

Invest
BRISTOL
+ BATH

SPACE IN THE WEST OF ENGLAND

THE PLACE FOR SPACE

We are a leading regional space hub in the UK. Recognised for innovation and strengthened by one of the most capable aerospace clusters in the world.

In the last decade, space has transformed into one of the UK's fastest growing sectors. Trebling in size since 2010, at the last count the UK space industry now employs close to 42,000 people in all corners of the country and

generates an income of nearly £15 billion every year. (gov.uk)

The West of England is home to a diverse space sector, with multi-national and SME companies working across the space supply chain.



Image credit: Luke Jerram

WE ARE:

PART OF THE UK'S LARGEST AEROSPACE CLUSTER & THE UK'S MOST PRODUCTIVE TECH CLUSTER

ONE OF SEVEN REGIONAL SPACE HUBS IN THE UK SUPPORTED BY THE UK SPACE AGENCY

A HUB OF OVER 50 ORGANISATIONS ACTIVE IN THE SPACE ECOSYSTEM

Space Technology is fundamental to the delivery of the Local Industrial Strategy ambitions. Underpinning key priorities including Net Zero, Future Transport, Mobility, Smart and Connected Cities, Digitalisation, sector development, innovation, trade and inward investment, enterprise, skills and workforce development.

9 
SATELLITE APPLICATIONS
 Downstream activity organisations

10 
 Outreach and community engagement organisations.

10 
SPACE MANUFACTURING
 Upstream activity organisations

11
 Consultancy, professional services and business support organisations

7 **UNIVERSITIES AND RESEARCH CENTRES**

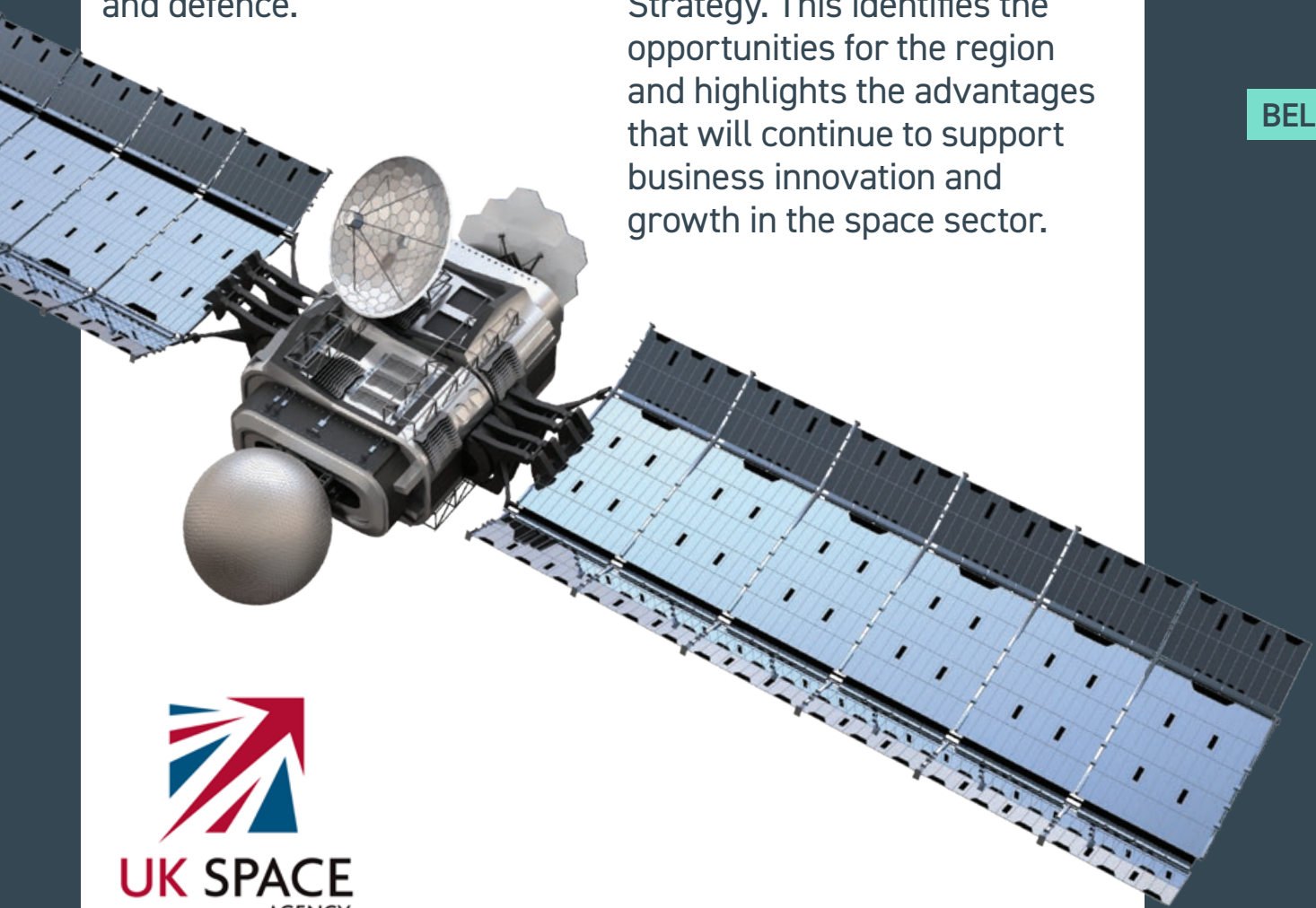
5 Significant engineering consultancies

UK SPACE CLUSTERS

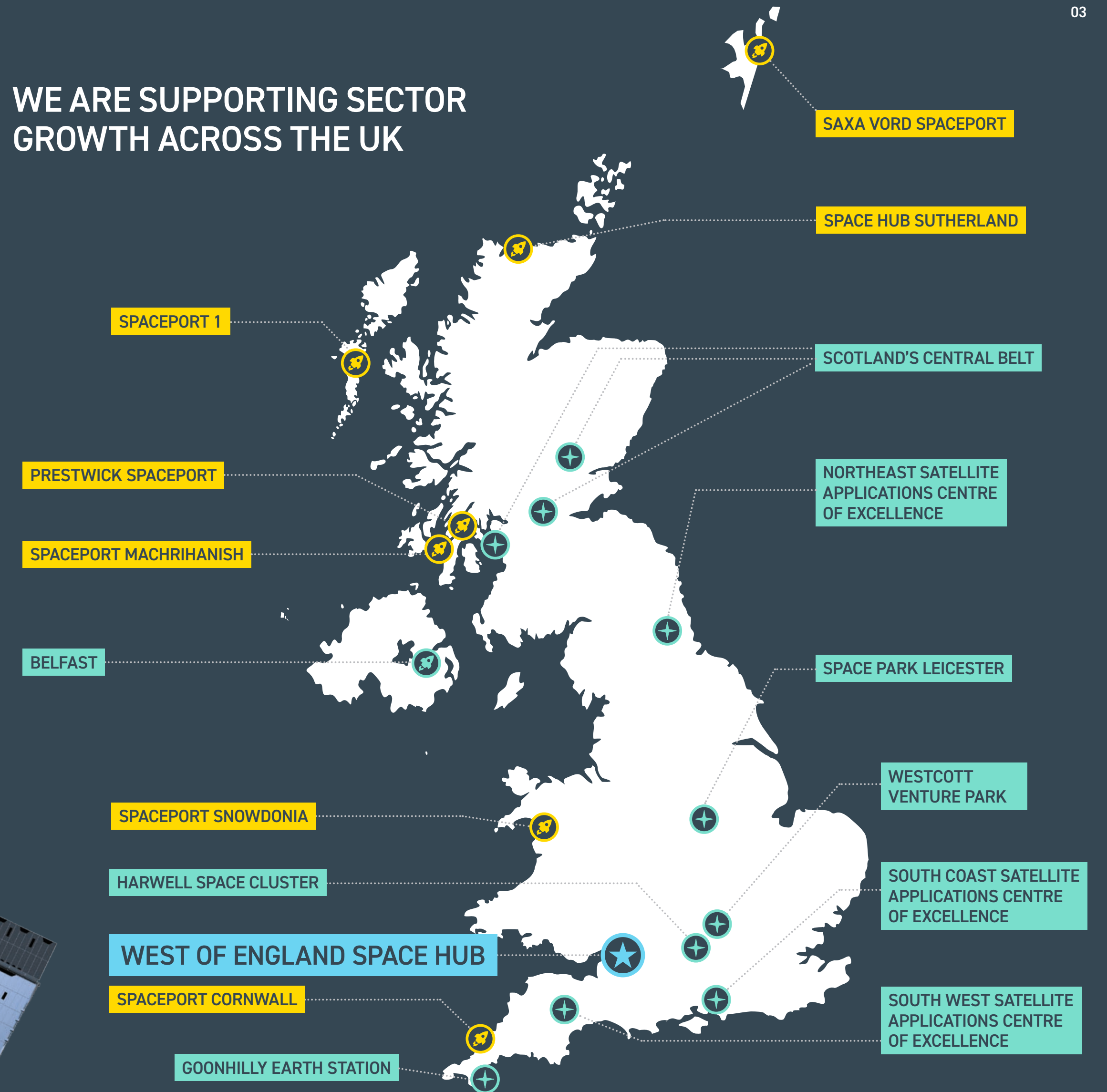
Regional growth is a core aspect of unlocking growth in Space Sector, described in the UK's National Space Strategy.

The South West of England is Home to 11% of the UK's space organisations. This builds on the strengths in other regional industries including digital technology, aviation, and defence.

The potential for growing the space sector in the West of England has been recognised through the development of the West of England Space Hub and the West of England Space Strategy. This identifies the opportunities for the region and highlights the advantages that will continue to support business innovation and growth in the space sector.



WE ARE SUPPORTING SECTOR GROWTH ACROSS THE UK

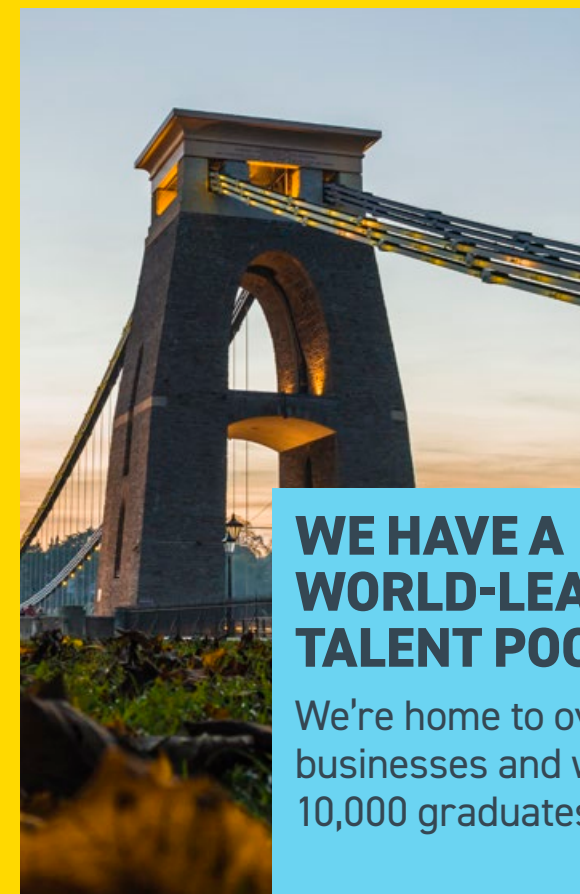


A SUCCESSFUL AND INNOVATIVE REGION



THE WEST OF ENGLAND IS ONE OF THE MOST DESIRABLE PLACES TO LIVE IN THE UK

It's no wonder why more than 80 people a week relocate from London to Bristol & Bath (Office of National Statistics). Home to 1.1 million residents, our region contributes £40 billion to the UK economy.



WE HAVE A WORLD-LEADING TALENT POOL

