

High Potential Opportunity

Smart and Sustainable Aviation

An exceptional opportunity for an investor to plug into a world-leading Smart and Sustainable Aviation ecosystem. Play an instrumental role in the development, demonstration and adoption of new and emerging aviation and advanced air mobility markets, taking full advantage of electrification, hydrogen, autonomy and disruptive technologies.

South West England



Department for
International Trade





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Smart and Sustainable Aviation in South West England

The South West of England is a world leader in Smart and Sustainable Aviation, building on a rich aerospace and advanced engineering heritage while simultaneously embracing disruptive innovations and technologies

A unique opportunity exists for investors to join this future-oriented community – creating the markets of the future, bringing to life the most sophisticated aviation and air mobility products, services and solutions, and enhancing the sustainability of the future air transport system technologies of the future.

From urban air mobility (UAM) vehicles to next generation propulsion systems, from electric aviation to alternative aviation fuels, the South West of England unlocks impressive opportunities.

TRANSFORMING THE FUTURE.



1

Executive
Summary

Profit from the growing national and global demand for smart and sustainable aviation solutions.

Transform the aerospace and aviation sector with smart and sustainable aviation solutions in South West England

Smart and sustainable aviation solutions

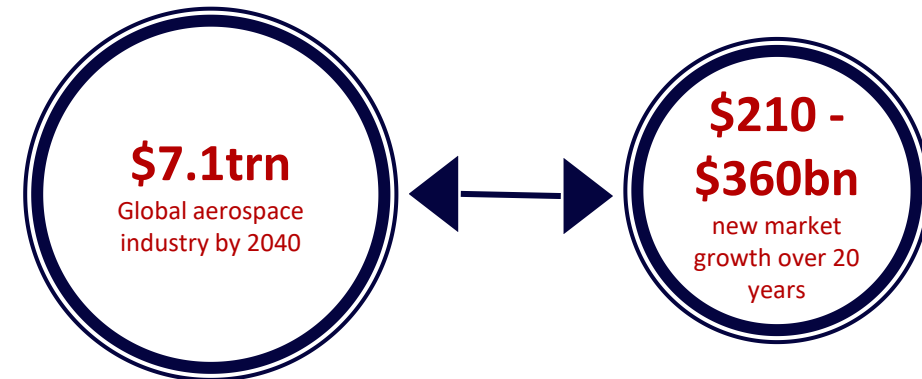
By locating in South West England you will be able to exploit an array of aerospace and aviation assets, capabilities and well trained personnel who play an integral role in the global aerospace industry.

Smart and sustainable aviation solutions aim to create new markets, which will by 2030, lead to the emergence of entirely new aviation markets in the sub-regional and urban environments. Urban Air Mobility (UAM) has the potential to bring about a mass market solution to urban mobility utilizing electric aircraft and vertical take off and landing (VTOL) and eVTOL capability. The decarbonisation of the sector will give companies exciting opportunities' to test and validate new methods of propulsion for the aerospace sector.

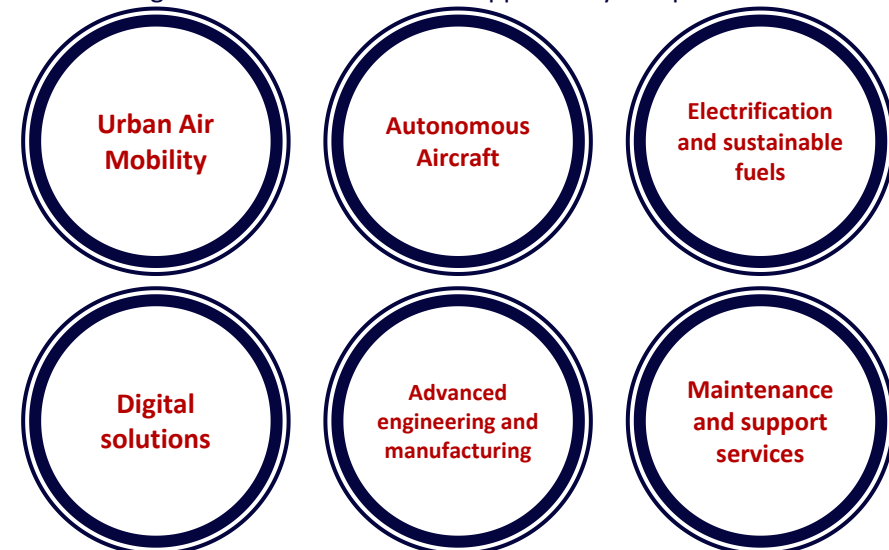
The conventional aerospace market is also forecast to grow rapidly over the next 20 years as global income levels, particularly in the developing world continue to rise coupled with an increased desire to connect and travel.

South West England is a location ideally positioned to meet this demand, with an established aerospace cluster sitting alongside a growing tech and digital capability.

Design, develop and manufacture smart and sustainable aerospace solutions of the future



Take advantage of this transformational opportunity and provide solutions in:





1

Executive
Summary

Benefit from a presence in South West England, a location primed for your investment.

Invest in a location at the heart of the UK's aerospace and aviation industry

South West England has well established aerospace and aviation industry with a large concentration of regional airports and airfields primes, projects, startups and technology companies unrivalled in Europe, making it an ideal location for your sustainable air mobility investment.

Integrate with a world class research and innovation intensive cluster: with key facilities including the National Composites Centre, Bristol Robotics Laboratory, IAAPS (Institute of Advanced Automotive Propulsion Systems), Centre for Future Clean Mobility and the Centre for Modelling and Simulation.

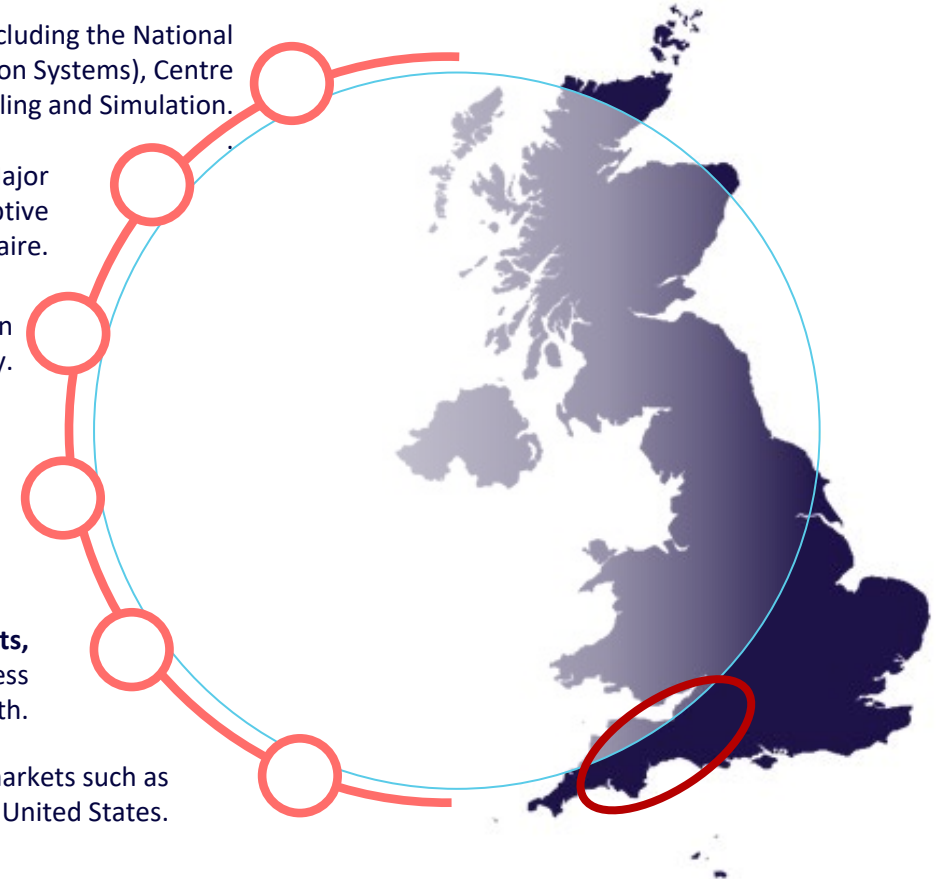
Collaborate with, and provide solutions in partnership with a large and growing cluster: Major global aerospace companies, such as Airbus, Leonardo, GKN and Rolls Royce plus disruptive innovative companies like Vertical Aerospace and Ampaire.

Exploit cost competitive office and industrial space in the UK: Rents for industrial space in Exeter and Bristol are at an average of £9 sq ft and £10 sq ft respectively.

Capitalise on a wide choice of soft landing platforms and business incubators: to set up-in with dedicated collaborative space for you, industry and academia.

Gain direct access to a core of highly-skilled aerospace related students, professionals and capability: to meet your needs now and support your business growth.

Exploit competitive salary costs: lower than other key markets such as the France, Germany and the United States.





2

The opportunity

Exploit the growing demand for new aerospace mobility solutions.

Urban air mobility

Autonomous aircraft

Electrification and sustainable fuels

Digital solutions

Leading to....

Adv. engineering and manufacturing

Maintenance and support services

Exploit a sector ripe for change by designing, developing and manufacturing the air mobility solutions of the future

South West England is one of the leading centres for urban air mobility in the UK, with an unrivalled cluster of partners, suppliers and customers.

The urban air mobility (UAM) market is projected to grow to £6.6bn and at a annual growth rate of 13.5% to 2030

With more 50% of the global population now living in cities, Urban Air Mobility can transform the way we use flight to allow people and products to travel across cities and regions in ever more congested space



Bringing urban mobility to the third dimension offers the potential to create a faster, cleaner, safer, and more integrated transportation system

Without skilful planning and innovative, smart solutions, cities are risking diseconomies such as congestion and pollution, which will outweigh agglomeration benefits and will lead to a deteriorating quality of life and a loss of economic dynamism.



