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Speech as Delivered

Well, good morning, everyone. I think I am in control of the PowerPoint. There we go. The Minister has just said to me it's boiling up there so I'm glad I wore my woollen Spitfire suit.

It's really good to see so many distinguished guests, colleagues, allies and friends here and welcome to the UK Space Power Conference here in what is a relatively unexpected sunny London, which is great. It's so good to see lots of familiar faces in the audience – I'm slightly worried that there's a sea of light blue at the back there to hold me to account on what I'm about to say.

But I'm particularly glad to see so many new faces and to meet so many new characters from across the space enterprise, scientists, academics, industry experts. We've got some leaders in finance and of course, there is a good group here from across government. So thank you all for supporting the conference. I really do from a personal perspective, I appreciate that. I stood here just a few months ago alongside many of my fellow international air and space chiefs at what was the Global Air and Space Chiefs Conference. And then I outlined how the RAF is now formally on a journey to becoming Europe's first sixth generation air force with the Global Combat Air Program and now our new Collaborative Combat Air program, the Storm Fighter, operating alongside F-35, Typhoons and a range of many other autonomous systems. But these capabilities will never fulfil their potential without space. And that's why these conferences and this discussion over the next two days are so very important.

From my perspective, I don't think I can get to a sixth-generation air force if I still have a fourth-generation space force. And that is a topic that I'm hoping we can cover over discussions in the coming two days. Space is obviously a prerequisite for modern air power. Every element of a sixth-generation air force depends intimately on space, the networks, the targeting, the navigation, the command and control.

Space is no longer just simply supporting air power from the sidelines. It is completely embedded within it. is essential. It's actually part of the DNA and you

don't have to scratch too far to see that. And space is no less relevant to the other domains. The effective use of space is critical to the ability of our new integrated force to understand, to communicate, to move and to fight. And as we learn critical lessons from ongoing conflicts in places like Ukraine and the Middle East, it is clear that a pivot to uncrewed systems is required at pace.

And of course, if we're going to do this, an uncrewed force is broadly a space-dependent force, once again reinforcing the importance of this vital domain to defence. We often refer to space as the ultimate high ground, through which the integrated force gains a decisive operational edge, enabling it to act with greater speed, better precision, and overall better effectiveness. It is an advantage we must maintain, and if possible, deny to our adversaries.

Space services are not just the invisible thread between our ships at sea, our soldiers on the land and our aircraft in the skies. They now completely underpin our whole approach to strategic deterrence, command and control, and decision advantage. And more broadly, across the fabric of our society, space underpins our modern way of life.

Just coming here, being linked to space told me, if I don't hurry up, I'm going to be late. And the Air and Space Commander was panicking, thinking he was going to have to do this keynote. It's been six years since I was appointed as the first director of space for the MOD, as Anu mentioned. Space was an important topic then. but I would argue now it is a critical matter which must be better understood and better championed across the whole of government, specifically if we are serious about our approach to modern deterrence. It is our responsibility to make sure that everyone in defence knows that the integrated force will not succeed without space. Space must become embedded in how defence generates and operates force.

To reflect this, the Royal Air Force's headquarters at RAF High Wycombe transitioned to become Air and Space Command just a few weeks ago. I'm sure some of you saw that announcement. This is more than just a simple name change. We are demonstrating that space is no longer just a supporting function. Space is now seen as a war fighting domain in its own right and with equal importance to the other domains.

It is a contested, congested and competitive environment where our operational edge and strategic advantage can be won but can also be very quickly and easily lost. Space can no longer be delayed, no longer deferred, or delegated. It must now be delivered and that has been my big message into our own department on this topic.

But importantly it cannot be delivered via national means only and we know in UK we cannot do this alone and I'm delighted that we are joined today by so many international colleagues from around the globe. Our greatest strength is our coalition

of space partners spanning the world, an alliance that is envied and feared in equal measure by our potential adversaries, with all members bringing different capabilities from unique geography to unique on-orbit assets, making our collective security greater than the sum of the space parts.

