



House of Commons  
Defence Committee

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**Defence Space: through  
adversity to the stars?  
Government Response  
to the Committee's  
Third Report**

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**Fourth Special Report of Session  
2022–23**

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## The Defence Committee

The Defence Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Ministry of Defence and its associated public bodies.

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The committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152. These are available on the Internet via [www.parliament.uk](http://www.parliament.uk).

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## Fourth Special Report

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The Defence Committee published its Third Report of Session 2022–23, [\*Defence Space: through adversity to the stars?\*](#) (HC 182) on 18 October 2022. The Government response was received on 19 December 2022 and is appended below.

## Appendix: Government Response

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### The UK Space Sector: Strategy and Governance

1. Recent years have seen welcome, if only partially successful, attempts to bring more coherence to space activity both across Whitehall and within the Ministry of Defence. The creation of the National Space Council and the MoD's Space Directorate were recognised by witnesses as being positive developments in this regard. As we came to the end of our inquiry, we were therefore both surprised and concerned to note that the Government has removed the National Space Council from the list of Cabinet Committees, and that the Space Directorate looks set to be disbanded. In its response to this report the Department must provide an explanation for these changes. It should set out what new governance arrangements have been put in place and why it believes they will be more effective at swiftly implementing the vision set out in the National and Defence Space Strategies. (Paragraph 27)

2. Even before these recent developments, which seem to be a backward step, cross-Whitehall governance on space lacked sufficient clarity and direction. The delays to publication of the National and Defence Space Strategies frustrated industry and other stakeholders and suggest that despite the previous Prime Minister's stated personal commitment to making the UK "a meaningful player in space", the Government is currently unable to drive changes through at pace, or even to meet its own deadlines. Nowhere is this better illustrated than by the continued delay and inertia surrounding space-based position, navigation and timing services, which we examine in detail later in this report. (Paragraph 28)

3. Vision must be backed up with delivery, and with space set to become ever more critical to the national interest it is clear that stronger, more cohesive leadership is required. We recommend that a Minister for Space should be appointed within the Cabinet Office to provide clear centralised direction and accountability in taking forward the UK's civil and defence ambitions in space. This new position must be sufficiently resourced and should be given appropriate authority to effectively coordinate and drive forward policy and delivery. (Paragraph 29)

The National Space Strategy and the Defence Space Strategy demonstrate the Government's commitment to developing the UK as a space nation. The Prime Minister announced the Cabinet Committee structure in November as set out on gov.uk. Discussions on space will be taken by the most relevant Cabinet Committee. The terms of reference for the current Committees are available on gov.uk. The Minister for Science at the Department for Business Energy and Industrial Strategy (BEIS) has responsibility for Space in their portfolio. In the MOD, the Minister for Defence Procurement, the Minister for Armed Forces and the Minister of State in the House of Lords all have a strong interest in the space agenda from their different perspectives.

Ministerial governance for space is supported by the National Space Board, which is the central hub for cross-government coordination and decision-making on space. It drives and oversees the implementation of the National Space Strategy. The National Space Board is co-chaired by Directors from BEIS and the MOD, has senior representation from across key departments, and is supported by a joint team from the MOD and BEIS. The governance of space within Defence has evolved to reflect the growing maturity of the space enterprise. The establishment of UK Space Command and the transition of the Space Directorate into extant structures is part of the Department's commitment to integrate the Space Domain into our business as usual. Space Policy is now integrated within the MOD's Security Policy and Operations area, enabling improved alignment with other operational and policy teams. Strategic and integrated direction from Head Office, combined with an established Space Command, will ensure the effective implementation of the Defence Space Strategy. Position Navigation and Timing (PNT) is addressed under conclusions ten and eleven.

### Skills and recruitment

**4. There is a clear challenge for the Government in addressing skills shortages and recruitment and retention difficulties in the space sector. Meeting this challenge will require a long-term, holistic approach to education and workforce development. Encouraging an interest in STEM subjects and space careers from a young age will be vital.** (Paragraph 43)

The UK has a renowned science and technology sector with a strong talent pipeline. The National Space Strategy (NSS) and Defence Space Strategy (DSS) place particular importance on the space sector having the right skills and expertise for both civil and military purposes.