Plug into a well-developed supply chain for the development and manufacturing of e/VTOL aircraft

New projects in development include Leonardo's plans to develop a hybrid-electric-powered light helicopter and the Future Flight Aviation Innovation programme in the South West which is investigating new methods of greener flight, finding new ways to travel, increasing mobility, improving connectivity and reducing congestion. The consortium is led by Atkins, and involving Vertical Aerospace and the West of England Combined Authority.



Collaborate with leading research organisations in the South West to innovate and commercialise e/VTOL aircraft

South West England has world class facilities such as the Bristol Flight Lab at the Universities of Bristol, Team Bath Drones at the University of Bath and in Exeter where you can collaborate with centres of excellence including the National Composites Centre and the Centre for Modelling and Simulation.

www.flight-lab.bristol.ac.uk

www.teambathdrones.com

www.exeter.ac.uk/business/consulting/dronelab/

www.nccuk.com

cfms.org.uk





Incorporate Autonomous and Unmanned Solutions to drive down costs, ease flight crew workload and maintain safety

Autonomy is critical to unlock the true potential of disruptive emerging markets and South West England has the skills, research facilities and test beds to develop your autonomous aircraft

The autonomous air vehicle market is projected to grow to \$23.7bn and at a CAGR of 17.06% to 2030

It can transform the way we use flight to deliver services, enabling sub-regional and urban air transport, the routine use of drones to deliver cargo, and a broad range of services including blue light, survey, maintenance and construction.

It will transform the way we use flight to deliver services, enabling sub-regional and urban air transport and ...

The South West has several Future Flight Challenge projects in development including GKN's Safe Flight project that will explore how to safely integrate unmanned and autonomous aircraft into existing air space and the DBAS project at the University of Bristol to safely enable the remote inspection and monitoring of construction and industrial sites. Other projects include Leonardo's Unmanned Rotary Wing Aircraft with first flight scheduled in 2024/5 and Leonardo's AW609 Tiltrotor

An autonomous air transport system has the potential to deliver higher levels of safety and productivity than today's human controlled system

Growth of the autonomous air solutions will be based around;

- › Increased cost savings
- › Reduction in human error due to increased autonomy
- › Advancements in AI

... introduce the routine use of drones to deliver cargo, and a broad range of services including blue light, survey, maintenance and construction

South West England has world class facilities such as Bristol Flight Lab based in the University of Bristol and Team Bath Drones at the University of Bath where you can collaborate with leading researchers of the field.

www.flight-lab.bristol.ac.uk
www.teambathdrones.com

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Design and develop the zero and net zero flight emission technologies for the aerospace and aviation industries

Alternative aviation fuels (SAF) will play a key part in decarbonisation

The development and commercialisation of alternative aviation fuels over the next decade is vital to providing a solution to greenhouse gas emissions in flying now. Alternative aviation fuels represent an essential near-term 'bridge' to technologies like hybrid-electric and all-electric aircraft.

Electric aircraft will enable new forms of air mobility

The South West is already demonstrating electric aircraft capabilities through the 2ZERO Project – which will see electric aircraft testbed flights taking off at Exeter Airport and flying to Newquay Airport. The region is also home to the Electric Aviation Group who are at the forefront aviation's industry drive to a greener future, developing a hydrogen hybrid electric regional aircraft. The demonstration of hybrid-electric aircraft in an integrated system, could catalyse a fundamental shift in regional airline operations.

The South West has the facilities and test beds you need to drive

forward decarbonisation

The South West is home to world class research and innovation facilities. Companies such as Easyjet at Bristol Airport are carrying out trials and using new technology to try to cut, or eliminate, emissions from aircraft ground operations. The region also hosts IAAPS's new £70m development located at the Bristol and Bath Science Park which supports collaborative opportunities in the development of drivetrain design and validation strategies and the transition to the decarbonisation of aerospace propulsion systems through the development of future fuels and electrification technologies. iaaps.co.uk/

Photo Sources: Ampaire.

Urban air mobility

Autonomous aircraft

Electrification and sustainable fuels

Digital solutions

Leading to....

Adv. engineering and manufacturing

Maintenance and support services

A clear market of scale

£2.34bn

Global market in electric aircraft

£10.84bn

Global market for sustainable aviation fuels



Sources: ReportLinker, More Electric Aircraft Market by End User, Aircraft System, Component, Application, Aircraft Type, Region - Global Forecast to 2025, Dec 2020. ReportLinker, Sustainable Aviation Fuel Market by Fuel Type, Biofuel Manufacturing Technology, Biofuel Blending Capacity, Platform, Region - Forecast to 2030, Oct 2020. Sustainable Aviation, Sustainable Aviation Fuels Road-map, 2020.



Digitalisation across the Aerospace and Aviation System

Bristol is one of the top 10 cities for tech in Europe with a well established cluster of companies and personnel, with Exeter pinpointed as the UK Tech Hub with the most growth potential for 2021.

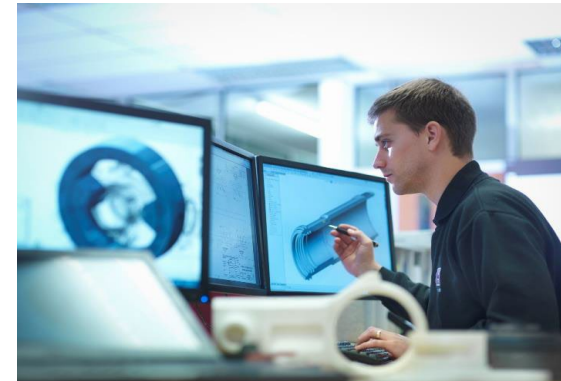
Communications, connectivity and AI are becoming more important in aviation

Project Bluebird is a partnership between NATS (formerly National Air Traffic Services) and The Alan Turing Institute based at the University of Exeter. The research aims to deliver the world's first artificial intelligence (AI) system to control a section of airspace in live trials, working with air traffic controllers to help manage the complexities of their role. This system will use digital twinning and machine learning technologies and will include the safe and trustworthy use of AI.



The Future Flight Challenge is exploring new innovative digital technologies to improve air traffic management and fully autonomous vehicles

Future Flight projects such as Fly2Plan and SafeZone will have the potential to transform the flow of data and the safety of airspace as more autonomous aircraft take to the skies, with the South West playing a key role in their development.



Plug into digital research organisations primed to create and pioneer new aviation solutions

The South West benefits from hosting The **Centre for Modelling and Simulation (CMFS)** in Bristol; **The Met Office**, in Exeter; **Digital Engineering Technology & Innovation (DETI)** - a strategic programme of the West of England Combined Authority, delivered by the NCC; **Smartia** in Bristol, a leading AI and industrial IOT company. These organisations are at the forefront of data science, AI and advanced simulation.
cfms.org.uk/ www.metoffice.gov.uk
www.nccuk.com/deti/ www.smartia.tech

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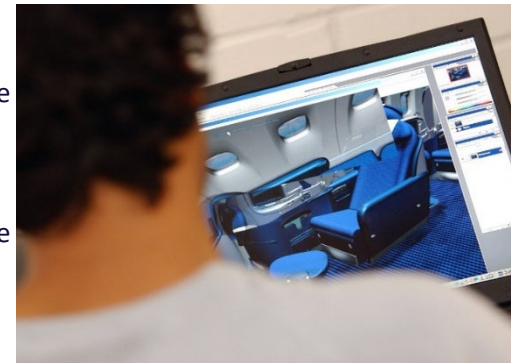
Leading to....

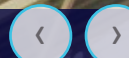
Adv. engineering and manufacturing

Maintenance and support services

5G offers the ability deliver better efficiency, productivity, and a range of new services in aerospace

The South West is also hosting the 5G ENCODE programme dedicated to demonstrate the value of 5G on industrial use cases within the composites manufacturing industry. Consortia partners include Zeeta Networks, the National Composites Centre (NCC), Siemens, Toshiba, the University of Bristol and the West of England Combined Authority. www.5g-encode.com





Exploit the growing demand for next generation aircraft

Be part of a \$7 trillion market for new aircraft over the next 20 years with 3.4% CAGR

Over 30,500 wide and narrow body aircraft are forecast to built over the 20 years with the UK ranking as one of the top nations exporting aerospace products.

Partner with companies at the cutting edge of new aerospace designs

Manufacturing for aerospace is often more technologically challenging than for other sectors. High-performance materials can be difficult to process. High levels of precision are required in components. The region is home to the Airbus Wing Integration Centre in Filton, Leonardo in Yeovil and the GKN Global Technology Centre who are at the forefront of innovative design in aerospace.

Collaborate with leading

advanced materials research facilities in South West England to grow your business

The National Composites Centre and Bristol Composites Institute in Bristol, Advanced Composites Manufacturing Centre in Plymouth and CALM - Centre of Additive Layer Manufacturing at the University of Exeter are all based in the region. These world class open access facilitates are dedicated to the design and development of new advanced materials, with a proven track record of helping small companies adopt advanced material solutions as well as partnering the world's most significant engineering companies with their biggest R&D programmes.

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**\$7 trillion
market for
new aircraft**

3.4% CAGR



The South West enjoys a leading position in the global maintenance, repair and overhaul (MRO) and upgrade market through a combination of product excellence and effective services to airlines

The region has significant strengths in MRO, highlighted by continued investment by globally-leading players like Rolls Royce at Bristol and Leonardo at Yeovil and Exeter Aerospace.

Total life-cycle support services will play a key role in keeping costs down for aircraft operators

As the aircraft fleet grows over the next 20 years, aircraft owners will be under increasing pressure to ensure MRO costs are kept to a minimum whilst maintaining the most stringent safety standards.