We're home to over 46,000 businesses and welcome 10,000 graduates per year.

THE UK'S MOST PRODUCTIVE TECH CLUSTER

Fast, reliable, secure and well-connected digital infrastructure is essential for business. Bristol is a leading Smart City with capabilities that are already some of the best in the UK.



Image credit: National Composites Centre



FROM ESTABLISHED TO EMERGING SECTORS, OUR BUSINESS ECOSYSTEM CAN HELP YOUR BUSINESS THRIVE

We are the most innovative UK city outside of London (Payment sense), and our range of sectors include aerospace and advanced engineering to Fintech, creative and digital.

OVER 91 LANGUAGES SPOKEN

We have a global-first approach and a reputation for innovation. Businesses can maximise their potential, grow and develop by investing here.

WE'RE AN INCLUSIVE REGION THAT CELEBRATES AND EMBRACES DIVERSITY

From the Bristol and Bath Prides to the annual St Paul's Carnival, our region promotes acceptance of all backgrounds and cultures. The West of England Centre for Inclusive Living (WECIL) promotes independent living and working for anybody who identifies as disabled. We are proud to be a diverse and inclusive society.

SUSTAINABILITY IS AT THE HEART OF WHAT WE DO

In 2015 Bristol was named the European Green Capital and Europe's most environmentally friendly city in 2017. With over 450 parks and green spaces it has proportionately more than any other UK city. We have ambitious targets to reach Net Zero by 2030.

WE PROVIDE STRATEGIC LEADERSHIP

Achieved in collaboration with the Local Enterprise Partnership (LEP), and through the Local Industrial Strategy (LIS), and complemented by the Climate Emergency Action Plan (CEAP) and the Regional Recovery Plan. The LIS draws on the unique strengths of our region and sets out an overarching ambition for driving clean and inclusive growth. At its heart are four key priorities: cross-sectoral innovation, inclusive growth, productivity and innovation in infrastructure.

THE WEST OF ENGLAND COMBINED AUTHORITY (CA) IS MADE UP OF THE THREE COUNCILS

Bath and North East Somerset, South Gloucestershire Council and Bristol City Council. The aim is to deliver economic growth for the region and address some of our challenges, such as productivity, skills, housing and transport. We have a strong emphasis on digital transformation to level up the West of England, a perfect foundation for space cluster development.

WHO WE ARE

WHERE WE ARE



INWARD INVESTMENT OPPORTUNITIES



Image credit: Limbic Cinema

WE ARE HOME TO A THRIVING ECOSYSTEM

that fosters business growth and acceleration.



ACCESS

to the UK's most highly qualified workforce.



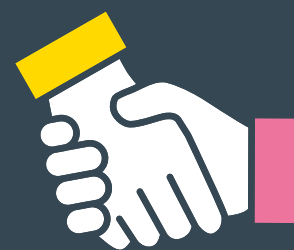
OPPORTUNITIES

to join local, regional, national and international facing events.