Work is ongoing across Government to inspire the future workforce. The proposed UK Space Agency (UKSA) Inspiration programme will seek to inspire young people of all backgrounds into STEM, raise awareness of space across society, and improve the sector's access to skilled people. The space sector and academia continue to benefit from broader support in STEM and other skills initiatives delivered by UK Research & Innovation (UKRI) and the Defence Science and Technology Laboratory (Dstl) as well as being championed overseas through programmes such as DIT's Global Talent Network.

Defence recognises the importance of a long-term holistic approach to education and workforce development. We are working closely with partners across Government, but also with industry and with leading academic centres around the country to ensure a joined-up approach to addressing skills gaps in the UK space sector. Defence participates in a regular forum that exists for officials to coordinate and progress delivery of this ambition across government.

While Defence is leading the establishment of the Space Academy, we are working with BEIS with industry and academic centres to identify where it may be able to meet broader civil needs in future alongside other space workforce initiatives.

**5. Defence faces particular challenges in recruiting and retaining space specialists. We were encouraged by the Minister for the Armed Forces' support for a more flexible approach to recruitment and career management within Defence, and we support the use of secondments to and from industry. But changes must be made at pace if we are not to fall further behind both our adversaries and our peers. (Paragraph 44)**

**6. Space literacy must also be embedded across Defence if multi-domain integration is to succeed. As well as establishing a Space Academy for defence space specialists, the MoD must ensure that wider professional military education comprehensively covers the role played by space in modern warfare. In its response to this report the Department should update us on its progress towards establishing a Space Academy and should set out target dates for the inclusion of space education on staff courses and across the Defence Academy curriculum. (Paragraph 45)**

A skilled and trained space workforce is fundamental to the delivery of Defence's space ambition, promoting the domain as an attractive area of interest, while offering a range of opportunities to Whole Force personnel. Given the imperative to swiftly set the conditions for future space education and training across Defence, UK Space Command commissioned a detailed Training Needs Analysis (TNA) in July 2021, which concluded in March 2022, with course redesign already underway at the foundational, practitioner and expert levels.

Foundation space training is already readily available across Defence through the Defence Learning Environment, where practitioner and expert courses are also well-established and available to all MOD personnel through the Air and Space Warfare School. To address specific training gaps identified within the TNA, while also standardising generic space education, a new foundational course will be integrated across all Defence entry-level training next year. Additionally, an Executive Space Operations Course (ESOC) aimed at more senior commanders and civil servants has also been rapidly developed and piloted, with the first course delivered in early December 2022. The TNA also recommended three new courses to address training shortfalls across the space enterprise, which will form an integral element of the iterative course design work in financial year 2023/2024. We are also continuing to explore options for career management over the short and longer term.

UK Space Command continues to lead on the delivery of the UK Space Academy that will build on already established Air and Space Warfare School courses, with the aim to constitute a Centre of Excellence for Space training across the Whole Force. As noted above, we are also exploring the potential to extend this across government and even internationally in the longer term. This will provide a tangible opportunity to facilitate space education and skills training alongside industry and academic partners, thereby nurturing and developing a career pathway in Defence space. It will also enable space training and education not currently facilitated in the UK and see the growth of new space-related courseware, in addition to hosting extant UK Defence space courses.

Following engagement with academia and industry to deepen Defence's understanding of UK-wide partnering options, UK Space Command is now refining the UK Space Academy training requirements prior to engaging openly for potential partnering opportunities. A formal tendering process will be completed towards the end of 2022 with an Invitation

to Tender initiated before the end of March 2023; extant space education and training courses will be transferred to the UK Space Academy once a partner has been selected and the Academy has been successfully established.

