

SUMMARY REPORT OF THE INTERNATIONAL CONFERENCE PROCEEDINGS

EMERGING MILITARY TECHNOLOGIES VIS-A-VIS HUMAN RIGHTS CONCERNS

20 november 2024



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Preamble

Advanced military technologies have, over the years, decisively shaped the dynamics of international security. From the advent of drones to cyber warfare, including autonomous weaponry and mass surveillance, these innovations have radically transformed military paradigms.

Since the dawn of the 21st century, the line between technology and warfare has grown increasingly blurred. The weapons of tomorrow are now designed to be smarter, more autonomous, and, in some cases, entirely independent of human intervention. Among these military innovations are increasingly sophisticated systems, such as stealth aircraft, drones, ships, hypersonic missiles, directed-energy weapons, and military robots.

The rapid evolution of military technologies, particularly in the areas of robotics and the automation of lethal weapons, has triggered a new global arms race. This shift has had a profound impact on the military strategies of states, with a growing number of nations seeking to acquire and master these technologies to strengthen their sovereignty and strategic positioningconsequently, it is redefining the way conflicts and wars are conducted.

In this context, new military innovations raise significant concerns regarding ethical principles and legal imperatives governing the use of force. These concerns are particularly acute when considering the risks associated with the use of advanced technologies by non-state actors, who are not necessarily bound by the norms of international humanitarian law.

Today, the questions that arise are complex: how can we ensure that new military technologies comply with the fundamental principles of international humanitarian law, particularly the distinction between civilians and combatants and the proportionality of force? Furthermore, how can we guarantee that the protection of human rights on a global scale does not take a backseat to the technological arms race in defense policies?

In light of the above and as part of its mission to analyze and decode complex issues, the Royal Institute for Strategic Studies (IRES) organized an international conference on November 20, 2024, entitled "Emerging Military Technologies vis-à-vis Human Rights concerns."

Bringing together eminent Moroccan personalities, high-ranking representatives of the public sector, leading international figures, and directors of prominent think tanks, this event provided an ideal platform to reflect on the fundamental challenges posed by the convergence of emerging technologies in the fields of security and human rights. It also sought to propose avenues for the development of advanced military capabilities that respect international legal standards.

1. Defense innovation and security policies considering the technological revolution

The military industry has capitalized on the technological revolution, resulting in the development of new types of weaponry, which have shifted the theater of operations to virtual environments. For instance:

- Algorithm "Gospel": Designed for military operations, it identifies the most relevant targets based on specific qualitative and quantitative data.
- Algorithm "Lavender": Developed for war scenario simulations and testing the vulnerability of defense systems.
- Algorithm "Where is Daddy": Used in intelligence and tracking operations, this algorithm relies on advanced data fusion techniques, combining information from sensors, satellites, telecommunications, and social media networks.

More notably, artificial intelligence has emerged as a key component of contemporary military strategy, given its ability to enhance the effectiveness of military operations.

While artificial intelligence was already being employed in various military domains, such as logistics and intelligence gathering, it is now advancing rapidly in military targeting, enabling the detection, classification, and tracking of targets. Several military operations currently utilize AI-integrated tools, including:

- Air defense systems: Systems like the American "Phalanx" and the Israeli "Iron Dome" leverage artificial intelligence to detect incoming missiles and decide on their neutralization. These systems operate under human supervision, allowing intervention or cancellation of an attack.
- Loitering munitions: Autonomous drones, used for instance by Russian and Ukrainian forces, are equipped with explosives and cameras to identify and prioritize targets. However, humans retain the final decision on munition deployment.
- AI-Driven Decision Support Systems (AI-DSS): These systems analyze massive datasets (satellite images, sensors) to assist in target identification. Although a human operator makes the final decision, experts question the capacity of humans to perform qualitative assessments in these processes.

These developments illustrate the growing trend of integrating humans and machines in targeting decisions, with an increasing reliance on automated systems. The operational advantages of artificial intelligence include rapid decision-making, the ability to conduct large-scale operations, and effectiveness in environments inaccessible to humans.

However, the use of artificial intelligence raises significant humanitarian and ethical concerns, particularly regarding the autonomous decision-making of machines, with differing opinions worldwide.

