Satellite Applications

Innovating for a better world, empowered by satellites
The Satellite Applications Catapult was established in May 2013 as an independent innovation and technology company, created to drive economic growth through the development of satellite applications. We help organisations make use of and benefit from satellite technologies, and bring together multi-disciplinary teams to generate ideas and solutions in an open innovation environment.

We are one of a network of centres established by the Technology Strategy Board to accelerate the take-up of emerging technologies and drive economic growth. As a not-for-profit company, we provide facilities, platforms and expert knowledge to enable the translation of ideas from concept to market.
Mission and Vision

Since our launch in 2013, the Satellite Applications Catapult has made significant progress. We’ve built a first-class team, established new facilities, and started delivering our first services. We have also updated our plans and strategy to maintain alignment with our ever-changing market, and we have revised our Mission and Vision statements to clearly articulate our direction and ambition. These are now defined as follows:

Mission

“To innovate for a better world, empowered by satellites.”

Vision

“To be a world-leading technology and innovation company, helping businesses of all sizes to realise the potential from space. By embracing a pioneering, agile, collaborative and entrepreneurial spirit, we create valued partnerships to deliver game-changing results.”

Innovation

The Catapult exists to inspire others to innovate and support the development of new commercial products and services. Recent innovations are offering opportunities for SMEs and private enterprise like never before; the cost of access to space, new low-cost satellite constellations, improved usability, accessibility and timeliness of data. These opportunities require new people to engage with the sector to capitalise and develop new businesses and ways of working.

We are already helping many organisations address their challenges and capitalise on the opportunities, to speed up the emergence of entrepreneurs and new business models, thereby increasing innovation and economic growth.

In addition, we are supporting the National Space Academy in its aim to use space technologies to inspire young people to consider careers in science and engineering. These are our potential innovators and entrepreneurs of the future.
Collaborative working is at the heart of our ethos. Building upon our vision to support UK businesses by accelerating the growth of satellite applications, we are working to exploit the innovation potential in the UK’s industrial and academic communities. This is being achieved by acting as a focal point where small and medium enterprises, large industry, and end-users collaborate and work with researchers to challenge barriers, explore and develop new ideas, and bring these to commercial reality.

Through this collaborative approach, we are forging a bridge between the space technology and applications sectors, promoting open innovation and partnership, and creating growth for the economy. Our work will help ensure the UK gains a larger slice of the global space sector, predicted to be worth £400 billion by 2030.

Working with Industry

Businesses face many challenges when working within the space sector, not least the “valleys of death” represented in the diagram below: The failure to commercialise, and the failure to exploit satellite technologies due to their unique challenges. At the Catapult, we can help businesses bridge these valleys, and create success where others have failed.

We achieve this by providing services and facilities that very few organisations can afford on their own. We provide access to technology platforms, new markets, new supply chains and business support services to help the development of new applications with significant commercial potential. We can also stimulate demand by showcasing the possibilities satellite applications and technologies can offer.
Working with Academia and Research Institutes

The Catapult is already helping universities and research institutes to accelerate the impact of their research outputs, and scale up/industrialise onto “production scale” equipment. We also work to increase interaction between industry and researchers through:

- Partnering in collaborative projects through use of their expertise and facilities
- Brokering partnerships by introducing industry to relevant work being undertaken by researchers
- Signposting industry to relevant facilities and expertise
- Identifying novel areas that have significant commercialisation opportunities – including “horizon scanning”
- Increasing opportunities for collaboration, by helping to articulate the potential economic impact of their R&D activity.

Working with SMEs

The Catapult supports SMEs and start-up organisations at all stages of their development. We have a dedicated business support team that tailors its broad capabilities to the specific needs for each SME.

We provide different levels of support depending upon requirements and relevance to our objectives.

Following an initial assessment, companies are engaged through either one of our SME Champion, Business Mentor, or Venture Accelerator programmes.

We also offer networking opportunities with key partners. Our network stretches across both the upstream and downstream space sector, government organisations, trade associations, clusters, academia, legal and finance – enabling access to the UK space and downstream customer communities.
Business Support

The Catapult supports businesses of all sizes and maturity, through a range of enabling services, either delivered by the Catapult itself or through third party organisations. Our key offerings include:

- **Expertise and access to facilities** – for early-stage companies with high growth potential, we provide technical and business support to help develop ideas into viable trading businesses.

- **Workspace** – we offer office space, allowing companies to be situated with other businesses going through the same development curve and have direct access to Catapult services and expertise.

- **Practical help from experienced entrepreneurs and other business support providers** – we have a vibrant group of mentors who, as seasoned entrepreneurs and industry experts, can provide you with the knowledge and know-how needed to get a company off the ground and help grow it into a thriving, profitable business.

