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New York

President:	Mr. Cassis	(Switzerland)
Members:	Algeria	Mr. Bendjama
	China	Mr. Fu Cong
	Ecuador	Mr. De La Gasca
	France	Mr. De Rivière
	Guyana	Mrs. Rodrigues-Birkett
	Japan	Ms. Kaji
	Malta	Mrs. Frazier
	Mozambique	Mr. Afonso
	Republic of Korea	Mr. Hwang
	Russian Federation	Mr. Nebenzia
	Sierra Leone	Mr. Sowa
	Slovenia	Mr. Žbogar
	United Kingdom of Great Britain and Northern Ireland	Dame Barbara Woodward
	United States of America	Ms. Shea

Agenda

Maintenance of international peace and security

Anticipating the impact of scientific developments on international peace and security

Letter dated 1 October 2024 from the Permanent Representative of Switzerland to the United Nations addressed to the Secretary-General (S/2024/708)

The meeting was called to order at 10.05 a.m.

Adoption of the agenda

The agenda was adopted.

Maintenance of international peace and security

Anticipating the impact of scientific developments on international peace and security

Letter dated 1 October 2024 from the Permanent Representative of Switzerland to the United Nations addressed to the Secretary-General (S/2024/708)

The President (*spoke in French*): In accordance with rule 39 of the Council's provisional rules of procedure, I invite the following briefers to participate in this meeting: Mr. Robin Geiss, Director of the United Nations Institute for Disarmament Research; Dr. Jocelyne Bloch, Faculty of Biology and Medicine, University of Lausanne; Dr. Grégoire Courtine, Faculty of Life Sciences, Swiss Federal Institute of Technology Lausanne; and Mr. Amin Awad, President of the Foundation Council of DCAF, Geneva Centre for Security Sector Governance.

The Security Council will now begin its consideration of the item on its agenda.

I wish to draw the attention of Council members to document S/2024/708, which contains the text of a letter dated 1 October 2024 from the Permanent Representative of Switzerland to the United Nations addressed to the Secretary-General, transmitting a concept paper on the item under consideration.

I now give the floor to Mr. Geiss.

Mr. Geiss (*spoke in French*): It is a real honour for me to address the Security Council, and I would like to begin by expressing my sincere gratitude to Switzerland for the invitation extended to the United Nations Institute for Disarmament Research (UNIDIR).

Since its establishment in 1980 as an autonomous research institution within the United Nations, UNIDIR has been helping States Members of the United Nations to better understand the implications of science and technology for international peace and security.

It is worth remembering that all the well-established technologies now shaping the reality of peace and conflict were once considered "emerging". Recent developments in fields such as advanced robotics, 3D printing, biotechnology, cyberspace or outer space, are now fully recognized as a source of concern in discussions on peace, conflict and disarmament.

(*spoke in English*)

In an interconnected, digital world, new technologies and scientific advances are developed, marketed and adopted with unprecedented and ever-increasing speed. It took half a century for the electric grid system developed in the 1880s to reach 100 million homes globally. In 2022, ChatGPT achieved the same result in just two months. This points to a drastic compression of the time available to policymakers to react and adapt to scientific and technological advances in today's world.

At the same time, the increasing convergence of different technologies, combined with their inherent dual-use nature, can lead to far-reaching and unintended consequences. It is the compounding effects of different scientific fields, technologies, and social contexts coming together that have the greatest disruptive potential for how wars will be fought, peace achieved and stability maintained.

The relationship between humans and technology is also evolving, as we move from assistance by technology, via enhancement by technology, and ultimately to replacement by technology. The growing use of advanced robotic systems in warfare provides a clear example, with robots employed for tasks considered too dangerous for human soldiers, such as bomb disposal or fire support. Notably, this is just one example based on technologies that are already available today. With the scientific and technological landscape evolving at such blistering pace, we often lack a clear sense of what is being developed, by whom, and with which resulting impacts, including for international peace and security. That issue is compounded by the siloed nature of today's international arms control architecture, which does little to support knowledge-sharing or the coherent analysis of new trends and their impacts. To enable timely and effective policy responses to future crises and conflicts and to ensure the proper protection of civilians, peacekeepers and humanitarians, we must increase our awareness and understanding of the growing threats and opportunities arising from scientific and technological developments. That is

particularly clear from the twin examples of quantum technology and artificial general intelligence (AGI).

Within the next five to 10 years, quantum technology will affect peace and security in many significant ways.

First, it will disrupt information and communications security by making traditional encryption techniques ineffective, and therefore obsolete.

Secondly, quantum sensors will enable the detection of objects underground or underwater, revolutionizing warfare on the one hand and monitoring and verification efforts on the other.

And thirdly, quantum computing will unlock a new era for artificial intelligence (AI) by enabling the computation of models that cannot currently be run on even the most powerful computers.

Precisely on the topic of quantum, UNIDIR and the Geneva Science and Diplomacy Anticipator will soon be co-hosting the UNIDIR Innovations Dialogue, an important international platform for horizon-scanning and future-oriented analysis.

Over the next decade and beyond, significant advances are also expected in the field of AGI. Unlike current AI systems, which excel at specific tasks but are limited to narrow applications, AGI would be able to understand, learn and apply knowledge dynamically across a wide range of contexts, allowing it to operate with a degree of flexibility more akin to human intelligence. That profound shift would have far-reaching consequences throughout society, but with two particularly concerning risks for peace and security.

The first risk is loss of control. Once AGI reaches a level of intelligence beyond human capabilities, humans might lose the ability to govern or constrain its actions. Many experts see that as a concrete and plausible risk that is worthy of serious consideration, particularly given the existential nature of the threat.

The second is the problem of value alignment, which is the challenge of ensuring that an AGI's goals, motivations and decision-making criteria remain, at all times, aligned with human values, ethics and well-being.

This powerful technology could be leveraged for good to tackle complex global challenges, but should it come to be used irresponsibly, it could pose significant, and indeed existential, risks to both human and international security.

The anticipation and early understanding of technologies on the horizon can enable decision makers, including the Security Council, to take informed action that both leverages the potential benefits and prevents or mitigates novel threats arising from a lack of awareness, loss of control or miscalculation. The Pact for the Future rightly stresses the need for evidence-based knowledge as the basis for policymaking. That is particularly relevant for science and technology, where media hype often reaches us more rapidly than sound, factual, scientific knowledge. Given the Council's primary responsibility for the maintenance of international peace and security, it could therefore consider the following actions.

First, it could institutionalize regular horizon-scanning dialogues on technological and scientific developments — a format used by the Council in the past. Aside from fostering early awareness on nascent science and technology, those dialogues would also allow for pre-emptive consideration of what novel protection needs and challenges might arise and how existing laws, norms and regulations could be interpreted in the light of anticipated applications.

And secondly, it could leverage the work and expertise of various United Nations bodies to the benefit of the Council through ad hoc briefings on scientific and technological fields of particular interest. That could include, for example, annual briefings on the Secretary-General's report on the impact of science and technology on international peace and security, specialized briefings from the Scientific Advisory Board for independent advice on breakthroughs in science and technology and expert advisory support from UNIDIR, whose Futures Lab initiative is dedicated to horizon-scanning in the fields of arms control, disarmament and global security.

Crucially, of course, the Council itself can also offer a unique perspective of its own on how scientific advances and new technologies affect peace and security. In that way, it can strengthen the ability of the United Nations system as a whole to better prevent or respond to newly emerging threats, bolstering in turn the prospect of sustained peace and security in future.

The President (*spoke in French*): I thank Mr. Geiss for his briefing.

I now give the floor to Dr. Bloch.

Dr. Bloch (*spoke in French*): I am here today to give the Security Council a concrete example of a scientific development that could have an impact on peace, humankind and international security.

