

## THE NETHERLANDS

### Cooperative Activities under the SPS Programme

Since NATO began offering science cooperation to partners in 1992, Dutch scientists and experts have had leading roles in 538 activities, and more joined various cooperative activities as participants.

Today, NATO science activities enable close collaboration on the two key priorities of **defence against terrorism** and **countering other threats to security** and are managed under the Science for Peace and Security (SPS)

Programme. SPS activities contribute to NATO's strategic objective of partnership, helping to connect scientists and experts from NATO countries with their counterparts from Partner and Mediterranean Dialogue countries through workshops, training courses, team collaborations and multi-year projects.



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All activities supported by the SPS Programme are approved by NATO nations on the basis of consensus.

### Examples of Activities

Investigators from the Netherlands, Denmark, Russia and Ukraine have been cooperating in the design of a super-conducting **“Integrated Spectrometers for Rapid Chemical Agents Detection”**. During the project, several technologies and methods have been developed and tested, and plans for the remainder of the project include a comprehensive test of the ability of the spectrometer to detect explosive substances, as well. One important use of the spectrometer will be onboard a heterodyne balloon mission launched to study the Earth's atmosphere. From such a platform, the integrated spectrometer can also be used to detect chemical warfare agents in the

atmosphere. The end-users in Russia include the Institute for Environment Remote Sensing in Moscow, the Central Aerology Observatory of the Russian Federal Service for Hydrometeorology and Environment Monitoring in Moscow, and the Space Research Institute of Moscow.  
[ref 981415]

As part of the project **“Detection of Dirty Bombs Using Nanosecond Neutron Analysis Technique”**, scientists from the Netherlands, Germany and Russia worked together to develop a mobile prototype device to detect dispersal devices for radioactive materials—so called RDDs or “dirty bombs”. Their approach was to use Nanosecond

Neutron Analysis for the simultaneous detection of both conventional explosives and nuclear materials. In the course of this project, gamma-ray, neutron and alpha particle detectors were procured; high-performance digital electronics were developed; and a portable neutron generator was obtained. After completion of the prototype production, the device was tested on a wide variety of potential components of dirty bombs, including explosives, radioactive and fissile materials. The prototype was successfully demonstrated to potential end-users. Possible applications include inspection of checked baggage at airports, landmine detection and cargo screening. [ref 981003]

Scientists from the Netherlands and Kazakhstan have worked to develop **“Integrated Water Resources Management for Wetlands Restoration”** in the Syrdarya River Delta and the northern Aral Sea in order to enhance environmental stability and the effective use of marine resources. The partners have gathered data on the past and present ecological conditions prevailing in these water bodies, and have adapted an integrated mathematical model, which was developed under a previous SPS project, for use with this data. They have also conducted surveys of the hydrological, ecological, soil and socio-economic conditions of the area, constructed GIS-based maps, and consolidated the information in the Aral Sea database. Preliminary work has also begun on hydraulic structures that can be used to regulate the wetlands. Among the end-users of this project are the Committee for Water Resources of Kazakhstan,

the ARAS Board of Construction Companies and authorities in the Kyzylorda and Aralsk municipalities. [ref 980986]

In addition to NATO-funded activities, the SPS Programme facilitates the development of nationally funded activities, such as the project **“Environmental Aspects of Military Compounds”**, led by the Netherlands, United States and Germany. Participants from 25 countries and several NATO agencies gathered at a three-day workshop to compare techniques and procedures in environmental management systems (EMS), to share experiences and successes in this field, and to establish a network of experts. The second phase consisted of three more workshops and finished in October 2008. Final outputs include recommendations for future training and information exchange; an EMS handbook and standards for NATO-deployed compounds; and an environmental protection annex to the standard NATO Operations Plan. Project participants hope to facilitate successful implementation of these outputs in the NATO organisation. [ref 983080]



Army Waste collection trailer at Johannes Post Barracks in Steenwijk (photo courtesy of Netherlands Ministry of Defence).