- **Support to funding and finance** – we have strong links to the UK’s business angel networks, venture capital community, and other funding agents. Our Investment Readiness Training arms companies with a wealth of knowledge on how to make their company attractive to a funder/investor.

Venture Accelerator Programme

Our Venture Accelerator programme is designed to help develop scalable businesses that will contribute to the growth of the UK space industry.

The programme is driven by our Business Innovation Team, offering a unique blend of entrepreneurs and designers. The team can leverage our sector and technological expertise, as well as the significant extended network of contacts that might prove useful in growing your business.

Each programme runs for a three-month period and focuses on rapid prototyping, testing assumptions and working quickly to develop a scalable and investable business model. The programme is tailored specifically to each company’s needs and continues to be developed throughout the process.

Over the three-month period, you will get the opportunity to work with the full breadth of our capabilities resident in the Catapult at Harwell. This includes opportunities to work with our developers and designers to build a prototype to support your business case and move towards creating a minimum viable product.

If applicable, companies will have the opportunity to pitch to a panel of real investors.
“Innovation has nothing to do with how many R&D dollars you have. When Apple came up with the Mac, IBM was spending at least 100 times more on R&D. It’s not about money. It’s about the people you have, how you’re led, and how much you get it.”

Steve Jobs

Funding

The Catapult itself does not award grants.

We do help businesses find support for R&D projects which aim to develop satellite applications. We work closely with all major R&D funding organisations, including UK Space Agency, Technology Strategy Board, European Commission (Horizon 2020) and European Space Agency, and always have knowledge of opportunities available at any given time. We can often help put together a complete programme of activities to support your project, including assistance with grant application, if required.

We also work with private investors, including Angel Networks, Venture Capital and Corporate Venturing, which in many cases can work alongside the public sector grant bodies to generate more investment leverage.

All this is provided by our Business Support Team, which can provide more information on request.

Intellectual Property

Appropriate protection of Intellectual Property is vital for all businesses. We will help businesses develop an Intellectual Property Rights (IPR) strategy that protects their business, and maximises opportunity for exploitation and business growth. All our own IP agreements are developed with those objectives in mind.

Our IPR policy is very straightforward. Our general principles are to:

- Ensure that IPR is appropriately protected with a view to promoting industrial exploitation
- Engender trust between collaborating partners
- Demystify IPR and its protection – in particular for SMEs.
The Catapult provides cutting-edge facilities that will help increase the UK’s international competitiveness and provide a platform for accelerating the development of new satellites and applications.

Our world-leading state-of-the-art facilities enable users to process vast arrays of satellite data in a new and innovative way, and allow organisations to prototype, develop, integrate, test, demonstrate and conduct early stage trials of new products, services and applications. They include:

- **Videowall** – a high impact 28 screen display videowall (7.2m x 2.3m) providing 30 megapixel multi-panel display, and the opportunity to see EO and science data in high definition. The wall offers a unique capability for supporting innovation, creativity and outreach in science and technology.

- **Spark Centre** – a unique facility designed to offer a flexible environment for identifying the ways in which space data and services can address real business issues. We organise ‘Spark’ sessions that are carefully orchestrated to bring together members from different organisations to discuss key challenges to their sector.

- **Operations Centre** – provides the UK with its own ground control capability – a unique step in giving the UK a national capability. It is an end-to-end centre for cost-effective satellite flight operations and payload data processing and exploitation services.

- **Public Regulated Service (PRS)** – in collaboration with the UK Space Agency and industry. We are providing the UK’s first PRS-encrypted positioning capability. PRS is one of the key Galileo services which offers a higher level of integrity and resilience for sensitive applications and government use. PRS will enable governments to respond more effectively to the increasing threats to satellite navigation systems from deliberate or inadvertent interference which could undermine crucial government functions or national services.

- **3D HD Dual Projection Visualisation Facility** – equipped with state-of-the-art hardware and software for visualising and exploring large 2D and 3D datasets. This includes virtual environments,
engineering models, and scientific information, ranging from EO and climate data to 3D models of complex molecules. The facility seats 6-34 people (depending on room design) and provides complementary capability to the videowall.

- **The Climate & Environmental Monitoring from Space (CEMS) Facility** – a unique EO facility, purpose-built to offer space-based climate change and EO data and services. CEMS is designed to give users access to extensive data holdings and a range of applications, tools and services that help them analyse this data more effectively. To facilitate this, CEMS provides businesses with a virtualised environment, allowing easy access to CEMS data and various associated services.

