The Emerging Security Challenges Division

The NATO Science for Peace and Security (SPS) Programme




Annual Report 2015

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List of Abbreviations

ARW	Advanced Research Workshop
ASG	Assistant Secretary General
ASI	Advanced Studies Institute
ATC	Advanced Training Course
BIFEC	Basic Improvised Explosive Device Field Exploration Course
CBRN	Chemical, Biological, Radiological, and Nuclear
CEP	Civil Emergency Planning
CIAC	C-IED Awareness Course
C-IED	Counter-Improvised Explosive Devices
CL15	Capable Logistician 2015
CNSS	Committee on National Security Systems
CoE	Centre of Excellence
CT	Counter Terrorism
DCB	Defence Capacity Building
DEA	Data Exchange Agency
DHS S&T	Department of Homeland Security, Science and Technology Directorate
DI	Defence Investment
DPP	Defence Policy Planning
DSG	Deputy Secretary General
EADRCC	Euro-Atlantic Disaster Response Coordination Centre
EAPC	Euro-Atlantic Partnership Council
EEP	Enhanced Enduring Partnership
ENEA	Italian National Agency for New Technologies, Energy and Sustainable Economic Development
ENVSEC	Environment and Security Initiative
EOD	Explosive Ordnance Disposal
ERW	Explosive Remnants of War
ESCD	Emerging Security Challenges Division
EU	European Union
EC	European Commission
IBAN	International Board of Auditors NATO
ICI	Istanbul Cooperation Initiative

IED	Improvised Explosive Device
IMS	International Military Staff
IO	International Organisation
IPAP	Individual Partnership Action Plan
IPCP	Individual Partnership Cooperation Programme
IS	International Staff
ISEG	Independent Scientific Evaluation Group
JAF	Jordanian Armed Forces
JWGSEC	Joint Working Group on Scientific and Environmental Cooperation
MAP	Membership Action Plan
MD	Mediterranean Dialogue
MENA	Middle East and North Africa
METU	Middle East Technical University
MIT LL	Massachusetts Institute of Technology Lincoln Laboratory
MoU	Memorandum of Understanding
MYP	Multi-Year Project
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organisation
NCIA	NATO Communications and Information Agency
NICS	Next-Generation Incident Command System
NIG	Network Infrastructure Grant
NIMS	National Incident Management System
NUC	NATO-Ukraine Commission
NSPA	NATO Support Agency
OPS	Operations Division
OSCE	Organization for Security and Co-operation in Europe
PaG	Partners across the Globe
PASP	Political Affairs and Security Policy Division
PCSC	Partnerships and Cooperative Security Committee
PDD	Public Diplomacy Division
PTEC	Partnership Training and Education Centre

REC	Regional Environment Centre for Central and Eastern Europe
RPPB	Resource Policy and Planning Board
SAM	Surface to Air Missile
SESU	State Emergency Service of Ukraine
SG	Secretary General
SHAPE	Supreme Headquarter Allied Powers Europe
SPS	Science for Peace and Security Programme
STANDEX	Stand-off Detection of Explosives
STO	NATO Science and Technology Organisation
TEIN	Trans-Eurasia Information Network
TUBITAK	Scientific and Technological Research Council of Turkey
TUM	Technical University of Moldova
UAV	Unmanned Aerial Vehicles
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNMAS	United Nations Mine Action Service
UNSCR	United Nations Security Council Resolution
UNWOMEN	United Nations Entity for Gender Equality and the Empowerment of Women
WMD	Weapons of Mass Destruction

Foreword by Ambassador Sorin Ducaru

In the past year, the SPS Programme has continued to represent an important tool for NATO's practical cooperation with its partner countries. The SPS Programme has proved itself flexible and adaptable in the changing security environment and able to respond effectively to the political guidance provided by the Allies as well as to new challenges affecting the Alliance.

Addressing the demand for enhanced cooperation with partners in the framework of the Defence Capacity Building (DCB) Initiative, the SPS Programme continued implementation of its ongoing successful flagship projects with Jordan: support for the implementation of the national cyber defence strategy and enhancement of Jordan's C-IED capacity, as well as supporting several new activities. Responding to the requests contained in the DCB package for Moldova, the SPS Programme provided support for the development of Moldovan cyber defence capabilities through provision of training and support for the creation of a cyber defence laboratory. Under the DCB package for Iraq, a capacity-building project in the field of countering improvised explosive devices (IED) has been developed.

CONTINUOUSLY ADAPTING THE SPS PROGRAMME TO ALLIES' POLITICAL PRIORITIES AND PROMOTING MANAGERIAL EFFICIENCY, TRANSPARENCY AND ACCOUNTABILITY.

Intensified cooperation with Ukraine resulted in launching new top-down initiatives. Projects to support humanitarian demining and to develop national telemedicine systems were tailored to Ukrainian needs and requirements. Additionally, the Partnerships and Cooperative Security Committee (PCSC) met in the NATO-Ukraine Commission (NUC) format for the first time, underlining the importance of SPS in the close NATO-Ukraine collaboration.

The International Board of Auditors of NATO (IBAN) presented the results of the comprehensive performance and financial audit for the SPS Programme in 2015. The audit report was discussed by the North Atlantic Council (NAC) in April and its conclusions confirmed that the SPS Programme is well-managed and in line with NATO strategic objectives. This independent assessment underlined the success of the SPS Programme reform process undertaken in the previous years in establishing an efficient, transparent, and accountable work process.

All high-visibility SPS activities have been carried out in line with Allied guidance to further strengthen the public diplomacy value of the SPS Programme. Furthermore, SPS Information Days took place in Serbia, Bulgaria, Italy, Israel, the Republic of Korea, and Tajikistan.

I am also proud to report that, as a young scientist, the 2015 Nobel Prize winner for Chemistry, Prof. Aziz Sancar, received a NATO Science Fellowship to pursue his career in DNA research. He joins the long list of Nobel Prize winners who have benefitted from NATO grants, further highlighting the tangible impact of the SPS Programme.

In 2015, the SPS Programme was implemented in line with the Overarching Guidance and the SPS 2015 Work Programme as agreed by Allies. This allowed us to further strengthen our cooperation with partner countries. I am sure that 2016 will bring even more opportunities to foster SPS collaboration with NATO partners and to further develop the Programme.

Ambassador Sorin Ducaru

Assistant Secretary General

NATO Emerging Security Challenges Division

Foreword by the Senior SPS & Partnership Cooperation Advisor

The Science for Peace and Security (SPS) Programme is one of NATO's most important partnership tools, providing support to NATO's political framework by developing and implementing joint collaborative activities with all partner countries.

In 2015, the SPS Programme successfully implemented an increasing number of new high-visibility flagship activities with a strong public diplomacy impact. The focus was placed particularly on projects developed in cooperation with Ukraine and other Eastern and Balkan partners, as well as with the Mediterranean Dialogue countries. The thematic distribution of these activities, being in line with the SPS Key Priorities and the NATO strategic objectives, has been very well balanced. Furthermore, the SPS Programme demonstrated its ability to swiftly adapt to new requirements by addressing the partnership initiatives launched during the NATO Summit in Wales in 2014. New SPS activities were fostered in the framework of the Defence Capacity Building Initiative in the fields of cyber defence and Counter-IEDs.

Additionally, a special emphasis was placed on the implementation of the IBAN recommendations. Addressing the outcomes of the audit, the Programme further leveraged the public diplomacy value of concrete results achieved in partner countries as well as NATO nations. 2015 saw a more strategic use of social media by the SPS Programme and growing mainstream media coverage of SPS activities.

BUILDING SCIENTIFIC & EXPERT NETWORKS WITH PARTNERS TO PROMOTE PRACTICAL COOPERATION

Furthermore, the SPS Programme continued to closely coordinate its activities both with other NATO Divisions, and other NATO Bodies as well as with international stakeholders with the aim to increase its efficiency and to create synergies.

The higher rate of approved SPS activities is a testimony to SPS Programme's flexibility and adaptability in a changing political and security landscape. The Programme has clearly demonstrated its ability to effectively respond to Allied and partner countries' demands through practical cooperation in a timely manner, particularly in the area of security related civil science and technology.

This Annual Report presents you with a detailed overview of the work and main achieve-ments of the SPS Programme in 2015. I hope you will find it informative.

Dr. Deniz Beten

Senior SPS & Partnership Cooperation Advisor

Emerging Security Challenges Division

Executive Summary

The NATO Science for Peace and Security (SPS) Programme is one of the most relevant, effective and flexible partnership tools of NATO. The Programme addresses the dimensions of Science, Partnerships, Security, and Beyond. In the spirit of cooperative security, SPS provides concrete, practical opportunities for cooperation within NATO's wide network of partner countries based on security-related civil science, technology, innovation and beyond. The SPS Programme is guided by a set of key priorities that are aligned with NATO's strategic objectives. Accordingly, the Programme promotes cooperation, scientific research and innovation to address emerging security challenges, such as cyber defence, counter-terrorism, or defence against CBRN agents; to support NATO-led missions and operations; to support the development of security-related advanced technology; and to address human and social aspects of security. The SPS Programme also responds and is adapted to the changing security context to support NATO's strategic objectives and political priorities in its relations with partners.

In 2015, the SPS Programme received **174 applications and Allies approved a total of 48 new SPS activities**. In line with the political guidance received from Allies, an increased number of multi-year projects and top-down activities[1] with a high political, strategic and public diplomacy impact were initiated in 2015; almost half of all new activities are multi-year projects, and the proportion of top-down activities approved has increased from 30% in 2014 to 42% in 2015. New SPS activities in 2015 engaged a total of 20 different partners and highlighted the diversity of SPS Key Priority areas addressed jointly with partners. This report provides key statistical information on these activities and their contribution to NATO's strategic objectives. A complete overview of newly approved activities in 2015 can be found in Annex 2. In the course of 2015, the Partnerships and Cooperative Security Committee (PCSC) met to discuss SPS on 12 formal occasions and the Independent Scientific Evaluation Group (ISEG) convened three times to review a total of 88 applications that had passed the SPS eligibility screening.

Results of the SPS Reform process & Implementation of the IBAN Recommendations: Over the last year, the work of the SPS Programme was guided by the SPS Work Programme 2015, aligned with the SPS Overarching Guidelines adopted by Allies in 2015 and in line with NATO's strategic objectives. 2015 also saw the implementation and results of the SPS reform process of the past five years. A Special Performance and Financial Audit of the SPS Programme was undertaken by the International Board of Auditors of NATO (IBAN) in the second half of 2014, upon the explicit request of ASG/ESCD. The IBAN Report on the SPS Programme was finalized and circulated to Allies in February 2015 and following the Resource Policy and Planning Board (RPPB) recommendation of March 2015, the NAC noted the IBAN and RPPB report on 30 April 2015. The report concluded that the SPS Programme was well managed and aligned with NATO's Strategic Objectives and provided three recommendations to further streamline the procedures of the SPS Programme and improve performance:

1. Nations to consider reducing the level of scrutiny afforded to even the smallest SPS projects in the interest of efficiency & effectiveness
2. Nations to consider adequate, fair & proportional representation of Allied experts & scientific disciplines on the ISEG
3. SPS Programme to formalize a process to systematically analyse results of project evaluations against SPS & Partnership objectives

1 A top-down application is one that is initiated and developed by NATO International Staff – the SPS and ESCD staff along with support from other NATO Divisions and Bodies – with Allies and/or partner delegations.

These recommendations were discussed with Allies informally at an SPS Away Day at the NATO Support and Procurement Agency (NSPA) and in formal PCSC meetings, and a way forward for their implementation was agreed in November 2015.

Enhancing NATO's Partnership Priorities & Responding to Partners' Needs: Throughout 2015, the SPS Programme has demonstrated its flexibility and adaptability to changing political priorities and the strategic context. The SPS Programme has provided opportunities for practical cooperation to enhance various NATO-wide partnership initiatives and priorities, such as the DCB Initiative, and engaged with strategic partners along the eastern and southern flank of the Alliance, as well as with important partners across the globe, including through the enhanced enduring partnership with Afghanistan. The development of new SPS activities has paid close attention to the priority areas for scientific cooperation of NATO partners as outlined in their IPAP or IPCP documents.

Practical Contributions to the Implementation of the DCB Packages for Jordan, the Republic of Moldova & Iraq: Addressing the request of the Jordanian authorities outlined in the DCB package for Jordan, the SPS Programme supported a training course for the C-IED experts of the Jordanian Armed Forces in 2015. In the context of the DCB package for the Republic of Moldova, an SPS multi-year project will provide Moldova with a cyber laboratory that will later serve as a training centre mainly for the civil servants of the state defence and security institutions. Following the approval of the DCB package for Iraq, a project aimed at building capacity for Iraq in the field of countering IEDs has been developed and was approved by Allies in early 2016. Additional SPS activities in support of the DCB Package are under development.

Strong cooperation with Ukraine and Eastern partners. In line with the political guidance received by Allies in April 2014 and reiterated at the Wales Summit, all SPS cooperation with Russia remained suspended and no new SPS activities with Russian participation were launched. At the same time, civil, security-related scientific cooperation with Ukraine and Eastern Partners was intensified. A total of 13 new activities with Ukraine were approved in 2015, including top-down projects with a strong strategic and political impact such as an initiative to support humanitarian demining in Ukraine. As in 2014, Ukraine was again the largest beneficiary of the SPS Programme.

Engaging Partners in practical cooperation: Through its work in 2015, the SPS Programme has been able to reach out to many important partners. The Programme continued to involve Mediterranean Dialogue (MD) partners and countries in the Balkans in meaningful collaboration; it engaged Partners across the Globe in practical cooperation; and Allies agreed to extend SPS-funding for the SILK Afghanistan Programme until the end of June 2016 as part of the Enhanced Enduring Partnership with Afghanistan.

Fostering Regional Cooperation: As in previous years, the SPS Programme supported regional initiatives in 2015. For instance, a top-down flagship project to develop an international civil emergency planning pilot in the Western Balkans was approved in 2015. These projects have the added value of addressing transboundary security issues, forging scientific and expert networks across the region and laying the foundation for future cooperation among the participants.

SPS Contributions to NATO Exercises: In 2015, SPS activities formed part of two NATO exercises: Exercise Capable Logistician 2015 (CL15) allowed experts in a SPS-funded workshop to observe the exercise and provide recommendations on smart energy in the military. During the EADRCC field exercise Ukraine 2015 in Lviv, the capabilities of the SPS multi-year project to develop a multinational Telemedicine system were, for the first time, tested live in a field exercise.

Lasting impact of completed SPS projects: A total of 17 SPS multi-year projects were completed in 2015. These projects achieved tangible results and left a lasting impact on the international scientific community, local populations and governments in partner countries by addressing a variety of security concerns. These projects supported essential capacity-building in NATO partner countries, helped to build scientific networks, brought tangible benefits for the end-users of the projects and trained many young scientists.

NATO-wide coordination with key stakeholders: Coordination with other NATO bod-ies and Divisions was of vital importance for the successful implementation of the SPS Programme. Given the cross-cutting nature of its work, the SPS Programme has developed fruitful cooperation with the STO and the Office of the Chief Scientist. The SPS Working Group, an advisory and coordinating body that brings together relevant stakeholders from various NATO Divisions and bodies, met in May 2015. The SPS Programme also continued to consult with and draw on the expertise of other NATO Divisions, Agencies and Bodies, as well as with the NATO Centres of Excellence to develop high-quality activities.

Fruitful cooperation with International Organisations: Engagement with other IOs was deepened in 2015, including in new areas of focus, such as border security. The SPS Programme worked closely with the OSCE on several activities, strengthening existing lines of communication. Adopting a multi-organisational approach, a SPS Workshop organised in 2015 brought together experts from NATO, OSCE and the EU to discuss approaches to crisis management. A fruitful and constructive cooperation with the United Nations continued throughout 2015 and UN experts were invited to participate in several SPS initiatives. Finally, NATO's partnership with ENVSEC came to an end in 2015

Enhanced Public Diplomacy Efforts: In 2015, the SPS Programme successfully strengthened its public diplomacy profile and maintained a high level of cooperation with the Public Diplomacy Division (PDD). Public Diplomacy highlights of 2015 included the award of the Nobel Prize in Chemistry to Prof. Aziz Sancar, a former NATO Science Fellowship grantee, as well as the inclusion of SPS components in Exercise CL15 in Hungary and the EADRCC 2015 field exercises. The SPS Programme strengthened its social media presence and adopted a more strategic approach to the management of its Twitter Account (@NATO_SPS). The SPS website remained a focal point for disseminating information and updates about the programme and a total of 18 web stories were published throughout the year. 2015 also marked an increase in mainstream media coverage of SPS activities, including in outlets such as Bloomberg Business, the New York Times and the Washington Post. Moreover, six SPS Information Days were organised in different NATO and partner countries.

SPS Work Programme 2016 provides guidance for the way ahead: In 2016, the implementation of the SPS Programme will be guided by the SPS Work Programme 2016 as well as by Allied political guidance resulting from high-level meetings such as the NATO Summit in Warsaw and Ministerials. The SPS Programme will continue to develop new cooperative activities in support of NATO's strategic objectives, taking into consideration the changing security environment. The programme will also continue to implement ongoing projects and flagship initiatives and further improve and streamline its project management and working procedures, including through the implementation of the IBAN Recommendations of the SPS Financial and Performance Audit. At the same time, the SPS Programme will enhance its public diplomacy activities.

CHAPTER I - INTRODUCTION
The SPS programme

The NATO Science for Peace & Security (SPS) Programme promotes security-related practical cooperation to address emerging security challenges and their impact on international security. It connects scientists, experts and officials from Alliance and partner countries, who work together to address these challenges. The SPS Programme provides funding and expert advice for security-relevant activities in the form of workshops, training courses, and multi-year research projects.

The SPS Programme also helps to promote the political dimension of NATO in terms of shared values and support to civil society. It provides the Alliance with separate, non-military communication channels and brings together experts from NATO countries with those from partner countries, often in situations or regions where other forms of dialogue more directly focused on defence and security are difficult to establish. Accordingly, it enables NATO to become actively involved in such regions, often serving as the first concrete link between NATO and a new partner. Furthermore, the SPS Programme promotes dialogue and regional cooperation among partners, including those for whom direct engagement or dialogue is difficult.

All SPS Programme activities contribute to the Alliance's strategic objectives as defined in the 2010 Strategic Concept and as set out in new NATO Partnership Policy adopted in Berlin in 2011. Today, the Programme promotes collaboration and cooperative security based on these core dimensions that define its identity:

Science

The first aspect is *Science*. The SPS Programme helps to foster research, innovation, and knowledge exchange in an effort to address mutual security challenges. As a brand, SPS has a vast network reaching out to hundreds of universities and institutions across the world.

Partnership

The second aspect is *Partnership*. The collaborative framework of the Programme brings together scientists, experts and policy makers from Allied and Partner countries to address today's security challenges together. Moreover, SPS is well known as a partnership tool that is available to all partners – proving that practical cooperation is achievable across political barriers through scientific exchange.

Security

The third aspect is the fundamental link to *Security*. According to the scope of the SPS Programme and guidance, all projects developed under SPS must have a security dimension. This is also reflected in the SPS Key Priorities developed by Allies.

And beyond…

The SPS Programme's primary purpose is to strengthen NATO's partnership policy, and following a strategic assessment of the SPS Programme in 2013, it will also include projects beyond scientific cooperation, while preserving an important scientific dimension of the Programme.

Focus

The SPS Programme focuses on a wide range of non-traditional risks and challenges including terrorism, defence against chemical, biological, radiological, and nuclear (CBRN) agents, cyber security threats, energy security and environmental security concerns, as well as human and social aspects of security, in particular the implementation of the United Nations Security Council Resolution (UNSCR 1325) on women, peace and security.

The SPS Programme aims to link civil society to NATO through activities that address global security challenges. Civil actors – researchers, academics, government experts – have an important role to play in helping the Alliance identify, understand and respond to contemporary vulnerabilities and threats. Civil society is integral to addressing these threats, and NATO aims to ensure that funding and support are available for collaborative activities that address NATO's security objectives while promoting cooperation and partnership. SPS activities also enjoy a high degree of publicity. SPS activities are publicized on the NATO and SPS website, through the SPS Twitter Account (@NATO_SPS), videos produced in cooperation with NATO TV, local and national mainstream media and through events such as SPS Information Days.

Grant mechanisms

The SPS Programme supports collaboration through four established grant mechanisms: Multi-Year research Projects (MYP), Advanced Research Workshops (ARW), Advanced Training Courses (ATC) and Advanced Study Institutes (ASI). Interested applicants must develop a collaborative activity that fits within one of these formats. Moreover, all activities funded within the framework of the SPS Programme must follow the rules and regulations outlined in the SPS Programme Management Handbooks.

Partnership frameworks

The SPS Programme supports collaboration between NATO and partner scientists and experts from countries that are associated with the Alliance through the Euro-Atlantic Partnership Council (EAPC), the Mediterranean Dialogue (MD), the NATO-Ukraine Commission (NUC), the Istanbul Cooperation Initiative (ICI) and Partners across the Globe (PaG). SPS activities take into account the priorities and preferences of partners, in particular those outlined in approved partnership documents including, Individual Partnership Action Plans (IPAPs), Individual Partnership Cooperation Programmes (IPCPs) and Membership Action Plans (MAPs).

Key priorities

All activities funded within the SPS Programme must address one or more of SPS Key Priorities, and have a clear link to security. The priority areas for the SPS Programme focus principally on emerging security challenges such as counter-terrorism, energy security, defence against CBRN agents, cyber defence etc. The SPS Key Priorities are based on NATO's Strategic Concept agreed by Allies at the Lisbon Summit in November 2010, and the Strategic Objectives of NATO's Partner Relations agreed in Berlin in April, 2011. The current SPS Key Priorities are:

1. FACILITATE MUTUALLY BENEFICIAL COOPERATION ON ISSUES OF COMMON INTEREST, INCLUDING INTERNATIONAL EFFORTS TO MEET EMERGING SECURITY CHALLENGES

a. COUNTER-TERRORISM

- Methods for the protection of critical infrastructure, supplies and personnel;
- Human factors in the defence against terrorism;
- Detection technologies against the terrorist threat for explosive devices and other illicit activities;
- Risk management, best practices and technologies in response to terrorism.

b. ENERGY SECURITY

- Innovative energy solutions for the military; battlefield energy solutions; renewable energy solutions with military applications;
- Energy infrastructure security;
- Maritime aspects of energy security;
- Technological aspects of energy security.

c. CYBER DEFENCE

- Critical infrastructure protection, including sharing of best practices, capacity building and policies;
- Support in developing cyber defence capabilities, including new technologies and support to the construction of information technology infrastructure;
- Cyber defence situation awareness.

d. DEFENCE AGAINST CBRN AGENTS

- Methods and technology regarding the protection against, diagnosing effects, detection, decontamination, destruction, disposal and containment of CBRN agents;
- Risk management and recovery strategies and technologies;
- Medical countermeasures against CBRN agents.

e. ENVIRONMENTAL SECURITY

- Security issues arising from key environmental and resource constraints, including health risks, climate change, water scarcity and increasing energy needs, which have the potential to significantly affect NATO's planning and operations;
- Disaster forecast and prevention of natural catastrophes; Defence related environmental issues.

2. ENHANCE SUPPORT FOR NATO-LED OPERATIONS AND MISSIONS

- Provision of civilian support through SPS Key Priorities;
- Provision of access to information through internet connectivity as in the SILK Afghanistan Programme;
- Cultural and social aspects in military operations and missions;
- Enhancing cooperation with other international actors.

