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EYES IN THE SKY: WHY UNTRAMMELED SATELLITE SURVEILLANCE IS AN ANATHEMA TO THE FUNDAMENTAL RIGHT TO PRIVACY

AUTHORED BY - SHIRAZ AHMAD KHAN

ABSTRACT

The existence of a robust surveillance apparatus is crucial to any modern state for protecting its national security interests, both at home and abroad. However, with the inexorable march of technology and an almost constant state of innovation, the methods and tools of conducting such surveillance have acquired proportions of intrusiveness hitherto unseen. One such problematic area is the use of satellites and other space-based systems to surveil populations on Earth. In the Indian context, the ineffectiveness of existing laws in preventing abuse of citizens' fundamental right to privacy by state as well as non-state actors has been well documented. Moreover, such laws are confined to regulating communications surveillance, i.e., interception of communications between individuals. The traditional concept of imaging surveillance, understandably overlooked in legislation due to the inherent limitations of ground-based sources, has become quite powerful with the advent of reconnaissance satellites. As such, this paper argues that allowing the government to carry on unfettered surveillance through satellites is an anathema to the idea of privacy and autonomy enshrined under Article 21 of our Constitution, and therefore advocates the formulation of a comprehensive new legislation for regulating all space-based surveillance.

I. INTRODUCTION

If ancient human history is categorised according to the important discoveries or technologies of each corresponding period of time, such as the Stone Age and Bronze Age, the latter half of the 21st Century may very well be dubbed as the "Space Age". Increasing international prowess in space exploration and utilisation comes with a raft of benefits for spacefaring nations, and indeed all of humankind. However, as with all new discoveries and inventions, there always exist certain groups which develop their own unscrupulous uses for the advancement of narrow interests and priorities. In the domain of space, this is most evident from the increasing phenomenon of satellites being deployed as potent tools of reconnaissance and intelligence gathering. Major military powers, which concurrently are also major space powers, have built

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up a vast worldwide network of surveillance vis-à-vis satellites and ground stations along the decades, all to purportedly serve national security interests, or for other seemingly benign purposes such as weather observation and prediction.

As a result, the concept of a surveillance state, previously only confined to certain totalitarian regimes and their citizens, has metamorphosed into global mass surveillance wherein even non-citizens are subject to constant transnational monitoring by other countries. Recent events, such as India's ambitious announcement of planning to launch a whopping 50 spy satellites in the span of five years[1], exemplify the transformation of space into an arena of competition and dominance. Conducting surveillance through satellites in space is not explicitly covered by the two extant laws regulating surveillance in India, and as such, the government has effectively found a legal loophole for it to snoop on its citizens without any fetters and qualms. Therefore, this paper argues there is a serious need for a new comprehensive statutory law covering space-based surveillance, in order to make sure that safeguards against citizen's fundamental right to privacy are not outstripped by fast paced technological advancements. By commencing nuanced discourse on the potential contours of such a law, this paper hopes to set the ball rolling and contribute to the growing pool of scholarly writing on privacy, civil and political liberties, and their tumultuous relationship with national security.

II. A BRIEF OVERVIEW OF SPY SATELLITES AS TOOLS OF SURVEILLANCE

The modern reconnaissance satellite is a highly sophisticated and able piece of spaceware capable of capturing high resolution pictures or intercepting signals, and thereafter relaying information back to the Earth for analysis and processing. At this juncture, it would be pertinent to bifurcate surveillance satellites into either imaging satellites or electronic reconnaissance satellites; the former make use of either high resolution spectral imaging cameras or radars to construct images of Earth from space, while the latter use advanced interception tools to gather signals intelligence on communications between actors on Earth. However, this present state is a culmination of decades of evolution and advancements in space technology, and for much of the period that is now referred to as the Space Race, as well as the Cold War, the great bulk of military intelligence was supplied by satellites markedly different from the ones in service today.

