



## Questionnaire on the Human Rights Implications of New and Emerging Technologies in the Military Field

This paper was prepared in response to the request of the Advisory Committee of the Human Rights Council to contribute to the preparation of its next thematic report on "The Effects of New and Emerging Technologies in the Military Field on Human Rights" to be submitted during the 60th session of the Human Rights Council in September 2025, and the following is a review of the most prominent actions of the Kingdom in this regard:

1. **What international legal frameworks, such as international human rights law and international humanitarian law, currently apply to the design, development, deployment, and use of new and emerging technologies in the military domain (NTMD)? How effective are these tools in addressing the challenges posed by the NTMD?**

International legal frameworks are a set of standards, principles, and rules aimed at protecting the rights and dignity of individuals in all circumstances, especially in situations of armed conflict. These frameworks regulate the conduct of states and other parties involved in conflicts and define the limitations and responsibilities of the use of force and weapons. It also establishes mechanisms to ensure that these standards are respected, applied, and enforced at the national and international levels.

- Some of the international legal instruments, treaties, and laws that relate to NTMD are
  - The Geneva Conventions and their Additional Protocols are a set of international treaties that define the rules and principles of international humanitarian law, protect persons not taking or taking limited part in hostilities, and limit the means and methods of warfare. These treaties include the Four Geneva Conventions of 1949, the Geneva Protocols of 1977, and the Third Geneva Protocol of 2005.
  - Treaties on Prohibitions or Restrictions on the Use of Certain Conventional Weapons are a set of international treaties aimed at preventing or reducing the tragic humanitarian effects of certain conventional weapons, such as nuclear weapons,



chemical weapons, biological weapons, anti-personnel mines, and unexploded ordnance. These include, for example, the 1996 Worldwide Nuclear Test Ban Treaty, the 1993 Chemical Weapons Convention, the 1972 Biological Weapons Convention, and the 1980 Convention on Prohibitions or Restrictions on the Use of Certain Weapons of Distortion.

- The effectiveness of these tools in meeting the challenges posed by NTMD:

The effectiveness of these tools in addressing the challenges posed by NTMD depends on several factors, including:

- The degree of commitment, application, and enforcement of these frameworks by all stakeholders, including governments, the private sector, and civil society,
- The degree of cooperation, coordination, and dialogue between all the interests involved in the NTMD field, including the scientific, technical, academic, legal, and ethical communities
- The degree of availability and access to information, data, evidence, and reports related to NTMD facilitates the monitoring, evaluation, and review of their impact on human rights and international humanitarian law.
- The degree of adaptation, modernization, and innovation in these frameworks must keep pace with developments and changes in the field of NTMD, ensuring their alignment with international principles and values.
- These tools have limited effectiveness in facing the challenges posed by NTMD because they depend on the commitment of states, organizations, and individuals to international legal rules and principles and on the existence of effective control and punitive mechanisms to prevent or punish violators.

**2. What measures can be taken to enhance international cooperation and dialogue in order to promote the responsible and transparent use of NTMD while ensuring compliance with international law, international humanitarian law, and international human rights law?**

- Some measures that can be taken to enhance international cooperation and dialogue in order to promote the responsible use of NTMD are:



- Work on the establishment of platforms and mechanisms for consultation and coordination between countries and international organization's and bodies concerned with the NTMD to exchange information, experiences, technology, and good practices.
  - Conclusion of international conventions and treaties that define the standards, rules, and responsibilities of states, organization's, and individuals in the field of NTMD and ensure respect for human rights and international humanitarian law
  - Develop effective monitoring and punitive mechanisms to monitor, evaluate, and ensure compliance by states, organizations, and individuals with international obligations related to NTMD.
  - Provide technical, humanitarian, and rehabilitation assistance to countries and communities affected by NTMD and strengthen their capacity to prevent and adapt to them.
  - Encourage scientific research and innovation in the field of NTMD, stimulate cooperation between academics, experts, and policymakers, and strengthen the link between science and policy.
3. **From a human rights protection perspective, what are the main domestic regulatory gaps that can be identified? In your opinion, what legal or other domestic measures are needed to prevent human rights violations, abuses, and violations of international humanitarian law resulting from the use of the NTMD?**
- The Kingdom of Saudi Arabia seeks to reduce domestic regulatory gaps in the field of NTMD and enhance compliance with international humanitarian law by taking several measures by issuing or amending laws, regulations, and initiatives in this field, such as:
    - Define the concept of NTMD and cyber operations, defining the responsibilities, powers, and obligations of the actors involved in these operations and taking into account internationally agreed principles and rules in this field.
    - Prohibit or restrict the use of NTMD or cyber operations that violate international humanitarian law, and establish conditions and controls for the lawful use of such operations, taking into account the rules on distinction, necessity, proportionality, and the limitation of disproportionate damage and impacts on the environment.



