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Legal aspects of Cyber Defence • JISR Service Line • The Team behind CWIX

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Dear Colleagues, Friends,

Nearly three years ago NATO Heads of State and Government challenged us to deliver improved communications and information technology for NATO. At the same time they asked us to reduce the resources required to develop, operate, and defend NATO's IT. We are delivering on that challenge. This is possible only because of the hard work of the Agency's staff, a team spirit, and innovation.

One of the articles in this edition of our in-house magazine describes how our colleagues in Brunssum optimized the maintenance of spare parts for key components. But Innovation is a theme that runs through the other stories as well.

At the same we continue to deliver new capabilities, for example the connectivity required for another NATO flagship project – the Joint Intelligence, Surveillance and Reconnaissance Initiative to be based in Sigonella, Italy.

Equally important is delivering on the Wales Summit decisions, including providing, in partnership with the NATO Communication and Information Systems Group, rapid communications support for what will be NATO's largest maneuvers since the fall of the Berlin Wall. COL Sirault explains the challenges well in his interview.

As NATO puts more planes in the air, more ships on the sea, and more troops on the ground, they need to be connected. We will succeed because of the quality, determination, and ingenuity of the people we have on board.

That is why – within the bounds of NATO regulations – I will continue to push for opportunities for our staff, both civilian and military, to grow and develop – and where possible, progress in their careers. Our new performance management system is another step in this direction. Nothing, however, will replace the face-to-face discussion between managers and their staff. To quote a former SACEUR, what I expect from my managers, at all levels, is to be leaders – and the difference between management and leadership is communication.

Our financial plan forecasts a busy and intense year. The numbers are impressive, but behind them is an even more impressive responsibility to connect and defend an Alliance that is busier than ever.

I realize not all decisions that we are asked to implement are easy – such as the new structure or the relocation of staff. But we operate in a complex political environment. What is most important is creativity and teamwork. Just like the Alliance we serve – while we are strong alone, we are far stronger together.

Enjoy the reading!

Koen Gijsbers

CSU Poggio Renatico supports APEX 2015 exercise

From 2 to 6 March, the NATO Deployable Air Command and Control Centre (DACCC) hosted colleagues from HQ AIRCOM Ramstein, Germany; the Combined Air Operations Centre (CAOC) Torrejon, Spain; and the Combined Air Operations Centre (CAOC) Uedem, Germany, as part of the Ramstein APEX 2015 (RAX15) exercise.

The purpose and objective of the exercise was to train the Joint Force Air Component (JFAC) of the NATO Command Structure on Air Operations Centre (AOC) requirements with detailed attention to Combat Plans Divisions, Combat Ops Divisions, and Intelligence, Surveillance, Reconnaissance Divisions, which are all fundamental elements of the Deployable Air Operation Centre (DAOC). Furthermore, it presented personnel the opportunity to prepare for Small Joint Operations and to maintain proficiency in the delivery of Air Command and Control (C2), whilst further developing the DAOC capabilities and using a common exercise setting.

Agency Support to APEX 2015

The NCI Agency support for RAX15 was a critical component in the overall success of the joint exercise. The Agency CSU in Poggio Renatico, Italy, began preparations for RAX15 many months prior to the actual exercise with the acquisition of additional resources and the leasing and assembly of a temporary exercise operations facility. In order to support the numerous RAX15 participants, the Agency configured and deployed additional workstations, multiple projectors and screens, new application servers, additional network infrastructure and VoIP telephony to various locations. The entire CSU Poggio Renatico staff worked extended hours during the actual exercise in order to provide timely, "on-the-spot" technical assistance to the exercise operators.

"The aims and objectives of Ramstein APEX 2015 would not have been met in such a coordinated and efficient manner if not for the hard work and preparation of our [NCI Agency] colleagues here at Poggio Renatico," said BGEN Karsten Stoye, Deputy Commander, DACCC.

As demonstrated many times, the CSU Poggio Renatico team comes together to provide quality, comprehensive support to the DACCC and their mission of forward deployment of Joint Force Air Component elements, including personnel and equipment, and the ongoing execution of the Initial Functional JFAC Training (IFJT) for the NATO Common Structure DAOCs.

Scott Mortimer, Head Automated Information Systems, CSU Poggio Renatico

Legal aspects of cyber defence

For the last two years, the NCI Agency Legal Office has supported the Agency's cyber defence staff in the Locked Shields exercises. These exercises, which are organized by the Cooperative Cyber Defence Centre of Excellence, aim to improve technical and legal reactions to a real-time network attack and to foster a common language in the area of cyber. Further, they enable the legal staff to acquire sufficient knowledge of the technical aspects of cyber defence.

Law applicable to armed conflicts

The law applicable to armed conflicts has traditionally been divided in two parts: one that covers the right of State to use force – what lawyers like to call the *ius ad bellum* – and the law that applies to the conduct of hostilities – what lawyer refers to as the *ius in bello*. Besides that, there is a wide body of law that covers situations under the threshold of armed conflict.

The right to use force

Most people have a broad understanding of what the *ius ad bellum* covers, as it is regulated in the Charter of the United Nations (UN). The UN Charter prohibits the use of force as a matter of principle and provides only limited exceptions to this prohibition. Under the Charter, a nation can only use force in self-defence or as part of operations decided by the Security Council (Chapter VII of the UN Charter). While the same rules apply to attacks involving conventional or cyber means, cyberattacks raise specific legal issues that the decision makers need to be aware of before taking a decision to respond with forceful measures (whether cyber or conventional).

First, while the perpetrator of conventional attacks can usually be identified with certainty very quickly, but cyberattacks usually involve the use of techniques that make it difficult to attribute the attack to a specific state or group. The identification of the author of a cyberattack will have to rely much more on the context of the attack than in the event of a conventional attack. For example, cyber-attacks carried out during a conventional conflict will probably be associated with the belligerent. The origin of cyberattacks not associated with a conventional conflict may be trickier to identify, although a context of tension could provide some hints on the potential perpetrator.

Second, cyberattacks are increasingly carried out by groups that only have loose affiliation with the State that are located in, thus raising doubt as to the actual awareness, involvement, or support – if any – provided by the State concerned. The question here is to determine whether the attack should fall under the law enforcement regime or require a military response. In such a case, the refusal of the State concerned to provide assistance in stopping the cyberattack could be used to conclude that the State is supporting the group or the attacks themselves.

Third, the effect of cyberattacks may be initially overestimated. What initially appears to be a major attack may not create damages in the long-term. For example, a denial of service attack, like the one that occurred in Estonia in 2007, will render websites inaccessible for a certain period of time, but may not cause permanent damage or loss of data. Accordingly, if one was to choose a military response too quickly, there would be a risk that the legal requirement to respond in a proportional manner is not complied with.

In the past years, there have been many discussions in legal circles to identify criteria that would allow governments to decide whether or not to respond to cyberattacks. It is generally agreed that an attack using cyber means with the same scope and effects as a conventional attack should be treated in the same manner and could, therefore, open the way for a kinetic response. An example of this would be an opening a dam to flood an area by taking control of the dam through cyber means. Up to now, however, cyberattacks have rarely caused damages similar in scope to those that would be created by a conventional attack. As we increasingly rely on computers in our daily life, it is likely that the perception of what warrants a military response will further evolve.

Governing the conduct of hostilities

The law governing the conduct of hostilities also raises some interesting questions in the area of cyber defence. These legal provisions, which are based on humanitarian principles, aim to establish certain constraints on the conduct of warfare. The main bodies of law are the 1977 Additional Protocols to the Geneva Conventions. This law applies to international conflicts and internal conflict (i.e. civil war). It prohibits, for example, attacks that are indiscriminate. Unsurprisingly, while the provisions make full sense for kinetic attacks, the drafters could not have taken into account the major changes that would result from the wide availability of computers. Certain legal requirements are therefore difficult to apply to cyber warfare. For example, the law requires an attacker to have a uniform and carry arms openly. How can this requirement be translated in the cyber area, considering that the success of a cyberattack is based on stealth and surprise?

Another example is the prohibition to attack civilian objects. How can this apply in the cyber area, given that most IT infrastructure is civilian? When one launches a cyberattack, civilian networks are used to transmit the information. Is this a violation of the law?

In order to foster discussions on this issue, the Cooperative Cyber Defence Center of Excellence based in Tallinn, Estonia, gathered a group of legal experts to provide their assessment on the law applicable to cyber conflicts. This manual, known as the Tallinn Manual, is a useful tool to apply the law to cyber – but it is only the first step. At the end of the day, it is the practice of the individual States that will adapt old laws to new situations.

Most cyberattacks that take place, however, do not reach the threshold of an armed conflict; they occur in peacetime. Examples of this can include breaking into military networks to steal classified information, espionage, website defacement, and denial of service attacks. Although these attacks may not be sufficient to trigger the application of the law of armed conflict, it does not prevent the victims from taking steps to protect their networks and infrastructure; for example, they could protect their network by filtering or blocking network traffic coming from certain regions (i.e geo-fencing). In coming years, the focus will also be on gathering evidence that would be helpful in identifying and prosecuting attackers, eventually using international treaties for police and judicial cooperation.

To sum up, all these examples just highlight the need for legal staff to be involved in cyber exercises, in order to simulate – to maximum extent possible – the real life political, public relations, and legal decision-making processes.

Vincent Roobaert, Assistant Legal Advisor, the NCI Agency

Meet CSU Lisbon

The NCI Agency's footprint in Lisbon

Born from the former Sector that supported the now extinct Joint Force Command Lisbon (JFCLB), the NCI Agency CIS Support Unit (CSU) Lisbon is located in Oeiras – a beautiful seaside village on the outskirts of Lisbon, Portugal. Based at the Host Nation Compound Reduto de Gomes Freire (RGF), CSU Lisbon shares facilities with several other entities.

Who we are and what we do

CSU Lisbon provides CIS support to its two main customers, STRIKFORNATO (SFN), which is co-located at RGF, and the Joint Analysis and Lessons Learned Centre (JALLC), located in Monsanto, Lisbon, as well as the Satellite Ground Terminal F-12. In addition, the CSU also provides the operational requirements to allow the Host Nation to connect to the NATO Wide Area Network. The agreement for the provision of CIS services to JALLC also accounts for the delivery of services to Allied Command Counter Intelligence (ACCI) and the National Support Elements established in the Lisbon Area of Responsibility (AoR). The CSU's mission is to enable end-to-end communication and information systems (CIS) services as it installs, operates, maintains, and supports the full range of CIS capabilities during peacetime, crisis and war throughout its allocated AoR, and areas otherwise directed.