The South West has key strengths in MRO and upgrade with a wealth of established players

Established companies such as Leonardo in Yeovil have been operating in the area for many years, allowing new companies to plug directly into a well established supply chain

The transition to Sustainable and Smart Aviation will create opportunities for Retrofits and Upgrades

Transitioning to zero emission flight, and increased levels of autonomy creates an opportunity to retrofit large numbers of existing aircraft, replacing old piston engine or turboprop engines with electric motors, fuel cells and batteries, or new Avionics and flight controls

New technologies and solutions will require new training, skills and techniques

Safe handling of high voltage electrical systems and recharging and maintaining batteries, or new zero emission fuels like hydrogen are all new skills and techniques required by the operators creating demand in these advanced training services

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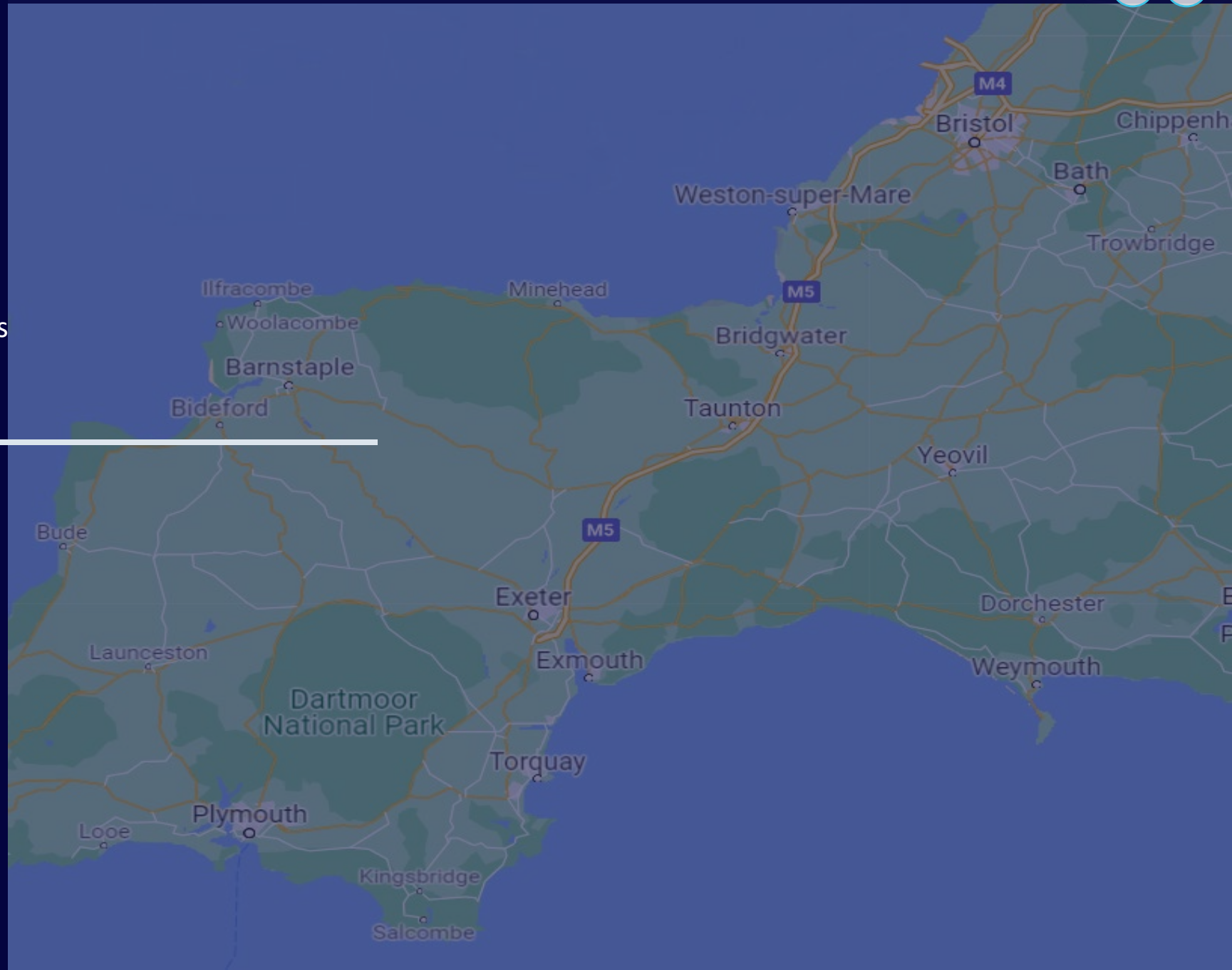
MRO market with a 20 year value in excess of \$2 trillion

forecasts projecting between 3.5% and 4.5% CAGR to 2030



Explore South West England

A compelling case for your business, with links to world class...

[SKILLS & RESEARCH](#)[CLUSTER INFORMATION](#)[SOFT LANDING LOCAL
SUPPORT](#)[GOVERNMENT SECTOR
SUPPORT](#)[CASE STUDIES](#)



3

Skills & research

Capitalise on world-class research, and gain the skills you need to succeed now and in the future.

Integrate with leading research capability and collaborative practice

Links to institutions dedicated to enabling the transfer of technology from research to industrial applications.

Bristol Robotics Laboratory

Bristol Robotics Laboratory (BRL) is the most comprehensive academic centre for multi-disciplinary robotics research in the UK. It is a collaborative partnership between the University of the West of England (UWE Bristol) and the University of Bristol, and home to a vibrant community of over 450 academics, researchers and industry practitioners.

www.bristolroboticslab.com

Centre for Modelling and Simulation

CFMS is an independent digital engineering research organisation, providing design & analysis services, consultancy and IT infrastructure to help organisations create better solutions to pioneer new product development. Working with research and commercial organisations of all sizes, CFMS experts in model-based engineering, data science, advanced simulation and computing use digital tools and methods to optimise designs and processes, resulting in better productivity and lower costs.

www.cfms.org.uk

Centre of Future Clean Mobility

The Centre for Future Clean Mobility partners with businesses to develop low-emissions, high-efficiency integrated power systems for applications in the marine, off-highway, rail, defence, and energy sectors. They have expertise in the following areas:

- › Powertrain design and test for optimal fuel efficiency, range and cost
- › Government funding leveraging
- › Battery pack design and test

futurecleanmobility.com

Institute for Advanced Automotive Propulsion Systems

Based at the Bristol and Bath Science Park, IAAPS is a state-of-the-art experimental research facility drawing on its 40 years of experience supporting technical developments in automotive propulsion systems. The adoption and implementation of zero carbon technologies aligns with other industry sectors including aerospace, and as a world-leading centre of excellence for research, innovation, and enterprise, IAAPS is ideally suited to support the regions research and collaboration need.

www.iaaps.co.uk

National Composites Centre

The National Composites Centre is the world leading authority on composites, bringing together the best minds and the best technologies, to solve the world's most complex engineering challenges. It works globally to accelerate the adoption of high-value, sustainable engineering solutions in composites. The NCC is a leader in digital design which is wider than composites and has the UK's first open-access 5G factory testbed.

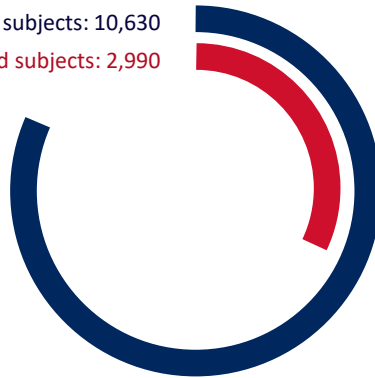
www.nccuk.com



Leading institutions developing a pipeline of talent for your business now and in the future

Universities and colleges in South West England are supporting a steady pipeline of students and graduates educated for the aerospace sector.

Students in key related subjects: 10,630
Graduates in key related subjects: 2,990



Globally ranked universities such as the University of Bristol are offering degrees in relevant courses.

Students currently studying at all South West England Higher Education institutes



Aerospace engineering



Electronics and electrical
engineering



Mathematics



Computer Science

The graduate pool is strengthened by aerospace specific courses and world-class research centres.

University of Bath

18,070

students across all subjects

Receiving University status in 1971, the university has a strong reputation in engineering, physical sciences, mathematics and technology and has been at the forefront of applied research into propulsion system via IAAPS. www.bath.ac.uk

University of Bristol

25,955

students across all subjects

A Russell Group University, Bristol is one of the most popular and successful universities in the UK, ranked in the world's top 60 in the QS World University Rankings 2021. Bristol is at the cutting edge of global research and houses the Bristol Composites Institute a world-leading institute for composites research www.bristol.ac.uk

University of Exeter

25,010

students across all subjects

Receiving its Royal Charter in 1955 and part of the Russell Group, The University has world-leading engineering researchers and hosts the Centre for Future Clean Mobility and sponsors the South West Institute of Technology (SWIoT). www.exeter.ac.uk

University of Plymouth

19,645

students across all subjects

Founded in 1862 as the School of Navigation, the University of Plymouth is now the UK's 15th largest university. The university hosts the Advanced Composites Manufacturing Centre as well as the Electron Microscopy Centre. www.plymouth.ac.uk

University of West England

29,560

students across all subjects

Achieving University status in 1992 UWE has a diverse student body of 30,000 students and more than 400 courses covering a wide range of subject areas. The University offers an BEng in Aerospace Engineering and jointly hosts the Bristol Robotics Laboratory. www.uwe.ac.uk



Capitalise early on ideas that will shape the future of aerospace, advanced air mobility and the wider air transport system

South West England has the talent to enable companies to capitalise early on ideas that will shape the aviation and aerospace sector. Collaborate with the region's colleges to access a pipeline of appropriately skilled people:

Weston College

Weston College is an Ofsted outstanding college of Further and Higher Education in Weston-Super-Mare. The college leads The West of England Institute of Technology (WEIoT) offering a range of technical qualifications and apprenticeships. The college has over 30,000 students.

