

ICRC OBSERVATIONS ON THE CONSULTANTS' REPORT

PROTECTING ESSENTIAL CIVILIAN SERVICES ON EARTH FROM DISRUPTION BY MILITARY SPACE OPERATIONS



The military application of technology enabled by space systems is an integral part of modern-day military operations. Outer space is becoming increasingly contested, as a number of states view space as an operational domain; have put in place specific space defence strategies and commands; and are engaged in developing, testing and deploying kinetic or non-kinetic “counterspace” capabilities.

At the same time, essential civilian services are becoming increasingly dependent on space systems. These systems – in particular navigation, communications and remote sensing satellites – are indispensable to the functioning of critical civilian infrastructure, especially in the energy and communications sectors. These sectors play an increasingly critical role in providing essential services on which civilians depend, including food production and supply, water, electricity, health care, sanitation and waste management. Humanitarian organizations also use satellite services in all aspects and phases of their work, from conducting needs assessments to delivering emergency aid, from mitigating disaster risk to building resilience in protracted conflicts.

Thus if, during an armed conflict, states or non-state armed groups party to the conflict target the space systems used by their adversaries for military operations, essential civilian services on Earth may also be impacted, raising humanitarian concerns.

To better understand these developments, the International Committee of the Red Cross (ICRC) commissioned a report by Gilles Doucet and Stuart Eves: ***Protecting Essential Civilian Services on Earth from Disruption by Military Space Operations***.¹ In this document, the authors: review the evolving and converging development of military space and counterspace operations, and of essential civilian space-based services; identify the risks to the civilian population and humanitarian operations posed by military operations targeting space systems; and propose policy options to mitigate the risk of civilian harm arising from military operations against space systems during armed conflicts.

Based on the findings of this report, and in line with its humanitarian mission and its mandate to promote and strengthen international humanitarian law (IHL), the ICRC has identified the following issues that deserve further attention and require action by states and other stakeholders.

¹ The enclosed report is the work of the authors and does not necessarily represent the views or position of the ICRC.

EXISTING LIMITS – UNDER INTERNATIONAL LAW – ON MILITARY OPERATIONS IN, OR IN RELATION TO, OUTER SPACE

The military use of space and space objects has been an integral part of contemporary warfare for several decades. The report commissioned by the ICRC enumerates the various military applications of space systems, including in the conduct of hostilities. For example, armed forces rely on satellite systems to operate navigation, precision targeting and global communications systems, including for command and control, and space-based monitoring systems to provide advance warning of missile attacks, as well as for surveillance and reconnaissance purposes. The growing role of space systems in military operations during armed conflicts also increases the likelihood of the ground or space components of such systems being targeted.

It is therefore important to underscore that military operations in, or in relation to, outer space² (involving kinetic or non-kinetic means) do not occur in a legal vacuum, but are constrained by existing international law. Relevant international law includes the Charter of the United Nations, space law treaties, the law of neutrality and IHL.³ More specifically:

- The United Nations Charter governs the lawfulness of the resort to threat or use of force by one state against another. It prohibits the threat or use of force, and mandates member states to settle their international disputes by peaceful means.
- Space law treaties, in particular the 1967 Outer Space Treaty, which recognizes the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes. Its Article IV prohibits the placement in orbit of objects carrying nuclear weapons or other weapons of mass destruction, the installation of such weapons on celestial bodies and the stationing of such weapons in outer space in any other manner.
- The law of neutrality regulates relations between belligerent states and neutral states in times of armed conflict and serves to mitigate and contain the adverse effects of a conflict.
- IHL constrains any military operation conducted in the context of an armed conflict, including those that are carried out in outer space, or the effects of which extend to outer space.⁴ In particular, it covers: the principle of distinction, the prohibition of indiscriminate and disproportionate attacks, and the obligation to take all feasible precautions to avoid – or at least to minimize – incidental civilian harm. IHL also prohibits weapons that are by nature indiscriminate, or of a nature to cause superfluous injury or unnecessary suffering, as well as a number of specific types of weapon. Furthermore, international law (in particular IHL) also affords specific protection to certain objects and persons during armed conflicts.