At the forefront of the transition

In May 2014 CSU Lisbon was the one of the first units within the organization to adopt the envisioned CSU model structure, which falls under the Director Service Operations. This transition was made from NCI Agency Detachment Lisbon, created on the 1 January 2013, which in its turn, had replaced former NCI Agency Sector Lisbon, which supported JFCLB.

Once again, the Agency is in a transition phase and the implementation of the Initial State Peacetime Establishment (ISPE) 2015 will bring more changes to the CSU structure. CSU Lisbon has already started to implement the new ISPE 2015 structure since January 2015. The reason behind this early implementation is to gain time and experience to learn in order to ensure a smoother transition. This experience is critical, as the CSU is expecting to rotate the majority of its military personnel this year.

To accomplish this mission, CSU Lisbon has been organized into two branches: the Service Management (SM) and the Service Operations (SO). The SM branch is responsible for providing staff support, and managing assigned resources and projects. It directs, coordinates, and supervises all staff activities, including resources support, management and general administration, logistics, plans, requirements, and service management. They are also responsible for the development and continual improvement of information management. For this task, the SM branch is composed of the Enabling Services section responsible for the Administration, Finance, and Logistics – and the Plans and Projects section, which is responsible for managing CIS Projects in support of the customers' requirements.

The Service Operations branch provides local support to the provision of CIS services in direct support of the local and remote customers in accordance with Service Level Agreement's (SLA) and other agreements. The SO branch is locally responsible for the installation, operation, maintenance, and administration of assigned IT, Network, Cable, Video Teleconference, Voice and Video equipment, as well as all operating systems, and core and functional application services. SO branch contributes to Problem Management, Access Management, Event Management, Request Fulfilment, Release and Deployment, Test and Validation, Configuration Management, and Change Management in support of appropriate Service Lines and in coordination with Service Management. It is composed by the Application Management section, the Facility and Technical Management section, and by the Service Support section.

At the moment, CSU Lisbon has 18 staff members, nine military, and nine civilians. Their nationalities are Portuguese, Italian, and Canadian. Besides these 18 people, there are two Portuguese OF-4s Voluntary National Contributions that have the exclusive mission to manage the program for the transition of the NATO Communications and Information Systems School (NCISS) from Latina, Italy to Oeiras, Portugal.

In direct support of the customers

CSU Lisbon has a vast number of customers: SFN, a maritime force; JALLC, an Allied Command Transformation (ACT) organization responsible for generating Lessons Learned for NATO; ACCI Iberian Peninsula Detachment; Satellite Ground Terminal F12 and the various National Support Element's (NSE) located in Oeiras. ACCI and the NSEs fall under the JALLC SLA. Also, the Host Nation receives its NS wide area network (WAN) connectivity from equipment managed by the Unit.

One challenge that has come up was the support to SFN operational exercises. A good example was the support provided during the exercise Trident Jaguar 2014. The exercise was divided in four major phases: an Academics, a Crisis Response Planning (CRP), a Battle Staff Training (BST) – all three taking place in Oeiras where the CSU did the setup of the CIS infrastructure; the Execution Phase, which took place at sea; and prior to its start, three of the CSU technicians were deployed aboard the USS Mount Whitney to setup the Core and Functional Services aboard the ship. CSU Lisbon support was so valuable that SFN expressed its appreciation in an appreciation letter.

JALLC is another important customer. The CSU has a permanent team of three/four staff detached in Monsanto to provide direct support to the customers' requirements. The SLA with ACT covers JALLC, ACCI and the local NSE's. This agreement was the first enterprise SLA signed by the NCI Agency, and serves as a model for the Agency's future SLAs.

On track for tomorrow

CSU Lisbon was the first Agency Unit to embrace the customer funded model and set a new way of CIS service provision to the customers. The SLA signed with STRIKFORNATO in 2012, was the first one to use the envisioned business model.

Now, another milestone is just around the corner as Oeiras is set to receive the NATO CIS School, from Latina, Italy, in 2016/17. This event will see CSU Lisbon transitioning into the NCISS structure and becoming responsible for the School technical support. None the less, the current mission of supporting the previously mentioned customers will be maintained. Looking at this new challenge, the overall attitude of the CSU Lisbon staff is best described in the words of a famous Portuguese poet "*I do not fear whatever it may come, whatever it is, it will not be greater than my soul.*"

NATO CIS School

The new school will be responsible for the management and administration of NCISS LAN/WAN configurations, the investigation of COMPUSEC incidents and the management of the IT budget. It will supervise the NCISS Management Information Systems (MIS), comprising the Bandwidth Management, Private Automatic Branch Exchange (PABX) and all IT equipment and facilities. It will provide a Help Desk service capable of resolving software and hardware issues and the routine repair of IT equipment. It will produce and implements Support Plans and request the procurement of new equipment in accordance with the IT Strategy Policy.

Joao Martins, Section Head Service Support, CSU Lisbon

A word from the Commander LCDR Nelson Martins

*"I arrived at NCSA Sector Lisbon to perform the INFOSEC Officer duties in July 2011.
With the NCI Agency implementation, I had the privilege to be invited to lead the new Agency team at Oeiras – a challenge I promptly accepted. I feel honoured to lead this amazing small team, who simplifies my job through their hard work and day-to-day performance. This team is happy to be part of the Agency evolution implementing change in a proactive manner and to provide support/deliver services to the Agency customers in accordance with the signed Service Line Agreements. Like we say here: If the Customer is happy, we have achieved our goal!"*

Joint Analysis and Lessons Learned Centre (JALLC) www.jallc.nato.int/

Established in Lisbon, Portugal, in September 2002, the JALLC is NATO's lead agency for the analysis of operations, training, and experiments, and for the collection and dissemination of Lessons Learned. JALLC deploys project teams worldwide, delivering analysis support to NATO at the strategic and operational levels.

Vision
The JALLC will be recognized as NATO's leading agent for joint analysis with our efforts and products respected, thereby enabling our contribution to improve the capabilities of the Alliance.

Mission
The Joint Analysis and Lessons Learned Centre (JALLC) is NATO's centre for performing joint analysis of operations, training, exercises and Concept Development and Experimentation collective experiments, including establishing and maintaining an interactive managed Lessons Learned Database (LLDB).

Naval Striking and Support Forces NATO (STRIKFORNATO) www.sfn.nato.int/

Naval Striking and Support Forces NATO (STRIKFORNATO) is NATO's premier Maritime Battle-staff, and the Alliance's primary link for integrating U.S. Maritime Forces into NATO operations.
Managed by a Memorandum of Understanding comprising of 11 Nations, STRIKFORNATO is a rapidly deployable Maritime Headquarters that provides scalable command and control across the full spectrum of Alliance fundamental security tasks. STRIKFORNATO Headquarters are located at Oeiras, Portugal, and the force is currently in NATO Response Force (NRF) status.

Vision
Within an evolving strategic context, STRIKFORNATO remains ready to deploy rapidly with optimized capabilities to plan, command, and control maritime operations across the full spectrum of Alliance missions and act as a joint commander for maritime/ expeditionary operations for smaller joint operations.

Intent
In its role as a joint, readily-deployable and scalable maritime Headquarters, STRIKFORNATO will maintain the highest state of readiness and proficiency to support collective defence and deterrence in a challenging security environment. This will be accomplished through the continued enhancement and refinement of STRIKFORNATO's internal operational capability, successful completion of U.S. and NATO-led exercises, and a proactive engagement posture that builds and maintains linkages with NATO stakeholders. Additionally, through our inherent flexibly and agility, STRIKFORNATO will always strive to position itself to make the best possible contribution to emerging Alliance requirements. Defining and developing its role in support of the NATO maritime Ballistic Missile Defence mission is just the latest example of this.

Joint Intelligence, Surveillance and Reconnaissance Service Line

What is Joint Intelligence, Surveillance and Reconnaissance?

In essence, Joint Intelligence, Surveillance and Reconnaissance (JISR) is the synchronization and integration of Operations and Intelligence capabilities and activities, geared to providing timely information to support decisions.

JISR Cycle

The 'JISR Cycle' is a combined Intelligence and Operations function, requiring extensive cross-Community of Interest (COI) coordination and interoperability at many levels. NATO JISR integrates Alliance and National Intelligence, Surveillance and Reconnaissance (ISR) capabilities, policies, procedures, and systems to provide information support to leaders, commanders, and decision makers from the strategic to the tactical level.

JISR within the Agency

Within the NCI Agency structure, the Joint Intelligence, Surveillance and Reconnaissance Service Line (JISR SL) is a sub-element of the Directorate of Application Services (DAS). The JISR SL is currently made up of 75 staff, across 3 different Agency locations – Brussels, Mons and The Hague. The JISR SL aims to continuously support the need to collect, process, exploit, and disseminate ISR data and information in a timely manner to those who need to know. The JISR SL is responsible to its customers for planning, coordinating, and executing full life cycle management activities in support of the JISR Cycle and associated services, including:

• Strategy, Policy, Doctrine and Concepts;
• Standardization & Interoperability;
• Requirements Analysis and Concept Development and Experimentation (CD&E);

• Design & Development;
• Processes, Procedures, Tactics & Techniques;
• System Acquisition, Implementation and Integration; and
• Transition and Service Operations (O&M).

Although JISR SL Services are geared to serve NATO Forces, they can also be used and adapted by NATO Nations and Partners. The specific focus of JISR is to allow global interoperability within the NATO JISR COI and with external COIs.

The JISR SL significantly improves the operational effectiveness and efficiency of its customers through a wide range of coherent JISR services, supported by well-trained, highly knowledgeable and uniquely experienced staff, in the key JISR areas: Intelligence Applications Services, Surveillance and Reconnaissance Services, Electronic Warfare, Sensor Services, and Geospatial Services, and the Multi-Intelligence All-Source Joint Intelligence Surveillance and Reconnaissance Interoperability Coalition (MAJIIC) project.

Intelligence Applications Services

The Intelligence Applications Services branch provides a range of services in the areas of Information Requirement and Collection Management (IRM & CM), All Source Analysis, Human Intelligence, Open Source Intelligence and Signals Intelligence.

This branch is also managing the delivery of the Intelligence Functional Service capability package. The services provided are focused on Joint Intelligence Surveillance and Reconnaissance user-facing applications and the supporting Community of Interest (COI). They encompass full life cycle support – including assistance to Intelligence and JISR doctrine development and requirement analysis, architecture development, implementation, test and verification, service transition including training, service operation, and finally service retirement.

The Intelligence Applications Services Branch – through the MAJIIC project – is also engaged in the development of a Service Oriented Architecture enabling the federation of NATO and coalition JISR COI technical services and user applications. This in turn supports the workflow processes comprising JISR and external Communities of Interest.

