NATO OTAN

The NATO Science for Peace and Security Programme

CountryFlyer 2022

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Developing Practical Cooperation through Science

The NATO Science for Peace and Security (SPS) Programme is open to scientists and experts from Colombia.

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.

COLOMBIA

NATO cooperates with a number of countries that are not part of its regional partnership frameworks. Often referred to as "Partners across the Globe", these countries develop cooperation with NATO in areas of mutual interest - including Emerging Security Challenges - and some contribute actively to NATO operations either militarily or in some other form.

In December 2016, discussions with Colombia began in order to develop an Individual Partnership and Cooperation Programme (IPCP) to set out priority areas for dialogue and cooperation. This first IPCP was agreed in May 2017. The objectives of the partnership are to develop common approaches to global security challenges such as **Cyber Security**, **Maritime Security**, and **Counter-Terrorism and its links to organised crime**; to support **peace and security efforts including human security**; to promote the role of **women in peace and security**; and to **build the capacities and capabilities of the Colombian Armed Forces**.

Cooperative Activities

The SPS Programme is open to all activities with Colombia in line with the political guidance from Allies in the form of the 2012 SPS Key Priorities and the 2013 Overarching Guidelines.

www.nato.int/science

COUNTER-TERRORISM LESSONS FROM MARITIME PIRACY AND NARCOTIC INTERDICTION

This three-day Advanced Research Workshop (ARW), gathered 30 policymakers, practitioners, and academics from fifteen NATO member states and two partner nations. Participants engaged in intensive high-level discussions focusing on methods to protect critical maritime infrastructure, such as ports, supplies, and personnel from terrorist attacks. Presentations and roundtables also addressed the human and social factors that contribute to the defence against terrorism. The discussions enhanced the cooperation between maritime security experts across four continents. By sharing knowledge from diverse national perspectives and research communities, the workshop facilitated the transmission of lessons learned from counter-piracy and counter-narcotic operations to formulate recommendations for best practices, and technological innovations to manage seaborne terrorism. *This project, led by scientists and experts from Colombia and Denmark, was held in Copenhagen from 6 to 8 March 2019.* [ref. G5549].

CLARIFIER: FREQUENCY-AGILE RADAR-LIDAR CHIP FOR SURVEILLANCE MOVING PLATFORMS

LiDAR (Light Detection and Ranging) and RADAR (Radio Detection and Ranging) are the two remote sensing technologies that are instrumental to detect objects in an area and to create a recognized picture for situational awareness. They are considered the foundation for current innovation in the domains of autonomy, self-navigating (range finding, collision avoidance) and self-driving vehicles. Both LiDARs and radars exploit the reflection of emitted signals on objects to calculate their distance, size and characteristics. While LiDAR uses laser pulses and can be commonly used for short distance high-resolution maps, radar uses radio signals and can cover long distances. The Multi-Year Project (MYP) CLARIFIER was launched in 2021 and aims to develop an integrated transceiver combining a radar and a LiDAR sensor sharing the same photonic core. This solution provides a high level of mutual coherence between the two subsystems, enabling high-performance target detection, imaging, and sensor fusion. Hardware sharing, as well as the implementation in photonic integrated technology, will dramatically reduce size and encumbrance. Additionally, the combined operation of the two sensors will allow the reduction of power consumption, providing a promising solution for unmanned vehicles navigation and surveillance applications. *This project is led by scientists from Colombia, Italy and Slovenia. [ref. G5888].*