Exeter College/Future Skills Centre

Exeter College is an Ofsted rated Outstanding college exceptionally well placed to support the needs of future aviation, with a purpose built 5600 sq ft simulator hall and operate a Boeing 737 simulator. The centres aviation support programme extends to £100k Airbus cabin trainer for air crew development. This is further enhanced by a evacuation simulator and cabin smoke simulator

Bristol Technology & Engineering Academy

BTEA is a University Technical College, They deliver courses in engineering, science, technology, healthcare and environmental studies for Year 10 to Year 13 students. Overall the UTC has over 400 students.

Yeovil College

Technology is moving faster now than at any time in history and it is our engineers who are driving that pace. Yeovil College train's engineers who will work with many of those technologies that are essential for the decarbonisation of aviation. They provide a personalised study programme that is tailored to specialist knowledge, but also the basic skills and knowledge that employers are looking for. The College offer programmes from Level 2 through to university level and degree apprenticeships.

West of England Institute of Technology (WEIoT)

WEIoT is an industry, education and research collaborator to design and deliver flexible, higher-level technical learning to equip people with the skills to fully participate in, and contribute to, economic growth driven by digital innovation and emerging technologies. The West of England Institute of Technology offer an Aerospace Manufacturing Engineer and Data Analyst Apprenticeship

South West Institute of Technology (SWIoT).

SWIoT will operate as a virtual college, specialising in technical training and development for the South West. Through our Degree Apprenticeship programmes in Digital and Technology Solutions and Data Science, students will gain unparalleled new skills development.



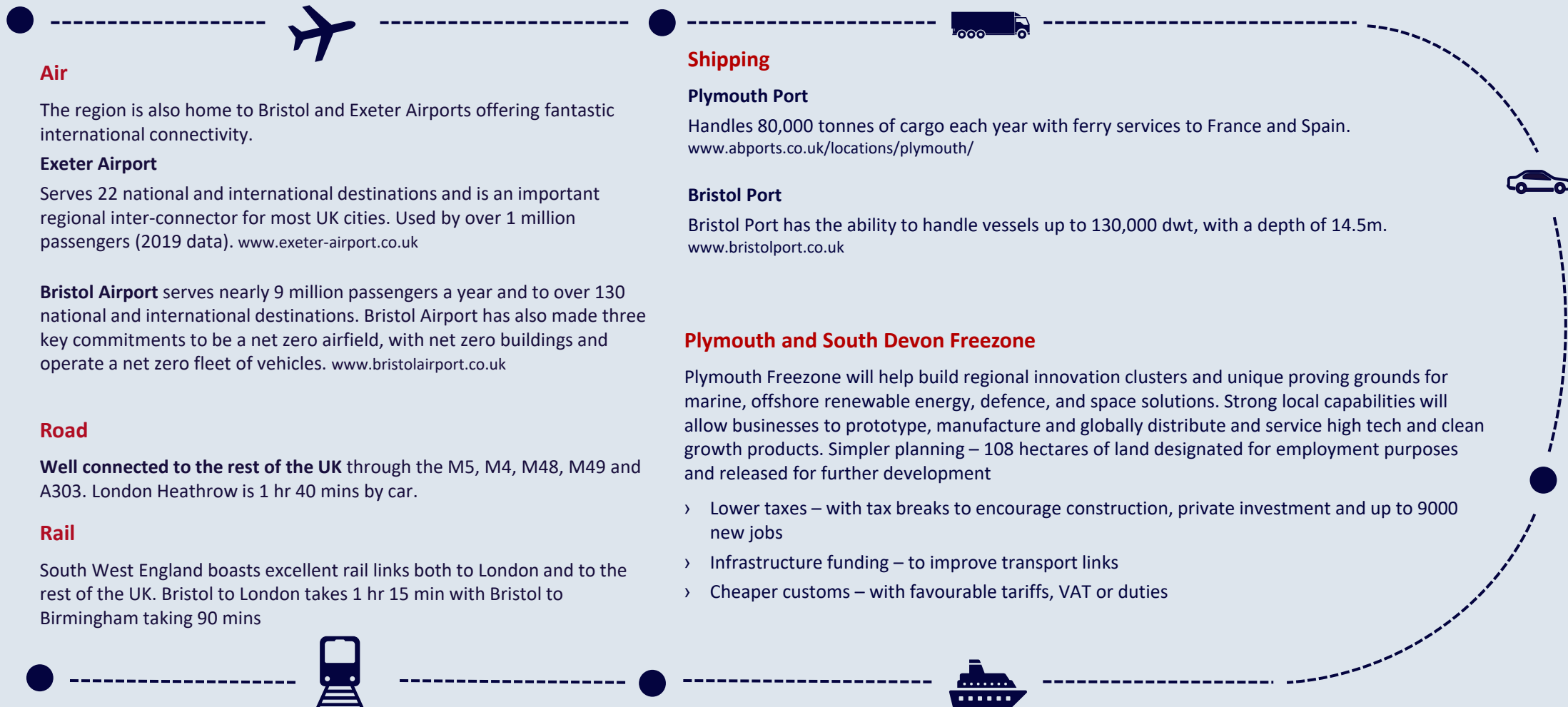
4

Cluster information

South West England has unrivalled transport options.

Get connected to the world

A transport network providing you with connectivity to the rest of the UK, Europe and beyond

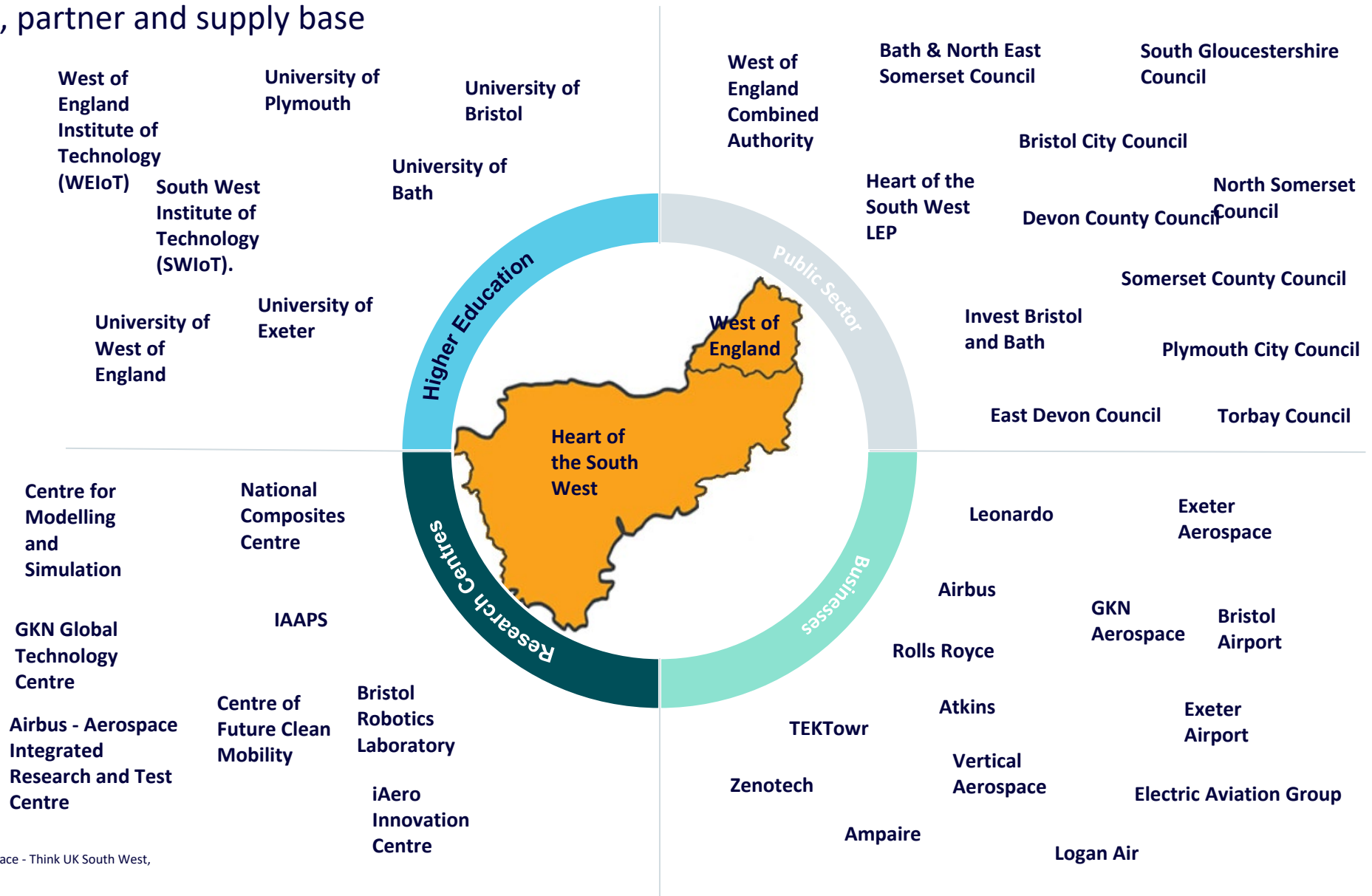




Capitalise on a clear customer, partner and supply base

Collaborate with other key companies through WEAFA

The West of England Aerospace Forum (WEAF) is a membership trade organisation that is passionate about all aspects of aerospace and defence. Its member and partner base represent a very wide spectrum – from SMEs to global corporations. As one of the largest aerospace and defence associations in Europe, it is able to provide a strong voice for our members, as well as representation and access to prominent regional, national and international decision makers in industry and government. www.weaf.co.uk





5

Soft landing & local support

A cost competitive location and soft landing support packages to support your investment.