[1] 'ISRO's Big Defence Boost for India - 50 Spy Satellites in 5 Years' *Press Trust of India* (Mumbai, 29 December, 2023) < https://www.ndtv.com/india-news/isros-big-defence-boost-for-india-50-spy-satellites-in-5-years-details-here-4760073> accessed 7 January 2024.

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Commencing with the CORONA program of the United States in the late 50s, the earliest imaging satellites were film-based reconnaissance satellites equipped with panoramic cameras.[2] They carried film canisters that would be ejected from the satellite, re-enter the Earth's atmosphere, and be captured mid-air by aircraft or recovered from the ground. In 1961, the Soviet Union launched its own program to gain dominance in the realm of photoreconnaissance satellites, that is, the Zenit series.[3] These two programs ran parallelly opposite each other, and the desire of each side to remain ahead of the other catalysed rapid innovation and improvements in satellite technology. The images produced by these early "eyes in the sky" fundamentally changed the tide of the Cold War. Providing critical information required for national security and diplomatic interests, spy satellites gave a strategic edge to whichever side that managed to launch a preponderance of them. After CORONA, subsequent reconnaissance satellites continued to use film-based systems for a period; incremental improvements in film technology allowed for higher resolution and better image quality.[4] The transition from film-based to digital imaging marked a significant advancement, wherein digital sensors allowed for real-time data transmission and onboard processing, reducing the need for film recovery missions. The development of electro-optical sensors and synthetic aperture radar enhanced the capabilities of reconnaissance satellites, providing all-weather, day-and-night imaging capabilities.

The Keyhole series of satellites, including KH-7, KH-8, and KH-11, represented significant advancements in reconnaissance technology.[5] Namely, KH-11, launched in the late 1970s, was the first electro-optical reconnaissance satellite with high-resolution imaging capabilities. Modern reconnaissance satellites often integrate multispectral and hyperspectral sensors, allowing for enhanced analysis of various materials and terrain. Consistent with the inexorable march of technological diversification, spy satellites today are no longer confined to solely imaging or visual reconnaissance.[6] Signals intelligence satellites have the capability of intercepting and listening on exchanges of information and conversations between parties on

[2] Mark Erickson, 'Into the Unknown Together – The DOD, NASA, and Early Spaceflight' (2005) Air University Press <https://web.archive.org/web/20090920093817/http://aupress.au.af.mil/Books/Erickson/erickson.pdf> accessed 8 January 2024.
[3] *Peter Gorin, 'Zenit: Corona's Soviet Counterpart' (1997) The American Society for Photogrammetry and Remote Sensing*.
[4] Pat Norris, *Spies in the Sky: Surveillance Satellites in War and Peace* (Praxis Publishing 2008).
[5] Jeffrey Richelson, *America's Secret Eyes in Space: the U.S. Keyhole Spy Satellite Program* (Harper & Row 1990).
[6] Marcin Frąckiewicz, 'Spy Satellites: How They Work and Their Importance' (TS2 Space, 31 March 2023) <https://ts2.pl/en/spy-satellites-how-they-work-and-their-importance/#gsc.tab=0> accessed 9 January 2024.

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Earth, which may include governments, militaries, or even private actors. Not only that, by making use of jamming and other electronic warfare tools, a spacefaring country can also disrupt communication between other satellites and their ground stations, thus potentially acquiring a monopoly like status in the collection of intelligence from space.