In the UK, NATO is of course our most critical alliance. And whilst we are building sovereign space capabilities, these will always be part of a NATO force, always part of our strategic deterrence approach. NATO led the way by recognising space as a domain in 2019. And two years later, NATO expanded the scope of our collective defence policy, making it clear that attacks to, from, or within space present a clear threat to the alliance and could possibly trigger an Article 5. This was a major statement of intent. In short, an attack on one of us in space is an attack on all of us, just as it is in the other, more traditional domains.

And whilst UK strategy is NATO first, we are not only NATO. Earlier this April, I went to Colorado to meet with my counterparts from 10 other nations, from the USA in the West to New Zealand in the East for the Principals Board of the Combined Space Operations Initiative, or CSPO. There we agreed to redouble our efforts to deliver capabilities in support of combined space operations, creating a web of global space power, generating and delivering mutually supportive capabilities that no adversary can match. Again, a fundamental approach to our collective deterrence posture.

And central to this is Multinational Force Operation Olympic Defender. This is now our primary international operational framework within which we deliver responsible combined space operations. and these are happening on a very routine basis at this very moment.

Last September, we delivered the first ever UK-US space operation under the banner of OOD. We completed a Rendezvous Proximity Operation in geostationary orbit, moving one of our SKYNET satellites close to a satellite operated by US Space Command. 35,776 kilometers from Earth's surface, to be precise. These satellites were traveling at 11,000 kilometers per hour. That's 3 kilometers per second. So, a collision would most definitely be catastrophic, creating substantial, long-standing debris in an orbit that is congested, full of critical assets.

That is why operations like this must only ever be delivered with the utmost of care, with the utmost of precision, communication, expertise and most importantly, collaboration and agreement. When another nation manoeuvres their satellite close to ours without collaboration, that is unacceptable. It is dangerous and it is unprofessional. It is no different than flying an aircraft to within 50 feet of my aircraft without coordination.

Unfortunately, we are now seeing more and more irresponsible and provocative actions from our adversaries in flagrant disregard of the norms for responsible behaviour by space-faring nations. In May of this year, we tracked a series of

unusual and significant manoeuvres by 5 Russian military satellites, moving to within rapid reach of two finished commercial satellites. These manoeuvres were uncommon and dangerous, raising serious questions about Russia's intent in space. And the next month, in June, it was confirmed that a Russian satellite constellation had caused disruptions to GPS signals across the breadth of Europe, Greenland and Canada over at least 75 days since 2019.

We all know and we all rely on GPS. It's an excellent system operated by our colleagues in the US Space Force. It is used by billions of people and industries around the world and of course it's used by many global military forces. Major disruption to GPS would cost the UK economy to the tune of £1.4 billion of impact every day. Sat-Nav systems would fail, congestion on the roads would create havoc. Our emergency services would take much, much longer to reach those in need.

So make no mistake, the satellite services you may have taken for granted now face unprecedented threats. And losing these services, be it the Sat-Nav that keeps us moving, the timing signals for financial transactions, the Earth observation that allows us to monitor the weather or the effects of climate change. All of this would make every sector sitting in this room less efficient, less prosperous and less secure.

Our adversaries know this. They are developing sophisticated space systems and they have both the capability and the intent to use them. Last year, and most of you will know this handsome chap, last year, the commander of UK Space Command, Tedders (*ret. Major General Paul Tedman*) here today. He's not. He knew I was putting this picture up. So our previous commander of UK Space Command denied that Russia is attempting to jam UK military satellites with ground-based systems every week. At the same time, Germany's defence minister said that Russia had been shadowing their military satellites. Alongside grey zone activity across all domains, space is a region of growing strategic competition. Space has become a warfighting domain, whether we like that or not. And the UK, as well as its partners and allies, must be prepared for this.

Fortunately, this is now recognised across government here in the UK. And in June of last year, we had the Strategic Defence Review, it outlined that space remains a critical national infrastructure sector. Space underpins 20% of the UK's GDP. In real money, that's almost £500 billion. But it is also a site of growing competition. The SDR set out the MOD's requirement to invest in space control decision advantage, reconnaissance, navigation, and timing signals. And if the SDR set out what we in defence would call the ends, this year's defence investment plan set out our means.

