

aerospace
defence
security
space



2016

INDUSTRY FACTS & FIGURES

A GUIDE TO THE UK'S AEROSPACE, DEFENCE, SECURITY & SPACE SECTORS

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FOREWORD

The UK's Aerospace, Defence, Security and Space industries make a significant and valuable contribution to economic prosperity and national security.

As the national trade association for the UK's Aerospace, Defence, Security and Space sectors, ADS works to promote and support their interests both at home and abroad.

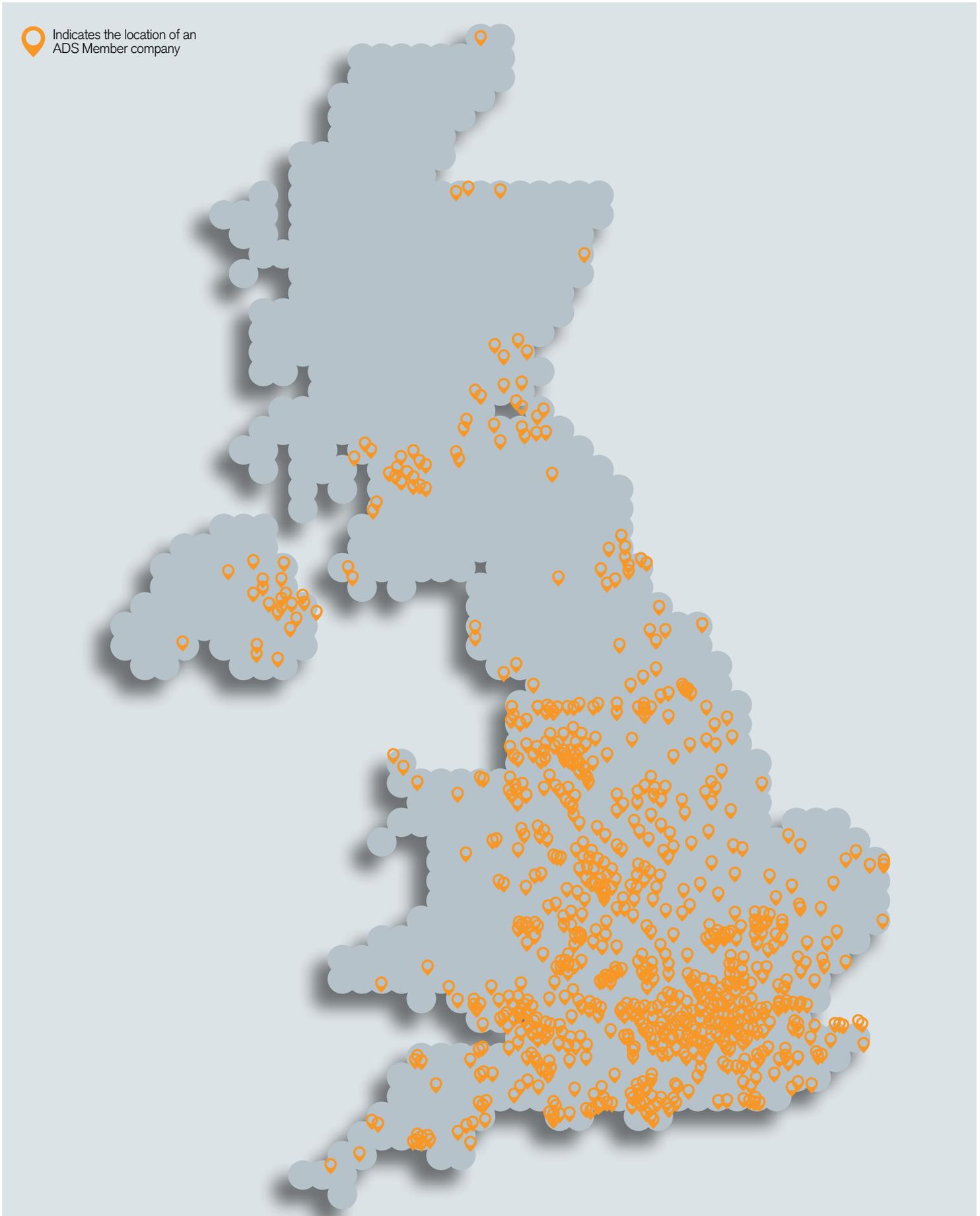
Working in partnership with the government, our members are investing in innovation, skills and supply chains throughout the UK in order to generate country-wide growth, boost productivity and strengthen our competitive advantage in fast-growing global markets.

