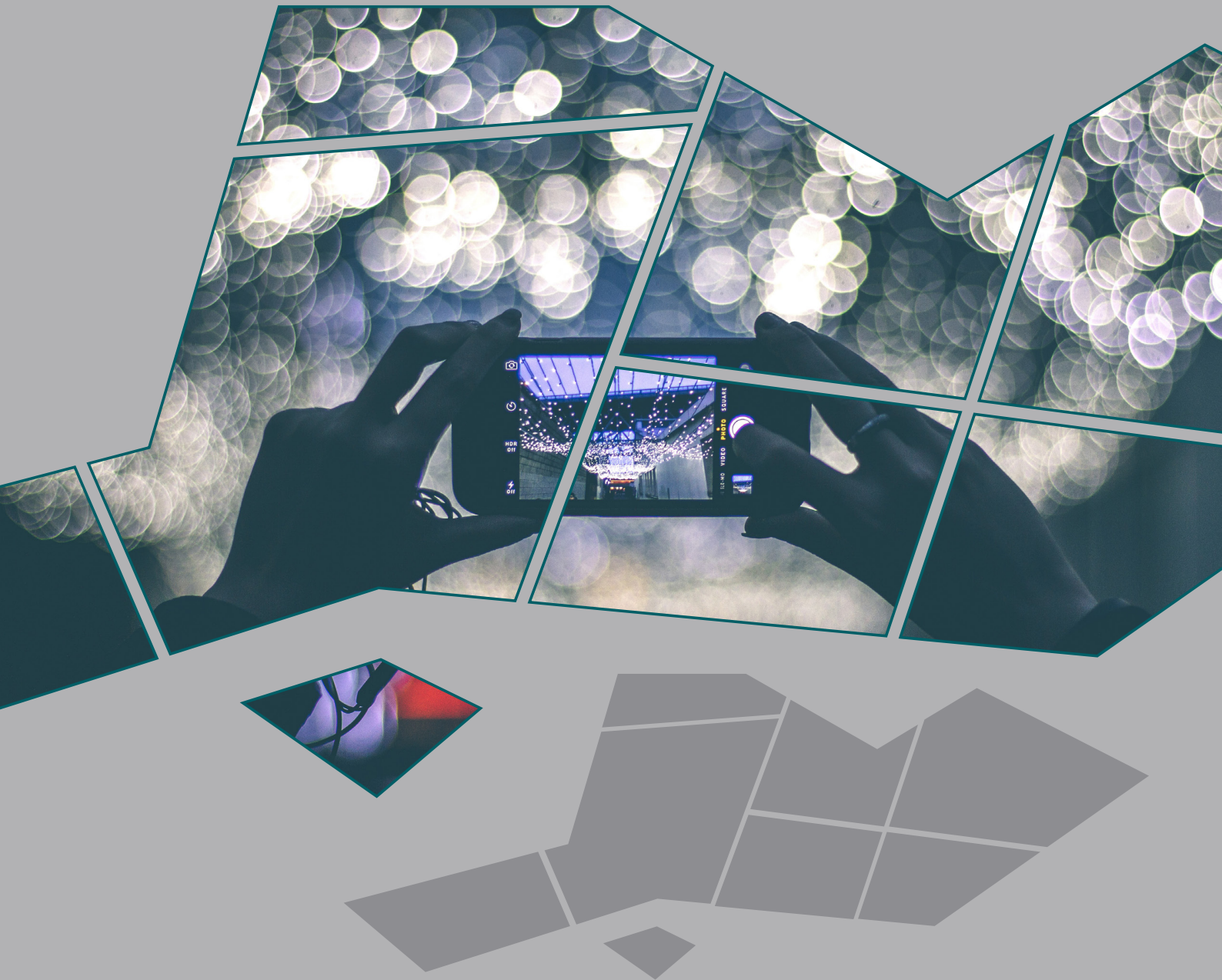


# INNOVATION SOUTH - A POWERHOUSE OF WORLD CLASS STRENGTHS IN DIGITAL ENABLING TECHNOLOGIES

A SCIENCE AND INNOVATION AUDIT REPORT SPONSORED BY THE DEPARTMENT FOR  
BUSINESS, ENERGY & INDUSTRIAL STRATEGY

SUMMARY REPORT  
2017



Department for  
Business, Energy  
& Industrial Strategy

**I**NNOVATION  
**SOUTH**  
SWITCHING ON OUR FUTURE

# 1. INTRODUCTION

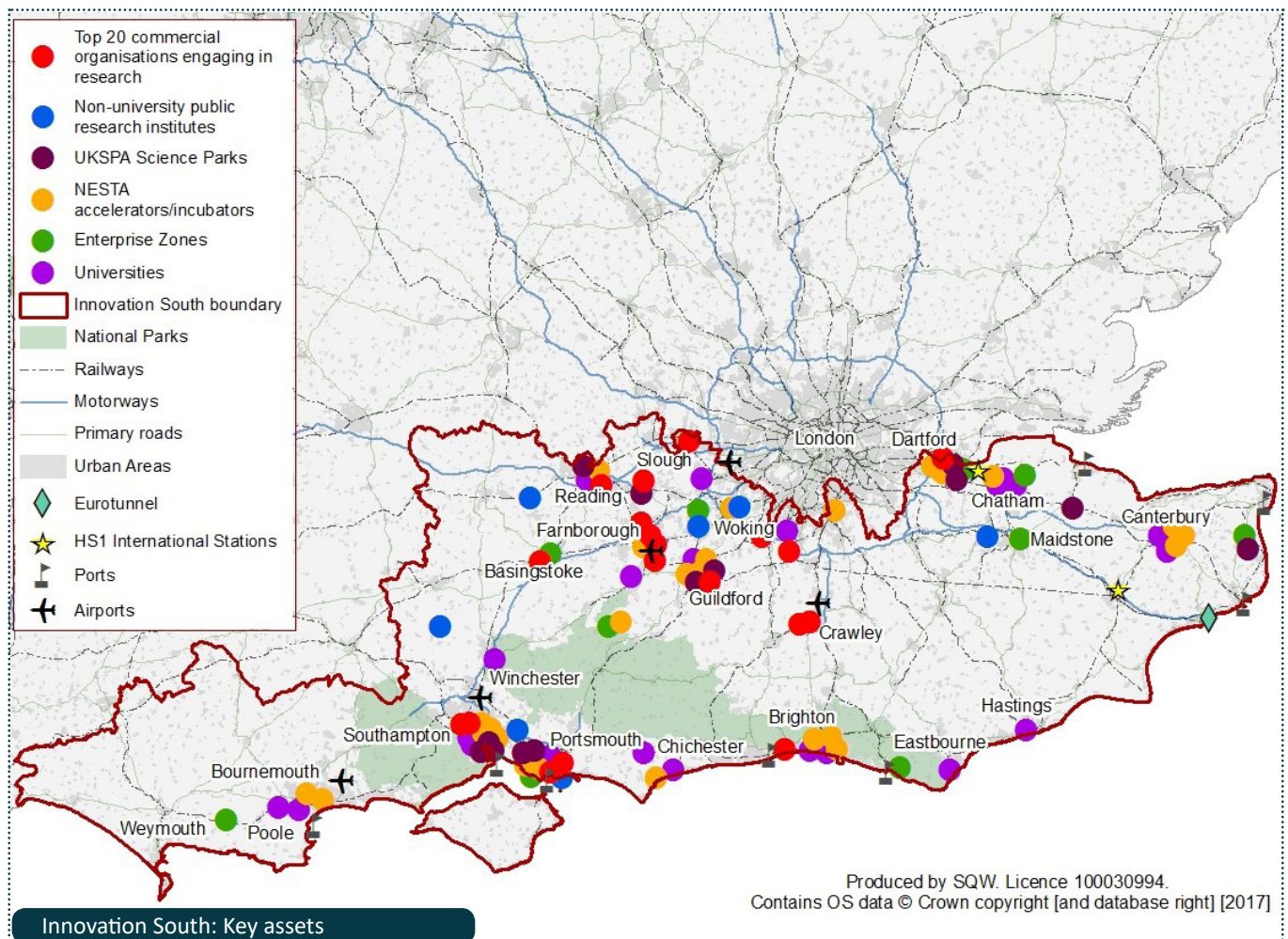
The UK has a world-leading digital economy and a proud history of digital innovation. Innovation South is key to that – a globalised region, with high-value, digitally-enabled innovation; a powerhouse of research strengths; a strong commercialisation culture; and dynamic businesses and industries to match. In the story of the UK’s digital success, a significant chapter belongs to Innovation South.

In Autumn 2015, the UK Government announced regional Science and Innovation Audits (SIAs) to catalyse a new approach to regional economic development. SIAs enable local consortia to focus on analysing regional strengths and identify mechanisms to realise their potential.

The specific focus of this Science and Innovation Audit report is the region’s capacity to commercially exploit its excellence in a portfolio of five mutually

supportive digital enabling technologies<sup>1</sup>. The Audit tests the hypothesis that while others may share strengths in individual technologies, Innovation South stands out for the number and breadth of digital enabling technologies, and their widespread application. These are underpinned by world class research, supported by centres of excellence in digital creativity and adopted by a successful stock of regionally-based, innovative businesses in four high-tech sectors: Connected Digital, Marine and Maritime, Bioscience, and Advanced Engineering.