And I just heard the Minister for Space talk about the DIP. £9 billion of new space capability already earmarked for 2030 to 2035. And from this year to 2030, £2.3 billion for satellite communications, £880 million for space-based ISR and space control, and a further £440 million for novel space technology. And now we have a

new UK Space Strategy issued just this month. A strategy that outlines how the UK government will act as one regards space, making our nation a competitive space power, assertive in protecting our interests and driving our own economic growth. To protect the nation and also to help it prosper is MOD's aim.

Space has never been more important for our nation's defence and security, for our prosperity and our daily lives. And our adversaries are not waiting until we're ready for them. We must now get on with delivery of space capability and operational effect at pace. At the heart of the UK space arsenal and a major offer to our global alliance is Skynet and many of you in this room will know of our Skynet program and the capability that offers. It's the backbone of UK's sovereign global comms capability and provides command and control for our entire integrated force.

And I'm grateful that the Defence Investment Plan allocated an additional £50 million to extend the life of our in-service SKYNET 5 satellites. And these will be joined next year with the launch of our new SKYNET 6 series, SKYNET 6A. While our demand for SATCOM only increases, and as threats in space grow more serious, SKYNET will be supplemented with allied and commercial SATCOM services. These will provide additional capacity, coverage, and resilience, with resilience being the keyword. Using both SKYNET and commercial SATCOM, UK armed forces will be able to make and communicate decisions quickly around the world. And this is an incredibly important keystone of our quest for decision superiority in today's modern warfare.

And the decision-making of our integrated force will be further improved by space-based intelligence, surveillance, and reconnaissance. Through our ISTARI program, we're delivering a constellation of satellites to provide a multi-sensor, multi-spectral capability to observe activity on the Earth, day or night, heat wave or snowstorm. One of these satellites, the Tyche, is now in space. Over the next two years, three more will be launched: Titania with in-space missions, Juno with SSTL, and Oberon with Airbus Defence Space.

ISTARI will feed our nascent digital targeting web, which in itself has been allocated £1.8 billion under the DIP, an initiative which will truly make our armed forces a single integrated force, connecting sensors, deciders, and effectors driving speed and how we decide to degrade or destroy an identified target in any domain underpinned by world leading AI and software. Our integrated force also relies on these services, so we must monitor them.

We deliver this through world leading sensors, both military and commercial, on the ground and in space. and many of you will recognize these pictures, including RAF Fylingdales, the UK's primary military space sensor, and the only three-faced and foreign-operated radar in the US space surveillance network. Alongside Fylingdales, we will have our new deep space advanced radar capability, the DARC, a trilateral

program with sites in Australia, the UK, and the USA, enabling us to detect, identify, and trap objects in the deepest of orbits.

But Fylingdales and DARC aren't simply radars. They too are part of the integrated battle management architecture, forming part of defence's pervasive multi-domain sensor network. NOCTIS 2, the first sovereign UK sensor for our National Space Ops Centre, or the NSPOC, declared fully operational capability this year. This high-precision optical sensor system, developed in partnership with Spaceflux, is now observing the vital satellites we rely on for military ops around the world. NOCTIS 1 will be soon followed by NOCTIS 2, another advanced sensor which will achieve even higher rates of precision and fidelity.

And we are building the infrastructure for these sensors to be modular, changeable and transportable. so we can swap out and move them as strategic demand evolves. This way, our space domain awareness capabilities would be agile, integrated and ready to support the integrated force anywhere in the world. And unsurprisingly, we will establish more advanced sensors to enhance our SDA using cutting edge technology.

This includes neuromorphic sensors which will help search for unexpected activity around our own satellites. Neuromorphic technology will allow us to monitor large volumes of space with drastically reduced power consumption, latency and data bandwidth, allowing us to detect events in orbit whilst increasing both our global sensor footprint and our observation capability.

However, it isn't all about the sovereign sensors and what we're building within the military. Commercial data procured from our industry partners will always be part of the hybrid, flexible and resilient SDA effort. This year, many of us will have avidly and I'm sure excitedly kept on top of the groundbreaking Artemis II mission. the first crewed Artemis flight and the first lunar flyby since 1972. Our team in the NSPOC using data from Spaceflux tracked this historic mission, demonstrating easily just how we can monitor significant events in orbit using the sensors and the data from our space industry partners.

