



Defence and Security
Accelerator



Innovation for a Safer Future

DASA Strategy 2021-2024



Ministry
of Defence



Foreword from the Head of DASA



Anita Friend
Head of DASA



Andy Caldwell
(Interim) Head of DASA
July 2020 to August 2021

“ DASA is here to play its part in keeping our Nation and our people safe. ”

On behalf of Anita Friend and myself, I am pleased to welcome you to Innovation for a Safer Future: DASA Strategy 2021-2024. We are both extremely proud of the staff at the Defence and Security Accelerator (DASA) and the work they have done to put DASA on the map, helping Government find solutions to pressing defence and security challenges by connecting them with the best Innovators across the UK and, increasingly, from abroad.

The concept of an accelerator for UK defence and national security was established in the 2015 Strategic Defence and Security Review (SDSR) leading to DASA's formation. We have recently marked our 4th anniversary. DASA finds and funds exploitable innovation for UK defence and security quickly and effectively while boosting UK prosperity. We are part of the Defence Innovation Directorate in the Ministry of Defence and are co-located with the Defence Science and Technology Laboratory at Porton Down. We are proud to have staff who live and work in every region and nation of the UK. By working locally, supporting and advising innovators of all shapes and sizes, we provide a critical link to pull through innovation to help the Ministry of Defence, Home Office, Department for Transport and other parts of Government keep this country safe by staying ahead of the threats we face.

When DASA was established in 2016, the defence and security situation was challenging and complex. As the Government's Integrated Review – Global Britain in a competitive age (Mar 2021), sets out the picture has continued to evolve

at a frenetic pace with intensifying threats to our way of life, international norms, and our wellbeing. The return of persistent competition between nation states, advances in technology, and the coronavirus pandemic, have accelerated the need for rapid and innovative solutions in defence and security. The recent publication of the Integrated Review¹ and the Defence Command Paper², MOD Science Strategy³, The Defence and Security Industrial Strategy⁴, and the Government Technology Innovation Strategy⁵ amongst others lay out our National resolve to meet those challenges. Together with you, whether you are an innovator, an official, a member of the Police and Emergency Services, or member of the Armed Forces, DASA is here to play its part in keeping our Nation and our people safe.

Anita Friend / Andy Caldwell
(Interim) Head of DASA

¹ <https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy>

² <https://www.gov.uk/government/publications/defence-in-a-competitive-age>

³ <https://www.gov.uk/government/publications/mod-science-and-technology-strategy-2020>

⁴ <https://www.gov.uk/government/publications/defence-and-security-industrial-strategy>

⁵ <https://www.gov.uk/government/publications/the-government-technology-innovation-strategy/the-government-technology-innovation-strategy>

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“ We are living in a time of unprecedented change. Science and technology (S&T) are developing and proliferating faster than ever before and have become new theatres of international competition. New adversaries have emerged, alongside traditional threats, who actively undermine our democracy and society, supported by substantial and rapidly modernising militaries. Terrorist groups and non-state actors can access technologies and weapons far more sophisticated than before. The natural environment is challenging us with a global pandemic and we have reached the tipping point where decisive action on climate change is required.

MOD Science & Technology Strategy

Executive summary

DASA is innovative in developing its service offering; trying new ideas, building on evidence, creating processes and systems that meet the challenges we are aiming to solve, supporting innovators with their ideas, and seeking to accelerate the most promising ones into products and services that transform the defence and security of the UK. **Our refreshed strategy reinforces DASA's position as an exemplar innovation organisation that promotes best practice across Government, and seeks to build on its experience and learning.**

DASA has learnt that by reaching out to innovators across the UK and beyond we can encourage and support the brightest and best to put forward feasible ideas to solve our problems. We have understood that we need to reach innovators who did not realise that they could work within defence and security. We have formed partnerships across industry and academia, leading to the development of clusters, collaborations, and engagements, which seek to bring together the innovators with the policy makers and capability owners to ensure that new ideas can be developed and integrated into service and used by those on the front line. **Our refreshed strategy builds on our learning as we continue to strengthen and broaden our links with innovators seeking out the best innovative ideas.**

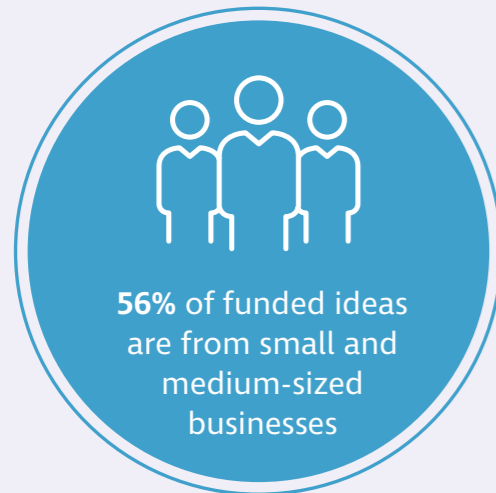
DASA knows the importance of working with our customers across the Ministry of Defence and wider Government, nationally and internationally, to better understand their needs, frame their opportunities into actionable competitions, and support projects as they mature so that each and every innovation has the maximum chance of making a difference to those customers. To that end, we are developing and expanding our teams working directly within the Royal Navy, British Army, Royal Air Force and Strategic Command and their innovation hubs, to provide that bridge from a promising idea to a product ready to enter service. **Our refreshed strategy deepens our collaborations with partners across HM Government aiming at increasing our competition throughput for finding National Security solutions from £40m to £60m per annum.**

DASA acknowledges that business readiness, including commercialisation, is as important as technology readiness in the development of an idea into a solution fit for purpose. **Through our refreshed strategy we will focus effort on increasing the pull through of innovative ideas supporting the exploitation and commercialisation of solutions into capability.** Businesses that show technical promise will be given the opportunity, support and guidance to develop their business and systems readiness, through access to defence and security business support schemes, such as defence innovation loans, and by developing an innovation ideas marketplace for ideas to be brokered with larger organisations in a position to develop and commercialise them. This will be an area of focus for us with a new 'Access to Mentoring and Finance' service.