POTENTIAL PARTNERSHIP OPPORTUNITIES

to work with the West of England Combined Authority and stakeholders in realising the region's Space Priority Actions and Grand Ambitions.



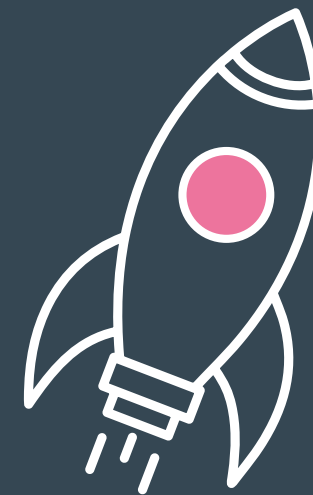
FACILITIES OFFERING OFFICE AND INDUSTRIAL SPACE,

access to talent, access to events, many workshops and incubation programmes. Grow with Institute for Advanced Automotive Propulsion Systems, National Composites Centre, SETSquared, Bristol & Bath Science Park, The Engine Shed, FutureSpace and more.



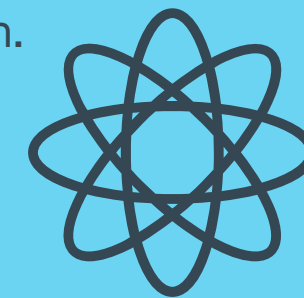
BURGEONING START-UPS

and SME's working in a variety of space-related sectors will benefit from the range and depth of cross-sectoral collaboration that will propel their business to newer and higher levels.



ACCESS TO OUR INDUSTRY-LEADING RESEARCH AND DEVELOPMENT FACILITIES

to support product development and application.



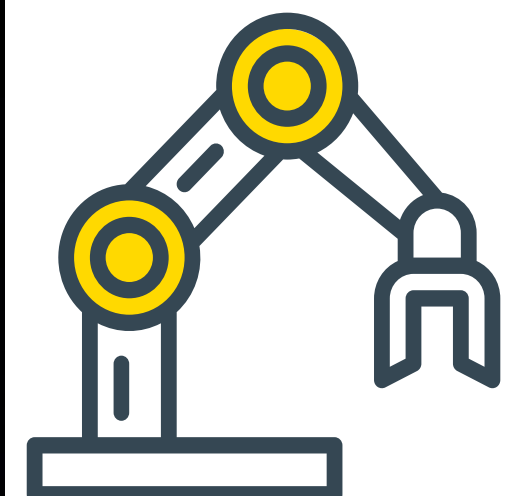
DISCOUNTED SERVICES

and 'soft-landing' offers from local partners.



BE AT THE FOREFRONT OF INNOVATION

by being based, and working closely with, businesses and individuals at the front line of the digital, cyber, quantum and AI transformation.



WE HAVE STRONG AMBITIONS AND PRIORITIES

Our vision is to be an internationally recognised space region, inspired by local, national and global challenges to improve the economy, the environment and wider society.

OUR STRATEGY IS BASED ON 4 GRAND AMBITIONS

Space for Climate,
Environment and
Net Zero.



Space
Infrastructure,
Safety and
Sustainability.



Space for National
Security and
Defence.



Space for Smarter
Local Government.



OUR PRIORITY MARKET OPPORTUNITIES ARE BASED ON 3 CORE AREAS

Downstream
Applications.



The Safety
of Space.



Defence Satellite
Communications.



THE WEST OF ENGLAND'S SPACE STRATEGY

Our strategy proposes specific programmes of activity that will support the space sector in the region to grow and achieve our vision.

Grand Ambitions

SPACE FOR CLIMATE, ENVIRONMENT AND NET ZERO

SUSTAINABILITY OF SPACE

SPACE FOR NATIONAL SECURITY AND DEFENCE

SPACE FOR SMARTER LOCAL GOVERNMENT

Market Opportunities

- Downstream applications
- Earth Observation

- In-orbit servicing
- Space debris
- Space weather

- Defence satellite communications
- Defence security and intelligence

- EO/ PNT for Smart Cities, UAM
- Downstream applications to deliver public services

Space-specific Strengths

Earth Observation

Satellite communications

Next generation propulsion

Space exploration

Space science/ instrumentation

Space weather

Space debris

Downstream (climate & environment, defence, disaster response)

Space-related Capabilities

Aerospace and defence engineering & manufacturing

Composites

Propulsion

Robotics

AR/VR/ immersive technologies

AI/ Machine Learning

Digital Engineering

Quantum

CASE STUDY

A detailed illustration of a satellite in space. The satellite is cylindrical with various instruments and solar panels. In the background, the Earth is visible on the left, and the Moon's surface is on the right. The text 'THALES ALENIA SPACE' is written in white, and 'EARTH OBSERVATION INSTRUMENTS' is written in large blue letters.

THALES ALENIA SPACE EARTH OBSERVATION INSTRUMENTS

Several Earth Observation scientific instruments which support climate research are being designed and built for space flight in Bristol by Thales Alenia Space.

Thales Alenia Space in Bristol are also leading the development of another important scientific instrument called a Multi Angle Polarimeter (MAP) dedicated to the measurement of atmospheric carbon dioxide produced by human activity.

ThalesAlenia
a Thales / Leonardo company *Space*

KEY FEATURES

CENTRES OF EXCELLENCE

AIRBUS WING INTEGRATION CENTRE (AWIC)

is a £30m state-of-the-art research and testing facility designed to undertake structural testing of large-scale aircraft assemblies including full-size wings down to the individual components and materials used in aircraft design.



Image credit: Airbus

THE INSTITUTE FOR ADVANCED AUTOMOTIVE PROPULSION SYSTEMS (IAAPS)

is a centre of excellence for research, innovation, enterprise and education. Its propulsion expertise could feed into high power density electric machines, drives and energy storage systems; new developments in hydrogen fuel cell technology which could be applicable to space power and mobility applications.

The Institute is also researching and testing potential transferability of new propulsion technologies in the automotive sector activity into space applications.

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Image credit: Bristol Robotics Laboratory

THE BRISTOL ROBOTICS LABORATORY (BRL)

is the most comprehensive academic centre for multidisciplinary robotics research in the UK. Bringing together the best expertise from industry and the academic community to spearhead Britain's efforts to be a world leader in modern advanced robotics.

THE NATIONAL COMPOSITES CENTRE (NCC)

is a world-class research centre. It's ultrahigh temperature ceramic matrix composites (CMC) capability is receiving interest from several space companies. The Centre is working with the small satellite launch community which have plans to launch satellites in 2022 onwards.

The NCC is also supporting the development of large all-composites launch rocket systems. Furthermore, the NCC has undertaken a study for the European Space Agency and is working in close partnership with the Satellite Applications Catapult to identify other space-related opportunities.



Image credit: National Composites Centre

GKN GLOBAL TECHNOLOGY CENTRE (GTC)

is one of 4 Global Technology Centres in the world. A 10,000m², 'Open access' collaborative R&D centre providing support to start-ups and SMEs. The GTC is a joint £32m investment between GKN Aerospace and the UK Government through the Aerospace Technology Institute.