A) The Revolutionary Impact of Satellites on Traditional Spying and Surveillance

Gone are the days when governments and agencies had to rely solely on ground-based agents and other electronic surveillance devices, which often entailed great financial expenditure as well as an element of uncertainty and risk. Other drawbacks of such intelligence networks also include the ever-present possibility of human error and the corresponding scourge of faulty intelligence leading to wrong and often costly, both in terms of human life and financial capital, policy decisions. One of the best examples from history where traditional spying and intelligence gathering failed to predict an impending breach of national security is the Pearl Harbor attack during the second World War. The massive investigation and overhaul conducted in the aftermath concluded that failure of intelligence agencies to share their respective inputs with each other, as well as the White House, was the root cause of this blunder.[7] And the reason why there was hesitation in bringing crucial intelligence to light was the perceived uncertainty of where the attack would happen, as different agencies ended up with conflicting accounts. In other words, due to the absence of satellite technology at that time and a sole reliance on ground sources, the veracity of intelligence obtained was questionable.[8] Specifically speaking, reconnaissance images from satellites would have clearly shown the movement of Japanese aircraft carriers around the ocean in anticipation of the attack. It need hardly be said that the attack fundamentally altered the course of the war, and perhaps history, by propelling the United States into the fold. One of the more endearing effects of the attack can be seen in the shift that occurred in the military strategy and foreign policy of America. It shifted the focus of U.S. foreign policy toward a more active and interventionist stance in global affairs, with a commitment to preventing aggression and promoting international security. The subsequent victory of the American led allies in the war also played a substantial role in moulding public opinion at home, one which can very well be attributed to the

[7] Gordon Prange and others, *At Dawn We Slept* (Penguin 1991).

[8] Jennifer Leake and Nick Baker, 'A history of intelligence failures from Pearl Harbour to 9/11 to the Israel-Gaza war' (ABC News, 7 November 2023) <https://www.abc.net.au/news/2023-11-08/a-history-of-intelligence-failures/103063034> accessed 9 January 2024.

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succeeding decades of foreign policy decisions.[9] Through no stretch of imagination, the war led to the United States discovering its true military and economic potential, by pitting it against major global powers and states.[10] Therefore, hypothetically speaking, had the attack been thwarted by use of crucial inputs from satellites, the plethora of instances where American intervention and involvement proved disastrous could have been avoided.

This brings us to the most significant area where satellite surveillance trumps all other forms of spying and surveillance, namely, the absence of a geographical limitation in terms of the area surveilled as well as a safe location to conduct said surveillance from. For example, the geographic limitation alone can be overcome by use of aircraft and drones, however, such methods always run the risk of violating international law, and consequently being shot down, by operating in foreign airspace. Space, on the other hand, is not under the jurisdiction of any nation and there is much greater flexibility in positioning intelligence collecting sources, i.e., satellites. These sophisticated machines are placed in a geosynchronous orbit which allows them to match the Earth's rotation speed and consequently eliminate the need for antennas on the ground to be shifted constantly. Imbued with the capability of capturing images or intelligence from practically anywhere on the surface of the Earth, as well as the ability of transmitting such data to receiving antennas on the ground, reconnaissance satellites foster an ecosystem of rapid intelligence collection and analysis, leading to prompt responses by policymakers. Apart from the obvious military implications of such a tool, such as real time awareness of enemy troop movements, constructions and even monitoring nuclear testing, such satellites also contribute to diplomacy and international cooperation on key issues such as cross-border terrorism, illegal immigration, smuggling, etc. Another rapidly evolving area in which surveillance by satellites is proving its mettle in the 21st century is in the domain of climate change. A reliable, constant flow of climate patterns and meteorological phenomena across the world enables countries to undertake meaningful assessments of climate policies in other countries, as well as the potential impact of such policies on their own country, providing adequate time to make requisite changes and mitigate unfavourable environmental consequences of global warming.

[9] William Thiesen, 'The Long Blue Line: The Attack on Pearl Harbor – a date that will live in infamy' (*Coast Guard Compass*, 7 December, 2017) <https://web.archive.org/web/20171209100049/http://coastguard.dodlive.mil/2017/12/the-long-blue-line-the-attack-on-pearl-harbor-a-date-that-will-live-in-infamy/> accessed 10 January 2024.

[10] Charles Burress, 'Biased history helps feed U.S. fascination with Pearl Harbor' *The Japan Times* (Tokyo, 19 July, 2001) <https://www.japantimes.co.jp/opinion/2001/07/19/commentary/world-commentary/biased-history-helps-feed-u-s-fascination-with-pearl-harbor/> accessed 10 January 2024.