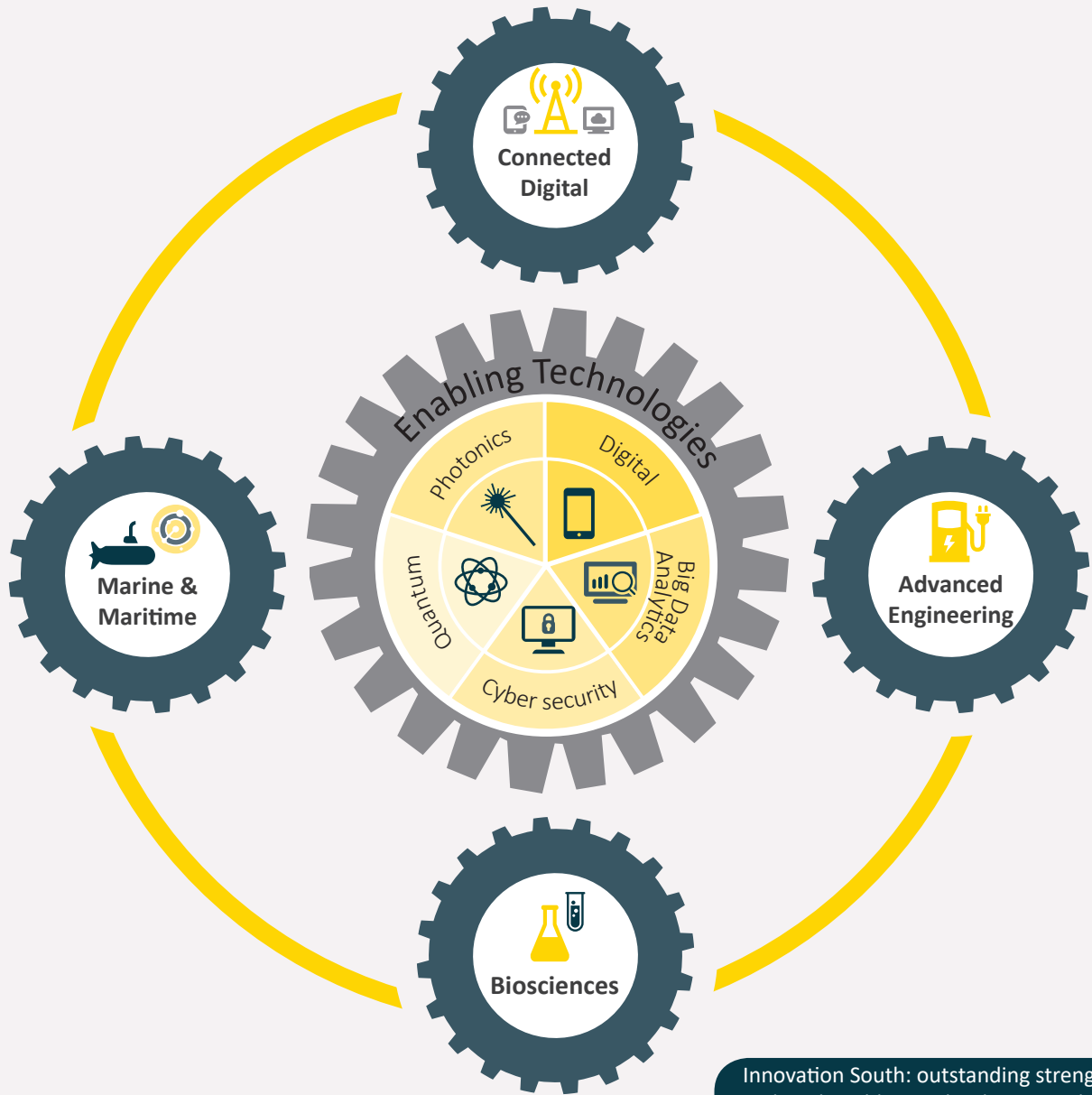
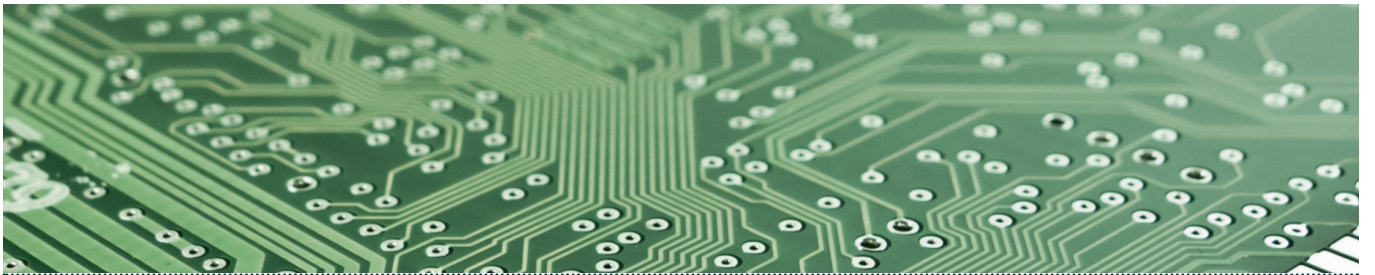
The Innovation South Consortium – which has completed the Audit – embraces well over one hundred organisations spanning the region’s eight counties<sup>2</sup> and its private (both corporate and SME) and public sectors. All are committed to using the findings from the SIA and advancing the opportunities that are identified.



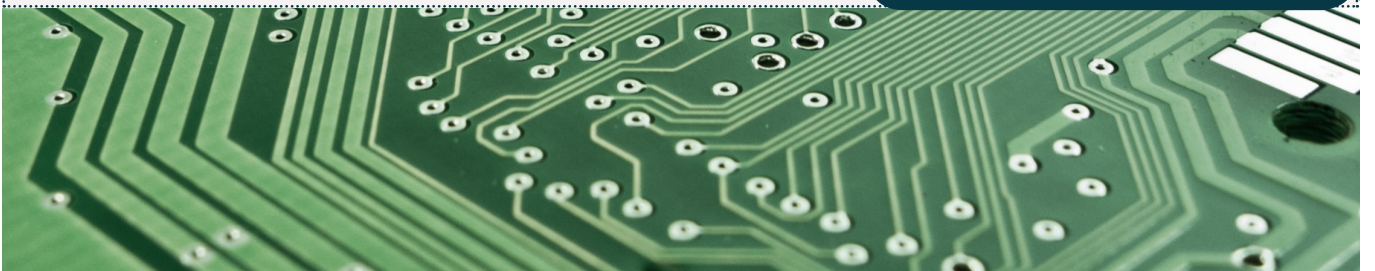
<sup>1</sup>Digital Communications; Cyber Security; Big Data Analytics; Photonics; Quantum

<sup>2</sup>Dorset, Hampshire, the Isle of Wight, Berkshire, Surrey, West & East Sussex, Kent





Innovation South: outstanding strengths in digital enabling technologies applied in four key sectors



## 2. INNOVATION SOUTH – OUR VISION

### OUR VISION IS TO:

- showcase and maximise Innovation South’s world leading and world class industrial and scientific strengths across a range of Digital Enabling Technologies
- demonstrate how investment in science successfully translates into innovation in four of the region’s stand out sectors, in a high performing Innovation South economy, and take that further still
- champion Innovation South as a global region - intrinsically resilient and equipped to face the challenges of competing in international markets
- extend partnerships to ensure areas of outstanding performance are not isolated, localised “hotspots” but region-wide excellence
- demonstrate Innovation South is a UK-wide national asset, whose strengths and collaborations impact in other regions - with ambition for more
- implement effective mechanisms to help maximise and realise the vast potential of these strengths, for the benefit of both Innovation South and the whole UK.