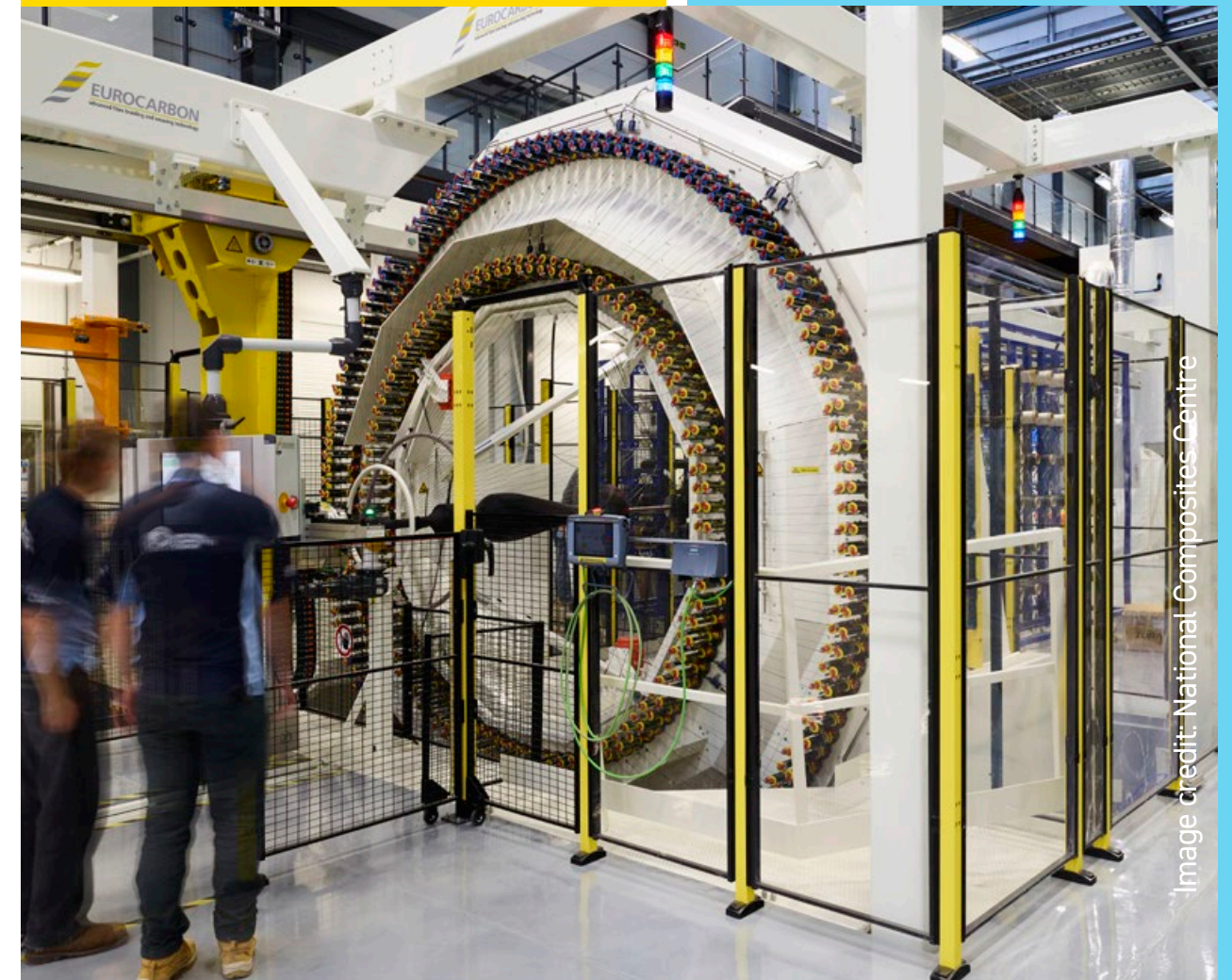


Image credit: National Composites Centre

KEY FEATURES

COMPANIES

CGI

This Canadian multinational IT consulting and systems integration company has a 30-year history in the West of England. Its activities here focus on civil space in two key areas – ground segment software and on-board software.



COSMIC FUTURES AND EVONA

Cosmic Futures serves both established players and start-ups in the New Space market to identify suitably qualified professionals. EVONA specialises in global space sector recruitment, with expertise in engineering, data science, and AI.



DELOITTE

Developing unmanned aviation and space propositions in Bristol led by TechWorks - a technology hub that brings Deloitte's global expertise and capabilities to the region.



FOOT ANSTEY

By combining its space law expertise, defence sector experience and specialist sector approach, Foot Anstey has ambitious plans to grow its business in this field, including in the West of England.



LENA SPACE

Headquartered in Bath with operations in the wider South West, Lena Space is developing low-cost space rocket propulsion technologies. The aim is to provide an off-the-shelf solution to rocket developers, based on the aerospace model of providing engines separate to the airframe.



NOVA SYSTEMS

The Nova team based in Filton are leading the support for the UK launch with a focus on systems engineering, system safety, test and evaluation, logistics and asset management, certification and design.



THALES ALENIA SPACE

The company's largest UK site is based in Bristol and focuses on EO and space exploration activities robotics, AR/VR and specialises in scientific studies, technology demonstrators, flight hardware, instrument prime contracting and systems integration.



4EI'S HEAT HAZARD INDEX

We worked closely with Bristol City Council's sustainability representatives to deliver a cost-effective solution to identify heat patterns and hazardous urban 'hotspots' using satellite imagery.

This concept was applied to meet the client's specific needs. The data we provided was an important first step in understanding Bristol's urban heat island and the areas which may pose greatest heat risk to the population. These maps formed part of the evidence base which was used in the development of the Bristol One City Climate Strategy.

The Heat Resilient Bristol project supported by the UK Climate Resilience Programme, will now use this data alongside other sources and additional modelling to develop a Heat Vulnerability Index. The 4EI team also contributed to workshops with a variety of different stakeholders in the city, explaining the output data in detail and how it was created.

4EI have now rolled out their Heat Index as a national product, which is being used by a range of organisations including, government, NGOs, and urban planners.



CAPABILITY CAPITALISE AND CREATE

We have unique, cutting-edge space capabilities combined with world leading engineering and manufacturing.

Our focus will be on 3 key areas to capitalise on our strengths and create new cross sectoral synergies.



ADVANCED ENGINEERING

Our world-leading capabilities in composite materials and additive manufacturing are of particular relevance to a wide range of emerging and future market opportunities. These include structures and components for launch vehicles, spacecraft and satellites, next generation launch and in-space propulsion, in orbit servicing, manufacturing and assembly, and spaceflight and space tourism.

ROBOTICS AND AUTONOMY

R&D into robotics and autonomy can facilitate space exploration and space science missions, while unlocking new opportunities related to in-orbit servicing, manufacture and assembly, and space debris removal. This makes it a tangible contribution to the long-term sustainability of space.



DATA AND COMPUTER SCIENCE

We have a host of opportunities to build on these capabilities to grow our space sector and improve our community – data capture, downlink, storage, processing and management, security, analysis and data-enabled products and services, including mapping, location and tracking, and insight and monitoring. Developing our data and computer science capabilities will help us to address all of our Grand Ambitions while also opening up market opportunities in Space Situational Awareness (SSA), space debris monitoring and tracking, defence space and secure communications, and a multitude of downstream applications.

