

Starlink's Role in Ukraine

Portent of a Space War?

Kaushik Ray and William Selvamurthy***

Starlink, a satellite internet constellation owned by Elon Musk, provides satellite-based internet connectivity to consumers globally, and has been actively involved in guiding Ukrainian military drones and missiles against Russian military positions, thus becoming party to the ongoing Russia–Ukraine conflict and a bonafide military objective. Russia had also accused Starlink of helping the Ukrainian forces to guide and modify fire of the two Neptune missiles, which led to the sinking of the Russian warship Moskva. As a United States (US) based privately owned organisation, Starlink's participation in an international war without formal US governmental authorisation has opened a Pandora's Box insofar as customary international laws of armed conflict are concerned. Moscow has now declared that it would destroy Starlink's assets in space to ensure the safety of its military in its areas of operation around Ukraine. Any attack by Moscow on a US-based satellite company's assets has the potential to draw the US out of its strategic forbearance into the quagmire of another 'un-winnable' war.

Keywords: *Starlink, Russia, Ukraine, Laws of Armed Conflict, Military Necessity, Proportionality, Distinction, Collateral Damage, Pre-emption*

* Colonel Kaushik Ray (Corresponding author) is a Ph.D. scholar (Part-time) at Amity Institute of Defence Studies, Amity University, Uttar Pradesh, India.

** Dr William Selvamurthy is presently working with Amity University as President, Amity Science, Technology and Innovation Foundation, Director General for Amity Directorate of Science and Innovation and Chair Professor for Life Sciences. He is also designated as the Chancellor, Amity University, Chhattisgarh.



INTRODUCTION

On 14 April 2022, the Russia–Ukraine War took a new turn as the 510-crew missile cruiser *Moskva*, pride of Russia’s Black Sea fleet leading Russia’s naval assault on Ukraine, sank around 50 kilometers (kms) from the coast of Ukraine. This was obviously a big blow to the Russian war plans against Ukraine. Russia’s Defence Ministry initially claimed that an accidental fire on the ship’s ammunition storage (where anti-ship, anti-aircraft missiles, torpedoes, naval guns and missile defense systems are located) led to its sinking. However, on 22 April, Russian Defence Ministry stated that in the mishap, one serviceman was killed and 27 crew members were missing.¹ As per an independent report published in *Meduza*, an independent Russian-language news website, 37 persons had died, approximately 100 were injured and many were reported missing.²

On 13 April 2022, Odessa Governor Maksym Marchenko had officially claimed that the Ukrainian forces had ‘caused very serious damage’ to the *Moskva* off the coast of Odessa with two recently introduced Ukrainian R-360 Neptune anti-ship cruise missiles.³ In a Facebook post just before the ship sank, Ukrainian officials claimed that Russian rescue efforts were being hampered by ammunition exploding onboard and bad weather.⁴ On 23 April, NDTV too referred to a senior Pentagon official who believed that ‘*Moskva* warship was hit by two Ukrainian missiles before it sank in the Black Sea’.⁵ According to unconfirmed media reports, it was Elon Musk owned Starlink satellite constellation that helped the Ukrainian forces to guide and modify fire of the two Neptune missiles, which led to the sinking of the *Moskva*.⁶

The Russian space agency Roscosmos had a presage about Starlink’s capability to support such military operations. A report published in *TASS* on 8 October 2021 quoted a statement by Dmitry Rogozin, the chief of Roscosmos, who believed that ‘Starlink satellites launched by Elon Musk’s company SpaceX can be used for military purposes in the future, including for changing the flight path of cruise missiles and managing spy networks’. On 7 October 2021, Rogozin had said:

This year, they [SpaceX] received about \$900 million [in state subsidies], the entire subsidy for the forthcoming period is \$20 billion. So, a question arises: why would the government do that? And the answer is: those spacecrafts provide internet connection, they can become a platform for steering cruise missiles, for changing their flight path when they are already in flight. [They can also be used] for sending orders to special forces, to networks of agents.⁷

Rogozin further stated that Starlink could even be utilised to distribute 'purely political, and most likely, anti-Russian content directly to mobile phones'.⁸