During my years in medicine, I have learned the following sad reality: a spinal cord injury leads to paralysis that confines the patient to a wheelchair for the rest of their life. That paralysis is due to the interruption of the commands that the brain sends to activate the leg muscles. Those commands are blocked at the level of the injury. However, the region of the spinal cord that controls the legs is not affected by the injury. It is therefore intact but disconnected from the brain.

I am a neurosurgeon, and I am here with Dr. Grégoire Courtine, who is a neuroscientist. We both wanted to come here today because we are convinced that this alignment was the key to the accelerated success of our scientific project. Together we have developed what we call a digital bridge between the brain and the spinal cord. This revolutionary device bypasses the spinal cord injury by creating a digital bridge between the area of the brain that controls the legs and the region of the spinal cord that activates the leg muscles.

The digital bridge comprises a first electronic implant, with electrodes to record the activity of the neurons in the brain that encode the motor skills of the legs and a second intervention, a second implant, to stimulate the spinal cord region that produces leg movements. Artificial intelligence decodes the patient's thoughts based on the recorded activity and programmes spinal cord stimulation to allow the paralysed person to walk naturally again. We recently applied the same principle to establish arm movement in a quadriplegic patient. We plan to extend the scope of the therapy to paralysis related to strokes or neurodegenerative diseases, such as Parkinson's disease.

The President (*spoke in French*): I thank Dr. Bloch for her briefing.

I now give the floor to Dr. Courtine.

Dr. Courtine (*spoke in French*): I am here today with Dr. Jocelyne Bloch to highlight the opportunities and risks associated with these applications. Neuroscience and neurotechnology are advancing at such a rapid rate that we can already predict that, in the next decade, many paralysed patients should have access to these treatments. That progress will have a significant impact on the lives of many people, including young athletes who have been injured in accidents, soldiers returning from combat paralysed and even civilian collateral victims. For example, we recently treated a patient from an area of ongoing conflict. In addition to the obvious improvements for patients' physical and mental health, overcoming paralysis will have a significant impact on society and the economy.

Of course, these innovations raise ethical and safety-related questions. We have equipped the brain with a new digital communication channel with an immense number of potential applications. For example, our patients are able to control a drone with their thoughts alone. We can therefore anticipate the moment when advances in these brain-machine interfaces will allow healthy people to use this new form of communication for uses that will be non-therapeutic or even military. We also need to think about security problems, such as the consequences of an unexpected interruption of that digital bridge due to disturbances to the electromagnetic fields present in our environments, and even of piracy of the neurological data that makes it possible for the digital bridge to work.

While those problems seem unlikely to arise in the near future, they are genuine concerns. We therefore find ourselves at a pivotal moment: what was the stuff of science fiction a few decades ago is now gradually becoming reality. It is now our collective responsibility to shape this new era in an ethical and secure manner, while paving the way for advances that will transform lives.

The President (*spoke in French*): I thank Dr. Courtine for his briefing.

I now give the floor to Mr. Awad.

Mr. Awad: I thank you, Mr. President, for the opportunity to address the Security Council today.

I stand before the Council today not as a scientist, but as someone who has spent decades on the front lines of international peace and security, confronting some of the world's most challenging humanitarian crises. I want to share with the Council some moments that have stayed with me throughout those years.

In January 1991, during the first Gulf War, I was on the Iraqi-Jordanian border with the United Nations, preparing for what I hoped would never come — a chemical weapons attack. My assigned protective suit hanging in my tent was a reminder of the thin line

between life and death. Beside it lay three injectors, each of them 20 centimetres long, antidotes meant to counter the effects of deadly chemicals that could descend upon us at any moment. I remember holding one of those injectors in my hands, knowing that, if an attack occurred, I might survive by plunging it into my leg. At that moment, I thought about the thousands of civilians in nearby towns and villages and in communities living in camps, unaware of the threat that loomed. They had no such protection. They had no antidote. And in that moment, a chilling realization struck me: science had created both a weapon and a means of survival, but only for a select few. For everyone else, there was no escape.

That was not just about survival; it was about the stark imbalance, a moral dilemma that confronted me then and haunts me to this day. Science, in the form of my protective suit and injectors, had become both a saviour and a gatekeeper. It offered hope to some while leaving others vulnerable to the full force of human-made horror.

My fellow briefers just outlined how breakthroughs in emerging technologies hold the power to change our world. That is our collective wake-up call — a moral call. Owing to the acceleration of science, the Security Council and the United Nations of course have to remain seized of those developments and consider the imbalance of existing normative frameworks. The family of treaties that constitute international humanitarian law, particularly the Geneva Convention of 1949 and their Protocols Additional, have survived the test of time, remain relevant and offer a beacon of hope all the time. Member States in this Chamber and in the General Assembly have proven that we can create universally accepted norms that govern the conduct of hostilities, thereby providing crucial protection for civilians, prisoners of war and aid workers.

We need to ensure that those technologies do not become the chemical weapons of tomorrow and are instead harnessed for the good of humankind and the global public good. We need a human-rights-based, gender-sensitive approach to ensure that technological advancements are inclusive of the different needs of women, men, girls and boys. In the spirit of the Secretary-General's New Agenda for Peace, there is a moral duty to build consensus on the substance of, and adherence to, those norms. The Security Council must lead on issues related to international peace and security. The Council has the mandate and the responsibility to establish global norms that are fit for the future.

We propose multilateral dialogue and multi-stakeholder consultation, including with parliamentary assemblies around the globe, as outlined in General Assembly resolution 77/43, to also ensure that scientific developments are harnessed for peace. Regular updates in this Chamber and in the General Assembly on scientific and technological developments will ensure that the Council remains ahead of the curve all the time and not behind it.

Let us act with courage and foresight to ensure that emerging technologies fulfil their promise of advancing global peace and security. Scientific advancement in neurotechnology, synthetic biology, artificial intelligence and quantum computing are already reshaping our world. They deserve our full attention, and we welcome further discussion on how the Security Council can anticipate, adapt and respond to those developments. No effort should be spared to ensure that those developments are for the benefit of human beings and not for evil. Let us seize the opportunity to shape a future in which scientific progress serves humankind's highest ideals.

The President (*spoke in French*): I thank Mr. Awad for his briefing.

I shall now make a statement in my capacity as Federal Councillor and Head of the Federal Department of Foreign Affairs of Switzerland.

At the outset, I thank the briefers for their excellent contributions.

New technologies are reshaping the relationships between people, organizations and our environment. That is not new. What is new, however, is that the rate of progress is now significantly outpacing the biological rate of our evolution, giving rise to deep fractures in society.

What was the stuff of science fiction 10 or 15 years ago is about to become our new reality. We just heard an enlightening example of that: the impact of advances in neuroscience and neurotechnology on peace and security will be significant. Neurotechnologies will soon be able to improve the precision, endurance and pain tolerance of soldiers. Those advances will allow soldiers to control additional limbs or acquire new senses, such as seeing in the dark. The integration of artificial intelligence and neurotechnologies will

enable ultra-fast decision-making, raising essential questions about control over those decisions in war and, ultimately, about how to ensure the applicability of the Geneva Conventions.

Today maintaining international peace and security is both an urgent and a complex task, as the Council is well aware. It therefore becomes even more urgent to prepare — in a word, to anticipate. We are obliged to look at global dynamics through the prism of science, because its rapid acceleration will have a profound impact on all aspects of our lives, including peace and security. We need to equip ourselves to meet future science-related challenges because the future is the here and now — *hic et nunc*, as the Romans put it. Hence the appeal that Switzerland is making today by convening this briefing, to explore, understand and anticipate the role of science in security policy. How can we ensure adherence to the Charter of the United Nations and international humanitarian law — which are now more critical than ever — in the face of those disruptors? How can we uphold our principles of humanity amid the risks of dehumanized wars?