Our customers include Allied Command Operations (ACO), Allied Command Transformation (ACT), NATO and non-NATO Nations and multinational coalition projects (e.g. MAJIIC).

Surveillance & Reconnaissance Services

The Surveillance and Reconnaissance branch provides overarching subject matter expertise for Surveillance and Reconnaissance (S&R) capabilities. In particular, S&R Services support key NATO and national capabilities, such as NATO Airborne Early Warning and Control (NAEW&C), Alliance Ground Surveillance (AGS), border surveillance and space systems. Key areas of support include technical studies; operational concept development and experimentation (CD&E); integration and interoperability; architectures; requirements analysis; and support to trials and exercises.

The branch brings together technical and operational experts who understand the specific capabilities, as well as their contribution to NATO's overall technical and operational architectures. In this way, S&R Services provide a gateway to these communities, connecting them with the wider NATO Command, Control, Communications and Computers Intelligence, Surveillance and Reconnaissance (C4ISR) environment and initiatives.

The key value S&R Services add to the customers' organizations is to make the wider NATO doctrine and C4ISR knowledge available to them in a focused and usable manner. While the branch harnesses the Agency's expertise and channels it to these communities through S&R services, it also provides an in-house "go to" point for other Agency elements to help them understand and work with specialized ISR communities such as NAEW, AGS and Space.

Electronic Warfare & Sensor Services

The focus of this branch is to provide consultancy and support services across a broad range of domains, contained within the four pillars: Sensor Services, Electronic Warfare (EW) Support Services, Counter Terrorism Services, and Navigation and Identification Services. The branch consists of a small group of subject matter experts with in-depth knowledge of the relevant service areas, and who provide direct support to projects within the branch, throughout the JISR Service Line and across the other Agency Service Lines and Project Offices.

In collaboration with the other JISR branches, the EW and Sensor Services branch supports a wide customer base including the NATO HQ and Consultation, Command and Control (C3) Board, the NATO commands, NATO and Non-NATO Nations, and internal Agency elements.

The Sensor Services offered by the branch aims to enable our customers to plan, procure, and operate state-of-the-art, cost-effective surveillance capabilities that fulfil both the NATO and national requirements. This is achieved through provision of expertise throughout the capability life cycle, starting from national and regional studies, requirements capture, joint procurement of sensor systems, and testing and development of through-life logistic support concepts.

Geospatial Services

In modern warfare Geospatial Services are applied across all defence functions to achieve geospatial superiority. Within NATO, Geospatial Services are fully embedded into the Joint Intelligence Surveillance and Reconnaissance (JISR) Cycle. These services are provided by the Nations and by NATO-owned and operated assets such as the NATO Core Geographic Information System (Core GIS). The use of GIS technology by NATO clearly represents a paradigm shift in the sense that Geospatial Intelligence (GeoINT) capabilities, analytical geo-processing services and products are available from the strategic level all the way down to the tactical headquarters. Furthermore, GIS together with the latest developments on secure mobile communications make it possible to provide decision makers with timely, relevant, and accurate data that can be exploited and used as actionable intelligence.

The JISR SL Geospatial Services branch provides GeoINT SME support services ranging from requirements analysis to capability development and support to operations – including source data identification, fusion, and assessment. The branch offers NATO and Nations an extensive GeoINT experience and knowledge base that assures technological and procedural alignment with current and future NATO GeoINT services. These services

are currently provided to most NATO operations. The branch maintains a state-of-the-art Core GIS facility that can respond to and support most operational GeoINT reach back tasks within short turn-around times.

The MAJIIC 2 Project

During the 1990s, NATO missions in the Balkans revealed huge interoperability gaps in the area of sharing JISR data and in the collaboration between JISR units from different nations. Since 2001, several nations have worked through a range of projects to help resolve JISR sharing and collaboration gaps. The lastest one of these projects is Multi-Intelligence All-Source Joint Intelligence, Surveillance and Reconnaissance Interoperability Coalition 2, also known as MAJIIC 2. The MAJIIC 2 project includes government, military, and industry participation from nine NATO Nations. Importantly, the JISR SL, on behalf of the participating Nations, is providing technical management of the MAJIIC 2 activities and direct SME support in all work areas of this key multinational JISR project.

The MAJIIC projects have been widely recognized as having made significant contributions to the NATO JISR concepts, technologies and standards (STANAGS) – some of which now form the backbone of the NATO JISR technologies – including those to be used in the NATO Alliance Ground Surveillance (AGS) system. The MAJIIC 2 project has a strong presence in key NATO JISR forums like the JISR Task Force and JISR Project Group, and works closely with the NATO JISR Capability Area Manager (CAM).

The JISR Team

Some of the achievements by the MAJIIC projects – as supported by the JISR SL – include:

• Contributing to development, enhancement, and proliferation of STANAGS for JISR data formats;
• Developing the Coalition Shared Data (CSD) mechanism for sharing of many types of JISR data;
• Developing and documenting the NATO JSIR operational processes and procedures; and
• How to make best use of JISR assets across multiple JISR units from different nations.

JISR SL Portfolio

INTELLIGENCE APPLICATIONS SERVICES
INTEL FS, OSINT, HUMINT, IRM&CM, JISR Architecture

SURVEILLANCE & RECONAISSANCE SERVICES
AGS, NAEW FC, Space Support to Ops

ELECTRONIC WARFARE & SENSORS SERVICES
C-IED, SIGINT, Electronic Warfare, NAVWAR, Radar ACQ, ESM

GEOSPATIAL SERVICES
Core GIS, IGMIC, GEO INT, Production, Integration

Agency Support to the NATO Alliance Ground Surveillance Programme

NATO is acquiring the Alliance Ground Surveillance (AGS) system that will give commanders a comprehensive picture of the situation on the ground. The NATO owned and operated AGS Core capability will enable the Alliance to perform persistent surveillance over wide areas from high-altitude long-endurance unmanned aircraft, operating at considerable distances. Using advanced radar sensors, these systems will detect and track moving objects throughout observed areas and will provide radar imagery of areas of interest and stationary objects.

The Main Operating Base (MOB) for AGS will be located at Sigonella Air Base in Italy, and will serve a dual purpose as a NATO Joint Intelligence, Surveillance and Reconnaissance (JISR) deployment base and data exploitation and training centre.

The AGS system is being acquired by 15 Allies – Bulgaria, Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia and the United States. It will be made available to the Alliance in the 2017-2018 timeframe.

The NATO AGS Program, managed by the NATO AGS Management Agency (NAGSMA), will deliver five Global Hawk Unmanned Aircraft, Air Vehicle C2 systems, Transportable and Mobile Ground Stations, and a Mission Operations Support installation at MOB, Sigonella.

The NCI Agency's engagement in the AGS Program has three main pillars: support to NAGSMA in their acquisition effort, the integration of AGS capability into the NATO C3 structure, and support to the AGS Implementation Office (AGSIO) at SHAPE and the future NATO AGS Force (NAGSF).

AGS Interoperability

NATO AGS represents a 'core' capability that will be complemented by additional national ISR assets providing a wider range of sensors and capabilities. The 'multi-source' intelligence collected will be analyzed to meet the NATO commanders' information requirements; therefore, one of the key requirements for AGS Core is to be interoperable with other NATO and national C2ISR systems. Since 2013, NAGSMA has been working with the Joint ISR Service Line (JISR SL) to ensure that AGS interoperability requirements are met. The JISR SL provides AGS Testbed facilities in The Hague, where AGS systems (currently as prototypes) are being tested for STANAG compliance and interoperability with other NATO systems.

AGS interoperability is based on the NATO ISR Interoperability Architecture (NIIA) and its associated STANAGs. The JISR SL has been at the forefront of NATO ISR Interoperability, with expertise in the development and implementation of standards and new technologies for complex coalition environments such as International Security Assistance Force (ISAF) and Multi-Intelligence All-Source Joint ISR Interoperability Coalition (MAJIIC). The Service Line hosts regular AGS Interoperability Working Group meetings where our SMEs support discussions on technical interoperability issues and provide advice to NAGSMA and AGS industry.

Following the first integration event in December 2013, the AGS Testbed supported a contractual Interoperability Demonstration and the AGS participation in Trial Unified Vision (April- May 2014). Besides exercises and contractual test events, the AGS Testbed is offered to AGS companies as an ad-hoc test, integration, and demo facility where they can interact with other NATO systems as well as officers from AGSIO representing the user community.

AGS Capability Package

The JISR SL is coordinating the implementation of the AGS Capability Package (CP) which regulates the integration of the AGS Capability into NATO C4ISR Systems. The AGS Capability will support a wide range of users, including political and military authorities from NATO and participating Nations, from command levels down to tactical forces. The NCI Agency will manage the integration of AGS Core Capability into NATO C3 Systems by enabling the connectivity to Bi-SC AIS and Deployable CIS AIS environments. In so doing, information exchange between the AGS Core and the NATO C4ISR environment, NATO-wide – both in the static and in the deployed domains – will be achieved. The absence of such connectivity and information exchange would severely compromise the ability to exploit and use the AGS services, as well as the quality and usefulness of the products generated within AGS to support the various C2 processes in NATO. Furthermore, without the services being provided by the NCI Agency, the Nations would be unable to access the products, both in the static and deployed domains.

Under the leadership of JISR SL, an **AGS Target Architecture (AGS TA)** was developed to:

- Provide **the baseline for integration** of the AGS Core System into the NATO C3 System, which forms the environment into which other C4ISR systems and data can be connected;
- Serve as **the primary reference** for all NATO interface specifications relevant to the AGS integration;
- Be a **key enabler** for all the acquisition/implementation projects that are programmed to be delivered by the NCI Agency in the AGS CP;
- Provide **guidance** in support of the specification of requirements for the next increments of the various C4ISR systems involved; and
- **Minimize the risk** in facilitating the integration of AGS system components into NATO's existing architecture.

The AGS TA was delivered in May 2014, and will be kept updated to retain its validity relative to the interfaces and information exchange requirements that will evolve as the AGS capability and NATO Joint ISR Initiative are developed. In this way, the AGS TA becomes not merely a reference document, but an essential dynamic tool for the duration of the AGS and JISR implementation efforts. The AGS TA covers all the stack layers, from the physical layer of a fibre connector in a SATCOM terminal or the modulation scheme used by a modem (SATCOM services), to the application layer of a Common Operational Picture client (Situational Awareness services).

