The NATO Science for Peace and Security Programme

CountryFlyer 2020

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UKRAINE

Developing Practical Cooperation through Science

Ukraine has been actively engaged within the framework of the NATO Science for Peace and Security (SPS) Programme since 1994.

The NATO SPS Programme enables close collaboration on issues of common interest to enhance the security of NATO and partner nations by facilitating international efforts to meet emerging security challenges, supporting NATO-led operations and missions, and advancing early warning and forecasting for the prevention of disasters and crises.

The current SPS Key Priorities include:

- *Counter-Terrorism;*
- *Energy Security;*
- *Cyber Defence;*
- *Defence against CBRN Agents;*
- *Environmental Security;*
- *Security-related Advanced Technology;*
- *Border and Port Security;*
- *Human and Social Aspects of Security*.

Additionally, the SPS Programme helps to promote *regional security* through scientific cooperation among partners. The Programme also helps to *prepare* interested eligible nations for NATO membership. SPS activities often have a high *public diplomacy* value.

Since the Russian illegal annexation of Crimea in 2014, cooperation between NATO and Ukraine has been strengthened in many areas, including through the framework of the SPS Programme. At the 2016 NATO Warsaw Summit, the Heads of State and Government of the NATO-Ukraine Commission endorsed the Comprehensive Assistance Package (CAP) for Ukraine. As part of the CAP, the SPS Programme implemented several activities in Ukraine's priority areas of cooperation. In 2019, Ukraine was the largest beneficiary of the SPS Programme, with a total of 28 ongoing SPS activities being led by Ukrainian scientists and experts. Below are some examples of completed and ongoing activities led by Ukraine and NATO Allies in the framework of the SPS Programme.

Cooperative Activities

MICROWAVE IMAGING CURTAIN

This ongoing Multi-Year Project (MYP) aims to develop an affordable solution to the challenge of detecting firearms or explosives concealed by a person in a mass-transit scenario, without disturbing the continuous flow of pedestrians. This project is included in the overall context of the DEXTER (Detection of EXplosives and firearms to counter TERrorism) programme, which aims to detect explosives and firearms in a mass-transit environment without disrupting the flow of pedestrians. The project will design, develop and test a radar-based imaging device for the non-checkpoint detection of explosives and firearms. Taking into account current regulations on the impact of radiation exposure to human health, the project will integrate high-performance microwave modules, and will develop specific signal processing algorithms to construct 3D images of dangerous objects carried by moving persons. *This project is led by Ukraine and France, and also involves experts from the Republic of Korea.* [ref. G5395].

AGILE TYRE MOBILITY FOR SEVER TERRAIN ENVIRONMENTS

This MYP aims to develop, implement and test new technology to improve the off-road mobility of military vehicles. The system being developed will sense tyre mobility faster than current technology, and

provide agile control action to maintain high-level mobility in severe terrain conditions for military vehicles. In order to achieve this, the project team will create new knowledge based on a new technological paradigm of agile tyre mobility; improve design methods; and model and implement hardware and testing of an agile mobility control algorithm. *This project is led by Ukraine and the United States, with support from the United Kingdom.* [ref. G5176].

SUPPORT TO HUMANITARIAN DEMINING IN UKRAINE

This Multi-Year Project (MYP) provided Ukraine with assistance in the area of humanitarian demining by enhancing the capacity of the State Emergency Service of Ukraine (SESU) in undertaking demining operations in the Donetsk and Luhansk regions. It significantly contributed to safeguarding the civilian population in eastern Ukraine where explosive remnants of war pose a significant threat. SESU Explosive Ordnance Disposal (EOD) teams were introduced to and provided with modern technologies of detection and clearance and associated specialist training so that the SESU can cope with the additional challenges brought about in a high threat environment. In addition, following a fire at the ammunition depot in Balaklia, Kharkiv region, which destroyed valuable equipment, the SPS Programme rapidly delivered the needed equipment to enable Ukrainian demining teams to successfully clear the territory of Balaklia and nine settlements in the vicinity. *This project was co-led by the SESU and the NATO Support and Procurement Agency.* [ref. G5024].

NOISE IMAGING RADAR NETWORK FOR COVERT AIR AND MARITIME BORDERS SECURITY (NORMA)

Launched in 2018, this Multi-Year Project (MYP) aims to develop a radar network that will ensure an all-weather 24-hour resilient surveillance system with high detection capabilities. It will be used for continuous monitoring of national sea and land borders (with both civilian and military applications). The project will enhance air border surveillance, which is of paramount importance in the management of new threats related to the cross-border use of drones, as well as to security in conflict areas around the world. *This project is led by experts from Ukraine and Italy.* [ref. G5465].

ADVANCED TRAINING RESPONSES TO CONFLICT AND SECURITY CHALLENGES IN EAST UKRAINE

This Advanced Training Course (ATC) trained junior experts (medical, surgical, first responders, nursing, military health professionals and students), from the Mechnikov Hospital and surrounding field hospital facilities, on casualty responses related to emerging security challenges in line with Key SPS Priorities. More specifically, this project aimed to produce participants competently trained in responding to CBRN agents; build a network of potential educators to train other healthcare professionals and scientists in the region; and develop a training template for other NATO partners to implement in conflict. *This activity, led by experts from Ukraine and the United States, took place in Dnipro, Ukraine, from 4 to 8 November 2019.* [ref. G5663]