In addition, DASA knows the importance of measuring and demonstrating its successes. DASA already collates and analyses its management information; we will seek to develop the way we capture and present our data, to show how DASA makes a difference to UK defence and security capability, and UK prosperity over the longer term. We will continue to publish individual success stories, whilst at the same time highlighting the measurable effects we are having on innovation in the UK.

Finally, we realise that maintaining our reputation is key and that this is only possible because we have a great team of people. Through our refreshed strategy, DASA will continue to learn, providing a reliable and professional service to our customers and suppliers alike, and will use that to promote ourselves at events across the UK and beyond, to continue to attract the brightest and the best to help us with our mission.

DASA top facts



Figures from DASA launch to 31 March 2021.

Introduction

The Strategic Defence and Security Review (SDSR) of 2015⁶ announced that a Defence and Security Accelerator (DASA) would be created to “help the private sector, allies and academia turn ideas into innovative equipment and services faster for national security users. It will allow us to identify the best routes to develop specialist, sovereign capabilities, and those products with broader commercial and export potential. This will work closely with Defence and the Security and Resilience Growth Partnerships”. The SDRS made it clear that this was part of the effort to develop technologies through partnership and joint investment to maximise the scope for commercialisation of technologies to encourage economic growth. The Accelerator was described in the glossary as “a Government-backed service designed to help small and medium-sized businesses bring new ideas to market more quickly”. DASA launched in December 2016 as part of the MOD’s Defence Innovation Initiative.

DASA’s vision is for the UK to maintain its strategic advantage through the most innovative defence and security capabilities in the world. DASA works collaboratively with a wide range of Government, industry and academia in order to identify requirements and problem sets, bring together the right people, develop workable solutions rapidly, and support implementation into the hands of end users.

DASA has a very wide remit across all of defence and security, and is open to working with any Technology Readiness Level. DASA is interested in all fields of science and technology, better ways of working, better services, or any way in which defence and security can be made more efficient or more effective. This includes improvements to existing processes, for example by applying methods well established in parallel sectors (incremental innovation) as well as completely novel ideas (disruptive innovation). DASA is open to proposals from anyone, at home or abroad. The breadth of this approach means DASA is able to spot linkages and common areas of interest across defence and security, identifying areas for collaboration and efficiency.

DASA does not have its own funding for innovation, in the way a typical commercial accelerator functions. The operating model is to provide a range of services to military and other National Security organisations, including: the MOD Chief Scientific Advisor (CSA), Defence Innovation Unit (DIU), the Home Office and Department for Transport (in particular the Future Aviation Security Solutions programme, which uses DASA to deliver its

competitions) and, increasingly, Front-Line Commands of the Armed Forces, and the police and security services. DASA does not work in isolation but works in collaboration with a broad range of innovation organisations such as Joint Security and Resilience Centre (JSaRC), the Home Office Accelerated Capability Environment (ACE) and National Security Technology and Innovation Exchange (NSTIx).

DASA has developed the concept of ‘innovation-as-a-service’ by providing a wide range of useful services to help defence and security customers to access innovative ideas, products and services more quickly, and brokering relationships between end-users and industry/academia. DASA has particularly focused on reaching out widely across the UK, beyond the traditional defence and security sectors, and building new and connecting to existing networks such as Local Enterprise Partnerships.

DASA is a service provider offering:

- **A UK-wide network of Innovation Partners** with excellent links to Small and Medium Enterprises (SMEs)⁷, large businesses and academia as well as broad technical knowledge of defence and security needs;
- **A complete innovation finding service** providing bespoke themed competitions, hackathons, market explorations and bespoke services based on customer requirements;
- **The Open Call for Innovation** is open to innovators with good ideas for defence and security;
- **Project management** including placing commercial contracts and accessing technical experts;
- **A team of DASA Partners and exploitation managers** who work closely with defence and security customers to understand their problems and how to exploit potential solutions;
- **Collaboration events**, roundtables and other bespoke events;
- **Investor events** to broker meetings between Small and Medium Enterprises (SMEs⁷) and private financiers;
- **An online innovation portal** providing a submissions service.

⁶ <https://www.gov.uk/government/publications/national-security-strategy-and-strategic-defence-and-security-review-2015>, paragraph. 6.45.

⁷ SMEs when referenced in this strategy includes micro businesses (less than 10 employees) and sole traders.

