



Strategic Command
Defence Digital

Sustainable Digital Technology and Services Strategic Approach 2021–25



Foreword

In its Strategic Approach to Climate Change and Sustainability¹, Defence has laid out its ambition to meet the UK's commitment to a Net Zero carbon future and to deliver military capability that is better adapted and more resilient to the future operating environment. Climate change represents a collaborative challenge and amplifies both directly and indirectly existing societal risks potentially increasing global disruption and instability. There is also the possibility that climate actions to adapt and mitigate impacts can have a negative effect such as increased competition for resources could disrupt the supply chains driving further instability. To mitigate these impacts we will need to collaborate and innovate across the Defence enterprise, with industry and with our allies and partners to ensure that we contribute to the UK's Net Zero commitment, deliver on our Greening Government Commitments and further embed sustainability considerations into our functional policies, processes and strategies.

In delivery of the Digital Backbone, we must consider and mitigate these wider environmental, ethical and socio-economic risks of our digital technology, whilst seizing opportunities to realise sustainability benefits that new digital capabilities may provide. With a £26bn programme over the next 10 years, we must all ensure that Defence Digital plays its part in the transition to a low carbon 'circular' economy that operates ethically and maximises social value. Much of our supplier base is already leaning into the problem and we must both exploit this momentum and engage with them to go further.

As part of the broader Digital Strategy for Defence², this sub-strategy provides guidance to staff and decision-makers across the Digital Function and is a signal of intent to our supplier base. It sets out the goals and objectives that will improve the sustainability of our digital services and contribute towards HM Government's Greening Government Commitments and Net Zero target. The sub-strategy will be realised through a delivery plan developed over the next year to align with the Department's ongoing agenda to drive and incentivise the right behaviours, to measure and report Defence's associated environmental impact and to meet direction on carbon targets, as well as wider sustainability measures. In this way, we will deliver, generate and operate more efficient, adapted and resilient digital services for Defence, which fully meet the challenges and opportunities of the future. Accordingly, this sub-strategy will be refreshed at an appropriate time to ensure continuous alignment with Departmental policy and direction.

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¹ [Ministry of Defence Climate Change and Sustainability Strategic Approach – March 2021](#)

² [Digital Strategy for Defence](#)

Introduction

Developed nations in Europe and America consume resources at a rate four times greater than the Earth's capacity to renew them. Sustainability is no longer the preserve of academics and activists; governments, businesses and the public increasingly recognise the need for fundamental change in humanity's relationship with the planet and its biosphere.

The effects of climate change and biodiversity loss brought about by unsustainable patterns of production and consumption were identified as major transnational challenges within the Integrated Review³. Dealing with these twin threats is the UK's international priority in 2021 and beyond. Climate change acts as a threat multiplier, creating instability, competition for natural resources, migration and conflict. A more sustainable approach globally will support greater international stability and security.

UK was the first major economy to pass laws to achieve net zero emissions by 2050. Due to its size and the nature of its activities, Defence accounts for about 50% of the UK central Government's emissions. The Defence Command paper⁴ commits the department to: building resilience of the armed forces to operate in future environments; to reduce its impact on the environment; to mitigate against the effects of its carbon footprint on the climate; and to embed sustainability considerations into all areas of Defence.