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B) The Existence of a "Surveillance State" in India

With these myriad advantages of operating surveillance satellites in mind, it is no surprise that they are immensely popular with governments, intelligence agencies and even commercial organisations throughout the world. India is no exception. With the advent of Bhaskara 1 and 2 launched in 1979 and 1981 respectively, India has built up the largest constellation of remote sensing satellites in the world today, with 14 dual military use satellites currently in operation.[11] The data and imagery collected by these satellites is transmitted back to Earth and disseminated, analysed, and distributed to various agencies by the National Remote Sensing Centre in Hyderabad, which itself has various regional receiving stations in the country.[12]

Of the Earth Observation Satellites part of India's surveillance fleet, the CARTOSAT (Cartographic Satellite) series use state-of-the-art panchromatic cameras for gathering images, while the RISAT series use synthetic aperture radars (SARs) for all weather radar imaging. Additionally, the HySIS (Hyperspectral Imaging Satellite) also provides high quality images across the electromagnetic spectrum. Particular attention must be drawn towards the four operational RISATs (Radar Imaging Satellite), which are dedicated to providing all-weather surveillance of India's borders and internal areas in national security interests. The last of these satellites was launched only in 2019, within the span of a decade from 2009 when the first RISAT was launched.[13] The timing and circumstances of the commencement of this program bears significant weight, as the first RISAT was launched in the aftermath of the 2008 Mumbai attacks, which was only successful due to lapses in India's coastal surveillance systems.

With respect to electronic reconnaissance satellites, the country only has one which is fully dedicated to this cause: EMISAT (Electromagnetic Intelligence Satellite), which was launched in 2019 as part of DRDO's Project Kautilya to provide the country with space based electronic intelligence.[14] All the aforementioned satellites, as well as other ground-based radars, listening posts, and aerial surveillance, are operated under the aegis of the National Technical Research

[11] K. Kasturirangan, 'Remote Sensing in India-Present Scenario and Future Thrusts' (1995) 23 *Journal of the Indian Society of Remote Sensing* 1.

[12] National Remote Sensing Centre, ISRO, Government of India, *About NRSC* <https://www.nrsc.gov.in/Aboutus_NRSC?language_content_entity=en> accessed 25 March 2024.

[13] Elizabeth Roche, 'India completes a quartet of spy satellites to ensure all-weather surveillance along its borders' *Live Mint* (New Delhi, 11 December 2019) <https://www.livemint.com/science/news/india-completes-a-quartet-of-spy-satellites-to-ensure-all-weather-surveillance-along-its-borders-11576069663879.html> accessed 25 March 2024.

[14] Madhumathi D.S., 'India gets surveillance satellite' *The Hindu* (Bengaluru, 1 April 2019) <https://www.thehindu.com/sci-tech/technology/pslv-isro-emisat-launch-from-sriharikota-on-april-1/article61566596.ece> accessed 25 March 2024.

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Organisation (NTRO). Recently, the NTRO was brought under The Intelligence Organisations (Restriction of Rights) Act, 1985, which now puts the agency on the same pedestal as the Intelligence Bureau (IB) and the Research and Analysis Wing (RAW).[15] This basically means that the employees of NTRO will now be subject to the same restrictive and secretive conditions which IB and RAW have been practising since the passage of the act, thereby reducing transparency and oversight in the working of the country's premier technical intelligence agency. In a watershed moment, the government announced this year that the country's first domestically produced spy satellite will be launched in April with the help of Elon Musk's SpaceX.[16] This satellite is particularly noteworthy as it is the first time that ISRO has collaborated with a private company, TATA Advanced Systems Ltd., in the construction and development of a satellite. These developments exemplify a surge in the government's focus on satellite-based surveillance tools and the emergence of an organisational structure to accommodate the intelligence from these new sources within the existing national security framework in India.