### Threats and Hazards

**7. The response to Russia's invasion of Ukraine has underlined the importance of the international community taking a united approach in the face of irresponsible and aggressive behaviour. We welcome the UK's leading role at the United Nations in seeking to achieve a consensus on responsible norms and behaviours in space and we support and encourage the Government in continuing to drive this work forward. An update on progress to date should be included in the Department's response to this report.** (Paragraph 66)

We welcome the Committee's support in continuing to take a leading role at the United Nations on responsible space behaviours. Our aim is to strengthen strategic stability, reduce risk of escalation and conflict and protect the space environment as a key operational domain. The MOD is working closely with the FCDO on this initiative.

The UN General Assembly (UNGA) adopted a UK-sponsored resolution (A/RES/76/231) on 24 December 2021, which established an open-ended working group (OEWG) mandated to make recommendations on possible norms, rules and principles of responsible behaviours relating to threats by States to space systems and to submit these in a report to UNGA at its seventy-eighth session in 2023.<sup>1</sup> This is a significant milestone in UN space security discussions and is a result of intensive UK diplomacy over the preceding two years.

The OEWG has met twice in 2022 (May and September) and will meet twice more in 2023 (February and August) before producing its recommendations. The UK has set out its position in a number of statements and working papers, which can be found on the OEWG webpage.<sup>2</sup> Discussions have been fruitful and have detected increasing support amongst countries for the idea of non-binding responsible space behaviours albeit as a step towards future legally binding instruments.

We will continue to engage strongly in the OEWG and other UN space discussions. We are working closely with a range of international partners to build further support for responsible space behaviours and counter ideas we consider to be unworkable, such as Russia and China's proposed Treaty for the Prevention of Weapons in Space and the Threat or Use of Force against Space Objects (PPWT).

On 3 October, the Government announced a UK commitment not to destructively test direct ascent anti-satellite (DA-ASAT) missiles, as part of our enduring efforts to promote responsible space behaviours. On 1 November, UNGA adopted a new US-sponsored resolution calling on States to make the same commitment.<sup>3</sup> It received 154 votes in favour indicating significant global support to refrain from such tests.

**8. Space Domain Awareness capabilities are rightly recognised by Government and stakeholders as being critical to safely operating in an increasingly contested and congested space environment. A cross-Government SDA strategy should be produced**

1 <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/417/21/PDF/N2141721.pdf?OpenElement>

2 <https://meetings.unoda.org/meeting/57866>

3 <https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com22/resolutions/L62.pdf>

**and implemented as soon as possible: the Department should confirm in its response to this report that work on this is already underway and should give a target date for its publication.** (Paragraph 72)

**9. Considered and strategic investment in the UK's SDA capabilities offers an opportunity to improve the UK's standing and contribution to Allied defence space efforts. The Department should set out how it will ensure that the Defence Space Strategy's promised investment in Space Domain Awareness maximises the advantages offered by the UK's existing pockets of expertise and the location of its Overseas Territories.** (Paragraph 73)

The NSS and the DSS provide clear strategic direction to deliver improved Space Domain Awareness (SDA).

Defence is investing £85 million over ten years in SDA, and in addition, significant work has been undertaken to generate the first set of cross-government SDA requirements. These requirements provide the foundation to conduct a gap analysis of data sources available to the UK and identify key areas for investment. This will combine the use of commercial sensor data, allies' data and sovereign sensors, to maximise opportunities for dual use. This work will progress over 2023. In addition, work is underway to develop and publish capability goals for space capabilities, including SDA, as part of the implementation of the NSS. We expect to publish these in early 2023.

We recognise the unique capability that the UK's Overseas Territories, Sovereign Base Areas and other overseas military facilities give to the UK for Space Surveillance and Tracking and SDA purposes. Work is already underway to understand the options available for new infrastructure investment at priority locations. Additional locations will be considered in due course by the MOD and UKSA.

Wherever possible UK expertise is utilised to maximise the return on investment as well as to develop our sovereign capability in technology and personnel. Defence has funded several Technology Demonstrator Projects through Dstl to advance UK expertise in key areas.

