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PROPOSAL

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	10 November 2022
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union

Subject:	PROJECT DOCUMENT “Unlocking innovation: Enabling Technologies and International Security”
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Delegations will find attached document HR(2022) 268.

Encl.: HR(2022) 268



PROJECT DOCUMENT

“Unlocking innovation: Enabling Technologies and International Security”

HR(2022) 268

Introduction

Advancements in science and technology are key enablers of economic and social development and prosperity. However, as indicated by the UN Secretary-General in the 2021 report on “[*Current developments in science and technology and their potential impact on international security and disarmament efforts*](#)” there are growing concerns that “developments in science and technology of relevance to security and disarmament are outpacing the capacity of normative and governance frameworks to understand and manage the risks”.

The United Nations Institute for Disarmament Research (UNIDIR) is an autonomous institution within the United Nations that conducts independent research on disarmament and related problems, particularly international security issues. Historically, UNIDIR has played a leading role in supporting efforts to understand and respond to the security implications of rapid and transformative technological advances. Today, this work is led by a dedicated, multi-year **Security and Technology programme** (SECTEC) which is a key knowledge provider for, and bridge-builder between, the international diplomatic community, private sector and civil society (over 13,000 publication downloads and over 6,500 event participants in the last two years alone). The work of SECTEC also achieved important policy impact including specific mentions in two consensus reports on international cyber security adopted by the UN General Assembly.

The proposed 2 year project entitled “**Unlocking innovation: Enabling Technologies and International Security**” will focus on **selected key enabling technologies** and their potential impact on international security. The work under this project will be organized in three workstreams as described in detail the following section.

The project will be fully integrated in the wider SECTEC programme of work, leveraging knowledge assets and networks already established as part of the wider programme and contributing to the achievement of its overall objectives which are closely aligned with the core [mandate of the Institute](#):

- **Shape policy and decision-making.** Technological innovation adds new layers of uncertainty to the global security environment and challenges traditional understandings of conflict as well as arms control concepts, and responses. The multilateral disarmament machinery, as well as regional and national mechanisms, will need to adapt their tools and processes to develop effective policy responses to new technologies. SECTEC's work will seek to contribute and inform the design of such policy responses through the production of knowledge, the provision of advice and the generation of ideas.
- **Reduce the knowledge gap on technological aspects of international security.** Many challenges and opportunities of new technologies are rooted in their technical characteristics, making it difficult to implement policy or regulatory action without adequate understanding of the technology in question, including risks and opportunities. This is further exacerbated by the inherent dual- (or all-) use nature of many of such innovations, which require a broader understanding of the possible cross-domain effects and dependencies of any policy or regulatory action.
- **Bridge communities.** At a time of increasing global instability and distrust, with an expansion of actors, an increased distribution of knowledge and expertise, and more limited options for traditional forms of regulation, there is an urgent need for different communities to come together and share insights to inform respective agendas. This applies to communities operating in different sectors (e.g. governments, industry, civil society), as well as to communities within the multilateral machinery that traditionally operate in different silos (e.g. international security, development, digital cooperation, crime). SECTEC will leverage UNIDIR's unique position to work across traditional silos in an effort to connect increasingly interdependent discourses, bridge communities and consolidate knowledge.

PROJECT

Responding to challenges and leveraging the opportunities presented by technological advancements in the context of peace and security is a complex task. In general terms, it requires being able to understand what the technology is, how it could be used and to what effect, and what governance tools are available to steer or control its development and use. The proposed project “**Unlocking innovation: Enabling Technologies and**

International Security” aims to explore the development, application and governance of selected key enabling technologies and their relevance for international peace and security through the three workstreams described below.

For the purpose of this project, enabling technologies are defined as those that enable or drive innovation, capability development and greater impact across other application areas within the scope of UNIDIR’s SECTEC work, namely Cyber, AI & Autonomy and System Integration. This is consistent with the [EU policy on key enabling technologies](#) which recognizes the fundamental role played by these cross-cutting technologies as drivers of innovation across sectors and applications.

This project will focus on the opportunities and challenges related to four enabling technologies that are considered as of particular relevance from a security perspective: **advanced materials** (e.g. semiconductors, micro- and nano-technologies), **parts and components** (e.g. microchips, sensors), **infrastructure** (e.g. next-gen connectivity infrastructure – 5G and 6G, internet of things, cloud, sovereign internet) and **processing and computing** (e.g. cloud, edge and quantum computing).

1. Workstream 1: Monitoring trends and increasing awareness of Science and Technology developments

1.1. Purpose

The purpose of this workstream is to identify and understand new and emerging technologies, as well as novel applications of more established ones. Work under this workstream will be primarily dedicated to providing policy and decision-makers with accessible knowledge on the technology areas under examination, built on technically and scientifically sound evidence.