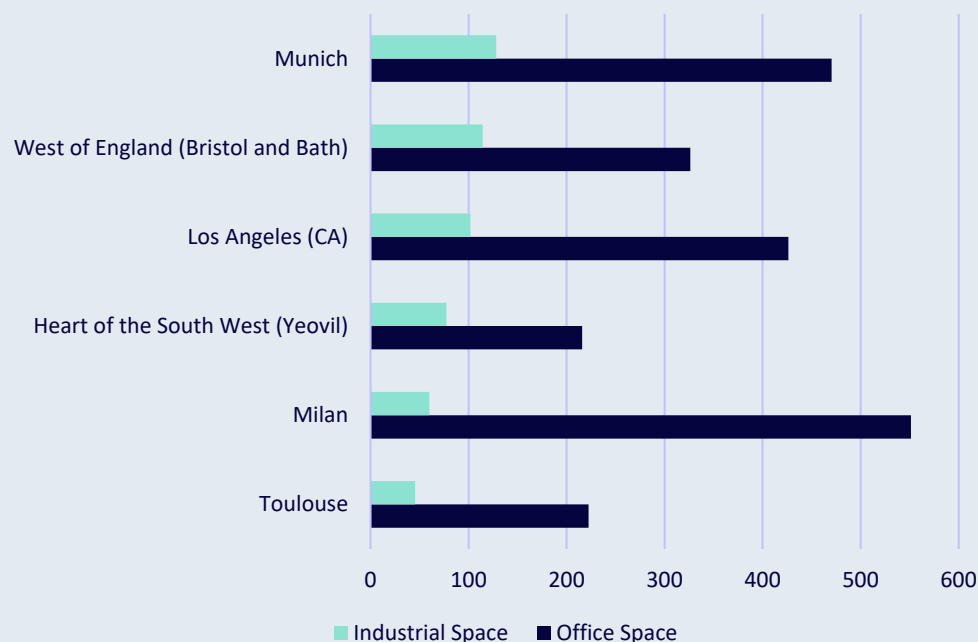
A competitive package against other leading global locations

Our industry insights identify key cost drivers for this industry. South West England provides:



Competitive Office and Industrial space Costs

South West England offers competitive office/industrial costs in the UK against other aerospace clusters in Europe and North America.



Cost (per sq m) in GBP

Source: fDi Benchmark from the Financial Times Ltd 2021



Cost Effective Salaries

Salary costs in South West England are competitive against other aerospace clusters.

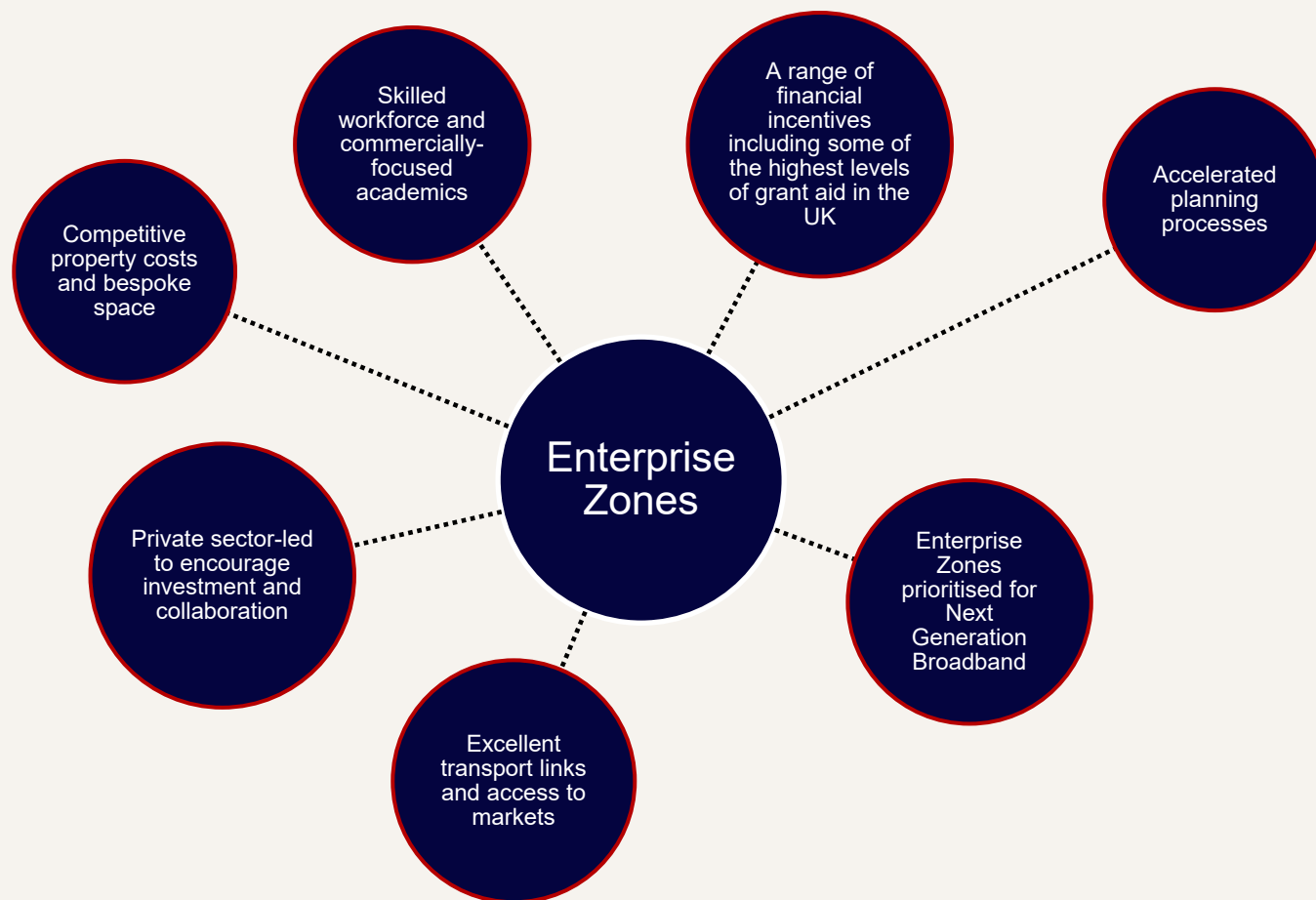
	Engineer	Software Development Engineer	Technology Engineering Specialist	Systems Designer
Heart of the South West (Yeovil)	£35,602	£45,398	£43,818	£36,667
West England (Bristol and Bath)	£39,836	£50,798	£49,030	£41,028
Milan	£48,153	£59,972	£57,552	£52,324
Toulouse	£50,688	£59,671	£57,733	£57,158
Munich	£71,832	£83,068	£80,685	£72,705
Los Angeles (CA)	£76,459	£88,920	£84,338	£78,684

Total salary costs in GBP. Averages in £000s (European cities converted from €, United States cities converted from \$).



Enterprise Zones and Areas in South West England

Enterprise Zones (EZs) will support your investment, bringing together researchers, manufacturers, distributors and retailers so you can improve productivity.



Filton Enterprise Area

With a world-renowned heritage in aerospace technology, manufacturing and engineering, Filton Enterprise Area offers new developments and businesses the potential to succeed. You can discover over 100 hectares of opportunity, a rich and diverse workforce, a robust and connected infrastructure, and technological expertise all at your fingertips.

www.insouthglos.co.uk/enterprise/filton

Exeter and East Devon Enterprise Zone

The Exeter and East Devon Enterprise Zone covers four major employment sites – strategically located with excellent transport links on the edge of the vibrant city of Exeter and close to Devon’s outstanding coast and countryside. The area has already had recent success with Future Flight/2zero programme and new transport links to Exeter College’s; Future Skills Centres and Centre for Future Clean Mobility at the Science Park

www.exeterandeastdevon.com

Gravity Enterprise Zone

A 616 acre site, Gravity will be an immersive, connected, intelligent and sustainable mixed-use campus, home to the World’s most innovative companies. Purpose built, diverse workspaces and resilient technologies will be set against an established natural landscape - supporting a culture of innovation and well-being that blurs the boundaries between work and play. Gravity will be designed to shape connections between people and the places they work for a cleaner, sustainable future. thisisgravity.co.uk

Emerson Green Enterprise Area

Emersons Green EA specialises in hosting businesses from the digital, creative and micro electronics sectors and is already home to the NCC, IAAPS and the Bristol and Bath Science Park, strategically and conveniently located between the cities of Bristol and Bath. Nestled amongst green open space and a well connected road network, Emersons Green is synonymous with innovation and entrepreneurship..

www.insouthglos.co.uk/enterprise/emersons-green/



Access a well-connected network of support

Incubators, advisory services and soft landing sites will help establish you in the region.