### **Position Navigation and Timing (PNT)**

**10. The events surrounding the UK's expulsion from the EU's Galileo programme were deeply unsatisfactory and demonstrated a failure of statecraft on all sides. The European Commission's decision was deeply regrettable given the extensive contribution, including financing of £1.2 billion, that the UK had made to the Galileo programme since its inception.** (Paragraph 83)

**11. Against this backdrop of political failure, it is simply unacceptable that almost four years on, and with tens of millions of pounds spent, the Government appears no closer to coming to any conclusions about development of the UK's own space based Position, Navigation and Timing (PNT) capabilities. Most recently the Space Based Position, Navigation and Timing Programme (SBPP), led by the UK Space Agency, seems to have disappeared without a trace. Given the vital need for a resilient PNT network both for Defence and for other aspects of Critical National Infrastructure we are deeply concerned by the complacent attitude towards PNT within Government, and by the seemingly low priority which the MoD attaches to this work. Government**

**must publish the conclusions of the SBPP and should set out a clear timetable for producing and taking forward the UK's PNT strategy in its response to this report.** (Paragraph 84)

We acknowledge the committee's frustrations with the European Commission's decision on Galileo, especially in light of the UK's previous involvement. The EU made clear that the UK would be unable to influence the future shape of the security architecture and only be afforded the restricted access provided to third parties, and that UK businesses were unable to bid for or deliver the majority of contracts under Galileo. As such we concluded that the capability would not have met our critical infrastructure and national security requirements and potential membership fees would not have presented value for money.

PNT remains a priority. BEIS recently created a small PNT project team to take forward the cross-Government PNT agenda, in line with the commitment in the March 2021 Integrated Review to strengthen the resilience of the PNT services on which our Critical National Infrastructure and economy depend. This project will build on the existing evidence base and significant work already undertaken within Government on PNT. The project will be completed by Spring 2023 and will help decide next steps on future PNT work across government. The Space-based PNT Programme built on the United Kingdom Global Navigation Satellite System (UK GNSS) programme to develop recommendations to provide the UK with satellite navigation services. The programme successfully concluded and has provided a range of detailed analysis on options which will now be considered by the BEIS PNT project team as part of its work. The MOD is supportive of the new PNT team, to which we have contributed experienced military personnel.

PNT is a high priority area for Defence. The MOD is also unique in government, as the sole department which can leverage the military encrypted signal of GPS, representing the cutting edge in Global Navigation Satellite System technology.

Despite this, we are also investing in a number of projects designed to enhance our PNT resilience, including from non-space based sources. This is part of a resilient "System of Systems" approach to providing PNT data for Defence, which has been endorsed at the highest levels in Defence.

Defence funds both the Robust Global Navigation System (RGNS), and the Alternative Navigation programme (AltNav) as major equipment programmes, as well as a programme of scientific research and development into emerging PNT technologies through Dstl.

RGNS is an £80 million project designed to deliver a UK-developed, low size, weight and power multi-constellation GNSS receiver, which can utilise all unencrypted GNSS signals being broadcast today. This will generate a more reliable and available PNT solution than could be achieved relying on a single GNSS constellation's unencrypted signal alone. AltNav is an £84 million programme to develop a suite of non-GNSS PNT technologies that do not rely on fixed external infrastructure.

### **Sovereignty and collaboration**

**12. The Ministry of Defence will have to carefully balance competing priorities in determining which defence space capabilities must be "owned" by Government and which can be provided by collaboration with Allies or through a commercial contract. Russia's recent impounding of OneWeb satellites at the Baikonur cosmodrome**



**demonstrates the potential dangers of making the wrong call, and the subsequently announced proposed merger of the OneWeb with Eutelsat has raised further questions concerning sovereignty and national security. The planned merger between OneWeb and Eutelsat must be subject to the most stringent scrutiny under the National Security and Investment Act. More broadly, it is critical that decisions affecting the sovereignty of the UK's defence space capabilities are made transparently. The MoD should confirm in its response to this report how it plans to make details of these decisions available for scrutiny by Parliament. (Paragraph 102)**

The UK's prioritised ambitions within the space domain will be delivered through the establishment of a balanced Defence Space Portfolio.