Reaffirming the prohibitions and restrictions imposed by the above-mentioned international law on military operations in, or in relation to, outer space is an essential first step towards respect for and compliance with international law. That said, the specific characteristics of the space environment and the accelerated development of the space sector have given rise to challenges with regard to the interpretation and application of existing international law, or elements thereof, to outer space. It is therefore essential for states to reach a common understanding to adequately protect the civilian population on Earth from the harmful effects of military operations against space systems.

² For the purpose of the discussion, military operations in, or in relation to, outer space include military operations in, to, from and through outer space and those against space systems, whether it be a space component, a ground component or any link between the two.

³ For a detailed discussion on existing limits under international law, including IHL, on military operations in, or in relation to, outer space during armed conflicts, see ICRC, *Constraints under International Law on Military Operations in Outer Space during Armed Conflicts: ICRC working paper submitted to the open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours, as convened under United Nations General Assembly Resolution 76/231, and to the Secretary-General of the United Nations in reply to General Assembly Resolution 76/230 on Further practical measures for the prevention of an arms race in outer space*, 8 April 2022, available at: <https://www.icrc.org/en/document/constraints-under-international-law-military-space-operations>.

⁴ The applicability of IHL in outer space is confirmed by Article III of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), which requires states to “carry on activities in the exploration and use of outer space ... in accordance with international law”. International law includes IHL. See also International Court of Justice, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, 8 July 1996, para. 86.

STRENGTHENING THE PROTECTION OF CRITICAL SPACE-BASED SERVICES TO CIVILIANS AND SERVICES THAT SUPPORT HUMANITARIAN OPERATIONS

The report provides a broad overview and ample examples of the increasingly indispensable role played by space-enabled services in supporting various aspects of the critical civilian infrastructure, including communications, energy, water and sanitation, transport, food and agriculture, health care, financial services, the prevention and mitigation of disasters, emergency services and humanitarian relief operations. The authors also highlight the interdependence of these essential civilian service sectors, which means that disruptions to one could have reverberating effects on others. Consequently, any hostile military operations against a space system would be likely to have both an immediate and a long-term impact on essential civilian services on Earth.

In this respect, in the ICRC's view, it is essential for the international community to recognize the importance of providing critical space-based services to civilians and humanitarian operations, and to consider further measures to minimize the significant risk of civilian harm arising from threats to space systems.

Building on existing protections afforded under international law, such as the prohibition of attacks on civilian objects and the protection afforded by IHL to specific persons and objects during armed conflict, and in the light of the significant risk of civilian harm and possible escalatory effects, states should refrain at all times from conducting and/or supporting any military operation or other activity designed or expected to disrupt, damage, destroy or disable space systems necessary for the provision of essential civilian services and for the protection and functioning of persons and objects specifically protected under international law.

Such systems include those that are critical to the production and maintenance of objects indispensable to the survival of the civilian population, or that otherwise enable the delivery of essential civilian services, such as foodstuffs, crops, livestock, drinking water installations and supplies, irrigation works and electricity and communications systems; those necessary for the protection and functioning of persons and objects specifically protected under international law, such as astronauts, humanitarian relief personnel and objects, civil defence organizations, cultural property, the natural environment, and medical personnel, activities and facilities; and those critical to the safety and operation of works and installations containing dangerous forces, such as nuclear power plants or infrastructure containing hazardous or toxic materials.