III. NATIONAL SECURITY: DO THE ENDS JUSTIFY THE MEANS?

Despite the raft of benefits that operating an intra-national surveillance network through the use of satellites, as well as other tools, provide countries, the argument most frequently employed to vindicate such invasive activity is that it is necessary for national security interests of the state. There is, strictly speaking, some truth, and certainly logic, in the contention that in order to undertake the none too easy task of preserving the security of the state and defending it from external as well as internal actors, a substantial degree of "awareness" is required. However, the weight behind the powerful term "national security" is increasingly being misused by the government to repudiate claims of human rights violations, particularly the fundamental right to privacy, which is guaranteed by the Constitution, as well as numerous international covenants and agreements to which India is a party to.[17] Even countries which have in place robust domestic surveillance laws, often limit the operation of these laws with

[15] Vijaita Singh, 'NTRO now under Intelligence Act' *The Hindu* (Bengaluru, 18 May 2017 <https://www.thehindu.com/todays-paper/tp-national/ntro-now-under-intelligence-act/article18476787.ece> accessed 25 March 2024.

[16] Manu Pubby, 'India's first spy satellite made by local private player set for SpaceX liftoff' *The Economic Times* (Mumbai, 19 February 2024) <https://economictimes.indiatimes.com/news/defence/first-spy-satellite-made-by-local-pvt-player-set-for-spacex-liftoff/articleshow/107802192.cms?from=mdr> accessed 25 March 2024.

[17] Universal Declaration of Human Rights Article 12, United Nations Convention on Migrant Workers Article 14, UN Convention of the Protection of the Child Article 16, International Covenant on Civil and Political Rights, International Covenant on Civil and Political Rights Article 17, and Article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms.

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provisos containing the terms "public security", "defence", or "national security". And where non-citizens are concerned, there are practically no restraints on intelligence agencies for respecting privacy, an activity which is often undertaken in full collaboration with the agencies of the state whose citizens are being surveilled.

"The ends justify the means" is perhaps the bedrock of intelligence agencies and other actors who engage in acts which they know are morally, and in certain cases, legally questionable. The belief that the end goal of achieving a safe and stable state should be pursued even at the cost of individual fundamental rights is a controversial one, and needs to be critically examined in the context of mass surveillance. Attempting to provide a "yes" or "no" answer to the question would not be feasible, as an absolutist stance towards either of the two, that is, privacy and national security, only results in compromising the sanctity of the other. Understandably, the premise that the state is continuously monitoring and surveilling citizens invokes an emotional response; the very term "mass surveillance" or "surveillance state" has now acquired profoundly negative connotations, understood as having close correlations with totalitarian and oppressive regimes. However, the fact remains that there are multiple ways in which communications surveillance has stymied the rise and occurrence of terrorist activities, as also the existence of certain exigencies which have necessitated a more intrusive approach towards intelligence gathering and analysis. Generally speaking, through the use of mass surveillance, states seek to achieve two objectives: prevent a possible terrorist attack from happening in the first place, and if it has not been possible to thwart such an attack, track down the perpetrators to be brought to justice. In the pursuit of these objectives in the 21st Century, it would be imprudent for the authorities to shy away from modern forms of communications interception and analysis, when the terrorists themselves have adopted nuanced and sophisticated techniques of communication and planning. A good example of the effectiveness of such programs operated by states is reflected in the reduced incidence of major terrorist attacks in the United States after the overhaul of their entire intelligence apparatus post-9/11.[18] Also, terrorists no longer confine themselves and their camps to the country, or even continent of the intended attack. By making strategic use of sponsor states and complex decentralisation structures, the scale of internationalisation which modern terrorism has acquired warrants the adoption by states of tools and weapons capable of keeping watch over all parts of the world. As stated earlier, spy satellites, by virtue of their inherent qualities, play a large role in this.

[18] Peter Bergen, *The Rise and Fall of Osama bin Laden*, p. 103 (New York, Simon and Schuster, 2021).

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However, there is certainly considerable risk involved in giving *carte blanche* to security agencies in conducting the requisite surveillance when it comes to non-citizens.

