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Beyond Buzzwords: Operationalising 'Protect and Defend' in UK Space Doctrine

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Beyond Buzzwords: Operationalising 'Protect and Defend' in UK Space Doctrine

Dr Tim Adcock

About the Author

Dr Tim Adcock is Principal Space Consultant at Inzpire Limited, specialising in the integration of Space Power within UK defence. He joined Inzpire in 2021 after a 20-year career in the Royal Air Force, where he held senior roles in space operations, including command of the operations squadron at RAF Fylingdales and key posts within the UK's Joint Force Air Component and 16 Air Assault Brigade.

He played a central role in the development of UK military space capability, serving as Space Tactics and Training Officer at 92 Squadron, lead instructor at the Air and Space Warfare School, and later as lead on the UK Space Command's Qualified Space Instructor programme. In 2020–21, he became the first UK national to serve as Deputy Director of Space Forces on the staff of the US Director of Space Forces at US Central Command.

Dr Adcock is currently embedded within the RAF's Air and Space Warfare Centre, supporting the application of Space Power in both live and synthetic environments. This paper draws on his operational experience and the insights of the Inzpire Space Team, including Gerry Doyle, author of the MOD's *UK Space Primer*.

Abstract

Today, our dependence on space-based systems – and the services they enable – is considerable. Yet many remain unaware of space's impact on daily life, and fewer still recognise its critical national strategic significance.

Over the past five years, *protect* and *defend* have become central to the UK's projection of Space Power. These terms feature prominently in the strategic objectives of the UK Space Command and the broader UK Government. As such, they serve as key indicators of strategic progress.

To function as meaningful metrics *protect* and *defend* must be clearly defined. Absent contextual clarity within the framework of Space Power, these terms risk misinterpretation, which may result in diluted efforts and suboptimal outcomes. This paper examines both terms, proposes precise definitions, and connects each to the activities – particularly required to realise them.

Introduction

Even before the launch of *Sputnik 1*, we imagined how space might be exploited. Since that historic event, our vision has expanded, and our use of space has continued to evolve and diversify. Today, reliance on space-based systems – and the services they support – is substantial. Yet many remain unaware of space's pervasive influence on daily life, and fewer still appreciate its underlying national strategic significance.[1]

The UK's *National Space Strategy* outlines a vision for the United Kingdom to become a leading global space economy. It frames the UK as a 'space nation', emphasising space's potential to address both domestic and international challenges. Realising that vision, however, requires assured access to space. While freedom of action in space may appear assured, the potential for disruption, degradation, or outright denial of access remains a clear and present threat.

Before the *National Space Strategy*, the UK's 2021 *Integrated Review* had already recognised the need to 'protect and defend' national interests in an increasingly congested and contested space domain. NATO's 2022 *Strategic Concept* echoed this concern, warning that adversaries are developing technologies capable of limiting access to space, degrading capability, targeting critical infrastructure, and undermining security.

> *Protect* and *defend* have become central to the UK's projection of Space Power

In response, *protect* and *defend* have become central to the UK's projection of Space Power. These terms are now embedded in UK Space Command's objectives and broader UK Government strategic space aims. Accordingly, they serve as vital benchmarks for assessing the effectiveness of strategic delivery.

This paper explores the concepts of *protect* and *defend* within the context of Space Power projection, offers working definitions of both, and links them to the activities – principally Space Control – necessary to achieve them.

Space as a Contested Domain

In their review of space and its evolution as a contested domain, Harrison et al. observe that 'the launch of *Sputnik 1* on 4 October 1957 ignited a frenetic competition for superiority in space. From 1957 to 1990, the US and Soviet Union were responsible for 93 per cent of all satellites launched into space. Moreover, the US and Soviet space programs were directly linked to military power, and about 70 per cent of satellites launched from 1957 to 1990 were military satellites'.[2] Since that launch, our ability to operate in space has reshaped the nature of international competition and conflict.

During the Cold War, space operations were critical to strategic deterrence. Space-based systems were deeply embedded in the nuclear postures of both the US and the Soviet Union. Although various counter-space weapons were developed and tested, a tacit understanding of non-interference in space largely held.[3] As Lupton notes in *OnSpace Warfare*, 'the primary value of space forces is their ability to reduce the probability of global nuclear war... At all levels of conflict short of global nuclear war, space forces retain their value only if the environment remains a sanctuary'.[4]

With shifting geopolitics and advancing technology, space-based systems have become a routine element of conventional tactical warfare. This widespread integration of space into modern military operations has, in turn, increased the risk of counter-space activity. Over the past two decades, countries such as Russia and China have developed and demonstrated substantial counter-space capabilities.