The NCI Agency is the Host Nation for 10 CIS projects programmed in the AGS Capability Package CP 0A0201. The Agency started by providing an AGS Advanced Echelon (ADVON) Team that was deployed in Sigonella in September 2014 with mobile CIS Services including REACH Laptops and Smartphones operating at the NR Classification Level. Although there is currently no CIS infrastructure in Sigonella, the ADVON Team was provided with the capability to communicate with the AGS Stakeholders using REACH and smartphones through VPN over the local 3G/4G connectivity. The NCI Agency will start delivering Bi-SC AIS services through static communications infrastructure in August 2015, and gradually increase the capacity to serve a rising number of NATO AGS Force (NAGSF) staff in Sigonella whilst also facilitating the information exchange between the AGS Core System and NATO C3 Systems.

The NCI Agency will also help provide the SATCOM space segment for the AGS Capability. This will allow the safe operation of the Unmanned Air Vehicles (UAV), while ensuring the flexibility, availability and the most efficient use of space segment resources over a period of 20 years.
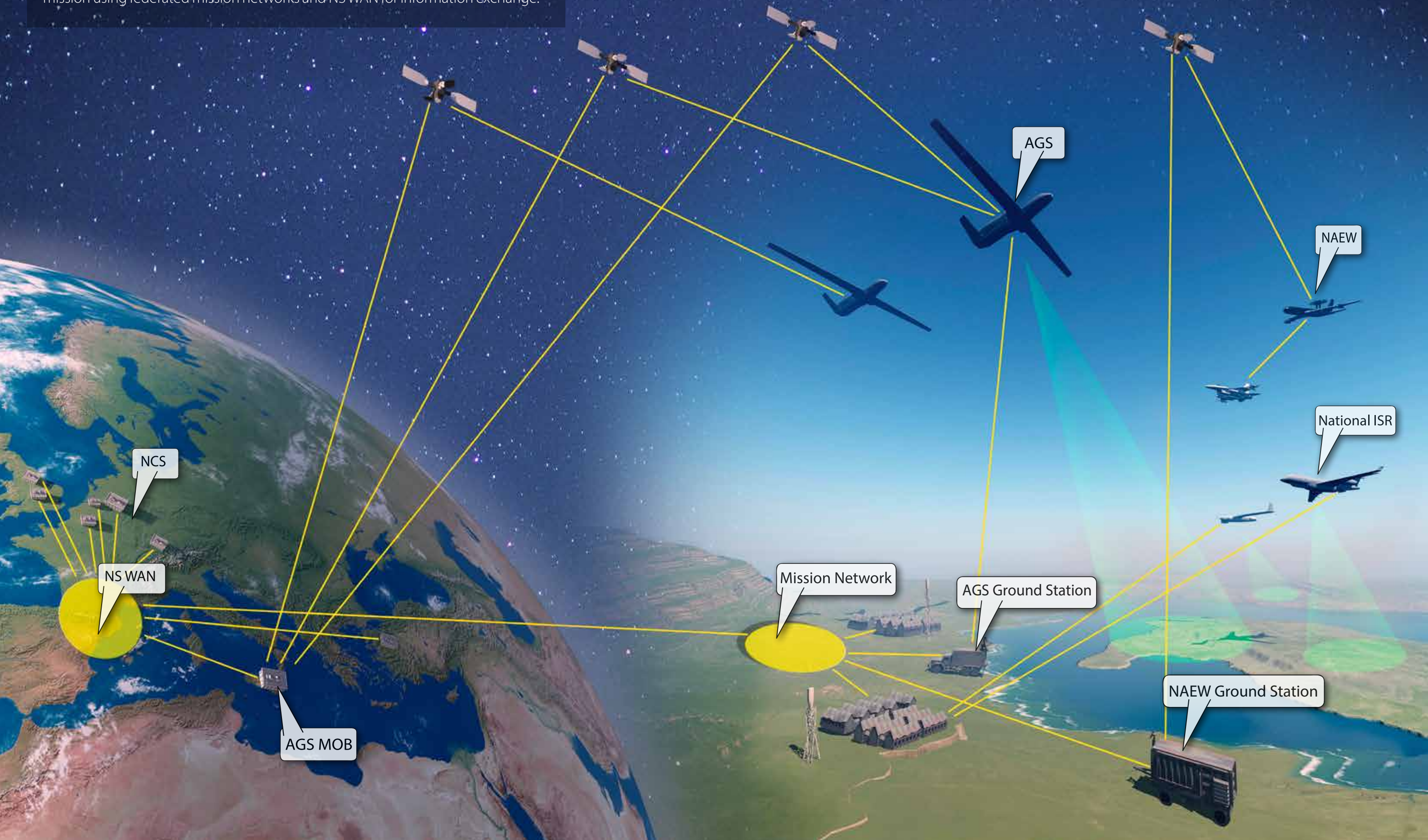
Support to the NATO AGS Force

The JISR SL has a long reputation for supporting operational users and major NATO operations with both technical and operational subject matter expertise. As a similar NATO owned and operated capability, the NATO AEW&C Force has been relying on JISR SL services for more than 20 years. Using the same model, the Service Line will support the future AGS Force with their concept development and experimentation activities, modernization needs and urgent operational requirements. As a first step, the JISR SL is working with AGSIO at SHAPE helping them to better understand AGS capabilities in the context of the NATO Joint ISR environment and to support the development of their operational procedures.

AGS Mobile Ground Station screen shot showing GMTI radar plots from AGS radar simulator

Artist's impression of NATO AGS aircraft based in Sigonella, Italy

Gokhan Alptekin, Cagatay Soyer, and Matt Roper

NATO AGS Core aircraft will be based on US RQ-4B Global Hawk high altitude, long endurance Unmanned Aerial Vehicles (UAVs). The UAVs will perform ground and maritime surveillance using state-of-the-art Synthetic Aperture Radar (SAR) and Moving Target Indicator (MTI) technologies.

AGS aircraft will communicate with their ground elements in theatre, as well as their Main Operating Base (MOB) in Sigonella, Italy. Other C2 and ISR assets such as NATO AWACS and national surveillance aircraft will contribute to the overall mission using federated mission networks and NS WAN for information exchange.

AGS

NAEW

National ISR

NCS

NS WAN

Mission Network

AGS Ground Station

NAEW Ground Station

AGS MOB

JFTC and NCI Agency
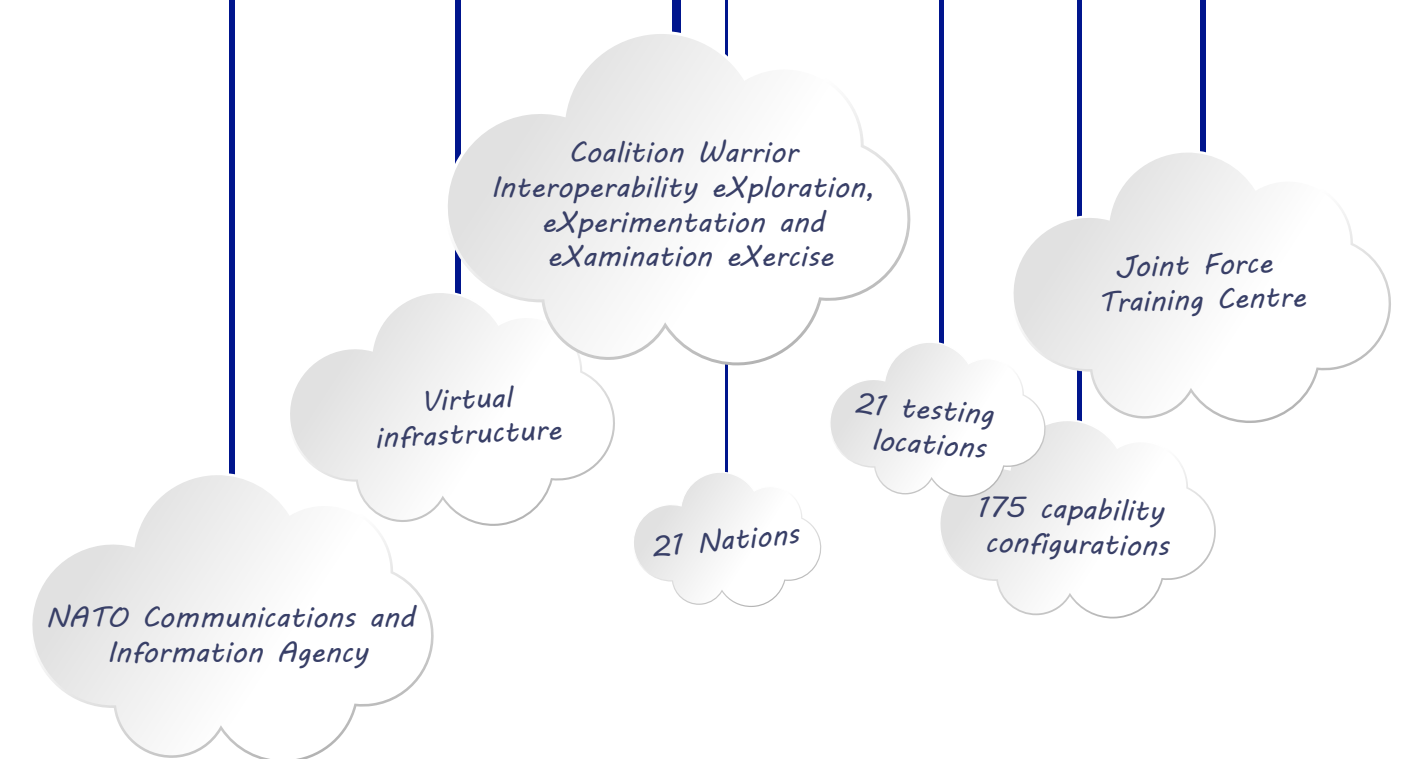## The team behind CWIX 2015

It has been five years since the Joint Force Training Centre (JFTC) became the home for the Coalition Warrior Interoperability eXploration, eXperimentation and eXamination eXercise (CWIX). As CWIX 2015 is approaching fast, the JFTC together with the NATO Communications and Information Agency CIS Support Unit Bydgoszcz (CSU Bydgoszcz) are working hand-in-hand to make major improvements to the CWIX exercise by increasing the capabilities of the money saving cloud services at the JFTC facility in Bydgoszcz, Poland. Through close cooperation the team in Poland is making sure that the future of CWIX and allied interoperability will remain a continued success.

Coalition Warrior Interoperability eXploration, eXperimentation and eXamination eXercise

Joint Force Training Centre

Virtual infrastructure

21 testing locations

21 Nations

175 capability configurations

NATO Communications and Information Agency

What is CWIX?