## 3. INNOVATION SOUTH – OUR STRENGTHS

### THE REGION - INNOVATION SOUTH IS A GLOBAL REGION AND A NATIONAL ASSET

The region has a total economic output of £225.3 billion – around 13.7% of national output. Two National Parks and many Areas of Outstanding Natural Beauty earn the South’s reputation for an excellent quality of life. More than one in ten people in the UK live here - a population of over 8.6 million and 5.3 million are of working age.

#### ***High skilled, high tech and dynamic in business***

Compared to the national average, Innovation South’s workforce is, in general, more highly qualified; the proportion of those working in science, research, engineering and technology is higher; average earnings are greater; and in parts of the region, productivity levels are much higher.

It is a dynamic region for business growth. Across most of the area, the concentration of start-up enterprises and the incidence of high growth firms are well above England’s average<sup>3</sup>.

International connections are excellent, with

access to Heathrow, Gatwick, Southampton and Bournemouth airports and international rail via Ebbsfleet and Ashford. The region’s ports (including Dover and Southampton) and Eurotunnel via Folkestone are also significant.

Proximity to London is important. Whilst congested, road and rail links are good and provide access to a highly valued sources of customers, finance and skilled labour. However, unreliable and inadequate transport systems, coupled with high housing costs, are a persistent obstacle to maximising the region’s potential. Although there are regional variations, the South’s digital infrastructure is better than the rest of the UK’s.

#### ***The South: ‘internationalised’; impressive foreign investment; strong on exports***

The South’s economy has an international focus. International corporations have chosen to locate their UK and European headquarters here. Export performance is strong<sup>4</sup>. The South East region, including most of Innovation South, attracts foreign direct investment and has the largest share of FDI projects in the UK outside London<sup>5</sup>.

<sup>3</sup>Technopolis core data

<sup>4</sup>The best available evidence is Government’s figures for the standard ‘South East’ region- the nearest approximation to Innovation South. It excludes Dorset and includes Bucks; Oxfordshire; Milton Keynes. Department for International Trade (2017), Regional Goods Export Data accounted for £37.8 billion in exports in 2015, 14% of the UK’s total exports. The region’s share of the UK’s exporters is just over 18%.

<sup>5</sup>Over the five years to 2016, the South East region accounted for 1,029 FDI projects, around 11.5% of the UK total, according to Department for International Trade (2016), FDI projects by UK region for 2011/12 to 2015/16. Note, as in note 5, the South East region is the nearest geographical approximation for some data produced at regional level

**The region is a powerhouse of world leading research in science and technologies**

**Innovation South has 16 universities<sup>6</sup> - a powerful diversity including Southampton, the UK's number 1 for engineering, and Surrey's internationally renowned 5G Innovation Centre.** High profile research institutions include the Atomic Weapons Establishment and TRL, the Transport Research Laboratory in Berkshire.

According to analysis of publicly-funded research and innovation activity involving business (e.g. Intel and Microsoft) and universities, the South 'punches above its weight' in winning backing for Digital Enabling Technologies innovation projects<sup>7</sup>.

**The region is entrepreneurial and has a strong track record in commercialising research**

Businesses are emerging from the region's universities and research institutions to commercialise research. For example, at Surrey Research Park, technology firms such as Surrey Satellite Technology Ltd (SSTL) and Detica (now BAE Systems Applied Intelligence) began as start-ups making use of university research, and have since grown into major internationals.

Business expenditure on research and development in the Innovation South area is high. According to

2015 figures, the wider South East, including most of Innovation South, enjoyed the highest corporate research investment of any nation or region in the UK<sup>8</sup>.

Major research and development facilities in Innovation South include those operated by QinetiQ, Ordnance Survey Ltd, IBM, BAE Systems, SSTL, Ricardo, Thales UK in Reading, Fujitsu and Oracle.

Dynamic business growth is being encouraged by support for innovative enterprises. SETsquared<sup>9</sup>, "the Global #1 University Business Incubator"<sup>10</sup>, is a stand out example. Sussex Innovation<sup>11</sup> runs a number of incubation hubs across the South, and Growth Hubs, supported by the LEPs, add to the large and extended family of Innovation South business support organisations.

**INNOVATION SOUTH: STRENGTHS IN DIGITAL ENABLING TECHNOLOGIES – DRIVING AN ECONOMIC, CULTURAL AND SOCIAL REVOLUTION**

The Innovation South region is home to world-leading research strengths and innovation capabilities in five powerful Digital Enabling Technologies (defined below).