3. ENHANCE AWARENESS ON SECURITY DEVELOPMENTS INCLUDING THROUGH EARLY WARNING, WITH A VIEW TO PREVENTING CRISES

a. SECURITY-RELATED ADVANCED TECHNOLOGY

- Emerging technologies including nanotechnology, optical technology, micro satellites, metallurgy and the development of UAV platforms.

b. BORDER AND PORT SECURITY

- Border and port security technology;
- Cross border communication systems and data fusion;
- Expert advice and assessments of border security needs and best practice.

c. MINE AND UNEXPLODED ORDNANCE DETECTION AND CLEARANCe

- Development and provision of advanced technologies, methodologies and best practice;
- Solutions to counter improvised explosive devices (IED).

d. HUMAN AND SOCIAL ASPECTS OF SECURITY RELATED TO NATO'S STRATEGIC OBJECTIVES

4. ANY PROJECT CLEARLY LINKED TO A THREAT TO SECURITY NOT OTHERWISE DEFINED IN THESE PRIORITIES MAY ALSO BE CONSIDERED FOR FUNDING UNDER THE SPS PROGRAMME. SUCH PROPOSALS WILL BE EXAMINED FOR LINKS TO NATO'S STRATEGIC OBJECTIVES.

CHAPTER II
SPS Priorities and main achievements in 2015

In 2015, the implementation of the SPS Programme was guided by the SPS Work Programme 2015 and the SPS Overarching Guidelines of 2013. As stipulated in these key documents, the SPS Programme in 2015 focussed increasingly on the implementation of top-down initiatives with high political and strategic impact.

The Programme further responded to all strategic aims put forward in the SPS Work Programme 2015, including:

- To strengthen cooperation with countries from the MENA region, Ukraine and Eastern partners while not launching any new SPS activities with Russia;
- To support the DCB Initiative and focus cooperation on partners identified as political priorities;
- To foster regional cooperation and engage with International Organisations;
- To address the results and conclusions of the SPS Performance and Financial Audit.

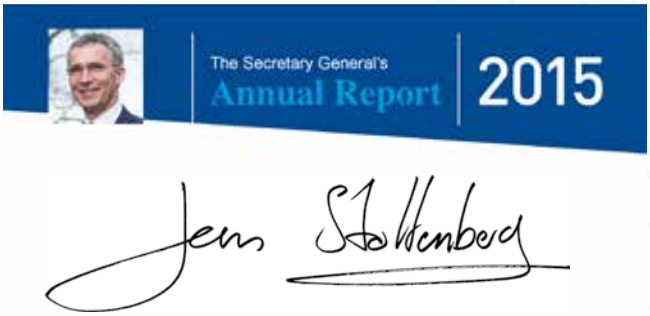
The SPS Programme also delivered key strategic activities outlined in the work programme, including the humanitarian demining project in Ukraine, SPS activities in the field of cyber defence as part of Moldova's DCB package, as well as several activities on CBRN Defence, Counter-Terrorism, UNSCR 1325, energy security and advanced technologies. Moreover, steps were taken to develop a follow-on project to the successful STANDEX (Standoff Detection of Explosive Devices in real time in a mass transit environment) programme and a number of SPS Information Days in NATO nations and partner countries were organised in 2015. The SPS Programme also sought to enhance its public diplomacy efforts, including through the SPS Twitter Account, to raise the visibility of flagship activities.

In particular, the SPS Programme was able to successfully meet its priorities and achievements in the following key areas throughout 2015:

- First, 2015 saw the positive results of the five-year reform process of the SPS Programme which cumulated in the **implementation of the conclusions and recommendations of the SPS Financial and Performance Audit**. The success of the reform process was also reflected in the high approval rating of SPS activities in the PCSC and an increasing number of top-down multi-year projects.
- Second, newly approved SPS activities in 2015 show a **strong alignment with NATO's political, strategic and partnership priorities** and the flexibility of the SPS Programme to adapt to the changing strategic context of the Alliance. In line with Allied political guidance, the SPS Programme maintained its high level of cooperation with Ukraine and Eastern Partners; it made concrete contributions to the implementation of the Defence Capacity Building (DCB) Packages; it engaged NATO's partners across the globe in practical cooperation; it continued to involve Mediterranean Dialogue partners and the Balkan countries in meaningful, often regional collaboration; and Allies agreed to extend SPS-funding for the SILK Afghanistan Programme until June 2016 as part of the Enhanced Enduring Partnership with Afghanistan.
- Third, the work of the SPS Programme was showcased in and **contributed to NATO exercises**. Exercise Capable Logistician 2015 (CL15) in Hungary allowed experts to provide recommendations on smart energy in the military. The EADRCC Field Exercise Ukraine 2015 in Lviv, Ukraine, presented an opportunity for the capabilities of the SPS Telemedicine project to be tested

live in a field exercise. The event was also attended by NATO Secretary Jens Stoltenberg and the President of Ukraine, Petro Poroshenko. The involvement of SPS activities in these exercises provided for excellent public diplomacy opportunities and resulted in video clips, social media output and mainstream media coverage.

- Fourth, 2015 also demonstrated the **tangible, lasting impact of SPS multi-year projects** on the international scientific community, local populations and governments in partner countries in addressing a variety of security concerns. Many of the 17 SPS projects that were completed in 2015 supported essential capacity-building in NATO partner countries, helped to build scientific networks brought tangible benefits for the endusers, and trained many young scientists.



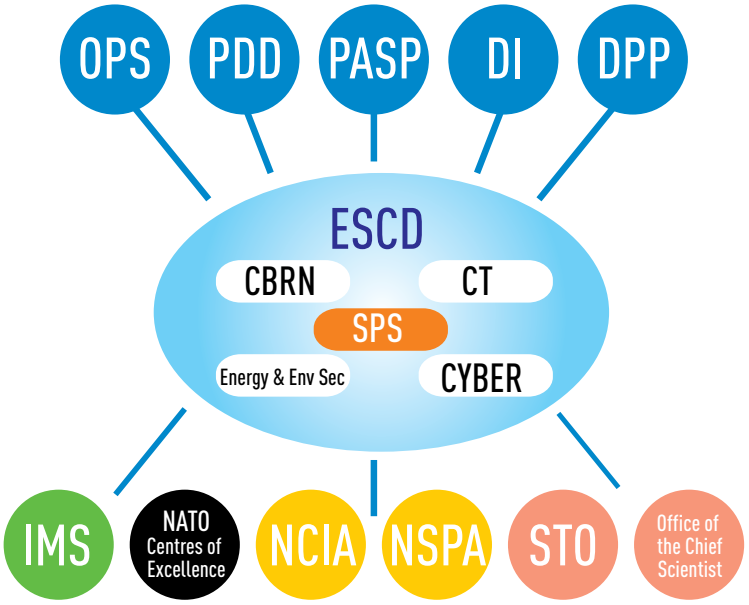
These achievements have been recognized and acknowledged NATO-wide. In particular, the **Annual Report of the NATO Secretary General** for 2015 provides an ample quantitative as well as qualitative reflection of the results and achievements of the SPS Programme in 2015. In a dedicated subchapter entitled "Managing Security Through Science", the report introduces the SPS Programme, covers a variety of SPS activities and demonstrates in particular the contribution of the SPS Programme to the overall partnership priorities of the Alliance. Throughout the report, SPS activities are highlighted as examples for practical collaboration, including in the field of Women, Peace and Security and as part of NATO's support to Ukraine[2]. The Annual Report of the NATO Science & Technology Organization (STO) also cross-references the SPS Programme.

As in previous years, **coordination with other NATO bodies and divisions** was of vital importance for the successful implementation of SPS Programme. Regular consultation with a variety of stakeholders helps to avoid duplication, creates synergies and seeks complementarities.

For instance, the SPS Programme has developed fruitful cooperation with the STO and the Office of the Chief Scientist. This cooperation comprises programmatic coordination, including the participation of two STO representatives in the ISEG, as well as, on a case by case basis, practical collaboration on concrete SPS activities.

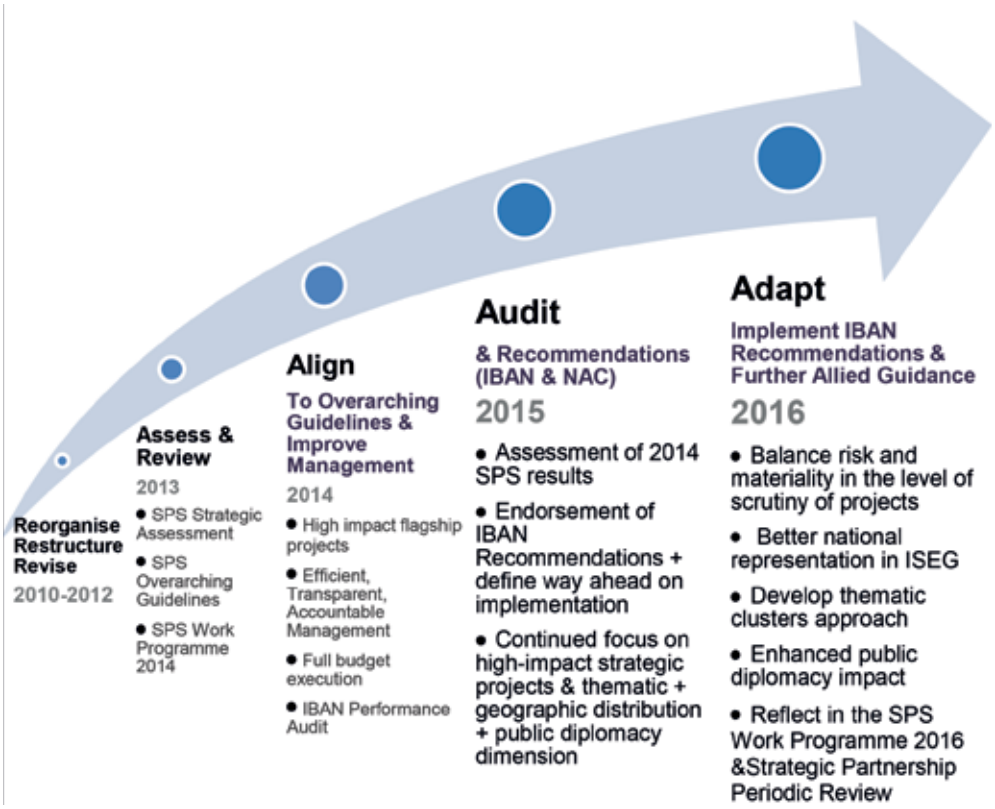
The SPS Programme also coordinates with and consults other NATO Divisions. The SPS Working Group meets on an Annual basis and convened in May 2015. This advisory and coordinating body brings together the relevant actors from ESCD, PASP, PDD, DI, DPP, OPS/CEP, IMS, the Office of the Chief Scientist, STO and other relevant bodies to inform and provide recommendations on potential new SPS activities. Outside this formal setting, the SPS Programme regularly works together with and draws on the expertise of other NATO Divisions, NATO Agencies and Bodies, as well as with the NATO Centres of Excellence to develop high-quality (top-down) SPS projects (see figure on opposite page).

2 The full report is available on www.nato.int/nato_staticfl2014/assets/pdf/pdf_2016_01/20160128_SG_AnnualReport_2015_en.pdf



Results of the SPS Reform Process & Implementation of the IBAN Recommendations

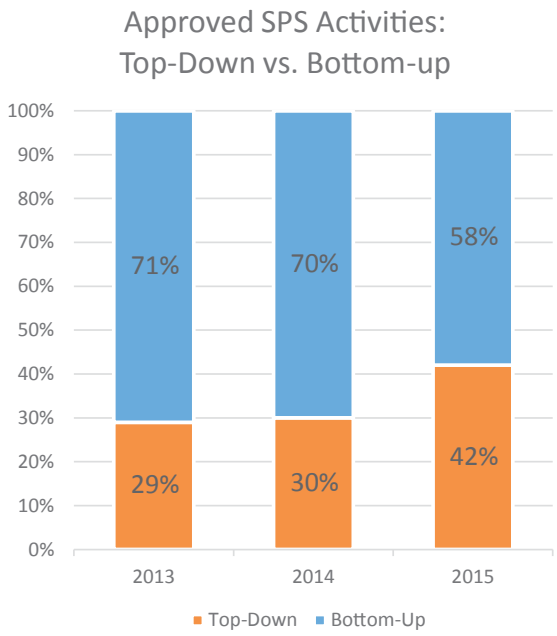
Over the past five years, the SPS Programme underwent a thorough reform process. Following a comprehensive, strategic review, the SPS Overarching Guidance was approved in 2013. These guidelines clarify the scope, policy objectives, and working procedures of the Programme which are reflected in the annual SPS Work Programme and its Annual Report. As a result of these reform measures, the SPS Programme today is more efficient, transparent and accountable, and has a better focus and strong strategic orientation towards top-down flagship activities with a high political, strategic and public diplomacy impact. SPS activities are also better aligned with NATO's objectives and correspond to needs and priorities for cooperation with



NATO partners. In that regard, the SPS Programme clearly has demonstrated its flexibility and adaptability to the changing political and strategic context.

Through its work in 2015, the SPS Programme demonstrated the positive effects of this reform process, its stronger alignment with NATO's strategic objectives and its improved and streamlined management procedures.

Moreover, in line with the SPS Overarching Guidance of 2013 and the SPS Work Programme 2015, the number of top-down projects with a strong strategic and political impact increased markedly. While in 2013 about 29% of all newly approved SPS activities were top-down proposals, this figure rose slightly to approximately 30% in 2014. In 2015, the proportion of top-down activities increased significantly, and for the first time represented more than two fifths (42%) of all SPS activities approved. At the same time, the approval rate of projects presented to the PCSC has increased steadily over the same time period, showing the better alignment of the SPS Programme with NATO's strategic objectives and political and partnership priorities.



In order to systematically assess the impact of the SPS reform measures, ASG/ESCD requested a Performance and Financial Audit of the SPS Programme by the International Board of Auditors for NATO (IBAN) in the second half of 2014. The IBAN Audit report was finalized and circulated to Allies in February 2015. The report concluded that the SPS Programme is well managed, aligned with NATO's Strategic Concept, that SPS projects are subject to rigorous project management and that the results of projects are reported to its governing body. The IBAN also noted that the SPS Programme collaborates with the wider NATO security, science and partnership community and has a Programme of Work which is closely screened and monitored. The IBAN provided three recommendations for the way ahead to further streamline the procedures of the SPS Programme and improve performance:

On 31 March 2015, the Resource Policy and Planning Board (RPPB) recommended

IBAN recommendations

1. The IBAN recommends that Nations consider balancing risk and materiality by reducing the level of scrutiny afforded to even the smallest SPS projects in the interest of efficiency and effectiveness.
2. The IBAN recommends that Nations consider adequate, proportional and fair representation of Allied experts and scientific disciplines on the ISEG in accordance with the new SPS Structure and ISEG nomination documents
3. The IBAN recommends the SPS Programme formalizes a process for systematically analysing the results of SPS project evaluations against SPS Programme and Partnership objectives and to use this feedback as the basis for planning future projects.

that the Council note the IBAN report along with the RPPB report and one month later, on 29 April 2015, ASG/ESCD briefed the NAC about the SPS Programme. His presentation focused on Programme implementation and the main SPS achievements in 2015, addressed the public diplomacy dimension of the Programme, and provided an overview to the Programme's work in 2015. The IBAN presented the results

and recommendations of the IBAN Financial and Performance Audit of the SPS Programme to Allies which were very well received and the NAC noted the IBAN and RPPB reports on 30 April 2015. In the spirit of transparency, the NAC also agreed to make the reports available to the public on the NATO website [3].

On 7 July 2015, the SPS Programme organised a **PCSC Away-Day to the NATO Support and Procurement Agency (NSPA)** to provide an update on ongoing SPS projects with NSPA participation, to hold initial discussions about the conclusions and recommendations of the SPS IBAN Audit, and to have an informal exchange of views on their implementation. Following further discussions in the PCSC, a Working Paper on the Implementation of the IBAN Recommendations was endorsed by Allies in November 2015.

By swiftly endorsing and addressing the recommendations of the SPS Financial and Performance Audit, Allies demonstrated their desire to further improve and streamline the working procedures of the SPS Programme and continue to ensure an efficient programme management.

Group photo – PCSC Away-Day to NSPA, July 2015

3 See www.nato.int/issues/iban/performance_audits/150504-iban-sps-report.pdf

Political and Strategic Impact of the SPS Programme – Enhancing Partnerships

In 2015, the SPS Programme proved to be a flexible and adaptable partnership tool which is adopted to changing political priorities and policies. This has allowed the Programme to contribute actively to a number of NATO partnership priorities and initiatives through practical cooperation, tailoring SPS activities to partners' key areas of cooperation as outlined in their partnership agreements with NATO. At the same time, SPS multi-year projects in particular have supported many young scientists and provided tangible outputs tailored to the needs of projects' end-users.

In line with Allied political guidance, the SPS Programme continued its **enhanced cooperation with Ukraine and NATO's Eastern Partners**. With a total of 13 out of 48 newly approved activities in the NATO Ukraine Commission (NUC) framework, Ukraine was once again the largest beneficiary of the SPS Programme in 2015. The Republic of Moldova was the second-most active partner, taking a leading role in five new SPS activities. At the same time, no new SPS initiatives with Russian participation were developed.

SPS activities with Ukraine address a wide range of security areas, including emerging security challenges such as cyber defence, energy security, and defence against chemical, biological, radiological, nuclear agents. New top-down flagship projects in Ukraine's priority areas of cooperation were developed and launched:

- A SPS project to support humanitarian demining in Ukraine with the State Emergency Service of Ukraine (SESU), was initiated in June 2015 and will provide equipment and training to Ukrainian deminers. The main goal of this initiative is to provide a minimum operational capability in the field by training four demining teams. This civil project will enable Ukraine to detect and clear landmines and booby-traps in parts of eastern Ukraine, allowing the local population to return to their homes safely.
- As of summer 2015, Ukraine, along with Finland, Moldova, Romania and the United States is participating in a flagship project to develop a multinational telemedicine system. Upon completion, the system developed as part of this project will allow medical specialists to engage in major disasters and incidents in remote areas, both of a military and civilian nature, that require specified medical expertise.

In September 2015, the **NATO-Ukraine Joint Working Group on Scientific and Environmental Cooperation** (JWGSEC) met at NATO HQ in Brussels. The high-level Ukrainian Delegation was led by the Deputy Minister of Education, Mr. Maxim Strikha. During the meeting, the Ukrainian representatives provided an overview of the impact of the current security crisis in Ukraine on scientific infrastructure and education institutes in the country. In that regard, the SPS Programme plays an important role by engaging Allied and Ukrainian scientists and experts in meaningful, practical cooperation, forging research networks and supporting capacity building in the country. The meeting of the Joint Working Group also served to take stock of ongoing SPS activities and identified a number of areas for potential future SPS cooperation. For the first time, a **PCSC in NUC format, dedicated to the SPS Programme**, was organised following the JWGSEC. This meeting allowed Allies to engage directly with the high-level Ukrainian representatives and discuss the effects of the unstable situation in Ukraine on scientific research and development and priority areas of new scientific collaboration. The Ukrainian representatives also emphasized the impact the SPS Programme is having on the Ukrainian academic community by creating important networks with Western scientists and underscored the importance of public diplomacy activities to underline the benefits of SPS cooperation in Ukraine.

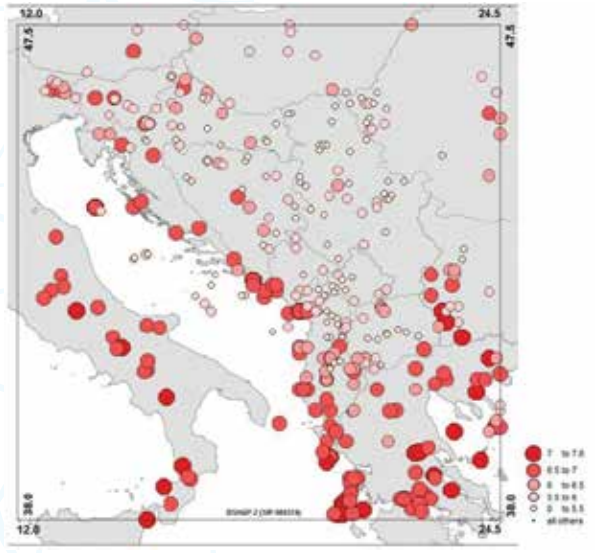
G5017 – Jordanian Armed Forces (JAF) Counter-IED (CIED) Assessment and Training

The SPS Programme is actively supporting the **Defence Capacity Building (DCB) Initiative**. The development of several new SPS activities addressing the DCB priorities of Jordan, Moldova and Iraq followed quickly on the announcement of DCB Initiative at the NATO Wales Summit in September 2014. These include a tailored counter-IED training for the Jordanian Armed Forces that was delivered by the NATO C-IED Centre of Excellence in Madrid throughout 2015. Another SPS project approved in 2015 will provide a cyber training laboratory and curriculum for network administrators in Moldova. Additional SPS activities in support of Defence Capacity Building are currently under development, including with Iraq in the area of countering IED.

The SPS Programme also makes important contributions on the Alliance's Southern neighbourhood, engaging partners and supporting security, stability and capacity building through cooperation on civil science, technology and beyond. By the end of 2015, more than 30 SPS activities were ongoing with **Mediterranean Dialogue partners**. These include a hands-on cyber defence training course for Morocco with the NATO School Oberammergau, the implementation of a cyber-defence strategy for Jordan, the development of innovative, security-related technologies with Israel and the creation of a national crisis management centre in Mauritania. The SPS Programme also brings together experts from Egypt and the Netherlands to provide the Egyptian military forces with equipment and training for demining, unexploded ordnance clearance and remnants of war detection. Many of these activities are top-down projects that directly address a request from a partner country expressed in their partnership agreement and therefore have a strong political and strategic impact. Representatives from Egypt also attended a SPS Information Day in Rome, Italy in October 2015 to discuss new SPS initiatives.

G4868 – Afghanistan National Research and Education Network (AfgREN) Workshop in Brussels, May 2015

The SPS Programme also provides avenues for practical collaboration for all NATO **partners, including partners across the globe and Western European partners**. At the end of 2015, 14 SPS activities with Australia, Finland or Sweden were ongoing, including in the field of CBRN defence, energy security, women in peace and security, and the development of advanced technologies, such as unmanned aerial vehicles. The SPS Programme remains open to applications from these countries and further joint activities are under development.



G4374 – Improvements in the Harmonized Seismic Hazard Maps of the Western Balkan Countries

The SPS Programme is also contributing to the **Enhanced Enduring Partnership (EEP) with Afghanistan**. In 2015, Allies agreed on a final extension of the SILK Afghanistan Programme until the end of June 2016. Over the last 11 years, this project has brought high-speed internet connectivity to 34 Afghan universities. In May 2015, Representatives from the Afghan government, the European Commission (EC) and NATO came together for a two-day workshop to take stock of the achievements of the SILK-Afghanistan programme, assess current needs and set out a plan to ensure a sustainable future for the initiative. While in Brussels, Dr Gul Hassan Walizai, the Afghan Deputy Minister for Administrative Affairs in the Ministry of Higher Education, briefed Allies in the PCSC on the impact and achievements of SILK. Another

ongoing SPS project connects Afghan students and military cadets in NATO countries via video teleconference, allowing them to engage in dialogue and foster intercultural understanding.