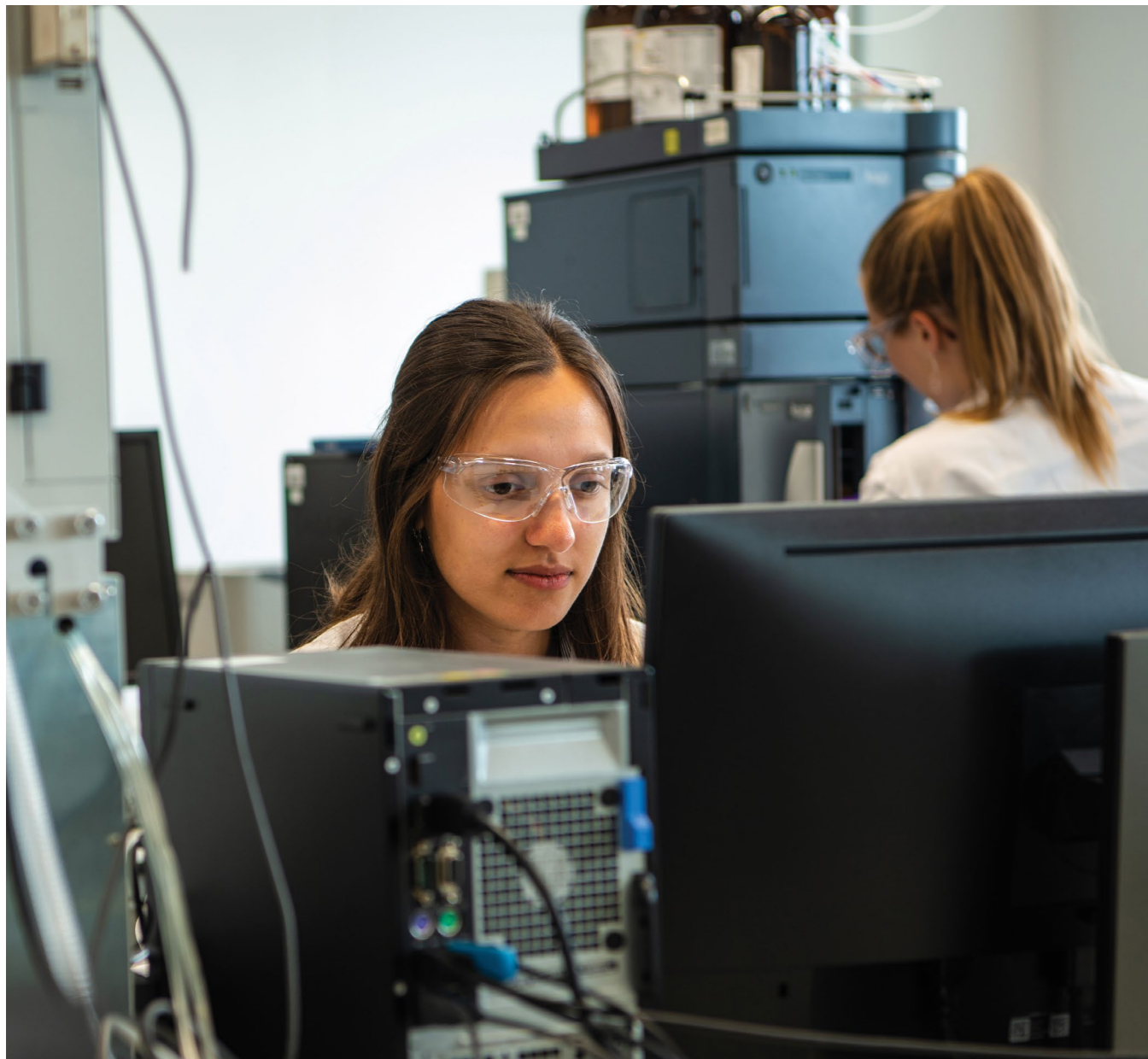
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From launch to the end March 2021, DASA has received over 4,000 proposals from nearly 1,700 different organisations (63% Small and Medium-Sized Enterprises). Of note, 40% of the organisations were new to defence and/or security, demonstrating how we have extended our reach beyond the traditional supplier base. In terms of throughput, DASA has funded 843 innovative proposals worth £136.5m from 379 organisations (56% from SMEs) thus helping to meet the MOD's targets to bring more SMEs into the supply chain.

DASA has so far delivered 53 themed competitions including two with international partners (US and Australia), and for: the MOD CSA, Defence Innovation Unit, the Home Office (Improving Crowd Resilience and Novel Chemistry) as well as in collaboration between the Home Office and

the Department for Transport (aviation security), Policing (less lethal weapons), the Army (wearable technologies, and how to stop tanks) the Royal Navy (solutions to personnel tracking on HMS Queen Elizabeth) and the RAF (bioprocessing waste fuels). We have partnered with Defence Digital and the Metropolitan Police Service to run three hackathons, and run 28 cycles of the Open Call for Innovation including creating a new 'Rapid Innovations' track, and launched new service offerings including market scoping reports which have proved popular. Emphasising our agility, we used the Open Call in support of COVID-19 response where innovations funded to support the Welsh Ambulance Service rapidly sanitise their vehicles have progressed to procurement.



DASA vision, mission and objectives

Our vision remains for the UK to have strategic advantage through the most innovative defence and security capabilities in the world.

Our Mission remains to:

"find and fund exploitable innovations to support UK defence and security quickly and effectively, and support UK prosperity."

We have refreshed our main objectives, which are to:

- Be an **exemplar innovation organisation** that promotes best practice across Government, and seeks to **build on its experience and learning**.
- **Strengthen and broaden links** to innovators across the UK and elsewhere, attracting the best innovative ideas for defence and security.
- Collaborate with customers across HM Government **to find innovative solutions** to National Security challenges.
- Focus effort on **increasing the pull through of innovative ideas**, supporting the exploitation and commercialisation of solutions into capability.

DASA values and work ethics

DASA has developed a set of core values, which guide the way we work:

- **Customer focused:** Provide an excellent and professional service to our customers, including industry, academia and Government stakeholders in defence and security.
- **Openness:** Think innovatively about delivering impact for defence and security and be open to trying new ways of doing things, learning from our mistakes and from others in the public and private sector, sharing our approaches with others and ensuring independent review of our performance.
- **Courage:** Have the courage to deliberately and consciously create a culture of calculated risk-taking and challenge, where failure is an accepted part of the learning process.
- **Integrity:** Operate with integrity, lead by example, be honest and transparent.
- **Inclusivity:** Involve team in decision-making, noting that individual experiences and expertise provides a richer picture and informs better collective decisions. Challenges to decision-making needs to be constructive and professional.
- **Respect:** Accept individual differences and boundaries. Treat each other fairly, irrespective of job grade, and value our diversity.
- **Accountability:** Take responsibility for our decisions and actions.



Turning our objectives into reality

Being an exemplar innovation organisation and learning from our experience

DASA's primary output measure is:

"The number of funded project proposals that have the potential to be exploited."

Completion of a funded project does not mean the innovation is ready to enter service but to be considered successful it should have the potential to be exploited. The potential could either be exploitation within a research programme, an equipment programme, a policy shift, as a service or as a commercial product. DASA tracks the development of the innovative idea over time until it enters service or is integrated into capability and/or makes an impact. We ensure we learn from our experience.