Some nations, such as the United States, the United Kingdom, Russia, and South Korea, argue that military artificial intelligence could enhance compliance with international humanitarian law by reducing risks to civilians. They believe artificial intelligence improves operational precision and reduces human errors caused by emotions or fatigue, emphasizing the importance of not stigmatizing this technology.

Conversely, countries like Pakistan, New Zealand, and Austria, along with non-state organizations such as the International Committee of the Red Cross (ICRC), highlight the ethical and legal dangers of delegating life-and-death decisions to machines. They fear this undermines the principles of international humanitarian law, particularly proportionality and distinction, and complicates accountability in cases of error.

In summary, while advanced technology offers military advantages in terms of speed and scale, its development and integration into military operations present ethical and legal challenges, especially regarding human responsibility and compliance with international humanitarian law.

These advancements compel states to reconsider the interplay between humans and machines in decision-making processes to meet legal and ethical requirements. This raises a fundamental question: Is international humanitarian law outcome-based (achieving objectives) or process-based (ensuring human intervention in decision-making)?

2. The use of advanced military technologies by the United States and China

The global geopolitical landscape is shaped by the arms race among major powers and their reliance on advanced military technologies:

The United States :

The emergence of advanced military technologies in the United States is a cornerstone of its military strength and geopolitical influence. The United States possesses some of the world's most sophisticated defense systems, including:

- interceptor missile systems, designed to intercept ballistic missiles during the terminal phase of their flight;
- MQ-9 Reaper drones, used for reconnaissance, surveillance, and precision airstrike missions;
- space defense systems, equipped with capabilities to protect satellites and critical infrastructure from cyberattacks and anti-satellite weapons.
- China :

As a rapidly growing military power, China has heavily invested in advanced military technologies over the past decades, including:

- Hypersonic weapons, such as hypersonic missiles and global-range missiles like the "DF-21D," known as the "carrier killer," a ballistic missile capable of targeting distant maritime objectives.
- Drones and autonomous systems, developing a range of military drones for surveillance, reconnaissance, strike missions, and logistics.
- Cybersecurity and electronic warfare: Creating technologies to jam and disrupt enemy communication systems, including radar-jamming systems and tools to counter GPS technologies.
- Air and space defense systems: Advanced systems like the "HQ-9," comparable to Russia's "S-400," capable of intercepting long-range targets and neutralizing enemy aircraft. Additionally, China has developed technologies to disable enemy satellites, including anti-satellite weapons designed to destroy or disrupt observation, communication, and navigation satellites.
- RAMA Program (Rapid Advanced Mobile Artillery): Aimed at modernizing and enhancing the mobility and firepower of the People's Liberation Army's mobile artillery. This initiative reflects China's commitment to adapting its military capabilities to the needs of modern warfare. Through this program, China seeks to bolster its artillery forces while ensuring greater flexibility on the battlefield.

3. Evolution of Space Military Technologies: New Concerns for Societies

Since the 1950s, space activity has been closely linked to the development of nuclear weapons, particularly intercontinental missiles. The superpowers of the time, namely the United States and the Soviet Union, viewed space as a crucial means of surveillance and defense against the nuclear threat. Over time, space activity has evolved in four key stages:

- "Strategic Space": Space was initially used for monitoring nuclear weapons and maintaining the strategic balance between major powers through the doctrine of "mutually assured nuclear deterrence."
- "Force Multiplier Space": After the Cold War, space became essential in conventional conflicts, providing military superiority through information and communication capabilities for soldiers, for example.
- "Strategic Catalyst Space": In the 2000s, space proved to be central for weapon and defense systems, with increasingly complex space architectures, becoming crucial for military victories.
- "Controlled Space": In response to the growing number of space functions, space has become of vital national interest. The concept of "space control" emerged, along with the development of counter-space weapons (antisatellite missiles, cyberattacks, directed-energy weapons). These developments have led to increased budgets and accelerated research in this area.

Today, the intensification of space use for military superiority raises two critical questions:

- First, how can non-military resources, such as commercial satellites and the data they contain, be protected? There is also the need to question the ability to define appropriate doctrines for the use of civilian resources in times of conflict. A recent example of this grey area is the refusal to use "Starlink" satellites for direct military actions in Ukraine.
- Second, how can the sustainability of the space environment be ensured? The proliferation of satellites, particularly those in low Earth orbit, poses risks to the space environment (such as the proliferation of debris) and longterm viability.