WEAF

The West of England Aerospace Forum (WEAF) is a membership trade organisation that is passionate about all aspects of aerospace and defence. Our member and partner base represent a very wide spectrum – from SMEs to global corporations. As one of the largest aerospace and defence associations in Europe, we are able to provide a strong voice for our members, as well as representation and access to prominent regional, national and international decision makers in industry and government. www.weaf.co.uk

iAero

The iAero (Yeovil) Centre Project is a purpose-built 2,398 m² that drives research, development and innovation through the supply chain. Dedicated to rotorcraft technologies, it will enhance design and manufacturing capability across the South West, supporting the development and introduction of new innovative processes to the market. The centre strongly encourages and facilitates SME engagement, as well as knowledge and technology transfer. www.somerset.gov.uk/business-and-economy/iaero-yeovil-centre/

Exeter Science Park

Exeter Science Park is the South West's centre of activity for businesses in science, technology, engineering, maths and medicine (STEMM). The Park provides inspirational incubation and grow-on space, as well as support for innovative businesses specialising in STEMM. With a record of proven growth and existing clients growing from hot desks to office space, their growth services will help businesses to thrive. www.exetersciencepark.co.uk

GKN GTC

The GKN GTC is a 10,000 m², 'Open access' collaborative R&D centre located in Filton, Bristol. It is one of 4 Global Technology Centres and is a joint £32M investment between GKN Aerospace and the UK Government through the Aerospace Technology Institute. It is part of an ecosystem of Universities, Research and Technology Organisations, Catapults, Government Organisations and Industrial Partners, providing support to start-ups and SMEs. <https://www.gknaerospace.com/en/about-gkn-aerospace/global-technology-centre/>

Bristol and Bath Science Park

Bristol and Bath Science Park, driven by the concept of sustainability, offers the ideal environment for research-led companies looking to forge links with local universities and other tenants. Facilities include a forum – a bright and spacious area to eat, meet and network, an innovation centre and a grow-on centre, as well as a number of sustainable travel options, state of the art IT and connectivity services and a number of meeting rooms/conference spaces. It is located in a region at the forefront of the IT and digital revolution. Current tenants include the National Composites Centre, CFMS, LJR Digital Marketing and the new Institute for Advanced Automotive Propulsion Systems.

www.bbbsp.co.uk



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Business West

The largest Chambers of Commerce in the UK, Business West works with over 20,000 businesses with the aim of making the South West the best place to live and work. Established in 1823, Business West has gone from strength to strength in the last two years, helping to create 4,400 jobs in the area. They offer a wide range of business services aiding hundreds of companies of all sizes to seize the opportunities that innovation offers to boost their growth.

www.businesswest.co.uk

SETsquared

SETsquared is a unique enterprise partnership and a dynamic collaboration between the five leading research-led UK universities of Bath, Bristol, Exeter, Southampton and Surrey. Ranked as the Global No. 1 Business Incubator, they provide a wide range of highly acclaimed support programmes to help turn ideas into thriving businesses.

www.setsquared.co.uk

South West Manufacturing Advisory Service

SWMAS are a team of manufacturing and business development experts with a mission to help transform south west manufacturers into world class businesses. Their connections, knowledge and expertise are used in partnership with manufacturers to help them improve their productivity, develop their capabilities and enter new markets. They support programmes on behalf of government, local enterprise partnerships and other public sector funders. They design and deliver programmes to support manufacturers in a variety of ways, from targeting key supply chains, developing strategy and improving productivity.

www.swmas.co.uk

TechSPARK

TechSPARK is a not-for-profit network dedicated to connecting, educating and strengthening the digi-tech cluster in the West. They work with tech and digital businesses from Startups to Scaleups, SME's to Global Corporations based in the region to help them to grow, using our connections and knowledge. They engage with over 25,000 people monthly highlighting the best in tech in the West and bringing people together at regular events.

www.techspark.co



Enabling your business to thrive

West of England LEP alongside Heart of the South West LEP and local partners will work with you across your entire business journey.

West of England LEP

The West of England Local Enterprise Partnership's (LEP's) role is to secure the region's continued economic success by promoting an environment where businesses thrive and healthy and productive communities grow in a sustainable way.

We work with Government to promote and champion the economic success of the region and support the attraction of new inward investment.

www.westofengland-ca.gov.uk/lep

Heart of the South West LEP

The Heart of the South West LEP (covering Devon and Somerset) provides a tailored business support brokerage for international businesses, including property and site searches, networking opportunities and a business introduction service.
www.heartofswlep.co.uk

Invest Bristol and Bath

The inward investment arm of the West of England Combined Authority. They offer extensive tailored support to companies interested in relocating and growing here. Soft landing and support package includes:

Local knowledge, expertise and advice from our Sector Specialists;
Hosting regional visits and briefings
Introductions to companies; R&D assets and trade associations;
Property and development site solutions;
Recruitment, apprenticeship and training support and
access to business support

www.bristolandbath.co.uk

Heart of the South West Grant Scheme

The Heart of the South West Local Enterprise Partnership (HotSW LEP) has launched a new £900,000 grant scheme for foreign-owned companies investing in the area to create jobs in Devon, Plymouth, Somerset and Torbay.

heartofswlep.co.uk/growing-your-business/inward-investment



6

Government
& sector
support

A dynamic and flexible aerospace sector, underpinned by a supportive regulatory environment.

The UK is a global leader in the drive to decarbonise air transport

South West England is an integral part of the Government's research and development programme

The Government has provided strong support for the Aerospace industry

In 2020, the Government signed off on £200m in grants, matched by industry to support projects including developing high-performance engines, new wing designs, and ultra-lightweight materials to reduce fuel consumption.

Future Flight Challenge

The challenge focuses on the development of the digital and physical infrastructure, regulation and control systems required to use these new aircraft practically and safely. These new modes of travel will increase mobility, reduce road congestion, improve connectivity, increase UK manufacturing opportunities and help reduce the environmental impact of air travel. The Future Flight programme is funded by £125m from the Industrial Strategy Challenge Fund which is expected to be matched by up to £175m from industry.

Opportunities in the South West

Future Flight will deliver a new revolution in aviation by bringing together technologies in electrification, digital and autonomy to create new modes of air travel and capability; enabling flying taxis, drones delivering goods and services, and small, all-electric aircraft – innovations that could address the mobility and congestion problems faced by increasingly urban, ageing populations, and reduce the carbon footprint of the global aviation system.

Partners from the Heart of the South West and the West of England are leading or participating in 14 Future Flight Phase 2 projects, 41% of the project portfolio being funded nationally. These projects span all segments of the future air mobility spectrum, as referenced above, including vehicle development, drone/ UAV operations, ground control systems, air traffic management systems, operational environments and hybrid-electric regional air transport..

Jet Zero Council

The Jet Zero Council (JZC) is a partnership between industry and government to bring together ministers and chief executive officer-level stakeholders, with the aim of delivering zero-emission transatlantic flight within a generation, driving the ambitious delivery of new technologies and innovative ways to cut aviation emissions.

Fly Zero

The Aerospace Technology Institute (ATI) has launched FlyZero, a new ambitious project to help set out a **detailed plan for how the UK might best contribute to zero-emission aircraft**. Backed by the UK Government's Department for Business, Energy & Industrial Strategy (BEIS), the FlyZero programme will pull together expertise from across the UK supply chain and universities in an initial 12-month programme to look at the design challenges and market opportunity of potential zero-emission aircraft concepts.

Connected Places – Future Air Mobility Innovation Centre

Is a first of kind UK independent centre of excellence for Future Air Mobility and associated specialisations in the UK, with an aim to position the UK at the forefront of Future Air Mobility, UAS research, and Sustainable Aviation. Their aim is to lead collaborations of multiple stakeholders to overcome challenges and barriers to the safe adoption of Future Air Mobility and drone technology – building on the success of the Government Drones Pathfinder Programme.



UK and regional industry bodies can provide you with quick and easy links to suppliers and customers

Aerospace, Defence, Space and Satellites Group

ADS represents and supports more than 1100 UK businesses operating in the aerospace, defence, security and space sectors.

Aerospace Growth Partnership (AGP)

The AGP is a strategic partnership between the UK Government, industry and other key stakeholders

UK Research and Innovation

The United Kingdom's innovation agency.

Civil Aviation Authority

The UK's specialist aviation regulator, supporting the use of innovative new technologies.

Aerospace Technology Institute ATI

The ATI promotes transformative technology in air transport and funds R & D through a £3.9 billion joint government-industry programme.

NATEP

The NATEP is aimed at SME suppliers to help them develop their own innovative technologies to enhance their capabilities.

Supply Chains for the 21st Century

SC21 is an improvement programme to increase the competitiveness of the Aerospace industry by raising the performance of its supply chains.

Sharing in Growth

SIG are business transformation experts in the complex world of advanced manufacturing.

High Value Manufacturing Catapult

Established by Innovate UK, we are here to bridge the gap between business and academia

Royal Aeronautical Society

Dedicated to the aerospace community, they exist to further the advancement of aeronautical art, science and engineering.

Association of Remotely Piloted Air Systems

ARPAS-UK is the only industry trade association and professional body focused on the UK drone community.