C4ISR SUPPORT TO AEROROZVIDKA

On 18 March 2022, *The Telegraph* reported that Ukrainian forces were using Starlink's network for drone attacks on Russian positions.⁹ Again on 27 April, a British freelance journalist David Patrikarakos, while reporting from the Ukrainian city of Dnipro tweeted about an interview with a Ukrainian soldier Dima, who had been fighting alongside Ukrainian forces since March. Dima said, 'I want to say one thing: @elonmusk's Starlink is what changed the war in #Ukraine's favour'.¹⁰ He stated, 'despite Russian efforts to destroy Ukrainian communications systems, Starlink's network runs under rocket or artillery fire and even works in Mariupol'.¹¹ On 16 June, *Republicworld.com* reported that 'Elon Musk's Starlink satellite technology is assisting an elite Ukrainian drone unit in destroying Russian weapons. According to *The Times* of London, 'the Aerorozvidka, a unit of the Ukrainian ground forces specialising in aerial reconnaissance and drone warfare, uses drones equipped with infrared cameras to observe Russian military equipment such as tanks and command vessels at night'.¹² Provision of direct assistance in military C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) operations of the Ukrainian armed forces leading to successful operations against the Russian military makes Starlink a party in the war.

STARLINK'S AFFILIATIONS

Shortly after Russia invaded Ukraine in February 2022, Starlink's services in Ukraine were activated in response to a request from Ukrainian Deputy Prime Minister, Mykhailo Fedorov to Elon Musk over Twitter.¹³ Incidentally, Musk's SpaceX owned Starlink is a satellite-based internet service provider company registered in the US. Under development for several years, it received a boost when the US Federal Communications Commission granted it nearly US\$ 885.5 million towards the end of 2020.¹⁴

With more than 3,000 satellites, Starlink's internet services are currently available in the US, the UK, France, Germany, Austria, the Netherlands, Ireland, Belgium, Switzerland, Denmark, Portugal, Canada,

Australia and New Zealand. As per the requirements of the United Nations Conventions on Registration of Objects Launched into Outer Space, 1976, United Nations states and international intergovernmental organisations that agree to abide by the Convention are required to establish their own national registries and provide information on objects launched into space to the Secretary-General for inclusion in the United Nations register.¹⁵ Interestingly, the US has already registered Starlink's satellites as per Article IV of this Convention, which states that:

Each State of registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on its registry: (a) Name of launching State or States; (b) An appropriate designator of the space object or its registration number; (c) Date and territory or location of launch; (d) Basic orbital parameters, including Nodal period, Inclination, Apogee, Perigee and (e) General function of the space object....¹⁶

It thus leaves no ambiguity regarding Starlink's country of registration and acknowledging US responsibility towards the actions of Starlink as per Article VI of Outer Space Treaty, 1967.¹⁷

Also, Article VI of the Outer Space Treaty, 1967 explicitly states that:

States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including moon and other celestial bodies, shall require authorisation and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space including the Moon and other celestial bodies by an international organisation, responsibility for compliance with this Treaty shall be borne both by the international organisation and by the States Parties to the Treaty participating in such organization.¹⁸

STARLINK'S DEMONSTRATED MILITARY APPLICATIONS

Starlink does not rely on ground infrastructure and therefore, has extremely high military value. The US military is using Starlink's satellite constellations to improve communication capabilities of its

combat aircraft. In 2020, the US Air Force (USAF) carried out tests on its advanced battlefield management system connecting combat aircraft and air defence systems utilising Starlink's satellites. In addition, the US military hopes to utilise the functions of Starlink to expand its missile defence, space warfare and other military capabilities. Ball Aerospace, a leading defence and space contractor is also working with Starlink for connecting USAF combat aircraft to Starlink's satellite internet by providing antennas necessary for establishing a connection with the 'tactical aircraft'.¹⁹ In March 2022, the USAF's 388th Fighter Wing's Operations Support Squadron with assistance from cyber teams at the Air Combat Command, one of the nine USAF Major Commands and the primary force provider of combat airpower to America's warfighting commands, and ACC's Agile Battle Labs initiative and Combat Communications whose role is to enhance operational agility in the cyber domain, utilised Starlink's satellite internet to 'connect an F-35 deployed debrief facility (housing an Autonomic Logistics Information System server stack) and looped back into the Air Force network's "central point of entry" for F-35 supply chain and logistics'.²⁰ A subsequent press release affirmed that the tests were successful, with internet speeds up to 30 times faster than current military satellites.²¹