We will continue to identify the UK-based industrial capabilities the MOD requires in order to deliver and sustain military capability and conduct military operations as we choose without reliance on other nations, and to protect the sensitive technologies that underpin those capabilities. Work on identifying the space technologies that Defence must be able to access to highly assured standards is already advanced and will be shared with industry in the coming months.

With regard to transparency of critical investment decisions impacting Defence, the BEIS Select Committee has responsibility for oversight of the NSI Act and the work of the Investment Security Unit (ISU) which supports the Business Secretary to administer the Act. The National Security and Investment system is based on hub-and-spoke model which brings together input from across government and the intelligence community, with the Investment Security Unit in BEIS as the central point. The MOD is one of a number of Departments and Agencies which are consulted during both the initial screening process and during a full national security assessment on acquisitions which are relevant to its remit.

The Government has committed to ensuring the BEIS Select Committee has access to the information it needs to undertake such scrutiny, and an MOU underpinning these arrangements will be published in due course.

In addition, the National Security and Investment Act (NSI) Act requires the Business Secretary to publish a notice that a final order has been made. To date, nine have been made. High-level details of these orders and the reasons for them are available on gov.uk.

The NSI Act also requires the Business Secretary to publish an annual report on the operation of the Act, including the numbers of notifications received, called in, and the sectors within which they fell. The first annual report, covering 4 January to 31 March 2022 was published in June 2022.<sup>4</sup>

### **The UK's Defence Space Capabilities: Opportunity and Challenge**

**13. The investment in new space capabilities set out in the Defence Space Strategy, and the procurement of the next generation of Skynet communications satellites, will provide a clear opportunity for the MoD to make a positive long-term impact on the sustainability and productivity of the UK's space industry. The Department should explain in its response to this report how it will ensure that its investment in the sector maximises benefits to the UK by growing and sustaining a skilled workforce,**

<sup>4</sup> [National Security and Investment Act 2021: annual report 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/111111/national-security-and-investment-act-2021-annual-report-2022)

**attracting investment, rewarding innovation, providing meaningful engagement with SMEs and adding social value. The Department should also provide an update on Skynet 6, including expected contract award dates for the Service Delivery Wrap and Enduring Capability strands of the programme.** (Paragraph 110)

Defence is investing £1.5 billion over ten years in the acquisition and development of new technologies in: SDA; Intelligence, Surveillance and Reconnaissance (ISR); Command and Control (C2); and Space Control (£1.4 billion from the 2020 Spending Review allocation and £120 million of innovation funding). This is in addition to around £5 billion over a ten-year period to enhance our satellite communication capabilities (SKYNET).

We will work closely with commercial providers to achieve our goals. This investment will play a part in stimulating innovation, commercialisation, and growth across the wider sector, from which UK industry is already benefitting, both directly and indirectly.

Procurement of the DSP will also adhere to the principles set out in the Defence and Security Industrial Strategy (DSIS), including identifying and rapidly exploiting new and emergent technologies to develop and sustain a thriving industrial base. The MOD and BEIS are working on a Space Sector Policy that will build on DSIS principles and set out how we intend to encourage growth and enhance resilience across the sector. This work forms part of the implementation of the 2021 National Space Strategy. As part of this, BEIS will set out how the government will build on the UK's regulatory leadership to further support the growth of the sector. This reflects the commitments set out earlier this year in the Government's first ever Plan for Space Sustainability to review our orbital regulatory framework to assess if there is even more that can be done to build an attractive business environment.

We are continuing to develop ways of attracting new and non-traditional suppliers into the defence supply-chain. Defence published the Small Medium-sized Enterprise (SME) Action Plan in January 2022, which outlines how we will remove barriers to entry for smaller suppliers, including specific commitments about improving access to opportunities and supporting innovation through supply-chain development programmes. These commitments will help to shape our future procurement under the DSP, as will the implementation of the Cabinet Office Social Value Model in our competitive procurements and consideration of the levelling up agenda. Defence is also working with the National Security Strategic Investment Fund and space-focussed Venture Capital companies to access start-ups and explore opportunities to accelerate innovative technologies, promote SME growth, prosperity and the UK's technical competency.