As the report illustrates, the ICRC – and the humanitarian sector as a whole – depend on space systems to conduct day-to-day humanitarian work. The authors also point out the challenges faced by humanitarian operations that rely on satellite services, in terms of sustainable connectivity, access to high-quality satellite services, technological hardware and software for data analysis, budgetary and human resources shortages in the humanitarian sector, and licensing restrictions in some operational environments. To this end, in order to ensure the availability of space-based services critical to humanitarian relief operations, an important aspect of international cooperation would involve states working towards increasing the resilience of space-based services for humanitarian operations in all types of emergencies, in particular by ensuring that humanitarian workers and first responders have uninterrupted multi-system access to satellite services, to avoid the negative impact on humanitarian operations of disruptions to the services provided by a specific satellite system. National space agencies – and other satellite operators in a position to do so (including commercial enterprises) – should respond positively to requests for assistance from emergency responders and humanitarian organizations.

MINIMIZING THE RISK OF CIVILIAN HARM ARISING FROM KINETIC AND NON-KINETIC MILITARY OPERATIONS AGAINST SPACE SYSTEMS

The report considers a range of kinetic and non-kinetic military counterspace capabilities that have been developed and/or may be used during an armed conflict, namely radio frequency interference with satellite communications, radio frequency interference with global navigation satellite services, interference with satellite command and control, cyber operations, attacks on satellite ground stations, laser dazzling of electro-optical imaging satellites, co-orbital anti-satellite attacks and direct ascent kinetic interceptor attacks.

SPACE DEBRIS AND KINETIC ANTI-SATELLITE OPERATIONS

While there have been no recorded incidents of kinetic anti-satellite weapons being used against a space object by another state, it is important to underline that any kinetic attack against space objects – either a direct ascent anti-satellite attack or a co-orbital anti-satellite attack – would risk creating far more space debris than most other space activities. This debris might damage or destroy, in an unpredictable manner, other space objects. The risks posed by space debris are growing owing to increasingly congested orbits, partly as a result of the increased pace at which new satellites, including commercial satellites, have been launched in recent years. Furthermore, an armed conflict involving major space powers could increase the risk of multiple kinetic anti-satellite attacks, which would significantly worsen the debris situation in Earth orbit and have a detrimental impact on the space environment, resulting in severe degradation of essential space-based civilian services on Earth.

Thus, parties to a conflict planning or deciding upon an attack against a military objective in space must, when applying IHL rules governing the conduct of hostilities, take into account the risk of creating debris and the cascading threat posed by debris to civilian space objects. While all assessments should be made on a case-by-case basis, there are serious doubts as to whether a party launching a destructive kinetic anti-satellite attack would be able to limit the effects of such an attack as required under IHL, given the difficulty of controlling or even accurately predicting the impact of a collision in orbit – and the resulting debris – on civilian satellites.

In any event, the foreseeable long-term danger that the debris would pose to civilian or dual-use objects in space, and the consequent risk of reverberating effects on civilians on Earth who rely on services provided by such objects, need to be considered when assessing the lawfulness of such an attack, in line with the principles of proportionality and precaution. Moreover, when planning an attack against a military objective in space, all feasible precautions must be taken to avoid, and in any event to minimize incidental civilian harm, including by choosing whenever feasible a non-debris producing alternative.

NON-KINETIC ANTI-SATELLITE OPERATIONS

It is widely accepted that a kinetic operation against a space system during an armed conflict constitutes an attack under IHL.⁵ This is also the case for non-kinetic operations, such as those involving directed energy weapons or cyber operations, that may be expected to cause death, injury or physical damage, including – in the ICRC's view – when such harm is caused by the indirect (reverberating or cascading) effects of such attacks.

However, a space system may also be disabled (rendered dysfunctional) without being physically damaged. The report discusses past incidents involving non-kinetic interference and/or attacks against civilian or dual-use satellites, resulting in significant disruption to civilian services. Furthermore, the report also draws attention to a particular concern, namely efforts to disrupt or disable global navigation satellite systems (GNSS) through non-kinetic military operations, such as jamming, spoofing or cyber operations. Even a temporary loss of functionality of GNSS may impair the positioning of other satellites that rely on GNSS and compromise their ability to avoid collision, with potentially reverberating effects on various types of critical civilian infrastructure on Earth.