<p><b>Digital comms</b> including fifth generation (5G) wireless communications enabling a step change in the capacity, speed, stability and potential for innovation of internet systems.</p>	<p><b>Cyber security</b> the protection of data from theft, damage or disruption. Arguably, the single largest challenge for the world's growing digital economy.</p>	<p><b>Big data analytics</b> the process of collecting, organising, analysing, visualising and optimising large, complex and dispersed data.</p>	<p><b>Photonics</b> involves manipulating light using lasers and optical fibres. It has revolutionised many areas including communications, medicine, aerospace and manufacturing. Fibre optic networks and developments in photonics will underpin all future communications, data and internet services.</p>	<p><b>Quantum</b> quantum devices, components and systems are based on the ability to capture and manipulate single atoms and particles of light. They are critical to the long term "future-proofing" of digital enabling technologies, lower manufacturing costs and sustaining growth in computer processing speeds.</p>

Digital Enabling Technologies

<sup>6</sup>A full list is at Annex D

<sup>7</sup>Technopolis (2017), Innovation South: Analysis of research activity and main collaborations. For example, while institutions in the Innovation South area participated in just under 14% of all UK projects funded by the Research Councils, Innovate UK and European research programmes, they were engaged in 19% of cyber security projects.

<sup>8</sup>Again the 'South East' is the nearest available approximation to Innovation South (see 5 above). The South East accounted for the highest for any region or nation in the UK- a total expenditure of about £4.7 billion which is 22.5% of UK business expenditure on R&D in 2015

<sup>9</sup><http://www.setsquared.co.uk>

<sup>10</sup>UBI Global Top University Business Incubator and Accelerator World Rankings 2015. UBI Global provides access to business incubation data & networks to help incubators and their partners benchmark themselves to become more efficient and competitive

<sup>11</sup><http://www.sinc.co.uk>



## **5G Digital Communications: World-Leading Regional Strength & National Asset**

- “The development of 5G presents a significant economic opportunity and this world-leading centre will position the UK at the forefront of research into the next generation of communications technology” Science Minister
- Jo Johnson, opening the 5G IC, 2015

The 5G Innovation Centre (5GIC), based at the University of Surrey, is the largest open innovation centre for 5G development worldwide. Partners include international corporates<sup>12</sup>. In 2016, 5GIC was recognised by G7 nations as a global leader driving the growth and promotion of a digitally-connected world<sup>13</sup>.

It is a valuable asset not just for the South but for the whole UK. Plans are underway to create regional and national test beds connected to the 5GIC core network. They include: Digital Greenwich (London); NE LEP (Northern Powerhouse); and Worcestershire LEP (Midlands Engine).

Within the region, partnerships include investigations with Airbus and Portsmouth University to create a Satellite/5G and Big Data Innovation Centre; work with Enterprise M3 LEP to extend the 5GIC existing network of SMEs; and a DCMS-commissioned 5G network and mapping tool, involving Bournemouth Council, Dorset LEP, Ordnance Survey and the Met Office, ahead of the national roll-out of 5G.

### **Cyber Security: A global Industry; An Innovation South Speciality**

In the UK, three of the fourteen universities now recognised by Government as Academic Centres of Excellence in Cyber Security Research are in Innovation South: Royal Holloway, University of Southampton, and University of Surrey.

Royal Holloway Information Security Group Founded in 1990, the Royal Holloway Information Security

Group (ISG) is a GCHQ/EP SRC recognised Academic Centre of Excellence for Cyber Security Research (ACE-CSR). It hosts one of only two UK, National Cyber Security Centre (NCSC) supported Centres for Doctoral Training in Cyber Security (CDT), and its MSc in Information Security (launched 1990) is recognised by GCHQ/NCSC.

### **Big Data Analytics: Big Business; Deep Expertise**

As our use of digital devices has exploded so has the volume and complexity of data being collected. Exploitation of this Big Data has many potential commercial gains, and expertise in the South goes broad and deep. It includes the University of Reading’s Institute of Environmental Analytics and partnership in Agrimetrics, the world’s first Big Data Centre of Excellence for the whole food system; Royal Holloway’s specialisms in machine learning - British Gas is among its partners; and the University of Portsmouth’s Institute of Cosmology and Gravitation. IBM at Hursley and QinetiQ; the Open Data Institute and Dame Wendy Hall, Regius Professor of Computer Science at Southampton, who is jointly leading a government review of the UK’s world-leading Artificial Intelligence technology add to the region’s private sector/academic mix of capabilities in Big Data.

### **Photonics - world-leading pioneers among research excellence in lasers & optical fibres; transformers of billions of lives**

There is a concentration of photonics research expertise at several Innovation South universities and it is particularly distinctive for its impact on everyday life and wider society. Researchers at the University of Southampton’s Optoelectronics Research Centre (ORC) have been making ground-breaking discoveries in photonics throughout the centre’s four decades. A device that led to the rapid expansion of the internet was developed in the 1980s, for example, and its numerous industry partners include BAE Systems, BMW, VW and Volvo. The Universities of Surrey, Kent and Sussex also have significant research strengths in photonics.

<sup>12</sup>Key partners include EE, Huawei, O2, Vodafone, HEFCE, Enterprise M3 LEP, TEOCO Corporation, BBC, BT, Cobham, Anite, Ascom, Digital Catapult, Fujitsu, Rohde & Schwartz, Samsung, Roke, McLaren Applied Technologies, Ofcom, Imagination Technologies, ITRI, MYCOM OSI, Three and Ordnance Survey.