Although national security is often narrowly interpreted to refer to measures aimed at protecting the country from human threats, a wider understanding is also said to encompass threats from other sources, such as natural disasters and viral pandemics.[19] In the former, earth observation satellites monitor weather patterns and changes on Earth, with the data often being simultaneously analysed and extrapolated by artificial intelligence programs. It might appear foolish to the layman that surveillance of weather phenomenon is a concern for privacy of individuals. However, contrary to popular belief, weather satellites do more than just observe clouds or wind systems. They also include within their ambit, the task of monitoring pollution, whether it be air pollution, water pollution, or even light pollution; detecting forest fires and other natural phenomena such as sand and dust storms; mapping snow cover, etc.[20] The latter area which is also included in a wider understanding of national security is the prediction and identification of outbreaks of infectious diseases and pandemics. Surveillance assists in this endeavour by analysing public health databases, google searches, and intercepting communications.[21] With the Covid-19 pandemic still fresh in the collective national mindscape, it is easy to see how national security extends to the prevention and identification of outbreaks.

IV. IDENTIFICATION AND ELIMINATION OF LACUNAE IN THE EXISTING LEGAL FRAMEWORK

In the words of former US president Barack Obama, who was also a civil rights attorney and constitutional law professor, "we have to make choices as a society";[22] that is, it is perfectly acceptable, and perhaps even necessary, for a state to make at least some trade-offs of civil liberties for security. However, a certain level of proportionality has to be maintained for the ends to justify the means, and to ensure this, as also to combat the inadequacies of solely relying

[19] Arvind Dahiya, 'Mass surveillance: Enhancing national and human security' (2017) 3 *International Journal of Applied Research* 1052.
[20] Ralph E. Taggard, *Weather satellite handbook* (American Radio Relay League, 5th ed, 1994).
[21] M. Mientka, 'The NSA's Controversial Mass Surveillance Could Help Thwart Disease Outbreaks' (*Medical Daily*, 19 January 2014) <http://www.medicaldaily.com/nsas-controversial-mass-surveillance-could-help-thwart-disease-outbreaks-267456. 2014> accessed 25 March 2014.
[22] Peter Baker and David E. Sanger, 'Obama Calls Surveillance Programs Legal and Limited' *The New York Times* (New York, 7 June 2013) <http://www.nytimes.com/2013/06/08/us/national-security-agency-surveillance.html?_r=0. 2013> accessed 25 March 2024.

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on extant domestic laws, a comprehensive framework for placing checks and balances on the functioning of state and non-state actors, insofar as they are involved in surveillance of citizens, is required. In the Indian context, the legal position is tilted in the favour of the state and national security. Even though there are two laws which deal with interception of calls (The Telecommunications Act, 2023)[23] and electronic communications (The IT Act, 2000),[24] they do little more than to provide the authorities with legal backing for their invasive acts against the citizens of the country. Lack of adequate oversight mechanisms and supervisory rules, coupled with the extremely broad range of circumstances under which private communications may be intercepted by the government, have nudged the country towards the brink of being classified as a "surveillance state.

Aside from the aforementioned two statutes, there is a complete absence of any legislative framework at all for imaging-based surveillance in the country. That is, while there is regulation for electronic intelligence satellites insofar as they intercept, decrypt, and analyse communications between Indian citizens, there is no corresponding regulation for satellites which collect images and pictures of locations on Indian territory. The urgency of the situation is magnified as there is only currently one electronic surveillance satellite operated by the government, while there are countless dual-use as well as dedicated optical imaging and radar imaging satellites operated by the government. Even though the professed function of these satellites is to deter terrorist activities and maintain border security, it is an inescapable conclusion that during the discharge of these functions some or the other data on ordinary citizens and their activities will be captured by the satellites. This is exemplified by the Pegasus snooping scandal, which demonstrates how the government can misuse sophisticated spying equipment in order to fulfil narrow political interests and subvert the democratic machinery in the country.