CAPABILITY PRIORITY ACTIONS

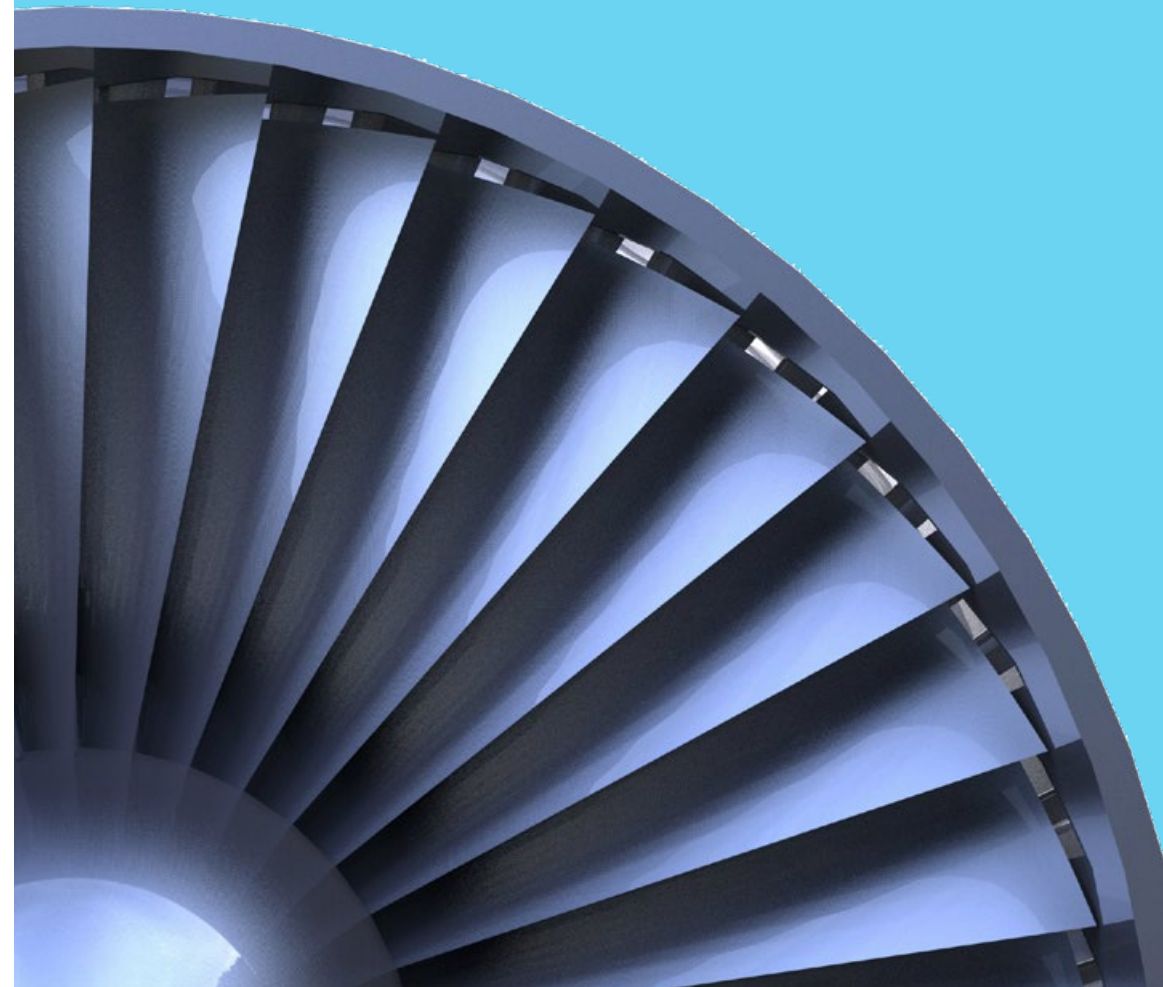
1

Bring forward several flagship collaborative R&D projects to work toward our Grand Ambitions and capture new market opportunities. This will be achieved by leveraging the collaborative culture in the West of England, driving cross-sectoral innovation and aligning with the ambitions of the West of England Local Industrial Strategy and the Innovation for Renewal & Opportunity programme.



2

Stimulate engagement between the space sector and the aerospace, defence, high-tech, digital and creative communities, while maximising the use of research facilities and assets in the region for space purposes.



3

Establish a Space Living Lab to undertake real-world test and demonstration of space enabled applications and support the West of England Climate Emergency Action Plan.

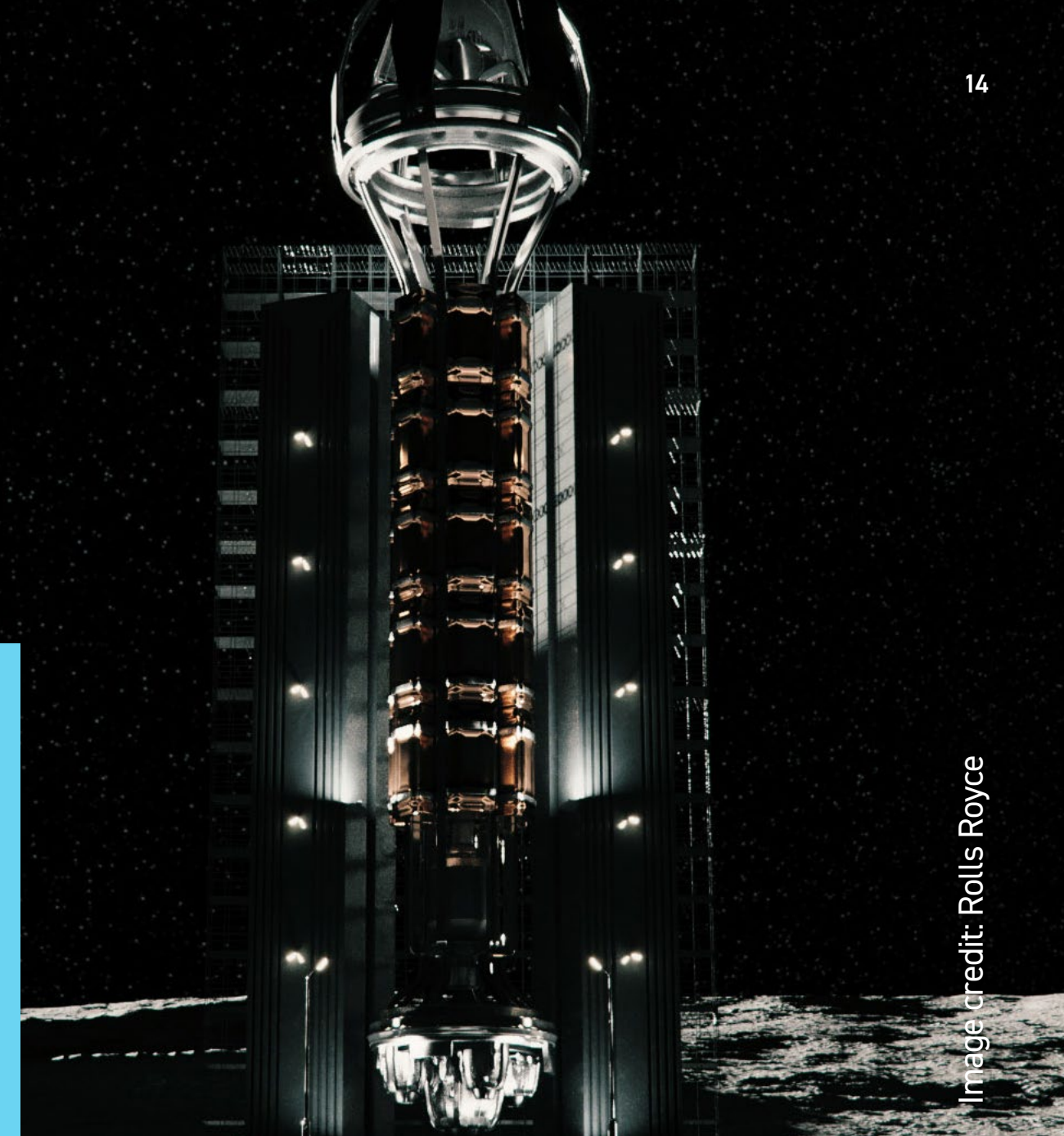


Image credit: Rolls Royce

TALENT EDUCATE AND INSPIRE

We recognise that diverse, highly talented people are fundamental to our ambition to be a world-leading space region.



