Mr Chairperson,

Under-Secretary-General for Disarmament Affairs,

Fellow panellists,

On behalf of the International Atomic Energy Agency (IAEA), I am pleased to participate in this discussion on the implications of emerging technological developments on disarmament and non-proliferation, in particular those concerning the IAEA’s activities.

As is the case with many technologies, nuclear technology can be used to benefit or to harm humanity. For over 60 years the IAEA has promoted the peaceful applications of this technology while simultaneously guarding against the spread of its use for military purposes. And in doing so, the IAEA makes a vital contribution to international peace and security.

The IAEA is the competent authority the international community has entrusted to verify States’ compliance with their non-proliferation obligations to maintain exclusively peaceful nuclear programmes. We do this by implementing safeguards – internationally approved legal and technical measures – in 181 countries. Over the years, we have dealt with some of the most critical issues on the international agenda. These include nuclear verification in Iraq, Iran and the Democratic People’s Republic of Korea. We are currently verifying and monitoring Iran’s implementation of its nuclear-related commitments under the Joint Comprehensive Plan of Action (JCPOA).

Hundreds of Agency inspectors visit nuclear facilities around the world to account for nuclear material to ensure that it is not being diverted from peaceful purposes. They examine and verify records; confirm physical inventories of fuel or spent fuel; take measurements and samples of nuclear material for analysis; and verify the functioning and calibration of IAEA-installed containment (seals) and surveillance (cameras) equipment that monitors access to and movement of nuclear material within a facility.

Environmental sampling and nuclear material analysis is another important aspect of safeguards. The IAEA’s analytical laboratories in Seibersdorf and its Network of Analytical Laboratories around the globe conduct nuclear material analysis of samples. Their work is tightly coordinated.
Continued access to state-of-the-art verification technologies that enhance our detection and nuclear forensic capabilities is crucial to the performance of our work, particularly as demands on safeguards continue to grow and become more complex. At the same time, the transfer to medium and long-term storage of increasing amounts of spent fuel and the decommissioning of nuclear facilities are verification-intensive activities which, by adding to our workload, also demand greater productivity. Technology is one means by which we can potentially achieve such improvement.

Since their inception, safeguards have continually evolved, taking into account changes in technology and practical experience, in order to become more effective and efficient.

Currently, as part of its strategic planning, the Agency regularly assesses its operating environment and looks for technological developments that could enhance its verification capabilities. Some of the new and emerging technologies being considered to assist in implementing safeguards include gamma imaging cameras, robotics and laser technologies. To help automate and reduce repetitive tasks, for example in processing safeguards data, technologies that embrace artificial intelligence and machine learning may prove helpful. We could also take advantage of autonomous platforms, automated systems and other technologies for enhancing productivity and detection capabilities. All of these and other emerging technologies will need to be carefully assessed to see if they can be applied successfully to safeguards implementation.

In conclusion, when and whether the Agency decides to make use of any of these technologies will depend ultimately on their cost-effectiveness. Making the best use of scarce resources is a constant requirement for the IAEA. Nevertheless, with the continued support of our Member States, we are confident that we can continue to exploit new technologies to deliver more effective and efficient safeguards, and thereby ensure that the world is a safer place.

I thank you.