1.2. Expected results:

- a) Enhanced preparedness of policy and decision makers with respect to challenges and opportunities posed by new and emerging technologies.
- b) Improved understanding of the links and convergences among different technologies.
- c) Increased awareness of potential risks and benefits of new technologies and provision of early-warning capabilities for states with limited capacity to conduct horizon scanning.

1.3. Workstream description

This workstream will encompass two main activities. First, it will enable the set-up of a **continuous technology horizon scanning** function to ensure that the most relevant science and technology advancements are detected, screened and analysed at early stages of development or application. This activity will result in **2 annual compendiums of the most relevant trends in technological innovation** as they pertain to international peace and security. The findings of this activity will be complementary to, and not duplicative of, the work conducted in official multilateral processes such as the CCW and its *Group of Governmental Experts on emerging technologies in the area of lethal autonomous weapons systems*, the *Open-ended Working Group on security of and in the use of information and communications technologies*, and will be used to contribute to the wider set of relevant multilateral activities such as the annual UN SG report on the [role of science and technology in the context of international peace and security](#), the [Common Agenda](#), including the new agenda for peace, and the 2023 Summit for the Future.

The second activity under this workstream will include the organization of **8 technology breakfasts** designed to offer the opportunity, on a quarterly basis, to the diplomatic community in Geneva and New York to learn and discuss, in an informal setting and through a direct engagement with experts, specific enabling technologies relevant to international peace and security. Each event will be held twice: the first time in-person in Geneva and the second time virtually for the New York community.

2. Workstream 2: Understanding the impact of Science and Technology on international peace and security

2.1. Purpose

The purpose of this workstream is to understand how new enabling technologies could be used, and what effect they could achieve, in security contexts. Work conducted under this pillar will focus also on the increasing convergence of different technologies and their cross-domain applications. In particular, this workstream will highlight how advancements in enabling technologies will shape the future of conflict and of the battlefield.

2.2. Expected results:

- a) Increased understanding by the policy making community of the impact on peace and security of new and emerging enabling technologies.
- b) Increased ability to establish links and connections between application areas of different technologies, resulting in better informed policy discussions across domains and processes.
- c) Increased ability to identify avenues for policy interventions aimed at reducing the risks posed by new technologies without hindering progress and innovation.

2.3. Workstream description

This workstream will include the conduct of **four research studies**, one for each of the sub-categories of enabling technologies under consideration. Each research study will aim at providing both an introduction to the technology itself and an analysis of the positive and negative impacts that such technology could have on international peace and security. The research methodology used to conduct such impact assessments will consider not only military capabilities but, where relevant and applicable, political, economic, social, technological, legal and environmental factors (PESTLE analysis). These research studies will result in written reports with executive summaries made available in all UN official languages to support greater reach and accessibility (translation of full reports will be conducted based on time and resource availability).

In addition, in recognition of the complex political, military, legal and technical ecosystem in which such technologies are developed and deployed, this workstream will organise **four multi-stakeholder dialogues** to complement the research activities and foster exchange of views and transfer of knowledge among different communities of stakeholders. The format of these convenings will be hybrid and timed to be accessible to audiences from all across the world.

3. Workstream 3: Modernizing arms control and designing 21st century governance responses

3.1. Purpose

The purpose of this workstream is to explore if novel enabling technologies pose new governance challenges and, if so, how the traditional arms control tool-box can be modernized to address them. In addition, this workstream will also explore the complementarity of traditional arms control measures with broader technology governance measures that may contribute to achieving the same goals of security, stability, safety, risk reduction, and non-proliferation.

3.2. Expected results

- a) Improved understanding of the possible strengths and limitations of the current arms control toolbox to deal with new and emerging technologies.
- b) Improved understanding of the wider set of technology governance tools (e.g. industry standards, self-regulation mechanisms) and how such tools can be leveraged by the international security community to pursue a more peaceful, stable and secure world.
- c) Cross-fertilization of knowledge across sectors through informal exchange, open to all UN Member States, industry and civil society at large.

3.3. Workstream description

This workstream will build on the findings of Workstream 2 to further expand the analysis of the selected enabling technologies through **four additional research studies** focusing on the specific governance challenges and potential policy responses. Similarly, to Workstream 2, each research study will be complemented by a dedicated **multi-stakeholder dialogue** held in hybrid format with the purpose of extracting lessons identified across sectors that can be used to improve international security policy responses.

In addition, this workstream will include the conceptualization and early design of an **interactive infographic** that enables the identification and mapping of relevant arms control and wider technology governance tools and instruments at regional and international level for selected enabling technologies. This activity will serve to test both the methodology to identify and prioritize applicable and relevant tools as well as different options for data visualization. The infographic will be uploaded on a specific webpage on UNIDIR's webpage.