The NATO Science for Peace and Security Programme

CountryFlyer 2018

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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 forecast 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.

UKRAINE

Since the wake of the Russia-Ukraine conflict in 2014, cooperation between NATO and Ukraine has been intensified in many areas, including 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 for Ukraine (CAP). As part of the CAP, the SPS Programme implemented several activities in Ukraine's priority areas of cooperation. Below are some examples of ongoing and completed activities led by scientists and experts from Ukraine and NATO member countries under the framework of the SPS Programme.

Cooperative Activities

SUPPORT TO HUMANITARIAN DE-MINING IN UKRAINE

As part of the CAP for Ukraine, this multi-year project provided the country 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 Eastern Ukraine. The overall aim of the project was to safeguard the civilian population within areas affected by the conflict and allow the return of displaced persons. The project was based on two areas of activity that are mutually reinforcing, namely providing the demining teams of the SESU with an initial operational capability,through equipment and training. The SESU teams were introduced to and equipped with modern technologies of detection and clearance. The NATO Explosive Ordnance Disposal (EOD) Centre of Excellence in Slovakia carried out specialist training to familiarize the trainees with the new equipment. Further reconnaissance training was provided, which included the investigation, detection, and reporting of explosive ordnance so that the SESU can cope with the additional challenges brought about in a high threat environment [ref. G5024]. *This project was co-led by the SESU and the NATO Support & Procurement Agency as executing agency.*

A MULTINATIONAL TELEMEDICINE SYSTEM

As part of the Comprehensive Assistance Package for Ukraine (CAP), this multi-year flagship project developed a multinational telemedicine system that enables medical specialists to engage in major disasters and incidents across national borders. Portable medical kits allow first responders at the scene to connect to the system to receive expert advice from medical specialists in case of an emergency, even in remote areas. Through the use of modern communications technologies, an international network of medical specialists will be able to assess patients, diagnose them and provide real-time recommendations. This will allow the right aid and care to reach those who need it most quickly, with the potential to save many in disasters [ref. G4748]. The System was successfully tested live in the field exercises co-organized by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) between 2015 and 2017. *This project was led by experts from Ukraine, Romania, the Republic of Moldova, Finland and the United States* [ref. G4748].

DEVELOPMENT OF MINE AND IED RECOGNITION SYSTEM BASED ON ULTRAWIDEBAND TECHNOLOGY

This project, which forms part of the CAP for Ukraine, aims to develop a state-of-the-art digital ground penetrating radar system which will detect dangerous targets such as mines, improvised explosive devices and explosive remnants of war. The device will provide a visual 3D image and automatically recognize the type of the detected object in up to 3 meters depth. Ultimately, the technology will allow faster, cheaper, and safer clearance of former conflict zones and help to avoid victims among civilians and the military. The end-user of the project is the State Emergency Service of Ukraine, which is receiving support from the SPS project on humanitarian demining. This multi-year initiative will open new possibilities in humanitarian demining operations and help sustain the efforts in the long run [ref. G5217]. *This project is led by Ukraine and Norway.*

DEVELOPMENT OF AN ADVANCED X-RAY GENERATOR

This SPS flagship project has helped to foster a new generation of young Ukrainian scientists working on the frontline of technology through the development of an innovative, cost-effective X-ray generator. The x-ray generator will be used across the world in fields as diverse as medicine, illicit trafficking, explosive detection and environmental security. Located at the National Science Centre's Kharkiv Institute of Physics and Technology in Ukraine, the X-ray generator is only 15 meters in circumference and thus takes up significantly less space, allowing it to be placed in the basement of smaller buildings. Launched in 2003 and completed in 2016, this was one of the longest running projects under the SPS Programme [ref. 977982]. *This project was led by experts from Ukraine, and the Netherlands.*

PHYSICAL AND CYBER SAFETY IN WATER CRITICAL INFRASTRUCTURE

This Advanced Research Workshop aimed to increase the awareness of the cyber related risks that pose threats to current and future water utilities and services, to share experiences from leading utility managers and specialists, and to teach how to increase surveillance, preparedness, as well as crisis minimisation if everything else fails. The event created a broad knowledge base,to increase the stakeholders awareness of threats and provided a platform of cooperation for the experts and decision makers from different countries [ref. G5495]. *This activity, which took place in Oslo, Norway in June 2018, was led by experts from Ukraine and Norway.*