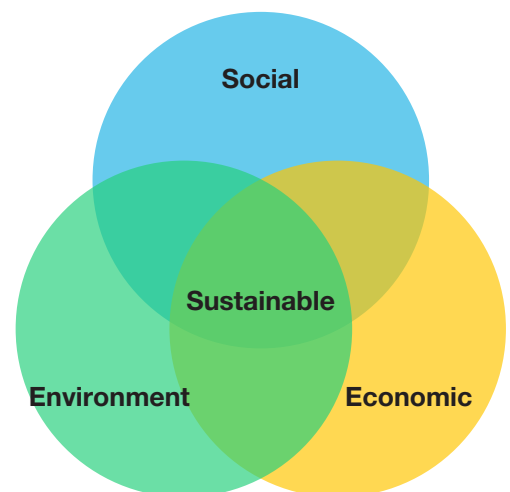
Purpose

The Sustainable Digital Technology and Services (SDTS) Strategic Approach defines the digital sustainability goals and objectives that support Defence Plan Task 15⁵ and Task 20⁶. It provides the sustainability 'Golden Thread' woven into the Digital Strategy for Defence⁷ and articulates how the delivery of the Digital Backbone can be realised in a way that achieves the UK Government's priorities for climate change and sustainability. It directly supports both the Greening Government ICT and digital services strategy⁸ and the MOD Climate Change and Sustainability (CC&S) Strategic Approach⁹, which sets Defence's strategic ambition for net zero emissions by 2050 and establishes an epoch by epoch approach to achieving this ambition.

Sustainable Digital Technology

What is sustainability?

Sustainability is about meeting our own needs without compromising the ability of future generations to meet theirs. It's more than just about environmental protection. To satisfy our material and immaterial needs, we need economic well-being and a society based on solidarity. Our actions cannot be considered as isolated, one-dimensional aspects; instead, one must consider the interrelationship between the three dimensions of environment, economy and society.



³ Global Britain in a competitive age – The Integrated Review of Security, Defence, Development and Foreign Policy – March 2021

⁴ Defence in a competitive age – March 2021.

⁵ Defence Plan 21 Task 15 – Deliver Defence's Digital Capabilities and Services that enable sustained military and business advantage and exploit Defence's Data.

⁶ Defence Plan 21 Task 20 – Deliver HMG Policy Priorities including the Union, Places for Growth, Prosperity and NetZero50/Greening Government Commitments.

⁷ Digital Strategy for Defence – Delivering the Digital Backbone and unleashing the power of Defence's data – May 2021.

⁸ Greening Government: ICT and digital services strategy 2020-2025 – 10 September 2020.

⁹ Ministry of Defence Climate Change and Sustainability Strategic Approach – March 2021.

In an increasingly globalised society, many of the goods and services we consume have long and complex supply chains, many of which are hidden from the end user. Sustainable supply chain management is necessary in maintaining the integrity of any organisation, ensuring business continuity and managing operational costs.

Sustainable procurement is a strategic activity that has the power to shape supply chains. It ensures that any goods, services, works and utilities needed for an organisation to function achieves value for money on a whole life basis. Social, economic and environmental risks and opportunities need to be addressed from the start of a project through to disposal or termination of the service.

Why does sustainable digital technology matter?

Sustainable digital technology encompasses resource management, climate change, energy efficiency, material security, equipment longevity, supply chain sustainability, economy and employment, social value, pollution and waste management. Sustainable digital technology is about ensuring that digital systems are designed, manufactured, managed and used in a way that minimizes environmental and social impact, improves resilience and contributes towards sustainable development. Large data centres, cryptocurrency mining, and enterprise systems that power global supply networks are some of the major contributors to the greenhouse gas emissions, placing the carbon footprint of worldwide ICT on a par with the aviation industry. Digital supply chains are under increased scrutiny for their use of modern slavery, conflict minerals and rare earth elements, whilst e-waste has become the world's fastest growing waste stream. These trends are exacerbated by explosive adoption of online digital services and social media across the world and global demand for pervasive access and the development of the Internet of Things (IoT). As we become ever more connected we need greater emphasis on sustainable solutions to mitigate the risks of uncontrolled growth in data and devices.



How digital technology contributes to sustainability

The COVID-19 crisis provides a timely example of the potential of digital technologies, but also highlights gaps and new challenges. Digital communication tools have helped to sustain interaction and continuity in vital economic and educational activities. Digital allows working from home, helps to cut travel emissions, reduces the need to print, and facilitates easy communication and collaboration with colleagues, family, suppliers and service providers such as banks, shops, education and healthcare facilities, creating a more efficient and sustainable society. However, access to digital technologies remains highly unequal within and between countries. Almost half the global population does not have access to the Internet. Many children and adults in UK are digitally disadvantaged and workers in the 'gig economy' are poorly protected against income losses.