CWIX is a Military Committee directed annual program designed to support the continuous improvement to interoperability for the Alliance and Partner Nations. Over the three week period, CWIX will bring together engineers, technicians, and operational users from 21 nations to test the interoperability between different information systems not only in Bydgoszcz, Poland, but also those distributed throughout Europe and North America. Last year CWIX 2014 explored critical areas such as cyber defense, the Federated Mission Networking (FMN), Modelling & Simulation, and Situational Awareness information systems. 21 nations distributed over 21 testing locations, brought together 175 capability configurations which spanned the complete communications and Information spectrum and represented current, future, and experimental capabilities of the Alliance and its partners. In 2015, CWIX is already looking to expand participation to even more nations and systems.

Why CWIX?

The importance of CWIX cannot be understated. It is the largest annual NATO approved event of its kind. It is one of the driving test beds for the Smart Defense concept and the Connected Forces Initiative (CFI). It builds interoperability and facilitates a common framework for Alliance members and Partner Nations to "plug and play" their Command and Control (C2) networks. During the International Security Assistance Force (ISAF) mission it took several years to create Afghan Mission Network. It allowed sharing real time information across the entire coalition and was vital to ISAF's success. The CFI and the FMN seek to capitalize on successes of the Afghan Mission Network, capture its lessons, and create a framework for future deployable networks that can be set up in a matter of months instead of years, giving NATO rapid crisis response ability. CWIX is where the concept takes life and nations have a chance to test, document and refine the interoperability of their C2 systems.

The cloud service at CWIX

The cloud service for CWIX was started in 2013 with the twin aim of reducing the hardware shipment and promoting mobile computing field in NATO. In obvious terms of practical equipment reduction, cloud service is invaluable. It allows the Nations to configure their virtualized systems from their locations in advance of arriving at the JFTC. They do not have to bring their own hardware and instead rely on virtual infrastructure available at the JFTC. This conserves the physical space, saves energy, and reduces the heat output and shipping costs of moving expensive equipment.

Furthermore, Infrastructure as a Service (IaaS) model implemented at JFTC reaches out beyond that. It is believed that on demand infrastructure provisioning, resource pooling together with dynamic resources reassigning, and the flexibility it offers, will change the model of CWIX capabilities experimentation and testing. It can speed up the capabilities deployment and reconfiguration process, extend the experimentation windows and provide new performance and productivity indicators.

The second aim of JFTC IaaS implementation is to promote cloud computing within NATO. Over the recent year cloud computing has become one of the main driving forces in the industry. Increasingly often companies and organizations are processing, storing and maintaining their data on the cloud and accessing it remotely from different locations. After 2 years of testing and exploring the potentials of this technology, JFTC together with NCI Agency CSU Bydgoszcz fielded with success vCloud Director that is now opening its doors for more CWIX participants.

Cooperation

The NCI Agency and JFTC, represented by Training Support Division, reached an unprecedented level of cooperation. The NCI Agency's efforts are led by its Interface and Integration Engineer, Waldemar Slifarski. Thanks to Waldemar and his technical support team, together with Fulvio Postogna, a JFTC CIS engineer, the service provided by technical infrastructure at JFTC is continuously improving. What is most striking is the ability of JFTC's CIS branch and the NCI Agency's ability to work together, share expertise, and exploit their respective strengths to ensure CWIX is success every year. For example, NCI Agency, which owns and operates most of the JFTC's technical infrastructure, is able to fully integrate with the JFTC battle lab, which is owned and operated by JFTC Wargaming branch. Whenever one of the agencies has a shortfall in one area, it can immediately rely on its partner to backfill the gap, providing seamless service to the CWIX community.

Future

The future of CWIX is bright. The event furthers NATO's interoperability and promotes the closer integration of the Alliance. Together the Bydgoszcz team of NCI Agency and JFTC will continue to improve the smooth running of this important event. Within the cloud area the next targets are Platform as a Service (PaaS) and Software as a Service (SaaS) models that are more advanced cloud computing capabilities, aiming at making the JFTC infrastructure even more attractive to the CWIX participants.

MAJ Alex Vershinin, JFTC

NCI AGENCY MEMBER TAKES CARE OF BIG CLIENTS

Senior MSGT Roland Liebetrau has always been a passionate fan of the underwater world, so when he stumbled across an internet contest that offered the chance to become the next Whale Whisperer of 2014, Roland knew he had to enter. "*It has always been my big dream to once see these breath-taking animals live,*" Liebetrau said. Luckily for Roland, his dream came true!

Last year, Senior MSGT Roland Liebetrau, a network technician and Public Relations Non-Commissioned Officer at CSU Uedem, won the Whale Whisperer contest staged by the Tourist Board of the Dominican and sponsored by Meiers Weltreisen. The two groups invited the winner, also known as the Whale Whisperer, on an all-expenses-paid trip to the Dominican Republic during whaling season (between January and March) to observe the humpback whales in their mating and reproduction habitat near Samaná, Dominican Republic.

It's not just a free holiday though, while in Samaná, the Whale Whisperer supports the nature preservation organization, the Center for the Conservation and Eco-Development of Samaná Bay and its Surroundings (CEBSE), by reporting on the humpback whales using the Whale Whisperer blogs on Facebook, Twitter, and Pinterest. As a non-profit organization, CEBSE works for the preservation and sustainable usage of natural and cultural resources in the Samaná region. "*The members of CEBSE, and all the other organizations do an outstanding job. Among other things CEBSE strictly observes the prescribed rules of conduct, such as policing the distance between boats and the whales,*" said Roland.

However, before becoming the Whale Whisperer, Roland had to overcome quite a few hurdles. The Whale Whisperer must be an adult German native speaker with good command of English – and most importantly, a huge fan of humpback whales! Each applicant is required to explain – in as much detail as possible

– why they think they should be the next Whale Whisperer on the organizer's website. After filling out the application document, the contestants compete in several challenges. Liebetrau said he put a lot of effort in his application because he was fully aware of its importance.

After having seen the challenges, Roland initially had no clue how to tackle them. But after some intense brainstorming and talking to friends, first ideas came up. For the first challenge, he found an exceptional approach, "*I was to present a declaration of love for a humpback whale. To this end, I wrote a poem and a friend of mine made me a candle with the Whale Whisperer logo on it, and I read the poem in the flickering light of that candle.*" All Roland's effort was worthwhile, since he won the qualification contest and became the next Whale Whisperer. What exactly tipped the scales in Roland's favour has not been published, but when Roland received the travel documents at the office of Dominican Republic Tourist Board in Frankfurt, Germany, he was told the jury had been particularly impressed by his dazzling declaration of love.

Afterwinning, Roland travelled to the Dominican Republic to begin his Whale Whisperer journey. The flight and the stay in the beautiful 5-star hotel, Bahia Principe Cayacoa was financed by Meiers Weltreisen. From his hotel room Roland enjoyed a view of Cayo Levantado, the island known from Bacardi commercials.

Every year about 3,000 humpback whales return from their foraging areas in the Arctic, Canada's east coast, or even from Norway to the Samaná region for mating and calving. The whales conquer distances of up to 7,000 km, and then, in the Caribbean waters, they find nothing to eat during their entire stay. However, the warm and shallow waters offer the whales ideal conditions for preparing their calves for their big journey north. Here there are no enemies such as orcas, sharks, or the large fishing nets in the Atlantic Ocean. "*With a little bit of luck one can observe up to 200 humpback whales every day,*" remembered Liebetrau.

During the trip, the Whale Whisperer regularly headed into the reproduction area in a whale watching boat to collect scientific data, such as coordinates; to observe the behaviour of the whales; and to take photographs of their tail fins for the CEBSE. Afterwards the data is uploaded to online data bases, which are accessible to scientists all over the world.

This data includes identifying the whales that travel to Samaná. Each humpback whale can be identified by its unique tail fin – just like humans by their fingerprint. Once the whales' fins are recorded, the world-wide observation and identification efforts can help to draw conclusions as to the whales' migrating routes and to determine the travel speed of the animals. Using this method scientists proved that female humpback whales born in Samaná have in turn given birth to several calves in that same Samaná bay. Another type of data recorded is the whale song, which is unique every year. Each year the song is composed anew by the various populations, which leads to variations in the yearly song. Roland managed to record a few interesting whale songs with an underwater camera that he shared with the scientists.

There is a whole lot more still to be learned about humpback whales. For example, nobody knows how old these animals can get. To find out, another 30 years or so of scientific data collection is necessary, and humpback whales that died of natural causes must be examined by scientists. For all that research more and more state-of-the-art technology is being used. Since 1966 the humpback whales have been protected world-wide as an endangered species, and the population has been growing year-by-year since. Unfortunately, several countries do not adhere to the International Whaling Commission (IWC) agreements; that is why every year quite a few of these miraculous creatures are pulled out of the oceans. And of course we do not know how many humpback whales die in fishing nets or are killed by orcas.

Being the Whale Whisperer means more than reporting on whales, Roland also reported on the Dominican Republic, "*During the first four days a member and a driver from the 'Dominican Republic Ministry of Tourism' took good care of me. The Whale Whisperer Project is also designed to be a big positive promotion for this country which wants to keep tourism and whale research in harmony.*"

In addition to the daily boat trips Roland rode on horseback to the famous waterfalls of El Limon, visited the Los Haitises National Park, and – during a tour of the city of Santo Domingo – he stood at the Columbus Lighthouse erected in honour of the famous explorer who – right here in the Dominican Republic – first set foot on the soil of what would later become America. "*If I had known before how hospitable the people are and how beautiful the landscape is, I would have travelled to this country much earlier. During my stay I came to love and appreciate this country,*" Liebetrau enthused.

After his return to Europe, the Whale Whisperer Project experienced another highlight in early July – to which Roland's reporting, photos, and videos significantly contributed. Among more than 700 publications proposed for the Best of Corporate Publishing Award, the most important award in this category in Europe, a 150-person jury selected the project of the Dominican Republic Tourist Board for the category Social Media and presented it with a Golden Award. Thus the Whale Whisperer clearly stayed ahead of projects presented by reputable companies such as Deutsche Telekom AG, Helvetia Insurances and Kircher Burkhardt GmbH.

Summing up, Liebetrau said: "*It was an unforgettable time that I definitely wouldn't want to miss, although I had stress sometimes. And despite having thrown in 17 days of my annual leave for this project, I returned home needing some vacation. But all in all it was a dream come true. I learnt a lot about humpback whales from first-hand experience, and I made new friends. At the end of my stay they did not want to let me go – they even offered me jobs over there. I will always remember the people, the country and, of course, the humpback whales, and I will continue to support the world-wide protection of whales.*"

Senior MSGT Roland Liebetrau, IIM Technician

Redesigning performance management

The Agency is redesigning its performance managment process this year. Performance management within the Agency is a cyclical, 12-month process introduced to all civilian and military staff members within the NCI Agency. The process is focused on results, delivery, and recognition, with the aim to ensure that staff understand their roles as well as how their work contributes to achieving the overall mission and vision of the Agency.