Finally, in the **Balkans**, the SPS Programme continued to demonstrate the value of **regional cooperation**. A new multi-year flagship project with the participation of Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia*, Montenegro and the United States aiming to develop a civil emergency capacity was approved in 2015. The project will enhance the emergency management capabilities in the Western Balkan region. Other SPS activities with a regional impact, including a workshop aiming to raise awareness of cyber defence challenges in the Balkans, also took place in 2015. Montenegro, too, is an active partner under the SPS Programme and has taken part in a region-wide project to develop and harmonize seismic hazard maps across the Balkans that came to an end in 2015. Another ongoing project assists Montenegro with acquisition and the development of improved means for UXO detection and faster, safer clearance, including through the provision of technical and management training. To enhance engagements with partners from the Balkans, the SPS Programme further organised Information Days in Serbia and Bulgaria in 2015 that were attended by scientists and government representatives from the region, including from Montenegro.

SPS involvement in NATO Exercises

In 2015, the work of the SPS Programme was part of two NATO exercises in the fields of smart energy and civil emergency planning. This exemplified the impact of SPS activities both civilian and military, and presented excellent public diplomacy opportunities which helped to raise the profile and visibility of the SPS Programme (see chapter 6).

Exercise Capable Logistician 2015 (CL15)

In **Exercise Capable Logistician 2015** (CL15; 8-19 June 2015) in Hungary, NATO tested a range of energy-efficient solutions in an effort to cut costs while enhancing interoperability and military effectiveness. During the exercise, NATO brought together private companies contributing equipment and expertise for 'smart energy' production, storage, distribution and consumption. Featured scenarios consisted of responding to power cuts, diesel and water contaminations and generators breaking down.

G5018 - Smart Energy in Capable Logistician: from Observation to Recommendation

With the support of the NATO SPS Programme, Exercise Capable Logistician 2015 also included the input of 30 experts from defence agencies, ministries of defence and public research institutes. In a SPS-funded workshop these experts observed the testing of interoperability of equipment and discussed the outcomes of the exercise, with a view to providing input for NATO standards that are needed to ensure interoperability in 'smart energy' solutions.

The inclusion of an SPS component in this exercise generated substantial public diplomacy output. CL15 and related smart energy activities attracted considerable media attention and were covered widely in the international press, including in Bloomberg Business (See chapter 6 for further details).

* References in this publication to the former Yugoslav Republic of Macedonia are marked by an asterisk (*) referring to the following footnote: Turkey recognizes the Republic of Macedonia with its constitutional name.

EADRCC Field Exercise Ukraine 2015

In September 2015, the telemedicine technology developed in a SPS project, was tested live in the consequence management field exercise **Ukraine 2015**. Co-organised by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and the State Emergency Service of Ukraine, the exercise involved 1,100 rescue workers from 34 countries. The exercise scenario was based on a mine collapse and subsequent chemical and radiological incidents, as well as transportation accidents, compounded by complex hazards affecting critical infrastructures in the area of Lviv. The overall aim of the exercise was to foster cooperation and contribute to enhancing national capabilities of NATO Allies and partners in the area of civil emergency planning (CEP).

G4748 - Telemedicine System was live-tested during the exercise Ukraine 2015 attended by NATO Secretary Jens Stoltenberg and the President of Ukraine, Petro Poroshenko

As part of this field exercise, the multinational telemedicine system, developed by Romania, Finland, the Republic of Moldova, Ukraine and the United States in a SPS Programme, was successfully live-tested. Once fully developed, this telemedicine system will have a dual-use for both civilian and military applications, including crisis situations. Portable medical kits allow first responders to connect to the system to receive 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. The NATO Communication and Information Agency (NCIA) is the executing agency for this project and responsible for the communications technologies.

The exercise was the first time that independent national telemedicine systems were connected and interacted to provide medical support in a simulated disaster situation. Ahead of the field exercise, NATO Secretary General Jens Stoltenberg and the President of Ukraine, Petro Poroshenko, also attended a demonstration of the telemedicine system.

Impact Assessment of selected SPS projects completed in 2015

By bringing together scientists, experts, government representatives and civil society on key issues of civil security, SPS Programme activities have the potential to have a significant positive effect on the local populations, the scientific community, academia, and national government. This is particularly true for SPS Multi-Year Projects which help to forge strong networks between scientific communities in NATO and partner countries, often result in the development of innovative, cutting-edge technology, the creation of patents and several scientific publications.

In 2015, a total of 17 SPS projects were completed, many of which have left a tangible and lasting impact as the end-users, for instance Ministries or research institutes, are integrated in the projects from the beginning. SPS projects not only offer equipment for research, but also provide training for young scientists and experts who are the end-users. The following accounts are based on the project reports and questionnaires submitted to the SPS Programme by the project directors. These projects are selected examples of completed multi-year projects which have been approved by nations at least three years ago and hence include examples of regional, environmental security projects.

Study of a National Operational Coordination Centre in Mauritania

Multi-Year Project G4451

SPS Key Priorities	1.a. Counter-Terrorism
Country Directors	France, Mauritania – Contributing Nations: France, Canada

The development of the National Crisis Management Centre is an excellent example of a SPS initiative that addresses a partner's priority area of cooperation, **directly benefitting the local population** and the partner country's government on an issue of civil security and thus exemplifies a **strong political, strategic and partnership impact.**

The project, co-funded by the Canadian government and the NATO SPS Programme, allowed for the implementation of the National Crisis Management Centre in Mauritania and connected it with four regions (Nouakchott, Nouadhibou, Rosso, Nema). France also provided equipment and training to realize this project. In May 2014, the main features of the crisis management system were tested in a validation exercise, and on 29 January 2015, the Crisis Management Centre was inaugurated by the Secretary General of the Ministry of Internal Affairs and Decentralisation, Mr. El Hady Macina.

Today, the Centre helps to reduce vulnerability to various risks and threats, strengthening the population's sense of security and helping to fight the spread of terrorism in particular, as well as developing better national responsiveness to emergencies and improving coordination among national, regional and local actors. This one-of-a-kind initiative in the region is considered a reference for the various Sahel countries, who have expressed an interest in setting up similar systems to strengthen regional coordination. In the words of the project directors, "Mauritania plays a leadership role in the prevention and management of security challenges linked to human activities" in the G5 region[4]. The project further carries significant public diplomacy potential and has been covered in national and local mainstream media, raising the profile of the NATO-Mauritania partnership among the local population.

G4451 – Study of a National Operational Coordination Centre in Mauritania

G4451 – Study of a National Operational Coordination Centre in Mauritania

From the perspective of the Mauritanian government, the project has also proved NATO's role as a strong partner in the crisis management, especially in times of terrorist threats. Given the success of the first phase of the project and based on a follow-up request from the government, the project is now continuing in a second phase with the aim of further strengthening the crisis management capacity of Mauritania by bringing the country's remaining six regions into the Centre's network CG5009. Step by step, this will expand the territory covered by the Crisis Management Centre, including to remote or partially isolated areas which are at risk of falling under the influence of terrorist or extremist organisations.

4 "La Mauritanie joue un rôle de leader dans la prévention et la gestion des défis sécuritaires liés aux activités hu-maines"

Improvements in the Harmonized Seismic Hazard Maps for the Western Balkan Countries

Multi-Year Project G4374

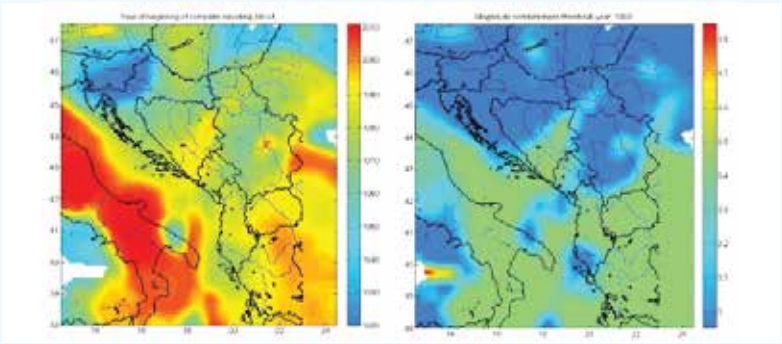
SPS Key Priorities	3. Early Warning and Crisis Management
Country Directors	Tukey, the former Yugoslav Republic of Macedonia*, Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia

G4374 – Group photo of project participants with the President of the former Yugoslav Republic of Macedonia*

Building on the work of a previous SPS project (G3054) that helped to ensure the harmonization of seismic data in one of the world's most seismically active regions and enabled seismic maps and monitoring systems to be upgraded to meet European standards, this follow-on project sought to implement state-of-the-art seismic hazard assessment techniques and ultimately, improved seismic risk prevention, preparedness and mitigation measures in the participating countries and the region.

For instance, the former Yugoslav Republic of Macedonia* uses the results of this activity as a basis for the development of Seismic Zone Maps. Its crisis management centre and other regional centres located in the country intend to use the data to improve their response and crisis management in case of an earthquake. The new seismic hazard maps will also be implemented into civil protection prevention and preparedness activities in Montenegro. Serbia considers the project results crucial for the improvement of national seismic hazard maps that will, in turn, help to start the process of defining seismic risks and to developing new codes for construction in seismic areas. The project will also contribute to the improvement of existing hazard maps in Croatia and in Albania.

Apart from having a **substantial, region-wide impact** on seismic activity monitoring, this activity helped to create **close professional relations among the participating institutes** and produced initiatives for future cooperative activities. The project directors highlighted NATO's contribution to fostering capacity building, cooperation and synergies among institutions in the Western Balkans, and the project's impact on the development and training of seismology experts.



G4374 – Improvements in the Harmonized Seismic Hazard Maps for the Western Balkan Countries

Transboundary Water Governance and Climate Change in the Hashemite Kingdom of Jordan

Multi-Year Project G4072

SPS Key Priorities	1.e. Environmental Security
Country Directors	Canada, Jordan

This project, also completed in 2015, provides an example of how SPS projects can have a practical impact by addressing a regional issue with security implications while, at the same time, fostering scientific partnerships and benefitting young scientists. Jordan is one of the most water-stressed countries in the world in a region where water scarcity is a fact of life. This project's objective was to establish six real-time water monitoring stations and one command centre. The implementation of the water monitoring network and development of extended water resources application tools will help build capacity for water resources management in Jordan. The monitoring network also provides a forum for regional cooperation and information sharing.

THIS HIGHLY SUCCESSFUL SPS RESEARCH AND DEVELOPMENT PROJECT WAS ONE OF THE FEW REMAINING SPS PROJECTS ON ENVIRONMENTAL SECURITY.

Furthermore, the project contributed to capacity building through the training of young scientists from Jordan, who were provided with several training opportunities over the course of the project. Three young scientists were part of the first Jordanian mission to Canada in June 2012 and received classroom and hands-on training on real-time water quality monitoring & reporting, as well as on the setting up of an automatic weather station, operation and maintenance. More advanced training was received in Jordan at the beginning of 2013. Additional equipment-specific training was offered to two young scientists at the Campbell Scientific headquarters in Canada in May 2014.

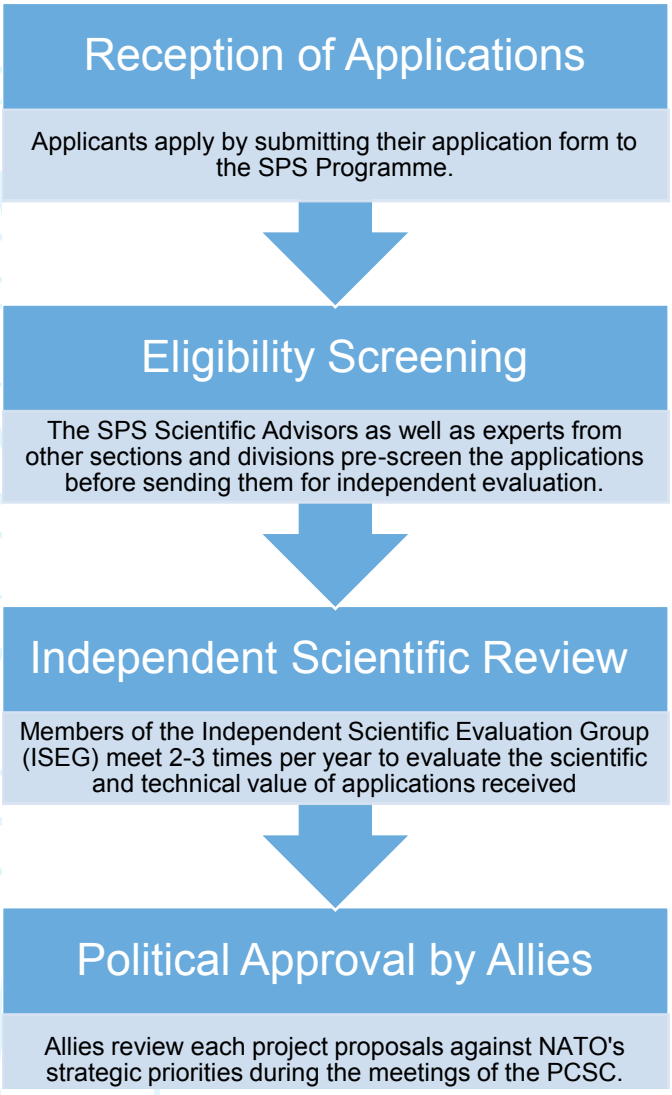
G4072 - Young Scientists participating in training and station setup in Jordan

CHAPTER III
SPS Programme Implementation in 2015

In 2015, Allies approved a total of 48 new SPS activities. This chapter provides a detailed overview of the SPS award cycle over the year, which includes the receipt of new applications by the SPS Programme, pre-screening by NATO experts, evaluation by independent scientists, and finally review and final decision by Allies. The chapter also presents a detailed breakdown of the implementation of the Programme, including the distribution of new activities according to Key Priority Areas and partnership frameworks. Other achievements, including the hosting of events, are also detailed in this chapter.

SPS Applications Reviewed in 2015

In order to streamline the work of the Programme and increase efficiency, the application process and the grant management guidelines were revamped during the course of 2015. The efficiency gained enabled the SPS team to devote more time to the elaboration of larger flagship top-down proposals and focus its efforts on projects with greater public diplomacy and partnership building value.



Applications received by the SPS Programme were pre-screened by NATO experts, reviewed by independent scientists, and then presented to Allies for approval in the Partnerships and Cooperative Security Committee (PCSC).

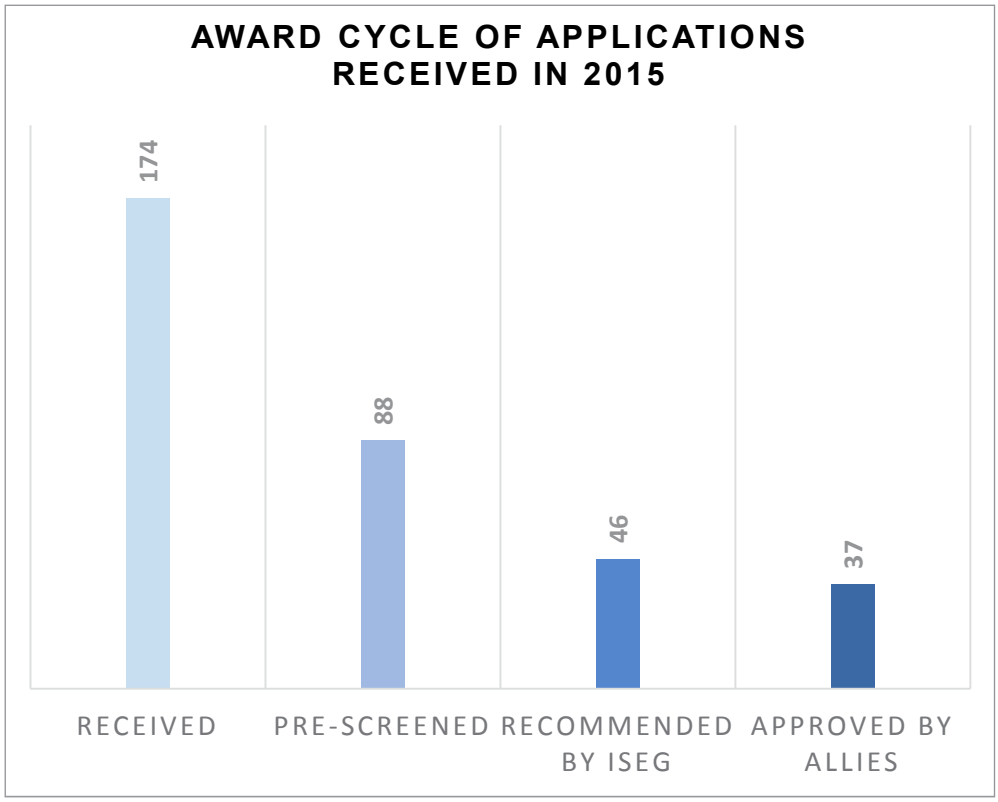
In 2015, the SPS Programme received a total of 174 new applications of which 26 were top-down proposals and 148 bottom-up. The SPS scientific advisors, in collaboration with experts from other sections and divisions, performed an initial screening to evaluate the eligibility of proposals. In their assessment, they took into account criteria such as the relevance of the proposal to NATO, the link to SPS Key Priority Areas, the partnership value of the activity and the soundness of the budget.

Applications deemed eligible in this initial screening were then presented to the members of the ISEG during their meetings in March, June and October 2015. The ISEG peer-reviewers evaluated the applications' scientific and technical content. The ISEG recommended to Allies 46 of the 88 (52%) applications discussed during its meetings. These ISEG-recommended applications were then presented to Allies for their approval at meetings of the PCSC.

The following table summarizes the reviewing cycle of applications received in 2015:

SPS APPLICATIONS IN 2015			
	'Top-Down'	'Bottom-Up'	Total
Applications Received	26	148	174
Application Not Recommended by SPS Staff	1	80	81
Applications Withdrawn by Applicants	2	3	5
Reviewed by ISEG	23	65	88
Recommended by ISEG	18	28	46

The SPS Programme presented to Allies a larger number of top-down proposals than in previous years. In 2013 and 2014, top-down projects represented 29% and 30% respectively of the activities approved by Allies. In 2015, this proportion increased to 42%.This achievement was the result of concerted efforts by the SPS Team to develop and present projects of greater scope, with increased political and scientific value and tailor-made to the needs of NATO partner countries.



Activities approved in 2015

In 2015, the PCSC approved 48 new activities from the 2014 and 2015 round of applications in a broad range of security areas and engaged with partners from 20 different countries. The following section provides a detailed breakdown of the SPS activities approved in 2015 by key priority, partnership objective, and grant mechanism.

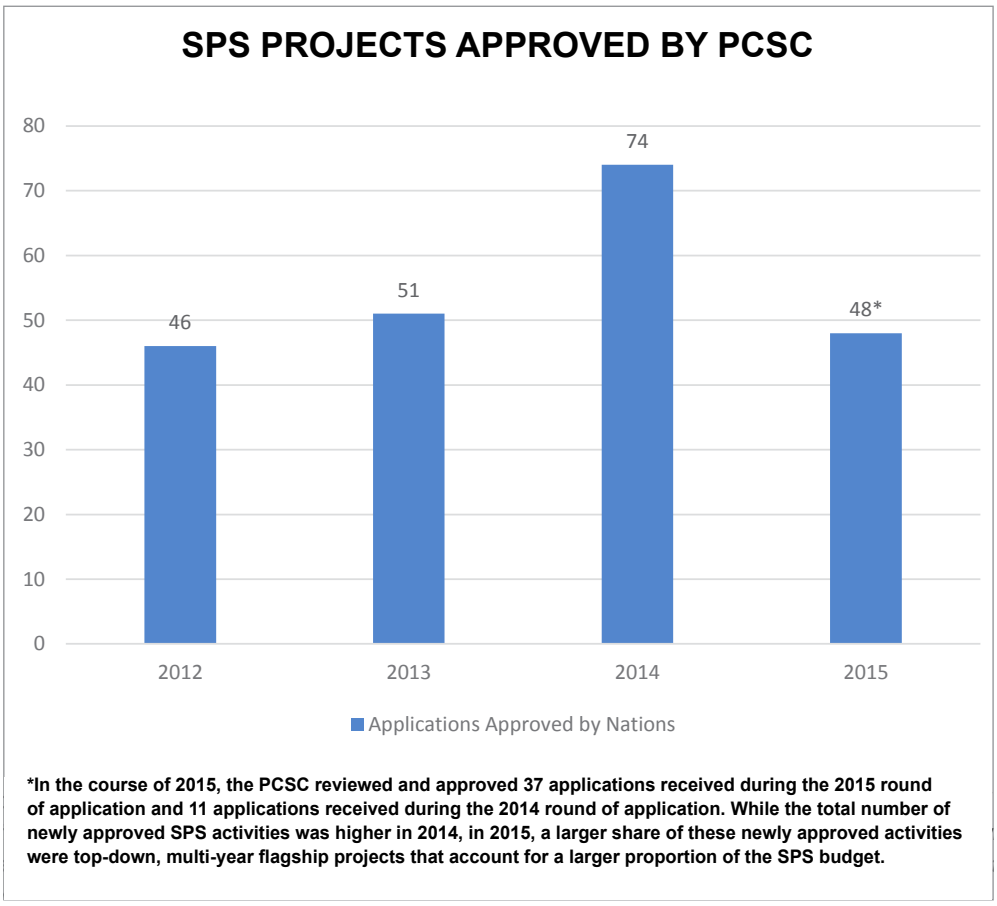
The Work of the PCSC in 2015

In 2015, Allies reviewed a total of 49 SPS activity proposals. Allies gave their unanimous approval to the funding of 37 new applications recommended by the

ISEG in 2015 and 11 applications recommended by ISEG in 2014. Nine applications recommended by ISEG in late 2015 remain to be considered by Allies in 2016.

In 2015, Allies rejected only one application, a Multi-Year Project that was recommended by ISEG in late 2014.

The chart below provides an overview of the applications approved for funding over the last five years. While the total number of newly approved SPS activities was higher in 2014, in 2015, a larger share of these newly approved activities were top-down, multi-year flagship projects that account for a larger proportion of the SPS budget. This reflects the focus of the SPS Programme on promoting higher impact, flagship projects.



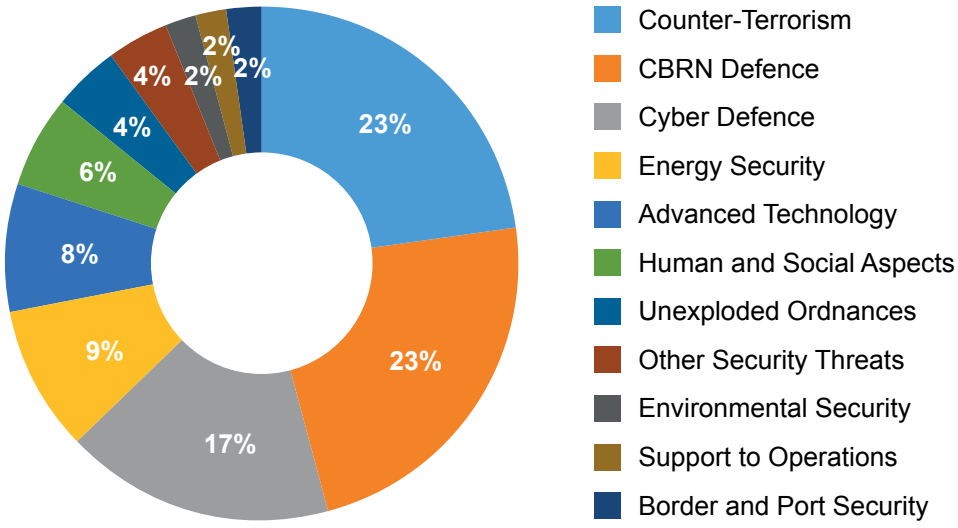
***In the course of 2015, the PCSC reviewed and approved 37 applications received during the 2015 round of application and 11 applications received during the 2014 round of application. While the total number of newly approved SPS activities was higher in 2014, in 2015, a larger share of these newly approved activities were top-down, multi-year flagship projects that account for a larger proportion of the SPS budget.**

New Activities by SPS Key Priority Area

The SPS Programme is part of the Emerging Security Challenges (ESC) Division, established in 2010 to address a growing range of non-traditional risks and challenges faced by NATO and partners alike. Today, energy security, terrorism, cyber-attacks and the threats of CBRN agents are major challenges to peace and security. The SPS Programme's work is closely aligned with the ESC Division's objective to address those new challenges.