The growing normalisation of such activity is widely recognised. Key publications – including the US Defense Intelligence Agency's *Challenges to Security in Space*,[5] the Centre for Strategic and International Studies' *Space Threat Assessment*,[6] and the Secure World Foundation's *Global Counterspace Capabilities*[7] – address these developments in detail. Today, few military analysts regard space as a sanctuary.

> The imperative to protect and defend interests in space extends well beyond the military domain

That said, the imperative to protect and defend interests in space extends well beyond the military domain. National prosperity and economic security are increasingly reliant on space-based systems. Ensuring access to space for civil, industrial, commercial, and academic stakeholders is likewise strategically important. Indeed, the broader need to safeguard national space assets is encapsulated in the US Space Force's concept of *Space Security* – one of five core competencies for which it is organised, trained, and equipped.[8]

UK use of 'protect and defend' in space strategy

While the terms *protect* and *defend* may appear unremarkable within traditional military power projection, their combined use in the UK's approach to space power marks a significant shift in strategic thinking. The *National Space Security Policy* (2014) recognises the need to 'protect our most sensitive national information and assets' but does not suggest active defence measures.[9] In contrast, UK Space Command's inaugural *Space Operating Concept* explicitly states that 'the UK will look to develop capabilities, plans, and response options to [not only] deter, [but also] defend against, and if necessary, defeat efforts to interfere with or attack national or allied space systems'.[10] It further emphasises that these responses 'need not be [delivered] in the same domain as the interference or attack' and that any measures taken will comply with international and UK domestic law.[11]

In the UK space power projection context, the phrase *protect and defend* appears to have first emerged in the 2021 *Integrated Review*, where it is used twice. First, to affirm:

> 'We [the UK Government] will ... ensure the UK has the capabilities to protect and defend our interests in a more congested and contested space domain'.[12]

Second, to declare:

> 'By 2030, the Government's ambition is for the UK to have the ability to monitor, protect and defend our interests in and through space...'[13]

Notably, this phrasing mirrors language in the US *Defense Space Strategy* and joint space power doctrine. Such alignment is further reflected in the UK's *National Space Strategy* (September 2021), which identifies *protect and defend* as one of its five strategic goals (see Figure 1).

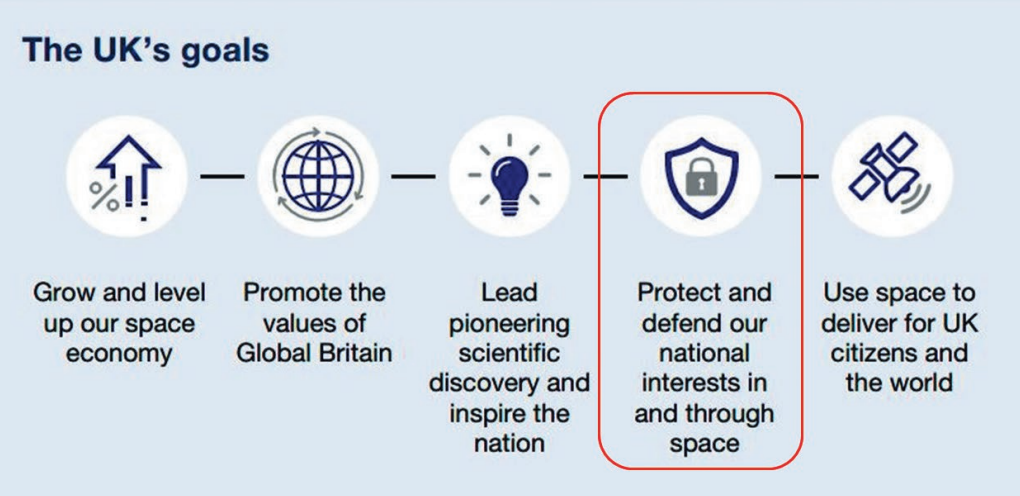

Figure 1. *UK* National Space Strategy *Goals*[14]