We recognise that by far the single largest Defence space programme is SKYNET and are committed to achieving the best outcomes for both Defence and the UK in its procurement. We recognise the opportunity to re-invest in UK talent and supply chains both to safeguard its longer-term capabilities and provide coherence and direction in which technologies UK industry should focus on developing and, where possible, establish global leadership.

The MOD will use the opportunity presented by the SKYNET Enduring Capability procurement to set the conditions for a sustainable and competitive onshore industry. The programme has set a clear requirement for "Technological Capital" to be based in the

UK and for critical technologies to be sourced from UK supply chains. This will help to ensure that the UK maintains the ability to design and manufacture world-class military communications satellites in the UK and contributes to our Operational Independence.

We are also committed to enhancing resilience and supporting the levelling up agenda as part of the programme's social value, both of which are likely to drive geographically diverse investments.

Our approach is also not just focused on assembling satellites in the UK, but on developing and maintaining the skills required to design, manufacture and operate the high-end technology delivered through the programme, providing the UK with a both military and industrial advantage over competitors. In most cases, this investment will need to be sustained by future cross-government business and exports, but the MOD's role as anchor client will underpin the investment required to develop capabilities which can provide advantage in other commercial and military markets.

### **Update on SKYNET programme**

- The SKYNET Programme's objective is to continue to maintain existing satellite and other communications services and provide a new space-based communications capability from 2026 out to 2041 and beyond. It consists of 3 main delivery workstreams: Service Delivery Wrap, SKYNET 6A, and SKYNET 6 Enduring Capability.
- **Service Delivery Wrap (SDW)** replaces the SKYNET 5 Private Finance Initiative (PFI) service delivery arrangements to provide contractor-supported space operations and resolve obsolescence in the ground and end user segments of the system. This approach will enable the MOD to rebuild a cadre of suitably qualified and experienced personnel to re-establish its capability as an "intelligent" owner/operator. The SDW contract has been competed, with four strong bids to provide services from no later than an expected contract award date of 1 March 2023. A preferred bidder will be announced as soon as the MOD is able.

**SKYNET 6A (SK6A)** will ensure capability continuity in the space segment from mid-2020s onwards and will be a mainstay of the Skynet programme out to 2040 and beyond in conjunction with the SKYNET Enduring Capability solution, providing secure space capability in an increasingly contested and hostile environment.

- SK6A remains on schedule and within budget. There is confidence that launch, and operational delivery will be achieved in accordance with the MOD's approved position.

**SKYNET Enduring Capability (SKEC)** will provide all space, ground and network elements of the next generation space-based communications capability, through provision of both infrastructure and service delivery. The space segment will consist of procurement of one Narrowband Satellite System spacecraft with an in-orbit date of 2028, and up to three Wideband Satellite System (WSS) spacecraft, with the first WSS spacecraft expected to be delivered between 2028 and 2030.

- Delivery of the NSS, a single Ultra High Frequency (UHF) satellite in a Geosynchronous orbit, will be procured through an open competition. This

has completed approvals, and a Pre-Qualification Questionnaire was issued to industry on 9 August 2022. Evaluation of industry responses has begun leading to a down-select, a competitive bid period and final negotiations. Contract award is currently expected in Q4 2024 although work is ongoing to accelerate this date.

- The Wideband requirement to assure Operational Independence, including the need to establish UK “Technological Capital”, is being developed through further industrial engagement, which included an industry engagement day held on 19 May at Leicester Space Park, followed by an assessment of Industry responses to a Request for Information (RFI) and individual meetings with industry which concluded in August 2022.
- Once the MOD has decided on the WSS requirements needed to assure Operational Independence, the optimum procurement strategy to deliver this outcome will be identified.
- The final procurement strategy decision will be taken following direction from Defence Ministers and cross-Government engagement. The chosen procurement strategy will dictate the contract award date; it is therefore not possible to comment further until the strategy has been approved by Ministers. Options are being developed to lessen the impact of any delay to contract award.