In 2015, the SPS Programme initiated 48 new activities that addressed all the SPS Key Priorities. As depicted in the table and chart below, approved activities this year highlighted the diversity of areas addressed jointly with partners within the framework of the SPS Programme. The most common areas of cooperation were defence against CBRN agents and counter-terrorism representing each 23% of the new activities, followed by cyber defence with 17%.

SPS KEY PRIORITY		'Top-Down'	'Bottom-Up'	Total
1.a.	Counter-Terrorism	2	9	11
1.b.	Energy Security	2	2	4
1.c.	Cyber Defence	4	4	8
1.d.	Defence against CBRN Agents	3	8	11
1.e.	Environmental Security	1	0	1
2.	Support for NATO-led Operations	1	0	1
3.a.	Advanced Technology	1	3	4
3.b.	Border and Port Security	1	0	1
3.c.	Mine and Unexploded Ordnance Detection and Clearance	2	0	2
3.d.	Human and Social Aspects of Security	1	2	3
4.	Other Security Threats Related to NATO's Strategic Objectives	2	0	2
	TOTAL	**20**	**28**	**48**



SPS Integration with the Activities of the Emerging Security Challenges Division and Other Relevant NATO Priority Areas of Activity

Counter-Terrorism

SPS supports NATO's Counter-Terrorism (CT) mission in four general categories: human factors – social science aspects of terrorism and counter terrorism; detection – development of detectors and detector systems for explosives, IEDs, and other dangers; military aspects of CT; and response to terrorism – improving capacity, infrastructure, and technology to respond to crises and attacks.

Through these activities, SPS supports all of NATO's counter-terrorism key areas. Both Human Factors and Military Aspects generally focus on the Awareness key area bringing experts from NATO and partner-countries together to improve our understanding of the terrorist threat and best practices for responding. Detection and Response activities focus on the Capabilities key area, providing technological solutions to assist in the fight against terrorism. Finally, because of the partnership element inherent in all SPS activities, all of these activities support the Engagement key area, ensuring that NATO remains engaged with partner countries and other international actors in the global struggle against terrorism.

In 2015, 11 activities primarily related to Counter-Terrorism were approved. Workshops examined human factors behind the terrorist threat and ways to prevent and mitigate it in regions such as Central Asia and the Middle East and North Africa with a particular focus on Egypt and the Sinai.

Work on detectors continued to be a primary focus with several newly started MYPs focused on the detection of concealed weapons and explosives from a distance by means of individual technologies, detectors, and systems of detectors.

Distinctly military aspects of CT were examined by a workshop looking at terrorist recruiting in the context of armed conflict as well as an ongoing Multi-Year Project which held three workshops examining the military interventions and transition to a long-term CT policy in Libya, Afghanistan, and Mali.

Finally, the response to terrorism was the focus of a workshop on resilience-based approaches to protecting critical infrastructure and a new MYP developing computer models and tools for monitoring, predicting, and guiding public responses to terrorism.

SPS projects related to counter-terrorism

A total of 11 new SPS projects (2 top-down and 9 bottom-up) related to counter-terrorism were approved in 2015.

Newly approved activities involve experts from Bosnia and Herzegovina, Croatia, Ireland, Israel, Jordan, the former Yugoslav Republic of Macedonia*, Moldova, Montenegro, Morocco, Serbia, and Ukraine.

Activities address themes such as human factors behind terrorist threat, prevention and mitigation of terrorism, detection of concealed weapons and explosives, terrorist recruitment, response to terrorism, etc.

Defence against CBRN Agents

The central objective of SPS activities in defence against CBRN agents is to improve the ability of NATO and its partners to protect their populations and forces from CBRN threats. In 2015, the SPS Programme supported a total of 11 new activities (3 top-down and 8 bottom-up) towards the development of CBRN defence capabilities,

making it one of the most common areas of cooperation among the SPS Key Priorities for a second year in a row.

Chemical and biological agents detection were the focus of more than half of the CBRN projects in 2015, with projects aimed at improving detector sensitivity and selectivity. Since technology is rapidly changing in this field, it is essential to keep up with the latest detection technology trends. It is expected that detection technologies will maintain their importance across the CBRN spectrum in the coming years. In addition to the projects, SPS sponsored an Advanced Study Institute on high-pressure crystallography aimed at enhancing the knowledge and expertise of Ph.D. level young scientists working in this field.

Medical countermeasures against CBRN agents tend to be both expensive and highly time consuming to develop. Harmonizing existing medications and dealing with adverse side effects are important considerations in defence against biological effects, especially in the case of treatment in advance of symptoms. Scientists from Belgium, Italy and Japan are collaborating to build human disposable skin or mucosa patches using biocomplex formed by collagen sponge and autologous micro grafts for immediate applications in emergency conditions.

In the nuclear field, SPS sponsored an Advanced Training Course aimed at enhancing technical competence and skills in radiation protection. In addition, scientists from the USA and Ukraine are developing new algorithms and instruments for radioactive materials detection in order to improve the control of radioactive materials storage, in particular in nuclear plants.

On 22 September 2015, the SPS Programme participated in an Outreach Event on Weapons of Mass Destruction (WMD) Proliferation and Chemical, Biological, Radiological and Nuclear (CBRN) Threats presenting its activities with partners both during panel discussions and the follow-on exhibition.

SPS projects related to defence against CBRN agents

A total of 11 new SPS projects (3 top-down and 8 bottom-up) related to the defence against CBRN agents were approved in 2015.

Newly approved activities involve experts from Israel, Moldova, Morocco, Ukraine, Japan, Sweden, and Finland.

Activities address themes such as the detection of chemical and biological agents, medical counter-measures against CBRN agents, enhancement of technical competence in the field of radiation protection, etc.

Cyber Defence

As cyber threats continue to expand and evolve, the need for advanced specialized capabilities and know-how in cyber defence has become prominent. The Alliance needs to ensure its ability to respond to these incidents, by both building up NATO's own cyber defence capabilities as well as cooperating with partners. Consequently, the SPS Programme has intensified the development and implementation of projects in the field of cyber defence. This trend has continued in 2015 and the engagement with partner countries has been further enhanced through the support of multi-year projects, workshops, and training courses aiming to strengthen partners' cyber defence capabilities.

Alongside the successfully progressing multi-year projects launched in 2014, such as Support for Implementing a Cyber Defence Strategy for Jordan, new multi-year

projects were initiated in 2015. Namely, the Allies agreed to establish a Cyber Defence Laboratory at the Technical University of Moldova, which will serve as a training and research centre for cyber defence experts and University students. Furthermore, the ongoing Privacy Preserving Big Data Processing Using Cloud Computing project, developed by the Korea University in Seoul and the University of Houston in Texas, seeks to improve the efficiency to securely process large amounts of data – a key aspect in delivering future defence superiority and security.

NATO also continues to assist partner nations in developing their own cyber defence capabilities by training network administrators working in security-relevant governmental sectors. Notably, a successful series of Advanced Training Courses provided by the Informatics Institute of the Middle East Technical University enabled the training of system and network administrators from Mongolia, Ukraine, Azerbaijan and Montenegro between 2013 and 2015. Additionally, training on network vulnerability assessment and risk mitigation was provided to civil servants of the Moroccan National Defence agency, by the NATO School Oberammergau, Germany and the Naval Postgraduate School, United States.

The SPS Programme also sponsored several other workshops over the year, creating fora for high level discussions (G5012 Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region; G4986 Resilience-Based Approaches to Physical and Cyber Infrastructure Safeguarding; G4789 Meeting Security Challenges through Data Analytics and Decision Support.)

SPS projects related to cyber defence

A total of 8 new SPS projects (4 top-down and 4 bottom-up) related to cyber defence were approved in 2015.

Newly approved activities involve experts from Azerbaijan, Bosnia and Herzegovina, Georgia, Korea, Moldova, Mongolia, Montenegro, and Morocco.

Activities addressed themes such as cyber defence strategies, cyber defence capabilities in security relevant governmental sectors, cyber defence cooperation at the regional level, etc.

Energy Security

The main emphasis of SPS activities in the area of energy security is to contribute to strengthening Allies' and partners' capacity to protect critical energy infrastructure with wide security relevance. Another major focus is to enhance energy efficiency in the military ("smart energy"). To foster these aims, SPS supported various projects promoting exchanges between experts from Allied and partner countries on best practices in critical energy infrastructure protection, as well as specific scientific projects that explored resilience measures. These areas are of particular interest to partner countries, many of whom are either energy producers or important transit countries.

SPS also supported the exchange of best practices on military energy efficiency, including in the frameworks of the "Smart Energy Team (SENT)" and the exercise "Capable Logistician 2015", which showcased many energy efficient solutions ranging from new technologies to empower the individual soldier to employing smart grids in military compounds. The experiences gained through these activities will provide the basis for the development of common energy efficiency standards, which will enhance interoperability and operational effectiveness, while reducing the environmental footprint of military activities.

SPS projects related to energy security

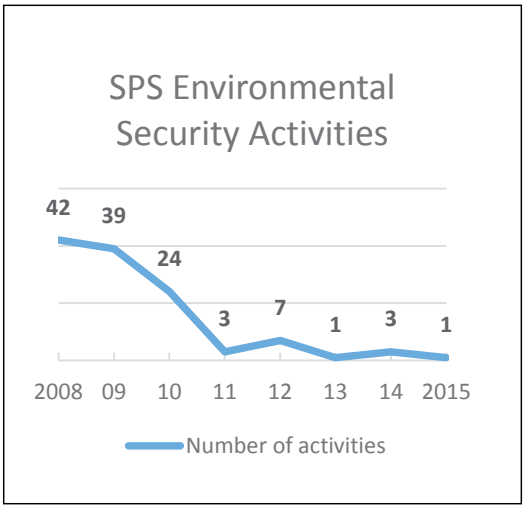
A total of 4 new SPS projects (2 top-down and 2 bottom-up) related to energy security were approved in 2015.

Newly approved activities involve experts from Australia, Austria, Sweden, and Ukraine.

Activities addressed themes such as protection of critical infrastructure with wide security relevance, energy efficiency in the military, exchange of best practices, resilience measures, etc.

Environmental Security

The number of activities developed and implemented by the SPS Programme in the domain of environmental security has significantly decreased in the past few years. While demand and interest from partner nations remains high, only a small number of projects are considered for funding. The involvement of the SPS Programme on topics such as water management, desertification, and river pollution is therefore marginal.



In 2015, Allies approved the funding of a workshop coordinated by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and the Ministry of Defence of Serbia. During this workshop to be held in Bulgaria in summer 2016, experts and scientists will evaluate current and future tools used to prevent conflicts resulting from climate-induced degradation. This workshop is especially relevant for the countries in the Balkan region which have been particularly prone to natural disasters in recent years.

Border Security

'Border and port security' is a key priority within the SPS Programme. This prioritization reflects an understanding that border issues can have a direct impact on regional stability – a trend ever more evident in the evolving security environment impacted by heavy migration flows. Border security and efficient border management are an increasingly important field of cooperation between local, government and international actors in confronting a wide range of threats. To address these emerging challenges, two new border security workshops were approved this year in the context of the SPS Programme.

In July 2015, the funding of a workshop entitled 'Addressing Security Risks at the Ukrainian Border through best Practices on Good Governance – Sources and Counter Measures' [G4985] was approved. The event took place in Kiev, Ukraine in February 2016 and contributed to raising awareness on corruption as a security risk within Customs and Border Guard Agencies. The intended outcome of this event is to achieve improved Border Management practices in Ukraine and border security through greater transparency, accountability, integrity and good governance. This workshop was led by Project Directors from Poland and Ukraine, and was developed in coordination with NATO's Building Integrity Programme.

SPS projects related to border security

A total of 2 new SPS projects (1 top-down and 1 bottom-up) related to border security were approved in 2015.

The newly approved activities involve experts from Moldova and Ukraine.

The activities will address the topics of border security challenges in Eastern Europe and corruption within the custom and border guard agencies of Ukraine.

Women, Peace and Security

The implementation of United Nations Security Council Resolution (UNSCR) 1325 and related Resolutions on Women, Peace and Security represents an important policy priority for NATO and partner countries. Since 2013, the SPS Programme has supported partnerships in areas beyond purely scientific cooperation, such as the Women, Peace and Security agenda. In two short years, substantial strides have been made in this field through the SPS Programme, with concrete deliverables developed in cooperation with partner nations.

The Women, Peace and Security agenda gained traction and visibility at NATO with several high-level events. On 1 June 2015, the preliminary findings of the SPS-sponsored multi-year study, 'UNSCR 1325 Reload: An analysis of Annual National Reports to the NATO Committee on Gender Perspectives from 1999-2013,' were presented to NATO International Staff, International Military Staff, Allied Delegations and Partner Missions. The report provides data and analysis on the integration of women into NATO member armed forces with key findings on national legislation, recruitment and retention policies, gender in military operations, and on the prevention of sexual violence.

This year also marked the 15th Anniversary of the adoption of United Nations Security Council Resolution 1325. The Anniversary was commemorated at NATO Headquarters on 29 October 2015 with the presentation of two SPS projects supporting the Women, Peace and Security agenda. Project Directors from the United States and Serbia presented the '1325 Scorecard', which provides a set of indicators to evaluate the implementation of UNSCR 1325 and related resolutions within the armed forces of NATO Allies and partner countries. A second presentation was delivered by Project Directors from Norway and Switzerland on the results of an SPS workshop entitled 'Gender-related Complaints in the Armed forces'.

SPS projects related to Women, Peace and Security

A total of 3 new SPS projects (2 top-down and 1 bottom-up) related to advanced technologies were approved in 2015.

Newly approved activities involve experts from Australia, Ireland and Ukraine.

Activities in 2015 aimed at improving the integration of women within armed forces, improving national legislation and policies to include a gender perspective, developing tools to prevent and respond to gender-related discrimination and harassment, etc.

SPS Programme continues to be an important driver for UNSCR 1325-related projects. In 2015, several new initiates were approved, including:

- A two-day SPS workshop organised by Project Directors from Switzerland and Norway took place in Geneva in April 2015 to discuss how to prevent and respond to gender-related discriminating, harassment, bullying, and abuse, resulting in the publication of a Handbook on best practices.
- An SPS-supported event developed in partnership with civil society from Italy and Ukraine which was held in Kiev to address the specific participation and protection gaps women and girls face in Ukraine today in light of the ongoing crisis, took place in September 2015.
- In December 2015, Allies also approved a multi-year project entitled 'Tailor-made Gender-awareness Applications for the NATO Community' (led by Canada and Australia).

Advanced Technologies

Advanced Technology encompasses a wide range of defence and security-related research topics, those itemized in the Key Priority Areas (nanotechnology, optical technology, micro satellites, metallurgy, UAV platforms) along with closely related subjects, as well as early-stage scientific research with promise for defence and security applications but not yet ready for practical applications. Because of this breadth, Advanced Technology activities range from laboratory concepts which may not see application in the field for years to demonstrations of technology essentially ready for deployment.

In 2015, ongoing Advanced Technology activities covered this wide ground. Nanotechnology was addressed at the scientific level by several workshops including G4910 – Nanomaterials for Security which included a lecture by Klaus von Klitzing, winner of the Nobel Prize in Physics. In addition, a two-week Advanced Study Institute G4883 – Nano-Optics: principles Enabling Basic Research and Applications attracted over 100 participants from over 20 NATO and Partner countries. Nanotechnology was also represented at the more applied level through very practical research in surface coatings to prevent ice build-up on military equipment and ships (G4957 – Icing Mitigation Studies and Technology with Applications to Security Systems).

Optical technology was also addressed through a Multi-Year Project to develop technology widely applicable to optical sensors (G4856 – Ultra-Fast Adaptive Optical Elements) as well as the Nano-Optics Advanced Study Institute mentioned above.

Finally, unmanned vehicles both in the air and in the water were the focus of several new Multi-Year Projects which address platforms, applications, and sensing technologies specifically desinged for use in these vehicles.

SPS projects related to advanced technologies

A total of 4 new SPS projects (1 top-down and 3 bottom-up) related to advanced technologies were approved in 2015.

Newly approved activities involve experts from Australia, Belarus, Japan and Ukraine.

Activities in 2015 involved research and workshop on the topics of nanomaterials, nano-optics, nanotechnology and icing mitigation, optical sensors, unmanned vehicles, etc.

New Activities by Grant Mechanism

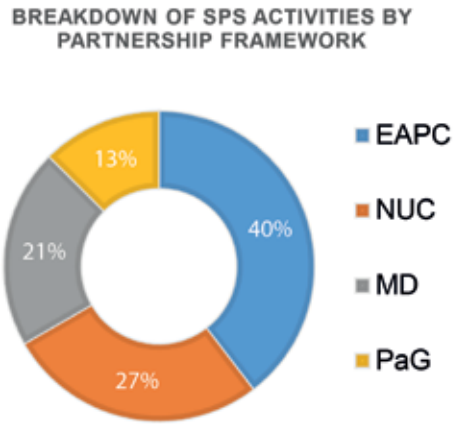
The SPS Programme supports practical cooperation with partners through several established grant mechanisms. Activities can take the form of multi-year projects, workshops, or training courses. This variety of funding schemes allows the SPS Programme to accommodate different needs and outlooks. The chart below shows the breakdown of new activities according to SPS grant mechanisms over the course of 2015.

MECHANISM	'Top-Down'	'Bottom-Up'	Total
Multi-Year Projects (MYP)	7	15	22
Advanced Research Workshop (ARW)	8	7	15
Advanced Training Course (ATC)	5	4	9
Advanced Study Institute (ASI)	0	5	5
Network Infrastructure Grants (NIG)	0	2	2
TOTAL	**20**	**28**	**48**

New Activities by Partnership Framework

The SPS Programme supports practical cooperation with over 40 partner countries and international organisations. In 2015, the SPS Programme continued to promote dialogue and cooperation with many of the Alliance's partner countries on a broad range of security-related issues. A total of 48 new activities in which 20 different partner countries played a leading role were initiated in 2015. The table below provides a breakdown of activities approved in 2015 by partnership framework.

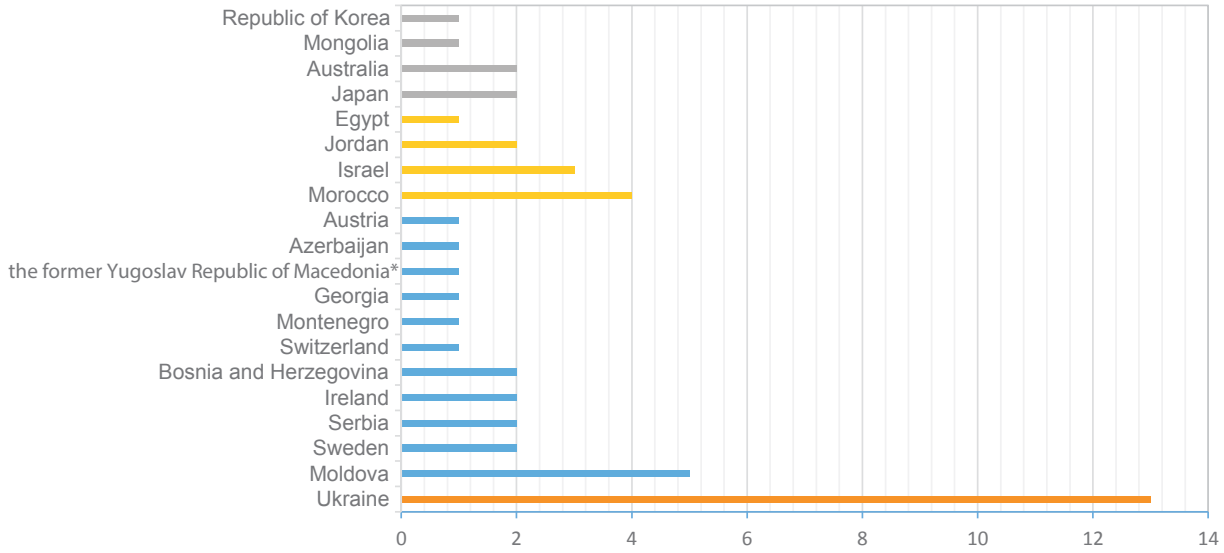
PARTNERSHIP FRAMEWORK	'Top-Down'	'Bottom-Up'	Total
EAPC - Euro-Atlantic Partnership Council	9	10	19
NUC - NATO-Ukraine Commission	4	9	13
PaG - Partners Across the Globe	3	3	6
MD - Mediterranean Dialogue	4	6	10
TOTAL	**20**	**28**	**48**



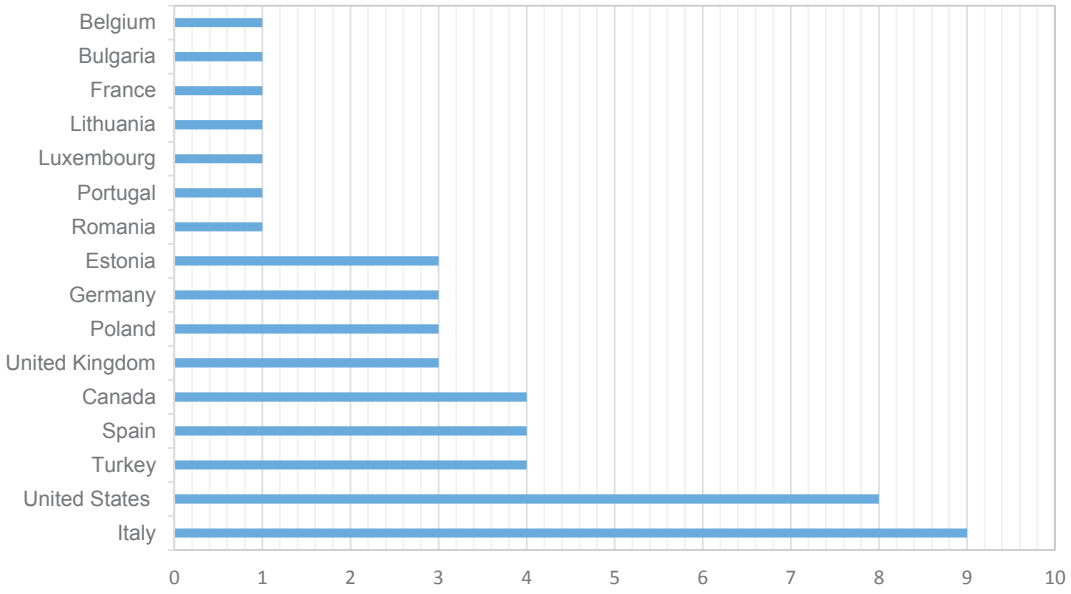
As depicted, new SPS activities engaged partners from all partnership frameworks, except the Istanbul Cooperation Initiative. In line with political guidance, the SPS Programme also served as a valuable tool for enhanced practical cooperation with Ukraine in 2015.

Compared with 2014, 2015 SPS activities were more evenly distributed across the partnership frameworks. The proportion of activities engaging Ukraine slightly increased, passing from 22% in 2014 to 27% in 2015 while the proportion of activities involving countries from the Mediterranean Dialogue increased more sharply passing from 15% to 21%. Activities involving countries from the Euro-Atlantic Partnership Council and Partners across the Globe however decreased in comparison to 2014 passing from 46% to 40% and 18% to 13% respectively.