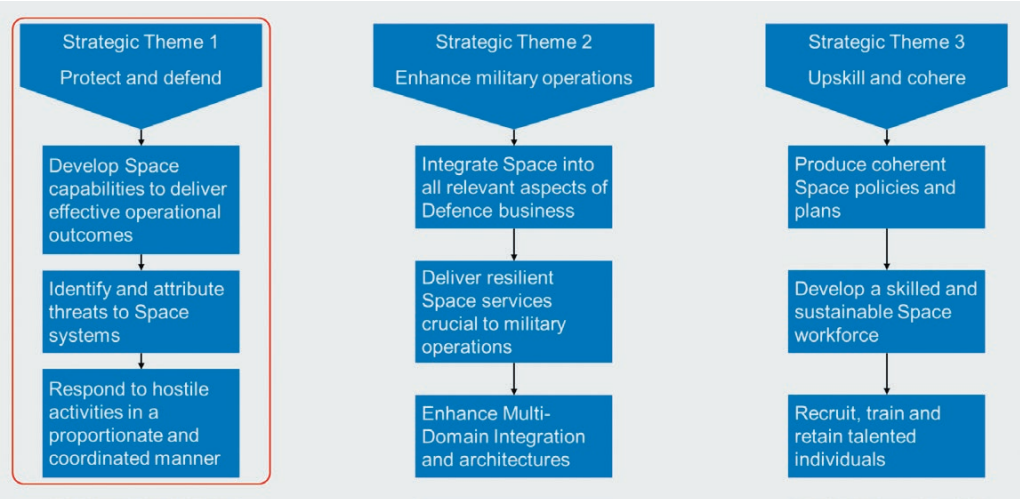

Figure 2. *UK* Defence Space Strategy *Strategic Themes*[15]

The UK's *Defence Space Strategy* (2022) similarly lists *protect and defend* as a central strategic theme (Figure 2).

However, the most striking articulation of *protect and defend* appears in UK Space Command's strategic mission statement. As outlined in the *Defence Space Strategy*, UK Space Command – established on 1 April 2021 – is tasked to:

> 'Protect and defend the UK and allies' interest in, from and to space, delivering decisive space power, enabling operational independence and contributing to global security'.[16]

Supporting this mission, UK Space Command's stated purpose is to 'deliver the UK's command and control of space..., coalesce and cohere space capability delivery and operations, and provide unity of effort to deliver a space enterprise that will [as its first specified task] protect and defend the UK and allies' interests in space'.[17]

‘Protect’ and ‘defend’ as measures of effectiveness

As *protect* and *defend* are conflated in the UK’s *National Space Strategy* and *Defence Space Strategy*, it is unsurprising that they are often treated as broad strategic themes. However, given their central place in UK Space Command’s mission statement – and their role as the Command’s first specified task – these terms carry greater operational weight. The author contends that *protect* and *defend* are linked yet distinct functional deliverables. As such, they should serve as key metrics by which the performance of UK Space Command, and ultimately the UK Government’s space strategy, is assessed. This argument is reinforced by the acknowledgement that ‘the UK is not currently postured or prepared to protect and defend its national security and defence interests in space’.[18] In light of this, tracking measurable progress toward these objectives is essential.

> To function as meaningful indicators, *protect* and *defend* must be clearly defined

To function as meaningful indicators, *protect* and *defend* must be clearly defined. Without clear definitions tailored to space power projection, the terms risk ambiguity – leading to diluted efforts and ineffective implementation. In *What Does Protect and Defend Mean for a UK National Approach to Space?*, Owens proposes that *protect* and *defend* be understood as a holistic approach incorporating several elements: reliance, resilience, domain awareness, mission scope, and threat assessment.[19] While each component is important, grouping such a wide array of concepts under two simple terms may be unnecessarily complex. In the author’s view, Owens’s approach does not aid UK Space Command in evaluating operational effectiveness.

Instead, the author recommends defining *protect* and *defend* as effect verbs. Doing so establishes a clear, shared understanding, enabling UK Space Command to simplify the complex task of assessing effectiveness in space operations.

UK doctrinal definitions

The MOD’s *Integrated Operating Concept* offers clarity on strategic competition, organising military activity into four functional areas – one of which is titled *Protect*.[20] According to *Joint Doctrine Publication 0-01: UK Defence Doctrine*, *protect* is an enduring function fundamental to deterrence and intended to prevent modern threats from exploiting vulnerabilities.[21] It enables Defence’s freedom of action and contributes to safeguarding the UK’s way of life; it is considered non-discretionary.[22]

While this conceptualisation of *protect* is relevant to the MOD’s projection of space power, it understandably lacks specificity. This interpretation offers little guidance in defining *protect and defend* as used in the *UK National Space Strategy*, *Defence Space Strategy*, the 2021 *Integrated Review*, or UK Space Command’s mission statement. Greater specificity may be found at the tactical level.