- Protect the rights and interests of civilians and protected persons from the effects of NTMD or cyber operations, and ensure that they receive assistance and compensation in the event of damage from such operations, taking into account the rules regarding the special protection of certain actors and infrastructure, such as medical facilities and humanitarian organizations.
- Cooperation between local, regional, and international authorities in the fight against NTMD or cyber operations and the definition of the mechanism for reporting or verifying such operations, taking into account the obligations of mutual exchange of information and notifications, consultation, inspection, and investigation in case of suspected violations

**4. What are the key human rights challenges posed by NTMD, including artificial intelligence (AI) and autonomous decision systems (ADS), enhanced decision support systems, autonomous weapons systems (AWS), human augmentation technologies, and dual-use technologies? How can these challenges be effectively addressed?**

- There are challenges related to the legal protection of individuals and groups from the negative effects of NTMD. There must be international and national legal frameworks that ensure respect for human rights and international humanitarian law in the design, development, dissemination, and use of NTMD. As well as strict controls on the use of autonomous weapons systems (AWS) that may target and kill humans without human intervention, there must be safeguards to ensure human transparency, accountability, and oversight of independent autonomous decision systems (ADS) that may affect human rights.
- Challenges related to privacy and discrimination in the use of NTMD. NTMD relies on large sets of data, with information about individuals collected, shared, consolidated, and analysed in multiple and often obscure ways. The data used to inform and guide NTMD may be false, discriminatory, outdated, or irrelevant.
- There are challenges related to ethics and limits to using NTMD. The use of NTMD for dual purposes, such as civilian and military purposes, may threaten international peace and security. Therefore, there must be ethical principles and values that guide the use of NTMD in a manner that respects human rights and the environment.



- To address these challenges effectively, there must be international cooperation and dialogue among all stakeholders, including states, international and regional organisations, civil society, the private sector, and academic institutions. These parties shall participate in the formulation, application, and monitoring of NTMD rules, standards, and controls in accordance with international law and human rights and shall exchange information, experiences, and best practices to promote mutual understanding.
5. **What standards and guidelines exist to ensure meaningful human control over the use of force and during hostilities and to ensure compliance with international human rights and humanitarian law in the military field?**
- According to international humanitarian law, there must be human control over the use of force during hostilities in order to ensure respect for the fundamental rules and principles of this law, for example:
  - The principle of distinction stipulates that a distinction must be made between civilians and combatants and between civilian and military objects, and that it is prohibited to target civilians or civilian objects directly or disproportionately.
  - The principle of necessity states that force must be used only to achieve a legitimate military objective and that excessive, arbitrary, or indiscriminate use of force is prohibited.
  - The principle of harm limitation, according to which the unintentional harmful effects of the lawful use of force on civilians, civilian property, or the environment must be avoided or minimized,
  - To ensure human control over the use of force, several factors must be taken into account, including:
  - The level of interaction, intervention, and supervision by humans in the decision-making process is related to the use of force and responsibility for these decisions.
  - The level of understanding, trust, consistency, and transparency of the use of a force regime, be it a traditional system, an autonomous system, or an artificial intelligence system,
  - The level of verification, evaluation, and feedback in the system of use of force and corrective or corrective actions in the event of an error or violation