Number of New 2015 SPS Activities by Leading Partner Country



Number of New 2015 SPS Activities by Lead Ally



ISEG Meetings

In 2015, three meetings of the Independent Scientific Evaluation Group (ISEG) were held. The first took place on 11 and 12 March in Brussels, the second on 2 and 3 June also in Brussels and the third on 20 and 21 October in Rome, Italy. Composed of 31 experts and scientists from NATO countries, the main role of the ISEG is to evaluate applications through peer-review. This direct involvement of the scientific community is invaluable in maintaining the integrity and high scientific standard of the Programme.

ISEG Meeting in Brussels

During the meetings, Science Advisors of the SPS Programme made presentations for the new top-down SPS proposals, as well as on the progress achieved in selected ongoing projects. During 2015, a total of 88 SPS applications were reviewed by ISEG members, of which 46 were recommended to the Allies.

SPS Working Group

On 8 May 2015, a meeting of the SPS Working Group, an advisory and coordinating body that brings together relevant stakeholders from various NATO Divisions and bodies was held at the NATO HQ chaired by ASG/ESCD, Ambassador Sorin Ducaru. The main objective of the meeting was to inform participants on the implementation and achievements of the SPS Programme in 2014 and to look at the SPS priorities for 2015. The meeting also provided for interdivisional coordination between relevant NATO divisions, bodies and stakeholders to exchange ideas for SPS activities to be developed in the future.

SPS Programme Away-Day to NATO Support Agency (NSPA) in Capellen, Luxembourg

With the support of NSPA General Manager, Mr. Michael Lyden, a SPS Away Day was organised at NSPA's premises in Capellen, Luxembourg on 7 July 2015. This invitation of the NSPA outlines the strong partnership between the Agency and the Programme which led to a number of top-down flagship SPS projects. Mr. Chris Rose, NSPA Chief of Staff addressed the group and provided a briefing about NSPA's work and its contribution to SPS activities. Allies and SPS Staff also took this opportunity to take stock of the productive work accomplished so far and discussed ways of improving the work of the Programme in the spirit of political consistency and increased efficiency in line with the SPS Overarching Guidance, the NAC policy guidelines, and the IBAN recommendations endorsed by Allies.

Discussions with PCSC Members at the SPS Away-Day to NSPA in July 2015.

The 14th NATO-Ukraine JWGSEC was attended by a high-level delegation from Ukraine, led by the Deputy Minister of Science and Education, Maxim Strikha

NATO-Ukraine Joint Working Group on Scientific and Environmental Cooperation (JWGSEC)

The 14th meeting of the NATO-Ukraine Joint Working Group on Scientific and Environmental Cooperation (JWGSEC) was held on 18 September 2015 at NATO

headquarters. In addition to the Deputy Minister of Education and Science of Ukraine and the Vice-President of the National Academy of Sciences of Ukraine, the Ukrainian delegation included the Head of the Ukrainian parliament's Committees for Science and Education, and Health Care, and the Advisor to the President of Ukraine on Humanitarian Issues. The meeting allowed NATO and Ukraine to take stock of their comprehensive and successful cooperation in the framework of the SPS Programme. Over the last two years, SPS activities with Ukrainian scientists have been enhanced significantly, including through highly visible flagship projects. The need to continue to strengthen the public diplomacy aspect of projects was underlined during the discussions. This meeting also represented a timely occasion to review the achievements and discuss priority areas for potential future scientific cooperation.

Following the NATO-Ukraine JWGSEC, Allies engaged with the Ukrainian Delegation in a PCSC(NUC).

Partnerships and Cooperative Security Committee (PCSC) in the NATO-Ukraine Commission (NUC) Format

Following the 14th meeting of the NATO-Ukraine JWGSEC, a PCSC in the NUC format was held at the NATO HQ. Mr Maksym Strikha, Deputy Minister of Education and Science of Ukraine, Dr. Olga Bohomolets, Advisor to the President of Ukraine on Humanitarian Issues, Dr. Anatoly Zagorodny, Vice-President of the National Academy of Sciences, and Mrs Liliya Hrynevych, Member of the Verkhovna Rada (Parliament of Ukraine) had the opportunity to convey their appreciation for Allies' support and point to potential future area of cooperation. Dr. Zagorodny provided a comprehensive overview of the impact of the ongoing crisis on the national scientific infrastructure and research networks of Ukraine which continue to suffer from the relocation of 26 universities and institutes from occupied areas to other parts of Ukraine.

CHAPTER IV
Cooperation with International Organisations

In addition to civil society, the SPS Programme regularly engages with international organisations, such as the United Nations (UN), the Organization for Security and Cooperation in Europe (OSCE), and the European Union (EU). This dialogue and cooperation enhances synergies and avoids duplication of work between organisations on matters of mutual concern. Extended outreach through practical cooperation contributes to enhancing security and complementarily of efforts.

Engagement with other IOs was deepened in 2015, including in new areas of focus, such as border security. In Staff-to-Staff talks which took place in 2015, all IOs recognized a need for continued coordination and discussions, and recognized the value of this exchange.

Multi-organisational Approach to Crisis Management

From 8–10 June 2015, experts from NATO, OSCE and the EU came together in Bratislava, Slovakia to discuss approaches to crisis management. International organisations like NATO, the Organization for Security and Cooperation in Europe (OSCE), and the European Union (EU) have an integral role to play in conflict resolution and crisis management – but each has different strategies and visions of how to approach a conflict. During this SPS-supported workshop, academics, policy analysts and other experts explored innovative ways to enhance cooperation between international organisations and examined international crisis management in several protracted, frozen and newly emerged conflicts in the Euro-Atlantic and Eurasian space.

Taking stock of the strengths of NATO, the EU and OSCE's strategies and toolboxes, experts identified overlapping competencies between these key actors. This analysis was then used as a baseline to assess the added value of each organisation.

The role of civil society in conflict management, conflict resolution and transformation activities was another key topic of discussion. Experts argued that due to the multi-level and multi-actor nature of conflict resolution activities, civil society should lead the process to avoid imposed reconciliation.

United Nations (UN)

Cooperation with the United Nations Mine Action Service in Support of Libya – on hold

In November 2013, the SPS Programme received a proposal from the United Nations Mine Action Service (UNMAS) outlining a potential SPS Multi-Year Project aimed at the destruction of ammunition in Libya. The destruction of Surface to Air Missiles (SAMs) was subsequently deemed viable, and would be carried out by the NATO Support and Procurement Agency (NSPA).

In July 2014, the UN withdrew its staff from Libya due to security concerns stemming from increased violence in Tripoli. As a result of the degraded political and security situation in Libya, the demilitarization project entitled 'Collaboration with UNMAS on the Destruction of Missiles in Libya' remains on hold. However, all parties involved have indicated their continued commitment to

Libya has one of the largest unsecured caches of arms and ammunition in the world. The destabilizing effect on the region of unsecured weapons is an important consideration when it comes to ammunition management in Libya.

move forward with the proposal as soon as the situation on the ground stabilizes, and UNMAS is once again engaged in Libya.

UN participation in SPS activities

A fruitful and constructive cooperation with the UN continued throughout 2015. UN experts were invited to participate in several SPS initiatives, and staff from UNWOMEN attended an ARW in Ukraine in September 2015 to contribute to the discussion on the specific participation and protection gaps women face in the ongoing crisis.

Organization for Security and Co-operation in Europe (OSCE)

In 2015 the SPS Programme engaged closely with the OSCE on several activities, particularly in the area of border security, and strengthened existing lines of communication.

During NATO-OSCE Staff Talks on border security which took place in December 2015, SPS staff pointed out that experts from the OSCE have been invited to attend upcoming SPS workshops on border security in 2016. Taking this as the base of discussion, NATO and OSCE staff agreed to mutually extend invitations to other upcoming events on border security in order to exchange knowledge, expertise, and maintain a common awareness in this area.

The OSCE also participates in two SPS workshops on 'Addressing Security Risks at the Ukrainian Border through best Practices on Good Governance – Sources and Counter Measures' [G4985], and 'Border Security Challenges in Eastern Europe: Lessons for Allies and Partners' [G5015], set to take place in 2016.

Environment and Security Initiative (ENVSEC)

In 2012, Allies agreed that NATO, through the SPS Programme, would continue its associated membership in the Environment and Security Initiative (ENVSEC) until the end of 2015. Launched in 2003, ENVSEC is a partnership of six international organisations – the OSCE, the Regional Environment Centre for Central and Eastern Europe (REC), the United Nations Development Programme (UNDP), the United Nations Economic Commission for Europe (UNECE), the United Nations Environment Programme (UNEP), and NATO as an associated partner – with specialised but complementary mandates and expertise, seeking to provide an integrated response to environmental and security challenges.

SPS Cooperation with ENVSEC contributes to NATO's strategic objective "Cooperation with other International Organisations", with the aim to pool expertise, avoid duplication and share information. It also contributes to disaster preparedness and prevention and serves to reduce regional tensions over shared resources. NATO joined ENVSEC in 2004 and confirmed its continuous partnership through Memoranda of Understanding (MOU), signed by all six organisations, the latest covering 2013-2015.

During the decade up to 2014, NATO completed 35 multi-year projects in cooperation with ENVSEC. The last active project will be completed by autumn 2015. No new projects addressing ENVSEC priorities have been approved by Allied nations, and NATO partnership with ENVSEC came to an end in 2015.

Organization for the Prohibition of Chemical Weapons (OPCW)

This year, for the first time, the Organization for the Prohibition of Chemical Weapons (OPCW) participated in the NATO Outreach Event on Weapons of Mass Destruction (WMD), Proliferation and Chemical, Biological, Radiological and Nuclear (CBRN) Threats held in Brussels on 22 September 2015. A follow-up meeting took place in the margin of the Conference of the States Parties of the OPCW on 1 December 2015 to discuss future cooperation under the SPS Programme in the area of WMD and CBRN defence. Potential SPS activities included regional training courses for CBRN first responders and a regional workshop on chemical safety and security.

CHAPTER V
A Selection of SPS Activities

The following chapter provides an overview of ongoing or completed SPS activities during the course of the year. A full list of SPS activities approved by Allies in 2015 can be found in Annex 1, of completed projects in Annex 2 and of SPS events hosted in 2015 in Annex 3.

NATO Ukraine Commission (NUC)

Support to Humanitarian De-Mining in Ukraine

Multi-Year Project G5024

SPS Key Priorities	3.c. Mine and Unexploded Ordnance Detection and Clearance
Country Directors	NATO Support and Procurement Agency (NSPA) and Ukraine

SESU EOD teams undertaking demining operation

This project was initiated based on a request from Ukraine for assistance with humanitarian demining in the Eastern part of the country. An SPS fact-finding mission organised in cooperation with the NATO Support and Procurement Agency (NSPA) identified a need to replace equipment that Explosive Remnants of War (ERW) clearance teams lost as a result of the current conflict. During that visit it was determined that the immediate requirement was to replace equipment lost by four Civil Defence State Emergency Service of Ukraine (SESU) demining teams from the two Pyrotechnic Groups in Donetsk and Luhansk Oblasts. This multi-year project therefore aims at providing the SESU with modern technologies to detect and clear ERW and offering technical and operational training to their teams.

The Military Conflict in Ukraine and UN Security Council Resolution 1325

Advanced Research Workshop G5066

SPS Key Priorities	3.d. Human and Social Aspects of Security
Country Directors	Italy and Ukraine

Panel at the SPS Workshop on the military conflict in Ukraine and UNSCR1325 (G5066).

Amid the fighting in eastern Ukraine, high levels of gender-based violence continue to be reported in the conflict area, including sexual violence. Moreover, women in Ukraine are often excluded at a decision-making level, as well as from the military response to the crisis. To address these issues, the SPS Programme supported a workshop in Kyiv from 21 to 22 September, which brought together high-level officials, leading experts and voices from Ukraine and the international community. Participants analysed specific participation and protection gaps women and girls face in Ukraine in the ongoing crisis. The workshop served to create awareness of United Nations Security Council Resolution (UNSCR) 1325 on Women, Peace and Security, and explored opportunities to increase the participation of women. In this vein, the gaps in national legislation on the issue of equal participation of women in conflict

resolution and peace-building processes was also brought to the table. More than 110 participants attended the workshop, including representatives from the Ukrainian Government, members of the Ukrainian Armed Forces and civil society, as well as international experts on gender mainstreaming.

Icing Mitigation Studies and Technology with Applications to Security Systems

Multi-Year Project G4957

SPS Key Priorities	3.a. Security-related Advanced Technology
Country Directors	Canada, Ukraine and Belgium

Ice build-up can have hazardous effects on the functioning of military and security systems, affecting equipment on land, at sea and in the air. The presence of excess ice, for example, can cause marine vessels, Unmanned Aerial Vehicles (UAVs) and aircraft to malfunction and, in extreme cases, crash. This multi-year project aims at better understanding the shedding of drops from coated surfaces and their propensity for icing and developing formulations to create coating materials facilitating drop shedding and mitigating icing. Energy efficient strategies will also be explored, including anti-icing systems based on electrical heating. Scientists from the York University, the Odessa I.I. Mechnikov National University, the Vladimir Martynovskiy Institute of Refrigeration, Cryotechnology and Ecoenergetics and the Université Libre de Bruxelles are working together on this research project.

Project G4957 aims to develop a coating material to mitigate the hazardous effects of ice build-up

Holographic and Impulse Subsurface Radar for Landmine and IED Detection

Multi-Year Project G5014

SPS Key Priorities	3.c. Mine and Unexploded Ordnance Detection and Clearance
Country Directors	Italy, Ukraine and United States

Detecting buried explosives is a vital security issue. The development of techniques that enable rapid detection with a low number of false alarms is crucial. This project is developing a remotely-operable, robotic, multi-sensor device for detection of UXO, mines, and IEDs. This device will enhance the detection of dangerous targets and diminish the number of false alarms by means of new, techniques combining holographic and acoustic methods. The enhanced radar will make possible the demining of larger areas of land in a safe and efficient manner, open new possibilities in demining in a range of soil conditions, help diminish the number of casualties among demining personnel and civilians and reduce the overall cost of demining. Scientists from the University of Florence, the National Academy of Sciences of Ukraine and the Franklin & Marshall College in the United States are working together to create this first prototype.

Project Kick-Off meeting – October 2015

Euro-Atlantic Partnership Council (EAPC) Partners

Developing a Multinational Telemedicine System for Emergency Situations

Multi-Year Project G4748

SPS Key Priorities	2. Enhance Support for NATO-led Operations and Missions
Country Directors	Romania, Finland, Moldova and Ukraine

Live testing of the SPS telemedicine system during the exercice Ukraine 2015, attended by NATO Secretary General and the President of Ukraine.

This project aims at developing a multinational telemedicine system (MnTS) to improve access to health services and increase survival rates in emergency situations, including in remote areas. Telemedicine assistance supports the teams on the ground in remote areas with expertise not present at the scene of the disaster. This will allow the right aid and care to reach those who need it most quickly, with the potential to save many lives on the battlefield as well as in disasters with civilian casualties.Through the use of modern communications technologies, a medical specialist will be able to assess the patient, determine the diagnosis and provide real-time recommendations to the on-site/in theatre caregiver. Once developed, the MnTS will have a dual-use potential both civilian and military including crisis situations such as the conflict in Ukraine. The technology was successfully live tested during a field exercise in Lviv, Ukraine in September 2015, attended by NATO Secretary General Jens Stoltenberg and the President of Ukraine, Petro Poroshenko.

Smart Energy in Capable Logisitican 2015: From Observation to Recommendation

Advanced Research Workshop G5018

SPS Key Priorities	1.b. Energy Security
Country Directors	Lithuania and Austria

Smart Energy technologies were being tested during the exercise Capable Logistician 2015

The increasing range of available Smart Energy technologies (e.g. micro grids, energy management systems, photovoltaic panels, insulation material, energy efficient climate systems and water purification) is allowing field camps to become more sustainable and resilient. However, due to a lack of standards, new technologies are often difficult to integrate and there is a lack of interoperability. The ARW “Smart Energy in Capable Logistician 2015” that was organised by the NATO Energy Security Centre of Excellence and the Austrian Climate and Energy Funds in Hungary, 15-17 June, aimed at assessing this challenge. About 25 experts from ministries of defence and research facilities observed and assessed the interaction of Smart Energy components that were installed by 14 private companies, the German Bundeswehr and the U.S. Army during the exercise Capable Logistician 2015. Their recommendations for standards will be included in the final Report of the exercise CL15 that will be presented to NATO in early 2016. As part of the workshop, 12 video clips were produced for awareness and training purposes.

Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region

Advanced Research Workshop G5012

SPS Key Priorities	1.c. Cyber Defence
Country Directors	Italy and Georgia

Widely publicized cyber-attacks – considered as examples of cyber warfare by some experts – were carried out in 2008 against Georgia. Those attacks resulted in a redefinition of the Georgian government's agenda, with a high priority on cyber defence and critical infrastructure protection. Recognizing that the Georgian experience is not unique and that the surrounding nations are also subject to cyber-attacks, often from the same national sources, the Data Exchange Agency (DEA) of Georgia in cooperation with Italy developed this ARW with a regional focus.

Participants of the SPS workshop discussing cyber defence cooperation

The ARW evaluated options for enhanced regional cyber defence cooperation, with the ultimate goal of information sharing, creating trust and common cyber defence countermeasures, including enhanced coordination on common technical, regulatory and interoperability frameworks in the Southern Caucus and the Black Sea region. The main result of this workshop is the start of a process to improve cooperation among nations in the region to ensure an overall increased preparedness and capability to prevent and respond to cyber-attacks efficiently and effectively. This process could pave the way to improve and enhance regional partnerships and cooperation in cyber space as well as eliminating the duplication of efforts and resources. A follow-up project is under consideration.

Cyber Defence Laboratory and Training at the Technical University of Moldova

Multi-Year Project G5083

SPS Key Priorities	1.c. Cyber Defence
Country Directors	Estonia, Republic of Moldova and Romania

In recent years, Allied and partner countries have experienced an increase in number and sophistication of cyber-attacks. To respond to these threats, the Republic of Moldova has requested support in developing human factor-related capabilities. A well-designed, state-of-the-art cyber defence laboratory and specially targeted training program will substantially contribute to these efforts, while focusing on the needs and requirements of the Ministry of Defence of Moldova. The goal of the project, bringing together experts from Estonia, the Republic of Moldova and Romania, is to establish such a cyber defence laboratory for training and research, making it available to all national defence and security-relevant institutions in the country as well as to students of the Technical University of Moldova (TUM). The project will ensure that the Republic of Moldova obtains a top quality cyber defence laboratory and Moldavian cyber defence experts receive a specially tailored training in cyber incident management.

Advanced Regional Civil Emergency Coordination Pilot

Multi-Year Project G4968

SPS Key Priorities	1.a. Counter-Terrorism
Country Directors	United States, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia*, Montenegro

National and international disaster response capabilities have received significant attention due to their continued importance for natural and man-made disasters. Particularly stressing are large-scale events where thousands of first responders from a wide variety of jurisdictions and agencies are involved in the response efforts. Organising, coordinating and commanding these efforts is a significant technical challenge, as it requires timely collection and distribution of information to enable shared situational awareness across all participating responders and agencies. This project aims at extending the Next-Generation Incident Command System (NICS), developed under the sponsorship of The United States' Department of Homeland Security's Science and Technology Directorate (DHS S&T) to NATO allies and partners in South East Europe. NICS is a scalable, non-proprietary, standards-based software platform that provides rich, timely situational awareness, cross jurisdictional collaboration, and National Incident Management System-compliant protocols for the purpose of sharing information across the Homeland Security Enterprise. Countries involved, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia*, and Montenegro will provide key subject matter experts in various domains (Emergency Responders, Information Technology, etc.) to work with NATO, DHS, MIT Lincoln Laboratory, the system developers, to design, customize, and evaluate NICS and ensure it meets the needs of the region.

Mediterranian Dialogue (MD) Partners

Enhanced Explosive Remnants of War (ERW) Detection and Access Capability in Egypt

Advanced Training Course G4899

SPS Key Priority	3.c. Mine and Unexploded Ordnance Detection and Clearance
Country Directors	The Netherlands and Egypt

Egyptian armed forces undergoing demining training.

Building on the successful implementation of the top-down SPS project "Advanced Detection Equipment for Demining and UXO Clearance in Egypt", this project which was initiated in 2014 aims to provide Egypt with an enhanced operational detection and clearance capability.

The project is composed of two phases – detection and access. The first phase includes the use of enhanced Ground Penetrating Radar detection systems capable of identifying anomalies buried at greater depths. In the second phase, the use of suitable excavation and associated equipment will enable safe access to the exposed ERWs. Provision of this enhanced capability will greatly enhance the safety of Egyptian deminers, reducing the number of casualties from ERW clearance and improving individual confidence and the credibility of the Egyptian de-miners. This will have an immediate effect on the safety and security of the local population, reducing the threat from ERW and releasing land for economic development.

Multidisciplinary Metrics for Soldier Resilience Rediction and Training

Multi-Year Project G4829

SPS Key Priorities	2. Enhance Support for NATO-led Operations and Missions
Country Directors	Croatia, Israel and the United States

The aim of this project is to better understand soldiers' stress resilience, vulnerability and pathophysiology. To this end, scientists work to identify multidisciplinary risk factors which could be used in the prediction of soldiers' resilience and vulnerability. One outcome of the project will be the development of a state-of-the-art pre-deployment training programme for armed forced aimed at strengthening the resilience of the soldier. The project participants will be exposed to stressful pre-deployment simulated combat training, and will be assessed for prediction of their mission readiness based on novel multidisciplinary metrics. Experts from the University of Zagreb, the Ruder Boskovic Institute, the Hadassah Hebrew University Hospital and the Emory University School of Medicine are leading this project.

Network Vulnerability Assessment & Risk Mitigation Course

Advanced Training Course G4966

SPS Key Priorities	1.c. Cyber Defence
Country Directors	Germany and Morocco

This Network Vulnerability Assessment and Risk Mitigation Course, part of a broader Cyber Security Certificate Programme, was offered together by the NATO School in Oberammergau, Germany and the Naval Postgraduate School in Monterey, USA under the sponsorship of the SPS Programme. The aim of the course was to involve students directly with the methodologies and techniques used for vulnerability assessments and mitigation. This ten-week course, held in Rabat was a mix of lectures, classroom seminar discussion, online discussions, videos, online labs and quizzes. In total, 34 members of the Ministry of National Defence of Morocco were trained and were awarded the United States National Security Agency (NSA) and the Committee on National Security Systems (CNSS) National Information Assurance Training Standard Certification for System Administrators. A second course, part of the same Cyber Security Programme on the topic of Network Traffic Analysis will be offered in March and June of 2016 with the support of the SPS Programme.

Network Vulnerability Assessment & Risk Mitigation course - Group photo of participants and instructors

National System of Crisis Management Coordination – Extension (Phase II)

Multi-Year Project G4451

SPS Key Priorities	2. Enhance Support for NATO-led Operations and Missions
Country Directors	France and Mauritania

This project aims at putting in place a National System of Crisis Management Coordination Centres in Mauritania and supporting the establishment of a national civil emergency planning framework. In 2012, the first phase of this project was initiated in order to improve national responses to emergencies by developing

regulatory standards and operational procedures; enhancing coordination between national, regional and local levels and strengthening capabilities for analysing risks and threats. In 2014, Allies approved the second phase of the project which aims at completing the Mauritanian Crisis Management System for a more effective response to the various risks and threats faced by the country. The Centre was inaugurated in January 2015 and will help reduce vulnerability to risks and threats associated with terrorist or illicit activity, in particular in isolated areas, through increased coordination between the various national civil protection and emergency response actors. The extension of the project will finalize the territorial coverage by connecting the remaining six regions, reaching out to partially isolated areas liable to fall under the influence of terrorist or extremist organisations.