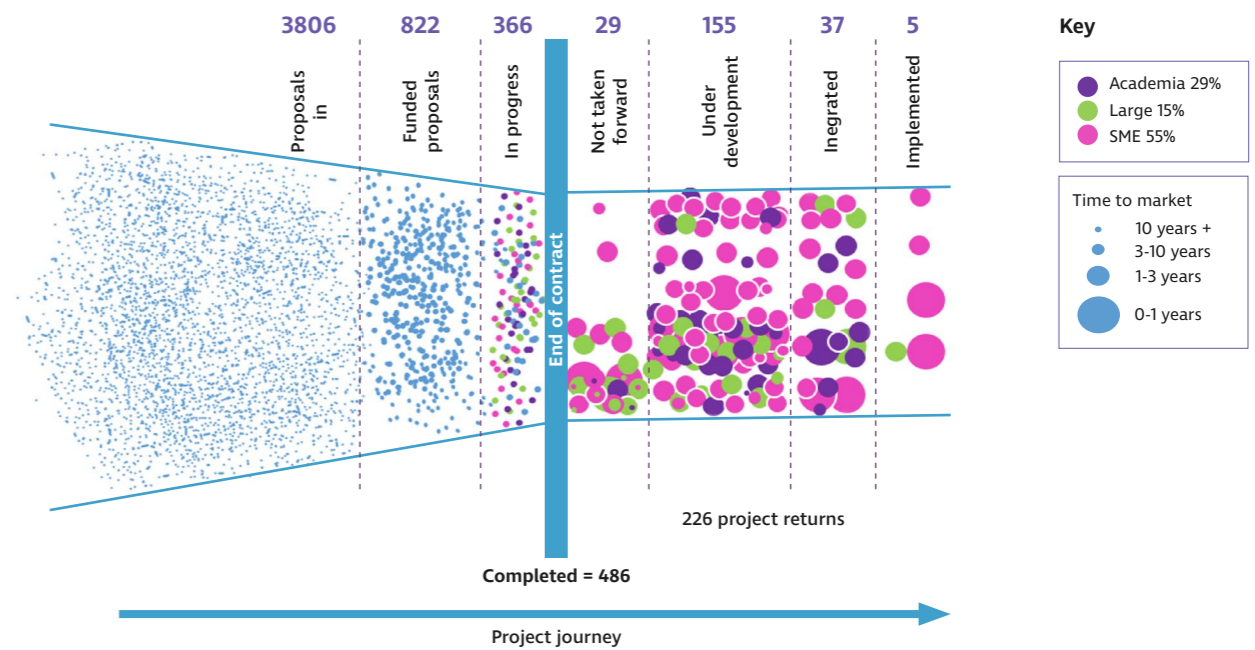
The schematic below shows on the left the valid proposals received by DASA since we started in December 2016. During DASA's first four years, over **3,500 proposals have been assessed with just over 20% funded**. This illustrates that **innovation takes time**, and as **most of our projects are less than Technical Readiness Level 6 (TRL 6)**. Some projects are never meant to reach full capability but of

those that are, it should not be a surprise that many are not fully integrated into capability.

The vertical blue line represents the end of contract and on the right of the line are the projects that were more than six months old in December 2020. **486 completed projects fall into this category. We regularly survey our suppliers with nearly half of the projects (226) responding to date.** Not all projects will be expected to enter service but we asked suppliers to assess what had happened to the project to identify which ones had been: taken forward, were under development, developed and moving towards integration or, fully implemented and in the hands of a user.

The coloured circles represent Academia, Large or SME. The size of the dot represents time to reach full implementation. The larger the dot, the quicker the time it would take the project to become market ready: in other words, into a marketable product ready for acquisition. The **results shown are our suppliers' views and we have more work to do to validate the response with our sponsors and end users.**

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The tracks of my peers



Case Study



Giving defence and security a real-time view of its people and assets – improving safety, reducing risk, ensuring compliance.

Kinsetu, a micro-SME from Northern Ireland, has developed innovative software that can account for and track personnel or assets – giving an immediate and live look at potential missing people or items.

Following DASA funding of £125,000, the company's technology was initially trialled with the Royal Navy on HMS Bristol – followed by further pilots on the HMS Queen Elizabeth-class aircraft carriers.

This technology has multiple security uses such as for energy and nuclear sites, prisons, hospitals and blue light services, potentially saving thousands of human hours on paper-based manual checks with improved accuracy.

After DASA business mentoring, the company has grown its turnover to an impressive £1.25m and are now much better prepared to start their journey to investment in 2021.

Co-founder Jackie Crooks said: "DASA has been invaluable in raising our profile and enabling access to the defence and security sector which we could never have achieved on our own. Mentoring underlined the importance of continuing to innovate, even in an economic



Kinsetu tech tracker.

downturn, and in May 2020 we were delighted to receive £50,000 from the UK Government's Fast Start Competition to deliver contact tracing to protect community care teams supporting the elderly and vulnerable against Covid-19."

Of the 29 not being taken forward:

- 3 were as a result of a technical challenge,
- 6 have found alternative uses,
- 5 were no longer considered desirable,
- 5 were early stage projects and not selected for further funding,
- 10 we do not know due to insufficient detail from supplier response.

Analysing the innovation 'funnel' and reflecting on our experience we have drawn the following conclusions:

- **Innovation takes time and so much of the impact DASA can generate is yet to be realised.** Much of what DASA funds is relatively low monetary value, low maturity ideas (sub-TRL 6).
- **We should expect some of the ideas that DASA funds to fail given risk is inherent to innovation.** To only find and fund ideas judged to have a strong chance of success would be failing to be innovative. What is important is that we spot and stop or adapt projects with a low chance of success quickly and that we learn from them. DASA has a robust process to evaluate ideas at each stage of the innovation journey and filter out ideas that lack promise.
- **DASA can facilitate and enable the exploitation of ideas but cannot turn ideas into reality on its own; a partnership approach is key.** DASA does not and should not attempt to have all of the necessary understanding, experience or levers to turn ideas into reality. For instance, it does not have the ability to change policy or legislation or own any of the Defence Lines of Development and so we work on the transition of projects to those that do.
- **Maintaining (as well as initiating) end-user and customer engagement throughout the innovation journey is essential for successful exploitation.** End user support to pull through the ideas and/or customer support can wane as confidence or interest fades, especially if the benefits do not materialise in the short term.

- **Innovators are not necessarily entrepreneurial or investable businesses that can deliver at scale.** Approximately 60% of DASA innovators are SMEs, micros or academics and many of these lack follow-on funding and/or business acumen. This can be a key barrier to exploitation as it prevents suppliers being able to scale-up. A holistic approach to innovation is needed that considers not just technical readiness levels but also business readiness.
- **Ultimately innovators need a sustainable market for their ideas to transition from being an inventor and/or scientist/researcher.** The wider commercial attractiveness of an idea beyond defence and security can make exploitation easier (though not easy).