Thus, space has become an indispensable strategic domain, both for military defense and for global issues in the economic, societal, and environmental realms, raising concerns about its management, sustainability, and regulation.

4. International law and advanced military technologies

As highlighted in previous sections, the use of advanced military technologies raises numerous ethical and human rights concerns due to their potential to impact individual security, freedom, dignity, and life.

In this context, international humanitarian law aims to mitigate the effects of new forms of warfare in the technological era by establishing principles of protection based on distinction, precaution, proportionality, and humanity.

The global legal framework governing the use of weapons comprises a set of rules designed to limit the repercussions of armed conflicts and protect individuals during war. This framework is guided by international humanitarian law, which is "composed of agreements between states, known as treaties or conventions, recognized as binding through state practice, and supplemented by general principles of law."

However, international humanitarian law does not determine whether a state has the right to use force; this issue is governed by a significant portion of the United Nations Charter, which is distinct from international humanitarian law.

International Legal Framework Includes the following elements:

 Geneva protocol prohibiting asphyxiating gases and bacteriological means (1925): "The Protocol concerning the prohibition of the use in war of asphyxiating, toxic, or similar gases and bacteriological means is the very first international text prohibiting the use of chemical and biological weapons." It was drafted and ratified during the Conference on the Control of International Trade in Arms and Ammunition, held from May 4 to June 17, 1925, in Geneva under the auspices of the League of Nations. This followed France's proposal to draft a protocol prohibiting the use of asphyxiating gases, to which Poland added the prohibition of bacteriological (biological) weapons. The Protocol entered into force on February 8, 1928.

The Protocol aims to prohibit the use of such weapons but does not ban their development, production, or possession.

• Convention on the prohibition of biological weapons (1972): "The Convention on the prohibition of biological weapons seeks to address the gaps in the 1925 Protocol by banning not only the use but also the development and stockpiling of biological and chemical weapons." It is the first international disarmament treaty to prohibit an entire category of weapons. The Convention was developed by the Conference of the Committee on Disarmament on December 16, 1971, in New York, opened for signature on April 10, 1972, and entered into force on March 26, 1975.

- Convention on the prohibition of chemical weapons (1993): "The Convention on the Prohibition of Chemical Weapons aims to ban the development, production, stockpiling, and use of chemical weapons and requires the destruction of both chemical weapons and their production facilities." Negotiated by the Conference on Disarmament in Geneva between 1972 and 1992, the Convention was adopted on January 13, 1993, in Paris and entered into force on April 29, 1997.
- Protocol (IV) to the convention on certain conventional weapons, relating to blinding laser weapons (1995): "Protocol IV complements the Convention on certain conventional weapons by prohibiting the use of laser weapons designed to cause permanent blindness in individuals with unenhanced vision." It was adopted in Vienna on October 13, 1995, during the Review Conference of the 1980 Convention on Certain Conventional Weapons and entered into force on September 30, 1998.
- Convention on the Prohibition of Anti-Personnel Mines (1997): "The Convention on the Prohibition of Anti-Personnel Mines, or the Ottawa Treaty, seeks to ban the use, stockpiling, production, and transfer of anti-personnel mines and requires their destruction." It was adopted on September 18, 1997, during the Diplomatic Conference in Oslo for a total ban on anti-personnel mines and entered into force on March 1, 1999.
- Convention on Cluster Munitions (2008): "The Convention on Cluster Munitions prohibits the use, stockpiling, and transfer of cluster munitions and mandates their destruction." It was adopted during the Diplomatic Conference in Dublin on May 30, 2008, and entered into force on August 1, 2010.
- Treaty on the Prohibition of Nuclear Weapons (2017): "The Treaty on the Prohibition of Nuclear Weapons aims to prohibit this category of weapons, paving the way for their total elimination." Adopted on July 7, 2017, in New York during the United Nations Conference to Negotiate a Legally Binding Instrument to Prohibit Nuclear Weapons in View of Their Complete Elimination, the Treaty entered into force on January 22, 2021.

