

Supplier	Company Profile	Services Offered
<p>Protolaunch</p>	<p>Protolaunch is a research-intensive space company that specialises in the development of chemical thrusters and propulsion subsystem components. Protolaunch is focused on 'green' propulsion and commercialising alternatives to hydrazine systems that improve in-space mobility capabilities.</p> <p>Established in February 2019, Protolaunch joined the original Westcott Incubation program at its inception and has since grown at Westcott to now employ a team of seven highly experienced multi-disciplinary engineers split across two locations at the Venture Park. The company operates a sea-level chemical propulsion test facility at E-Site as well as co-located office and lab facilities in Unit 330.</p> <p>In late 2023 Protolaunch secured external investment to diversify the consultancy arm of the business and commercialise an in-house line of propulsion systems, utilising oxygen/hydrogen and oxygen/methane in the thrust classes of 1N, 20N & 500N; the development and qualification of which is progressing at pace.</p> <p>Protolaunch has built a reputation for technical excellence in the field of chemical propulsion with a track record of rapid project delivery.</p> <p>Protolaunch served as Chair of the UK Space Propulsion Working Group from 2021-2023 and has delivered propulsion-related technology development contracts for commercial customers including Space Forge, Nammo, Astroscale, Benchmark Space Systems, Lumi Space, Astron Space Systems and The University of Sheffield</p> <p>https://www.protolaunch.co.uk</p>	<p>Technical Support, Design & Consultancy Services</p> <p>Tailored to the specific customer or project needs, Protolaunch can provide bespoke technical engineering support on an ad hoc basis. This could include technical workshops, or direct collaborative engineering effort. This service provides access to Protolaunch expertise and capabilities and could cover areas including:</p> <ul style="list-style-type: none"> • Thruster design • Test campaign design • Thermodynamic and flow modelling • Mechanical design and CAD • Prototyping • Space systems architecture • Electronics design and/or manufacture • Ground Support Equipment and Feed System design <p>Cold Flow Testing and Characterisation</p> <p>Our Cold Flow Testing services are designed to simulate and analyse the behaviour of fluid systems under non-combustive conditions. This applies directly to propulsion systems (e.g. characterising injector pressure drops) but also more broadly to wider fluid control system (e.g. pump characterisation or testing valve discharge coefficients). This crucial step in the development process helps identify potential issues and optimise performance before proceeding to more expensive or higher risk tests.</p> <p>Key Features:</p> <ul style="list-style-type: none"> • Comprehensive Data Collection: We employ precision sensors and data acquisition systems to capture detailed flow dynamics, pressure distributions / drops, and temperature variations. • Range of Test Fluids: As standard we offer cold flow testing with: Water, Cryogenic Liquid Nitrogen, Nitrous Oxide, Nitrogen Gas, Helium Gas, Oxygen Gas or Hydrogen Gas. Other fluids are possible after discussion with the Protolaunch technical team. • Safety and Compliance: Rigorous safety protocols and compliance with industry standards to ensure secure and controlled testing environments.