NATO defines *defend* as an action verb, while the British Army defines *protect* as an effect verb:[23]

- **Protect** (*Effect*): Prevent the enemy, environment, or disease from affecting an individual or group.[24] (UK LAND-specific term)
- **Defend** (*Action*): A combat operation designed to defeat an attacker and prevent them from achieving their objectives. It employs all available means and methods to prevent, resist, or destroy an enemy attack.[25] (NATO term)

These definitions imply that *protect*, an effect achieved through activity, is the outcome of an action – *defend*. In this light, *defend to protect* appears logically sound. However, in the author's view, when officials refer to *protect and defend* in the context of space power projection, they are not describing an effect delivered through an action. Instead, the authors of the 2021 *Integrated Review*, *National Space Strategy*, and *Defence Space Strategy*, along with those behind UK Space Command's mission, consistently treat *protect* and *defend* as distinct but interrelated effects.

UK Space Command's *Space Operating Concept* addresses the two terms separately under the conceptual pillar *Endure*. *Protect* is described as:

> 'To protect space operations, the UK will take measures to overcome attempts to deny or manipulate friendly space systems and ensure they perform as designed. These measures will ensure the freedom of action to operate in, from, through, and to space, and mitigate against the strategic consequences caused by the loss of highly capable space systems and infrastructure.'[26]

Defend is defined as:

> 'The UK will look to develop capabilities, plans, and response options to deter, defend against, and if necessary, defeat efforts to interfere with or attack national or allied space systems. The response need not be in the same domain as the interference or attack. Measures taken would be in accordance with international and UK domestic law.'[27]

Despite widespread use across space-related strategy documents, concept papers, and military doctrine, what the UK means by *protect and defend* remains ambiguous

Yet, in the author's opinion, these paragraphs do little to clarify the precise meaning of *protect* and *defend*, or how they may differ. Paradoxically, they appear to suggest that *protect* is the desired effect and *defend* the means to achieve it – contradicting earlier assertions that the two are distinct effects.

In summary, despite widespread use across space-related strategy documents, concept papers, and military doctrine, what the UK means by *protect and defend* remains ambiguous. What is clear, however, is that words matter. Regardless of intent, imprecise language leads to miscommunication. The central question, then, is whether the phrase *protect and defend* reflects a linguistic oversight – or whether it represents two distinct effects, delivered through actions undertaken at different times.

US doctrinal context

Given the lack of clarity in UK space strategy, operating concepts, and military doctrine regarding the meaning of *protect* and *defend*, and considering the phrase appears to have been initially 'borrowed' from the United States, it is logical to look to the UK's closest space ally for guidance.

The US Space Force's capstone doctrine, *Spacepower: Doctrine for Space Forces*, identifies unfettered access to and freedom of action in space as vital.[28] It states explicitly that military space forces exist to 'protect, defend, and preserve this freedom of action'.[29] As in UK doctrine, *protect* and *defend* are listed as associated but distinct effects – a distinction reinforced by the US Space Force's characterisation of *combat power projection* as 'the force available and, when necessary, employed to protect, defend, or defeat threats'.[30]

Aligned with this emphasis on preserving freedom of action, the US Department of Defense's 2023 *Space Policy Review and Strategy on Protection of Satellites* states

that it will 'assure critical space-based missions by accelerating the transition to more resilient architectures and by protecting and defending critical systems against counter-space threats'.[31] While this policy does not provide explicit definitions of *protect* or *defend*, it offers some elaboration in a section titled 'Mission Assurance by Protecting and Defending Critical Systems Against Counter-space Threats'. Here, the Department commits to 'developing a range of solutions across all domains that counter hostile uses of space and protect and defend US and, as directed, allied, partner, and commercial space'.[32]

Further guidance is offered in the following definitions:

> 'Protection includes all measures taken to ensure friendly space systems perform as designed by overcoming attempts to deny or manipulate them and by mitigating environmental hazards, including terrestrial and space weather. Protection measures include electromagnetic spectrum operations, movement and manoeuvre, and hardening. Cybersecurity also plays a key role in improving the resilience of US space architectures, and hardening networks against hostile cyber operations is a priority effort.'[33]