5 The term “attacks”, as defined in IHL, refers to “acts of violence against the adversary, whether in offence or in defence”, see Article 49(3) of the Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Additional Protocol I), of 8 June 1977.

In the ICRC's view, a non-kinetic operation expected to disable a space object without causing – even indirectly – physical damage qualifies as an attack under IHL, and is therefore also limited by the above-mentioned rules governing attacks, among others.⁶ Otherwise, a non-kinetic operation designed or expected to disable a space system on which the critical civilian infrastructure relies might not be covered by essential IHL rules designed to protect the civilian population and civilian objects. Such an overly restrictive interpretation of the notion of attack would be difficult to reconcile with the object and purpose of IHL rules on the conduct of hostilities.

CHALLENGES ARISING FROM THE MILITARY USE OF COMMERCIAL SPACE CAPABILITIES, INCLUDING DURING ARMED CONFLICTS

In recent years, commercial entities in the space sector have significantly increased their involvement in military activities, including armed conflicts. Commercial Earth-observing satellites, for example, now play a crucial role in providing intelligence to belligerents for conducting their military operations. There have also been reports of commercial entities providing satellite communication and internet support to belligerents and their military infrastructure, while simultaneously providing such services to the civilian population. Furthermore, commercial satellite service providers may establish or make available infrastructure, such as launch platforms and on-orbit servicing, to military satellites, use commercial satellites to host military payloads, or operate military satellites.

The authors of the report observe that the evolution of military and commercial space capabilities has given rise to the following trend: while essential civilian services rely more than ever on space-enabled services, the space systems providing those services are exposed to an unprecedented threat from potential counterspace operations, owing to the military function of these often dual-use systems.

MILITARY USE OF COMMERCIAL SPACE OBJECTS AND THE RESULTING IMPACT ON THEIR PROTECTION UNDER IHL

IHL prohibits targeting civilian objects, either in outer space or anywhere else. However, dual-use space objects may become military objectives, provided that they – under the circumstances ruling at the time – fulfil the criteria stipulated in Article 52(2) of Protocol I additional to the Geneva Conventions of 12 August 1949.⁷ In such cases, any attack against a dual-use commercial satellite would continue to be subject to the prohibitions under IHL on indiscriminate and disproportionate attacks, and the obligation to take all feasible precautions.

If a dual-use satellite were to become a military objective during an armed conflict, all foreseeable direct and indirect incidental harm to civilians and civilian objects in outer space and on Earth would have to be considered when assessing the lawfulness of an attack, not only with regard to foreseeable incidental civilian harm to other space objects and persons, but also the potential impact of impairing the civilian use of that dual-use space object. Whenever feasible, in order to avoid or at least minimize incidental civilian harm, means and methods of warfare must be chosen that solely affect the parts of the space structure (for example, a payload or a specific transponder on a satellite bus) used for military purposes, and not the parts used for civilian purposes.

⁶ This issue features prominently in current debate on cyber operations during armed conflicts, and divergent views exist on whether disabling an object without causing – even indirectly – physical damage qualifies as an attack under IHL. For the ICRC position, see ICRC, *International Humanitarian Law and Cyber Operations during Armed Conflicts: ICRC position paper submitted to the Open-Ended Working Group on Developments in the Field of Information and Telecommunications in the Context of International Security and the Group of Governmental Experts on Advancing Responsible State Behaviour in Cyberspace in the Context of International Security*, 2019, available at: <https://www.icrc.org/en/document/international-humanitarian-law-and-cyber-operations-during-armed-conflicts>, pp. 7–8.

⁷ Dual-use space objects may become military objectives if they, under the circumstances ruling at the time, fulfil the definition under Article 52(2) of Additional Protocol I: “those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage”.