MOSCOW'S REACTION

The Kremlin considers Starlink's overt and covert involvement in support of Ukraine as an aggression. Dmitry Rogozin, the head of Roscosmos, stated in *Russia Today*: 'When Russia implements its highest national interests on the territory of Ukraine, Elon Musk appears with his Starlink, which was previously declared purely civilian'.²²

The sinking of Moskva using Neptune missiles allegedly aided by Starlink's satellite constellation was further seen as a humiliating blow to Moscow. Dmitry Medvedev, currently Deputy Chairman, Security Council of Russia and a close ally of Vladimir Putin announced in a party document dated 16 April 2022, Russia's intent to destroy Musk's Starlink satellites. The document titled 'The Chairman of the United Russia Party, Dmitry Medvedev stated the Tasks Set by the Russian VKS [Vozdushno Kosmicheskiye Sily—The Russian Aerospace Force] to Destroy the Starlink Satellite Group', mentioned that: 'This is due to new data from the General Staff of the Russian Federation. According to the data received, the guidance and adjustment of fire on the flagship of the Black Sea Fleet cruiser Moskva, was carried out using the Starlink

satellite constellation (SpaceX)'. Dmitry Medvedev said that in order to ensure safety of all units participating in the special military operation, the Supreme Commander-in-Chief was ordered to destroy the Starlink satellite constellation located above the territory of the Russian Federation, the zone of the special military operation and the Black Sea basin. He also said that Russia is not engaged in the militarisation of outer space but it will not allow others to do it.²³

Russia's electromagnetic warfare attacks on Ukrainian electronic systems and on Starlink's constellation had commenced well before the sinking of the Moskva. In March 2022, soon after Starlink was launched in Ukraine, Russia had jammed its terminals. However, after a software update, Starlink started operating normally. 'Starlink, at least so far, has resisted all hacking and jamming attempts', tweeted Musk on 25 March 2022.²⁴ On 21 April, *c4isr.net* reported that SpaceX successfully fended off a Russian electromagnetic warfare attack in Ukraine. Speaking at the *c4isr.net* conference on 20 April, Dave Tremper, Director of Electronic Warfare, Office of the Secretary of Defense, spoke about SpaceX's ability to thwart a Russian effort to jam Starlink's services in Ukraine. He felt that the US government and the military too must develop and sharpen such capabilities.²⁵

Russia's attacks on Starlink's constellations may continue in the future, and not remain restricted to jamming. Russia is developing directed energy weapons, anti-satellite laser weapons besides those already in its arsenal such as Direct Ascent ASAT missile systems (A-235 PL-19 Nudol missile system) and manoeuvrable 'inspection satellites' (Kosmos 2542 and 2543) that could be employed in a demonstrative strike to destroy/deorbit certain critical satellites of Starlink's constellation located above the Russian Federation and the war zone in Eastern Europe.

FOREBODING OF A SPACE WAR?

The role played by Elon Musk owned Starlink in the Russia–Ukraine war has triggered off a chain reaction that can lead to the first war in space. Starlink's internet services in Ukraine were made operational ostensibly to ensure internet access to the public in the face of Russian electromagnetic attacks that brought down its internet infrastructure. Starlink enabled systems however, might have aided the Ukrainian forces by assisting Ukrainian military drones in C4ISR, to acquire Russian targets with thermal imaging and to direct artillery fire against Russian positions. As mentioned earlier, unconfirmed media reports also

attributed the guidance of Neptune missiles which led to the sinking of Moskva to Starlink. Starlink's interactions and agreements with the Ukrainian government are legally complex and could be a subterfuge to provide direct US military assistance to Ukrainian war efforts. Starlink's actions pose a challenge to several tenets of International Humanitarian Law (IHL) and it is quite possible that Russian targeting of Starlink's infrastructure, in space or on ground, could entangle the US directly in the conflict.

LAWS OF ARMED CONFLICT: AMBIGUITIES AND ARGUMENTS

Did Starlink Circumvent International Laws of Armed Conflict?

