



S.E.T. for socio-economic growth

National Science and Technology Forum (NSTF)

media release

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The meaning of disarmament in the digital age

The United Nations (UN) General Assembly adopted resolution 50/72 B in 1995 proclaiming this week in October as an annual **Disarmament Week**, to facilitate multi-stakeholder engagement and thereby increase public understanding of the key role disarmament plays in resolving conflicts. Measures for disarmament are pursued for many reasons, including to maintain international peace and security, uphold the principles of humanity, protect civilians, promote sustainable development, foster confidence and trust among States, and prevent and end armed conflict. The UN has been working towards the global elimination of nuclear weapons and other weapons of mass destruction since its inception. Nuclear weapons are uniquely powerful and pose a significant threat to humanity and the environment, and although they have only been used twice, there are still estimated to be over 13,000 in existence. Pockets of offensive and defensive warfare have persisted despite past international action against weapons proliferation such as the Biological Weapons Convention and the Chemical Weapons Convention, and other treaties designed to eliminate major world conflict. Conventional arms also continue to cause extensive damage and harm civilians, and the general availability of small arms facilitates armed violence.

The 2030 Agenda for Sustainable Development recognises the need for peace and the reduction of arms flows for a stable and peaceful global society. Multilateral treaties and instruments have been established to regulate and restrict various weapons, such as the Anti-Personnel Landmine Convention and the Arms Trade Treaty. The **UN Office for Disarmament Affairs (UNODA)** also offers support to various UN bodies, member states, and civil society groups in promoting nuclear disarmament, addressing other weapons of mass destruction, regulating conventional arms, and ensuring responsible innovation and use of advances in science and technology. Disarmament and arms control remain inextricably connected with development in a multitude of ways, providing a unique opportunity to advance both the implementation of the Sustainable Development Goals (SDGs) and the **Agenda for Disarmament**.

In 2018, UN Secretary-General António Guterres launched an Agenda for Disarmament, calling for renewed cooperation and fresh perspectives to address the deteriorating international security environment. The agenda outlined four key pillars with practical measures to achieve sustainable peace and security through stronger partnerships and determination:

- Disarmament that saves humanity – by strengthening norms against weapons of mass destruction and quelling new areas of conflict
- Disarmament that saves lives – by addressing the impact of conventional arms and the growing illicit arms trade
- Strengthening partnerships for disarmament – by revitalising disarmament institutions and processes, and engaging regional organisations, promoting women’s participation, empowering youth, as well as engaging civil society and the private sector
- Disarmament for future generations - by ensuring responsible innovation and use of advances in science and technology, keeping humans in control of weapons and artificial intelligence, and ensuring peace and stability in cyberspace

Artificial Intelligence (AI) has become widespread in today’s society, with its influence infiltrating the realm of warfare. The proliferation of AI and other forms of digital technology has been a focal point of much of the recent **NSTF discourse**, and the organisation’s 2024 theme is “The Fourth Industrial Revolution (4IR) in South Africa (SA).” The theme recognises the many benefits of the 4IR, while acknowledging the socio-economic and environmental ramifications it may impose. This proliferation of digital technologies has given rise to growing concerns about use of AI in weapons systems. Escalating weaponisation of AI parallels the nuclear arms race of the Cold War, with nuclear weapons being replaced with automated weapons systems (AWS). The international community began taking notice of this issue in 2012, when documents outlining the use of automated weapons systems were released.

There have been calls for control over the use of AWS. There is a policy directive by the U.S. **Department of Defence (DoD) on autonomy in weapons systems**. There are also reports from Human Rights Watch and the Harvard Law School’s International Human Rights Clinic (2012 **HRW-IHRC report**), called: ‘Losing Humanity, the case against killer robots.’ The report recommends that all states should:

- *Prohibit the development, production, and use of fully autonomous weapons through an international legally binding instrument.*
- *Adopt national laws and policies to prohibit the development, production, and use of fully autonomous weapons.*
- *Commence reviews of technologies and components that could lead to fully autonomous weapons. These reviews should take place at the very beginning of the development process and continue throughout the development and testing phases.*

An open letter in March 2023, from the **Future of Life Institute (FLI)** urged companies to pause ‘giant AI experiments’:

“In an effort to stave off these outcomes, the FLI, joined by over 15,000 leading AI researchers, professors, CEOs, engineers, students, and others on the frontline of AI progress, called for a pause of at least six months on the riskiest and most resource-intensive AI experiments – those experiments seeking to further scale up the size and general capabilities of the most powerful systems developed to date.”