Image credit: Rolls Royce



GENERATING THE TALENT PIPELINE

The four-world class universities in the region are supplying high calibre graduates, many of which are engaged with UK students for the Exploration and Development of Space (UKSEDS). The new multi-million pound West of England Institute of Technology, led by Weston College will revolutionise digital, engineering and manufacturing technology education across the South West. Our region's talent pool is further supported by the West of England Careers Hub working with schools and colleges to improve career opportunities and work experiences for young people.

UPSKILLING THE EXISTING WORKFORCE

The West of England Combined Authority has a wide range of skills and workforce development initiatives in place which have synergies with the requirements of the space industry, including up-skilling and re-skilling existing workers. This includes Digital Engineering Technology and Innovation (DETI), Workforce for the Future programme and the Digital Skills Investment programme.

INSPIRING THE NEXT GENERATION

We support STEM outreach with our companies, universities and cultural attractions all having a role to play in inspiring and attracting young people into the sector. From the "Future Martians" programme delivered by Thales Alenia Space UK, to the planetarium at We The Curious, from CGI UK's contribution to the Bristol Technology Festival and to the University of Bristol's "Zebrafish in space" exhibition.



Image credit: IDPS, University of Bath

TALENT

PRIORITY ACTIONS

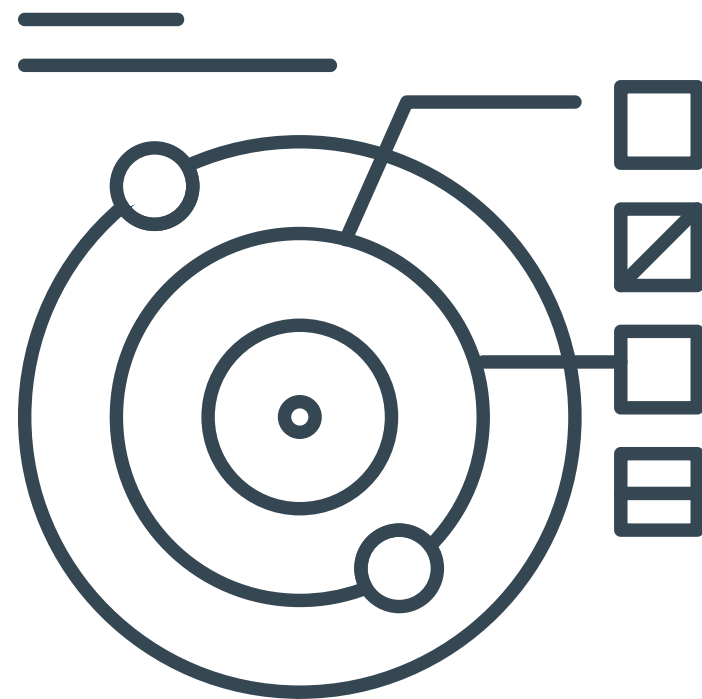
1

Undertake a comprehensive review of space skills, workforce and outreach activities in the region determining what additional actions need to be taken to support space sector talent, now and in the future.



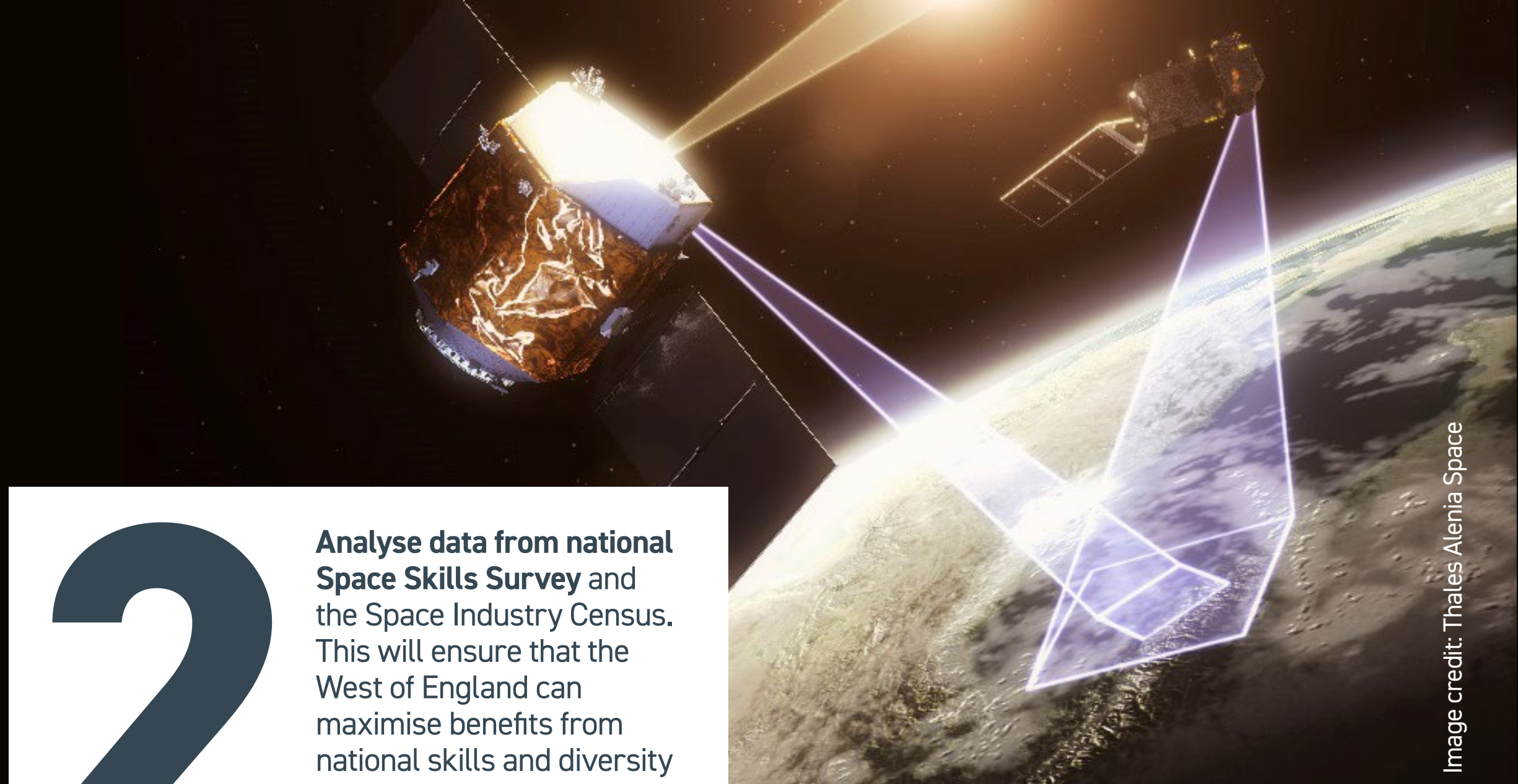
2

Analyse data from national Space Skills Survey and the Space Industry Census. This will ensure that the West of England can maximise benefits from national skills and diversity initiatives, as well as contributing to the development of the National Space Skills Academy.