This instance of a commercial space sector participating in an international conflict is the first of its kind, and raises certain legal issues that need to be addressed holistically. As in every international conflict, the Laws of Armed Conflict (LOAC) or IHL are a part of international laws that regulate the conduct of armed conflicts, which must be abided by all the belligerents. While the interpretation of LOAC may vary amongst states, its five foundational principles of military necessity, humanity, honour, distinction and proportionality are acceptable to all.²⁶ Amongst these, the principles germane to the Starlink episode are those of military necessity, distinction to include the principle of lawful targeting, and proportionality. Also, in question here is Russia's *jus in bello* right to collective self-defence in response to the threats posed to the Russian military by Starlink's direct involvement in the Russia–Ukraine War. Overall, it raises a question whether in light of the latest happenings, there is a need to put a code of conduct in place for commercial space ventures with regard to international laws.

Collective Self-Defence

The inherent right of self-defence including the right to collective self-defence, delineated in Article 51, Chapter 7 of the UN Charter regarding 'Action with respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression' serves as another foundation of LOAC. It states:

Nothing in the present Charter shall impair the inherent right of individual or collective self-defence if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security. Measures taken by members in the exercise of this right of

self-defence shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.²⁷

This right to collective self-defence relates to *jus ad bellum*, that outlines the rules that legally permit a state to go to war against another state.

The US however interprets ‘collective self-defence’ differently. The Standing Rules of Engagement for the US forces defines collective self-defence as ‘the act of defending other designated non-US forces, personnel or designated foreign nationals and their property from a hostile act or demonstration of hostile intent’.²⁸ In an article published in *Just Security*, Elvina Pthelet argues that collective self-defence ‘may be thought of as an extension, not of self-defence of nation states, but self-defence of military units (a form of self-defence specific to military forces) and is sometimes characterized as “tactical self-defence”’.²⁹ In 2016 for instance, the Obama administration invoked the collective self-defence of African Union Mission in Somalia (AMISOM) to justify a strike against an Al-Shabaab camp in Somalia. Similarly, the Trump administration invoked the collective self-defence of Syrian Democratic Forces (SDF) in June 2017 to justify the downing of a Syrian regime jet, and again in February 2018 to justify its strikes against Syrian pro-regime forces.³⁰

Extending the right of self-defence to space, the US Strategic Command Commander General John Hyten in a popular American television programme said ‘It’s a competition that I wish wasn’t occurring, but it is. And if we’re threatened in space, we have the right of self-defence, and we’ll make sure we can execute that right’.³¹ *Jus in bello* interpretation of self-defence or collective self-defence, therefore has precedence and has become common international practice. Dmitry Medvedev’s statement ‘... In order to ensure the safety of all units participating in the special military operation ...’ apparently invokes this right to collective self-defence in a future strike against Starlink.

Military Necessity

Military necessity may be defined as ‘the principle that justifies the use of all measures needed to defeat the enemy as quickly and efficiently as possible that are not prohibited by the laws of war’.³² In the case of an

armed conflict, the only legitimate military purpose is to weaken the military capacity of the other parties in the conflict. The principle of military necessity permits the use of all legitimate measures necessary to make the adversary submit as quickly and efficiently as possible. LOAC recognises that certain types of actions are militarily necessary *per se*. For example, an attack on enemy combatants is generally lawful. Also, vide the Rendulic Rule, LOAC recognizes that 'commanders must assess the military necessity of an action based on the information available to them at the relevant time; they cannot be judged based on information that subsequently comes to light'.³³ Russia suffered significant military losses in terms of armoured fighting vehicles and artillery due to drone action and again due to the sinking of an operationally critical warship. As per the available information, Starlink as one of the Ukrainian military's most effective communications and C4ISR systems, was involved in providing technical support to these operations. From the aspect of military necessity, degrading it would accrue considerable military advantage. Any kinetic or non-kinetic attack on a Starlink system in space would not endanger human lives and hence, no aspect of the principle of humanity would be violated. Therefore, any attack on Starlink by the Russian military is justifiable as a military necessity as per the LOAC.

Distinction

Distinction, sometimes called discrimination is the LOAC principle that obliges parties to a conflict to distinguish between combatants and the civilian population and to distinguish between military objectives and protected property and places. As per LOAC, only military objectives can be targeted.³⁴ Rule 8 of Customary IHL (LOAC) as defined in a study conducted by International Committee of the Red Cross on Customary IHL originally published in 2005 states: 'In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose partial or total destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage'.³⁵ Targeting of Starlink by the Russian military would also not violate this principle as it is directly involved in the operations of the Ukrainian military. The destruction of Starlink's assets in the intended area of operations would directly benefit the Russian forces.