Between June and October 2015, performance management briefing sessions will be delivered across the Agency. Please visit the performance management portal page for more information.

Our new approach is designed to be simple and straight forward. It is an annual performance management process that establishes strategic goals, set by the General Manager, which cascade downwards throughout the Agency, via the executive management team, senior managers, and team leaders to individual civilian and military staff throughout the Agency. It encourages staff to work on the Agency's set goals, and to establish personal objectives approved by their manager that are designed to complement their roles and improve the quality of individual performance.
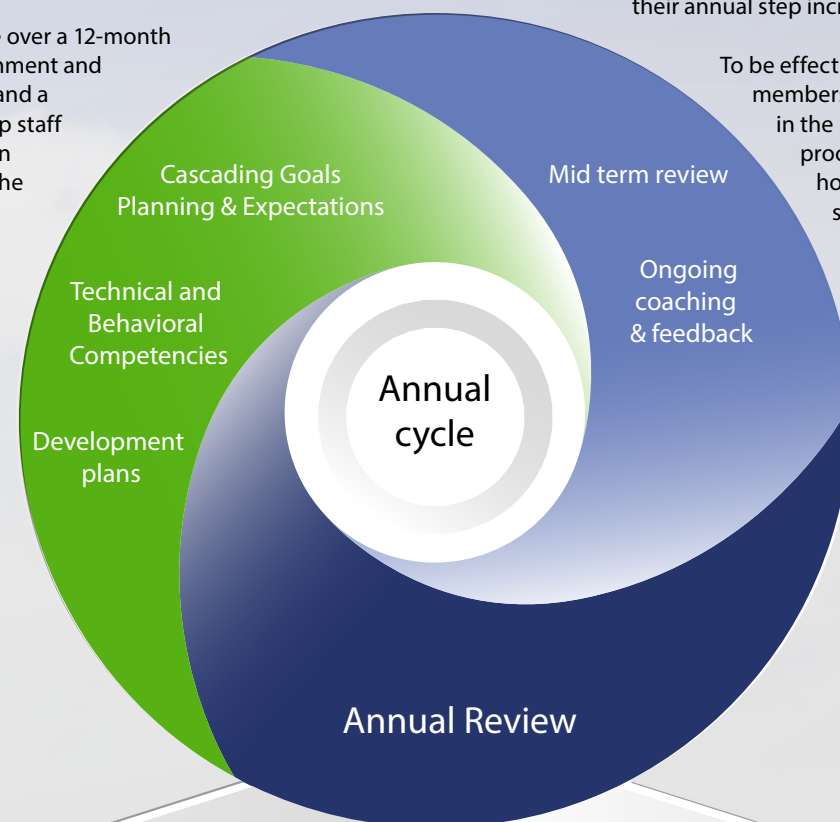
The process takes place over a 12-month cycle, with the establishment and approval of objectives and a midterm review (to keep staff on track). It ends with an annual assessment by the line manager and manager's manager. It can incorporate input from others, such as project managers to support the Agency's matrix structure, and can lead to recommendations for development. The process can be calibrated across all locations, so that the measurement of staff

performance is more consistent, assuring management of the validity of a performance report, which can assist in selection, renewal or promotion decisions. The process is reportable, giving the executive management an understanding of the performance and potential of their team, as well as where skills gaps exist.

The process will be reinforced by placing the onus on to a manager to ensure the timely completion of annual reviews for their staff. Any civilian line manager who does not complete all of their staff's reviews within the set timelines will forfeit their annual step increment.

To be effective, both managers and staff members must actively participate in the performance management process, and have open and honest discussions about the staff's individual performance. In addition, managers must provide ongoing feedback to staff on their performance.

A dedicated performance management tool will support the process for all staff that will be integrated within the Agency EBA project at a later date

Output Military
• Performance Review
• Input to International Evaluation Report (IER) when required
• Input to National Military Reports when required

Output Civilian:
• Performance Review
• Talent reports for each Service Line/CSU
• Calibration
• Recognition & Reward
• Links to training requirements

Planning and Expectations

Planning involves managers meeting with their staff to establish the key work objectives and behaviours that support achievement of the Agency's business plan. Planning includes preparing for achieving the key work objectives and behaviours. Key work objectives must be measurable and behaviours must be demonstrable. During the planning phase, both the manager and staff member must discuss the staff's goals, aspirations, and any related development activities.

Midterm Review

Halfway through the year, managers will meet with their staff to review progress in achieving the goals set out in the plan, provide feedback, and make any required adjustments to the written plan. Ideally, managers and staff will carry on an ongoing conversation throughout the year relating to job performance.

Annual Review

During the final performance evaluation, managers will provide an assessment of their staff's success in achieving the objectives and behaviours set out in their performance plan.

The assessment will be objective and based on the agreed measures of success, where possible. The common evaluation standard will be used. Follow-up actions will be set out where required. Good performance needs to be recognized, and poor performance needs to be clearly and consistently handled.

The final assessment becomes a permanent part of the staff's performance record.

Gulumser Kaplan, HR Performance Management

"Strategic and integrated approach to delivering success to the Agency by improving its workforce."

"Means through which better results can be obtained by managing performance with planned goals and competence requirements."

Military & Civilian

One Direction

Agency Vision & Mission
Agency Goals
Business Unit Goals
Team/Project Goals
Individual Objectives

December - March
Annual review

June - August
Review progress

January - March
Set objectives together

Interview

COL Herve Sirault,
Chief of the Operations and Exercises Service Line

There is no doubt that 2015 is a year of transformation and transitions; from increasing security threats to the Agency reorganization, the entire Agency is affected – especially the Operations and Exercises Service Line. In March, COL Herve Sirault, Chief of the Operations and Exercises Service Line (O&E SL), sat down for an interview to discuss the challenges his Service Line will face in the upcoming year and how he and his team will adapt in order to remain successful.

In March COL Sirault – having recently returned from Afghanistan – met to discuss the changes happening to the Agency, both internal and external, and how these changes will affect his Service Line (SL). From the beginning COL Sirault is clear on the O&E SL's main challenges this year – supporting the Trident Juncture Exercise (TRJE), fewer operations and more threats, new task forces; and balancing increasing requirements with decreasing resources.

Trident Juncture Exercise

Exercises are crucial to the Alliance's success for several reasons: most notably for testing interoperability and displaying NATO's readiness to respond to and defend against potential threats. In 2015, the Agency's O&E SL and several other Service Lines will participate in Trident Juncture – the largest exercise since the fall of the Berlin Wall.
From 28 September to 16 November, over 30,000 troops will gather in multiple locations across the Alliance – including Italy, Portugal, and Spain – to train, deploy, and exercise in a complex and distributed environment. The Agency, especially the O&E Service Line, will support TRJE. COL Sirault's team will be responsible for ensuring the planning and coordination of the CIS deployment, a job of the utmost importance as the exercise is described as a "networked battlefield".
After the Wales Summit, it was clear that one of NATO's priorities for 2015 was to increase the interoperability especially during exercises and operations. "*Interoperability is one of the main challenges for exercises in the coming year. When we support an exercise we supply all of the services we would in a static environment, and provide assistance in the planning phase as well as analysis and lessons learned,*" noted the Colonel. "*TRJE proves even more challenging, not just for its size, but also because it requires interoperability between NATO Nations and Non-NATO Nations.*"
One of the CIS features that COL Sirault and his team will support during TRJE is 'plug-in and play', which enables participants to

"play" for as long or as little as they like. Providing interoperability like this is no small feat especially for such a large exercise; it requires careful planning and execution.
How does the O&E team counteract these challenges? "*It's all about communication with the customer. The Agency is there through the whole exercise life cycle. The first phase is preparation, where we give expertise on CIS environment. The second phase is execution, analysis, and technical support during the exercise. The third and last phase is lessons learned. Most important though is maintaining a close relationship with your customer, that way you know what they need. And O&E acts as a facilitator internally and externally in this perimeter.*"

Fewer operations, more exercises and a changing political landscape

Another major change in the upcoming year is NATO's transforming operations. "*In the past, most of the operations were scheduled to support the International Security Assistance Force (ISAF) in Afghanistan, and focused on counter-insurgency – so far this is not the case in 2015.*"
On 31 December 2014 a small ceremony in Kabul marked the end of NATO's thirteen year combat mission – the largest in the Alliance's history – in Afghanistan, and recognized the beginning of Resolute Support mission, which focuses on training and building the Afghan National Security Force (ANSF), so NATO can hand-over control. As COL Sirault explains, this means a shift from exercises focused on counter-insurgency. "*Since operations are decreasing, we are shifting to exercises for defence against stronger threats.*"
The stronger threats he is referring to are what the Secretary General dubbed the 'watershed of events of 2014', which saw the Alliance face "a new and more dangerous security environment from the East and from the South". Just like decreasing operations affected exercises, the new security environment acted as the catalyst that shaped the Agency's exercise from combating counter-insurgency to defending the Alliance.

Supporting new task forces

A new challenge the Service Line will face in 2015 is meeting the demands of new task forces. On 5 February 2015, the Defence Ministers voted to create the Very High Readiness Joint Task Force (VJTF) within the NATO Response Force (NRF), a highly ready and technologically advanced multinational force comprised of air, maritime, and special operations forces used for collective defence or crisis-response operations. The VJTF acts as a 'spearhead force', who is able to rapidly deploy within three days, especially within the borders of the Alliance. The formation of these new forces is so critical to the Alliance that the purpose of TRJE is dedicated to their validation, but it's the NRF's unique relationship with the Agency that is changing in 2015.
Since the NRF is 'technologically advanced' they depend on the Agency for support. "*If or when the NRF or VJTF deploy, [the Agency] has deploy at the same time. That only gives us three days to prepare, so we need to be ready ahead of time.*" Maintaining a constant state of high-level readiness requires careful planning: "*For exercises you have a general knowledge of what you need, but for operations – especially rapid response operations – you don't always know what you'll need. To combat this, you need to predict what could happen, and where it could happen. In addition, you need to have the resources readily available – you can't start taking from other customers, you have to have it ready.*" Part of high readiness is 'freezing' equipment and resources for possible NRF missions, requiring intense coordination and planning of requirements and resources with not just the NRF, but with all of the SL's customers.