The digital function contributes to several UN Sustainable Development Goals (SDG)¹⁰, directly supporting the following 5 goals



and indirectly supporting these 4 goals:



Digital technology is expected to cut carbon emissions on a global scale by developing next-generation distributed grids, smarter cities, transportation systems, industrial processes, and energy saving gains. Emerging technology such as Artificial Intelligence (AI), blockchain, drones, automation and robotics will play a large part in achieving the UN SDGs, through the precise surveillance and control of complicated processes which improves our ability to minimize pollution and improve energy efficiency. Transparency in supply chains will improve, and the environment can be more easily surveyed and protected because of real-time monitoring.

The Case for Change

Whilst sustainability has been around for a long time, its application in Defence has been limited. The Defence Infrastructure Organisation (DIO) and Defence Equipment and Support (DES) are leading efforts to make sustainability an integrated discipline of environmental and socio-economic factors. However, despite the existence of much policy direction and guidance, the incorporation of sustainability into project requirements, contract award and performance reporting remains immature.

¹⁰ The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, and peace and justice.

This is despite the fact that being sustainable by design has the potential to improve resilience and lower procurement and operating costs in a time of financial stringency.

Within equipment acquisition, some aspects of sustainability are addressed within environmental risk management, but wider sustainability opportunities are rarely considered. A recent National Audit Office (NAO) assessment of MOD Environmental Sustainability¹¹ reported that the subject lacks satisfactory oversight arrangements at senior levels. Project teams produce bespoke and unquantified risk assessments and a consolidated view of environmental impact is generally not available. The NAO also highlighted that MOD is not monitoring compliance with Government's sustainable procurement buying standards. Furthermore, because environmental risks are often addressed alongside safety assessments, there is disproportionate focus on compliance and risk avoidance which overshadows any consideration of the positive contribution that could be made to wider environmental sustainability goals.

Digital technology is used widely across Defence: energy use by Defence ICT makes up 36% of total ICT energy use across Government. There are about 1 million office devices¹² in use, equating to 5 per employee and our individual ICT electricity consumption (2300 kWh) is approaching that of a small mid-terraced house. To meet the GGCs and Net Zero 2050 target, a more sustainable approach to digital technology is clearly needed. Within the Digital Function, improvements to sustainability can be achieved in the following ways:

- **Policy must be matured and communicated.** Policy exists but is not well communicated or understood. Material security, waste, climate change, resilience and ethical issues need more attention, with change objectives and plans to implement improvements.
- **Sustainability risks and opportunities must be systematically addressed.** Sustainability assessments must be done at an early stage in the project lifecycle. Sustainability risk management is immature, and opportunities are rarely identified or exploited.
- **Positive sustainable outcomes and behaviours must be defined, monitored and managed.** Improved measurement and reporting for sustainability are required, including independent audit and assurance activity.
- **Procurement activities should be realigned with sustainability priorities.** Supplier engagement on sustainability issues needs to be improved, and sustainability given more weight in requirements development and procurement decisions.

¹¹ Ministry of Defence Environmental Sustainability Overview – National Audit Office – 13 May 2020.

¹² Desktops, laptops, monitors, printers, telephones, smartphones, tablets, audio-visual devices.



Strategic Intent

The environmental footprint of MOD's digital technology is continually reduced, and its digital services support better sustainability outcomes.

Principles

Digital technology and services will be introduced and managed in accordance with three guiding principles:

- **Reduced Environmental Footprint** – be more economical with the planet's resources.
- **Use Digital to Adapt and Evolve** – use digital capabilities to improve sustainability.
- **Responsible and Assured Procurement** – act in an ethical and equitable manner.

Reduced Environmental Footprint

Delivery and operation of digital capabilities must be non-polluting, require less energy, and reduce raw material demand, lowering MOD's overall resource consumption. Device numbers must be managed effectively to avoid unnecessary proliferation, and hardware reused within a circular economy.

Use Digital to Adapt and Evolve

Transformative and enabling digital capabilities must be introduced that support the evolution of MOD to a net zero-carbon organisation. Resilience to supply chain issues and strategic global shocks must be enhanced, and we must adapt appropriately to climate change.