Counter-IED Assessment and Training for the Jordanian Armed Forces

Advanced Training Course G5017

SPS Key Priority	1.a. Counter-Terrorism
Country Directors	Spain and Jordan

JAF undergoing C-IED training

JAF undergoing C-IED training

In 2015, NATO offered support to Jordan with concrete capacity building assistance. As part of the Defence Capacity Building Package for Jordan launched at the Wales Summit, two Advanced Training Courses were developed under the umbrella of the SPS Programme, with the Madrid C-IED Centre of Excellence (CoE) in the lead, to deliver a Basic Improvised Explosive Device (IED) Field Exploitation Course and C-IED Awareness Course to the IED/EOD Unit of the Jordanian Armed Forces (JAF). The training aimed to support JAF tactical IED exploitation as well as the planning and integration of C-IED enablers during operations in an IED threat environment.

The Basic IED Field Exploration Course (BIFEC) took place in Madrid, Spain in May 2015, with 15 JAF/EOD unit personnel in attendance. The course provided an overview of the execution of C-IED field exploitation, and included technical and forensic field exploitation in order to obtain immediate technical intelligence and to preserve evidence for further investigations, legal processes or military action.

The C-IED Awareness course (CIAC) brought together 12 participants from the Jordanian Armed Forces and Law Enforcement in November 2015, with the intent of providing operational level HQ staff with an awareness of C-IED strategies and supporting activities that may be integrated into existing operational planning.

As part of the assistance to Jordan, the C-IED COE also conducted a Staff Assessment Visit in June to the Jordanian Counter-IED Unit in order to identify any additional C-IED urgent requirements. This initiative, considered to be a 'model of success', led to practical recommendations to further strengthen the Jordanian C-IED capability. As a result, Jordan has expressed interest in follow-on training courses and cooperation with the SPS Programme and the Madrid C-IED CoE.

Afghanistan National Research and Education Network (SILK Afghanistan)

Advanced Research Workshop G4868

SPS Key Priorities	2. Enhance Support for NATO-led Operations and Missions
Country Directors	United States and Afghanistan

Named after the Great Silk Road trading route linking Asia and Europe, the SILK-Afghanistan project provides high-speed internet access via satellite and fibre optics and contributes to the development of the Afghan education system. The Silk Afghanistan internet access became operational at Kabul University in Afghanistan in 2006 and the network has since been expanded to 34 Afghan universities as well as some governmental institutions. Today, some 150,000 students – of whom 35 % are women – use the internet thanks to SILK-Afghanistan.

Dutch Military Cadets engage in a dialogue with Afghan civilians via VTC

In 2013, Afghanistan became the 19th member country in the TEIN4 network (Trans-Eurasia Information Network, phase 4). This regional academic network provides a dedicated high-capacity internet network between research and education communities in the region and is co-funded by the European Commission.

On May 20th and 21st 2015, representatives from the Afghan government, the European Commission and NATO came together for a two-day workshop to take stock of the achievements of the SILK-Afghanistan programme, assess current needs, and set out a plan to ensure a sustainable future for the initiative. NATO funding has been extended until June 2016 to bridge the gap between the handover to the European Union through the TEIN4 network.

Transitioning from Military Interventions to Long-Term Counter-Terrorism Policy

Multi-Year Project G4855

SPS Key Priorities	1.a. Counter-Terrorism
Country Directors	The Netherlands and Australia

In the current geopolitical environment, military interventions are led by multi-state and multi-party coalitions, which inevitably impacts the design of exit strategies. This research project investigates how counter-terrorism planning has been incorporated into these exit strategies and how effective they have been. The specific focus is on three recent operations - two NATO-led, Afghanistan and Libya, and one under a national lead, Mali – for which key success factors and best practices will be identified. This project will enhance NATO and partner countries' knowledge of military transitions led by a coalition of states and will provide them with a set of recommendations for future conduct and for the design of counter-terrorism policies.

Privacy Preserving Big Data Processing Using Cloud Computing

Multi-Year Project G4919

SPS Key Priorities	1.c. Cyber Defence
Country Directors	United States and the Republic of Korea

This multi-year project, launched in 2015, aims at developing a solution for preserving

confidentiality and integrity for big data processing. As with most technologically dependent sectors, the defence and military sector also faces significant challenges in information processing. The scale of data which is continuously collected and must be stored and analyzed threatens to overwhelm existing data processing facilities. In this context, improving the efficiency to securely process large amounts of data is becoming key to deliver future defence superiority and security.

The project, led by Korea and the United States, focuses on the development of cloud computing and big data technologies that provide a promising solution to this challenge. Specifically, cloud computing offers computation/storage service in a flexible and scalable way, and big data processing technology enables the user to take advantage of this powerful computation/storage capability. However, existing cloud-based big data processing takes little account of the security of the data, especially important for defence applications. Therefore, designing a secure cloud based big data processing solution is an important part of cyber defence.

Rapid Skin Wound Healing by Integrated Tissue Engineering and Sensing (RAWINTS)

Multi-Year Project G4961

SPS Key Priorities	1.d. Defence against CBRN Agents
Country Directors	Belgium, Japan, Italy, Spain

Skin wound healing is a very complex biological process that can take quite a long time. This project contributes to the development of rapid medical countermeasures to reduce the recovery time. To this end, scientists from Japan and Belgium are working together to build human disposable skin or mucosa patches for immediate applications in case of emergency. These patches will provide fast relief to civilians and military personnel injured by chemical or physical agents destroying for example their skin or other surface tissues. The new patches will strengthen medical countermeasures to the impact of exposure to e.g. CBRN agents and provide support in monitoring the healing process associated with wounds, burns and vesicles.

Kick-off meeting held in July 2015 at the NATO HQ

CHAPTER VI
Public Diplomacy Activities

The SPS Programme has considerable public diplomacy value: It demonstrates NATO's commitment to cooperative security by engaging partner countries in practical cooperation with tangible results. It therefore helps to illustrate the benefits of NATO's partnership policy. With its focus on non-military cooperation in civil science, technology, innovation and beyond, the SPS Programme also strengthens the civilian image of the Alliance, balancing the perception of NATO as a political-military organisation. Throughout 2015, the SPS Programme has therefore continued to make use of all available public diplomacy tools. The impact of public diplomacy initiatives was further amplified by cooperating and coordinating closely with the NATO Public Diplomacy Division.

Public Diplomacy highlights for the SPS Programme in 2015 included:

- the award of the Nobel Prize in Chemistry to a former NATO Science Fellowship Grantee and an associated, successful outreach campaign;
- the participation of the SPS flagship project on **Telemedicine in the EADRCC field exercise Ukraine 2015**, including the visit of NATO Secretary General Jens Stoltenberg and the Ukrainian President Petro Poroshenko to attend a demonstration of the project capabilities;
- the **SPS Advanced Research Workshop** and broader contributions of the **SPS Smart Energy Team** to the **Exercise Capable Logistician 2015** that focused on smart energy applications in military operations.

The SPS website remained the focal point for disseminating information about the SPS Programme to the general public and the SPS stakeholders by providing updates on recent SPS activities to the interested public as well as detailed information about the SPS application procedures and relevant forms for interested applicants.

Throughout 2015, the SPS Programme has successfully been able to **strengthen its social media efforts by taking a more strategic approach to the management of its Twitter Account**, cooperating with the NATO Social Media Team and by coordinating with Delegations, where appropriate. Cooperation with the NATO Channel also remained fruitful and resulted in several videos about SPS activities, notably a corporate video about the SPS Programme.

In 2015 also marked an increase in mainstream media coverage of various SPS activities in NATO and partner countries. At the same time, the SPS Programme continued to create and update information material about the Programme.

The SPS Programme also continued to conduct SPS Information Days in NATO and Partner countries throughout 2015 and organised and participated in other outreach events to raise awareness of the SPS Programme and the achievements of SPS activities.

Public Diplomacy Highlights in 2015

Nobel Prize Winner Prof. Aziz Sancar

In 2015, former NATO grantee Prof. Aziz Sancar was awarded the Nobel Prize in Chemistry together with two colleagues, Tomas Lindahl and Paul Modrich, for their mechanistic studies of DNA repair. The SPS Programme is proud to say that throughout his career, Prof. Sancar received several NATO grants that supported his ground-breaking research.

In January **1971**, he was awarded a PhD scholarship by the Turkish Scientific and Technological Research Council TUBITAK through the **NATO Science Fellowship Programme**. This two-and-a-half year grant helped Sancar to move to the United States in 1973, where he studied molecular biology and eventually completed a Ph.D. on the photo-reactivating enzyme of E.coli at the University of Texas in 1977.

Sancar later accepted an offer to join the University of North Carolina School of Medicine, Chapel Hill, as an associate professor in Biochemistry in 1982. In February **1986**, Professor Sancar and Dr Paul Heelis (North East Wales Institute, United Kingdom) received a **NATO Collaborative Research Grant**, supporting them to engage in a multi-year research project entitled "The photochemical studies of the mechanism of DNA photolyase". The grant also allowed Prof. Sancar to visit his colleague in the UK several times to conduct experiments together. The final report of the NATO grant noted that "considerable progress has been made in understanding the mechanism of DNA repair" during the project. In **1990**, Prof. Sancar and Dr Heelis successfully applied for another **NATO Collaborative Research Grant** on the topic of "Photoenzymic Repair of UV-Damaged DNA". This allowed the team to continue its work in the first half of the 1990s on this eventually Nobel Prize-winning subject.

The SPS Programme collaborated with PDD to publish a feature story on this achievement on the NATO homepage and the SPS website, and to disseminate the article through the weekly NATO newsletter '*NATO Update*' and various social media channels, including Twitter, Facebook, Google+ and LinkedIn.

The tweet by the official NATO Account turned out to be the **Top Media Tweet for December 2015**, meaning that this was the tweet with an image that received the highest number of impressions during that month. It also attracted a high number of retweets (243) and likes (266). Moreover, the tweet had an above average life, i.e. where a number of retweets continued after the day of posting. Also on Facebook the story on Nobel Prize Winner Prof. Sancar did very well compared to other posts with an organic reach of 115,408 people, 1,470 Likes, 184 comments and 263 shares. The story saw close to 1,900 post clicks (i.e. expanding

the story to read it in full), as well as 291 link clicks. The comments provided on the Facebook post further showed the appreciation for NATO's support to scientific cooperation, highlighting once again the Programme's public diplomacy value.

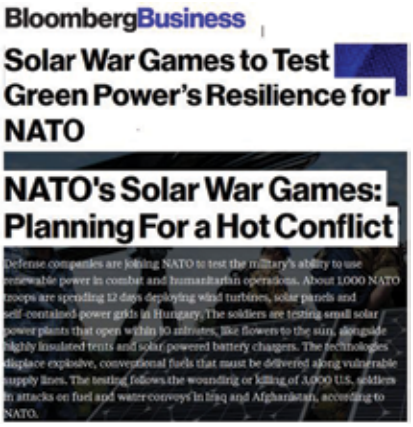
NATO Secretary General & Ukrainian President Poroshenko visit demonstration of the SPS Telemedicine project as part of the EADRCC Field Exercises UKRAINE 2015

An SPS project to develop a multinational capacity for disaster response was successfully live tested during the field exercise "Ukraine 2015" in Lviv, Ukraine in September 2015, attended by NATO Secretary General Jens Stoltenberg and the President of Ukraine, Petro Poroshenko. Co-organised by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and the State Emergency Service (SESU) of Ukraine, the field exercise involved 1,100 rescue workers from 34 countries. It was the first time that independent national telemedicine systems interacted to provide medical support in a disaster scenario.

Telemedicine supports the teams on the ground in remote areas with expertise that is not present at the scene of the disaster. Portable medical kits allow first responders to connect to the system to receive 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 the patient, determine the diagnosis and provide real-time recommendations.

The telemedicine project attracted considerable media attention and a large number of renowned international mainstream media, including the New York Times, ABC News, and the Washington Post, as well as outlets in Romania and New Zealand reported on the multinational project that involves experts from Romania, Finland, the Republic of Moldova, Ukraine and the United States.

The project's role in the EADRCC Ukraine 2015 exercise was covered in a news story on the SPS website, including an extensive photo gallery, and was featured in a NATO Channel video about the exercise. The EADRCC and NCIA, too, reported about the live testing of telemedicine project on their websites. The SPS Programme sought to enhance these public diplomacy efforts by sharing this coverage on the SPS Twitter Account.


BloombergBusiness

Solar War Games to Test Green Power's Resilience for NATO

NATO's Solar War Games: Planning For a Hot Conflict

Defense companies are joining NATO to test the military's ability to use renewable power in combat and humanitarian operations. About 1,000 NATO troops are spending 12 days deploying wind turbines, solar panels and self-contained power grids in Hungary. The soldiers are testing small solar power plants that open within 10 minutes, like flowers to the sun, alongside lightly insulated tents and solar-powered battery chargers. The technologies displace explosive, conventional fuels that must be delivered along vulnerable supply lines. The testing follows the wounding or killing of 3,000 U.S. soldiers in attacks on fuel and water convoys in Iraq and Afghanistan, according to NATO.

SPS Advanced Research Workshop at Exercise Capable Logistician

While ESCD organised a Smart Energy unit in the exercise "Capable Logistician 2015" that took place in Hungary on 8-19 June 2015, the SPS Programme funded an ARW "Smart Energy in Capable Logistician 2015: From Observation to Recommendation" (ref. G5018). As part of the workshop, 12 video clips were produced on micro grids, water purification, thermal solar power, heat exchange air conditioning units, and other topics for awareness and training purposes. The exercise also provided an opportunity to include the contributions of the SPS Smart Energy Team (SENT). The Smart Energy components and the workshop experts attracted over 500 visitors, as well as a number of journalists from PDD, SHAPE and independent media & press. They produced news articles, interviews and video clips, e.g. the Bloomberg News article "Solar Wargames to Test Green Power's Resilience for NATO", the PDD video "The soldier of the future" and several articles on Smart Energy in the journal "The European – Security and Defence Union". Public news, videos and reports on Smart Energy and the workshop can be found at www.natolibguides.info/smartenergy.

NATO Website

The SPS website remains a central tool for providing stakeholders and the wider public with important and up-to-date information about the SPS Programme, its grant mechanisms and opportunities for collaboration. The website also keeps its visitors abreast on the work of the Programme and publishes news stories as well as videos on selected SPS projects and events on a regular basis.

Most importantly, the SPS website is the main point of contact and information for scientists and experts wishing to explore the SPS Programme and submit bottom-up applications. It provides comprehensive, up-to-date information about the application and selection procedures, all necessary application and reporting forms as well as examples of current and past SPS activities. In 2015, regular updates to the website have helped the SPS Programme to enable a smooth transition to the new project management handbook as well as to the new guidelines for SPS events.

The following table shows the number of page views of the SPS website www.nato.int/science in 2015, as well as the views of individual news stories that were published throughout 2015.

Title	Page views	Unique page views	Avg Time on Page
SPS Website	55,731	34,625	01:05
NATO ‘’Smart Energy” exercise gets underway in Hungary	4,660	4,329	02:46
Fighting weapons of terror	2,770	2,490	02:30
NATO-supported DNA researcher wins Nobel Prize in Chemistry	2,442	2,279	03:27
Women, Peace and Security agenda in the spotlight at NATO	2,073	1,799	02:48
The role of women in the Ukraine military conflict	1,651	1,544	02:15
NATO and its partners become smarter on energy	1,366	831	01:18
NATO tests telemedicine system in Ukraine	1,216	1,116	03:29
Science: NATO’s “third dimension”	1,048	908	02:00
Mauritania: new crisis management centre	845	616	01:23
NATO and Ukraine strengthen scientific cooperation	840	766	02:43
Supporting Jordan’s cyber defence strategy	828	576	01:49
Enhanced cyber defence cooperation in the South Caucasus and Black Sea region	800	723	02:21
Regional cooperation to improve CBRN responses	672	586	02:41
SILK-Afghanistan: 10 years of promoting internet connectivity in Afghanistan	465	412	02:45
Handling gender-related complaints in the armed forces	428	379	02:21
NATO engages with the scientific community in Italy	273	254	01:54
Improving international conflict management	219	191	02:10
NATO reaches out to scientists and experts in Bulgaria	111	98	02:50

NATO Channel

In cooperation with NATO TV, several videos about SPS activities were produced in 2015. This included the creation of a corporate video providing a concise overview of the SPS Programme and introducing opportunities for cooperation. This video in particular was very well received and has been showcased at various SPS outreach events such as SPS Information Days.

In conjunction with Exercise Capable Logistician, the SPS Programme also worked together with PDD on the recording of an interview with NATO Assistant Secretary General for Emerging Security Challenges, Ambassador Sorin Ducaru, to explain the concept of smart energy.

Another NATO TV story on the SPS-funded National Crisis Management Centre Mauritania was further adapted to a francophone audience. The SPS project on telemedicine also featured in a video about the EADRCC field exercise in Ukraine in September 2015.

See Annex V for an overview of SPS videos.

Mainstream Media Coverage

Throughout 2015, several SPS activities have enjoyed a high level of publicity and coverage in mainstream media, including in national and international newspapers as well as Television. Flagship initiatives have for example been picked up by major outlets, including Bloomberg and the New York Times. BioPrepWatch, a leading global Internet-based newswire dedicated to the global coverage of biological terror threats and counter-measures, reported extensively on an SPS CBRN Response Training Course that took place in Bulgaria in May.

SPS activities have also been picked up by media in NATO partner countries. For instance, the launch of a SPS multi-year project to support the implementation of a cyber defence strategy in Jordan was reported on the national TV News Channel. In

Mauritania, the opening of the SPS-supported crisis management centre was also reported in the daily television news.

SPS activities were also extensively covered on the websites of participating institutes and universities and of national ministries. This included news stories, as well as some video productions. Please see Annex V for a non-exhaustive overview of SPS-related media coverage.

The SPS Programme on Twitter

In 2015, the SPS Programme enhanced its public diplomacy efforts through social media channels and the SPS Twitter Account @NATO_SPS proved to be a useful tool to update SPS stakeholders on current activities and to promote the work of the SPS Programme to the wider public.

Following the creation of the SPS Twitter Account @NATO_SPS in 2014, the SPS Programme sought to foster its presence on Twitter in 2015, including by tweeting more regularly and by coordinating public diplomacy efforts with colleagues from PDD/Social Media. As a result, stories and videos about SPS activities have been posted on the official NATO Facebook page, the NATO Twitter Account as well as NATO's LinkedIn presence.

In 2015, the SPS Twitter account also registered a marked increase in followers as the number more than doubled from just under 300 followers at the beginning of 2015 to 850 by the end of the year. The main audience are scientists, subject matter experts, interested individuals and Delegations of Allies and partner countries at NATO.

With a growing followership and more active stance on Twitter, @NATO_SPS tweets were also shared more widely: Compared to 2014, the number of re-tweets increased more than fivefold in 2015 and @NATO_SPS tweets received more than three times as many likes as they in the previous year. Likewise, tweet impressions, i.e. the number of times users saw the tweet on Twitter, grew steeply.

The most successful tweet disseminated from the SPS Twitter Account shared a photo and web story about a SPS-funded workshop on the role of women in the Ukraine military conflict that took place in Kyiv in September 2015. It was **retweeted 62 times** and received **53 likes**. The tweet was also shared by important social media multipliers, including the official NATO Account and several Allied and partner delegations. Overall, this tweet **received more than 32,000 impressions** and close to 1200 engagements.

Coordinating with key multipliers and the NATO Social Media Unit allows the SPS Programme to enforce the messaging about its activities, as the example of outreach efforts surrounding the Nobel Prize Winner Aziz Sancar have shown. The SPS Programme also worked together with PDD colleagues at the end of 2014 to spread

the word about SPS engagement with Ukraine: A Tweet from the official NATO Twitter account on enhanced SPS cooperation with Ukraine was **re-tweeted 232 times** and received **107 likes**.

Therefore, in 2016, the SPS Programme intends to continue making best use of its Social Media presence, including through cooperation with NATO's PDD and NATO Delegations.

Science Publications, Country Flyers & new Brochures

The SPS Programme continues to produce and update informational material such as pamphlets, brochures and flyers. For instance, a brochure providing a comprehensive overview of SPS cooperation with Ukraine was developed in 2015. The SPS Programme also supported the publication of findings of activities in the field of Women in Peace and Security. In the run-up to the inclusion of SPS activities in the exercises 'Capable Logistician 2015' in Hungary and the EADRCC field exercise 'Ukraine 2015', informative pamphlets and brochures were distributed to participants and journalists. Moreover, all country flyers presenting SPS activities with individual partner countries were updated throughout 2015 and presented on the SPS website.

As in previous years, many directors of SPS events have published their findings in the NATO Science Series. A total of 21 books were published in 2015. Annex 4 provides a complete overview of all books published under the NATO Science for Peace and Security Series.

SPS Information Days

SPS Information Days are an excellent opportunity to raise awareness of the SPS Programme and develop potential new activities by engaging with government representatives, scientists, and experts in NATO and partner countries.

Serbia

On 10 July, a SPS Information Day took place at the Serbian Academy of Sciences and Arts in Belgrade, Serbia. The event provided a timely opportunity to assess the progress and results of ongoing SPS activities and exchange views on new joint activities.

Meeting with Dr Aleksandar Belić, State Secretary, Prof. dr Viktor Nedović, Assistant Minister and the other representatives of the Ministry of Education, Science and Technological Development

In the past, SPS cooperation with Serbia has mainly focused on environmental security activities such as seismology and flood monitoring with many projects having a positive impact across the Balkan region. In this regard, the Serbian interlocutors also emphasized the importance of public diplomacy activities to inform the population about the benefits

of SPS cooperation. During the Information Day, government representatives and experts also expressed an interest in expanding SPS cooperation in the areas of cyber defence training, CBRN resilience and advanced technologies. Serbia hosts a number of scientific institutes that could be part of interesting future collaborative SPS initiatives. This includes the Institute of Physics, the Mine Action Centre, as well as the CBRN Training Centre that was accredited as a Partnership Training and Education Centre (PTEC) in 2013.

While in Belgrade, the Senior SPS and Partnership Cooperation Advisor also met with Research Directors of the National Academy of Sciences, and with government officials of the Ministries of Foreign Affairs, Defence, and Interior to discuss and explore potential future areas of scientific cooperation.

Bulgaria

Over 120 experts and scientists from NATO and partner countries attended a Science for Peace and Security (SPS) Information Day on 25 September 2015 at the University of Sofia in Bulgaria to take stock of ongoing cooperation and look ahead to identify potential scientific cooperation in the areas of CBRN resilience and cyber defence.

Visit of the Bulgarian Defence Advanced Research Institute in margin of the SPS Information Day in Sofia

The Information Day benefitted greatly from the high-level participation of representatives from Serbia and Montenegro who presented their priority areas for security-related scientific cooperation and used the opportunities to exchange ideas for potential new SPS activities with their Bulgarian colleagues. Current and former SPS grantees also presented, including the director of a SPS Training Course in CBRN defence who presented the training results to fellow scientists and experts, reporting also about his experience of working with the SPS Programme.

While in Bulgaria, SPS staff also visited the Bulgarian Defence Advanced Research Institute, the main scientific institution of the Ministry of Defence which undertakes applied research and testing and provides scientific and military technical advice. It was discussed how the SPS Programme could play a complementary role to intensify practical cooperation with Bulgaria, in particular in the areas of energy security, cyber defence, and unmanned aerial vehicle (UAV) platforms. SPS staff also had the opportunity to attend demonstrations in different laboratories of the Institute.