> 'Defensive space operations contribute to deterrence in space – thereby supporting deterrence across all domains – by improving the mission assurance of critical space services that support US national security interests. Operations to protect and defend space systems can consist of all active and passive measures taken to secure friendly space capabilities from attack, interference, or hazards, and can apply to defense of any segment of a space system – space, link, or ground. Active space defense can consist of actions taken to neutralise imminent counterspace threats to friendly space forces and space capabilities. Passive space defense minimises the effectiveness of on-orbit and terrestrial threats.'[34]

"For UK Space Command to effectively assess success in achieving its stated strategic aims and to measure progress toward them, clarity is essential

However, as with the UK Space Command's *Space Operating Concept*, these descriptions do little to distinguish *protect* from *defend*. In fact, the language often mirrors that of the UK despite the US documents predating them. The continued use of the phrase *protect and defend* – without clear differentiation – suggests that the terms are still considered distinct but have closely interlinked effects.

Despite the prominence of *protect and defend* in seminal US space publications, as in UK documents, no definitive, doctrinal definitions of either term – particularly in the context of space power projection – are provided. As a result, there is neither a compelling argument nor a viable rationale for the UK to adopt existing US definitions wholesale.

For UK Space Command to effectively assess success in achieving its stated strategic aims and to measure progress toward them, clarity is essential. That clarity can only be achieved by formally defining *protect* and *defend*.

Proposed definitions

Defining *protect* and *defend* is not inherently complex. The 2022 *UK Defence Space Strategy* offers initial guidance: 'In response to our adversaries' increasing offensive capabilities in space, we require credible deterrence and response options to protect and defend our national interests in and through space'.[35] While open to interpretation, it is reasonable to view *deterrence* as a means of protecting national interests and *response options* – implicitly, the response itself – as a means of defending them.

Building on this interpretation, the following distinction is proposed:

Unless under attack or if an attack is deemed imminent, there is no justification for initiating defensive measures.[36] *Defend*, understood as an effect aimed at preserving operational capability and continuity, is relevant only in response to an actual or imminent attack. This interpretation aligns with NATO's doctrinal definition of *defend*.

Consequently, since *defend* applies exclusively in the context of attack, *protect* – likewise aimed at maintaining operational effectiveness – applies outside those circumstances.[37] Notably, this framing of *protect* encompasses proactive measures intended to deter aggression, echoing the original intent articulated in the *UK Defence Space Strategy*.

Figure 3 illustrates this conceptual distinction.

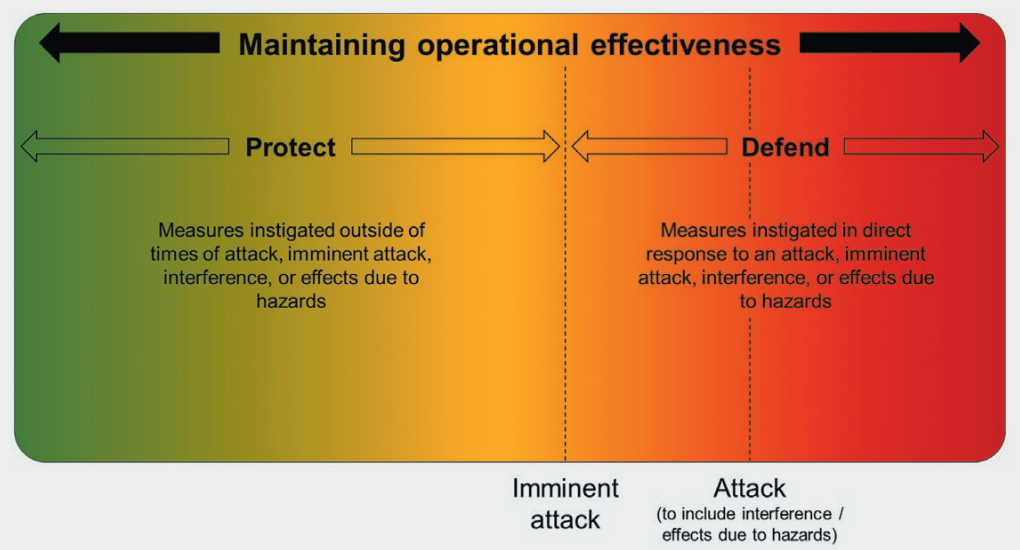

Figure 3. *Maintaining operational effectiveness*

If this rationale is accepted, the following definitions are proposed:

- **Protect and Defend** (*Concept*): Prevent a competitor, adversary, enemy, unwitting malign actor, or environmental hazard from rendering a space system/force operationally ineffective.
- **Protect** (*Effect*): Outside of times of attack, imminent attack, interference, or effects due to hazards, negate opportunities by which a space system/force might be rendered operationally ineffective.[38]
- **Defend** (*Effect*): In response to an attack, imminent attack, interference, or effects due to hazards, prevent a space system/force from being rendered operationally ineffective.[39]

Defining these terms in this way establishes a clear, shared understanding of their meaning. This clarity enables UK Space Command – and, by extension, the UK Government – to assess operational effectiveness as simply and accurately as possible. It also supports the identification of capability gaps and the articulation of future capability requirements through objective evaluation of operational efficacy.

Delivering effects through space control

Having defined *protect* and *defend* as effect verbs, it is useful to consider how these effects might be achieved in practice. In *JDP 0-40: UK Space Power* – the UK military's principal doctrine on space power – *space control* is defined as 'the use of defensive and offensive capabilities to assure access and freedom of action in space'.[40] Although traditionally seen as a purely military function, the doctrine notes that 'in an era of persistent competition, the integrated approach means that achieving a desired degree of space control can also be pursued through diplomatic, regulatory, or legal channels'.[41] Accordingly, the UK's ability to *protect* or *defend* national interests in space may be delivered through this broader interpretation of space control operations.

> Having defined *protect* and *defend* as effect verbs, it is useful to consider how these effects might be achieved in practice

This paper first considers space control measures initiated by military forces – here referred to as *hard power* space control operations – and then briefly explores space control measures delivered through non-military channels, referred to as *soft power* operations.

According to *JDP 0-40*, offensive and defensive space control operations are defined as follows:

- **Offensive space control**: 'Operations seek to disrupt, degrade, deny, or destroy the space-related capabilities and forces of an adversary.'[42]
- **Defensive space control**: 'Defensive space control ... is conducted to protect space capabilities from attack, interference, or unintentional hazards. Defensive space control consists of both passive and active measures.'[43]
- **Passive defensive space control measures** 'provide a significant level of protection by physically hardening satellites to enable resistance to radiation or electronic attack. Anti-jamming and cryptographic techniques can be used to protect command, telemetry, and data transmission links. The protection of terrestrial infrastructure is another important aspect and can be achieved by ensuring that adequate force protection is in place or by using camouflage, concealment, and deception techniques.'[44]
- **Active defensive space control measures** 'include using techniques to counter any kinetic or non-kinetic attacks against a satellite or its mission systems. Additionally, active measures may be used to target adversary threats and prevent them from deploying attacks against space systems.'[45]

From these doctrinal definitions, it follows that passive defensive space control operations align with activities undertaken *prior* to an attack and thus support the delivery of a *protect* effect. Conversely, active defensive space control operations, employed *in response* to an attack, naturally support a *defend* effect. However, *JDP 0-40* also states that active measures may be used to 'target adversary threats and prevent them from deploying attacks', which extends their relevance to *protect* effects as well.[46] These actions need not involve direct engagement; for instance, a pre-emptive orbital manoeuvre constitutes an active defensive measure intended to protect a system. Figure 4 illustrates the alignment of defensive space control operations with the delivery of *protect* or *defend* effects. Passive measures support *protect* effects exclusively, while active measures may support either *protect* or *defend*, depending on the timing and intent of their application.