Combating increasing requirements and decreasing resources

In 2015 the O&E Service Line, along with the entire Agency, will provide support to a broader range of customers and a higher number of nations. Supporting more clients, means that the Agency has to meet more requirements with a decreasing amount of resources. "*Imagine a graph,*" COL Sirault explains, "*where the requirements are increasing, but resources are steeply dropping…the point where they intersect is the 'sweet spot', where we are able to use our resources to deliver the customer's needs and wants.*" COL Sirault's and his team's ability to find this 'sweet spot' is strongly based on communication with their customers. "*During the planning and preparation phase, we meet with customers and explain that we can support them, we can meet their capabilities, and we can deliver on their requirement – but everything has a cost.*" Once O&E identify a customer's requirements, the team needs to balance those with the Agency's resources.

Managing resources is not only difficult because of increasing requirements, it's also difficult because the Agency operates over the entire geographic terrain of the Alliance, posing the question of what resources need to be where, and when should they need to be there – this takes some prediction from the SL. Since the SL supports multiple operations and exercises, it's important to predict and plan what resources are required, who needs them, where and when they need to be delivered, and from where they need to be delivered.

NATO Meritorious Service Medal

NATO Meritorious Service Medal

NATO Meritorious Service Medals are awarded to staff members who have clearly demonstrated exceptional and remarkable service to NATO under one of the following four categories:

1. Performing acts of courage in difficult or dangerous circumstances.
2. Showing exceptional leadership or personal example.
3. Making an outstanding individual contribution in any activity or programme.
4. Enduring particular hardship or deprivation in the interest of NATO.

In September 2014, the NCI Agency Awards Board, chaired by the Chief of Staff, met to consider 16 nominations for the NATO Meritorious Service Medal, which had been received from various locations throughout the Agency. The Board were very pleased to see that both Military and Civilian staff, across broad range of ranks and grades, had been nominated to receive this prestigious award. As the quality of nomination was so high, the Chief of Staff personally wrote to each of the 16 nominees to thank them for their outstanding contribution to the Agency and the Alliance.

Every nomination was considered on its own merits and, though it was not an easy task, the Board selected six nominations (the NCI Agency's maximum number) to be put forward to NATO Headquarters. The Board's proposal was duly endorsed by the General Manager.

At the end of the year all six Agency nominations were approved by NATO Headquarters to receive the Meritorious Service Medal. The recipients and their partners will be shortly invited to a meeting with the General Manager where they will be presented with their well-deserved medal and a certificate.

We extend our congratulations to:

Dr Raffaele De Luca	CSU Naples
Mr Andras Csallo	CSU Brussels
Specialist Joshua Smith	CSSC Brunssum
Mr Antony Wilson	DAS/OASL, The Hague
Mr Tibor Kruty	DAS/CCS, Mons
GP CAPT Kevin Thomas	CSU Northwood

NCI Agency Merit Awards

In accordance with the new process, as stated in Agency Directive 02.03 Merit Awards and Service Recognition, the Agency Awards Board reconvened in November 2014 to deliberate over 132 individual and 46 team Merit Award nominations received from locations across the Agency. The Board was once again pleased to see nominations of such high calibre and that so many members of staff had taken the time to put their colleagues from every staff group and level forward for recognition.

The Board selected 88 individuals and 38 teams to receive an award in the following categories:

- Outstanding Individual Performance
- Outstanding Leadership
- Individual Innovation Award
- Outstanding Team Performance
- Outstanding Teamwork
- Team Innovation Award
- General Manager's Team Recognition Award
- General Manager's Individual Recognition Award

In December, awards ceremonies were held as part of the All Hands Meetings at the three main Agency locations Brussels, The Hague and Mons. Award recipients were presented a certificate and, where applicable, a token. In every case a citation was read out to those assembled presenting the tremendous accomplishments achieved by the individual or team being nominated and ultimately selected to receive the award. Similar ceremonies are currently being conducted by the General Manager and Chief of Staff to recognize Award recipients across the CSUs.

For a complete list of award recipients, please refer to Communications Community of Practice - MERIT AWARD WINNERS section.Our congratulations extend to every Merit Award winner and our thanks extend to all of those who submitted a nomination in this cycle. Please keep up the good work in 2015!

Rosalyn Graney, Human Resources

The technicians within the CIS Support Equipment (CSE) Section, a part of CIS Sustainment Support Centre (CSSC) Brunssum, in the Netherlands, continually strive to reduce costs, while delivering top quality products and services. To achieve these cost reductions, the CSSC has to consider a few areas, including labour costs, material costs, overhead costs, and capital investment in the manufacturing process.

Identifying overpriced products

The CIS Support Equipment Section identified that – as with all military organizations – the parts procured for equipment are either unique or, at the very least, modified versions of "off-the-shelf" products. As a result, the companies that provide these parts charge a premium.

Part of identifying overpriced products is monitoring the supply chain for modified items that appear excessively costy. If an item supports multiple equipment or platforms, and is identified as having an inflated price, the technicians carry out a non-destructive reverse engineering examination of the part and its modifications. If the modification falls within the scope and capability of the Section, a cost estimate is carried out to see if the CSE can deliver the same product for less. This takes into account the cost of the "off-the-shelf" item, the modification parts, and labour. Then, if this returns a lower estimate than the manufacturers price, the CSE approaches CSSC management for permission to carry out the in-house modifications.

Reducing costs in practice

The CSE team has achieved considerable savings for the Agency over the last year. Through a combination of these cost saving exercises the team has reduced the support cost liability on several projects. One project saved nearly €23,000 on cables alone.

The basic breakdown of that analysis is as follows:

The original manufacturer offered 30 cables at a rate of €1,078 each, for a total of €32,340. After a cost analysis, the CSE predicted that it was able to produce the same cables based on the following rates:

Cable 18 x 0.75	€4.55	x 750	= €3,412.50
Connector insert CSHF16	€12.58	x 35	= €440.30
Connector insert CSHM16	€11.96	x 35	= €418.60
Connector enclosure MHO16.25	€8.52	x 70	= €596.40
Gland ESSKE-25-EMV-Z	€3.86	x 70	= €270.20
Small material	€2.50	x 70	= €175.00
Man hour rate	€80	x 60	= €4,800
Total costs			**€10,113**

The total savings for NCI Agency was €22,227.-; that's €740.90 per cable less than the manufacturer price.

The do-it-yourself approach

The CSSC has substantially invested in special tools, test equipment, and machinery to ensure the CSE reduces the requirement to outsource by fabricating and repairing more parts in house.

The combined effect is not just reduced cost, but also an accelerated repair time due to decreased reliance on the supply chains. This returns the equipment to the hands of the user quicker, and also increases product availability for exercises and deployments.

The team's dedication to cutting costs is an example of how being a technician is not just a case of finding the easiest solution to repair equipment, but more importantly, ensuring that the customer and the Agency get value for money.

For their efforts, the CSE was awarded the NCI Agency Team Innovation Award, which was presented to them by the NCI Agency General Manager, Koen Gijsbers, at a recent awards ceremony at Allied Joint Force Command Brunssum.

OR-7 Philip McCartney

The **Financial Plan**

...and the process behind it

The Financial Plan (FP) provides an overview of how the Agency intends to plan and execute its activities from a financial and resources point of view[1] over the next three years. Per the NATO Communications and Information Organisation (NCIO) Charter, the General Manager is responsible to submit annually the Financial Plan to the Agency Supervisory Board (ASB) no later than four months before the end of the preceding financial year.

The FP is a stand-alone document that undergoes a specific approval and review process. It is one of the building blocks for full visibility of the Agency's strategic intent, business and operational environment, together with the Agency's other key planning documents that includes the Strategic Plan, the Business Plan, and Consolidated Programme of Work (CPOW).

While the chartered planning horizon for the Agency is three years, the forecasts for demand and capacity, revenues and costs for the second and third years are less mature. A significant portion of the Agency revenue is derived from NATO common-funded annual budgets and therefore subject to the funding ceilings, priorities, and operational requirements established by Nations and by its Customers year-over-year. Additionally, the Agency is still undergoing a significant period of transition with major structural changes planned. These moves include the move to the New NATO HQ (NNHQ); the new facilities in Mons and The Hague, as well as a number of important initiatives such as IT Modernization and sub-structure rationalization.

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[1] C-M(2012)0049, NCI Agency Charter

The Financial Plan Preparation

The preparation of the Agency key planning documents is a joint effort of all organizational/functional units coordinated by the corporate elements responsible for the final delivery of each of them, specifically, Human Resources for the Capacity Plan, Demand Management for the Demand Plan, Service Strategy for the Business Plan, and CPOW and Finance for the Financial Plan.

The Capacity Plan and the Demand Plan are internal planning documents that, together inform the Directors of the potential Demand forecast and projected required Agency workforce. Using these elements and under the lead of the Chief Operating Officer (COO), the Directors take a strategic decision on the Demand aim for the forthcoming years. This work helps determine the NCI Agency's workforce and skills mix that is required to execute the portfolios and programmes of assigned projects and services Agency-wide.

As a result, a CPOW is produced, which details the portfolio of projects and services driven from the Demand Plan and foreseen to be executed. The primary purpose of CPOW is to inform the manpower capacity planning and the revenue side of the FP.

Forecasted costs are directly linked to the level of demand and revenue projected over that period and the capacity (amongst civilian, military and contractors) assessed as required to deliver the demand. Agreed Key Management Assumptions and Customer Rates, which are approved by the Budget Committee on behalf of all customers, are used in formulating the FP. The cost structure is divided into three main areas:

As the Agency is a no profit/no loss NATO entity, the Financial Plan follows the break-even principal (planned at no surplus/deficit) and is the document by which the Agency governing bodies monitor the deliverable of the target Savings and Benefits and consequently, the evolution of the overhead costs. The Financial Plan is approved by the ASB manually.

Financial Plan 2016 - 2018 – What to expect?

The FP under execution sets a good baseline for future plans in terms of structure and consistency but it reflects the current Agency organizational and business model maturity level. The recent implementation of the new Service Line structure, the staff movements between different locations, and the changes in Real Life Support relationship with hosting entities are influencing the planning process in terms of level of confidence and forecast accuracy.