		<p>Propulsion Testing Our Propulsion Testing services provide critical insights into the real-world performance of propulsion systems.</p> <p>Key Features:</p> <ul style="list-style-type: none"> • Advanced Test Infrastructure: Equipped with state-of-the-art test stands, control rooms, and safety systems to conduct reliable and precise hot-fire tests. • Comprehensive Data Acquisition: High-speed data acquisition systems capture parameters such as thrust, pressure, temperature, and flow rates. • Versatile Test Capabilities: Capable of testing a variety of propulsion systems, including liquid, solid and hybrid engines across different scales and thrust levels. • Safety and Compliance: Adherence to stringent safety protocols and industry standards to ensure secure testing environments and the protection of personnel and equipment.
<p>Plastron</p>	<p>Plastron Training has been providing dedicated training to the space sector since 2021, when it set up a training partnership, the Space Industry Centre for Excellence (SiC4E), with European Astrotech Ltd. This partnership leverages combined expertise to provide hybrid, practical training in Space Engineering Test, Launch Site Operations, Launch Campaign ConOps and Hazardous Handling Best Practice. They are also experienced in multichannel service development. Training course participants include Further Education (250+), European Primes (10), Spaceflight Regulator (10).</p> <p>The team work concurrently as engineering experts in the space sector in the UK and internationally. In 2024, Plastron secured a major grant from the UK Space Agency to develop an advanced training programme in Engineering Test Best Practices. This will be developed and delivered in partnership with Latitude 51 Space Systems, the Space Skills Alliance and Plymouth & South Devon Freeport. The augmentation of SiC4E increases the skills and</p>	<p>The combination of expertise in Plastron and the Space Industry Centre for Excellence ensures the following areas of expert business and technical support are available from our extended team:</p> <p>Training:</p> <ul style="list-style-type: none"> • Hazardous & safety engineering • Developing mission Concept of Operations • Launch campaign planning • Engineering test best practice for new entrants • Risk management of space hardware development • L4-L7 and early careers onboarding for space sector roles • Start-up staff onboarding for space sector roles • Skills transition onboarding for space sector roles • In orbit & Space science planning <p>Technical design & advisory:</p> <ul style="list-style-type: none"> • Engineering Mission planning for R&D, product development and launch • Safety-led design of space hardware • Safety-led design and evaluation of test environments & test stands

	<p>capabilities in terms of what types of business support are available.</p> <p>Plastron UK has been providing leading advisory and product design support to the UK Space sector since 2020. Leaning on their knowledge and experience in launch operations, they have designed advanced engineering environments for space hardware handling for UK Launch operators and advise on complex supply chain design.</p> <p>Plastron - Space for the Next Generation</p>	<ul style="list-style-type: none"> • Digital engineering platform design
<p>Airborne Engineering</p>	<p>Airborne Engineering Limited (AEL) provides design and test services to the aerospace industry and academia, with a focus on chemical propulsion research. We operate two state of the art propulsion test facilities, supporting rocket engines using a variety of liquid and gaseous propellants. We have designed bespoke test rigs and control systems, tested injector and nozzle geometries, and evaluated the performance of new propellants and materials. Our customers rely on us to deliver successful cutting edge test programmes on time and on budget.</p> <p>Our J1 test bay can accommodate a wide range of engines and propellants, including as standard: liquid oxygen, liquid methane, gaseous methane, liquid nitrogen, nitrous oxide, alcohols and hydrocarbons (e.g. kerosene). Our J2 test bay has gaseous feed systems for air breathing rocket engine research, flow testing or fundamental combustion research. This facility includes a high flow rate air and hydrogen supply, water cooling, water spray sound suppression, and automatic metering valves on all propellant lines.</p> <p>AEL can also offer pressure testing and heat exchanger testing. We also develop custom ground support equipment (electrical and propellant loading), fluid handling components or rocket engines to meet specific customer needs.</p>	<p>Propulsion test and evaluation</p> <p>At our Westcott facility, we have a well-equipped on site mechanical workshop and instrumentation lab and two rocket engine test bays covering a variety of propellants and thrust ratings up to 40kN. We are able to test at higher thrust levels elsewhere on the Westcott site if required. Each test bay has extensive data acquisition and control support, which can be extended for specific experimental requirements as necessary. Raw data and automated reports are available immediately after a firing is complete, allowing rapid turnaround and efficient test schedules.</p> <p>The J1 test bay can accommodate a wide range of engines and propellants, including as standard: liquid oxygen, liquid methane, gaseous methane, liquid nitrogen, nitrous oxide, alcohols and hydrocarbons (e.g. kerosene). Its modular structure allows us to quickly reconfigure the test bay to support different customer requirements, including hybrid engines and speciality propellants.</p> <p>Our J2 test bay has a purpose-built high-pressure air flow system for air breathing rocket engine research. This facility includes a high flow rate air and hydrogen supply, water cooling, water spray sound suppression, and automatic metering valves on all propellant lines. Our custom designed metering valves are digitally controlled and can either follow a specific mass flow profile to better than 1% accuracy or can be set to allow closed loop control of engine operating conditions such as chamber pressure. While J2 is predominantly used for air breathing rocket work and gaseous propellants, it</p>