In addition, states must take all feasible precautions to protect civilians and civilian objects under their control against the effects of military operations against dual-use space objects.⁸ Possible measures include physically or technically segmenting space systems (or parts thereof) that are used for military purposes from civilian ones, and working towards identifying space systems serving specifically protected objects, such as hospitals and objects indispensable to the survival of the civilian population.

INVOLVEMENT IN ARMED CONFLICTS OF COMMERCIAL ENTITIES IN THE SPACE SECTOR, AND THE POTENTIAL IMPLICATIONS FOR SUCH ENTITIES AND THEIR EMPLOYEES

Commercial (and certain military) space systems that support military operations in armed conflicts are operated by commercial entities and their employees. These employees are civilians, and the space objects and other assets belonging to the above-mentioned commercial entities are civilian objects and protected as such under IHL, unless and for such time as they constitute military objectives during an armed conflict.

The more that infrastructure or services are shared by civilians and military forces, the higher the risk of civilian space infrastructure being attacked during armed conflicts. A cornerstone of IHL is the cardinal principle of distinction between civilians and combatants, and between civilian objects and military objectives. The growing involvement in military space operations of commercial entities and their employees, and the use of civilian space infrastructure and services for military purposes, makes it factually more difficult to distinguish between the two, and puts civilians and civilian objects at risk, including of being misidentified as lawful targets.

Commercial entities in the space sector operating in armed conflicts should understand and monitor whether the services they provide may amount to direct participation in hostilities by their employees, and whether the space objects or any other infrastructure belonging to the company might qualify as military objectives. They should understand and monitor whether their involvement in armed conflicts might put their employees at risk and, if necessary, adapt their activities accordingly and inform employees of the risks and legal consequences of their activities.

During armed conflicts, companies should take all appropriate measures to mitigate any foreseeable negative impact that their services may have on the civilian population, including by ensuring their activities comply with relevant IHL rules. Individuals who act on behalf of a space sector company in the context of an armed conflict must comply with IHL rules relevant to their activities. Company personnel involved in violations of IHL that constitute war crimes or are complicit in such crimes, can be held criminally responsible. National legislation often also provides more generally for civil and criminal responsibility of private companies and their employees for such wrongful acts.

To the extent feasible, companies should also monitor whether belligerents use their civilian services for military purposes, and prevent or minimize such use. They should do everything in their power to minimize the risks to the civilians who rely on such services, including by segmenting, whenever feasible, military and civilian use of space systems (including satellites, communication links and ground stations) and avoiding measures that would impede the functioning or availability of critical space-based services to civilian populations affected by the conflict and humanitarian operations.

⁸ Article 58 of Additional Protocol I; Rules 22 to 24, in Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law*, Vol. 1: Rules, Cambridge University Press, Cambridge, 2005.

THE INVOLVEMENT IN ARMED CONFLICTS OF COMMERCIAL ENTITIES IN THE SPACE SECTOR AND THE IHL IMPLICATIONS THERE OF FOR STATES

With regard to the conduct of commercial entities in the space sector and their employees during armed conflicts, it should be noted that states have undertaken to respect and ensure respect for IHL.⁹

Under public international law, a state is responsible for the conduct of private persons, groups and entities – including commercial entities in the space sector and their employees – if they are “empowered by the law of that state to exercise elements of the governmental authority”, or “in fact acting on the instructions of, or under the direction or control of, that state”.¹⁰ Furthermore, under space law – *lex specialis* for outer space activities – states bear international responsibility for national activities in outer space carried on by governmental and non-governmental entities, for assuring that such activities are carried out in conformity with international law, including IHL, as well as for the authorization and continued supervision of national activities in outer space carried out by non-governmental entities.¹¹ States must do everything in their power to ensure that anyone who conducts space activities in relation to an armed conflict on their behalf, from their territory, or otherwise involving national activities in outer space, complies with IHL.