It was precisely to respond to that appeal that Switzerland founded the Geneva Science and Diplomacy Anticipator (GESDA) centre in 2019, achieving concrete results. First came the Open Quantum Institute, inaugurated last year, which seeks to put quantum technology at the service of the common good and make it available to all. This year saw the launch — just 10 days ago — of the Anticipation Gateway Initiative — which aims to democratize access to cutting-edge science and technology.

"To govern is to foresee", said Adolphe Thiers, the first President of France's Third Republic, in the late nineteenth century. The corollary of that maxim is less well-known but holds equally as true: "to not foresee anything is to not govern, but to run to headlong into wrack and ruin". Let us therefore head in the right direction. Although some of the aspects mentioned are reminiscent of a futuristic film, we need to incorporate them throughout the remainder of our work, so that considerations that might inform rule-making do not arise after the debate, without having been foreseen and tracked.

Switzerland believes that the Security Council must keep its focus on the scientific question. The Council must rely on high-level experts and tools, such as GESDA, which are already available. The Council must also consider the impact of those advances on peace operations. We also recommend that the Secretary-General regularly inform the Council of scientific advances and their potential impact on peace, be it through an annual briefing or his thematic reports on the Council's agenda. We also hope that other countries will routinely contribute to this central theme.

It is the duty of the Council to invest in foresight. The Council can count on Switzerland's dedication and on the sharing of knowledge and the scientific partnerships fostered, in particular in international Geneva. I would like to thank members for taking part in the briefing, and it is my hope that we will regularly bring this shared vision to the Council and beyond.

I resume my functions as President of the Council.

I shall now give the floor to those members of the Council who wish to make statements.

Ms. Kaji (Japan): I thank you, Mr. President, for convening this timely and important meeting.

Advances in science and technology, as eloquently described by the briefers today, including in the areas of neuroscience and front-line war zone experience, are proving to be transformative for all human activities, including diplomacy. As for neuroscience, Japan, for instance, funds moonshot projects to develop cybernetic avatars by the year 2050. Japan fully appreciates Switzerland's initiative of bringing science to the Council, with a vision for the future and for the effective use of science methodologies in the Council's work.

New and emerging technologies are playing an increasingly important role in national and international security. At the same time, distinguishing between civilian and security-related uses of those cutting-edge technologies has become more complicated than ever, and they keep advancing at top speed. It has become all the more important to address those challenges and shape a safe environment for innovation, including through regulations and collaboration. The Council should be mindful of current undertakings in various forums within and outside the United Nations when considering that agenda.

Japan was one of the earliest cosponsors of the General Assembly resolution adopted last March (resolution 78/265) that focused on using artificial intelligence (AI) to attain the Sustainable Development Goals. In that connection, we are reminded that the

three pillars of the United Nations are intertwined in many ways.

The Council should be cognizant of technological tools when authorizing peace operations. The safety and security of United Nations personnel — civilian and uniformed — are prerequisites for efficient and effective operations. For example, access to specialized medical services in the field is often limited, with casualties among peacekeepers at a record high and having exceeded 100 a year at times. Telemedicine utilizes digital communication technology to connect missions with different levels of medical facilities and provide timely and high-quality medical care to peacekeepers. Japan is supporting that project under the United Nations Triangular Partnership Programme in collaboration with troop-contributing countries.

The world must join forces to support innovation while properly mitigating the risks and misuse of emerging technologies. Japan has led the international discussion on the governance of advanced AI systems to achieve safe, secure and trustworthy AI, including through the Hiroshima AI process. Launched in May 2023, that process led to the development of international guiding principles and a code of conduct on which more than 50 countries in the friends group are now working so as to address the risks of generative AI.

The international community has been facing multiple crises, such as climate change and pandemics, which can be the root causes of serious issues on the agenda of the Council. Science and technology could serve as a means of, and catalyst for, States uniting and meeting those common challenges, and the Council is well-placed for that. Emerging technologies should be developed and used responsibly to prevent conflicts, thereby ensuring the rule of law, human dignity and human security.

Last month, the Pact for the Future (General Assembly resolution 79/1) was adopted with a chapter on science and technology. Japan intends to build on that momentum and continue participating proactively to strengthen the functions of the United Nations, including by enhancing the effectiveness of Security Council actions that leverage science and technology.

Mr. Hwang (Republic of Korea): I extend my gratitude to the briefers for their valuable insights.

New and emerging technologies, such as neural technology, quantum technology and synthetic biology, have the potential to reshape the global peace and security landscape. While scientific innovations offer significant benefits, their dual use nature also presents notable risks. The Security Council must cultivate a balanced understanding of the impact of emerging technologies on peace and security. Science and technology are inherently value-neutral. The way we utilize them will determine whether this Oppenheimer moment leads to enhanced security or unprecedented disruption. In that context, my delegation commends Switzerland for bringing that issue to our attention.

Artificial intelligence (AI) is revolutionizing both the development and application of new technologies, as demonstrated by the awarding of this year's Nobel Prizes in Physics and Chemistry to AI scientists. The international community must pay greater attention to the implications of AI. The Republic of Korea has been making considerable efforts to foster global discourse on AI governance by hosting, in May, the AI Global Forum and the AI Seoul Summit, which adopted the Seoul Declaration for Safe, Innovative and Inclusive AI. Building on that momentum, last month we hosted the 2024 summit on Responsible Artificial Intelligence in the Military Domain and endorsed its blueprint for action, which lays out a road map for establishing norms and governance of responsible AI in the military domain and is supported by 63 countries.

We have also submitted, together with the Netherlands, a draft resolution to the First Committee of the General Assembly requesting the Secretary-General to submit a report on the opportunities and challenges posed to international peace and security by the application of AI in the military domain. We hope that the report, once finalized, can serve as a cornerstone for the potential role of the Council in that area.

The Security Council must also address the rapidly increasing threats in cyberspace as a key security issue. In that regard, the Republic of Korea hosted an Arria formula meeting on that topic in April and a high-level open debate on cybersecurity (see S/PV.9662) as the signature event of my country's presidency of the Council in June, highlighting the connection between malicious cyberactivities and broader security threats, including to non-proliferation, public safety and democracy. My delegation will continue to advocate for elevating the profile of cybersecurity within the Council in order to enable it to move beyond the

diagnosis stage and hopefully offer prescription and treatment for those threats.

Finally, Governments alone may lack the expertise to detect and monitor technological developments of concern, and our policy processes may struggle to keep pace with their speed. We therefore believe that multi-stakeholder engagement, including with industry, academia and civil society, is vital for paving the way towards more agile and responsible governance of emerging technologies. The Republic of Korea remains committed to continuing its constructive role to address the broader implications of emerging technologies on international peace and security.

Mr. Bendjama (Algeria): I thank Switzerland for its excellent choice of theme for our discussion today. We listened carefully to the remarks by Mr. Robin Geiss, Dr. Jocelyne Bloch, Dr. Grégoire Courtine and Mr. Amin Awad.

Today we stand at a critical juncture in human history. As we grapple with unprecedented scientific achievements, we must ensure that these innovations serve all of humankind — not just a few. Rapid progress presents both promise and peril, and we stand at a crossroads at which the decisions of the international community will shape the future of international peace and security. But let us be clear: that future must be inclusive, equitable and just. I would like to highlight eight points.

First, we must address the technological divide. As these groundbreaking technologies emerge, we risk deepening the gap between developed and developing countries. The Security Council must prioritize technology transfer and capacity-building for the global South. Science should unite us rather than exacerbate gaps further.

Second, we call for truly inclusive decision-making. The future of global security cannot be determined by a select few. We advocate for involving our experts in order to ensure robust representation from the global South. Our scientists, our policymakers and our voices must be heard.

