Israel has been actively engaged within the framework of the NATO Science for Peace and Security (SPS) Programme since 1996.

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.

Israel is an active partner in the SPS Programme with a number of ongoing activities. At present, the leading areas for cooperation include Advanced Technology, Counter-Terrorism, Cyber Defence and CBRN Defence. Below are some examples of ongoing and completed activities led by scientists and experts from Israel and NATO countries in the framework of the NATO SPS Programme.

**Cooperative Activities**

**CYBER DEFENCE SUMMER SCHOOL**

This SPS Advanced Study Institute (ASI) engaged young researchers from NATO and partner nations, comprising lectures on the latest developments in cyber defence. The advanced-level audience received training in cyber terrorism counter-measures with methods and techniques of theoretical computer science. The ASI, held in Marktoberdorf, Germany, is a yearly networking hub that helps to establish an international community of competent young researchers in the field of cyber defence. Editions of the Summer School supported by the SPS Programme were held in 2017, 2016 and 2014. *This Advanced Study Institute was led by Germany and Israel* [ref. 5315].

**www.nato.int/science**
COUNTERING TERRORISM AT THE BORDERS: COMMON CHALLENGES AND SOLUTIONS
This Advanced Training Course (ATC) provided a platform for high-level experts on counter-terrorism from NATO, EU, OSCE, UN, Israel and other partners in the MENA region to share insights and best practices on operational challenges in the implementation of counter-terror activities. The course, held in November 2017, helped to increase awareness on preventative measures and resilience against the threat of terrorism. It was composed of lectures, training and simulations. This course was led by Israel and Belgium [ref. 5391].

CLOUD-BASED ARCHITECTURE FOR BORDER SURVEILLANCE SYSTEMS
The project ‘Dynamic Architecture based on UAVs mOnitoring for border Security and Safety” (DAV OSS) was launched in April 2018 to develop a cloud-based architecture aimed at enhancing capabilities for border surveillance. The system will be based on an innovative sensors-network model, which better fits the need to protect large areas and is capable of integrating a large number of different sensors (cameras, thermal and noise sensors, unmanned systems, etc.). This project is led by experts from Israel and Italy [ref. G5428].

DEVELOPMENT OF NEW CHEMICAL SENSORS AND OPTICAL TECHNOLOGIES FOR FAST AND SENSITIVE DETECTION OF IMPROVISED EXPLOSIVE DEVICES
The objective of this project, launched in September 2018, is to develop a compact, portable system for the detection of explosives to be used by police and security officers. It will combine two independent sensor technologies: a chemical sensor and Multiphoton Electron Extraction Spectroscopy (MEES). The system will be able to take measurements from the same sample simultaneously, and provide a robust detection sensitivity while limiting false positive events. This project is led by Israel and Spain [ref. G5536].

AUTONOMOUS PLATFORM FOR SECURING MARINE INFRASTRUCTURES
This Multi-Year Project (MYP) aims to develop an underwater unmanned system to secure marine infrastructures from the threat of diving intruders and submerged mines. Researchers will investigate key aspects for the successful operation of autonomous underwater observation systems, i.e. object detection, positioning, and classification. They intend to develop practical system architectures and signal processing algorithms, and to deploy them using a marine platform on-board of an autonomous underwater vehicle (AUV). The platform will provide detection through an acoustic array, while the AUV will use its sonar system to enable detection verification of a submerged mine. This project is led by experts from Israel, Spain and Canada [ref. G5293].

COUNTERING TRAFFICKING OF WMD AND CBRN MATERIALS IN A MARITIME ENVIRONMENT
This workshop presented the latest developments in technological, legal, strategic and tactical aspects relevant to CBRN/WMD proliferation in a maritime environment. Held at the NATO Maritime Interdiction Operational training Centre in May 2018, it improved cooperation and fostered the exchange of views, expertise and awareness between NATO and partner nations on various aspects of the issue. This event was led by Israel and Greece [ref. 5469].