Responsible and Assured Procurement

Cost-effective digital capabilities must be acquired and operated in a manner that enhances socio-economic wellbeing, supports sustainable development, adds social value and promotes ethical standards throughout the supply chain, which must be independently audited.



Goals and Objectives

The six goals of the SDTS Strategic Approach are shown below. These seek to address the deficiencies identified in MOD's historic approach to sustainability and to meet the direction of travel set out in the Greening Government ICT and digital services strategy.



Net Zero digital services

Cut GHG emissions to zero through sustainable and efficient use of resources associated with the entire ICT lifecycle.



An embedded circular economy in digital technology

Move towards a full service-delivery model for ICT equipment, where our ICT suppliers create a closed-loop system for equipment, including offering remanufactured items by default.



Digital services that improve sustainability

Ensure that sustainability is embedded in project approvals and across the capability lifecycle. Innovate and develop digital services that deliver sustainability benefits.



Resilient operations and supply chains

Futureproof our digital operations from disruption caused by a range of issues including resource depletion, climate risk and geopolitical instability.



Ethical, traceable and assured supply chains

Identify and trace the resourcing and production and delivery of digital capabilities to ensure the reliability of our sustainability claims in areas of human rights, labour, the environment and anti-corruption.



An educated and responsible workforce

Through education and training, raise awareness of the importance of sustainability within ICT and encourage employees to be responsible digital citizens.



Net Zero digital services

a. **Rationale.** To limit global warming to less than 1.5 degrees, as set out in the Paris Agreement in 2015, the UK Government has legislated to be Net Zero by 2050. To achieve this target, all departments need to decarbonise their supply chain and operations.

b. **Objectives.** To achieve this Goal, the following objectives must be met:

- The MOD's digital estate minimises embodied and emitted carbon.
- Digital services are operated in the most energy-efficient environments.
- Suppliers of digital services have verified carbon footprints and a plan to achieve Net Zero by 2050.



An embedded circular economy in digital technology

- a. **Rationale.** ICT waste is adding to an ever-increasing e-waste problem and new equipment is reliant on finite resources such as rare earth elements. Circular principles need to be embedded into our digital technologies in order to reduce environmental impact, mitigate future supply chain risks, and lower costs. Linear digital procurement evolves to acquisition of layered services delivered incrementally with component maximisation and evergreening.
- b. **Objectives.** To achieve this Goal, the following objectives must be met:
- All digital technology and services are designed to meet stringent sustainability standards.
 - Procurement of remanufactured and upgraded hardware is increased.
 - Device re-use is increased.
 - Landfill from digital technology is reduced to zero.



Digital services that promote sustainable outcomes

- a. **Rationale.** Sustainability must be embedded throughout the procurement process, particularly within requirements generation, investment appraisal, contract award and through-life management. All investment will be tested against alignment and coherence to sustainability policies before approval. Emerging technology holds the potential to accelerate sustainability goals; CIOs across Defence must conduct horizon-scanning for disruptive digital capabilities, identifying those that deliver sustainability advantage and adopting them wherever feasible and affordable.
- b. **Objectives.** To achieve this Goal, the following objectives must be met:
- Sustainability is integrated within digital procurement processes.
 - Measures to reduce the MOD's energy consumption are enabled by digital services.
 - Digital services are developed to reduce MOD's emissions from its business activities.



Resilient operations and supply chains

- a. **Rationale.** To mitigate the risk of disruption of digital services due to resource scarcity, pandemics, natural disasters, climate change and geopolitical instability, we need resilience built into our digital technologies and effective, flexible management of the supply chain. We must mitigate against the impact of the carbon footprint of deployed technology and seize opportunities to improve the sustainability of our operations.
- b. **Objectives.** To achieve this Goal, the following objectives must be met:
- Digital technology and services are designed and operated to be resilient to climate change.
 - Risks associated with supply and operation of digital technology are identified and mitigated.