- To ensure compliance with international humanitarian law in the military field, several measures must be taken, including:
  - Issue or amend laws or regulations prohibiting or restricting the use of weapons or tactics that succeed in such arts, or establish conditions and controls for their lawful use.
  - Provide employees of the armed forces with education, training, and guidance on this law and its application in the planning, preparation, and execution of military operations.
  - Conduct investigations in the event of violations of this law, prosecute those responsible and bring them to justice, and provide redress or compensation to victims.
  - Strengthening cooperation and coordination with states and international, regional, and local organization's in the field of application of this law and exchanging information, experiences, and technology.
6. **How can the right to equality and non-discrimination be supported in the design, development, and use of NTMD, especially when it relies on data and algorithms that may lead to or amplify bias or discrimination? How can the collection and management of representative data be ensured? How can NTMD transport and trade be organised effectively?**
- To support the right to equality and non-discrimination in the design, development, and use of NTMD, certain principles, such as:
  - Respect international human rights standards and ensure that the NTMD is compliant with the law and ethics.
  - Ensure respect for data privacy and security, and limit the collection, storage, analysis, and dissemination of unnecessary or unwanted data.
  - Ensure the quality, accuracy, and comprehensiveness of the data used in NTMD and avoid bias, misinformation, or manipulation.
  - Ensure the promotion of digital education for individuals and stakeholders to raise awareness of the benefits and dangers of NTMD and develop the necessary skills to benefit from it.
  - The collection and management of representative data is a process aimed at ensuring that the evidence used in the NTMD reflects the reality and diversity of social,



cultural, and geographical realities and that the rights and interests of all groups affected by the NTMD are respected. To ensure the collection and management of representative data, steps such as:

- Identify reliable and appropriate data sources for the desired purpose, and verify their validity and placement.
- Identify variables and categories to be measured and analysed, ensuring that they are comprehensive, balanced, and context-sensitive.
- Use appropriate and effective data collection methods, whether quantitative, qualitative, or mixed, and ensure that they are transparent and inclusive.
- Use appropriate and secure data management methods, including storing, protecting, cleaning, classifying, and collecting data.
- Use appropriate and accurate data analysis methods, including statistical analysis, textual analysis, or visual analysis, to ensure that they are constructed on scientific and ethical standards.
- As for the organisation, transport, and trade of NTMD, which is a process that aims to ensure that NTMD conforms to the required technical and quality standards, is compliant with local and international regulations and laws, and is socially and environmentally responsible, some procedures must be followed, such as:
  - Obtaining the necessary licences, permits, or certificates from the competent authorities to prove the quality and safety of NTMD.
  - Follow the technical standards, specifications, or standards applied to NTMD, whether local, regional, or international.
  - Respect for property rights

**7. What are the potential risks associated with the use of NTMD that could be exploited for malicious purposes, such as cyber-attacks, espionage, plagiarism, jamming, sabotage, or biological weapons? How can these risks be mitigated to prevent potential human rights violations and abuses?**

There are many potential risks associated with using NTMD for malicious purposes, such as:

- Cyber-attacks Hackers may use NTMD to generate malware, phishing messages, fake content, denial-of-service attacks, network hacking, or data theft. This may



disrupt, sabotage, or tamper with vital services and facilities or sensitive information.

- Espionage may use hostile actors (NTMD) to collect, analyses, and exploit confidential, personal, or strategic information about individuals, organizations, or nations. This may result in a violation of the privacy, security, and sovereignty of individuals, groups, and states.
- Plagiarism Scammers may use NTMD to create fake images, videos, or audio of people or organization's for the purpose of misleading, manipulating, or defaming them. This may lead to a denigration of the reputation, dignity, or truth of individuals or institutions.
- Jamming aggressors may use NTMD to obstruct, disrupt, or distort the process of certain communications, signals, or systems. This may reduce the effectiveness, accuracy, or credibility of such communications, signals, or systems.
- Sabotage may use NTMD terrorist or extremist organization's to cause physical or material harm to individuals or property that may result in the loss of human life, bodily injury, or destruction of infrastructure.
- Biological weapons: Criminals may use NTMD to create or disseminate infectious or toxic biological agents that may lead to an epidemic or mass poisoning.
- To mitigate these risks, several actions must be taken at the individual, community, state, and international levels, such as:
- Promote education and awareness of the dangers and potential effects of NTMD on human rights, and apply ethical principles and values in the design, development, and use of NTMD.
- Develop and apply security and legal standards, controls, and procedures to protect data, privacy, identity, communications, and systems from cyber or biological threats.
- Promote transparency, accountability, and oversight of the use of the NTMD, and ensure mechanisms for investigation, punishment, and reparation in the event of human rights violations or abuses.
- Promote cooperation and dialogue among all stakeholders, including states, international and regional organizations, civil society, the private sector, and academic institutions, to exchange information, experiences, and best practices to enhance mutual understanding, trust, and solidarity.