Military Objective

Starlink's involvement in directing an 'armed attack' against the Russian military in the Russia–Ukraine conflict leading to loss of human lives and damage to military equipment makes it a direct party to the conflict. This brings Starlink under the ambit of a 'military objective' as per Customary IHL regarding 'Civilian Objects Loss of Protection from Attack', which states that 'civilian objects are protected against attack, unless and for such time as they are military objectives', subject to LOAC.³⁶ The US stance on this is amply clarified in the *Department of Defense Law of War Manual* and the *US Army and US Marines Corps Commander's Handbook on the Law of Land Warfare (FM 6-27)*, which states that 'taking a direct part in hostilities extends beyond merely engaging in combat and also includes certain acts that are an integral part of combat operations or that effectively and substantially contribute to an adversary's ability to conduct or sustain combat operations'.³⁷ This implies that civilians who play a direct part in the war lose the protection offered under LOAC for that duration. Starlink therefore, qualifies as a military objective and a lawful target for the Russian military.

Proportionality

The principle of proportionality in the LOAC 'requires commanders to refrain from attacks in which the expected loss or injury to civilians and damage to civilian objects incidental to such attacks would be excessive in relation to the concrete and direct military advantage expected to be gained. It also underlines the requirement to take feasible precautions to reduce the risk of harm to civilians, other protected persons and civilian objects'.³⁸ The 'military advantage' may be evaluated considering the long-term war strategy and may not just be limited to short-term tactical advantages. In a conflict in space, achieving proportionality while attacking satellites in an orbit is a complex matter. In such a scenario, Starlink's military and civilian interests cannot be distinguished and hence, any attack on the satellites operating over the Russian Federation and Ukraine would affect both the military and the civilians alike. In such a situation, it would be difficult to assess the proportionality aspect of any attack on Starlink's systems, unless the constellation's components involved in assistance to the Ukrainian military in its targeting of the Russian forces are collectively classified as a military objective and its limited destruction/degradation offers considerable military advantage

to Russian forces and is found justifiable within the realms of military necessity.

Dual-Use Objects and Collateral Damage

Dual-use objects, or objects that serve both a military and a civilian use, provide unique challenges to military commanders. Dual-use objects may be targets of attack only during those times when they are used for a military purpose, and when such a strike would also not be disproportionate.³⁹ While the concept of dual-use typically refers to traditional civil–military infrastructure like ports, airfields, oil dumps, etc., growing civil and military significance of new domains like cyber and space necessitate future military commanders to take real-time decisions on targets in these domains. Existing LOAC provisions are inadequate for targeting such dual-use infrastructure in the cyber and space domain.⁴⁰ Starlink constellation amply qualifies as a dual-use object that gives the Ukrainian military a distinct military advantage, while providing essential internet connectivity to emergency rescue workers and civilian population.

Separating its military use component from its civilian component and launching an attack targeting the former while leaving the latter component intact is difficult. Therefore, any attack on Starlink would adversely affect civilian infrastructure services as a ‘collateral damage’. LOAC requires belligerents to adopt every possible step to minimise collateral damage to non-military objectives: civilians need to be given prior warning in case any collateral damage is anticipated due to military actions. Medvedev’s public declaration of the order to the Russian armed forces to degrade/destroy Starlink’s constellation satellites over Russian Federation and war zone tends to address the requirement of communicating advance warning, as well as, public declaration of the intent to limit collateral damages to the intended area of operation.

Also, any kinetic attack on Starlink’s satellites would lead to debris in space, affecting space environment and the safety of spacecraft of neutral countries, again amounting to the possibility of collateral damage. Affecting the space environment would also amount to infringement of a customary law of IHL (LOAC) as stated in Rule 45: ‘The use of methods or means of warfare that are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment is prohibited. Destruction of the natural environment may not be used as a weapon’.⁴¹ Although, a non-kinetic attack using directed energy/laser

weapons or de-orbiting of specific Starlink satellites using manoeuvrable 'inspection satellites' like Kosmos 2543 without causing much space debris and avoiding any serious damage to the space environment, is highly feasible.