Italy

Prof Federico Testa (ENEA), Mr Gianfranco Incarnato (Italian Ministry of Foreign Affairs), Ambassador Sorin Ducaru (NATO) and Ambassador Alessandro Minuto-Rizzo (NATO Defense College Foundation) opened the SPS Information Day in Rome.

Scientists and experts from Italy and NATO partner countries helped to raise awareness of the SPS Programme and presented SPS activities in the area of cyber security and chemical, biological, radiological and nuclear (CBRN) defence during an SPS Information Day. Around 60 interested scientists and experts attended the event on 21 October 2015, which had been organised in cooperation with the Italian National Agency for

New Technologies, Energy and Sustainable Economic Development (ENEA), the Permanent Representation of Italy to NATO and the Ministry of Foreign Affairs of Italy.

The event was also an opportunity for current and past SPS grantees from Italy to speak about their projects and experience with the SPS Programme, focusing on cyber defence and CBRN resilience. Representatives from NATO partners Egypt and Uzbekistan also participated to present priority areas of scientific cooperation and to build networks with Italian scientists. While in Rome, the NATO SPS Independent Scientific Evaluation Group (ISEG) also convened.

Israel

On 12 November 2015, a SPS Information Day took place at the Israeli Ministry of Foreign Affairs to review past SPS cooperation, discuss new ideas for collaborative activities and raise awareness about the SPS Programme among the Israeli scientific community.

Overall, the event proved to be very productive with lively interest from Israeli scientists and government representatives to receive in-depth information about the work of and the opportunities under the SPS Programme. The attendees expressed an interest in deepening Israel's involvement in the SPS Programme, in particular in fields such as advanced technologies with security applications and counter terrorism. At the margins of the Information Day, NATO Assistant Secretary General Ambassador Sorin Ducaru engaged in several bilateral meetings with interlocutors in the Israeli Ministry of Foreign Affairs.

Republic of Korea

Ambassador Sorin Ducaru (NATO) meeting with the Korean Deputy Minister for Multinational and Global Affairs Mr Dong-ik Shin during the SPS Information Day in Seoul.

On 26 November 2015, an SPS Programme Information Day was held in Seoul, focusing on engagement with civil society and international experts in the areas of cyber defence, Women, Peace and Security and energy security. The first event of its kind between NATO and South Korea, the SPS Information Day attracted more than 80 participants from a wide range of sectors, including government, NGOs, universities, and international organisations.

The Information Day was organised in conjunction with the Ministry of Foreign Affairs and provided the opportunity to present the SPS Programme to the scientific and expert community, as well as to take stock of ongoing SPS initiatives. To date, collaborative activities with South Korea have been primarily focused on the development of advanced technology and cyber defence. The SPS Information Day allowed for dialogue on cutting edge cyber defence technology, but also opened the floor for a discussion on Women, Peace and Security. The visit further allowed for bilateral exchanges between high-level representatives from South Korea and Assistant Secretary General, Ambassador Sorin Ducaru.

Tajikistan

A SPS Information Day that took place on 9 December 2015 in Dushanbe, Tajikistan offered an opportunity for over 40 policy makers, scientists, and researchers to discuss security challenges of mutual interest, such as border security, counter-terrorism, energy and environmental security.

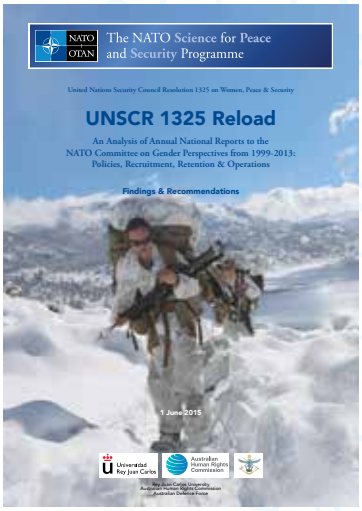
NATO has been cooperating with the Republic of Tajikistan since 1992 when the country joined the North Atlantic Cooperation Council. Since then, the SPS Programme supported several projects that have been developed in cooperation with Tajikistan. The country participated, alongside with several other countries in the region, in an SPS flagship project "Virtual Silk Highway". In 2012, a workshop *Central Asia's Strategies and Perceptions on Afghanistan*, led by Tajik and US experts, was organised in the framework of the SPS Programme.

As a result of the Information Day, promising new project ideas have been identified in the field of counter terrorism and border security. Furthermore, contacts were established with the delegates from Tajik institutions and non-governmental organisations active in the region. Together with a visit of the representatives from the ESC Division to the OSCE Centre in Dushanbe and the OSCE Border Management Staff College, new opportunities were created for the further development of SPS initiatives.

Special SPS Public Diplomacy Events

In addition to SPS Information Days, the SPS Programme organised and participated in a number of events in 2015 with the aim of increasing awareness about the SPS Programme and raising its profile among key stakeholders. This included the hosting of several events pertaining to the agenda on Women in Peace and Security, the participation in the Future Security Conference in Berlin, as well as the organisation of an outreach event to the CBRN community in cooperation with the NATO Weapons of Mass Destruction Centre.

SPS support to the Implementation of UNSCR1325



Two major events organised in 2015 allowed the SPS Programme to showcase its support to the Women, Peace and Security agenda and engage with key stakeholders, they generated social media traffic, and resulted in interesting publications.

To kick off the "Gender Week" at NATO Headquarters at the beginning of June, the Science for Peace and Security (SPS) Programme hosted a conference to present the findings and recommendations of the SPS multi-year research project entitled "UNSCR 1325 Reload" on 1 June 2015. The findings and recommendations of that project are based on an analysis of Annual National Reports published by NATO's International Military Staff (IMS) Office of the Gender Advisor from 1999 to 2013, and map the integration of women in the armed forces of Allied countries. All keynote speeches of this event have been recorded and the videos have been uploaded to YouTube. The event further generated substantial traffic on Twitter, with various attendees tweeting live from the conference. The UNSCR1325 Reload Report is also available for download on the SPS website.

On 29 October 2015, the SPS Programme organised another event to mark the 15th anniversary of the adoption of UNSCR 1325 and to present the findings of two SPS projects: 'Gender-Related Complaints in Armed Forces' and 'The 1325 Scorecard'. As an outcome of the former project, a comprehensive Handbook on how to prevent and respond to gender-related discrimination, harassment, bullying and abuse was published and disseminated to participants. This event, too, was well covered on Twitter.

Participation in the Future Security Conference Berlin

In September 2015, the SPS Programme participated in the Future Security Conference in Berlin, organised by the Fraunhofer Institute. The event brought together leading experts and researchers from Germany and a wide range of NATO and partner countries who focus on security-related research and new technologies to present and discuss recent developments in the field. At this year's conference, more than 75 projects submitted from 16 countries were presented in oral and poster sessions. The SPS Programme organised

an information stall as part of the conference with the aim of building networks with potential future applicants and raising awareness of the Programme among key stakeholders. The event proved to be an excellent opportunity to reach out to scientists, to disseminate information about the SPS Programme, to build new networks, and to discuss new project ideas.

WMD/CBRN Outreach Event

NATO WMD Centre organised an Outreach Event on WMD-Non-Proliferation and CBRN Threats at NATO HQ with the participation of Allies and Partners on 22 September 2015. The opening session addressed NATO's current strategic-level policy and explained the Alliance's overall approach in non-proliferation and CBRN defence within the framework of cooperative security. The event ended with an interactive session where Partners had the chance to move between several stands presenting a range of practical options for cooperation, including a number of SPS activities in the area of CBRN defence.

CHAPTER VII
Outlook – The SPS Programme in 2016

In 2016, the SPS Programme will continue to develop new cooperative activities in support of NATO's strategic objectives, taking into consideration the changing security environment. The implementation of the Programme will be guided by the SPS Work Programme 2016.

New SPS initiatives will ensure high scientific standards and respond to Allied political guidance as well as strategic and partnership priorities. 2016 will also see the implementation of a number of recently approved flagship activities and enhanced public diplomacy efforts. Moreover, in accordance with the implementation of the IBAN Recommendation, the SPS Programme Management will be further streamlined.

Supporting NATO's Strategic Objectives

In 2016, the SPS Programme aims to continue to enhance its political impact on NATO's partnerships in line with the SPS 2016 Work Programme and Allied guidance resulting from **Ministerial meetings**, and the **Warsaw Summit**. It will develop and promote large scale, strategic activities, while keeping in mind that both top-down and bottom-up activities have a role to play.

In particular, the **SPS Programme will continue to support key NATO partnership initiatives such as the DCB Initiative**. In that context, new SPS flagship activities with **Jordan** and **Iraq** in the area of Counter-IEDs as part of their DCB Packages will be developed and implemented in 2016.

The SPS Programme further intends to foster regional cooperation, and secure the eastern and southern neighbourhood of the Alliance by maintaining the high level of cooperation with Eastern Partners and Ukraine, and by developing new activities with partner countries from the Middle East and North Africa (MENA) region. At the same time, the Programme will engage partners across the Globe and in Western Europe.

The SPS Programme will also closely monitor and respond to the outcomes and political guidance resulting from the **NATO Summit in Warsaw** in July 2016. Given its flexibility and versatility, relevant decisions and guidance arising from the Summit are expected to be reflected in the implementation of the Programme in the second half of 2016.

At the same time, a number of SPS flagship projects with high political impact will be implemented throughout 2016. These include:

A **Big Tent Meeting** with all NATO partners took place in February 2016 and provided a timely opportunity for an exchange of views on priority areas of cooperation for partners. The input received during this meeting will also support the development of new SPS initiatives with political and partnership value, responding directly to the interest expressed by partners.

Implementation of ongoing SPS Projects

- Civil Emergency Pilot in the Balkans
- Support to humanitarian de-mining in Ukraine
- Crisis Management Centre in Mauritania – Phase II
- Developing a Multinational Telemedicine System

Continued Improvement of SPS Programme Management & Outreach

In 2016, the SPS Programme will also seek to further improve and streamline its project management and working procedures through the implementation of the IBAN Recommendations of the SPS Financial and Performance Audit and through a performance-focussed managerial approach. Throughout 2016, the SPS Programme will follow the **path of continuous adaptation and increased managerial efficiency, transparency and accountability.**

Based on the SPS brand and the appreciation it has achieved, the SPS Programme stands ready to continuously adapt and respond to Allied political guidance, especially in the light of the upcoming Warsaw Summit and important political decisions that will be taken in 2016.

Moreover, the SPS Programme intends to **continue to exploit the public diplomacy value of its activities** through various channels, including through cooperation with PDD and NATO Delegations and with a focus on coverage in mainstream media. In that regard, the SPS Programme will also seek to link its outreach activities to political events and milestones in the implementation of SPS projects. In addition, a number of new public diplomacy products are in the pipeline for 2016. The SPS Programme will also continue to promote its activities through its website and Twitter account.

Annex 1: New SPS Activities Approved by PCSC in 2015

	Top-Down	Key Priority	Partnership Framework	SPS Reference	Grant Mechanism	Title	NATO Country	Partner Country	Other Countries
1		CT	MD	G4775	MYP	An Inexpensive 3D Millimetre-Wave Imaging System	TUR	ISR	
2		CBRN	MD	G4777	MYP	A Mechanistic Approach to Fight against Chemical Warfare Agents	ESP	ISR	FRA, USA
3		CBRN	EAPC	G4913	ARW	THz for CBRN and Explosives Detection and Diagnosis	GBR	MDA	
4		CBRN	MD	G4915	ASI	Molecular Technologies for Detection of Chemical and Biological Agents	CAN	MAR	
5		CYBER	PaG	G4919	MYP	Privacy Preserving Big Data Processing Using Cloud Computing	USA	KOR	
6		CT	MD	G4936	MYP	Hybrid Sensor Networks for Emergency Critical Scenarios	ITA	JOR	USA
7	X	ADV	NUKR	G4957	MYP	Icing Mitigation Studies and Technology with Applications to Security Systems	CAN	UKR	BEL
8		CBRN	**NUKR**	G4958	MYP	New Sensor Materials and Detectors for Ionizing Radiation Detection	FRA	UKR	
9	X	CBRN	MD	G4960	ATC	Improvements in radiation protection procedures: Implementation of best practices	PRT	MAR	
10	X	CBRN	**PaG**	G4961	MYP	RApid Skin Wound healing by Integrated Tissue engineering and Sensing (RAWINTS)	BEL	JPN	ITA
11	X	CT	EAPC	G4968	MYP	Advanced Regional Civil Emergency Coordination Pilot	USA	BIH	HRV, FYR*, MNE
12		HUMAN	**NUKR**	G4985	ARW	Addressing Security Risks at the Ukrainian Border through Best Practices and Good Governance - Sources and Counter Measures	POL	UKR	
13		CT	EAPC	G4986	ARW	Resilience-based approaches to physical and cyber infrastructure safeguarding	USA	SRB	
14	X	CBRN	**MD**	G4988	ARW	CBRN Risks in Land and Maritime Container Transport	ITA	EGY	
15		CT	NUKR	G4992	MYP	Long-range Stand-off Microwave Radar for Personnel Protection	CAN	UKR	
16		CT	**NUKR**	G5005	MYP	Magnetic Resonance & Microwave Detection of Improvised Explosive and Illicit Materials	TUR	UKR	
17	X	CYBER	**EAPC**	G5012	ARW	Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region	ITA	GEO	
18	X	UXO	NUKR	G5014	MYP	Holographic and Impulse Subsurface Radar for Landmine and IED Detection	ITA	UKR	USA

19	X	BORDER	EAPC	G5015	ARW	Border Security Challenges in Eastern Europe: Lessons for Allies and Partners	POL	MDA	UKR
20	X	CT	MD	G5017	ATC	Jordanian Armed Forces (JAF) Counter IED (CIED) Assessment and Training	ESP	JOR	
21	X	ENERGY	EAPC	G5018	ARW	Smart Energy in Capable Logistician: from Observation to Recommendation	LTU	AUT	
22		CBRN	EAPC	G5021	ASI	High-Pressure Crystallography: status artis and emerging opportunities in CBRN Defence	USA	SWE	
23	X	OTHER	EAPC	G5022	ARW	Countering Hybrid Threats: Lessons learned from Ukraine	ROU	MDA	
24	X	UXO	NUKR	G5024	MYP	Support to Humanitarian Demining in Ukraine	LUX	UKR	
25	X	CYBER	PaG	G5025	ATC	Cyber Defense Training Course for System Administrators of Mongolia	TUR	MNG	
26		ADV	NUKR	G5030	MYP	Titanium Armour with Gradient Strcuture: Advanced Technology for Fabrication	USA	UKR	
27		HUMAN	EAPC	G5036	ARW	National Action Plans (NAPs) on Women, Peace and Security	GBR	IRL	
28		CBRN	MD	G5042	MYP	Cell Biosensors for Detection of Chemical and Biological Threats	ITA	ISR	ROU, JPN
29		CBRN	NUKR	G5043	MYP	Multi-Sensor System for Rapid Detection of Hazardous Agents	ITA	UKR	FIN
30		CT	MD	G5044	ARW	Responses to Female Migration to ISIS	USA	MAR	
31		ADV	PaG	G5048	MYP	Nanostructures for Highly Efficient Infrared Detection	ESP	JPN	AUS, TUR, LTU
32		CT	EAPC	G5050	ATC	Countering the South-East European Terrorist Threat	USA	FYR*	
33		ENERGY	NUKR	G5055	MYP	Development of novel methods for the prevention of pipeline failures with security implications	ITA	UKR	
34	X	HUMAN	NUKR	G5066	ARW	The Military Conflict in Ukraine and UN Security Council Resolution 1325	ITA	UKR	
35	X	OPS	EAPC	G5071	ARW	Arab geopolitics in turmoil: Perceptions, unknowns and policies	ITA	SWI	
36		ENERGY	PaG	G5079	MYP	Improving Efficiency and Operational Range in Low-Power Unmanned Vehicles Through the Use of Hybrid Fuel-cell Power Systems	ESP	AUS	
37	X	OTHER	PaG	G5080	MYP	Tailor-Made Gender-Awareness Applications for the NATO Community	CAN	AUS	USA
38	X	CYBER	EAPC	G5083	MYP	Cyber Defence Laboratory and Training at the Technical University of Moldova	EST	MDA	ROU
39		CT	EAPC	G5086	ARW	Terrorists' Use of the Internet: Assessment and Response	GBR	IRL	
40	X	ENERGY	EAPC	G5093	ATC	Advanced Net Zero Energy Training	DEU	SWE	

41		CBRN	NUKR	G5094	MYP	Reliable Nuclear Materials Identification Technology From Spectrometry Data	USA	UKR	
42		ADV	NUKR	G5120	MYP	Infrared Transparent Ceramic Windows for High-speed Vehicles	DEU	UKR	
43		CT	EAPC	G5122	ARW	Not Only Syria? Foreign Figthers: A Threat to NATO Allies and Their Neighbours	POL	MDA	
44		CYBER	EAPC	G5126	ATC	Specialized Cyber Defence Trainings for the Civil Servants of Bosnia and Herzegovina	EST	BIH	
45		CYBER	EAPC	G5130	ATC	Specialized Cyber Defence Trainings for Civil Servants of Montenegro	EST	MNE	
46		CYBER	EAPC	G5131	ATC	Advanced Cyber Defense Training Course for System Administrators of Azerbaijan	TUR	AZE	
47	X	ENV	EAPC	G5136	ARW	Implications of Climate Change and Disasters on Military Activities: Building Resiliency and Mitigating Vulnerability in the Balkan Region	BGR	SRB	
48	X	CYBER	MD	G5139	ATC	Network Traffic Analysis Course	DEU	MAR	

Annex 2: SPS Projects Completed in 2015

	Top-Down	Key Priority	Partnership Framework	SPS Reference	Title	NATO Country	Partner Country	Other Countries
1		ENERGY	MD	G2620	Sahara Trade Winds to Hydrogen : Applied Research for Sustainable Energy Systems	USA	MAR	FRA, DEU, MRT, TUR
2	X	ENV	IO	G3195	Contribution to UNEP-UNDP-OSCE - Environment and Security Initiative (ENVSEC)	UNEP	UNDP	OSCE
3		ENV	MD	G3611	Desertification Observatory for Environmental and Socio-Economic Sustainability	ITA	MRT	
4		CT	MD	G3932	Novel Magnetic Sensors and Techniques for Security Applications	LVA	ISR	POL, USA
5		ENV	EAPC	G3945	Assessing Transboundary Water Pollution in Central Asia	NOR	KGZ	KAZ, TJK
6		ENV	MD	G4072	Transboundary Water Governance and Climate Change in the Hashemite Kingdom of Jordan	CAN	JOR	
7		CBRN	EAPC	G4082	Esterase Status for Diagnostics and Prognosis of OPC Intoxication	BGR	RUS	
8		ADV	NUKR	G4091	Microwave Tunable Materials, Composites, and Devices	SVN	UKR	GBR
9		CT	NUKR	G4243	Novel Nanocomposite Materials Based on Low Dimensional Carbon Systems for Electromagnetic Shielding	DEU	UKR	FRA, ISR
10		ENV	EAPC	G4374	Improvements in the Harmonized Seismic Hazard Maps for the Western Balkan Countries	TUR	FYR*	ALB, HRV, MNE, SRB
11		CT	EAPC	G4397	Secure Communication Using Quantum Information Systems	ITA	RUS	ITA, UKR, USA
12		CBRN	NUKR	G4398	Removal of Heavy Metals and Radionuclides from Water using Ceramic Membranes	SVN	UKR	CZE
13		ENV	EAPC	G4401	Ecotoxicity of Metal and Metal Oxide Nanoparticles : Experimental Study and Modelling	NLD	RUS	UKR
14		CT	EAPC	G4409	Optimization and Rational use of Wireless Communication Bands	DNK	FYR*	GRC, ROU
15		ENV	MD	G4451	Study of a National Operational Coordination Centre in Mauritania	FRA	MRT	
16		ENERGY	NUKR	G4536	Thermoelectric Materials and Devices for Increasing of Energy Saving and Security	TUR	UKR	
17		CBRN	MD	G4538	Ultrasensitive and Highly Miniaturized Electrochemical Aptasensors for Biological Warfare Agents Detection	GBR	EGY	TUN

Annex 3: Events – ARW, ASI, ATC – Hosted in 2015

Top-Down	SPS Reference	Grant Mechanism	Title	NATO Country	Partner Country	Location	Dates	Other Countries
X	G4967	ATC	Hands-on Cyber Defense Training Course for System/Network Administrators of Ukraine	TUR	UKR	Ankara, Turkey	02-13 February 2015	
	G4778	ARW	Triple Zero Net Energy, Water and Waste Models Applications	DNK	FIN	Sonderborg, Denmark	17-19 February 2015	FRA, DEU, MRT, TUR
	G4799	ARW	Encouraging Cyber Defence Awareness in the Balkans	BGR	FYR*	Skopje, the former Yugoslav Republic of Macedonia*	17-19 March 2015	OSCE
	G4602	ARW	Functional Nanomaterials and Devices for Electronics, Sensors, Energy Harvesting	BEL	UKR	Lviv, Ukraine	14-16 April 2015	
X	G4896	ATC	Regional Cooperation in CBRN Response and Preparedness	BGR	MDA	Montana, Bulgaria	20-24 April 2015	POL, USA
	G4897	ATC	Environmental Protection and Environmental Management in the Military Sector	CAN	FYR*	Skopje, the former Yugoslav Republic of Macedonia*	20-24 April 2015	KAZ, TJK
X	G4959	ARW	Sharing Good Practices on the Handling of Gender-related Complaints in Armed Forces	NOR	CHE	Geneva, Switzerland	28-30 April 2015	
	G4858	ARW	Countering Terrorist Recruitment in the Context of Armed Counter-Terrorism Operations	TUR	KGZ	Antalya, Turkey	09-10 May 2015	
X	G4903	ARW	International Expert Support for Ukraine's Security and Defence Review	EST	UKR	Kyiv, Ukraine	19-20 May 2015	GBR
	G4776	ARW	Fundamental and Applied NanoElectroMagnetics	ITA	BLR	Minsk, Belarus	25-27 May 2015	FRA, ISR
	G4789	ARW	Meeting Security Challenges through Data Analytics and Decision Support	CAN	ARM	Aghveran, Armenia	01-05 June 2015	ALB, HRV, MNE, SRB
	G4872	ASI	Molecules to Crystals to Function: Materials to Protect against CBRN Agents	GBR	JAP	Erice, Italy	05-14 June 2015	ITA, UKR, USA