<sup>13</sup>See G7 Opportunities for Collaboration – available at [http://www.japan.go.jp/g7/\\_userdata/common/data/000416960.pdf](http://www.japan.go.jp/g7/_userdata/common/data/000416960.pdf). Also see notes from G7 ICT officials meeting, Brussels, 2nd December 2016 (meeting convened by Japan G7 Presidency. Chaired by Vice Minister Shigeki Suzuki and moderated by Yoichi Iida Director for International Research and Policy Coordination)

## Quantum

- “You don’t need to understand the details
- of the underlying physics...Quantum devices
- could enable us to see around corners, map
- hidden underground hazards, and easily
- solve problems that would stump any existing
- supercomputer.”<sup>14</sup>

The pursuit of quantum technologies is a national priority and universities across Innovation South are stepping up to the challenge, namely Southampton, Sussex and Royal Holloway. All are key collaborators in one or more of the four Quantum Technology Hubs.

The University of Sussex is leading work with Google and Aarhus on a breakthrough in developing a quantum computer; Southampton University is important in developing the industrial capacity and supply chain for quantum products and has particular expertise in the commercial exploitation of the technology with regional partners, the Government’s Defence Science and Technology Laboratory (Dstl) and National Physical Laboratory (NPL), the UK’s National Measurement Institute.

The University of Surrey has close working links with the National Physical Laboratory (NPL). Together they formed the NPL South hub and aim to expand the quantum industry, and subsequent development of new products, as led at the Advanced Quantum Metrology Laboratory, currently under construction, in Teddington.

## APPLYING DIGITAL ENABLING TECHNOLOGIES ACROSS FOUR KEY SECTORS

### **Strengths in the Connected Digital Sector - A National Success**

The digital economy is a UK success story and the outstanding performance of the Connected Digital sector in Innovation South is essential to that. The South has a major concentration of large corporates, including international businesses such as Fujitsu, Huawei, Microsoft and IBM, with UK/European Headquarters in the Thames Valley, Surrey and Hampshire. These are major employers,

ensuring the South’s position as a globally-significant and globally-connected region.

Clusters of digital companies are achieving national and international acclaim: the gaming sector in and around Bournemouth, Brighton, and Guildford, is the “Hollywood of Videogames”<sup>15</sup>. Around half the UK games industry is in London and the South.

The “prize” of a Digital Catapult located in Brighton is testimony to the area’s innovation culture. The South has growing credentials in the Internet of Things (IoT) and the closely linked “Internet of Place”. In the South, the application of digital technologies across a raft of sectors and services, e.g. FinTech & HealthTech, is spearheading the digital revolution.

### **Strengths in Digital Enabling Technologies in the Marine & Maritime Sectors**

Innovation South, home to the Navy at Portsmouth and the UK’s number one vehicle-handling port at Southampton, is a major contributor to the UK’s marine and maritime industry, which, national estimates suggest, is similar in scale to pharmaceuticals and notably bigger than aerospace.<sup>16</sup>

Digital Enabling Technologies are driving fundamental change, especially: robotics, sensors, big data analytics, smart ship autonomous systems, cyber and electronic warfare, human computer interaction, communication<sup>17</sup>. The notion of “high value digitally enabled design” is also key as many of these drivers need to be integrated into complex systems requiring multidisciplinary design tools, often enabled by high performance computing.

In both marine science and maritime engineering, the cross-disciplinary Southampton Marine and Maritime Institute (SMMI) and the National Oceanographic Centre are especially important. There are many other research centres too. A Marine Robotics Innovation Centre has been established and innovative SMEs are playing a crucial role in the commercialisation process.

The role of large commercial companies is

<sup>14</sup>“ The Quantum Age- Technological Opportunities “ Govt Office for Science

<sup>15</sup><https://www.theguardian.com/technology/2014/jun/04/guildford-uk-video-game-industry-ubisoft-little-big-planet-hollywood>

<sup>16</sup>Maritime Growth Study – keeping the UK competitive in a global market, Department for Transport, 2015

<sup>17</sup>Identified by Southampton Marine & Maritime Institute, and based on Global Marine Technology Trends 2030, QinetiQ, Lloyd’s Register, University of Southampton, 2015

significant – including Sunseeker International (in the leisure market), Lloyd’s Register (a classification society) through to BAE Systems (in defence-related maritime systems). The RNLI, based in Poole, drives innovation in search & rescue.

Solent University’s Warsash Maritime Academy has a global reputation in international marine and offshore oil and gas industries, earned over 70 years. Its deck officer training exploits highly sophisticated digital simulators for ship operations. The ambition to bring the America’s Cup home and the location of Land Rover BAR (Ben Ainslie Racing) in Portsmouth are generating new opportunities for science and innovation in the powerful technology behind “spectacle” events such as high level competitive yachting.

### ***Strengths in Digital Enabling Technologies in Bioscience Sectors***

The profound influence of Digital Enabling Technologies on the development of health & social care, medical data, devices, pharmaceuticals, and agrimetrics plays to Innovation South’s strengths in Big Data Analytics and Security, 5G, Advanced Engineering and Robotics. Increasingly, advanced data analysis has reduced the cost – and pushed forward the boundaries – of drug discovery. At Discovery Park near Sandwich<sup>18</sup>, this has opened up new opportunities for research-intensive SMEs.

Bioscience in the wider South East<sup>19</sup> is seeing strong growth in Med Tech SMEs, in particular. The South East boasts one fifth of the UK workforce (compared to 6% for London and 11% in the Midlands).<sup>20</sup>

Around 500 businesses<sup>21</sup> across Innovation South are in Med Tech and Biopharmaceuticals, in disciplines ranging from medical imaging to oncology. Prosthetics and Orthotics is a regional specialism supported by many Med Tech enterprises and the Institute for Life Sciences at the University of Southampton. The global company, Blatchford, based at Basingstoke, developed the first commercially available microprocessor controlled prosthetic knee.