**8. In what ways can NTMD enhance weapon accuracy, reduce lateral persistence, and improve situational awareness and communication during military operations?**

- One of the ways in which the NTMD contributes to enhancing weapon confidence, reducing collateral damage, and improving situational awareness during military action Digital technologies, artificial intelligence, cloud computing, and other advanced technologies are used to increase the efficiency and effectiveness of weapons and defense systems and use lethal autonomous weapons systems (LAWS), which are systems that can choose and carry out an attack on a specific target without human intervention, to collect, analyses, and share information about the surrounding environment. These systems help improve the situational awareness of the armed forces and increase the accuracy of planning and execution of military operations.
- Note that these technologies also have risks and challenges to human rights and international humanitarian law. There are issues regarding the responsibility, transparency, and accountability of the use of NTMD, particularly with regard to LAWS. There are also concerns about protecting the privacy and security of data used in the NTMD, especially in light of cyber threats, and there are also concerns about respecting freedom of expression and communication via the NTMD, especially in light of its use for censorship, misinformation, or manipulation. Therefore, there must be human control over the use of NTMD, ensuring respect for international human rights standards and international humanitarian law.

**9. How do private states and entities differ in their roles and responsibilities in relation to the design, training, deployment, use, and acquisition of an NTMD?**

Countries and private entities differ in their roles in terms of the design, training, deployment, use, and acquisition of the NTMD, with a sense of their level of development, objectives, capabilities, laws, and standards in general. These roles can be classified into three main categories:

- Producers are the countries or private entities that design, develop, and produce NTMD, and these require high skills in areas such as engineering, programming,



and artificial intelligence. They also need to secure funding, infrastructure, and security for their projects.

- Users are countries or private entities that purchase, lease, or borrow NTMD from producers or others. These require skills in areas such as operation, maintenance, evaluation, and reporting. They also need to respect international humanitarian law and human rights in the use of NTMD.
- Regulators are states or private entities that issue, enforce, or monitor laws, standards, principles, or initiatives related to the NTMD. These need skills in areas such as negotiation, supervision, verification, and solutions. They also need to collaborate with all stakeholders to ensure safety, security, and sustainability in the NTMD field.

**10. What are the potential risks associated with private entities, such as non-state actors, obtaining or misusing NTMD, such as drones, cyber weapons, or biotechnology?**

- Security risks are risks that threaten the national, regional, or international security of states as a result of private entities using NTMD in illegal or irresponsible ways. For example, private entities may use drones to spy, threaten, or sabotage sensitive targets. Wire weapons may be used to launch attacks on the infrastructure, information, or communications of states, or biotechnology may be used to produce or deploy bacteriological or chemical weapons.
- Legal risks are risks that arise from the absence of binding international laws, standards, or agreements regulating the use of NTMD by private entities. For example, there may be gaps or conflicts in local, regional, or international legislation regarding the rights, responsibilities, and accountability of private entities in the field of NTMD, or there may be difficulties in applying, activating, and monitoring these legislations due to the lack of effective mechanisms for cooperation and coordination between stakeholders.
- Moral hazards are risks that are contrary to human principles, values, and ethics as a result of the use of NTMD by private entities in ways that violate human rights, dignity, freedom, and protection. For example, an NTMD may be used to destabilize the integrity or sovereignty of states or peoples, or a TMD may be used to increase inequality, discrimination, or marginalization between different groups of society.



Or you may use NTMD to weaken the role, authority, or participation of humans in decision-making.