Third, we must confront decisively the misuse and deviation of new technologies. The potential for their militarization is huge, and it is a grave concern. Algeria calls for strengthening disarmament measures to include that new frontier. Science should be used to nurture peace — not conflict.

Fourth, we must align scientific advancements with sustainable development. How can science address climate change? How can nanotechnology combat poverty? Those are the questions we must answer. Science should serve our sustainable development goals — not sideline them.

Fifth, we must protect the sovereignty of nations in this new scientific boom. The risk of the use of technological advancement to interfere in internal affairs is real and pressing. I would recall Pegasus. We call for robust international norms to safeguard national sovereignty as such technologies advance.

Sixth, we must ensure that ethical considerations guide our path forward. The development and application of those technologies must respect diverse cultural perspectives and uphold the rule of law. We must ensure that our progress does not compromise our humanity.

Seventh, we must address the financial implications. Keeping pace with these rapid advances is very costly. Mechanisms for financial support are crucial to ensure that developing countries are not left behind in this scientific revolution.

Eighth, we must emphasize the peaceful application of emerging technologies. From enhancing United Nations peacekeeping capabilities to advancing humanitarian assistance, the potential for good is immense. However, that potential can be realized only through equitable access and deployment.

To conclude, I want to remind members of the successful adoption this year of the outcome of the comprehensive international convention on countering the use of information and communication technologies for criminal purposes, which was led by Algeria. That is a perfect example of the success of multilateralism. The challenges before us are great, but so are the opportunities.

Mr. De Rivière (France) (*spoke in French*): I would like to thank the Swiss presidency of the Security Council for organizing today's meeting. I also thank the various briefers for their briefings.

I would like to make three points.

First of all, scientific progress must contribute to creating long-term conditions that are favourable to peace. I am thinking specifically about climate change and its consequences. Science must contribute to

mitigating the impact of climate change. That is why France and Tajikistan presented the General Assembly resolution entitled Decade of Action for Cryospheric Sciences, 2025–2034 (resolution 78/321), based on the commitment made by President Macron at the One Planet Polar Summit in 2023.

International scientific cooperation in the area of health can also contribute to peace. During the coronavirus disease (COVID-19) pandemic, France was part of the COVID-19 Vaccine Global Access Facility mechanism for fair access to vaccines. Today we continue to stand alongside our African partners through our support for the African Centres for Disease Control and Prevention and in the fight against the mpox epidemic.

Secondly, scientific progress must be put in the service of the United Nations in favour of peace and security. The United Nations is present on the ground in crisis zones and can ascertain the situation. To do that, as is recalled in the New Agenda for Peace, it is important for technological progress to be used in peace operations. The safety of Blue Helmets and United Nations workers deployed in the field and their ability to effectively do their jobs are at stake.

International justice also plays a crucial role in the maintenance of international peace and security. Scientific developments are at the heart of international justice efforts to fight impunity and ensure accountability, in particular in collecting evidence where crimes are suspected to have been committed in conflict areas.

Thirdly, here and now, the United Nations must identify the scientific and technological breakthroughs that will have an impact on peacekeeping. We are already seeing the impact of information technologies on our collective action, which has made clear productivity gains possible, and their use is governed by the normative framework governing the responsible behaviour of States. However, information technologies exacerbate the systemic challenge of the manipulation of information, which is now also a challenge for peacekeeping operations.

France places special importance on the regular development and use of safe and secure artificial intelligence. We will host an artificial intelligence action summit in Paris on 10 and 11 February next year to encourage multilateral and multiparty cooperation and contribute to the establishment of an international governance framework, in the quest for international scientific consensus.

Lastly, France continues to firmly believe in the potential for progress in the exploration and use of outer space, provided that such progress is used for peaceful means.

Mr. Fu Cong (China) (*spoke in Chinese*): China thanks Foreign Minister Cassis for presiding over today's meeting.

I listened carefully to the briefings by the experts and scholars. They are very inspiring.

New technological innovation is moving full steam ahead. It is a prominent feature of the current era. While technological development empowers all sectors and brings great convenience and opportunities to humankind, it also brings new challenges to international peace and security. The Internet has become an important channel through which criminal gangs and terrorist organizations recruit, finance, organize and commit crimes. The misuse of deepfake technology fuels the spread of disinformation, triggering social tensions and tearing communities apart. Frequent cyberattacks and cyberespionage incidents have undermined the security and public interests of many countries.

The military application of artificial intelligence (AI) is disrupting traditional forms of warfare and causing widespread concerns. The recent conflicts in Gaza and Lebanon have shown us the unimaginable destruction and civilian casualties caused by AI-driven algorithms and remote manipulation. The misuse of technology in violation of international humanitarian law must be condemned and resisted.

China attaches great importance to the governance of science and technology. We spearheaded the efforts to hold the Council's first discussion on emerging technologies in 2021. We welcome its continued attention to the matter and support the gradual inclusion of science and technology in the Council's work to fulfil its duties.

Technology is a double-edged sword. We need to balance development and security, encourage innovation and manage risks so that the development of science and technology can truly benefit all countries and peoples. I would like to make three points.

First, the principle of technology for good is a basic requirement in regulating technological development. Technological research, development and application must comply with ethical norms, recognize the rules of international law and match civilization's progress. We support the United Nations in playing its role as a main platform for the global governance of technology to encourage discussion among countries in order to develop universally accepted rules and norms, based on broad participation and thorough deliberation.

Secondly, bridging the digital divide is not only a requirement for common development, but also a necessity in addressing security risks. Developing countries, long excluded from scientific and technological progress, can easily become weak links in global security. We must support and help developing countries catch up to benefit equally from the opportunities brought about by scientific and technological progress.

China led efforts to adopt a General Assembly resolution on enhancing international cooperation on capacity-building of AI (resolution 78/311), at its seventy-eighth session, and announced its AI Capacity-Building Plan for Good and for All in September this year. We will actively implement the five visions and 10 actions set out in the plan and support the global South in strengthening AI infrastructure, industrial empowerment, talent cultivation, data development and security governance to share AI dividends.

Thirdly, ensuring safety and control is the bottom-line requirement for technology development. AI must be kept under human control at all times, and autonomous killing by machines must be prevented. We must say no to the use of one country's technological advantage to violate other countries' sovereignty, interfere in their internal affairs or undermine their stability. We must guard against cyberattacks, cyberespionage and a cyber arms race and, in particular, safeguard the security of critical information infrastructure. China will continue to champion the General Assembly resolution on promoting international cooperation on peaceful uses in the context of international security and will support the peaceful uses of science and technology by developing countries without discrimination while advancing non-proliferation goals.

Science knows no borders. Every major breakthrough in humankind's scientific discoveries and technological innovations in modern times has been achieved through international exchange and cooperation. Tackling the risks and challenges brought about by those advances also requires international cooperation.

Regrettably, there has been a rise in certain practices that go against the laws of scientific development and historical trends. We have seen individual countries stretching the concept of national security and using the excuse of preventing risks to unscrupulously strangle other countries' high-technology businesses. They tout so-called decoupling and put up barriers to normal economic and trade activities and scientific and technological exchange between countries. They also carefully organize various small groupings to exclude specific countries and build so-called small gardens and high walls. Given how unrelated those practices are to national security, it is clear that they are in fact designed by the countries concerned to consolidate their own technological monopoly and contain the development of other countries. It is essentially a cold war mentality, with zero-sum game logic at play. The raft of negative moves has caused many disruptions. The small gardens with high walls have become large yards with iron curtains, seriously destabilizing industrial and supply chains, exacerbating development gaps and hindering technological progress.

We are particularly worried that the practice of artificially creating divisions will be more detrimental to international peace and security than the risks posed by technology itself and may ultimately plunge the world into the abyss of confrontation. Secretary-General Guterres has explicitly warned against a world artificially divided into two markets, two sets of rules and two major systems, in which each country is forced to pick a side, which would have grave consequences for all.