Innovation in the use of digital technologies

to improve care and hospital/GP information systems, is a regional strength. University Hospital Southampton achieved national recognition in 2016 as an IT Centre of Excellence and Global Exemplar for Clinical Informatics development. The Kent, Surrey and Sussex AHSN<sup>22</sup> is participating in one of five national ‘test bed’ initiatives, sponsored by NHS England, to assess the potential for new technology in health and social care, and devices have been tested at the 5G Innovation Centre. The University of Southampton will be a core partner in the new Rosalind Franklin Institute<sup>23</sup>.

Technologies to control bacteria and pest threats, and the use of data and connectivity to ensure safe, efficient and sustainable food production are also being exploited in Innovation South by organisations such as the University of Reading’s Agrimetrics, the global life science company, Bayer, Syngenta, a global agribusiness, NIAB-EMR, an internationally-significant centre for fruit research, and the Pirbright Institute, a world leading centre of research excellence in virus diseases of farm animals and animal/human virus transfer, one of eight National Institutes of Bioscience.

### ***Strengths in Digital Enabling Technologies in Advanced Engineering***

The South has high-value, innovation-intensive, engineering. Its advanced engineering capabilities are at the centre of the UK’s defence and aerospace sector, where the UK has a strong comparative advantage.

World-class and outstanding research strengths in Advanced Engineering go deep and wide across the region. In general engineering, Southampton university is the UK’s highest ranked university by research power. It also comes top for research power in electrical and electronic engineering, metallurgy and materials. The University of Surrey is second. Five Innovation South universities are ranked in the top 20 nationally in relevant research areas (Greenwich, Portsmouth, Southampton, Surrey and Sussex). Four more are in the top 30<sup>24</sup>. Innovation South is the chosen base for several major engineering corporates. There are

<sup>18</sup>See case study at Box 6-4

<sup>19</sup>Official South East data do not reflect Dorset. These statistics do include the rest of Innovation South, plus Oxfordshire, Bucks and Milton Keynes

<sup>20</sup>UK Medical Technology Sector Strength & Opportunity 2015 compiled by UK Govt

<sup>21</sup>Office for Life Sciences (2016), Strength and Opportunity 2016: The landscape of the medical technology and biopharmaceutical sectors in the UK database estimates 430, which compares with around 260 in Oxfordshire. The University of Southampton Institute for Life Sciences counted 557.

<sup>22</sup>Academic Health Science Network

<sup>23</sup><https://www.epsrc.ac.uk/newsevents/news/rosalindrfranklininstitute/>

<sup>24</sup>More details in 7.11 of main Audit report



many aerospace & defence companies around Farnborough. Ricardo, in Shoreham supplies the McLaren Formula One team, based in Woking<sup>25</sup> and there is an array of specialist engineering SMEs using Digital Enabling Technologies. At Bournemouth Aviation Park, for example, there is a concentration of aerospace and advanced engineering firms, including Cobham, Meggitt and Magellan Aerospace.

Advanced engineering is increasingly dependent on the use of digital technologies to maintain competitiveness in the global marketplace. The South's strengths in engineering research are closely connected with, and regularly inseparable from, strengths in Digital Enabling Technologies. For example, Innovation South research

organisations are at the cutting edge of the revolution in transport underpinned by the introduction of connected and automated vehicle technologies. TRL (the UK's Transport Research Laboratory) based at Wokingham is examining how automated vehicles will improve transport systems. Thatcham Research, located near Newbury, is the motor insurance automotive research centre, and engaged with manufacturers (particularly Volvo) in developing standards for automated vehicle safety, operation and repair. Ricardo plc, has strengths in systems for autonomous vehicles, through Ricardo Agent Drive, in simulation software to test complex driving situations for autonomous road vehicles.

## 4. LOOKING FORWARD: GROWTH OPPORTUNITIES, CHALLENGES, GAPS – AND AMBITIONS/PROPOSALS

The commercial application of Digital Enabling Technologies is the key to innovation and future success. It is also clear, from the results of this Audit, these technologies and their application are a specialism for Innovation South, putting the region in an excellent position to support national growth, global competitiveness and to step up to economic challenges ahead.

The SIA highlighted five areas where the potential of this substantial region could be improved, released and maximised. In all cases, these reflect specific elements of the region's scientific specialisms and innovation assets coupled with its distinctive economic character and potential:

### OPPORTUNITY 1

### KNOWLEDGE-TO-MARKET ACCELERATOR



Enhancing collaboration between business, industry, universities, & other research expertise to maximise the commercial application of digital enabling technologies and ensure Innovation South is among global leaders in innovation in the digital, marine, health and life science and advanced engineering sectors.

### OPPORTUNITY 2

### LINKING INNOVATION HOTSPOTS

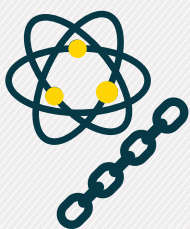


Complementing the first opportunity by enhancing, replicating and expanding the South's excellent "innovation hotspots" (e.g. SETSquared, Wired Sussex and SinC) to develop a more powerful innovation network across the South driving new growth, underpinned by digital enabling technologies.

<sup>25</sup>See Case studies of Ricardo (Box 7-1) and McClaren (Box 7-4) in main report

### OPPORTUNITY 3

### QUANTUM SUPPLY CHAIN INITIATIVE



Helping to build capacity and presence in the development of products using quantum technology in readiness for significant commercial demand. This project will not only improve the supply chain for current research into quantum technologies, but will also develop the industrial capacity needed to support the production of the first quantum products once the technologies are market-ready. The strength of defence-related activities in the region will provide an important foundation for this project.