Ethical, traceable and assured supply chains

- a. **Rationale.** The MOD has a duty to comply with legislative requirements on ethical issues and to be a good corporate citizen. In our procurement spend on digital services, the MOD can also create wider social benefits. Through the Strategic Supplier Performance Management process, we must hold our suppliers to account by verifying their sustainability claims and ensuring they identify potential opportunities and risks in the supply chain.
- b. **Objectives.** To achieve this Goal, the following objectives must be met:
- Unethical practices are removed from MOD ICT supply chains.
 - Digital procurement makes a positive contribution to Social Value.
 - MOD digital suppliers are transparent and held accountable for the services they provide.



An educated and responsible workforce

- a. **Rationale.** Sustainability improvements can only be realised through the active contributions of the whole workforce: those who lead and drive change, those who deliver and manage digital capabilities, and end-users who are aware of their own sustainability responsibilities.
- b. **Objectives.** To achieve this Goal, the following objectives must be met:
- Senior leadership understand the digital sustainability imperative and goals.
 - Project and Commercial teams are empowered and know how to apply sustainability requirements in contracts.
 - End users are sustainability-aware in their behaviours.



Governance, Roles and Responsibilities

The response to climate change and sustainability in Defence must be led from the top and applied across all areas and at all levels. Governance of digital sustainability will integrate with, support and be accountable to overarching departmental governance arrangements. Successful implementation of the SDTS Strategic Approach requires action throughout MOD, with the following key responsibilities:

- **Defence CIO** – As the principal advisor to the Defence Board on Digital, CIO will lead the digital response to MOD's Climate Change and Sustainability (CC&S) Strategic Approach and Defence's contribution to Greening Government digital sustainability initiatives. CIO will sponsor the SDTS Working Group (WG) and the implementation of the SDTS Delivery Plan.
- **Digital Leaders (CIOs or equivalent) from TLBs, FLCs, and Trading Funds/Agencies** – In conjunction with TLB 2* Sustainability Champions, lead the adoption of digital sustainability best practices, incorporating the SDTS objectives into information strategies and plans and contribute to the SDTS WG.
- **SDTS WG** – Manage the implementation of the SDTS Strategic Approach and Delivery Plan, reporting on progress towards Government and MOD sustainability targets, and sponsor new initiatives to improve digital sustainability.
- **Defence Acquisition Community** – Ensure the Goals and Objectives of the SDTS Strategic Approach are embedded into capability requirements and through-life management and that sustainability is given increased weight in procurement activity.
- **Defence Commercial and Financial Community** – Incorporate digital sustainability objectives into commercial and financial policy and engage with suppliers to drive improvements within supply chains, ensuring that they are aware of MOD's ambition and the importance of compliance.
- **Defence Safety and Environmental Community** – Ensure full consideration of environmental aspects in projects with digital components and work closely with project and commercial officers to address sustainability risks and opportunities.
- **Investment Approvals Board (IAB/DPAS)** – Provide scrutiny and assurance to make sure submissions have taken full account of Sustainable Procurement policy and guidance.
- **Defence End-Users/Personnel** – Apply sustainable practices to all aspects of digital behaviour, within the work environment and at home.

Implementation – the SDTS Delivery Plan

Although achieving Net Zero and becoming more sustainable in digital procurement and operations will be a significant challenge addressed over many years, implementation must start now. The SDTS Strategic Approach provides the vision and direction of travel and identifies what needs to be done. The Digital Function will coordinate and cohere with the Defence approach led by the new MOD climate change and sustainability directorate. Defence is embarking on its first epoch of change in the period 2021-2025 and a concurrent SDTS Delivery Plan will be developed which will align to MOD and HMG sustainability policy objectives and targets. This will set out the actions required to implement the SDTS Strategic Approach during this period, who is responsible for delivering which elements, the timeline and any dependencies, funding arrangements and governance, including reporting arrangements to monitor progress. Commands and Enabling Organisations should incorporate relevant measures and targets into their own digital capability plans. The SDTS Delivery Plan will be owned by MOD CIO and maintained by the SDTS WG who will deliver annual reports on progress to CIO, MOD and Defra.