Regarding the Use of Autonomous Weapons, currently, there is no specific international legal framework governing this type of weapon. The International Committee of the Red Cross (ICRC) defines autonomous weapon systems as "weapons that select targets and apply force against them without human intervention". An autonomous weapon is triggered by software when it matches information collected from the environment via sensors with a "target profile"¹. For example, this could include the shape of a military vehicle or the movement of a person: it is the vehicle or the victim that triggers the strike, not the operator.

What is concerning about this process is that the exercise of force escapes human judgment, making it difficult to control the effects of these weapons. The use of autonomous weapon systems without human intervention undermines the very foundations of humanitarian principles enshrined in international humanitarian law.

These autonomous weapon systems create legal grey areas where accountability for civilian harm becomes uncertain. Moreover, mass surveillance tools powered by artificial intelligence pose significant threats to the right to privacy, often in contexts of heightened social control and suppression of dissenting voices.

Given these developments, the international legal framework remains largely inadequate to effectively regulate the use of new military technologies. While the Geneva Conventions are relevant by analogy, they were not designed to address the specificities of modern technological warfare, including the decision-making autonomy of weapons or targeted cyberattacks.

In this context, the United Nations Convention on Certain Conventional Weapons (CCW) of 1980, which entered into force on December 2, 1983, initiated discussions in 2014 on lethal autonomous weapons systems and related technologies.

The objective of these discussions is to reach a consensus on the compatibility of autonomous weapon use with international humanitarian law and the accountability of individuals and states employing them.

The additional protocols to the aforementioned convention allow for adaptation to new warfare techniques through a variable system of signature and ratification (states must ratify at least two of its protocols):

- Protocol 1 on Non-Detectable Fragments ;
- Protocol 2 on the Prohibition or Restriction of the Use of Mines, Booby-Traps, and Other Devices ;
- Protocol 3 on the Prohibition or Restriction of the Use of Incendiary Weapons;
- Protocol 4 on Blinding Laser Weapons ;

¹ <u>https://www.icrc.org/fr/document/questions-reponses-armes-autonomes.</u>

• Protocol 5 on Explosive Remnants of War.

Regarding Morocco, the country recognizes the primacy of international law over national law. The preamble to the constitutional text grants "duly ratified international conventions, within the framework of the Constitution and the Kingdom's laws, respecting its immutable national identity, and upon the publication of these conventions, primacy over domestic law." It also reaffirms its "commitment to human rights as universally recognized".

In the realm of international humanitarian law, these principles have long formed the basis of Morocco's adherence to the four Geneva Conventions of 1949 (ratified in 1956) and the two Additional Protocols of 1977 (ratified in 2011). Monitoring and adaptation bodies have been established to ensure that universally negotiated and effectively adopted provisions are applied in Morocco.

Additionally, Morocco's conventional practice demonstrates that the Kingdom was among the signatory states of the United Nations Convention on Certain Conventional Weapons (signed on April 10, 1981, and ratified on March 19, 2002). Morocco has actively supported the universalization of this convention and its annexed protocols.

In this context, Morocco advocates for the adoption of an effective legal instrument through universal application of the convention. The Kingdom has initiated efforts to promote the convention within the Mediterranean region and actively participates in the work of the United Nations Group of Governmental Experts tasked with negotiating a legally binding instrument. This instrument aims to balance military and humanitarian considerations effectively.

Recently, Morocco has embarked on a strategic process to develop an advanced national military industry. In 2020, Law No. 10-20 on the defense industry was enacted, providing a rigorous legislative and ethical framework for structuring and supervising the creation of innovative weapon systems.

This initiative aligns with a national sovereignty strategy, with the clear objective of equipping the Kingdom with the necessary capabilities to adapt to the new dynamics of global defense, while fully integrating ethical concerns related to the use of military technologies.