Decision Dilemma

This conundrum of proportionality and military necessity calculus is likely to decide the eventuality of the Russian action against Starlink. A report in the *United Russia* journal specifically attributing the Moskva attack to Starlink in conjunction with the Ukrainian military states: 'This is due to new data from the General Staff of the Russian Federation. According to the data received, the guidance and adjustment of fire on the flagship of the Black Sea Fleet cruiser Moskva, was carried out using the Starlink satellite constellation (SpaceX)'. Nonetheless, in the absence of credible electronic forensic analysis the linkage is difficult to ascertain. Difficulty in attributing Ukrainian military actions to communications and C4ISR assistance by Starlink could therefore be another dilemma influencing Russian decision-making in this regard.

Ownership of Starlink's Actions: US Policy

Starlink is a privately owned division of SpaceX and its shareholders. With the company being registered in the US, in all probability its provision of C4ISR support to the Ukrainian military exploits a loophole in the US National Space Policy (NSP) with regards to policy concerning export of technology and the anticipated areas of supervision.⁴² Starlink's internet service is basically oriented towards export and the only exports possible are user terminals enabling connectivity. US may attempt to prevaricate any accountability citing such ambiguous internal laws, but the Outer Space Treaty, 1967 (OST) does not offer any similar refuge of ambiguity. It may be noted that unlike tenets of LOAC, Article VI does not distinguish between the actions of the State and the private entities in space. The treaty directs that the member states 'shall bear international responsibility' towards the 'national activities' 'carried out by 'both governmental and non-governmental agencies' in outer space. Thus, the US, which has registered Starlink's satellites with the UN as per Article IV of the United Nations Conventions on Registration of Objects Launched into Outer Space, 1976, needs to 'bear international responsibility' for its actions. Also, as per Article VI of the Outer Space Treaty, 1967, the activities of non-governmental entities like Starlink

‘require authorization and continuing supervision by the appropriate State Party to the Treaty’, a provision, which the US has clearly faltered to implement.

If the US accepts responsibility for Musk’s actions, it would put the US policymakers in a difficult situation since no domestic legislative/governmental authorisation was sought for Starlink’s actions. Section 2, Para 6 of NSP states:

The United States considers the space systems of all nations to have the right to pass through and conduct operations in space without interference. Purposeful interference with space systems, including supporting infrastructure, will be considered an infringement of a nation’s rights. Consistent with the defense of those rights, the United States will seek to deter, counter, and defeat threats in the space domain that are hostile to the national interests of the United States and its allies. Any purposeful interference with or an attack upon the space systems of the United States or its allies that directly affects national rights will be met with a deliberate response at a time, place, manner, and domain of our choosing.

It thus, clearly communicates the US reaction to an attack on its space assets.⁴³ Starlink’s activities are replicating those actions against which, as per the above-stated policy, US would choose its right to retaliate. The US would not wish to be seen taking a permissive stance towards corporate interference in national security policy decisions and geopolitical affairs or appear prepared to enter into armed conflicts based on unauthorised decisions by giant corporations. The Commercial Space Guidelines of the NSP have already brought in such provisions to monitor and control novel activities by commercial space entities. Section 5, Para 1 (c) (i) of the NSP states: ‘Mission Authorization of Novel Activities. The Secretary of Commerce, in coordination with the National Space Council, shall identify whether any planned space activities fall beyond the scope of existing authorization and supervision processes necessary to meet international obligations’.⁴⁴

However, this particular clause in the NSP has evidently been violated. US Space Command is exploring the legal framework for integration of commercial space entities in armed conflicts in conjunction with the Commercial Integration Cell (CIC). A *Defence News* report dated 6 April 2022 states that during the post release press conference by US Space Command, Commander General James Dickinson said: ‘(when) Asked about concerns that commercial satellites could be

targeted by adversaries, Dickinson did not directly address the issue, but noted those capabilities are becoming inherently more resilient as companies develop proliferated constellations and the ability to rapidly replenish capabilities'.⁴⁵ Notwithstanding the purported effort of CIC to address the issue, amendments to the NSP are necessary to obviate such implications of Article VI responsibilities since the existing clause in Commercial Space Guidelines of the NSP appears inadequate or violable.