	G4882	ATC	Cooperative Solutions to Critical Security Issues in the Black Sea Region	USA	GEO	Tbilisi, Georgia	08-12 June 2015	CZE
	G4918	ARW	Best Practices and Lessons Learned in Conflict Management: NATO, OSCE, EU and Civil Society	SVN	UKR	Bratislava, Slovakia	08-10 June 2015	UKR
X	G4956	ARW	Supporting the Response of NATO and its Partners to the Proliferation of Weapons of Mass Destruction Threat	CZE	FIN	Vyskov, Czech Republic	08-09 June 2015	GRC, ROU
X	G5018	ARW	Smart Energy in Capable Logistician 2015: from Observation to Recommendation	LTU	AUT	Varpalota, Hungary	14-17 June 2015	
	G4866	ARW	Best Practices for Cultural Protection in NATO-led Military Operations	DNK	BIH	Sarajevo, Bosnia and Herzegovina	15-18 June 2015	
X	G5012	ARW	Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region	ITA	GEO	Tbilisi, Georgia	30 June - 1 July 2015	TUN
X	G5025	ATC	Cyber Defense Training Course for System/Networj Administrators of Mongolia	TUR	MNG	Ankara, Turkey	30 June - 13 July 2015	
	G4883	ASI	Nano-Optics: Principles Enabling Basic Research and Applications	USA	BLR	Erice, Italy	04-19 July 2015	
	G4909	ASI	Verification and Synthesis of Correct and Secure Systems	DEU	ISR	Marktoberdorf, Germany	04-16 August 2015	
	G4910	ARW	Nanomaterials for Security	SVN	UKR	Odessa, Ukraine	30 August - 3 September 2015	
	G4951	ARW	Violent Extremism in Central Asia: Trends, Responses and Post-2014 Scenarios	NLD	KAZ	Astana, Kazakhstan	02-03 September 2015	
X	G5066	ARW	The Military Conflict in Ukraine and UN Security Council Resolution 1325	ITA	UKR	Kiev, Ukraine	21-22 September 2015	
X	G5022	ARW	Countering Hybrid Threats: Lessons Learned from Ukraine	ROU	MDA	Bucharest, Romania	28-29 September 2015	
X	G4813	ASI	Challenges and Emerging Techniques in Energy Infrastructure Security	USA	AUS	Antalya, Turkey	04-11 October 2015	
	G4790	ARW	Counter-Terrorism in the Post-Arab Spring Context	NLD	EGY	Brussels, Belgium	06-07 October 2015	

	G4893	ARW	Lessons Learned from Small Countries Committing Troops to Operations Abroad	SVK	GEO	Tbilisi, Georgia	26-27 October 2015	
	G4913	ARW	THz for CBRN and Explosives' Detection and Diagnosis	GBR	MDA	Izmir, Turkey	03-05 November 2015	
X	G5017	ATC	Jordanian Armed Forces (JAF) Counter-IED Assessment and Training	ESP	JOR	Madrid, Spain	03-05 November 2015	
	G5126	ARW	Specialized Cyber Defence Trainings for the Civil Servants of Bosnia and Herzegovina	EST	BIH	Sarajevo, Bosnia and Herzegovina	23 November - 11 December 2015	

Annex 4: List of Books Published Under the NATO Science for Peace and Security Series

SPS Reference	Title	Editors	Series	Publisher	Volume
G4482	Nano-Structures for Optics and Photonics	Baldassare Di Bartolo, John Collins, Luciano Silvestri	Series B: Physics and Biophysics	Springer	N/A
G4489	Environmental Security of the European Cross-Border Energy Supply Infrastructure	Martin G. Culshaw, Victor I. Osipov, S.J. Booth, Alexey S. Victorov	Series C: Environmental Security	Springer	N/A
G4569	Nanomaterials and Nanoarchitectures	Maria Bardosova, Tomas Wagner	Series C: Environmental Security	Springer	N/A
G4573	Resiliency: Enhancing Coping with Crisis and Terrorism	Dean Ajdukovic, Shaul Kimhi, Mooli Lahad	Series E: Human and Societal Dynamics	IOS Press	119
G4621	Nuclear Terrorism and National Preparedness	Samuel Apikyan, David Diamond	Series B: Physics and Biophysics	Springer	N/A
G4621	Nuclear Threats and Security Challenges	Samuel Apikyan, David Diamond	Series B: Physics and Biophysics	Springer	N/A
G4627	Nanotechnology to Aid Chemical and Biological Defense	Terri A. Camesano	Series A: Chemistry and Biology	Springer	N/A
G4667	Terrorist Threats in North Africa from a NATO Perspective	János Tomolya, Larry D. White	Series E: Human and Societal Dynamics	IOS Press	124
G4712	Countering Radicalisation and Violent Extremism Among Youth to Prevent Terrorism	Marco Lombardi, Eman Ragab, Vivienne Chin, Yvon Dandurand, Valerio de Divitiis, Alessandro Burato	Series E: Human and Societal Dynamics	IOS Press	118
G4714	Dependable Software Systems Engineering	Maximilian Irlbeck, Doron Peled, Alexander Pretschner	Series D: Information and Communication Security	IOS Press	40
G4715	Comprehensive Approach as 'Sine Qua Non' for Critical Infrastructure Protection	Jadran Perinić, Robert Mikac	Series D: Information and Communication Security	IOS Press	39
G4716	Engaging the Public to Fight the Consequences of Terrorism and Disasters	Ion Apostol, Jumber Mamasakhlisi, Dorit Subotta, Dieter W.G. Reimer	Series E: Human and Societal Dynamics	IOS Press	120
G4723	Nanoscience Advances in CBRN Agents Detection, Information and Energy Security	Plamen Petkov, Dumitru Tsiulyanu, Wilhelm Kulisch, Cyril Popov	Series A: Chemistry and Biology	Springer	N/A
G4724	Advances on Superelliptic Curves and their Applications	Lubjana Beshaj, Tony Shaska, Eustrat Zhupa	Series D: Information and Communication Security	IOS Press	41
G4733	CBRN Security Culture in Practice	Julia Thompson, Seema Gahlaut	Series E: Human and Societal Dynamics	IOS Press	121
G4747	Multifaceted Roles of Crystallography in Modern Drug Discovery	Giovanna Scapin, Disha Patel, Eddy Arnold	Series A: Chemistry and Biology	Springer	N/A

G4763	Lone Actors - An Emerging Security Threat	Aaron Richman, Yair Sharan	Series E: Human and Societal Dynamics	IOS Press	123
G4772	Advanced Autonomous Vehicle Design for Severe Environments	Vladimir V. Vantsevich, Michael V. Blundell	Series D: Information and Communication Security	IOS Press	44
G4871	Strengthening Maritime Security Through Cooperation	Ioannis Chapsos, Cassie Kitchen	Series E: Human and Societal Dynamics	IOS Press	122
G4884	The Protection of Critical Energy Infrastructure Against Emerging Security Challenges	Alessandro Niglia	Series D: Information and Communication Security	IOS Press	43
G4885	Terrorist Use of Cyberspace and Cyber Terrorism: New Challenges and Responses	Mehmet Nesip Ogun	Series D: Information and Communication Security	IOS Press	42

Annex 5: SPS Media Visibility in 2015 - Videos, SPS Web Stories & Mainstream Media Coverage

Videos about SPS Programme Activities in 2015

16 Dec. 2015 - The NATO Science for Peace and Security (SPS) Programme

Terrorism, cyber-attacks, energy security, and CBRN threats are among today's most pressing security challenges. Discover how the NATO Science for Peace and Security (SPS) Programme brings together experts from NATO & partner countries to address these and other shared security concerns through cooperation on civil science, technology, innovation and beyond.

10 Dec 2015 - NATO Smart Energy experts evaluate technology at "Capable Logistician 2015"

The NATO Energy Security Centre of Excellence and the Austrian Climate and Energy Funds co-organised a Smart Energy workshop during the exercise "Capable Logistician 2015" that took place in Hungary in June 2015.

6 July 2015 - The Soldier of the Future

At the international military exercise Capable Logistician, outside the Hungarian town of Veszprem, a number of leading scientists and engineers gathered to demonstrate the latest in equipment and technology.

30 June 2015 - 'Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region'

News Coverage of the SPS ATC G5012 in Georgia

30 June 2015 - La Mauritanie renforce sa gestion de crise

Le nouveau Centre national de gestion de crise de la Mauritanie, établi avec l'aide de l'OTAN, étend sa couverture afin d'assurer un même niveau de protection et de sécurité dans tout le pays. Ainsi, il couvrira notamment les zones isolées de l'est du pays qui sont les plus susceptibles de tomber sous l'influence d'organisations terroristes ou extrémistes.

26 June 2015 - What is Smart Energy?

"Smart Energy" describes NATO's efforts to enhance the energy efficiency of its armed forces. This can be achieved by a wide range of means, such as the increased use of renewable energy, better energy management, new technologies for energy storage and most importantly, behavioural change. Ambassador Sorin Ducaru shares his thoughts.

17 March 2015 - NATO's forskningskonference i Sønderborg februar 2015

A video about the SPS-funded Workshop 'Triple Net Zero' that took place in Sonderburg, Denmark.

20 Jan. 2015 - Ukraine-NATO: Science for peace

This video was made by the Institute of World Policy within the project "Partnership matters" with the support of the NATO Center of Information and Documentation of Ukraine (in Ukrainian).

NATO SPS Website Stories

10 Dec. 2015 - NATO-supported DNA researcher wins Nobel Prize in Chemistry

From quiet, rural Turkey to the Nobel Prize Award Ceremony in Stockholm, Professor Aziz Sancar has, from a young age, made life choices that have taken him as far as discovering ways of curing serious illnesses such as skin cancer.

1 Dec. 2015 - NATO engages with the scientific community in Italy

Scientists and experts from Italy and NATO partner countries helped to raise awareness of the Science for Peace and Security (SPS) Programme and presented SPS activities in the area of cyber security and chemical, biological, radiological and nuclear (CBRN) defence during an SPS Information Day.

8 Oct. 2015 - NATO tests telemedicine system in Ukraine

NATO is developing a multinational telemedicine system to improve access to health services and increase survival rates in emergency situations, including in remote areas. The technology was successfully live tested during a field exercise in Lviv, Ukraine in September 2015, attended by NATO Secretary General Jens Stoltenberg and the President of Ukraine, Petro Poroshenko.

7 Oct. 2015 - The role of women in the Ukraine military conflict

Amid the fighting in eastern Ukraine, high levels of gender-based violence continue to be reported in the conflict area, including sexual violence. Moreover, women in Ukraine are often excluded at a decision-making level, as well as from the military response to the crisis.

25 Sept. 2015 - NATO reaches out to scientists and experts in Bulgaria

Experts and scientists from NATO and partner countries attended a Science for Peace and Security (SPS) Information Day on 25 September 2015 in Sofia, Bulgaria to take stock of ongoing cooperation and look ahead to identify potential scientific cooperation in the areas of CBRN resilience and cyber defence.

21 Sept. 2015 - NATO and Ukraine strengthen scientific cooperation

The current security crisis in Ukraine is not only affecting regional and Euro-Atlantic security. It has also impacted scientific infrastructure and education institutes in the country. Through NATO's Science for Peace and Security (SPS) Programme, the Alliance is engaging Allied and Ukrainian scientists and experts in practical cooperation, forging research networks and supporting capacity building in the country. Ideas to strengthen such support were identified at a meeting of the NATO-Ukraine Joint Working Group on Scientific and Environmental Cooperation at NATO Headquarters on 18 September 2015.

4 Sept. 2015 - Fighting weapons of terror

Recent terrorist attacks across Europe have shown that terrorism remains a real threat to Alliance populations. So does the risk that terrorist groups consider the use of chemical, biological, radiological and nuclear materials as weapons. This year, NATO's Weapons of Mass Destruction Non-Proliferation Centre (WMDC) is celebrating its 15th anniversary and stepping up its activities to respond to these threats.

29 July 2015 - Enhanced cyber defence cooperation in the South Caucasus and Black Sea region

Critical infrastructures and government services rely increasingly on Information Technology (IT) and this dependence has raised concerns about the vulnerability of such infrastructures to cyber threats. As cyber attacks become more prominent and conventionally used, new defence strategies, adaptive approaches and enhanced cooperation are required.

11 June 2015 - Women, Peace and Security agenda in the spotlight at NATO

The participation of women in Allied armed forces has been steadily increasing over the past few decades, and significant strides have been made towards the recruitment and retention of women. However, women continue to be underrepresented and more work is needed to implement United Nations Security Council Resolution (UNSCR) 1325 and related Resolutions on Women, Peace and Security.

10 June 2015 - Improving international conflict management

International organisations like NATO, the European Union (EU) and the Organization for Security and Co-operation in Europe (OSCE) have an integral role to play in conflict resolution and crisis management – but each has different strategies and visions of how to approach a conflict.

8 June 2015 - NATO ''Smart Energy'' exercise gets underway in Hungary

Exercise Capable Logistician 2015 (8-19 June) will see NATO testing a range of energy-efficient solutions in an effort to cut cost while enhancing interoperability and military effectiveness. The exercise takes place at Bakony Combat Training Centre near Veszprem, Hungary, and, with the support of NATO's Science for Peace and Security Programme, will include input from 30 experts from defence agencies and research institutes.

21 May 2015 - SILK-Afghanistan: 10 years of promoting internet connectivity in Afghanistan

Representatives from the Afghan government, the European Commission and NATO came together for a two-day workshop last week to take stock of the achievements of the SILK-Afghanistan programme, assess current needs, and set out a plan to ensure a sustainable future for the initiative.

21 May 2015 - Handling gender-related complaints in the armed forces

An important barrier to women's retention and equal participation in the armed forces is gender-based discrimination, harassment and abuse. Investigating related complaints and providing victim support during operations abroad can be particularly challenging. A recent NATO-sponsored workshop looked at possible practical solutions to these issues.

8 May 2015 - Regional cooperation to improve CBRN responses

The risk of possible use of chemical, biological, radiological and nuclear (CBRN) agents by terrorists, or incidents resulting from natural or man-made disasters, continues to pose serious threats to civilian populations internationally. Being able to effectively manage this risk is of particular importance to first responders in the Balkans and the Caucasus.

7 April 2015 - NATO and its partners become smarter on energy

Reducing fuel consumption in the military has become an operational imperative: not only can it save money, it will also save soldiers' lives, as well as improve the mobility and endurance of military forces. Enhancing the energy efficiency of the armed forces is one of NATO's priorities in the field of energy security.

26 Feb. 2015 - Supporting Jordan's cyber defence strategy

Jordan is the most active member of NATO's Mediterranean Dialogue. Faced with new threats, the country has expressed interest in further engagement with the Alliance. Ambassador Sorin Ducaru, NATO Assistant Secretary General (ASG) for Emerging Security Challenges (ESC), accepted an invitation to visit Jordan in February 2015 to discuss opportunities for collaboration on new projects.

29 Jan. 2015 - Mauritania: new crisis management centre

The Secretary General of the Ministry of Internal Affairs and Decentralisation, Mohamed El Hady Macina, chaired the inauguration in Nouakchott of the Mauritanian centre for crisis monitoring, alerts and management (centre de veille, d'alerte et de conduite des crises - COVACC) on 29 January 2015.

23 Jan. 2015 - Science: NATO's "third dimension"

"Now the Alliance needs a third dimension: it needs not only a strong military dimension to provide for the common defence; not only a more profound political dimension, to shape a strategy of peace; but it also needs a social dimension (…) in this final third of the Twentieth Century through the humanities and science."

Examples of Mainstream Media Coverage of SPS Programme Activities in 2015

SPS Activity	Title of the Article	Date	Outlet/ Magazine	URL
G4464 Sustainable Military Compounds (Towards a Zero Footprint Compound)	Verkleining Footprint Kampementen. Genisten wetenschappelijk actief voor vrede en veiligheid	Winter 2014	Genie. Vereiniging van Officieren der Genie. Kennis & Inzicht	N/A (hard copy)
G4451/G5009 National System of Crisis Management Coordination in Mauritania	Lancement du Centre opérationnel de veille et de gestion des catastrophes en Mauritanie	29 JAN 2015	APA	http://fr.starafrica.com/actualites/lancement-du-centre-operationnel-de-veille-et-de-gestion-des-catastrophes-en-mauritanie.html
G4746 Cross Cultural Training for Military Cadets	World in Conversation to study impact of dialogues with NATO cadets, civilians	3 FEB 2015	Penn State University Website	http://news.psu.edu/story/343295/2015/02/03/impact/world-conversation-study-impact-dialogues-nato-cadets-civilians
G4589 Towards the Monitoring of Dumped Munitions Threat (MODUM)	AUV to Monitor Munitions in the Baltic Sea	9 FEB 2015	Marine Technology News	http://www.marinetechnologynews.com/news/monitor-munitions-baltic-506649
SPS Smart Energy Activities	NATO Tests Green Energy to Reduce Fuel Supply Line Vulnerability	7 APR 2015	Bloomberg Business	http://www.bloomberg.com/news/articles/2015-04-06/nato-tests-green-energy-to-reduce-fuel-supply-line-vulnerability
G4896 Regional Cooperation in CBRN Response and Prepared-ness	NATO holds regional WMD response training	11 MAY 2015	BioPrepWatch	http://bioprepwatch.com/stories/510544535-nato-holds-regional-wmd-response-training
G4451/G5009 National System of Crisis Management Coordination in Mauritania	Mauritanie: création d'un centre de gestion des catastrophes	15 MAY 2015	Alakhbar	http://fr.alakhbar.info/8981-0-Mauritanie-creation-dun-centre-de-coordination-et-de-contrle-des-catastrophes-.html
G4451/G5009 National System of Crisis Management Coordination in Mauritania	R&D : l'Otan lance un appel à projets sur la détection d'explosifs et d'armes à feu au sein d'une foule	29 MAY 2015	AEF	N/A (hard copy only)
G5024 Support to Humanitarian Demining in Ukraine	ДСНС України та НАТО розпочинають реалізовувати спільний проект у сфері гуманітарного розмінування	10 JUN 2015	Government website	http://www.mns.gov.ua/news/39911.html

SPS Activity	Title of the Article	Date	Outlet/ Magazine	URL
G5024 Support to Humanitarian Demining in Ukraine	"NATO is going to strengthen its support of the scientific sector of Ukraine" - NATO Senior SPS and Partnership Cooperation Advisor	11 JUN 2015	Government Website	http://nato.mfa.gov.ua/en/press-center/news/37260-nato-naroshhuvatime-pidtrimku-naukovogo-sektoru-ukrajinikerivnik-ofisu-programi-alyjansu-nauka-zaradi-miru-i-bezpeki
G4748 Developing a multinational Telemedicine System	NATO Working With South Dakota Telemedicine Hub	22 JUN 2015	AP	Published i.a. on the following websites : http://www.nytimes.com/aponline/2015/06/22/us/ap-us-telemedicine-hub-nato.html http://abcnews.go.com/US/wireStory/nato-working-south-dakota-telemedicine-hub-31953752 http://www.washingtonpost.com/national/health-science/nato-working-with-south-dakota-telemedicine-hub/2015/06/22/006f2056-1933-11e5-bed8-1093ee58dad0_story.html
G5012 Options for Enhanced Regional Cyber Defence Cooperation in the Southern Caucasus and Black Sea Region	High Time to Care About Cyber Security	2 JUL 2015	Georgia Today	http://georgiatoday.ge/news/562/High-Time-to-Care-About-Cyber-Security
G4909 Summer School Marktoberdorf	Informatiker aus aller Welt bei Summer School in Marktoberdorf	9 AUG 2015	Allgäuer Zeitung	http://www.all-in.de/nachrichten/lokales/Informatiker-aus-aller-Welt-bei-Summer-School-in-Marktoberdorf;art26090,2042092
SPS Information Day in Sofia, Bulgaria, 25 SEPT 2015	Сорин Дукару: НАТО отговаря на заплахите с наука, технологии, иновации	28 SEP 2015	24chasa	http://www.24chasa.bg/Article.asp?ArticleId=5008921
G4748 Developing a Multinational Telemedicine System – EADRCC Field Exercise	NCI Agency support to exercise in Ukraine	28 SEP 2015	NCIA website	https://www.ncia.nato.int/NewsRoom/Pages/150928-Ukraine-Exercise.aspx
G4748 Developing a Multinational Telemedicine System – EADRCC Field Exercise	7th CSC Soldiers work with 25 other nations during disaster response exercise in Ukraine	28 SEP 2015	Dvids (Defence Video & Imagery Distribution System)	https://www.dvidshub.net/news/177362/7th-csc-soldiers-work-with-25-other-nations-during-disaster-response-exercise-ukraine#.VguTN5ecxmw
G5022 Countering Hybrid Threats: Lessons Learned from Ukraine	Workshop NATO organizat de Academia Națională de Informații „Mihai Viteazul"	29 SEP 2015	Website of the „Mihai Viteazul" National Intelligence Academy	http://www.animv.ro/eveniment-workshop-nato-organizat-de-academia-nationala-de-informatii-mihai-viteazul--178 ARW website: http://animv.ro/nato/index.html

SPS Activity	Title of the Article	Date	Outlet/ Magazine	URL
G4748 Developing a Multinational Telemedicine System (EADRCC Field Exercise)	NATO tests telemedicine platform in the Ukraine	9 OCT 2015	mHealthNews	http://www.mhealthnews.com/news/nato-tests-telemedicine-platform-ukraine
G4790 (Counter-) terrorism in the post-Arab Spring context	ICCT co-hosts NATO workshop on counter-terrorism in MENA region	15 OCT 2015	Website of the ICCT The Hague	http://icct.nl/update/icct-co-hosts-nato-workshop-on-counter-terrorism-in-mena-region/
G4790 (Counter-) terrorism in the post-Arab Spring context	Expert meeting '(Counter-)terrorism in the post-Arab Spring Context'	15 OCT 2015	Clingendael	http://www.clingendael.nl/event/expert-meeting-%E2%80%98counter-terrorism-post-arab-spring-context%E2%80%99
G5014 Holographic and Impulse Subsurface Radar for Landmine and IED Detection	A Firenze si studiano robot per combattere le mine antiuomo	16 OCT 2015	STAMP Tocana	http://www.stamptoscana.it/articolo/universita/a-firenze-si-studiano-robot-per-combattere-le-mine-antiuomo
SPS Information Day in Rome, Italy, 21 OCT 2015	Roma hosts the NATO Science for Peace and Security (SPS) Programme on 21 October 2015	19 OCT 2015	Website of the Permanent Representation of Italy to NATO	http://www.rappnato.esteri.it/rapp_nato_bruxelles/en/ambasciata/news/2015/10/sps-rome-21-10-2015.html
G5014 Holographic and Impulse Subsurface Radar for Landmine and IED Detection	MINE ANTIUOMO: UNIVERSITÀ DI FIRENZE PARTNER NATO PER LA SICUREZZA	20 OCT 2015	Intoscana.it	http://www.intoscana.it/site/it/universita/articolo/Mine-antiuomo-Universita-di-Firenze-partner-Nato-per-la-sicurezza/
G4968 Advanced Regional Civil Emergency Coordination Pilot	Technology confronts disasters	20 OCT 2015	MIT Website	http://news.mit.edu/2015/technology-confronts-disasters-1020
G5014 Holographic and Impulse Subsurface Radar for Landmine and IED Detection	"Rascan" findet Sprengkörper aus Plastik und Glas	23 OCT 2015	Pressetext Nachrichtenagentur	http://www.pressetext.com/news/20151023014 http://www.extremnews.com/nachrichten/wissenschaft/eeaf158aecadbb1
G5014 Holographic and Impulse Subsurface Radar for Landmine and IED Detection	Italian research involved in the NATO programme against landmines	26 OCT 2015	Researchitaly.it	https://www.researchitaly.it/en/understanding/press-media/news/italian-research-involved-in-the-nato-programme-against-landmines/
G4934 Risk to the Enguri Energy Infrastructure	Science for Peace and Security: "Bicocca" University will lead the programme in the next three years	4 NOV 2015	Researchitaly.it	https://www.researchitaly.it/en/understanding/project-and-success-stories/main-projects/science-for-peace-and-security-bicocca-university-will-lead-the-programme-in-the-next-three-years/

SPS Activity	Title of the Article	Date	Outlet/ Magazine	URL
G5014 Holographic and Impulse Subsurface Radar for Landmine and IED Detection	F&M prof working on NATO land mine detection program	16 DEC 2015	LancasterOnline	http://lancasteronline.com/news/local/f-m-prof-working-on-nato-land-mine-detection-program/article_ec674cbe-a37a-11e5-aca2-e7f1bdb7fcef.html

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