This Industry 2016 facts and figures guide shows the extent to which companies in our sectors serve as the industrial backbone of the UK – delivering the well-paid jobs and high-tech exports we need to secure a prosperous future.

Paul Everitt
Chief Executive, ADS Group
Chairman, Farnborough International Ltd

THE STRENGTH OF OUR SECTORS

SPANNING THE LENGTH AND BREADTH OF THE UK, ADS' 950 MEMBER COMPANIES INCLUDE OVER 900 SMEs.



Together the UK's Aerospace, Defence, Security and Space companies generate well-paid jobs, high-tech exports and sustainable growth right across the country.

MAJOR CONTRIBUTION TO UK JOBS, SKILLS, EXPORTS & GROWTH

Supporting 900,000 jobs across the country, our sectors offer global growth opportunities and are vital to the UK's future as a high-tech, high-skill, high-wage economy.

In 2015, the UK Aerospace, Defence, Security and Space sectors' contribution to the UK was:



GOVERNMENT AND INDUSTRY

WORKING IN PARTNERSHIP, INVESTING IN GROWTH, WE SHOULD...

1 Continue to support successful Industrial Strategies to further enhance their impact and attract global investment to the UK

2 Help to improve productivity throughout the supply chain by encouraging investment in skills, technology and innovation

3 Build on investment in industrial R&D in order to ensure the UK is the best place in the world to innovate

4 Boost exports with active government support to maximise opportunities, remove barriers and identify new growth markets

5 Work together to implement the SDSR, including its focus on innovation, exports, SMEs and refreshing defence industrial policy

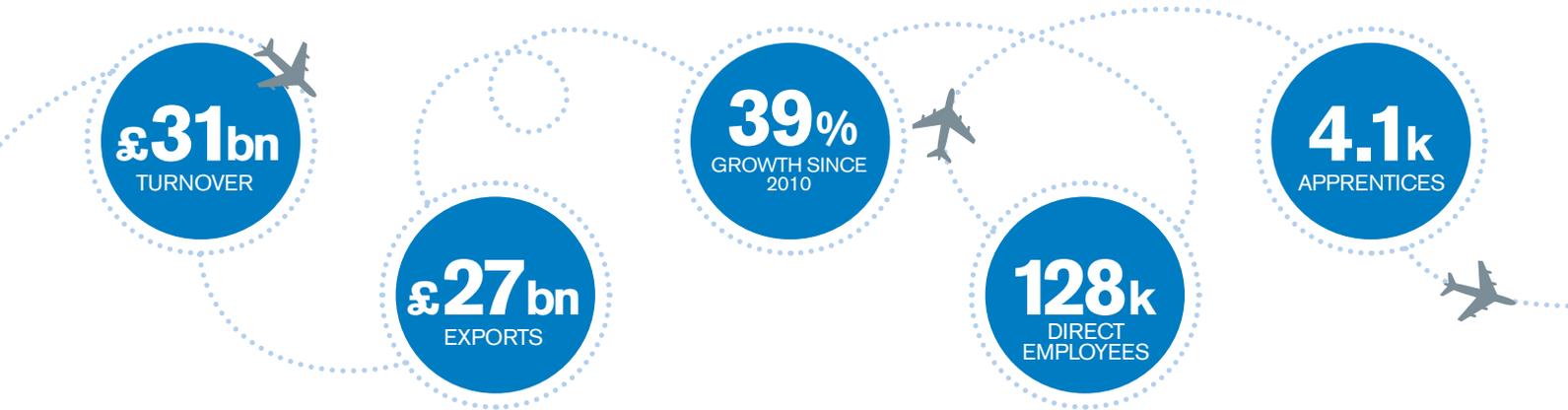
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UK AEROSPACE SECTOR

The UK's Aerospace sector is the largest in Europe and second globally to the USA, generating well-paid jobs, high-tech exports and sustainable growth across the country.