US RESPONSE: PROGNOSIS

Medvedev's comments in the *United Russia* journal threatening destruction of Starlink's satellites are in direct violation of Article 2(4) of the UN Charter, which advises member nations to desist from threatening or using force against the territorial integrity or political independence of any State, which could be interpreted to include a state's physical property.⁴⁶ In case Russia decides to act militarily against Starlink, the US may be compelled to respond either, diplomatically or militarily. The US National Security Space Strategy states that it must 'prepare to defeat attacks and to operate in a degraded environment' since the space environment is 'contested', implying that space systems face a range of man-made threats that can deny, degrade, deceive, disrupt, or destroy them. Potential adversaries are seeking to exploit perceived space vulnerabilities. To address the contested nature of space, the US follows a policy of 'multi-layered deterrence' in space, while simultaneously, improving its ability to 'attribute attacks, strengthen our [US] resilience, and retain the right to respond, should deterrence fail'.⁴⁷ In this regard, the NSP Section 2, Para 6 states

...Purposeful interference with space systems, including supporting infrastructure, will be considered an infringement of a nation's rights. Consistent with the defense of those rights, the United States will seek to deter, counter, and defeat threats in the space domain that are hostile to the national interests of the United States and its allies. Any purposeful interference with or an attack upon the space systems of the United States or its allies that directly affects national rights will be met with a deliberate response at a time, place, manner, and domain of our choosing.⁴⁸

The US retains the rights to respond in self-defence should deterrence fail. The US National Security Strategy, 2017 states:

The United States considers unfettered access to and freedom to operate in space to be a vital interest. Any harmful interference with

or an attack upon critical components of our space architecture that directly affects this vital US interest will be met with a deliberate response at a time, and domain of our own choosing.⁴⁹

So, while adopting a dissuasive posture against any Russian threat targeting Starlink, the US may feel compelled towards a pre-emptive action. Pre-emption or anticipatory self-defence is an offshoot of the inherent right of self-defence, legalised by Article 51 of the Charter of the United Nations, which recognises that 'Impair the inherent right of individual or collective self-defence'. The US National Security Strategy, 2002 advocates pre-emptive action, explicitly stating, 'The United States has long maintained the option of pre-emptive actions to counter a sufficient threat to our national security'.⁵⁰

CODE OF CONDUCT FOR COMMERCIAL SPACE VENTURES

These cogitations evidently direct our thoughts towards the need for a revision to the existing international space laws and the customary International Laws of Armed Conflict besides establishing binding clauses in the space policies of nations with respect to commercial space ventures. While Article VI of Outer Space Treaty, 1967 attributes accountability of actions of non-governmental organisations in space to their countries of origin, it needs further elaboration in this new light. Also, IHL or LOAC that seek to limit the effects of armed conflict by protecting persons not participating in hostilities and by restricting and regulating the means and methods of warfare available to combatants,⁵¹ do not specifically elaborate upon the new age services provided by commercial space or cyber ventures that could make them parties to an international conflict and invite consequent retaliatory actions from an adversary. Such issues need deliberation and incorporation into the well-established customary LOAC. Such accountability would also compel nations to remove any similar ambiguities in their space policies and institute checks and balances to prevent actions by commercial space ventures that are not authorised by the state, since these not only undermine the authority of the state, but could also have serious, spiralling global consequences.

CONCLUSION

So far in the ongoing Russia–Ukraine conflict, the US and the NATO have maintained a diplomatic and moral high ground *vis-à-vis* Russia. The US and its allies have launched a series of debilitating economic sanctions against Russia aimed at crippling its economy and decapitating

its war machinery. US has led a well-orchestrated diplomatic onslaught at the United Nations and at the level of individual nations condemning Russia's unilateral military action and demanding an immediate cessation of Russian military operations. They have also provided succour to Ukraine in terms of economic and humanitarian assistance and military material. Indeed, the US has displayed tremendous strategic restraint in not getting ensnared into a direct military confrontation with Russia. However, a possible Russian retaliation against Starlink consequent to its involvement in Ukraine, has the potential to draw US out of its strategic forbearance, in context of the calibrated US response and careful avoidance of red lines and also the non-involvement of US/NATO military in the Ukraine–Russia conflict in spite of Russian instigation and serious threat to the European security, into the quagmire of another 'un-winnable' war, one that would have grim consequences for all nations irrespective of its military outcome.

NOTES

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