- **SatComms Lab** – a new facility for applications developers and systems integrators who need to support a variety of different satellite communications services and hardware. The SatComms Lab consists of Mobile Satellite Service (MSS) and Fixed Satellite Services (FSS) satcomms hardware running satcomms services from several satellite operators. Potential types of engagement include:
  - Education and advice
  - Providing equipment and air time
  - Assisting with systems integration
  - Running test campaigns

- **Third Party Facilities** – to support our customers, we will aim to negotiate access to existing facilities where a need exists. Where modification to an existing facility is required, in cooperation with the owner we will look to upgrade the existing facility. Where a new facility is required, we may work with an industrial or institutional partner to build the facility.

- **Security & Resilience Centre (SRC)** – a secure data and operations lab offering UK organisations a staging ground for prototyping, development, integration, testing, demonstration and early stage trials for satellite products, services and applications. It provides a flexible, private and secure work-space and infrastructure for maintaining data, undertaking work, and showcasing capability.

For more information regarding our facilities, please contact info@sa.catapult.org.uk.
The Catapult acts as a bridge between industry, universities and other research institutes, to align activities and collaborate to meet shared objectives. As part of this activity, we are developing strategic partnerships – Centres of Excellence – as part of our Regional Engagement Initiative.

These Centres of Excellence will provide a co-ordinated Catapult presence, acting as representatives and ambassadors for us in their local region or market sector. They will actively develop links to local communities, acting as a conduit and enabler to Harwell and the rest of the Catapult network.

We anticipate that these centres will work with us across a number of areas, developing a shared vision and framework for future collaborative activities. The centres will initiate a jointly developed programme of business-led research and development activities, funded through a variety of sources, advise and influence our activities within particular market/business sectors and/or technologies, and deliver our objectives outside Harwell.

Inward Investment

The Catapult works closely with overseas companies who wish to establish operations in the UK, and we have already helped several international businesses set themselves up in and around Harwell. In support of this, we work closely with the UK Space Agency, UK Trade and Investment, our Centres of Excellence and other national and local partners to develop the space cluster and community at the Harwell Space Gateway, and provide a focal point for inward investment.

Export

Strong export growth in space-enabled applications and services is fundamental to the new IGS Strategy and our own mission. We play an important role in supporting the UK ambition to grow its exports. Throughout 2014, we will increase our international engagement for the benefit of the community. We will work with UKTI to find overseas partners willing to provide export potential for the UK supply chain, as well as inward investment into programmes and resulting commercial products.

We have already had some significant international engagements with opportunities from or visits to Chile, Columbia, USA and Europe, and supported numerous inward investment opportunities which are
“Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved.”

Mattie Stepanek

seeing the Harwell site becoming a real space cluster that can lead the UK to excel through the competition and collaboration that this will bring. This ambition is underpinned by the Space Technology Roadmaps which will enable the sector to prioritise those enabling technologies that will deliver the most benefit in the target high growth markets and therefore enhance the UK’s competitive edge and export opportunities.

The Catapult Network

The Catapult network was created by the Technology Strategy Board to help support innovation by UK business. Each Catapult is focused on an area which has already been identified as strategically important for the UK, and has a large global market potential.

There are currently seven Catapult centres – Satellite Applications; High Value Manufacturing; Cell Therapy; Offshore Renewable Energy; Connected Digital Economy; Future Cities; and Transport Systems.

Catapults provide a critical mass of expertise in areas such as core technology domain, manufacturing processes, regulatory approval supply chain development. Many offer access to equipment and specialist facilities to test ideas in a live environment. All use the power of people and organisations working closely together to unlock opportunity and speed innovative products and services towards commercial reality.

Catapults are already working together on increasing the reach of the network and providing customers with further services. They add a new dimension to complement existing research and development work, providing businesses with the next stepping-stone on the journey to commercialisation.

The Technology Strategy Board has recently announced two further Catapults – Energy Systems and Precision Medicine.

About the Technology Strategy Board

The Technology Strategy Board is the UK’s innovation agency; its goal is to accelerate economic growth by stimulating and supporting business-led innovation. Sponsored by the Department for Business, Innovation and Skills (BIS), the Technology Strategy Board brings together business, research and the public sector, supporting and accelerating the development of innovative products and services to meet market needs, tackle major societal challenges, and help build the future economy.
Satellite Applications Catapult Ltd is an independent technology and innovation company. It is one of a network of elite centres established by the Technology Strategy Board to accelerate the take up of emerging technologies and drive economic growth. The Satellite Applications Catapult is a company limited by guarantee, registered in England and Wales. Company Registration Number 07964746. Registered office: Electron Building, Fermi Avenue, Harwell Oxford, Didcot, Oxfordshire, OX11 0QR, UK.

Electron Building
Fermi Avenue
Harwell Oxford
Didcot
Oxfordshire, OX11 0QR

For more information:

T: +44 (0)1235 567 999
W: sa.catapult.org.uk
E: info@sa.catapult.org.uk
@SatAppsCatapult