**14. In order to meet the challenges posed by the rapid pace of technological advancement in the space domain, the MoD will need to take every opportunity to learn from the experiences of Allies. The pioneering approach taken by the US Space Development Agency will be of particular relevance.** (Paragraph 116)

The MOD is committed to deepening international collaboration, working with Five Eyes partners and other like-minded nations bilaterally and multilaterally to share knowledge and experience and to ensure we provide resilience in our joint pursuit of a safe and secure space domain.

We are a founding member of the seven-nation Combined Space Operations (CSpO) MOU, which we use as a forum to share knowledge on operations, policy and capabilities with like-minded responsible space nations.

UK Space Command collaborates closely with bilateral partners, in particular the US. UK Space Command has Liaison Officers and Exchange Officers embedded within US Space Command, US Star Command, US Space Systems Command and in the US Space Force covering Operations, Plans and Capability. This provides valuable insight, influence and learning across the US Space enterprise and access to the US Space Development Agency, the US Space Rapid Capabilities Office and other US Space aligned departments. UK Space Command staff also benefit from US Space Force education and training courses, which has further developed the expertise of UK Defence personnel as well as generating a network of formal and informal relationships between the nations.

The UK MOD and US Department of Defense signed a Statement of Intent on Enhancing Space Cooperation in December 2021. In support of this, UK Space Command has implemented several arrangements, including a Bilateral Framework with the US Space

Force, which formalises collaboration across organisational structures, training of personnel and acquiring new capability, and an Enhanced Space Cooperation MOU with US Space Command. The latter is the most comprehensive defence space arrangement signed yet between the UK and the US, and the basis for a number of new and developing areas of cooperation. Terms of Reference with the Republic of Korea Air Force and Australian Defence Space Command have also been signed, outlining future cooperation in areas such as information-sharing, collaborative training, and personnel exchanges.

The UK also supports the NATO Space Enterprise by providing operational products from the UK Space Operations Centre (UKSpOC) to meet NATO's Space Support requests where we are also providing space Subject Matter Experts to support NATO exercises. The UK also currently holds a Branch Head role in that organisation.

**15. Space acquisitions require an innovative and flexible approach to procurement, but the MoD will need to balance this against ensuring value for money for the taxpayer. This will not be an easy task, and the Department's endemic failure to robustly manage major projects does not inspire confidence that they will be able to meet this challenge. We will write to the Comptroller and Auditor General asking him to increase his oversight of these new projects to provide additional assurance and we intend to scrutinise their progress closely. In this emerging domain the Ministry of Defence has a real opportunity to learn from its past failings: history must not be repeated. The Department must meet its commitment to set out clear milestones for the significant infrastructure projects announced in the Defence Space Strategy by the end of this financial year. Timescales should also be included, and progress should be reported every six months.** (Paragraph 122)

We acknowledge the need for an innovative and flexible approach to procurement of space capabilities given the rapidly changing nature of the domain and pace of technological development. The department is exploring ways to enable greater agility and iterative delivery of capability. It is intended that the Defence Space Portfolio will be able to take advantage of this approach, which forms part of the department's acquisition reform agenda to drive pace and agility into acquisition to deliver capability to the front line when it is needed and embrace the rapid pace of technological change.

As with all programmes, the procurement of space capabilities will be subject to Defence's robust investment decision-making process, including independent scrutiny, ensuring that oversight is maintained, and capabilities are acquired in a way that delivers value for money for the taxpayer. This process, embodied in Joint Service Publication 655, is regularly updated to ensure alignment with wider acquisition and approvals changes including, for example, mandating a new Risk and Complexity Assessment for all Defence programmes greater than £10 million and an associated tool, currently being trialled, that will enable tailoring of Assurance requirements to the project risk.

UK Space Command recently published a Capability Management Plan,<sup>5</sup> which gives an indication of milestones, and we would be pleased to provide the Committee with a Written Ministerial Statement on the progress we have made in early 2023. The MOD has already begun working with the Cabinet Office Infrastructure and Projects Authority to drive adoption of strong governance, assurance and programme delivery to meet the ambitions set out in the National and Defence Space Strategies.

5 <https://www.gov.uk/government/publications/space-capability-management-plan>