	<p>Airborne Engineering Ltd (ael.co.uk)</p>	<p>can also be configured for other types of rocket engine, hot gas generation for heat exchanger research, and hypersonic wind tunnel testing.</p> <p>Whilst our facilities are usually used for testing rocket engines or subsystems, they may also be used for other applications such as flow testing, pressure testing and heat exchanger testing (either with hot gas or gas cooled in a liquid nitrogen bath).</p> <p>Custom hardware design AEL regularly design and manufacture custom equipment for the aerospace industry, including:</p> <ul style="list-style-type: none"> • Rocket engines and their components (injectors, combustion chambers etc.) for a variety of customers, for custom applications or proof-of-concept demonstrators • Ground support equipment (GSE) for propellant handling • Pressure regulation panels for use in propellant labs • Electrical ground support equipment (EGSE) for propulsion systems • Data acquisition and control systems • Custom valves for test rigs (high flow rate, throttle control etc.) <p>Skills and experience Our staff have a wide range of engineering, scientific and business experience, having previously worked on projects including stratospheric balloon records, aerodynamic decelerator testing, radio frequency propagation studies, meteorological radar, general aviation and various rocket engine programmes. Our staff have over 100 years combined experience in rocket systems design and testing.</p>
<p>Satellite Applications Catapult</p>	<p>Satellite Applications Catapult Ltd (The Catapult) is one of nine Catapults, uniquely established to transform the UK’s capability for innovation in specific areas and to help drive future economic growth.</p> <p>We help organisations make use of, and benefit from, space technologies, and bring together multi-disciplinary teams to generate ideas and solutions in an open innovation environment.</p>	<p>The Satellite Applications Catapult is uniquely placed to be able to offer a range of facilities at Westcott, including technology support services and business innovation support, using a modular approach.</p> <p>Technical Facilities at Westcott</p>

Many of the programmes run by the Catapult are tailored for business support and acceleration across a wide range of technologies and markets.

The Catapult has delivered highly successful outcomes to SMEs in partnership with Buckinghamshire Local Enterprise Partnership (Bucks LEP), now Buckinghamshire Council (Bucks Council), and is delighted to be able to support the Launchpad scheme to include other contributors within the Westcott environment.

Our Business Innovation team demonstrates success in programmes supporting Innovate UK, the UK Space Agency and the European Space Agency as well as corporate sponsors and consortiums.

[Satellite Applications Catapult - Satellite Applications Catapult](#)

Several Catapult technical facilities based in Westcott may be offered to participants for prototyping and testing purposes, depending on suitability and availability. These are:

Drone Test and Development Centre - This facility offers a secure environment to test and develop drone products and services, including capabilities that support Beyond Visual Line Of Sight (BVLOS), pilot training, and remote flight operations. It provides a safe, real-world environment for companies to test and develop drones, their applications, and their procedures. The facility includes three 300m² hangars dedicated as workshop spaces for UAV companies, with flexible workbench options. The resurfaced 270m runway also offers four dedicated landing pads for vertical, or vertical to horizontal take-off.

Additive Manufacturing - We offer a range of additive manufacturing capabilities to companies looking to build complex, strong geometries and lightweight parts in a cost-effective way. The 3D printing equipment includes an LCD Resin 3D printer, a Stereolithography (SLA) Resin 3D printer, a FDM 3D Printer and the MetalFab1 3D printer.

MetalFAB1 - The specific technology of the MetalFAB is Laser Powder Bed Fusion (LPBF). It has a large build platform with net build envelope of 420 x 420 x 400 mm. The material that is currently being used is Inconel 718 with a layer thickness of 40 µm. It has 2 lasers of 500W and has an accuracy of ~0.05mm. It is possible to remotely access and monitor the printing processes with continuous video feed.

In-Orbit Servicing and Manufacturing (IOSM) Yard – This facility provides users with a dynamic platform to validate their technologies prior to launch using robotic equipment to simulate a microgravity environment. One robot is fixed to the floor, and the second robot is mounted on a 17m travel track, allowing for the simulation of approach and docking manoeuvres with large payloads (up to 120 kg). With tracking systems and advanced motion control, the system can achieve high levels of accuracy and repeatability, allowing representative mission testing to be carried out. Technologies that could be validated on the system include guidance sensors & software, docking mechanisms, and servicing robots.