As emphasized in the Pact for the Future (General Assembly resolution 79/1), international cooperation is not an option, but a necessity. Only through the broadest cooperation can the potential of science, technology and innovation be harnessed to make the vision of the three pillars of the work of the United Nations a reality. We call on all countries to uphold the principles of openness and inclusivity, to take the implementation of the Pact for the Future as an opportunity to support the United Nations in its role as a main channel for global science and technology governance and to promote the use of science and technology in order to achieve common development, common security and common progress.

Dame Barbara Woodward (United Kingdom): I would like to start by thanking you, Mr. President, for bringing this important issue of peace and security to our agenda today. I would also like to extend our thanks to Mr. Geiss, Dr. Bloch, Dr. Courtine and Mr. Awad for their insightful and compelling briefings.

I would like to highlight three points, drawing on themes from our excellent briefings.

First, we share the view that the Security Council must remain ahead of emerging threats. As the briefers noted, advances in neurotechnology, engineering biology and artificial intelligence offer significant potential but also create risks that can have an impact on international peace and security. That is particularly true as those advances intersect, causing a compounding effect.

In future, quantum technologies may break the most advanced cryptographic encryption, threatening secure communications and information systems that underpin peace and humanitarian operations. While human augmentation technologies, such as exoskeletons, can facilitate quicker and more effective decision-making on the battlefield, they may also be exploited by malicious actors.

Today artificial intelligence (AI) is already being weaponized by State and non-State actions to spread disinformation at scale. The United Kingdom is actively working to counter the impacts of disinformation through data-driven tools and localized information verification systems, including through the AI Safety Summit, which was launched in Bletchley, United Kingdom, in 2023 and to which the representatives of Korea and France have already alluded. We therefore endorse the briefers' recommendations that the Council deepen its collaboration with the scientific community and systematically incorporate scientific analysis into reports and briefings on existing Council files.

Secondly, many scientific and technological advancements, as we have heard, are dual-use. There is a role for the Council in promoting the development of national, regional and international governance approaches that enable economic growth and development while mitigating risks to security. It is essential that technologies are researched, developed and deployed responsibly and ethically, in accordance with international law, including international human rights and humanitarian law.

Thirdly, the Council can prevent emerging threats before they escalate by better integrating scientific tools into decision-making. Developing capabilities for early warning through data analytics, as the United Kingdom has done through support to the African Union's early-warning mechanism and the Complex Risk Analytics Fund of the United Nations, can enable the Council to better anticipate risks and make timely, informed decisions.

In conclusion, the United Kingdom remains committed to ensuring that technological progress serves as a force for peace and security, not instability.

Mrs. Rodrigues-Birkett (Guyana): At the outset, I would like to thank Switzerland for organizing today's open debate and for its ongoing efforts to ensure that the Council keeps abreast of the discussions on this topic. As we grapple with a proliferation of conflicts across the globe, it is essential that the Council properly examine both the transformative potential of science and technology in fostering peace and security and their potential harmful use in exacerbating conflicts. I would like to thank our briefers — Mr. Geiss, Mr. Awad, Dr. Bloch and Dr. Courtine — for their informative remarks exploring current and future scientific developments and their implications for global peace and security, as well as how the Council can best make use of those new tools to fulfil its mandate.

The world is rapidly changing, with new technological and scientific advancements emerging almost daily. Whether we look to artificial intelligence, quantum computing or medical technology and biotechnology, new tools are being developed and employed across every sector. We are at a critical juncture, at which we must urgently adapt both our mindsets and legal frameworks to ensure that the application of scientific tools is used to radically enhance our ability to address global challenges, and not to widen divisions or inequalities.

Those new developments that facilitate the control of big data, propel cyberwarfare and information warfare and exploit nanotechnology and biotechnology have placed us in an era of unprecedented risks. Our traditional understanding of what constitutes war, who are the combatants and civilians, and what constitutes dual-use goods must be reimagined and even redefined. The digital world has also created new challenges to sovereignty and territorial integrity as we traditionally know them, within physical borders, while the ability

to cripple an enemy without a single bullet or bomb is no longer science fiction.

The Security Council is mandated to address threats to international peace and security. That requires not only responding to crises when they occur but also, critically, anticipating and preventing conflicts, including ensuring the protection of civilians. The use of science and technological innovations can provide a unique set of horizon-scanning tools that can equip the Council for employing preventive diplomacy. Science, if effectively and ethically utilized, can be used to craft evidence-based policy solutions. That will require that Governments play a more active role in the development phase, not taking a back seat to private sector innovation. It will also require international cooperation in the governance and responsible deployment of those new tools.

Guyana has long advocated for increased emphasis on conflict prevention, including the nexus between climate change, food insecurity and conflict. In that area, the use of science to predict the effects and prevent the catastrophic consequences of those drivers of conflict can be an apt illustration of how science and technology can have a positive impact on peace and security. Such uses of science tools to identify climate change risks to national, regional and international peace and security and the interplay between climate, food insecurity and conflict will be critical to preventing conflicts that will arise over issues related to resource scarcity and mass displacement.

As a small, developing country, Guyana's underscores that, even as we engage in discussions on the impact of scientific development on peace and security, there is a clear gap between the countries where those new technologies are developed and those where they are more likely to be deployed. In addition, there is the issue of access to these technologies, whether to advance peace and development or for harmful use. The reality is that most armed conflicts occur in the developing world where, for the most part, these new tools are not being developed. The Council, and the international community as a whole, must ensure that the developing world does not become the playground for developers to test the lethal effect of their new tools and instead that it be an active participant in the utilization of those tools for national development and the promotion of peace and prosperity. Alongside innovation, there must be an equal focus on capacity-building and technology transfer to the developing world.

These conversations are only the beginning of what must be a sustained effort by the Council to effectively consider the various emerging issues and their impacts on the maintenance of international peace and security. Guyana is prepared to be an active partner in any initiative that can enhance the ability of the Council to effectively execute its mandate in a manner that is objective, ethical and science- and data-driven.

Mrs. Frazier (Malta): I begin by thanking the Swiss presidency for organizing today's briefing on this important and highly topical matter. I also thank all the briefers for their insightful briefings.

Science and technology are advancing at an unprecedented pace, with a significant impact on matters relating to security, development, climate change and human rights, among other areas. Emerging technologies, including artificial intelligence (AI), are reshaping the way we live, work and interact. In an increasingly interconnected world, it remains in our interest to leverage those advancements for international cooperation, peace and security and gender equality. Scientific and technological progress can bring us closer to achieving the Sustainable Development Goals, such as by combating food insecurity through enhancing efficiency in food production. In addition, it can play a crucial role in our collective efforts to tackle climate change and in peacekeeping.

In that regard, we recognize the indispensable work of the climate, peace and security advisers engaged, with select United Nations missions, in identifying climate-related impacts. New technologies have the potential to serve as crucial tools to mitigate climate-induced threats that lead to resource scarcity and conflict. On the flip side, technological progress can produce devastating consequences that transcend national borders if applied for military purposes or to restrict fundamental human rights. As established in the Pact for the Future (General Assembly resolution 79/1), including in the Global Digital Compact, we must seize the opportunities associated with emerging technologies, while also addressing the risks posed by their misuse. Against that backdrop, the international community, including through the Security Council, must ensure governance and accountability for the use of emerging technologies. Through multi-stakeholder engagement, the Council must consider technological advancements as an integral part of its work, while also countering mis- and disinformation.

