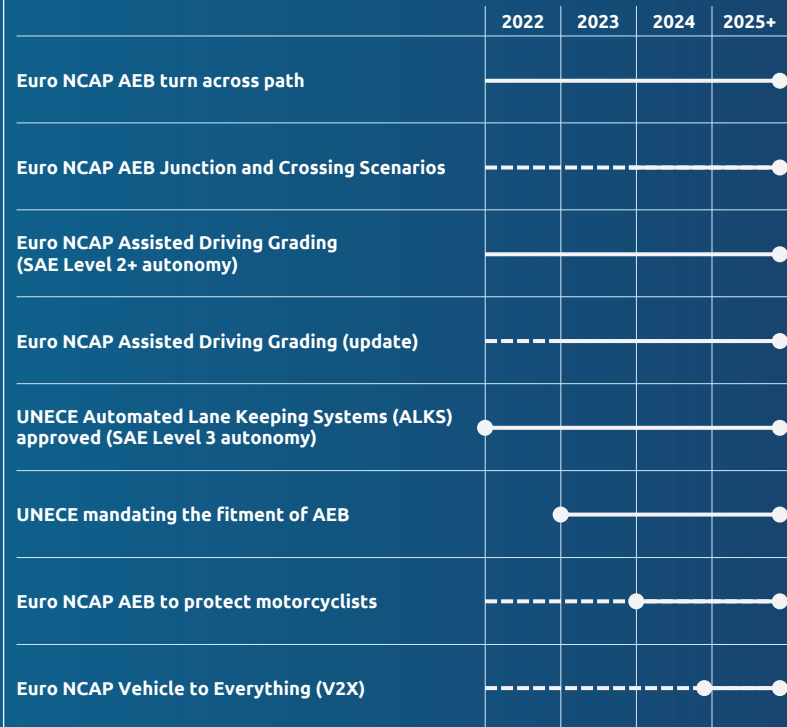
- Average of one acquisition delivered per year between FY 2019 and FY 2023
- Acquisitions to date are rFpro (simulation software), DRI (track testing), VadoTech (testing services) and Ansible Motion (DiL simulators)
- Good long-term pipeline of promising acquisition opportunities

Compounding organic growth through carefully selected, value-enhancing acquisitions

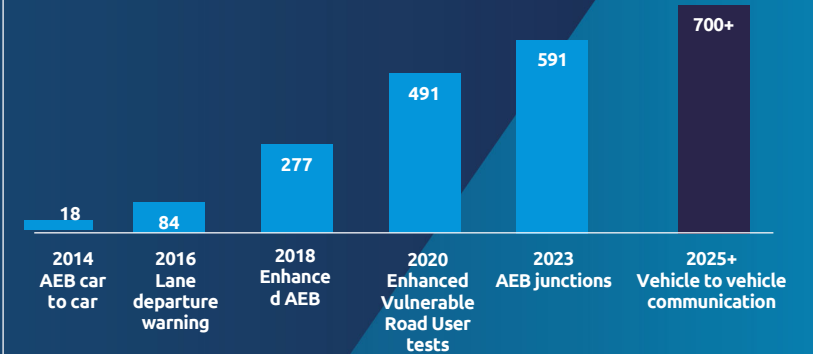
Regulatory growth drivers

- Product development driven by future test scenarios
- Euro NCAP roadmap 2025-2030 launched:
 - New tests for automated driving functions
 - Enhancements to vehicle safety assist functions
 - The inclusion of testing of heavy trucks, expanding the newly introduced commercial vehicle rating scheme
 - Additional and enhanced categories of test targets to complement diversity in road users and increased sophistication of sensors

Roadmap 2022–2025



Euro NCAP test scenarios



Regulatory growth drivers continued

Roadmap 2026–2032

	2026	2029	2032
Safe Driving			
M1: Beyond Intelligent speed assistance		●	
M2: Driver Awareness: impaired driving to cognitive distraction		●	●
M3: AD Grading: Domain extension and driver engagement		●	●
Crash Avoidance			
M4: Improved robustness and real-world effectiveness		●	●
M5: Leveraging vehicle connectivity			●
M6: Pedal misapplication		●	
Crash Protection			
M7: Senior protection: low severity testing with sled		●	
M8: Far-side and side pre-crash incentives		●	●
M9: Protection equity through modelling		●	●
M10: Whiplash protection parity		●	●
M11: Passive VRU protection – A-pillar and micro-mobility		●	●
Post-Crash Protection			
M12: Nest-gen updates including D-call and thermal scanning		●	●



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