As far as we know, there was no such pause implemented in response to this letter.

One of the ‘cause areas’ of the FLI is **Nuclear Weapons**, and they point out: “The use of just a few hundred could leave Earth’s population decimated by a nuclear winter,” the impacts of which would be far greater than previously thought.

A year ago, the UN General Assembly adopted a **resolution on lethal Autonomous Weapons Systems (AWS)**, which can be summarised as follows:

The General Assembly:

1. *Stresses the urgent need for the international community to address the challenges and concerns raised by AWS, in particular through the Group of Governmental Experts on Emerging Technologies in the Area of Lethal AWS, and to continue to further its understanding of the issues involved.*
2. *Requests the Secretary-General to seek the views of Member States and observer States on lethal AWS, inter alia, on ways to address the related challenges and concerns they raise from humanitarian, legal, security, technological and ethical perspectives and on the role of humans in the use of force, and to submit a substantive report to the General Assembly at its seventy-ninth session for further discussion by Member States.*
3. *Also requests the Secretary-General to invite the views of international and regional organizations, the International Committee of the Red Cross, civil society, the scientific community and industry to include these views in the original language received in the annex of the aforementioned report.*
4. *Decides to include in the provisional agenda of its seventy-ninth session the item entitled “Lethal AWS”.*

Despite all of the above serious concerns raised in prominent international forums, there is currently no international legal framework addressing the use of AI in warfare, (except for Article 26 of the International Covenant on Civil and Political Rights, which only relates to the right to privacy).

As the use of AI in modern warfare continues to grow, the need for regulation and oversight becomes increasingly critical. The international community must establish an international legal framework that ensures humans will always retain meaningful control over AWS and other digital technology systems.

References/Sources and further reading:

- [Disarmament Week | Agenda for Disarmament | United Nations](#)
- [Disarmament Week | Background | United Nations](#)
- [Disarmament Week – the United Nations – GGIN \(stimson.org\)](#)
- [Biological Weapons Convention – UNODA](#)
- [Chemical Weapons Convention | OPCW](#)
- [AP Mine Ban Convention | Anti-Personnel Mine Ban Convention](#)
- [The Arms Trade Treaty | Home Page](#)
- [UNODA – United Nations Office for Disarmament Affairs](#)
- [Disarmament Agenda](#)
- [2024 Vienna Conference on Autonomous Weapons Systems – BMEIA - Außenministerium Österreich](#)
- [DoD Announces Update to DoD Directive 3000.09, 'Autonomy In Weapon Systems' > U.S. Department of Defense > Release](#)
- [Home - Future of Life Institute](#)
- [n2330266.pdf](#)
- [AI & The Future of Conflict | GJIA \(georgetown.edu\): article in The Georgetown Journal of International Affairs, by Kristian Humble, July 12, 2024](#)

About the NSTF (National Science and Technology Forum): NSTF is an independent non-profit stakeholder body and network – a civil-society forum of over 130 organisations involved in science, engineering, technology (SET) and innovation in SA.

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About the NSTF

The National Science and Technology Forum (NSTF), established in 1995:

- is a broadly-representative stakeholder body for all science, engineering and technology (SET) and innovation organisations in South Africa
- gathers stakeholders around burning issues of national and global interest, across the public and private sectors, including matters of public policy
- includes a network of professional societies in SET and STEM education (STEM = science, technology, engineering and mathematics) - the NSTF proSET membership sector.
- recognises, awards and profiles the outstanding contributions of individuals and groups to SET and innovation through the prestigious NSTF Awards
- runs and supports collaborative projects and youth outreach, including recognition of top performance in mathematics and science, role modelling, bursary and STEM career information
- runs and supports the STEMulator.org which attracts youth and educators to Explore>Discover>Learn the world of STEM including careers. (Established by NSTF proSET)

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