3

Enhance space skills and STEM outreach activities. These include cross-sectoral collaboration between the space industry and the digital, creative and cultural community, and the establishment of international educational partnerships.



ENTERPRISE ACCELERATE & GROW



WE AIM TO BOOST SPACE-SPECIFIC SUPPORT

at local level and increase visibility and awareness of what is on offer, both locally and nationally.

THIS SUPPORT WILL EMPHASISE:

- Incubation and acceleration – recognising the exponential growth rates in the commercial space arena, with an emphasis on the provision of space-focused incubation and acceleration facilities.
- Supply chain strengthening and diversification – the space sector has enormous potential to open-up new markets and unlock diversification routes for the well-established aerospace supply chain, particularly those that have been adversely impacted by the COVID-19 pandemic.
- Boosting innovation – facilitating opportunities for entrepreneurs, start-ups and SMEs to collaborate with other industry players and universities.
- Accessing finance and facilities – in order to scale-up and grow SMEs, focussing on access to funding from a variety of sources.



WE BUILD RELATIONSHIPS

giving you access to a range of business and innovation support, trade associations, incubators and accelerators including Business West, local Department for International Trade and investment teams; Engine Shed; the West of England Growth Hub; Quantum Technology Enterprise Centre (QTEC); SETsquared Bath and Bristol; TechSPARK; Science Creates and the West of England Aerospace Forum (WEAF).



WE PROVIDE FUNDING OPPORTUNITIES

including the Business Innovation Fund (BIF), which is a three-year project to award R&D grant funding, alongside wrap-around business support, to SMEs in the West of England. Businesses in the region can also take advantage of national-level space support initiatives delivered through UKSA, UKspace, the Satellite Applications Catapult, the Satellite Finance Network (SFN) and the KTN Space team.



ENTERPRISE

ACCELERATE & GROW: PRIORITY ACTIONS

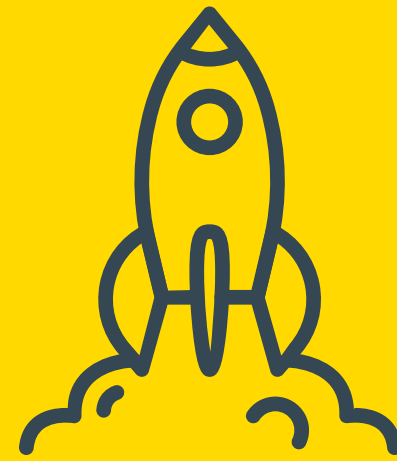


1



Promote space-specific business support and sources of finance widely to enable SMEs to grow. Advocate for the establishment of a new Satellite Applications Centre of Excellence to cover the West of England geography.

2



Provide access to affordable space incubation and acceleration support to drive the growth in space start-ups and scale-ups. Longer term this could lead to the creation of a West of England Space Campus, including dedicated space incubator and accelerator facilities.

3



Establish frameworks for space entrepreneurs, start-ups and SMEs to undertake collaborative research, development and solutions testing with larger companies and academia.

BEYOND BOUNDARIES COMMUNICATE AND COLLABORATE



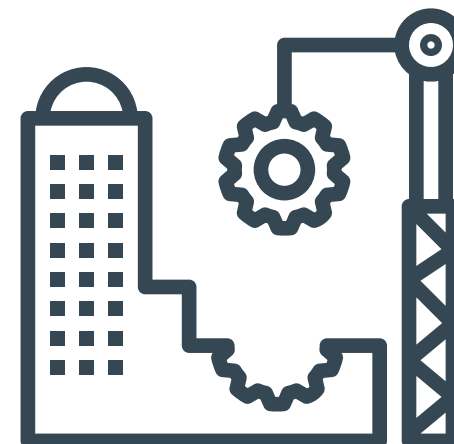
As an outward-looking region we will proudly increase the visibility of these space strengths and capabilities.

We will enhance the region's influence nationally and internationally, attract future funding and investment, grow the space sector and increase its productivity and competitiveness, and demonstrate how space is actively contributing to local and global challenges.

With our ambition to be recognised globally as a leading space region we have strong focus on trade, R&D collaboration and educational exchange.

Invest Bristol & Bath, the inward investment team within the West of England Combined Authority, is already attracting international business in partnership with the Department for International Trade (DIT), with trade target markets **including:**

Well-established space nations which closely align with existing priority markets for Invest Bristol & Bath's aerospace and advanced engineering activities.



Markets with plans to increase international space activity.



Other markets which have synergies with the West of England region.



BEYOND BOUNDARIES

PRIORITY ACTIONS

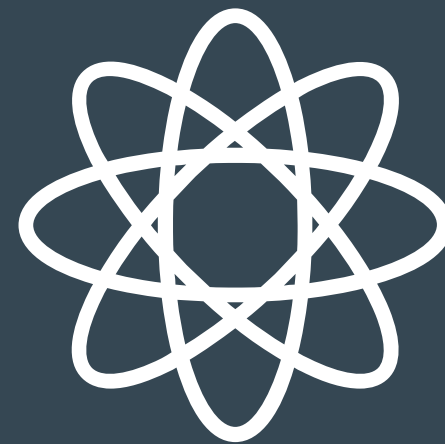


1

Continue to develop a compelling space proposition and suite of space-specific marketing materials to showcase the West of England's strengths and capabilities. Increase the region's influence within Government and the national arena, and act as a catalyst for collaboration and international engagement.