AEROSPACE GROWTH PARTNERSHIP (AGP)

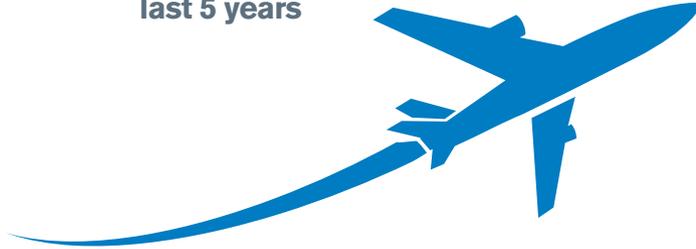
The AGP is the UK's Aerospace industrial strategy, with industry and government working in partnership to attract global investment to the UK.

Purpose 	Delivered 	Impact 	What next 
<ul style="list-style-type: none"> Grow the UK's global market share Attract long-term global investment to the UK Improve the UK's global competitiveness through technology, skills and supply chains 	<ul style="list-style-type: none"> £3.9bn investment in aerospace R&D secured for the Aerospace Technology Institute (ATI) Supporting SMEs and new technologies with £40m from NATEP to help SMEs commercialise innovations £250m invested in supply chain competitiveness 	<ul style="list-style-type: none"> Changed global perceptions of UK as a place to invest Invested £1.4bn in R&D through the ATI to date Funded 500 future engineers to study Aerospace MScs Supported over 150 SMEs to commercialise new innovations 	<ul style="list-style-type: none"> Refreshed AGP strategy focusing on the global competitiveness of the UK supply chain A strategy update from the ATI that reflects the new 10 year funding commitment and priority technology themes

RAPID PRODUCTIVITY GROWTH...

30%

Productivity growth in the last 5 years



Aerospace productivity has increased by 30% since 2010 – compared to 2% across the UK economy

1,397

AIRCRAFT

Aircraft delivered globally in 2015, worth £23bn to UK industry

9 years

WORTH OF WORK IN HAND

Strong order book of over 13,000 aircraft, worth up to £195bn to the UK

44%

INCREASE IN DELIVERIES

Increase in global commercial aircraft deliveries since 2010

\$5.7 trillion

Value of the global market opportunity over the next 20 years

...DELIVERING NEW TECHNOLOGY

The UK Aerospace industry is at the heart of delivering new technology for the next generation of cleaner, quieter and more efficient civil aircraft.

Airbus UK in Broughton assembles the wings for all Airbus civil aircraft, including the new A350 XWB. Producing over 1,000 wings a year, the site employs more than 6,000 people.



Did you know?

Aerodynamic improvements and composite materials ensure the wings on the A350 XWB help deliver a **25% decrease in fuel burn** across the aircraft.



Did you know?

The Rolls-Royce Trent XWB engine for the A350 is **10% more fuel-efficient** than the engines it replaces.

Innovative SMEs like Sigma Precision Components are developing new technologies to improve both the weight and cost of a range of conventional engine and airframe components.

Sigma's COMPipe, a composite aero-engine pipe, delivers weight savings of 50% over traditionally-manufactured pipes.

Did you know?

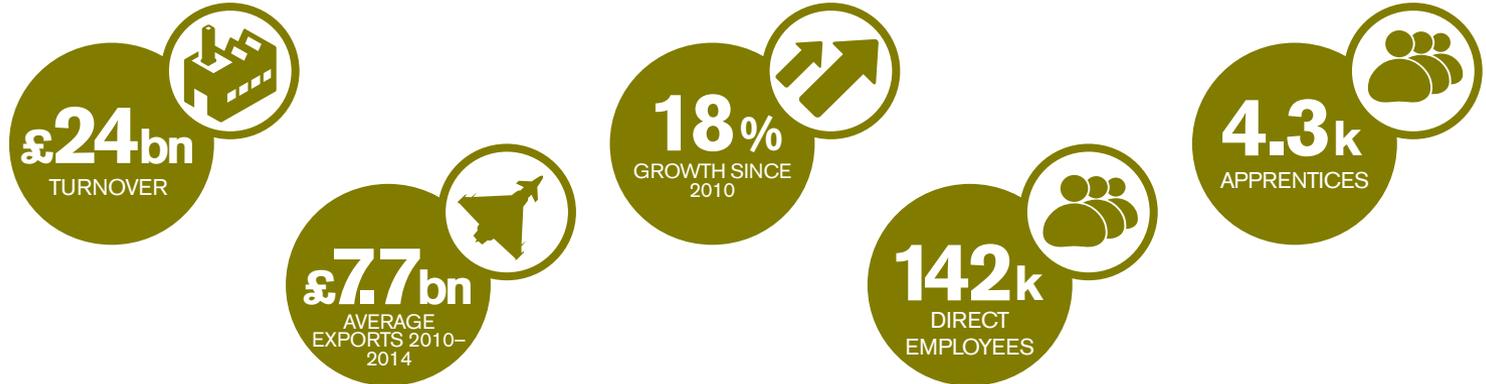
GKN Aerospace will produce the new Advanced Technology Winglet for the Boeing 737 MAX. The winglet alone will provide a **reduction in fuel use of up to 1.5%**.