Even if the conduct of commercial entities in the space sector and their employees is not attributable to a party to an armed conflict, states are nonetheless obliged to ensure respect for IHL. At a minimum, parties to an armed conflict must not encourage, aid or assist commercial companies involved in space operations, or their individual employees, to violate IHL,¹² for example by knowingly providing intelligence collected by the company’s remote sensing satellite which forms part of a concrete and coordinated attack against civilians or civilian objects.

Furthermore, states must – among others – exercise due diligence to prevent and repress breaches of IHL by the civilian population “over which they exercise authority, i.e. also to private persons whose conduct is not attributable to the State”.¹³ And at the very least, states must disseminate IHL as widely as possible to the commercial entities in the space sector and their personnel in their respective countries, in order to ensure their awareness of, and compliance with, their obligations under international and domestic law; prosecute persons alleged to have committed grave breaches of IHL (i.e. war crimes): and take measures necessary for the suppression of all other IHL violations committed by private space companies or their individual employees.¹⁴

⁹ Article 1 common to the four Geneva Conventions, and Preamble and Article 1(1), Additional Protocol I.

¹⁰ See International Law Commission, *Responsibility of States for Internationally Wrongful Acts*, 2001, Articles 5 and 8.

¹¹ See Articles III and VI of the Outer Space Treaty.

¹² See ICRC, *Commentary on the Third Geneva Convention*, ICRC and Cambridge University Press, 2020, para. 191 on Article 1.

¹³ *Ibid*, para. 183 on Article 1.

¹⁴ See Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949 (First Geneva Convention), Article 49; Geneva Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Members of the Armed Forces at Sea of 12 August 1949, (Second Geneva Convention), Article 50; Geneva Convention relative to the Treatment of Prisoners of War of 12 August 1949, (Third Geneva Convention), Article 129; Geneva Convention relative to the Protection of Civilian Persons in Time of War of 12 August 1949 (Fourth Geneva Convention), Article 146; Additional Protocol I, Article 85.

WAYS FORWARD

The report confirms – on the basis of facts, data and analysis – that disrupting, damaging or destroying space systems that support critical civilian infrastructure and/or essential civilian services could involve a significant human cost for civilians on Earth. Furthermore, certain military operations, in particular kinetic counterspace operations, may generate a large amount of debris that could result in the loss of – or reduced access to – the Earth orbit, with a long-term impact on the delivery of essential civilian services. Based on the current understanding of these consequences, measures are needed to prevent and mitigate these risks, with a focus on (but not limited to) the context of an armed conflict. These measures can be used to inform debates about the application and possible further development of international law and policies governing the use of outer space.

The ICRC has, in line with its humanitarian mission and mandate, participated in and contributed its expertise to processes mandated by the United Nations General Assembly in relation to outer space security.¹⁵ Most recently, we made five preliminary recommendations on the possible further development of legally binding and/or non-binding instruments, focusing on measures to minimize the risk of civilian harm posed by threats to space systems, which should be implemented at all times.¹⁶ In our view, states should:

- refrain from conducting or supporting any military operation or other activity designed or expected to disrupt, destroy, physically damage or otherwise disable space systems necessary for the provision of essential civilian services and for the protection and functioning of persons and objects specifically protected under international law
- whenever feasible, physically or technically separate or segment space systems (including satellites, communication links and ground stations, or parts thereof) that are used for military purposes from civilian ones, particularly with regard to systems necessary for the provision of essential civilian services and for the protection and functioning of persons and objects specifically protected under international law
- identify, register, mark, announce and/or otherwise indicate those space systems within their jurisdiction or control that are to be spared from the effects of military space operations
- refrain from developing, testing or using kinetic counterspace capabilities, or conducting other harmful operations against space systems that are designed or expected to create space debris
- cooperate to increase the resilience of satellite services for humanitarian relief and emergency response in times of armed conflict and other emergencies.