2

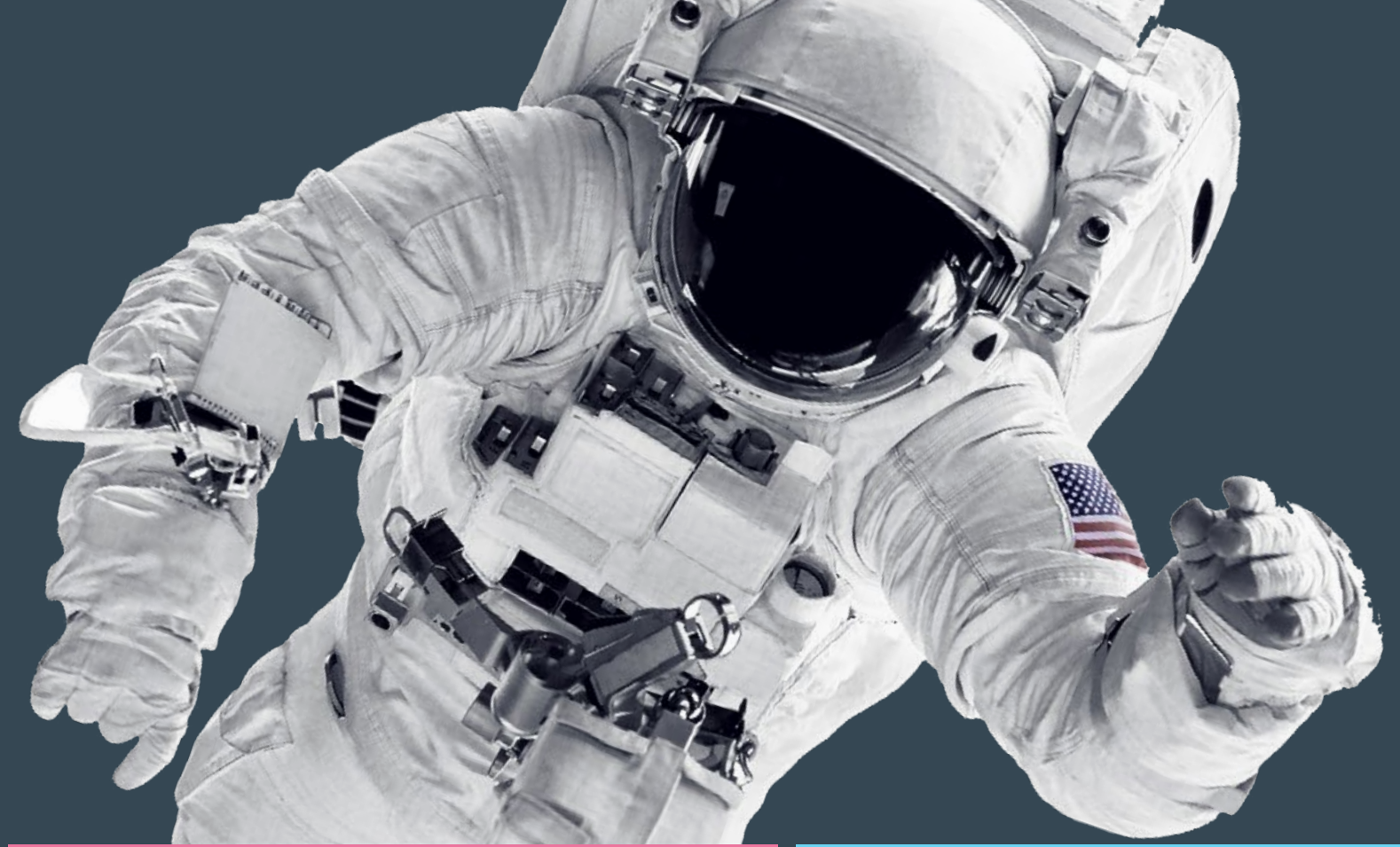
Increase the profile of the West of England by hosting a major space conference in the region. Participate in internal space shows, in partnership with the UK Space Agency, Satellite Applications Catapult, DIT and other stakeholders.



3

Collaborate with other UK space hubs and clusters to develop a competitive advantage and build international partnerships.





STRATEGIC PILLARS AND PRIORITY ACTIONS

CAPABILITY



Deliver flagship collaborative R&D projects and capture new market opportunities and driving cross-sectoral innovation



Stimulate engagement between the space sector and the aerospace, defence, cyber, high-tech, digital and creative communities

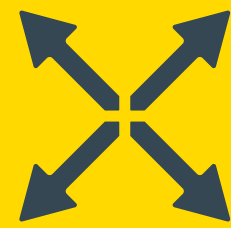


Establish a Space Living Lab to undertake real-world test and demonstration of space-enabled applications

TALENT



Identify and address skills gaps based on how existing STEM skills and workforce mechanisms in the region can support the space sector



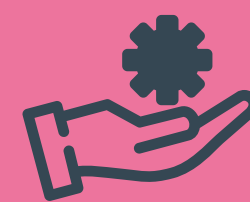
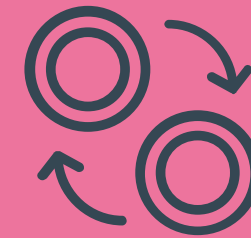
Maximise benefits from national skills and diversity initiatives



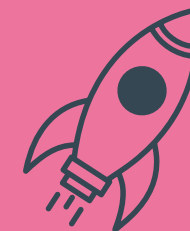
Establish international educational partnerships and enhance collaboration between sectors

ENTERPRISE

Establish mechanisms for space entrepreneurs, start-ups and SMEs undertake collaborative research with larger companies and academia



Promote space-specific business support and sources of finance widely and effectively within the West of England

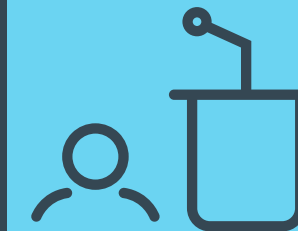


Provide access to affordable space incubation acceleration support, and facilities

BEYOND BOUNDARIES



Develop a compelling space proposition and marketing materials to showcase the West of England's strengths and capabilities



Host a major space conference and participate in internationally-significant space shows



Collaborate with other UK space hubs and build international relationships to drive a step-change in space-related exports and inward investment

CASE STUDY

UNIVERSITY OF BRISTOL SESAME

Image credit: University of Bristol



Bartolomeo: expected location of SESAME

The University of Bristol participated in a highly competitive European Space Agency and French Space Agency call.

SESAME (the experimental compartment involves a door opening on command to expose the samples) is a 6-month, £3.5M mission to expose 45 material samples on the Bartolomeo platform, mounted on the exterior of the International Space Station's Columbus module, to assess their capability for survival in low Earth orbit (LEO).

OUR SERVICES

Do you need comprehensive information on Bristol & Bath as a global business destination? Are you looking to expand, relocate or set up a new business hub?

Our team can support you by presenting our diverse sectors, enviable talent and future ambitions in innovation and climate change at a glance, bespoke to your needs to support your strategic business case.

Our experienced, knowledgeable and well-connected Inward Investment team offers an **extensive, tailored support service to potential inward investors (businesses)**, with an outstanding reception service enabling your company to soft-land and grow in our region.

A confidential and complimentary service



International businesses

looking to invest into the UK will benefit from our valued partnership with Department for International Trade. Our connections can link you into UK government and national business support programmes to support your business set up.



Talent & Education

As home to the most skilled workforce in England we can provide detailed analysis on our talent pool, covering all experience levels. Introductions to our academic partners including Universities, Colleges, Training Academies including regional talent programmes.



West of England Combined Authority

Full access to the Combined Authority support including: Mayor's office; business support, school engagement, skills and talent, infrastructure and local councils.



Property Solutions

Whether you are wanting to relocate large teams, set up a new centre, looking at office, manufacturing or development sites - we can help. In partnership with our industry experts, we can identify the right blended solution for you from a phased growth path to a fully functioning property solution all done confidentially.



Sector Specialists

Gain invaluable expertise and advice from our sector specialists and stakeholders. We can connect you to the business experts who have vast experience in their field, including Aerospace and Advanced Engineering, Creative & Media, Tech & Digital, Nuclear and Fintech.



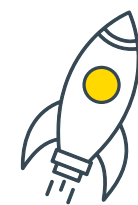
Regional Partners

Connect businesses with stakeholders and regional partners across a range of industries and locations across the South West to support your investment and business case. Including Nuclear South West, South West Aerospace and Western Gateway.



Regional Visits

We can design and host visits to the region for you to further qualify and verify your investment decision making. Visiting your city of choice can make a real difference and will showcase how collaborative and welcoming our region is.



Industry connections service

Introductions to business support, recruitment links with providers, to give you a head start in your research or landing in the region, we can make introductions and gather intelligence for you either in your initial research stage for setting up through to you soft-landing in the region, we are very well connected to industry and can quickly make those essential links for you.



Networks

Collaboration is at the heart of the Bristol & Bath region. We can link you into the many industry networks, R&D assets and trade associations plus more. Let us connect you with likeminded businesses and membership organisations to raise your profile.



Image credit: Thales Alenia Space

Invest
BRISTOL
+ BATH

WEST OF
ENGLAND
Combined Authority

Whether you're an innovative start-up or established company, contact Invest Bristol & Bath to find out how we can support the future growth of your business.

Invest Bristol & Bath
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