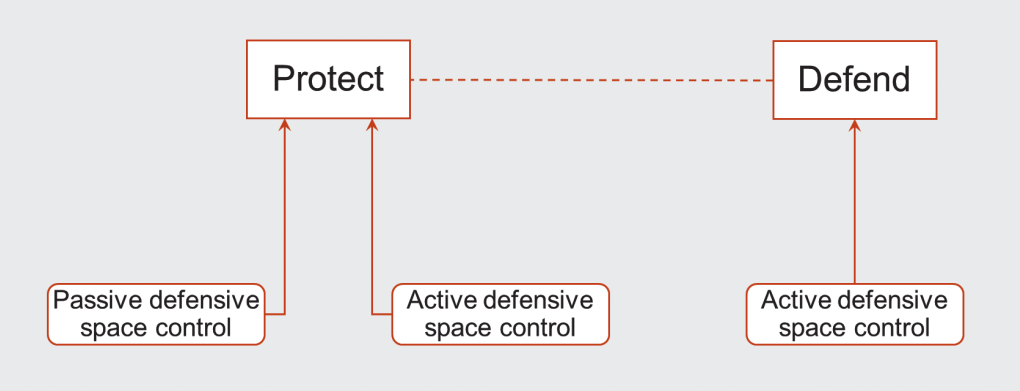

Figure 4. *Protect and Defend through Space Control*

Soft power in space control

As previously noted, space control operations are not the exclusive domain of military forces. *JDP 0-40* explicitly states that national interests in space may also be secured by achieving 'a desired degree of space control through diplomatic, regulatory, or legal channels'.[47] These forms of influence are referred to here as *soft power* space control.

Soft power space control measures aim to constrain a competitor's, adversary's, or enemy's freedom of action in space. Such measures are most likely to be employed well in advance of any attack – or in the aftermath of one. When applied preventively or as part of a post-attack response, they support the delivery of a *protect* effect.[48]

While less likely, it is conceivable that *soft power* space control measures – whether diplomatic, regulatory, or legal – might be deployed during an actual or imminent attack and succeed in halting or averting it. In such a scenario, these measures would have delivered a *defend* effect.

Conclusion

The prominence of *protect* and *defend* in UK strategic discourse signals their importance – but their continued ambiguity risks undermining implementation. Without precise definitions, these terms function more as political signals than operational guideposts.

This paper has shown that *protect* and *defend* are not just semantic preferences but potential effect verbs essential to measuring and delivering strategic outcomes. When defined clearly, they enable structured assessment, capability development, and coherent doctrine.

In an era of intensifying space competition, the UK cannot afford doctrinal vagueness. A shared understanding of what it means to *protect* and *defend* space interests is not optional – it is foundational to credible strategy and effective space power projection.

Endnotes

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33 ibid, 10.

34 ibid, 10.

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36 The latter being tied to an inherent right to self-defence i.e., the use of force to repel an attack or imminent threat of attack directed against oneself or others or a legally protected interest. Noting that while the text used within Article 51 of the UN Charter limits the right to use self-defence to the case in which an armed attack occurs only, there is evidence that in drawing up the Charter many states assumed the inherent right to self-defence includes the right to use force against an imminent attack i.e., pre-emptive self-defence.

37 Noting that in this context an attack need not necessarily be limited to adversarial action but could be due to the impact of an environmental hazard.

38 Noting such measures could include pre-emptive targeting of an adversary's counter-space capability if deemed appropriate / just.

39 To include pre-emptive targeting of an adversary's counter-space capability to nullify an imminent attack i.e., pre-emptive self-defence.

40 Development, Concepts and Doctrine Centre, *Joint Doctrine Publication 0-40 UK Space Power*, (UK Ministry of Defence, 2022) 34, https://assets.publishing.service.gov.uk/media/653a5261e6c968000daa9b8a/JDP_0_40_UK_Space_Power_web.pdf.

41 ibid, 34.

42 ibid, 36.

43 ibid, 39.

44 ibid.

45 ibid.

46 ibid.

47 ibid, 34.

48 Protecting either the original system / force if the 'soft power' Space Control measure was employed far in advance of any attack, or subsequent systems / forces if it was employed as a response to an attack.

About the Freeman Air and Space Institute

The Freeman Air and Space Institute (FASI) is an inter-disciplinary initiative of the School of Security Studies, King's College London. It is dedicated to generating original knowledge and understanding of air and space issues. The Institute seeks to inform scholarly, policy and doctrinal debates in a rapidly evolving strategic environment characterised by transformative technological change which is increasing the complexity of the air and space domains.

FASI places a priority on identifying, developing and cultivating air and space thinkers in academic and practical contexts, as well as informing, equipping and stimulating relevant air and space education provision at King's and beyond.

The Freeman Institute is named after Air Chief Marshal Sir Wilfrid Freeman (1888–1953), who was crucially influential in British air capability development in the late 1930s and during the Second World War, making an important contribution to the Allied victory. He played a central role in the development of successful aircraft including the Spitfire, Lancaster and Mosquito, and in planning the wartime aircraft economy – the largest state-sponsored industrial venture in British history.

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