In this refresh period we will:

- **Act as a thought leader** encouraging risk-taking, championing the value of innovation; managing expectations on success ratios and the time needed to innovate; and identifying areas of shared interest and/or opportunities across the network.
- **Continue developing a systematic approach to capturing learning** so it can rapidly identify what is not working, adapt and grow.
- **Make better analytical use of data and metrics** in decision-making and to quantify impact. This includes looking at investment decisions and impact on prosperity.
- **Shift emphasis from throughput to increasing impact.** Recognising the scale and difficulty of increasing impact, DASA's growth will mainly focus on enhancing its ability to facilitate and build exploitation pathways to acquisition and create the conditions for others to exploit the innovation.
- **Continue to place a strong emphasis on collaboration.** DASA will articulate its value proposition and strategically partner with others involved in Research and Development, business development and capability integration to deliver shared goals. This will include clarifying the type of impact DASA is aiming for; i.e. not just capability in the hands of the end user but also innovations that change how National Security does things in a way that helps keep us ahead of adversaries – e.g. via a research programme or shift in policy.



Hit the road hack

“DASA funding and support has helped us to expand our team of specialists and develop the business. We have also been able to mature our innovation and the ‘data privacy patented technology’ is now ready to transform the data security market. Anzen is now looking for further commercial opportunities in the UK and overseas.”

David Studd, Anzen Business Development Director



Every day there are 65,000 attempts to hack UK organisations’ data – this innovation could stop you becoming a victim.

The Defence and Security Accelerator (DASA) has helped fast-track game-changing cyber and data security innovation.

With funding from the Defence Innovation Fund, **Anzen Technologies**, a small UK innovator, has developed patented technology that anonymises and fragments data and strategically distributes these shards across the world in unreadable formats. This innovation boosts data privacy and security while reducing costs by allowing the use of the public cloud for highly sensitive or classified data. It also retains data sovereignty. With DASA’s business mentoring, the company is now market ready.

Reaching out to innovators across the UK

Through our outreach, we will help to find exploitable innovation to support UK defence and security quickly and effectively, and support UK prosperity, by:

- Maintaining our network of Innovation Partners based regionally across the UK.
- Reaching out to Innovators in industry and academia, across all sectors, both in the UK and abroad. We will do this both directly and by partnering with a range of organisations.
- Identifying the best and most innovative solutions to the Government’s defence and security challenges.
- Linking innovators to potential customers within UK’s defence and security ecosystem.
- Guiding and supporting innovators to build capability relevant to our defence and security ecosystem, and enhance UK prosperity.
- Telling DASA’s story through targeted engagement events and social media.
- Sharing our knowledge and understanding across Government to maximise our impact.

In this refreshed strategy period, Outreach will focus on:

- **Supporting HM Government in the Levelling Up agenda**, and its support to Strengthen the Union, as well as delivery of the Defence and Security Industrial Strategy.
- **Realigning our network** of innovation partners to 12 UK regions, consisting of the three Devolved Administrations and the nine English regions. As part of this, we will **develop regional plans tailored** to the strengths and opportunities in each area.
- **Growing our reach into the innovation supply chain** for the benefit of both DASA and wider Government. Our relationships will include industry, academia, trade bodies, professional bodies, Local Enterprise Partnerships and their equivalents in the devolved administrations, science parks and local government organisations.
- **Supporting the emerging Regional Defence and Security Cluster (RDSC) pilots.** The RDSCs bring together strategic suppliers, Local Enterprise Partnerships, SMEs,

academia and MOD in a mutually beneficial group that facilitates more joint working. The RDSCs will offer a route into Defence for non-traditional SMEs and the means to collaborate with strategic suppliers to address challenges faced by Defence⁸. They are partner-led and owned by the region, and are not dependent on DASA or MOD support. The first RDSC was launched on 4 November 2020 in the South West. Noting they are pilots we will tailor engagement to each cluster and regularly review the nature and extent of our involvement.

- Further developing our reputation as **the gateway into defence**, guiding innovators towards both DASA opportunities and signposting where appropriate to those from other organisations within Government. We will support wider Government to directly engage with innovators across the UK, such as in setting up regional bases or accessing scarce skills.
- Recognising the unique nature of our Outreach team, we will seek opportunities to **share our expertise and knowledge** across defence and security organisations within Government.
- Improving the process of working with DASA to make the innovator’s experience as effective as possible, and **encourage development of the high quality proposals.** In doing so, we will identify the best and most innovative solutions to the Government’s defence and security challenges.

We will know we have been successful by:

- Developing new metrics that focus on the output of our efforts rather than the amount of activity undertaken. Examples include measuring the quantity of fundable innovations being submitted to DASA and the rate of applications per unit population across the regions. These will be tracked over time to understand the ongoing impact of our plans and actions.
- The re-alignment of our activities to the 12 UK economic regions with evidence based regional plans and objectives aligned to the strengths and opportunities within each region. These will draw on our expert knowledge of the regions and the insights from our new metrics.

⁸ HMG Global Britain in a Competitive Age, Integrated Review pages 40, 75, 101 dated 16-03-2021. MOD Defence in a Competitive Age pages 46, 67 dated 26-03-2021).

Clean machines



■ Case Study



When the coronavirus pandemic hit, DASA acted to get ambulances on the road through innovation.

The citizens of the UK were first told to 'stay at home' on 16 March 2020 in response to the coronavirus pandemic.



Just **nine** days later, DASA had launched its first Covid-19-related innovation competition when fears over ambulance contamination and availability were flagged as a potential challenge.

On behalf of the Welsh Government and the Welsh Ambulance Service, DASA found more than 200 innovative ideas to speed-up the cleansing of ambulances.

Of these, 12 of the most promising were trialled with scientists at the Defence Science and Technology Laboratory at Porton Down.

The finding and technical assessment of more than 200 ideas and the scientific trials were completed in a remarkable **33 days**.



Some of the solutions cut the time to sanitise the ambulances from around an hour by hand – to minutes through automated systems. This also frees up crews, reduces operator burden, and allows ambulances to get on the road quicker.

The Welsh Ambulance Service has since trialled the systems further and has adopted one of the 12 systems into service.