Malta is particularly concerned about the use of AI-enabled systems in the military domain. Lethal autonomous weapons systems (LAWS) raise significant legal, ethical and security concerns. We continue to stress that human control must be retained over autonomous weapons systems, as no machine can make life-and-death decisions. In that regard, clear and binding restrictions must be imposed on LAWS that do not comply with international humanitarian law. We must also ensure that women participate fully and equally in all processes related to emerging technologies and that these advancements equally benefit women and girls. Furthermore, all efforts aimed at regulating emerging technologies must be rooted in full respect for human rights. Generative AI challenges us to ask the right questions and seek the right answers. In that spirit, we shall not be guided simply by fear of what we do not yet fully comprehend. Instead, we should strive for the regulation, coordinated oversight and collective governance of new and emerging technologies to ensure that they serve the purposes and principles of the Charter of the United Nations.

In conclusion, science and technology have the potential to enhance our efforts for peace, sustainable development and the respect of human rights for all. The Security Council has an important role to play in that regard, including by providing a powerful platform for our collective work.

Mr. Žbogar (Slovenia): We also want to thank Switzerland for putting this important topic on our agenda. I would also like to thank our briefers, Mr. Geiss, Dr. Bloch, Dr. Courtine and Mr. Awad, for their insightful briefings.

Rapidly advancing and converging technologies are undoubtedly revolutionizing conflict dynamics. We are witnessing the application of those developments on a daily basis, live from the Middle East and Ukraine. Drone warfare, cyberwarfare and the growing military use of artificial intelligence are a reality, but as the briefers highlighted, they are far from the only technologies capable of posing risks to peace and security. The Security Council, as the primary organ responsible for international peace and security, must do its utmost to keep up with developments not only in technology but also in science and innovation in order to anticipate and prevent threats to peace and security. It must also promote the responsible behaviour of all of the actors involved. That is crucial to preventing the weaponization of emerging domains and promoting responsible innovation, in accordance with the Secretary-General's recommendation in the New Agenda for Peace.

To fulfil that recommendation, Slovenia believes that it is essential to establish a robust international framework to govern the responsible use of science, technology and innovation, ensuring that they contribute to peace instead of exacerbating tensions. In our view, drawing on United Nations processes related to new and emerging technologies, such an international framework must consist of at least two components.

First, there must be a clear consensus among Member States that international law, in particular international humanitarian and human rights law, applies to developments in science, technology and innovation.

Secondly, it is necessary to establish norms, rules and principles that govern the development, deployment and use of those advancements to mitigate risks. The framework must strike a balance between innovation and ethical standards, ensuring that scientific developments and technological progress do not undermine stability or create new security threats.

Let me underscore that science, technology and innovation have the potential for concrete applications that support the Security Council's decisions. On one hand, they make it possible to incorporate evidence-based information into the Council's decision-making process. Recognizing the importance placed by the Secretary-General's Scientific Advisory Board on evidence-based decision-making, we emphasize the critical role of the United Nations in providing the Security Council with neutral and impartial analysis.

In different instances, such analysis can also be provided by other trusted actors. On the other hand, developments in science, technology and innovation hold promise for improving various aspects of the work of United Nations integrated missions. The combined use of satellite imagery, artificial intelligence and quantum computing can identify, for instance, climate and environmental factors that drive conflict and instability, pinpoint hotspots where intervention may be needed and assist in logistics and mission planning. Through advanced data analytics, those developments can also provide vital protection for women and girls by identifying patterns of sexual and gender-based violence and enhancing the response of peacekeeping forces to threats against people in vulnerable situations.

To conclude, by leveraging developments in science, technology and innovation and with strategic foresight, the Security Council can, in our opinion, become better equipped to enhance international peace and security through improved conflict prevention and peacebuilding.

Ms. Shea (United States of America): I thank you, Mr. President, for convening this meeting. We would like to express appreciation to Switzerland for leading the discussion on the impact of scientific developments on international peace and security. I also thank our briefers, Mr. Geiss, Dr. Bloch, Dr. Courtine and Mr. Awad, for their insightful comments.

As President Biden emphasized to the General Assembly, the question with respect to technologies such as artificial intelligence (AI) is how we govern them and manage their associated risks, rather than allowing the technology to govern us. The United States has been at the forefront of those efforts. In March, all 193 Member States joined the consensus and adopted the first General Assembly resolution setting out a common framework for safe, secure and trustworthy AI (General Assembly resolution 78/265). The resolution recognizes the tremendous potential for AI to help to accelerate progress towards the achievement of the Sustainable Development Goals and also the imperative of ensuring that AI systems are designed, tested and deployed in a manner consistent with the Charter of the United Nations and the Universal Declaration of Human Rights. That resolution left no one behind and indeed, laid the groundwork for AI systems that leave no one behind by focusing on capacity-building and closing digital divides. It emphasized that AI should not be used to undermine peace or repress human rights. It called on those creating advanced AI models to be responsible when it comes to developing and launching new capabilities and to root out bias and discrimination in AI systems, and it set the stage for more close collaboration and conversation, both within the United Nations and beyond.

The United States was proud to support the Global Digital Compact, which clarified the agenda for that cooperation and cemented our shared commitment to leveraging technology to advance the common good. The United States also supports the commitments in the Pact for the Future (General Assembly resolution 79/1) on preventing an arms race in outer space, advancing discussion on lethal autonomous weapons, bridging digital divides and requesting the Secretary-General to provide regular updates on the impact of science and technology on security and disarmament efforts.

Today's meeting is also a recognition of how dependent our societies have become on science and technology. The Security Council has an important duty to protect that technology. Earlier this year, the United States, joined by 65 countries, put forward a draft resolution (S/2024/302) that affirmed the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and called on all Member States not to develop nuclear weapons specifically designed to be placed in orbit. That draft resolution, which was the product of nearly two months of constructive negotiations, reflected a simple reality: placement of nuclear weapons into orbit would not only violate the Outer Space Treaty, but also threaten human space flight and the vital communications, scientific, meteorological, agricultural, commercial and national security services that any and all satellites provide to people around the globe. Regrettably, one member of the Council, the Russian Federation, voted against that draft resolution. Consequently, it was not adopted.

It should not have been controversial for the Security Council to affirm the obligations of parties under the Outer Space Treaty, nor should it have been difficult to ask that States work together towards our shared interests. The Security Council needs to address existing risks, even as it monitors for new ones.

We also recognize that technology too can infringe on human rights. Authoritarian regimes are co-opting technology to censor, surveil or repress their citizens, including by restricting Internet connectivity and spreading disinformation online. It is vital that we confront those abuses.

The United States is proud to stand alongside dozens of other countries working under the umbrella of the Freedom Online Coalition to support democratic principles, to safeguard a free and open Internet and to advocate steps to help to ensure that digital technologies enhance the rights and privacy of our people and expand broad-based opportunity. For example, the United States, Germany and Estonia supported the Open Technology Fund, which helped millions of people acquire virtual private networks and empowered journalists and activists around the globe, from Russia to Iran to Cuba. The United States also joined fellow democracies in signing the Council of Europe

Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law, the world's first multilateral treaty on AI and human rights.

We thank Switzerland once again for its leadership on those critical issues.

Mr. Nebenzia (Russian Federation) (*spoke in Russian*): We welcome your personal participation in the meeting, Mr. President, and we are grateful to the briefers for their statements.

The topic chosen for today's meeting, regarding the links between critical processes and science, is something that everyone is talking about because science and technology are our future, development, independence and security. However, in that area, as in others, some countries have it all and others have nothing. We would like to contribute to that very topical discussion, our contribution pertaining to one of the main tasks of the United Nations, namely, overcoming inequality and redressing the impact thereof.

Scientific research, technological advances and innovation can indeed play a role in preventing conflict and in peacebuilding by fostering socioeconomic development. For example, modern systems of water resource management are helping to prevent water crises in arid regions. Renewable energy technologies reduce dependence on fossil resources. Agro-environmental technologies lower the risk of food crises. Unmanned aircraft delivering medicine and food to inaccessible areas can facilitate humanitarian missions. Telemedicine allows medical assistance to be provided remotely in crisis situations.