Bombardier in Belfast design, develop and manufacture the lightweight composite wings – using their unique Resin Transfer Infusion (RTI) process – for the CSeries.



UK DEFENCE SECTOR

The UK is the second largest defence exporter in the world, which helps deliver the equipment and services our armed forces and security services need to safeguard national security.



DEFENCE GROWTH PARTNERSHIP (DGP)

With industry and government working in partnership, the DGP is the UK's strategy to win more exports in competitive global markets.

Purpose 	Delivered 	Impact 	What next 
<ul style="list-style-type: none"> • Grow the UK's global market share through exports • Foster greater collaboration and innovation across the sector • Ensure the UK has the technology, skills and supply chains to win export orders 	<ul style="list-style-type: none"> • Established the UK Defence Solutions Centre (DSC) and strengthened UKTI DSO to bring the best of UK capability to the international market • Launched £10m Dual Use Technology Exploitation (DUTE) innovation cluster • Launched the Systems Engineering Masters Programme 	<ul style="list-style-type: none"> • Longer-term assessment of defence export opportunities • DSC Innovation Challenge stimulating solutions in persistent surveillance, autonomy and synthetic operational training • DUTE helping to harness the innovative potential of UK SMEs for economic growth 	<ul style="list-style-type: none"> • UK DSC technology roadmaps to be published and growth opportunities to be identified • Supporting UKTI DSO with a Team UK approach to exports • DUTE will support 140 new jobs across 15 partners up to 2019

The 2015 Strategic Defence and Security Review recognised the importance of industry's contribution to supporting national security and economic prosperity.

FOCUS ON EXPORTS

- The UK is the second largest exporter of defence equipment and services in the world – generating an average of £7.7bn for the UK through defence exports every year
- Defence and security exports help to sustain high-skill jobs and our industrial base, deliver UK capabilities for the UK Armed Forces, facilitate interoperability, and strengthen security relationships

FOCUS ON SMEs

- The UK Defence industry is made up of thousands of companies – both large and small – right across the country
- The UK value chain is underpinned by a vibrant community of innovative businesses, with over 5,000 SMEs directly supplying the MOD
- Industry is working with the government to make it easier for SMEs to bid for defence and security contracts

FOCUS ON INNOVATION

- Innovation strengthens our global competitiveness and generates high-skill jobs and high-tech exports
- The UK Defence industry provides over 32,000 research, design and engineering jobs
- Sustained and coherent investment in innovation and technology underpins the UK's ability to rapidly adapt to evolving security threats

Implementing the SDSR

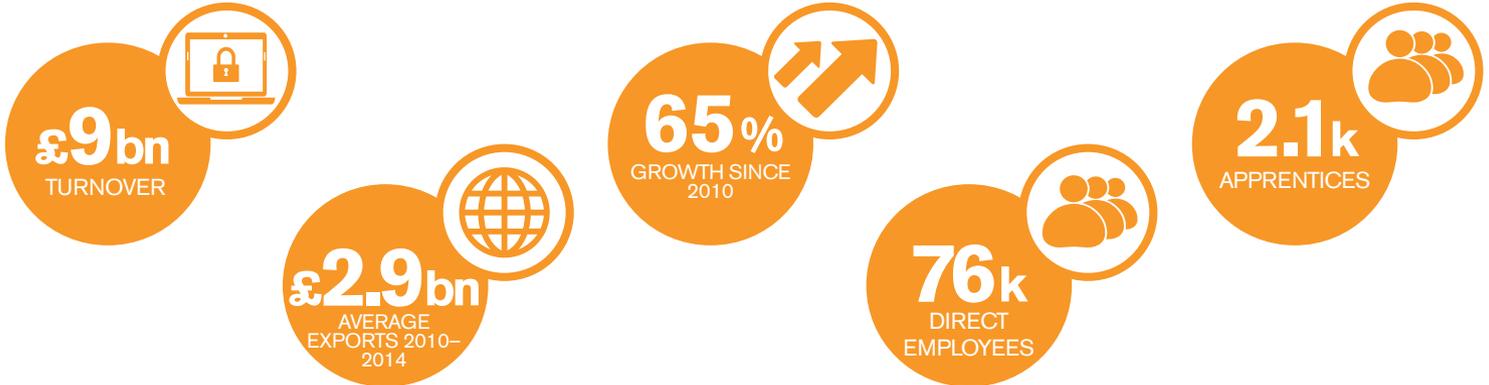
Industry worked constructively with the government on the SDSR and hopes to continue to help inform and deliver its implementation:

- Inputting into the refresh of defence industrial policy
- Enhancing support for exports
- Understanding and helping to shape the new innovation landscape
- Supporting SME access and engagement



UK SECURITY SECTOR

The UK's Security sector provides solutions to some of the greatest challenges we face today, from the cyber protection of citizens' data through to the products and services which secure the airports of the UK's international partners.



SECURITY & RESILIENCE GROWTH PARTNERSHIP (SRGP)

The SRGP brings industry, academia and government together to demonstrate the UK's security expertise and capabilities, especially our ability to innovate and respond to new and emerging threats.

Purpose



- Help deliver national security through the partnership between the government and the security sector
- Establish a joint approach to the promotion of Security sector exports

Delivered



- Strategic partnership established with the EU Funding Unit
- New models for collaboration between the Home Office and industry to deliver international security objectives

Impact



- New security export opportunities available to industry worth tens of millions of pounds
- Greater opportunities for SMEs to pursue these opportunities in collaboration

What next



- Re-launch the Security Innovation and Demonstration Centre in order to drive forward the objectives of the SRGP
- Identify and use UK funding streams in support of Security sector exports

HOW THE SECURITY SECTOR BENEFITS THE UK

The UK Security sector touches many aspects of our daily lives, from cyber systems protecting online banking details to emergency responses that protect our homes.

NATIONAL INFRA-STRUCTURE

- Command and control
- Biometrics and screening

CYBER SECURITY

- Identity and authentication
- Analysis and big data

POLICING AND COUNTER-TERRORISM

- Secure communications
- IED/bomb disposal
- Forensics

MAJOR EVENT SECURITY

- Perimeter and venue protection
- Guarding/close protection
- Crowd modelling

BORDER SECURITY

- Search equipment and screening
- Explosive and chemical detection

OFFENDER MANAGEMENT

- Secure and safe facilities
- Secure fencing, CCTV and access control

UK SECURITY – IN DEPTH

Helping to contain and control the Ebola crisis

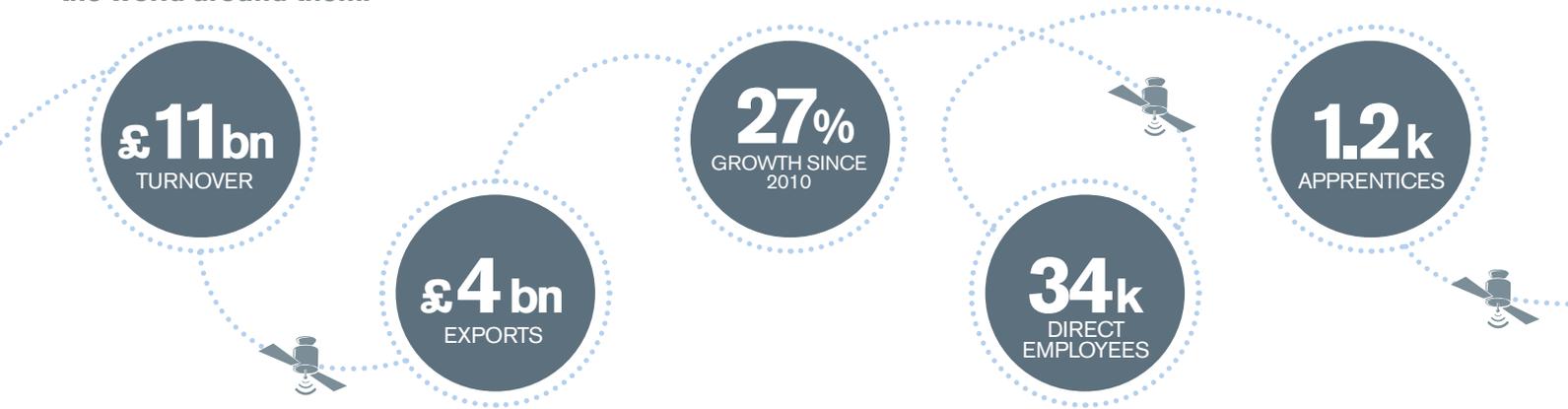
- The UK is the sixth largest exporter of security equipment in the world
- The sector's expertise helps resolve global humanitarian crises such as Ebola
- UK companies provided the decontamination skills used in London's Royal Free Hospital, undertook screening of passengers at Freetown International Airport, Sierra Leone, and provided specialist equipment throughout West Africa