Manufacturing Technologies Association

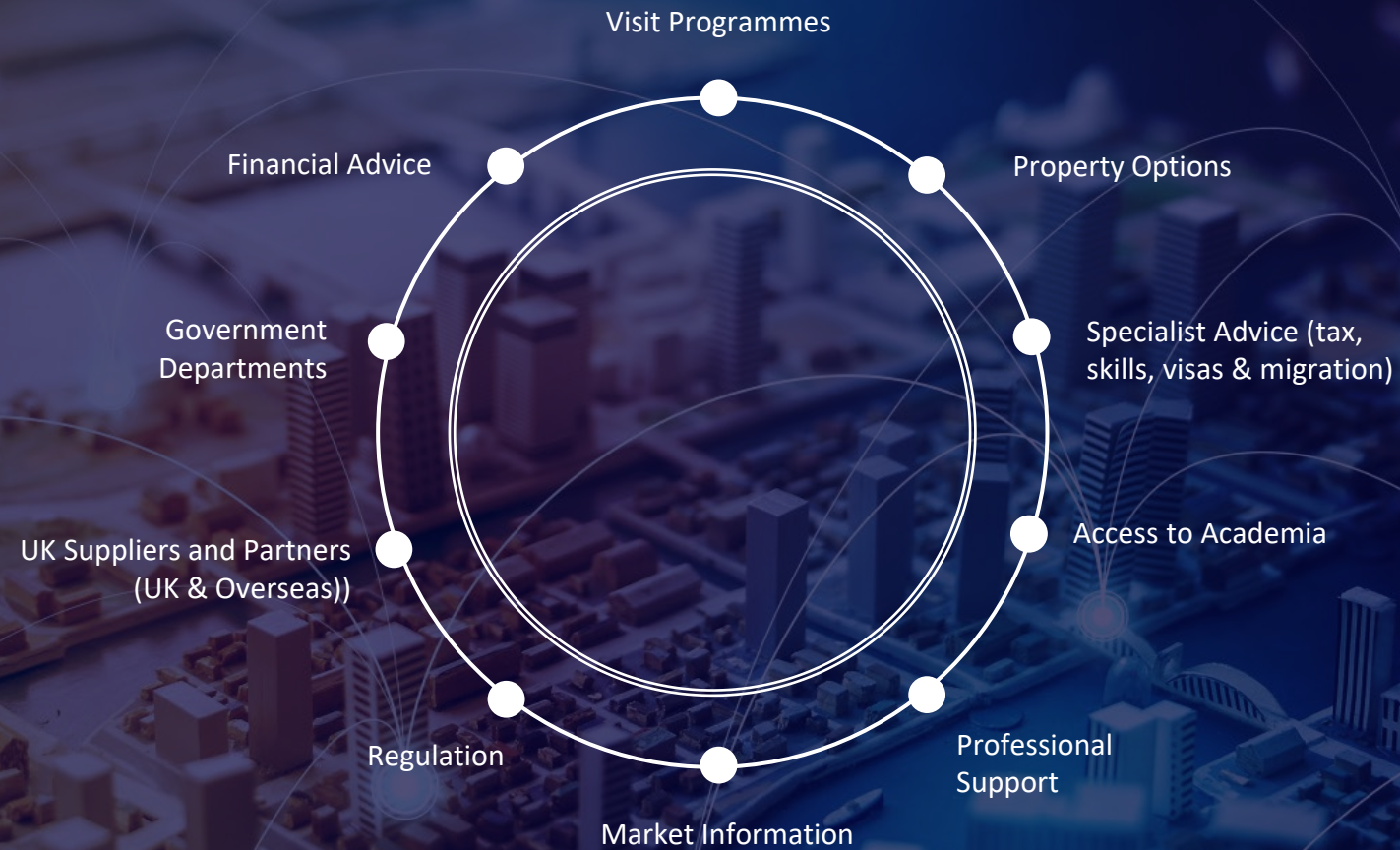
The UK's trade association for companies in the manufacturing technology sector.

Compound Semi-conductors Catapult

Provides impartial 'innovation as a service' for businesses, infrastructure providers and public institutions to catalyse improvements in the way people live, work and travel.



Benefit from the right support from local partners and Government to ensure a seamless investor process



Real companies. Real experience. Real value.

Case Studies

How South West England can work
for your business

[Ampaire](#)

[Airbus](#)

[Exeter Aerospace](#)

[GKN Aerospace](#)

[Leonardo](#)

[Vertical Aerospace](#)





Ampaire

Ampaire is a global leader in the development of Hybrid-Electric Aircraft, with a particular focus on the regional market, and the retrofit of electric propulsion systems to existing aircraft. Ampaire's initial series hybrid electric system will cut fuel and maintenance costs by 25% to 30% for small workhorse airplanes like the Cessna Caravan and DHC Twin Otter that seat between nine and 19 passengers, with no loss in range compared to conventional versions. Ampaire decided to set up its operations in the UK as it offers an attractive proposition for aerospace companies; it is well renowned for its aerospace excellence, the investment landscape, and support at government level. An added benefit for Ampaire is the forward-looking approach to certification of Novel Electric Propulsion Aircraft. The Certification basis within the UK is already quite advanced, and the development process is eased versus areas of mainland Europe, with the provision of E-Conditions. In particular, the South West of England has an excellent aerospace supply chain, strong engineering talent and plenty of opportunity in the underdeveloped transport links.

Ampaire are the lead partner on the 2ZERO project which will use a holistic systems approach to simulate and physically demonstrate the viability of electric aircraft in regional air transport operations and the changes needed to achieve a scalable ecosystem with demonstrable economic and environmental impact. The 2ZERO project will carry out flight demonstration of a novel 365KW initial prototype of 6-seat hybrid electric (HE) aircraft to assess performance capabilities and operational requirements.

The project will also integrate a hybrid-electric powertrain and novel battery pack energy system into a 1MW 19-seat hybrid electric (HE) Twin Otter aircraft to prepare for flight demonstration in Phase3. This would be the largest passenger capacity for which HE flight is demonstrated. Modelling and simulation will be used to optimise flights based on this class of HE aircraft. This research will uncover the system-wide changes necessary for future operations of HE aircraft, including new standards and certification, airport infrastructure, demand management for renewable ground power (storage, distribution, and charging), optimisation of ground operations and air traffic route systems.

Significantly, reduced operating costs and the Point-to-Point route structure will dramatically improve flexibility for airline operators and ease congestion at major hubs by creating viable routes from smaller regional airports.



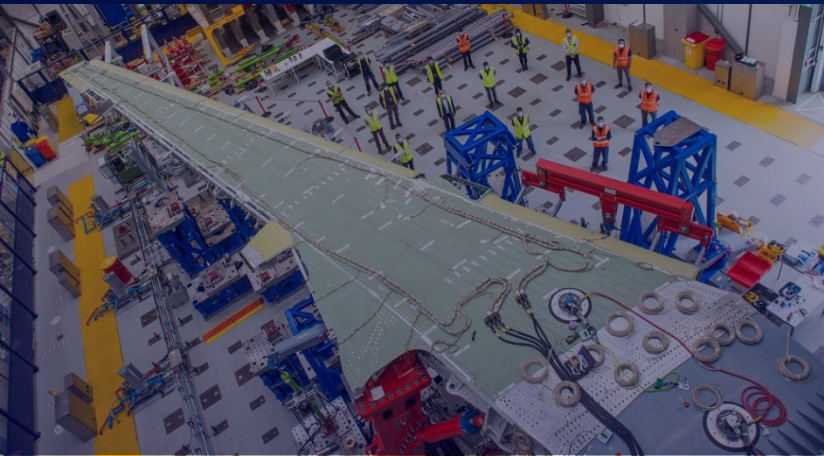
Read more case studies

Ampaire	Airbus	Exeter Aerospace
GKN Aerospace	Leonardo	Vertical Aerospace



“We believe hydrogen is one of the most promising zero-emission technologies to reduce aviation’s climate impact, this is why we consider hydrogen to be an important technology pathway to achieve our ambition of bringing a zero-emission commercial aircraft to market by 2035.” Glenn Llewellyn, Airbus’ Head of Zero Emissions

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Airbus

Building on a proud 100-year British aviation heritage, Airbus is part of the very fabric of the UK, its 11,700-strong UK workforce is part of a global family of 131,000 employees around the world. In the south west of England, Airbus has operations at Filton, where 3,000 people work and the design, engineering and support for Airbus wings, fuel systems and landing gear take place. Teams also work on aerodynamics research, development and test facilities, while wings for the A400M transporter are assembled on site.

A high-potential technology to meet aviation’s climate targets

Renewable hydrogen is expected to be a solution for several industries to meet their climate targets. And Airbus believes the aviation industry should be no exception: it is estimated that hydrogen has the potential to reduce aviation’s CO2 emissions by up to 50%. Airbus collaborates with a variety of industry players, including energy providers and airports, to ensure hydrogen can help them to take significant steps towards climate-neutral aviation. Research into hydrogen as a potential energy carrier to power future zero-emission aircraft has been intensifying in recent years. But the road to hydrogen-powered aircraft requires significant effort inside the aviation industry and beyond. From hydrogen storage, cost and infrastructure to public perceptions about safety, the aviation sector is working to mature the technology while tackling some major challenges. Glenn adds: “From the technical side, aeronautical engineers at Filton and across our research sites will need to take the technologies developed in the automotive and space industries and make the technology compatible with commercial aircraft operations, notably by bringing the weight and cost down.”

Filton’s Flying Future

Filton’s new Airbus Wing Integration Centre (AWIC) – a facility that will test and develop current and future aircraft wings – has recently marked another major milestone that has been five years in the making. The Bristol teams recently completed the ‘wing-to-strong wall’ join-up in the facility. The strong wall, which weighs more than 200 tonnes, supports a full scale A321 aircraft wing for structural testing. The test will recreate 200,000 simulated flight cycles over the next four years, during which the performance of the wing structure will be monitored. “The purpose of the test – called the A321 limit of validity’ test – is to demonstrate that the single-aisle family airframe has a higher capacity than its current lifespan of 60,000 flights – potentially it could be good for 100,000 flights,” explains Test Leader, Matt Hooper, who is based at Airbus Filton.

Read more case studies

Ampaire	Airbus	Exeter Aerospace
GKN Aerospace	Leonardo	Vertical Aerospace



Exeter Aerospace

Exeter Aerospace was established on 29th September 2020 by Dublin Aerospace Group. Dublin Aerospace operates a hugely successful Aircraft Overhaul facility in Dublin which specialises in Boeing 737, Airbus A320 and A330 families. Exeter Aerospace complement this product range by specialising in a more regional fleet; Embraer 170/190 Regional Jets, Bombardier Dash 8 100,200,300,Q400 family, and ATR 42/72 Turboprop families.

We have 2 modern 3 bay hangars that can house up to 6 regional Aircraft, constructed in 2004, the facility includes all the modern day functions with a central workshop location housing all your backshop requirements under one roof. Exeter has a separate single bay hangar that complements the main facility giving additional uninterrupted space for long term projects, major modifications and repairs. Our fully equipped central workshop facility offers a wide range of support from composite repairs, component overhaul, machining, welding, interior trim, structural repairs, and dedicated paint spray facilities. The South West of the UK was a perfect location for Exeter aerospace to form with a ready made facility and an abundance of local talent who already specialised in the Regional aircraft maintenance.