The value of commercial data for our space domain awareness is shown day in and day out by the Joint Commercial Ops Initiative, the JCO. The JCO programme now encompasses over 20 nations with the JCO UK team and UK Space Command leading the Meridian region between the Americas to our west and the Pacific to our east. JCO teams worldwide are providing unclassified information on activity in orbit, strengthening integration with the commercial sector and integrating public information into military operations. But this SDA will be of limited value unless we can convert it into effective decision making. And so this year, our BOREALIS command, control and data processing system developed by CJI as part of a

five-year, £65 million contract reached initial operating capability six months ahead of schedule. I don't often get to say that.

This system used by No.1 Space Ops Squadron in the NSPOC is providing timely, quality information to government and military commanders, allowing us to make effective decisions and provide operational understanding of the space domain to the whole of the integrated force. Through all of these capabilities, space is now the connective tissue of that integrated force and we must protect these vital capabilities from the threats we see growing every day. This month's new UK Space Strategy outlined the UK's Control of Space requirement.

Through a whole of government approach, the UK will safeguard allied space interests, we will gain and maintain our freedom to operate in space, and we will deny our adversaries that same freedom.

But we are not doing this for its own sake. We're doing this to enable our own freedom of action and for that of NATO and for our overall security. We're protecting the command and control of our integrated force by defending global strategic communications and the systems that generate our decision advantage and combat edge. To help our nation fulfill the control of space requirement, UK defence is now developing capabilities for orbital warfare.

This can be described as actions and effects conducted within space to achieve military objectives, electronic warfare and capabilities to counter anti-satellite weapons. Alongside other supporting operations, these capabilities will help us to deter threats, defend our critical space infrastructure and reduce an adversary's freedom to operate against the UK and against our allies.

To deliver these capabilities, I am incredibly proud today to announce that we are forming No. 3 Space Effects Squadron, UK defence's first dedicated squadron to deliver operations in support of the UK's Control of Space mission. No. 3 SES will disrupt, degrade and deny hostile activity to defend UK space interests and gain operational advantage for the integrated force.

The squadron will be staffed by specialist personnel from across defence and will support offensive and defensive space operations, safeguarding the critical space services which are so incredibly precious to us.

But with all of this said, let's be very clear, and this is particularly important for this audience. No one wants a war in space. We are positioning to deter this. The UK will always operate responsibly in ways that promote stability and avoid escalation.

Alongside our colleagues across government, we aim to promote norms, rules and responsible behaviours in space so that space is preserved as a safe, secure and sustainable domain for prosperity, research and exploration. Our approach to control

of space will always be transparent and rooted in international collaboration and norms.

We will never escalate military activity in space, but we must respond responsibly to a rapidly changing environment in which threats to our critical space systems are growing every single day.

UK Space Command and its associated Space Squadrons operating under the newly established HQ Air and Space Command will deliver space power to protect this nation. We already have No. 1 Space Ops Squadron working as part of the NSPOC and No. 2 Space Warning Squadron delivering the operational activity that we all know so well from our RAF Fylingdales. Our new No. 3 Space Effects Squadron will deliver precise, integrated effects to safeguard our national interests in space. And we are planning more. Numbers 4, 5 and 6 Squadrons, including a Space Tactics and Training Squadron, and squadrons which will deliver the deep space advanced radar capability. And a Space Defence function working as part of the newly established Integrated Air, Space and Missile Defence Operations Centre.

The Strategic Defence Review gave us the ends. We've discussed that here. The Defence Investment Plan gave us the means, and I've talked to some of those numbers. Together though, I think we are all the ways.

And it is time for us to harness our resources. It is time to get moving. It's time to act. and it's time to deliver more meaningfully with our space capabilities.

To work with all of you to turn our approved budget lines into real, tangible capability so that we can monitor space, make effective decisions, deter our adversaries, and if necessary, prevail in this vital yet increasingly contested domain.

Thank you very much indeed and thanks again for supporting us.