Future Networks Development Centre – This facility provides access to testing and developing new services and products by accessing the latest wireless applications service equipment and satellite data. It serves as a test centre for all ITU Primitives, providing total standardised COTS testing facilities. We also offer 5G test and development Ofcom licences from 700MHz to 4200MHz and satellite and terrestrial capabilities such as a fully virtualized 5G core and state-of-the-art O-RAN deployments.

Modular Support Package

Our proposal consists of a modular set of workshops that can scale up or down depending on the maturity and requirements of the participants. These can be run as stand alone, individual workshops or as a series. Whilst these can be delivered remotely, previous experience suggests in-person sessions yield better collaboration and outcome. With this in mind, all modular session pricing includes the cost of a technology enabled meeting room in Westcott. The module descriptions are follows:

1. **Understanding** – this session focusses on an initial company pitch, the definition of the problem they aim to solve, what makes them unique and what the current market looks like.
2. **Technical IP** – using remote collaborative tools such as Miro, we take a deep dive into the proposition and create a technical road map, looking at value chains, recommended markets, growth and development areas.
3. **Business / Go-to -Market** – exploring potential business models by identifying the right stakeholders, target market, buyer personas, communication strategies and competitive landscape, to build a comprehensive go-to-market strategy.
4. **Pitch and Present** – helping refine and enable businesses to create and present their pitch deck to get themselves investor ready.
5. **Additional Sessions** – bespoke (optional) 1-2-1 sessions to strengthen and support the operational growth of a business in the areas of accountancy, IP, HR and bids and grants.

		<p>The session durations are indicative and may change due to the needs of the different businesses. The modularity of our approach will allow applicants to combine specialist support from other delivery partners enabling user and provision flexibility and support – e.g. combining propulsion prototyping/testing with Module 4 Pitch and Present to prepare for future funding rounds.</p> <p>Enhanced Consultancy Services The Catapult can provide further add on services that allow us to do a deeper dive into a specific technical, strategic or business growth areas. The provision of these services will depend on the availability of correct expertise or access to facilities. Sessions could include a deeper dive into a specific area of interest and would usually take place over 1 x 2 hour session. These could be added onto other modular sessions or as a standalone piece of work (for a more mature company). In addition, these sessions could compliment support provided by other supply partners in the programme, to enhance the offering.</p> <p>Meeting Rooms and Hot Desk Facilities The Catapult offers a selection of rooms with smart tech to enable on-line meetings and collaborative working. Rooms can be booked on an hourly or daily basis depending on requirements, whilst competitively priced workstations are available to book in advance on a daily pay per use rate</p>
<p>European Astrotech</p>	<p>European Astrotech Ltd provides high quality propellant based chemical and mechanical services in all areas of industry.</p> <p>Our expansive experience in the chemistry of all storable liquid propellants and the engineering of spacecraft propulsion subsystems enables us to support our clients in all aspects of propulsion chemistry and engineering.</p> <p>As part of the Westcott Launchpad initiative, EAL offers a range of services tailored to support startups in the space industry.</p>	<ul style="list-style-type: none"> • Consultation Services: Startups can access consultation on prototyping, testing, and business strategies. These sessions are available either online or in-person, with a minimum of six hours required for initial consultation. • Specific Launch Site Services Consultation: EAL provides consultancy on satellite propellant loading, project management, and site logistics at major launch facilities. • Propellant Analysis & Compatibility Testing: EAL offers its extensive expertise in propellant analysis and material compatibility, which can be used to validate propulsion components. The voucher includes a 96-hour screening test to identify material and propellant incompatibilities.

	European Astrotech European Astrotech	<ul style="list-style-type: none">• Propulsion Testing: Startups can access EAL's hazardous test bays for propulsion component and sub-system testing, supported by experienced engineers.• Surface Treatment: EAL offers surface treatment of propulsion components, ensuring materials meet industry standards, with quick turnaround times.
--	---	---