The Financial Plan 2016 - 2018 will be developed between April and August 2015 with the aim to continue to improve the quality of the FP process and output. The goal for the next plan is to develop a revenue and cost forecast at Service Centre level. The FP 2016 - 2018 is expected to reflect Agency's intent to continue to reduce its operating costs, leveraging efficiency gains from the new structure, in-line with the Benefits and Savings Plan and exploiting the scale benefits of the increasing demand for Agency services.
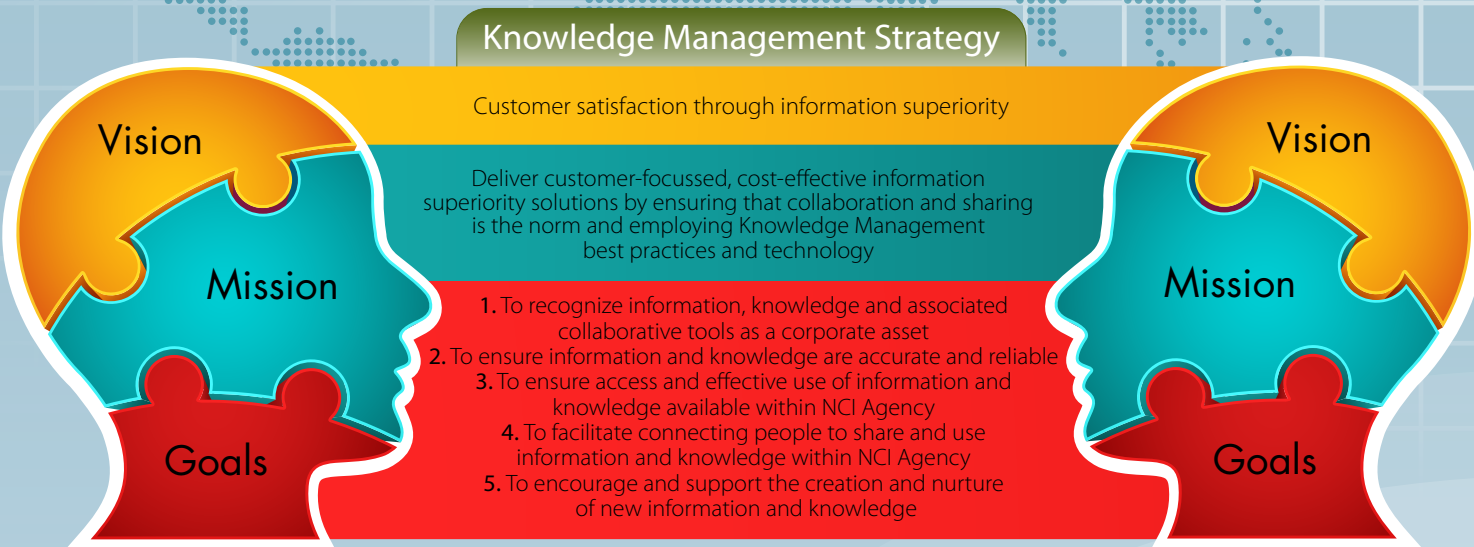
The FP serves as a recognized tool to support Executive decision making and a guide for the in-year operation of the Agency. Accordingly active participation by all stakeholders in its development is encouraged.

Emanuel Santos, Chief Financial Planning and Analysis

- **Acquisition Costs -** The NCI Agency procures significant amounts of goods and services using funds provided by all its Customers but principally, the NSIP. These amounts vary year-on-year due to the value of the contracts and related execution milestones. The total forecasted amounts for the period 2015 to 2017 vary from 422 to 446 MEUR per year

- **External CIS Services Costs -** These services are provided in direct response to the operational requirements determined by primarily ACO, ACT and NATO HQ, within the funding ceilings set by each individual customer agreement. This mostly relates to contractual supplies and services procured directly from industry. For the period of 2015 through 2017 these costs, are estimated at 129.1 MEUR for 2015, 122.8 MEUR for 2016 and 2017

- **Operating Costs -** Agency Operating Expenditures include:
  - Personnel Costs – salaries and related costs (benefits, allowances, pension, recruitment, joining and removal costs)
  - Operational Mission Support Costs - e.g. travel, mission support and other costs in support of the projects
  - Operational Running Costs - tied to the operation and maintenance of the Agency's facilities and its equipment, the training of its staff and other recurringtype services (e.g. catering, security, etc).

Knowledge Management
Help us become better at what we do

Knowledge Management Strategy

Customer satisfaction through information superiority

Deliver customer-focussed, cost-effective information superiority solutions by ensuring that collaboration and sharing is the norm and employing Knowledge Management best practices and technology

1. To recognize information, knowledge and associated collaborative tools as a corporate asset
2. To ensure information and knowledge are accurate and reliable
3. To ensure access and effective use of information and knowledge available within NCI Agency
4. To facilitate connecting people to share and use information and knowledge within NCI Agency
5. To encourage and support the creation and nurture of new information and knowledge

Vision · Mission · Goals

Well-structured Knowledge Management and sharing strategy is an enhancer of successful Information and Content Management.

Knowledge Management is not solely about a process to identify, create, capture, transfer, retrieve, use, and reuse knowledge, it is also about changing behaviours and identifying the business critical knowledge and the individual critical knowledge to be put in motion to the personal and organizational benefit.

Focus on purpose

We often adopt new technologies and web-enabled solutions without really knowing what we want to do with them. Information Management (IM) has been a high priority on many businesses and organizations' agendas for a long time, but only those that have understood to only try to manage the business critical information while letting the rest of information flow free have progressed. The critical information can be defined as information, that when put in motion, shared, and discussed in a specific context will generate knowledge to inform business decisions. Far too often, Knowledge Management (KM) is exchanged for, instead of enabled by, IM. Information and Communication Technology is often the driver behind IM initiatives, which are far better known and understood, letting KM try to leverage the provided technology. This is a legacy from the Information Age where humanity eluded itself into thinking we could "manage all data and information" with the help of IT solutions, but initially failed to consider the exponential and uncontrolled growth of Information production that IT would bring along. We want to change this to better address the user's need of knowledge access and transfer, and through the strategy provide the users the information they need, when they need it!
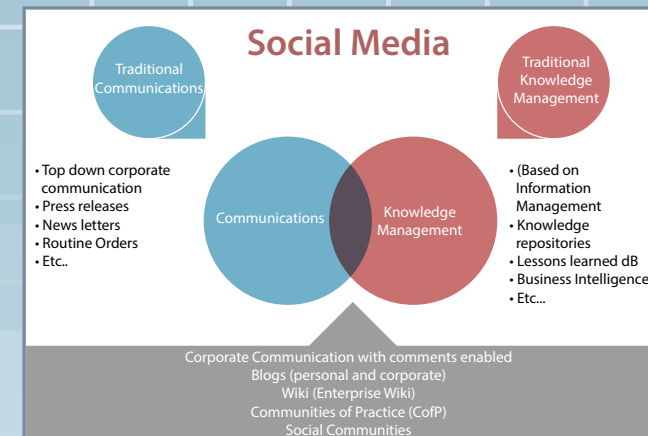
So, if we look at the Agency, what *could* be the common purpose between the Communications, KM and IM within the Agency? Let's make suggestions to demonstrate how these three domains could work together and in symphony with the other to better address the user's needs:

1. **From a KM perspective we *could***: "Enable, increase and share critical knowledge needed to achieve our core values, objectives and Strategies";
2. **From an IM perspective we *could***: "Store, retain and make information and content easily available and shareable in support of critical knowledge creation, sharing and consumption"; and
3. **From a Communications perspective we *could***: "Inform, remind and reinforce our Core Values, Objectives and Strategies."

Let us imagine if we achieve our common purpose with these three perspectives - where would this lead us? As identified by a formal Benefits Realization Map, developed during the Information and Knowledge Management (IKM) Transition project (TIP), the following benefits were identified, but certainly more can be identified:

- **Reduce costs**, though improved search, knowledge identification in subject matter experts and discussions and information lifecycle management;
- **Capitalize on innovation**, generated through crowdsourcing and collaboration in Communities of Practice (CofP) on staff suggested topics;
- **Improve quality of deliverables and services**, by reducing duplication of efforts and increase knowledge and lessons learned sharing; and
- **Improve staff satisfaction**, by increasing transparency and knowledge sharing, putting people in the centre of knowledge creation, making information more readily available, and changing culture.

More importantly, it is the first KM step to achieve faster, easier, and more accurate access to Agency-wide information resources and expertise. While we are aware that the actions needed to reach the initial end-vision are many, the work has started and you are all welcome and encouraged to contribute!

Connection between Communication and Knowledge Management

How can we illustrate the connection between the two disciplines of Communication and KM, with the underpinning tie to IM; and how is this connection influenced by social media or social technologies? In the past, traditional communication was dictated by top-down unilateral corporate communication with little to no dialogue or feedback. Traditional KM was either a theoretical/academic exercise of defining the concept or a too narrow discipline often confused with IM and the formal recording of data and information for future reuse. Now, corporate communication has embraced a more feedback driven approach by enabling staff comments though blogs, both personal and corporate; Wikis, user-generated knowledge and communication platforms; CofPs, used to communicate as well as share knowledge on SME topics; and social communities, allowing people to 'socialize' online; therefore, eliminating physical and geographical distances.

For both the Communication as well as KM, we are looking at very interesting times filled with opportunities to do things smarter by leveraging the collective intelligence and enthusiasm of people. So the questions before us are what do we need to improve in our collective intelligence, and can we motivate our staff to contribute in knowledge sharing? The experts on KM agree on one basic principle; first we need to have an understandable and adoptable KM strategy, then we need to support this strategy with proper communication that leverages user-generated content enabled by social technologies, and last, but not least, we should not forget the importance of IM technologies as enablers. The emphasis is on the users for the users!

Importance of a Knowledge Management Strategy

The most advanced technology in the world is useless if it is not used to connect content to people, hence concentrating efforts on building advanced repositories of information, content and data without considering the purpose and the usage will only lead to limited success. In line with the Agency's strategic goals, the IKM has introduced a way forward, which is currently being translated into more practical terms to be incorporated into the overarching Service Strategy, under the full support of the Agency's Executive Management, accompanied by a Communication campaign to raise awareness.

So what are the founding pillars of the Agency's Knowledge Management strategy?

The three founding ambition statements of the Agency's proposed Knowledge Management Strategy are to:

- Sustain the Agency's Information and Knowledge across segments and geographical locations. This means that access and sharing shall be assured regardless of geographical location;
- Help our staff to find, share, and organize information and knowledge already existing in the organization. This means setting up the processes and tools needed to support this ambition; and
- Increase collaboration and facilitate information and knowledge creation and sharing. This means setting up the processes and tools needed to support this ambition.

But we also envision :
- A more coherent approach to Information and Content Management, that will serve the user requirements for the whole Information and content lifecycle management;
- Improved search and availability to information and content to be shared in the frame of knowledge sharing;
- Training on the underpinning strategy but also on when and how to use the tools; and
- Rewards for early adopters (part of the performance review)

In short, all features that are important to get employees on board and are often lacking in many purely IT-driven content and IM initiatives. When it comes to collaboration, which is working together towards a common goal, this will hardly happen without knowledge sharing – your knowledge sharing and contribution is therefore instrumental for success. This is just the sum of the fact that Communication, KM, and IM are strictly interlinked and one cannot happen without the other, but our wish and aim is to make them all work together for an improved end-user experience!