International space pitch day

“ I am delighted that our first ever International Space Pitch Day was so successful, and congratulations to the winning bids. With innovations from space weather to space domain awareness, I wish these ten companies every success as they move forward with defence contracts.

Defence Secretary Ben Wallace



INTERNATIONAL SPACE PITCH DAY

DASA partnered with the Defence Science and Technology Laboratory (Dstl), the Royal Air Force, and the US Air Force to deliver the first International Space Pitch Day.

This was the first time two nations had joined together to launch a joint-innovation competition based around a pitch day model with same-day contract awards.

It was also the first time MOD had awarded contracts in this way – and the first time either the UK or US had jointly given contracts to foreign companies through this model.

More than 100 organisations from all over the world initially registered interest.

15 made it through to pitch day at the UK Defence Space Conference 2020 where they pitched in front of a global audience of hundreds.

10 innovators from Australia, India, the UK and US were successful in persuading a panel of military leaders to win funding to fast-track innovations that give strategic advantage in Space.

Working with our customers to find solutions to their problems

Using our operating model, we will access the very best innovators and their ideas using tried and tested mechanisms for supporting applied research and development projects, as well as constructing novel services to provide value to our end-users in a complex world. We will fund innovations to accelerate the maturity of technologies spanning all technology readiness levels.

- Through **Themed Calls**, we will find, assess and contract applied research and development projects to drive the development of technologies addressing predefined challenges in national security. We will work with the MOD, other government departments and organisations across the wider public sector to maximise access to cutting-edge science and technology, providing a route to strategic advantage.
- By regularly running **Open Call cycles**, we will provide innovators with opportunities to submit ideas which they feel would be of interest to national security end users. We will gauge end users' interest, then assess and contract the very best of these ideas.
- We will **develop new services** for the MOD, other government departments and public sector organisations to deliver value. We will work to help develop their understanding of their requirements and generate novel approaches to problem solving using hackathons, sandpits, **market exploration** and, where necessary, develop bespoke services.
- We will work with other parts of the defence and security innovation ecosystem including the Defence Science and Technology Laboratory (Dstl), Defence Equipment and Support (DE&S), Defence Innovation Unit (DIU), National Security Technology Innovation Exchange (NSTIx) and others to ensure that the right combination of expertise is engaged in developing work programmes. We will also engage with other expertise outside of government to draw in learning relevant to DASA's remit and mission to improve services.

In this refreshed strategy period, we will ensure quality throughout by:

- Using a **triage process** to ensure that the work DASA takes on is aligned to the organisation's mission and vision, and that the work can be delivered within the required timelines using available resources.

Once commissioned, projects will be monitored against a schedule of deliverables by project managers and technical partners assigned to each project.

- **Continuously monitoring our performance** while delivering our services, to identify what works well and what does not. We will implement any required improvements through iterative changes to our processes, while embedding a learning culture across our teams.
- Actively **assessing technical risks** across activities to produce a portfolio which delivers a flow of both incremental and transformative innovations for defence and security customers.

We will know we have been successful by our ability to find and fund innovations, which address operational challenges in defence and security. This will include both quantitative and qualitative measurements, the latter using feedback from customers, suppliers and internal review mechanisms.



Beckie B
Engagement co-ordinator

“ Every day I know the work I am doing is having a direct and positive impact on our national security – it's fascinating and highly rewarding.

Investment showcase: the business behind the innovation



Case Study



“A common problem in the UK innovation landscape is that although support is available for early-stage R&D, it often falls away before ideas are fully commercialised and brought to market. As a result, innovation and intellectual property sometimes move out of the UK before companies are able to mature into commercial successes.”

Global Britain in a competitive age. The Integrated Review of Security, Defence, Development and Foreign Policy.

As part of DASA’s Access to Mentoring and Finance service, each year we hold an Investment Showcase – linking some of the most promising DASA-funded innovators with investors, including venture capitalists, business angels and specialists.

Helping innovators, especially small and medium-sized enterprises, get market-ready and giving them the best possible chances to attract extra funding is crucial if we are to turn ideas into a capability and benefit from the strategic advantage this gives us.

Nearly 30 organisations have received business mentoring and had the opportunity to meet investors through DASA.

“It is DASA’s agility in their ability to deliver not just funding, but business mentoring and support that has helped to accelerate our innovations. With DASA’s help, we achieved in one year what otherwise would have taken us three years on our own.”

Al Roan Co-Founder & Managing Director, Cervus Defence

Supporting exploitation and commercialisation through partnerships

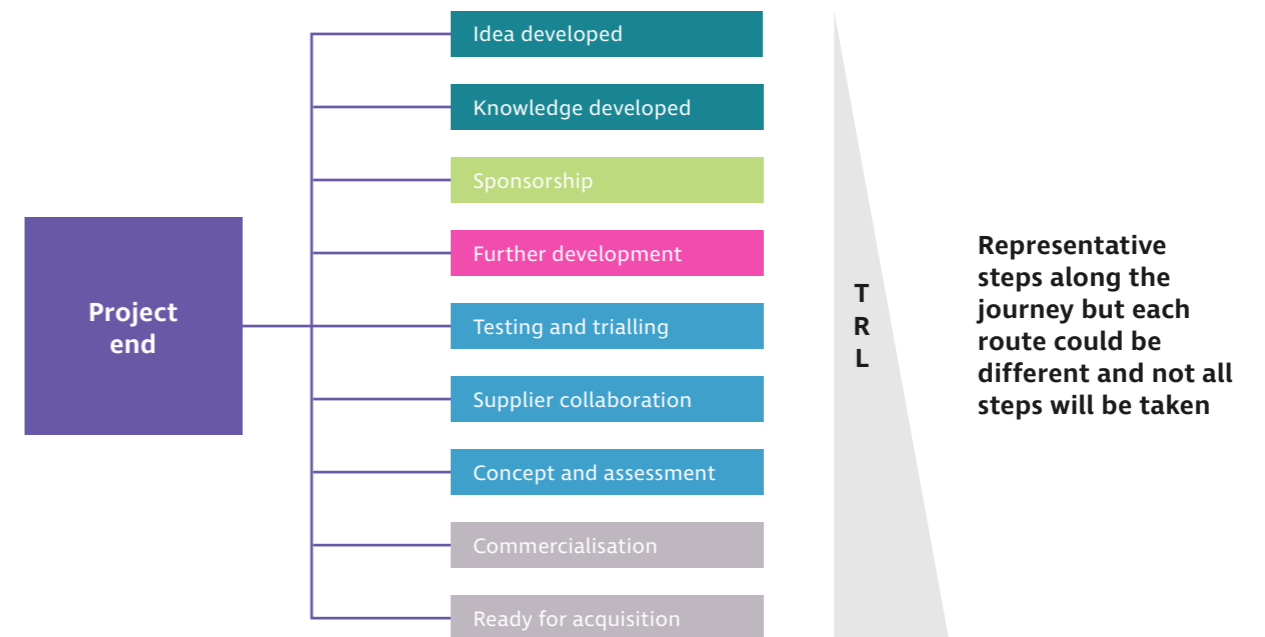
To create the conditions for success and deliver impact we need to develop strong partnerships with a variety of stakeholders. DASA does not hold the levers to exploit projects and therefore must continue to focus on building and maintaining strong and productive relationships with those that do. We must understand customer needs and then deliver services that enable suppliers to develop innovations that achieve the right outcomes. We need to develop enduring partnerships with Government **customers, buyers and end-users**. To achieve this we will:

- Better identify the next stage of development and work with the suppliers to set out their anticipated exploitation pathway.
- Work with Government customers and end-users to encourage and influence them to maintain their commitment to projects as they develop and to support their progress through facilitating adoption of solutions as appropriate. We will support the supplier to understand their buying customers and develop tailored services to help them become market ready.

- Qualify with customers, buyers and end-users that, where appropriate, they are able both financially and in process terms, to adopt the solutions as they come through the system.
- Facilitate relationships between customers, SMEs and others who will assist in the development to delivery journey.
- Have processes that ensure we target those ideas most likely to succeed, and to flush out those unlikely to make the cut quickly and efficiently.

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Project pathways – What happens next?





How veteran-run innovators are bringing to life Virtual Reality training.

The UK Armed Forces have been getting their hands on innovative Virtual Reality systems – using the best in gaming technology to enhance their training.

SimCentric, a veteran-run software company was awarded £300,000 by DASA through the Open Call for Innovation (Rapid Impact), to improve training for personnel making it more realistic, intuitive and immersive, while lowering the costs.

The simulator, which can be used by over 30 personnel at the same time, uses intuitive gesture control designed to match real actions on the battlefield. HD surround sound and highly realistic visuals bring to life training scenarios tailored for VR interaction.

Rather than click a mouse while sitting at a desk, personnel will be able to hold a ‘gun’ and crouch and crawl when necessary, just as they would on a real-life exercise. They will be able to practice this virtual exercise as many times as needed before going into the field for real, preparing them more effectively for operational deployments.

Trials have taken place with the Parachute Regiment, the RAF Regiment, and the Royal Marines.

The gaming tech is from Epic Games – the developers of Fortnite.

Lieutenant Henry Dufosse, of the Royal Marines’ 40 Commando Alpha Company, said: “It’s incredibly real, so real that you sort of lose all situational awareness of the outside and you’re solely focused on the moment that you’re in.”

Epic gains

“If you get a mission set or a target pack, you can plug it into the system and go through a few drills before you go into target. It’s great to use on camp as well, even sort of the allocation of training resource is in the military. If we can’t get access to a range or a training area, then having it in our own back garden is pretty useful.”

Lieutenant Henry Dufosse, Royal Marines’ 40 Commando Alpha Company



In defence we will look to identify whether DASA, which typically operates at Technology Readiness Level 6 or below, could collaborate with Innovation Hubs more formally to provide exploitation pipelines for some of DASA’s work. For example, passing projects at the end of their DASA funding into JHUB in Strategic Command for the next stage of their evolution. This also extends to other next stage organisations such as Ploughshare Innovations and the National Security Strategic Investment Fund (NSSIF).

In this refreshed strategy period, we will increase the opportunity for exploitation and commercialisation by:

- **Increasing our focus on helping SMEs** to scale up to be able to deliver to their defence and security customers.
- Helping SMEs find support, including financial, to grow their business, exploit and commercialise their technology and connect them to customers who need their products and services. We will provide an **access to mentoring and finance service** to provide opportunities for SMEs to hone their businesses and secure investment to take them to the next stage. Without this support, we run the risk of the technology investment being wasted because the SMEs will not mature into sustainable businesses which are viable within the defence and security supply chain.
- Implementing within DASA the **MOD/Industry Innovation Operating Model (IOM)** developed through the Defence Suppliers Forum (DSF), Capability Management International & Innovation (CMII) Working Group. The IOM looks to optimise and cohere innovation effort across defence, aligning MOD and Industry innovation planning and investment to maximise the likelihood of pull-through of ideas into UK military capability.
- **Provide opportunities for regional SMEs to collaborate** with MOD strategic suppliers, academia and other SMEs to develop innovation of value to Defence for example through Regional Defence and Security Cluster pilots.
- Introducing a digital **Ideas Marketplace** as the means to showcase innovative ideas from SMEs to MOD’s strategic suppliers and other SMEs in a way that protects intellectual property whilst increasing opportunities for collaboration.
- **Brokering introductions** for SMEs into a business support ecosystem so they can become sustainable suppliers.

We will know we have been successful when:

- We are seen as a **trusted partner** to Front Line Commands, National Security customers and end users – and we are seen to be adding value and delivering for them.
- We can **measure prosperity** to know how many SMEs have gone on to grow their business, increase employment and achieve sales in the defence and security sectors.
- We can **measure commercial advancement** to see if an increase in ideas that have received a contract from DASA have progressed through the development journey all the way to be ready to bid into a future procurement or have been commercialised.
- We have increased knowledge in new areas of technology which feeds into and **informs future policy and research programme decision making**.



Tracey H
DASA Partner (Royal Navy)

“I enjoy working with our brilliant service personnel to understand their problems and priorities – and to find and fund solutions that keep the UK safe.”

Our People



Jas S
Innovation Partner
in East Midlands

“ The current climate has given us challenges that need to be addressed, we need to work in a different way to get workable ideas converted into meaningful results. We need to build on our rich history of innovating to find, fund, and exploit ideas, and to this end, I am excited to be working with the East Midlands community.