These first three recommendations aim to ensure the effective protection of space systems necessary for essential civilian services and specifically protected persons and objects, the fourth seeks to mitigate the risks posed by space debris, and the fifth aims to increase the resilience of satellite services used for humanitarian relief operations. The facts and analysis contained in the report support these preliminary recommendations. The authors further propose – in the final chapter of the report – ten policy options based on humanitarian concerns, that aim to mitigate the potential impact on

¹⁵ Most recently, the United Nations open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours, established pursuant to General Assembly resolution 76/231, held sessions in Geneva from May 2022 to September 2023. The group of governmental experts (GGE) on further practical measures for the prevention of an arms race in outer space, convened pursuant to General Assembly resolution 77/250, was scheduled to hold sessions between November 2023 and August 2024. In December 2023, the United Nations General Assembly decided to convene two new open-ended working groups on outer space, scheduled to begin their work in 2025: an open-ended working group on the prevention of an arms race in outer space through the development of norms, rules and principles of responsible behaviours (building on the work of the 2022–2023 open-ended working group), and an open-ended working group on further practical measures for the prevention of an arms race in outer space.

¹⁶ Further details on these recommended measures can be found in ICRC, *Preliminary Recommendations on Possible Norms, Rules and Principles of Responsible Behaviours relating to Threats by States to Space Systems*: ICRC working paper submitted to the open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours, 27 January 2023, available at: <https://www.icrc.org/en/document/preliminary-recommendations-on-reducing-space-threats>, and the ICRC statement made at the open-ended intersessional informal consultative meeting on further practical measures for the prevention of an arms race in outer space, 29 February 2024, available at: <https://www.icrc.org/en/un-outer-space-ihl-statement>.

civilians of disruptions to space-based essential services, which complement the ICRC's preliminary recommendations and offer the international community new food for thought. These recommendations deserve further study and discussion, with a view to exploring feasible implementation strategies.

As identified in the report, the specific characteristics of the space environment and the accelerated development of the space sector, for both military and commercial use, have given rise to challenges regarding the interpretation and application to outer space of existing international law or any part thereof. In this regard, the ICRC also recommends that states further examine and discuss how international law regulates military operations in outer space, as research and debate would contribute to improving compliance with international law and avoiding misperceptions, miscalculations and the unintended escalation of situations. States' interpretation of existing IHL rules will determine the extent to which IHL is able to protect the civilian population, and individual civilians, against dangers arising from military operations involving outer space. It will also help to determine whether existing international law is sufficient, or whether new rules may be needed.

More broadly, the ICRC urges states and armed forces to consider the humanitarian consequences of developing military space capabilities, or using them during armed conflicts. We welcome the mandate of the new open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours to discuss and issue recommendations on "protecting critical space-based services to civilians as well as services that support humanitarian operations".¹⁷ In the light of the risk of significant civilian harm, states may decide – for reasons that include the potential humanitarian impact – to introduce general prohibitions or specific limits with regard to weapons, hostilities or other military operations, either in or in relation to outer space. If new, legally binding rules and/or voluntary norms in this regard are to be developed, they must be consistent with, build on and strengthen the existing legal framework, including IHL.

The ICRC hopes that the enclosed report will help to raise awareness of the humanitarian consequences of disrupting, damaging or destroying space systems that support critical civilian infrastructure and/or the delivery of essential civilian services. By providing a solid assessment of the risk of civilian harm arising from military space operations, we hope that the report will contribute to and inform international discussions aiming to identify gaps and explore measures to prevent and mitigate the potential human cost of military operations in, or in relation to, outer space.

¹⁷ See UNGA Res. 78/20, 6 December 2023, on "Reducing space threats through norms, rules and principles of responsible behaviours", para. 4(d).

MISSION

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the Geneva Conventions and the International Red Cross and Red Crescent Movement. It directs and coordinates the international activities conducted by the Movement in armed conflicts and other situations of violence.