Delivering cyber security in partnership with the UK government:

- The UK is a world leader in building the cyber resilience of developing states, protecting citizens and giving other countries the confidence to work and trade with them
- UK government recognises industry's essential role and has agreed a strategic partnership with ADS to ensure that activities draw on the complementary strengths of both government and industry

UK SPACE SECTOR

The UK's Space sector is at the cutting edge of exploring the universe and connecting people to the world around them.



SPACE INNOVATION & GROWTH STRATEGY

The Space Innovation and Growth Strategy brings together a partnership of industry, government and academia to identify opportunities and remove barriers to growth for the UK Space sector.

Purpose	Delivered	Impact	What next
<ul style="list-style-type: none"> Develop, grow and exploit new space-related opportunities Make the UK the best place to start and develop Space businesses Grow the UK's share of the global space economy to 10% by 2030 	<ul style="list-style-type: none"> UK Space sector has trebled in size since 2000 First UK National Space Policy shows government commitment to sector Insurance tax waiver for UK spacecraft operators reduces cost of spacecraft and increases UK's competitiveness 	<ul style="list-style-type: none"> 12 Space companies have expanded or established UK presence UK's lead in space data led ESA to establish European Centre for Space Applications and Telecommunications at Harwell Through ESA participation the UK has been able to take the lead in new commercial and scientific missions 	<ul style="list-style-type: none"> Grow UK Space sector to £40bn of annual turnover by 2030 Grow UK space-related exports to £25bn by 2030 Create 100,000 new jobs in Space sector by 2030

GROWING AT OVER 8% A YEAR, THE UK'S SPACE INDUSTRY DESIGNS, DEVELOPS & MANUFACTURES...

TECHNOLOGY THAT SUPPORTS EVERYDAY LIVES...

- Access to the internet
- Calls on mobile phones
- Broadcasting to TVs
- Weather forecasting
- GPS on satnavs
- Banking services such as ATMs and card machines

Galileo

Galileo is the development of Europe's global navigation satellite system

- In total 30 satellites will be positioned around the earth
- 4 satellites are currently in place – all built in the UK
- The payloads of the next 22 satellites will be built in Guildford by SSTL



TECHNOLOGY THAT EXPLORES THE UNIVERSE...

- Major Tim Peake is the first ESA astronaut of British nationality – spending six months in space from December 2015
- Investing in space exploration has boosted interest in STEM
- 'Astro Pi' – a collaboration between the UK Space Agency and Raspberry Pi – allowed students to devise and programme their own experiments

ExoMars Rover

The ExoMars rover is due to be launched in 2018 and land on Mars in 2019

- Airbus Defence and Space in the UK are the lead builder of the rover
- SCISYS UK are supporting the development of on-board software and autonomous operations
- 5 UK universities will lead the development of the rover's panoramic camera and CCD camera



TECHNOLOGY THAT SUPPORTS OTHER INDUSTRIES...

- National security – providing communications for British forces
- Disaster monitoring
- Earth observation for food security
- Tackling climate change
- Public sector – including assisting emergency services

NovaSAR

NovaSAR is a constellation of four satellites designed for low cost missions to help monitor drug trafficking, illegal fishing etc

- UK government has allocated £21m to assist the first satellite
- Will be built in the UK by SSTL
- Estimated that the project will attract £150m of investment into the UK



ADS Group is the UK trade organisation representing the Aerospace, Defence, Security and Space sectors. ADS is focused on representing the interests of these valuable wealth producing industries in the UK and overseas to key stakeholders, government, and the media. Farnborough International Limited, which runs the Farnborough International Airshow, is a wholly owned subsidiary.

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