That notwithstanding, the priority in international cooperation should be not to hide behind eloquent slogans, while entrenching the technological supremacy of some countries over others, but rather to bridge the technological and digital divide between developed and developing countries. Access to modern technology and scientific data is critical to socioeconomic development and overcoming inequality. Many countries, however, particularly those in the global South, continue to be deprived of those resources, making them more vulnerable to conflict and crises. Technology and know-how should be accessible to all without discrimination, in order to foster development and build peace. That is an imperative.

Russia is helping to strengthen the technological sovereignty of its partners in various industries, first and foremost in the energy sector, by creating full-fledged scientific production chains. That is how our cooperation in the area of peaceful nuclear energy is developing, where our Rosatom stations are being built abroad in tandem with the training of local staff, engineers, workers and managers of the new facilities. In essence, what we are doing is not just building a power station, but, as they say at Rosatom, we are creating a new branch of energy for our partners.

I turn now to the relationship between science and technological development and issues of international peace and security. In discussing that here in the Security Council, we need to bear in mind the processes that have been ongoing for years in the General Assembly, and in its First Committee in particular. A salient example is the United Nations Open-ended Working Group on Security of and in the Use of Information and Communications Technologies, which was established at my country's initiative. The mandate of that mechanism is to consider all aspects of security that pertain to the use of information and communications technology. In that inclusive forum, decisions are taken by consensus, and all 193 Member States discuss, on an equal footing, that complex, multifaceted and still not fully understood topic, which involves technical expertise. Incidentally, one of the key aspects of its mandate is to deepen the international community's common understanding of how international law applies to information and communications technology. There are also related processes on the military aspects of the use of artificial intelligence, in particular the Group of Governmental experts on Lethal Autonomous Weapons Systems under the Convention on Certain Conventional Weapons.

The issue of the development of next-generation biological agents, uncontrolled biotechnological activities and the problem of sensitive technologies falling into the hands of terrorist organizations are being addressed by States parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxin Weapons and on Their Destruction. It is necessary to resume negotiations on a universal, legally binding, non-discriminatory protocol with an effective mechanism to verify compliance with the provisions of the Convention, as well as the establishment of a mechanism within the framework of the Convention to review scientific and technological achievements in the biological sphere. In doing so, it is imperative to take into account

ongoing discussions, including active negotiations in the forums I mentioned. While those activities are ongoing, it would be premature for the Security Council to pre-empt their outcomes. It is fundamentally important to avoid duplicating efforts and initiatives, as that could undermine the integrity of the relevant processes. By the same token, we in the Council should not encroach on the mandate of the General Assembly's Special Committee on Peacekeeping Operations, which considers all issues related to developments in peacekeeping and its technological and resource base, including the participation of host countries and troop- and police-contributing countries. We do not believe that the role of the Council is to discuss a new generation of soldiers and more effective fighters. That is antithetical to our primary task of achieving a political solution to conflicts and peace.

Today our American colleagues mentioned the draft resolution (S/2024/302) that they presented in the Security Council on the non-deployment of weapons of mass destruction in outer space. A provision to that effect is undisputably contained in the Outer Space Treaty, which all have signed. For some reason, our American colleagues persisted in refusing to mention other weapons, also of a strategic nature — but not weapons of mass destruction — in that draft resolution. The answer to that question is very simple: the precise reason is that they are going to put such weapons in space. Therefore, before searching for the mote in someone else's eye, one should find the beam that in one's own eye.

In conclusion, I would like to underscore that the most important trend in the area of scientific cooperation unfortunately is not reflected in the concept note (see S/2024/708). In addition to the obvious and still unbridgeable gap between developed and developing countries in accessing scientific advances, we are witnessing instances of historical ties being severed and outright discrimination, instead of support for global scientific cooperation on the basis of fairness and openness.

In recent years, we have seen manifestations of cancel culture, including when it comes to Russian science. For example, the European Organization for Nuclear Research (CERN) will soon stop cooperating with scientists associated with Russian scientific organizations. The situation is similar with the European X-Ray Free-Electron Laser Facility, where a temporary ban has also been imposed on Russian scientists using the Facility. Moreover, there is a phenomenon whereby CERN is poaching staff scientists through changes to scientists' citizenship. Other egregious examples include the discriminatory demands by the Organizing Committee of the International Geological Congress for Russian scientists to change their Russian affiliation to affiliation with another country as a precondition for participating in this year's event in the South Korean city of Busan.

It is unacceptable for political differences to impede scientific progress. Such actions not only weaken the global scientific community, but they also undermine the ability to use science and technology to address global challenges such as peace and prosperity on our planet. Vulnerable countries will be adversely affected by that approach. The prospects for technological and, more generally, comprehensive sovereignty will be pushed further and further out of their reach.

Mr. Afonso (Mozambique): Mozambique commends the Swiss presidency for convening this crucial and timely high-level session on the theme "Anticipating the impact of scientific developments on international peace and security".

We express our profound appreciation for the expertise and insights offered by the briefers. Their contributions illustrated the value of interdisciplinary approaches in tackling complex global challenges of our time.

The United Nations was born out of a vision of prevention — that of saving succeeding generations from the scourge of war. That is, in our view, what makes Switzerland's theme most relevant. The rapid advances in science and technology have opened up new avenues for addressing the complex challenges we face. They enhance our ability to respond to immediate threats and can pave the way for lasting peace, security and prosperity for humankind.

However, the potential dual use of scientific and technological advances cannot be ignored. While those advances offer ample benefits, they can also pose significant risks to international peace and security. A few can be highlighted.

First, innovations in artificial intelligence, robotics and other fields can lead to the development of advanced weaponry, potentially destabilizing global peace and security.

Secondly, as the world becomes more interconnected, there is an increase in the potential for cyberattacks that target critical infrastructure and sensitive data, thereby posing a serious threat to international peace and security.

Thirdly, advances in synthetic biology could lead to the creation of new pathogens, which would threaten biosecurity.

In order to mitigate those and other connected risks, it is crucial that we, the United Nations, establish robust ethical guidelines, regulatory frameworks and international cooperation. It also requires, among other things, the following strong, decisive and combined actions.

First, we need to adopt constructive approaches that promote transparency, in accordance with internationally agreed principles and norms.

Second, we need to hold regular briefings and produce reports for the benefit of the entire international community on the latest scientific advancements and their possible impacts on peace and security.

Third, we need to engage in scenario-planning to explore various future possibilities and develop strategies to address potential risks and opportunities.

Fourth, we need to create and strengthen panels of scientists, technologists and ethicists to continuously monitor and assess emerging technologies and their potential implications.

Fifth, we need to improve predictive analytics to help anticipate and prevent conflicts, while enabling proactive measures rather than reactive responses.

Sixth, on the basis of shared goals, we need to foster international collaboration to share knowledge, resources and best practices in managing technological advancements.

Seventh, we need to invest in technical and institutional capacity-building to ensure that no nation is left behind and that all nations, especially developing countries with limited resources, can effectively manage and benefit from scientific developments. That includes investing in education, training and infrastructure development.

By taking those steps, the Security Council and the international community as a whole can better anticipate and mitigate the risks associated with scientific developments, thereby ensuring a more secure, peaceful and just world.

We believe that the Pact for the Future (General Assembly resolution 79/1), which we adopted just a few weeks ago, breathes new life into our collective aspirations. By reinforcing a multilateral system grounded in shared principles, vision and goals, we can foster stronger global cooperation to benefit international peace and security — guided always by the Charter of the United Nations and international law.

Mr. De La Gasca (Ecuador) (*spoke in Spanish*): Ecuador thanks Switzerland for convening today's visionary meeting and the briefers for their valuable contributions.