5. Proposals to ensure military technology compliance with human rights

During the discussion panel, participants emphasized the need to establish a global governance framework for advanced military technologies that is balanced, responsible, informed, and continuously adaptable. This governance should be based on the following three pillars:

• A rigorous international legal framework

- Legally define concepts related to advanced military technologies (e.g., lethal autonomous weapons, hypersonic missiles, directed-energy weapons, military robots, cyberattacks, biological weapons, etc.) as well as actor accountability in cases where autonomous systems (such as drones or armed satellites) cause harm to humans or civilian infrastructure.
- Develop an Additional Protocol to the Geneva Conventions to effectively regulate the development and use of advanced military technologies, incorporating explicit rules ensuring human oversight, civilian protection, and clear accountability for misuse of these technologies.
- Encourage nations to ratify a binding international treaty prohibiting the use of advanced military weaponry.
- Balance the imperative of developing new military technologies with the protection of fundamental human rights.
- Establish "soft law" international norms by introducing non-binding guidelines and codes of conduct that promote principles of transparency, proportionality, accountability, and human supervision in the use of technological advances for military purposes.
- Include non-state actors in discussions on regulating the use of advanced military technologies.
- Implement judicial sanctions against the illegal use of military technologies by strengthening the capacity of the International Criminal Court (ICC) to prosecute war criminals using technologically advanced weapons, particularly against civilian infrastructure as well as by creating binding legal mechanisms to sanction states or non-state actors that deploy advanced military technologies illegally, in violation of international law.

Strengthened International Cooperation and Adapted Systems for Innovation and Research

• Establish an international cooperation and sharing platform to develop norms for the use of advanced military technologies, both terrestrial and space-based, involving states, private sector actors, and non-governmental organizations.

- Organize international conferences on regulating advanced military technologies, aimed at establishing global agreements on the use of such technologies.
- Create an international commission within the United Nations to monitor the ethical use of advanced military technologies.
- Increase investment in research and innovation in the nexus of "advanced military technologies and human rights."

A Diplomacy of Armaments to Prevent Conflicts Related to New Military Technologies

- Lay the groundwork for a diplomacy of armaments that ensures the use of advanced military technologies fully respects international humanitarian law.
- Promote transparent and proactive diplomatic initiatives aimed at protecting space as a "common good" of humanity, prohibiting its militarization in ways that risk destabilizing global strategic balance.

In parallel, it would be appropriate to undertake the following actions:

Raising Awareness and Training Military, Governmental Actors, and Citizens on the Issues of Advanced Military Technologies

- Conduct awareness campaigns on the destructive effects of technologically advanced weapons for the benefit of stakeholders.
- Develop training modules on the ethical use of advanced military technologies, involving relevant actors.
- Organize international forums for political and military leaders on the risks inherent in the proliferation of advanced military technologies.
- Enhance scientific literacy among citizens to raise awareness of the harmful effects of advanced weaponry.

Limiting the militarization of space

- Ban the use of autonomous military technologies in space that could threaten national sovereignty and create international tensions, for example, by disrupting civilian or commercial infrastructures.
- Develop a protocol to incorporate space militarization-related crimes into international jurisdiction frameworks, ensuring that perpetrators are prosecuted for human rights violations in the event of an incident.
- Establish specific international regulations to govern the use of space drones, particularly regarding their deployment in non-conflict zones and their impact on sensitive environments and civilian infrastructures.

• Set strict rules for the use of drones and satellites in warfare to prevent their use in asymmetric conflicts where non-state actors could potentially gain access.

Annex : Conference Program

9.30	 OPENING REMARKS Mr. Mohammed Tawfik MOULINE, Director General, Royal Institute for Strategic Studies "IRES"
	SESSION 1: THE TECHNOLOGICAL REVOLUTION, NEW DEFENSE AND SECURITY POLICIES
	This session aims to elucidate new military weapons considering the technological revolution and to
	discern the implications of this revolution on armament, defense, and security policies during both
	times of peace and war. SESSION CHAIR
	Mr. Issam LOTFI, Chief Strategy Officer, Royal Institute for Strategic Studies
9.45	• Prof. Amal EL FALLAH SEGHROUCHNI, AI Expert, Delegate-Minister to the Head of
	Government in charge of Digital Transition and Administration Reform.
	• Mr. Xavier PASCO, Director, Foundation for Strategic Research "FRS".
	• Mrs. Laura BRUUN, Senior Researcher "Governance of Artificial Intelligence Program", Stockholm
	International Peace Research Institute "SIPRI".
	• Prof. Askin INCI SOKMEN ALACA, Specialist in new emerging technologies, national defense,
	outer Space and Space war / Professor of International Relations at Istanbul Arel University.
	SESSION 2: THE ETHICAL, LEGAL AND HUMANITARIAN ISSUES RELATED TO THE USE OF NEW
	This session endeavors to highlight how international law, specifically the Geneva Conventions and
	their associated protocols, alongside recommendations from international human rights bodies, have sought to oversee the deployment of emerging military technologies during wartime. The session
	aims to expound upon guiding principles, achievements, limitations, and potential redresses in this
	complex domain.
	SESSION CHAIR
	Prof. Nadia BERNOUSSI, Expert in Constitutional Law
10.45	Vice-Chair of the Advisory Committee of the Human Rights Council in Geneva
	• Ambassador Omar ZNIBER, Permanent Representative of Morocco to the United Nations Office
	in Geneva, President of the Human Rights Council 2024.
	• Prof. Javier PALUMMO LANTES, Chair of the Advisory Committee of the United Nations Human
	Rights Council in Geneva / Special Rapporteur on Economic, Social, Cultural, and Environmental
	Rights of the Inter-American Commission on Human Rights of the Organization of American States "OAS".
	 Major General Philippe BOUTINAUD, Security and Strategy Advisor to the Director, Geneva
	Centre for Security Sector Governance "DCAF".
11.40	GROUP PHOTO AND COFFEE BREAK