### OPPORTUNITY 4

### DEVELOPING SME ENGAGEMENT WITH THE 5G INNOVATION CENTRE



Building the capacity and reach of the 5GIC even further, unlocking a new generation of high growth digital businesses in the South and other UK regions, fit for a global competitive market. This opportunity complements 1 & 2, and extends these facilities to SMEs and companies across the South and in other UK regions.

### OPPORTUNITY 5

### ADVANCED & SPECIALIST SKILLS IN DIGITAL TECHNOLOGIES



Securing a supply of high calibre digital talent which will be critical to realising the significant growth potential of applying digital enabling technologies. Fresh thinking is required to address the needs and responsibilities of employers, and ensure competition between providers does not frustrate the end goal. This project will champion and promote career opportunities linked with digital enabling technologies, provide a clearer skills evidence base which can be used by industry bodies, universities and further education, and offer a brokerage service, linking SMEs with new entrants to industry from the region's universities and further education colleges.

## 5. NEW PARTNERSHIPS IN INNOVATION AND GROWTH

• “Without the SIA process, I wouldn't have been aware of the capabilities that Universities in the Southern area have around our key themes. Even the diverse location of the meetings, highlighted key strategic themes (e.g. 5G Innovation Centre in Guildford) that other groups had that we might be able to use. I have been invited to Royal Holloway to visit the Cyber/Big Data department, as a direct result of using SIA in a networking capacity. This could foster future work or collaboration between Industry and Academia”  
• Matt Albans, BAE Systems

Conducting this Science & Innovation Audit has presented a great challenge, but an even greater opportunity, to unite this, extremely large, area of Southern England for the first time around a single endeavour and achieve results in just a few months. There are many conclusions to draw, but one message prevails: **there is huge potential for Innovation South to be greater than the sum of its parts.** The comments below speak for themselves. As of June 2017 a series of meetings have taken place with BEIS, regional LEPs and the Innovation Strategic Steering Group to discuss a) developing the profile of the Innovation South region and b)

implementing the opportunities identified by the SIA . There is clear support and ambition to do both. Next steps include involving all these stakeholders in decisions about geography, delivery and funding going forward.

Innovation South has initiated early conversations with other SIAs about potential partnerships: Leeds on Med Tech, Glasgow on Quantum, and Oxfordshire on transformative technologies. South East LEP has a direct interest in two Audits: East of England and Innovation South. These linkages are set out in more detail in Annex E of the report.

- *“Representing TRL in the development of the SIA has been excellent both in terms of discovering the innovative activities taking place across the region but also being able to share our thought-leading research to create the future of transport. Our work is about producing a transport system that is safer, cleaner and more effective. Increasingly, this requires an in-depth understanding of transport as one part of a complex, interdependent set of social, technical, economic, environmental, communications and energy systems. To be able to forge connections with organisations working in the Innovation South region across these sectors has been excellent and enables collaboration that delivers better outcomes for transport and for the UK”* Dr Nick Reed, Academy Director, TRL

*“As a direct result of new introductions during the SIA I am working with a Consultant Surgeon at the University Hospital of Southampton to explore how Enterprise M3 LEP and the hospital can support significant growth in high level digital and technology skills”* Sue Littlemore, Enterprise M3 LEP

- *“The SIA has proved to be a great forum to bring together various leading initiatives within the region...the SIA has given [impetus] to the concept behind the formation of a Satellite Innovation Hub to be based in Portsmouth as a joint initiative between Airbus, Portsmouth University and the 5G Innovation Centre”* Keith Robson, CEO, 5GIC, University of Surrey

*“A couple of the universities reached out to us for potential engagement with their apprentice scheme, for a possible hackathon and the third for a contact for Amex cyber security”* Jaime K Lee Choon, Amex

- *“I’ve made valuable new contacts in BAE and Airbus which I expect to take forward. I’ve also been able to discuss the SIA activity with senior contacts in Thales offline, who are involved in maximising their SME supply chain. I discussed the potential collaborative outcome of the report with them and they were insistent this is going to be of value and reflects a broader issue that Primes have. It has been very useful from a Growth Hub perspective to make new contacts within the universities, particularly Royal Holloway...TRL...and Portsmouth/SetSquared...”* Mel Redding, JuMelia Ltd. & Enterprise M3 Growth Hub Champion

*“I think that in general the workshop Digital Enabling Technologies is quite effective in terms of knowing the Government is working very hard on collecting evidence of the key assets in the region and in return hopefully more investment/opportunities will be brought to the region, which I personally wasn’t aware of before the workshop”* Dr Taihai Chen, Director & IC Design Engineer, AccelerComm Ltd, Workshop attendee

- *“As a University we are very keen to follow up on the findings of the audit and to provide leadership and support in delivering digital enabling technologies to allow further impact in the region through the four industry sectors identified, as well as more broadly... My engagement with the SIA process has also allowed me to see more clearly how the Southern region benefits from a particularly strong and diverse capability in digital technologies, supported by a wide range of higher education institutions and being exploited by companies ranging in scale from the micro-start-ups to multinationals across several key industry sectors. It has been a great pleasure to be involved and I look forward to implementation of the recommendations from the audit for the benefit of the South and the UK more widely”* Professor Mark Spearing, Vice President (Research & Enterprise), University of Southampton