Science and technology have always been central to the advancement of humankind. Today we have reached a tipping point in which scientific and technological progress promise to improve our societies while at the same time posing unprecedented challenges to global stability. The Security Council must preserve its ability to adapt and respond to the emerging dynamics of a world undergoing constant change. The Council can leverage science, data and statistics as decision-making tools — ensuring they are always human-operated — and through inclusive, ethical and depoliticized scientific cooperation. We could effectively harness the flood of technology to provide Council members in meetings with a solid information base that includes accurate statistics, forecasts and proposed solutions. That would help to achieve operational outcomes, since it would limit discussions that are merely theoretical in nature.

We can strengthen peace operations by integrating cutting-edge technologies into their mandates. Tools such as artificial intelligence and big data management are already proving their worth in areas such as logistics planning, risk analysis and emergency response. However, in implementing those technologies, a responsible approach should be taken in order to ensure the proper management of data and respect for the sovereignty of the host States.

Similarly, the Council must pay special attention to the implications that developments in the fields of neurotechnology, synthetic biology, quantum technologies and others can have for international peace and security. We need to leverage the benefits of those technologies while also acknowledging the risks associated with their development. Quantum computing, for example, could jeopardize global

cybersecurity in the near future, given the risk that it can break the most sophisticated encryption systems. That was the case with the cybersecurity attack on the International Criminal Court.

Similarly, the military use of neurotechnology raises serious ethical and human rights concerns by opening up the possibility of potential brain-hacking and manipulation of soldiers' cognitive and sensory abilities. It is imperative that advances in these and other areas be developed within sound regulatory frameworks that ensure respect for international law, including international humanitarian law and human rights.

We should also apply sustainable development, capacity-building and technology transfer principles in order bridge the digital divide between developed and developing countries. The Pact for the Future (General Assembly resolution 79/1), adopted by our Heads of State and Government, reminds us that the transformative power of science, technology and innovation must be at the service of humankind. Ecuador supports that call and reaffirms its commitment to multilateralism as the only viable path to face today's global challenges.

In conclusion, I express my hope that we can stop any potential technological and arms-control race, based on artificial intelligence and synthetic biology, between the great Powers, in favour of preserving the well-being of humankind, as articulated most broadly and summarized by the three pillars of the Charter of the United Nations. Harnessing scientific progress to promote peace, human rights, sustainable development and equity among nations is a task that we must carry out responsibly, in a way that ensures that those benefits reach all peoples, especially those in developing countries, with the aim of leaving no one behind.

Mr. Sowa (Sierra Leone): I would like to express my sincere gratitude to Switzerland for convening this very important meeting. I thank the briefers — Mr. Robin Geiss, Dr. Jocelyne Bloch, Dr. Grégoire Courtine and Mr. Amin Awad — for their valuable contributions to today's discussion.

The topic "Anticipating the impact of scientific developments on international peace and security" is both timely and highly relevant. We are encouraged that the Security Council continues to engage on this issue, which is acknowledged in the Pact for the Future and the Secretary-General's New Agenda for Peace. The role of science and technology in shaping international peace and security is undeniable, and it is essential for the Council to keep pace with these developments.

Sierra Leone recognizes the transformative power of science and technology in advancing human dignity, human rights, environmental protection and sustainable development. The potential for scientific development and innovation to have a positive impact on peace and security is considerable. However, the same scientific and technological advancements, if not regulated or if abused or misused, pose significant risks to global stability. It is for this reason that we emphasize the responsibility of the Security Council to remain informed and proactive in addressing scientific developments. Whether it is the proliferation of artificial intelligence (AI), autonomous weapons systems, biotechnology or quantum technologies, the Council must ensure that such advancements are used to support, not to undermine, international peace and security. In this regard, Sierra Leone joined Switzerland and Slovenia in the media stakeout before the commencement of this meeting to call for joint action on the Secretary-General's New Agenda for Peace, which was launched during the presidency of Sierra Leone in August.

One of our intentions is to work with Council members to integrate scientific knowledge into the Secretary-General's New Agenda for Peace, as affirmed in the Pact for the Future. Leveraging data-driven insights and the latest scientific tools, inter alia, can enhance our collective ability to anticipate and prevent conflicts.

The United Nations has long recognized, dating back to the adoption of General Assembly resolution 43/77, in 1988, both the promise and the challenge of scientific and technical technological innovations. This includes the need to establish normative frameworks that ensure the safe and responsible application of these technologies for the benefit of all humankind.

On 13 June 2024, the African Union Peace and Security Council, during its discussion on the topic "Looking into the future: artificial intelligence and its impact on peace and security in Africa", underscored the importance of continuous dialogue and enhanced collaboration. It was emphasized that member States, regional economic communities and regional mechanisms, the private sector, think tanks, the African Union, the United Nations and other stakeholders must work together to ensure a

harmonized approach in harnessing the potential of artificial intelligence. Furthermore, the session called for the urgent development of a global compact on artificial intelligence, recognizing the need for collective international efforts to establish principles and frameworks that guide the responsible and beneficial use of AI in promoting peace and security across Africa and beyond.

Additionally, the African Union Development Agency has published a white paper on the regulation and responsible adoption of AI in Africa. The white paper sets out to demystify AI by providing the reader with many examples of already existing AI uses in Africa and gives African Governments recommendations on what their next steps should be.

In August, Council members engaged with experts from the Geneva Science and Diplomacy Anticipator on the margins of the commemorative event of the seventy-fifth anniversary of the Geneva Convention to explore the implications of rapid advancement in artificial intelligence, quantum technologies, synthetic biology and neurotechnology for global peace and security. That discussion highlighted the urgent need for the Council to develop strategies to manage both the risks and opportunities associated with these innovations. In this regard, Sierra Leone wishes to make four key points.

First, scientific and technological innovations can be harnessed to meet the Sustainable Development Goals and address the root causes of conflict. For example, in the Sahara and Sahel region, high-resolution satellites and machine-learning tools are being used to monitor vegetation and inform policies that address food insecurity. Similar innovations are being utilized in humanitarian settings for real-time planning and support during crises.

Climate science advancements, such as adaptive crops, will continue to help to mitigate conflict by addressing the challenges of food scarcity and resource competition. Quantum technology, including quantum sensing and computing, offers both opportunities and risks. While it enhances military capabilities and problem solving, it also raises concerns about ethical use and security threats. Similarly, the deployment of AI in robotics, drones and human augmentation presents both humanitarian opportunities and potential harm, particularly in the area of peacekeeping and conflict management.

Secondly, while scientific advancements offer immense promise, they also widen the technological gaps between developed and developing nations. Barriers to accessing funding and research and development disproportionately affect poorer countries, limiting their ability to benefit from innovations. It is crucial to establish frameworks that promote equitable access to technology and ensure that all nations can participate in and benefit from scientific progress.

Thirdly, effectively harnessing scientific innovations for peace and security requires enhanced international cooperation. The Secretary-General's report on current developments in science and technology (A/75/221) emphasizes the need for multilateral forums to address the potential impact of these advancements on global security. A rules-based system with compliance and accountability mechanisms is essential for regulating technologies, such as nuclear power, 3D printing of weapons and biotechnologies, which pose significant risks if misused by non-State actors. Strengthening collaboration across borders and fostering responsible research will help to mitigate these risks. Sierra Leone supports efforts to integrate science and technology into peacebuilding policies and ensure that innovations are used for the greater good.

Finally, Sierra Leone reaffirms its commitment to working with international partners to leverage global expertise and best practices in scientific research. We look forward to more engagement on these critical issues, particularly in the context of implementing the Pact for the Future and the Secretary-General's New Agenda for Peace. We stand ready to contribute to efforts that promote inclusive and equitable access to scientific knowledge, ensuring that all nations can benefit from and contribute to global peace and security.

The meeting rose at noon.