	SESSION 3: HUMAN RIGHTS AND NEW MILITARY TECHNOLOGIES: WHAT IMPLICATIONS FOR
	SECURITY GOVERNANCE IN MOROCCO?
	This session focuses on evaluating the progress made by Morocco in reconciling security imperatives
	with human rights considerations, as well as identifying the challenges and actions required to
	enhance the country's international standing in this domain.
	SESSION CHAIR
40.00	Colonel Hassane SAOUDI, Expert in strategic and security issues
12.00	Research Fellow, Royal Institute for Strategic Studies
	• Prof. Amina BOUAYACH, President, National Council for Human Rights "CNDH".
	• Prof. Amal EL FALLAH SEGHROUCHNI, AI Expert, Delegate-Minister to the Head of
	Government in charge of Digital Transition and Administration Reform.
	• Prof. Abdelmounaim EL GHEDDARI, Expert in public law, Royal College for Higher Military
	Education "CREMS".
	Prof. Abderrahmane MEKKAOUI, Expert in security and defense issues.
	PANEL DISCUSSION: SOME STRATEGIC PROPOSALS TO ENABLE MOROCCO TO EMBRACE
	NEW MILITARY TECHNOLOGIES WHILE UPHOLDING HUMAN RIGHTS
	SESSION CHAIR
	Mr. Issam LOTFI, Chief Strategy Officer, Royal Institute for Strategic Studies
	Prof. Amina BOUAYACH, President, National Council for Human Rights "CNDH".
	• Prof. Amal EL FALLAH SEGHROUCHNI, AI Expert, Delegate-Minister to the Head of
	Government in charge of Digital Transition and Administration Reform.
	Mrs. Fatima BARKAN, Secretary General, Inter-ministerial Delegation for Human Rights.
	Prof. Nadia BERNOUSSI, Expert in Constitutional Law, Vice-Chair of the Advisory Committee of
	the Human Rights Council in Geneva.
	• Dr. Abderrahmane EL YOUSFI ALAOUI, Prefect of Police, General Directorate of National
	Security.
	• Prof. Mohammed ESSAOURI , Academic Advisor, Royal College for Higher Military Education
13.00	"CREMS".
	• Prof. Abdelmounaim EL GHEDDARI, Expert in public law, Royal College for Higher Military
	Education "CREMS".
	Colonel Hassane SAOUDI, Expert in strategic and security issues, Research Fellow, Royal Institute
	for Strategic Studies.
	 Prof. Abderrahmane MEKKAOUI, Expert in security and defense issues.
	 Mr. Xavier PASCO, Director, Foundation for Strategic Research "FRS".
	• Prof. Javier PALUMMO LANTES , Chair of the Advisory Committee of the United Nations Human
	Rights Council in Geneva.
	• Major General Philippe BOUTINAUD, Security and Strategy Advisor to the Director, Geneva
	Centre for Security Sector Governance "DCAF".
	• Mrs. Cécile LAGOUTTE, Program Manager Morocco, Geneva Centre for Security Sector
	Governance "DCAF".
13.30	LUNCH