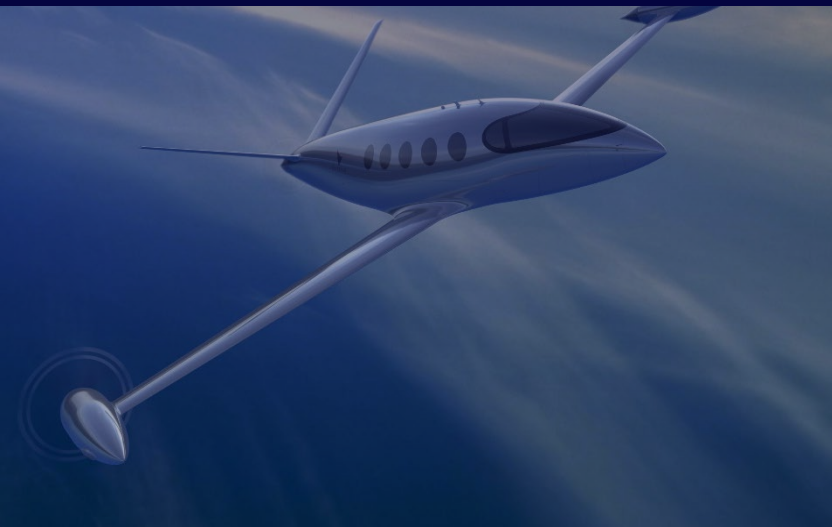
The only regional Aircraft Maintenance facilities in the South West of the UK, we hope to grow over the coming years employing up to 250 employees by the end of 2022. Where possible we try to support local suppliers from uniforms to specific aircraft parts. Partnering with the newly formed Future Skills Centre we will develop a 4 year program, starting in September 2022, where students can work towards gaining their CAA engineering licenses along side a foundation degree in Aerospace Engineering. We are also working with the Future Skills Centre to ensure continued development of our established engineering team. Exploring opportunities and feasibility for shaping future engineering in a changing environment.



'Quest for Excellence in all we do'

Read more case studies

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‘GKN Aerospace’s legacy and heritage is significant. We have continually reinvented ourselves over our 260 year history.’

Max Brown, Vice President,
Horizon 3 Technology



GKN AEROSPACE

History and Capability

GKN can trace its roots to the start of the industrial revolution in Europe, starting as a small Welsh ironworks to become one of the giants in the British industrial landscape. Today, GKN Aerospace is a global first tier supplier of complex wing and fuselage structures and components, nacelle systems, landing gear and wiring systems, engine static and rotating structures, transparencies and ice protection systems. In 2021 GKN Aerospace achieved sales of GBP2,6bn and employs a global workforce of over 15,000 employees across 12 countries.

It is a significant contributor to all modern major civil aircraft programmes and has a broad customer base spanning commercial, military, business aerospace and space markets. The company’s extensive engineering capability and clear focus on targeted innovation has created technological and manufacturing leadership in each of its areas of expertise.

Technology

In 2021 GKN Aerospace opened its state of the art £32M UK Global Technology Centre (GTC) in Filton, Bristol. The Centre was co-funded by the UK Government through the Aerospace Technology Institute (ATI) and will bring together GKN Aerospace with its partners, acting as a hub for world-class innovative technology for the next generation of fuel-efficient aircraft.

The 10,000 square metre facility hosts 300 highly skilled engineers, and will focus on advanced composites, assembly and industry 4.0 processes to enable the high rate production of aircraft structures. Amongst other technology projects, the GTC will serve as a base for GKN Aerospace’s technology partnership in the Airbus’ ‘Wing of Tomorrow’ programme, building a next generation composite wing spar. The Centre will also house sustainable technology focused projects such as ‘H2GEAR’, a project co-funded by Government to develop hydrogen propulsion capability.

Ecosystem & Collaboration

GKN Aerospace’s mission is to be the most trusted and sustainable partner in the sky, but this cannot be done alone. The GTC will host a world class ecosystem where collaborating partners can use our desk space and have the opportunity to undertake their work on our shop floor to deliver the sustainable aerospace technologies of the future.

Read more case studies

Ampaire	Airbus	Exeter Aerospace
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Leonardo

Building on the foundations laid by British engineering icons like Marconi, Ferranti and Westland, Leonardo has over 100 years of heritage in the UK. Today, following decades of investment, we proudly stand as a jewel in the crown of British engineering, employing over 7,000 highly skilled people across the country. Leonardo is continuing this legacy through its apprenticeship and graduate schemes.

To operate successfully as the UK's only on-shore helicopter manufacturer and the biggest supplier of complex electronics to the UK Ministry of Defence, Leonardo UK draws on the skills of a broad supply chain of innovative companies. Two thirds of these are small and medium enterprises (SMEs) and they too are creating opportunities and delivering value right across the UK from Scotland to Somerset.

Leonardo in Yeovil is the UK's only onshore helicopter manufacturer, which provides end-to-end support. The Company based in South Somerset manufactures the AW101 Merlin and AW159 Wildcat helicopters, both of which are operated by the British Armed Forces. Sitting just outside of Leonardo's Yeovil site, a multi-million-pound aerospace research, design, and innovation centre has been commissioned by Somerset County Council (SCC) and is scheduled to open in 2021, complementing the existing Yeovil Innovation Centre less than a mile away. The new facility, to be known as the Yeovil iAero Centre, will enable a range of collaborative projects focussing on design, development, and prototyping—all based in a state-of-the-art centre that is accessible directly from Leonardo's airfield.

Advances in AM are opening up significant opportunities to produce parts faster and cheaper using fewer resources and enabling designs previously unachievable. The possibility of remote printing of spare parts offers the potential to avoid shipping parts around the world, a much greener solution. Other areas of technology we are exploring include advanced levels of autonomy, hybrid power systems and new lift systems that could be used in future unmanned and autonomous air vehicles.

The sky really is the limit as Leonardo turns its focus to autonomous flight, digitisation and hybrid power technologies. All of which are expected to have vital roles to play in the next generation of rotorcraft. In its recent report, Oxford Economics stated that Leonardo's UK helicopter business's total contribution to UK GDP was £880 million in 2018. This consists of £360 million from the operations of the business itself, £240 million as a result of procurement spending and £280 million as a result of consumer spending by employees of Leonardo and its supply chain. We estimate that this economic activity supported a total of 12,200 jobs around the UK in 2018. This is made up of 3,100 jobs directly with the business, 4,900 as a result of supply chain spending and 4,200 supported by Leonardo and supply chain workers' wage spending.

Read more case studies

[Ampaire](#)[Airbus](#)[Exeter Aerospace](#)[GKN Aerospace](#)[Leonardo](#)[Vertical Aerospace](#)



“At Vertical Aerospace, as we increasingly emerge from our stealthy beginnings, we are privileged and inspired to be right at the cutting edge of these developments as a global eVTOL leader, pioneering a new sustainable future for aviation.”

— Michael Cervenka, CEO, Vertical Aerospace

Vertical Aerospace

Bristol Based

Based in the heart of Bristol, one of the world’s top aerospace hubs, Vertical Aerospace was founded in 2016 by greentech entrepreneur Stephen Fitzpatrick. With access to the best talent, from both the aerospace sector in Bristol and Formula 1 in Oxfordshire, the team has already grown to over 100 world-class engineers and experts, recruited from the likes of Airbus, Boeing, Leonardo, Gulfstream, Rolls-Royce, Jaguar Land Rover, Dyson and most of the UK’s Formula 1 teams.

A Global Leader

Vertical believes passionately in the power of electric aircraft to change the way the world travels. Since its inception, Vertical has been disrupting the way aircraft are developed, combining the rigour and discipline of aerospace with the pace and agility of Formula 1 to develop cutting edge aircraft. They are already a global pioneer in sustainable aviation technologies, as one of only a handful of companies worldwide to have flown two full-scale all-electric vertical take-off and landing (eVTOL) prototypes, both with UK Civil Aviation Authority approval.

Introducing the Latest All-Electric Air Taxi, VA-1X

Vertical recently unveiled VA-1X, the eVTOL aircraft they will take through certification. Capable of carrying four passengers and one pilot, VA-1X is set to be the world’s first certified winged eVTOL with initial commercial operations starting in 2025. Boasting cruise speeds of 150mph with a useable range of up to 100 miles, bypassing road congestion means that passengers could travel from Bristol to Cardiff in under 20 minutes, compared to over an hour driving, or an hour and a half by train. The ultimate aim is to connect entire regions, as well as carry out shorter missions across single cities, using sustainable air travel.

Excellence in Engineering

VA-1X is engineered with high levels of expertise and will be certified with the same safety standards as commercial airliners. Taking off and landing from existing helipads allows for direct city centre to city centre connections. The all-electric distributed propulsion system enables the aircraft to be 30 times quieter than a helicopter. Vertical is heavily leveraging the UK’s leading aerospace and automotive capabilities in areas such as advanced lightweight composites and electrical powertrains. In addition, it has a strategic partnership with Honeywell for state-of-the-art flight control systems – the “electronic brains” of the aircraft that make it incredibly easy and safe to fly.

Read more case studies

Ampaire	Airbus	Exeter Aerospace
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The Department for International Trade (DIT) and local partners are here to support you in navigating the opportunities across the UK – to find the right fit for your business.

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Department for International Trade

The UK's Department for International Trade (DIT) has overall responsibility for promoting UK trade across the world and attracting foreign investment to our economy. We are a specialised government body with responsibility for negotiating international trade policy, supporting business, as well as delivering an outward-looking trade diplomacy strategy.

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