Therefore, there is a sore need for Parliament to enact a comprehensive law dedicated to drawing the contours of acceptable practices as well as safeguards for all kinds of surveillance activities conducted by both state and non-state actors. This is crucial in order to lend credence to the citizen's fundamental right to privacy under Article 21 of the constitution.[25] The fountainhead of this principle, the Puttaswamy case, is an excellent benchmark and starting

[23] The Telecommunications Act, 2023, Bill No. 194 of 2023.
[24] The Information Technology Act, 2000, Bill No. 21 of 2000.
[25] *Justice K.S. Puttaswamy (Retd.) & Anr. vs. Union of India & Ors* (2017) 10 SCC 1.

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point for formulating any law with the purported aim of protecting citizen's privacy. Particularly, Kaul J's opinion in that case offers a holistic understanding of the concept of privacy in the 21st century and its interrelatedness with technology and surveillance. However, if there is one thing which can be extrapolated from Kaul J's opinion in Puttaswamy, it would be the four-pronged test to determine whether an action which infringes the privacy of individuals is justified in light of the fundamental right to privacy or not, as the said right is not absolute and must give way to other competing rights and interests.[26] Therefore, a law for regulating satellite based surveillance could condition such surveillance on the fulfilment of the four prerequisites under the test.

Firstly, the said act of infringement by surveillance must be expressly or impliedly authorised by law, whether it be constitutional law or a specific statute, and must not be such so as to deliberately exploit loopholes and lacunae. Secondly, the action must be essential in a democratic society, that is, the objective of the action must serve the interests of the society as a whole, like national security or public safety, and must not be a tool for narrow interests. Thirdly, the infringement or interference afforded by the act must be proportionate to the objective sought. All less intrusive alternatives must be explored beforehand and sincere efforts must be made to minimise the impact on civil liberties of citizens. Lastly, procedural safeguards must be in place to prevent abuse of powers in the name of governmental functions. A redressal mechanism for citizens aggrieved by the violation of their rights must be provided, and accountability and transparency must be fostered by comprehensive legislation towards this end. Only then will there be a state of equilibrium between privacy and autonomy of individuals and the state's obligations to protect and defend its citizenry.

V. CONCLUSION

To conclude, satellites are undoubtedly a force multiplier in any nation's surveillance arsenal and intelligence apparatus. However, an equitable and just balance must be struck between national security considerations and individual privacy of citizens. Formulating a comprehensive law dedicated to this subject and the constitutional ethos of privacy and autonomy would be a much-needed step in the right direction, and perhaps the only way to put an end to the hegemony of the state in surveilling its citizens. Inspiration may be sought from

[26] Ibid.

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other countries, such as the UK's Regulation of Investigatory Powers Act, 2000,[27] which provides detailed guidelines to government bodies for surveillance and investigation, and is also used as a model for many EU member countries.[28] The potential of this new law to become a bulwark against the high-handed approach of government agencies is contingent on the inclusion herein of effective safeguards and mechanisms. Failure to do so would result in a position which is largely similar to the IT Act, which makes a passing reference to the grounds under which personal data of individuals can be intercepted, but provides no accountability mechanism or procedural safeguards. The same lackadaisical approach towards privacy is reflected in the Drone Rules 2021, which gloss over privacy considerations entirely in favour of a more liberalised regime for unmanned aircrafts in the country.[29] At the end of the day, we as a society will have to make certain choices; whether we want complete security or whether we want complete privacy. However, we cannot have both and expect there to be no inconveniences.

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[27] The Regulation of Investigatory Powers Act, 2000, 2000 c. 23.

[28] Andrew Roberts, 'Court of Appeal Regulation of Investigatory Powers Act 2000: Private Surveillance' (2006) 70 *Journal of Criminal Law* 286.

[29] Renu Gupta & Akshat Bhushan, 'How the Drone Rules 2021 threaten the Right to Privacy' (*The Leaflet*, 22 October 2021) <https://theleaflet.in/how-the-drone-rules-2021-threaten-the-right-to-privacy/> accessed 26 March 2024.

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