- Environmental hazards are risks that affect the quality, health, diversity, and sustainability of the natural environment as a result of the use of NTMD by private entities in ways that pollute, destroy, or waste environmental resources. For example, TMD may be used to cause damage or danger to ecosystems, species, or biological balance; TMD may be used to increase greenhouse gas emissions or climate change; or NTMD may be used to deplete, exploit, or waste natural resources such as water, air, or soil.

**11. How can both states and private entities effectively forget about accountability and responsibility mechanisms to address the use of NTMD, including artificial intelligence, direct advertising, and the use of force? Limits, long distances, neural technology controls, and interface fluctuation, plus dual controls using technologies used for both military and civilian purposes?**

- Governments and private entities that effectively have accountability mechanisms to address the use of NTMD, including AI and direct advertising, should follow steps such as:
- Develop binding international laws, standards, and agreements that regulate the use of NTMD by all concerned parties and define the rights, duties, and responsibilities of each party.
- Establish independent and effective mechanisms and bodies for monitoring, inspection, and verification of the compliance of users (NIMD) with related laws, standards, and conventions.
- Provide opportunities to report any irregularities, abuses, or violations committed in the use of the NTMD, and ensure the protection of the rights of whistleblowers and victims.
- Enforcement of deterrent and fair sanctions on any party established responsible for using NIMD in illegal, unethical, or irresponsible ways.
- Encourage cooperation and coordination between governments and private entities in the field of NTMD and the exchange of knowledge, experiences, and best practices.



**12. How can states and private entities effectively establish accountability and responsibility mechanisms to address violations and abuses of international human rights law and violations of international humanitarian law committed using NTMD, including artificial intelligence and advertising, cross-border and long-distance use of force, neuroethology, and brain interface controls, as well as dual-use technologies used for both military and civilian purposes? In addition, how can monitoring the design, development, training, and use of NTMD play a role in ensuring accountability and addressing potential violations and abuses?**

- First, dual-use technologies are goods, software, and technology that can typically be used for dual civilian and military purposes, such as drones, artificial intelligence, cryptography, synthetic biology, and nuclear energy.
- Second, what are the potential effects of using these technologies on human rights and international humanitarian law? These technologies can contribute to improving human lives and protecting their rights, for example, by improving health, education, the environment, and security. However, these technologies can also be used to commit violations or crimes against human rights or international humanitarian law, for example, through the use of excessive violence, espionage, or manipulation.
- Third: Ensure accountability and address potential violations. This requires prompt, transparent, independent, and thorough investigations into all suspected violations or crimes using the NTMD, ensuring that those responsible are held accountable and justice is done for victims. It also requires reforming state laws, policies, and institutions to comply with international human rights and humanitarian law standards, including regulating, monitoring, and evaluating the use of NTMD.
- Fourth: Monitor, design, train, and use NTMD to contribute to ensuring accountability and addressing potential violations. This requires enhanced cooperation and dialogue among all parties concerned, including governments, the private sector, civil society, academia, technical experts, and international agencies. It also requires the application of ethics and human rights principles at all stages of the development, deployment, and use of NTMD, including conducting impact assessments on human rights and international humanitarian law before, during, and after their use.



**13. How do new and emerging technologies in the military domain (NTMD) affect the respect, protection, and promotion of human rights in your country? What challenges or distinct advantages does your country have in addressing this issue?**

- Saudi Arabia respects its commitments under IHL and human rights, and we use military technologies in a responsible and transparent manner. It participates in international forums such as the Convention on Certain Conventional Weapons (CCW), which aims to discuss emerging technologies in the field of lethal autonomous weapons systems (LAWS) and develop common rules to ensure respect for IHL. It also supports the efforts of international organizations such as the Red Cross in disseminating IHL and raising awareness of the challenges, opportunities, and challenges in the field of NTMD.
- One of the challenges in the field of NTMD is that these technologies are developing very quickly, may exceed the capabilities to address or control them, and may face the risk of manipulation by illegal or terrorist parties. Therefore, the Kingdom needs to strengthen its capabilities in areas such as research and development, education and training, cyber security, and international cooperation. You also need a balance related to NTMD. Between using NTMD to improve security and defense and protect people's rights.