Elaina I
Delivery Manager

“ Working in DASA is like no job I have ever had before. It's challenging, fast-paced, and very people-driven with a committed and dedicated team.



Alan S
Access to Mentoring
and Finance Lead

“ I use my skills from business to help brilliant innovators make their ideas commercially attractive and become real capabilities – boosting national security and prosperity.

Our people – a growing and learning organisation

DASA has grown over the last 4 years to a team of over 70 people. We have been able to attract a talented and diverse team drawn from Dstl, other government departments, industry and academia. Although there is healthy diversity of thought **bringing in new ideas and approaches**, the one thing we have in common is a passion for innovation.

We nurture our people, investing in training and professional development opportunities to bring out the best in our outstanding team. Each year we take part in the Civil Service People survey, consistently receiving excellent engagement scores. In 2020, 90% felt that they could rely on people in the team when things got difficult with their job, 85% said they found their work interesting, and 82% said their team worked together effectively. We also use the survey to target further improvements to the way we work together and manage our people.

Our aim is to continue to ensure a safe, secure and **inclusive workplace** in which everyone can achieve their full potential. Creating a culture of diversity and inclusion makes sense for any organization but for us, as we aim

to find and fund innovation, it is essential. We need to reach out and find the best innovations wherever they are located and that requires us to be diverse and inclusive in our approach inside, as well as outside, the team. A **diverse and inclusive environment leads to creativity and drives innovation**, and this in turn ensures we are achieving the best results and improving our reputation for spot on delivery. In the 2020 Civil Service People survey 90% said that DASA respected individual differences and 93% that they were treated with respect by the people they worked with. This shows how heavily we emphasise the need to respect diversity within our team.

In this strategy refresh period:

- We will take positive action and take nothing for granted in our quest to **recruit the best, retain our talent and create an inclusive team that is inspired** to do ever better things.





■ Case Study



DASA funded technology has impact with defence scientists.

Scientists have trialled a fully autonomous robot that can detect and report dangerous chemicals over large areas – powered by innovation funded through DASA.

The Merlin robot, developed by Midlands-based **Horiba-MIRA**, autonomously carried out simulated chemical reconnaissance tasks over test areas covering up to 10,000 square metres.

Currently a single prototype, Merlin operated continuously on tasks for several hours with ease, allowing personnel to monitor and manage

the test incident scene from a safe distance, away from potential harm.

This trial demonstrated human-machine burden-sharing opportunities for defence and security personnel dealing with hazardous scenes.

Horiba Mira was awarded contracts across two phases of DASA's Autonomy in Hazardous Scene Assessment themed competition. The funding was for the design of the Merlin autonomous robots to support the Chemical Biological Radiological (CBR) Autonomous Hazardous Scene Assessment (AHSA) programme.

Merlin's AI-based object recognition capabilities tested different

autonomous behaviours for search and mapping operations, exploring an area, obstacle avoidance and chemical mapping.

The operationally realistic trial was undertaken with support from 27 Squadron RAF Regiment RAF Honington. The DASA project was funded by the MOD and Home Office.



Governance



DASA is a part of the Defence Innovation Directorate in the Military Capability branch of the Ministry of Defence, reporting to Deputy Chief of Defence Staff (Military Capability).

DASA, as a part of the Defence innovation ecosystem, is held to account by the Defence Technology Innovation Board (DTIB). Supporting this the **Defence Innovation Steering Group (DISG)** is a **sub-committee for Defence innovation, reporting to DTIB** with terms of reference to provide strategic direction, policy and priorities for innovation projects and workstreams across the Ministry of Defence.

Separately **DASA has a Deputy Director level cross-Government Governance Board**, which was set up in January 2018, to provide effective oversight, governance and assurance from both defence and security stakeholders (as DASA manages funding from a range of sources), and to hold the Head of DASA to account. The board meets quarterly.



Dr Deb C
Innovation Partner
(Scotland)

“ Every day I am using my engineering knowledge and operational experience as an MOD scientific officer when I speak with innovators about their ideas. It's inspiring and fulfilling to be making a difference to Her Majesty's Armed Forces and our national security.



■ Case Study



AI innovation funded by defence now feeding the nation.

Xihelm, a micro-SME tech start-up based in London, specialises in using Artificial Intelligence. Its innovation uses video to detect objects and to inform robots to take action based on machine learning.

The company was awarded £92,310 through the Revolutionise the Human Information Relationship for Defence (standard track phase 1) themed competition in 2017.

DASA funding was to build the TheiaView prototype – a flexible object detection and classification toolset for tracking prioritised threats in real-time video.

It has since been integrated with Xihelm’s agricultural robot harvesting system and is in use within the commercial agricultural sector.



Xihelm chief executive James Kent said: “The DASA funding allowed us quickly to take the TheiaView prototype from a technical readiness level (TRL) 2 to 4. We have since integrated the technology with our main agricultural robot harvesting system that uses live visual recognition to understand 3D space in realtime, enabling robot harvesting, and is being used by APS Salads in the agricultural sector (specifically tomatoes).

“Our next step is to extend it into looking at multiple sensors at the same time (enabling higher quality object recognition).”

The company said they have had more than a 100 per cent return on their DASA investment and secured other funding to advance their work.

Summing up

Our progress and contribution to innovation and prosperity are a result of the energy, enthusiasm and collaborative spirit stimulated by DASA since its establishment. This refreshed DASA strategy lays out our objectives, services, relationships and activities – building on our learning over those years. Looking forward, we are excited about developing our plans to bring this strategy to life and tapping into the UK’s wealth of talent in discovering **innovation for a safer future.**

Finally, none of the achievements, services or changes in this Refreshed Strategy would have been possible without the dedication of DASA’s staff and the support of the MOD’s Defence Innovation Directorate and the Defence Science and Technology Laboratory (Dstl). The defence and security challenges we face as a nation are some of the most uncertain and complex faced since the end of the Cold War. We regularly advertise for new people to join us. If you are interested, search Civil Service Jobs for Dstl then look for DASA, and help play your part in keeping our Nation safe.





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