

C-IED CoE Newsletter



**Counter Improvised Explosive Devices
Centre of Excellence**



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C-IED COE HIGHLIGHTS

STEERING COMMITTEE 2019

On 05 to 06 November 2018 the Sponsor Nations held their annual C-IED CoE Steering Committee- meeting led by framework nation Spain. The Steering Committee approved the POW and Budget for 2020.



CHRISTMAS PARTY

On the 18th of December, the CIED CoE celebrated Christmas for his members and their families. While Santa Claus distributed chocolate to the children, the CIED CoE members tasted dishes from different countries and enjoyed a good time together.





COURSES AND TRAINING

WEAPONS INTELLIGENCE TEAM (WIT) COURSE ITERATION 19.2

The second iteration of WIT Voluntary National Contribution Fund (VNCF) 2019 took place between 10 and 27 of September in Szentendre, Budapest, Hungary.

The course was hosted by Hungarian Defence Forces NCO Academy (HDF NCOA), as part of the VNCF WIT Training 2019 Executing Agent Agreement.

The course has duration of three weeks, and covers overall IED exploitation subjects, including make-up and type of IEDs, forensics, photography, terrorist tactical design, S-UAS collection, DOMEX basic concepts and skills and post blast collection and analysis. The course includes as well a very complete practical phase, through which the instructors help developing the skills needed for WIT operators.

Students pass through a complete incident battle rhythm, starting with receiving of the task, being deployed to incident site and conducting the scene investigation, producing WIT reports and finalizing next day with a briefing for the Task Force Commander. VNCF instrument has proven again being a very powerful tool to fulfill the NATO Operational requirements as well to provide nations with a High standard accredited training.

The program allows nations to join in an international pool all the needed trainers (and related knowledge) filling the existing gaps in most nations without too much burden to each one.

NATO C-IED ATTACK THE NETWORK OPERATIONAL COURSE (AtNOC)

Based on both CoEs POWs 2019, C-IED CoE in collaboration with the Defence Against Terrorism CoE conducted a new iteration of the Attack the Network Operational Course in the period of 7-18 October 2019 supported by Subject Matter Experts from JIDO, USAREUR and DAT CoE.

The AtNOC intends to provide NATO Intelligence, Operations, Plans, Counter



terrorism and C-IED Staff Officers and Senior Staff Assistants from upper tactical (Land Component Command, Maritime Component Command, Air Component Command, Special Operation Component Command) and operational level commands with the knowledge and skills to integrate the comprehensive AtN approach across the other HQ processes. Emphasis concentrates on providing AtN related Situational Awareness, recommending ways to engage all networks and an assessment on the engagement effects.

C-IED STAFF OFFICER COURSE (CSOC) 19.3

From 21-25 October 2019 the C-IED Staff Officers Course (CSOC) 19.3 was conducted in the C-IED CoE in Madrid. With participants from 13 different NATO and the 7 NNN (Non NATO Nations) there was a lot of army experience in the class. A large portion of the attendees came from the NATO Command and NATO Force Structure. Having representatives from these headquarters in the course was a great benefit.



C-IED CoE PARTICIPATION OR SUPPORTING:

HOMEMADE EXPLOSIVES ADVANCE COURSE

C-IED CoE participated to the HMEA-C (Homemade Explosives Advanced – Course) with two representatives (EOD technicians) from DtD (Defeat the Device) Branch and AtN (Attack the Networks) Branch. The course was organized by the EOD CoE at the training area of Zvolen (Lest). The duration of the course is one week, therefore two iterations conducted in a period from 01 to 12 of July 2019. During the course there were analyzed all the known precursors of HME and their chemical characteristics in theory but also performed practically. Different scenarios were examined, providing the opportunity to the training audience to practice their skills in realistic scenarios in permissive and non-permissive environment.



N2-04-C-19 NATO OSINT COURSE

The attendance to the OSINT course at the NATO School has been an excellent experience. Being divided into two phases (basic and advanced, one each week), it shows in ascending order, contents and knowledge about several approaches of searching information the internet, “deep dark web” and social networks, adapted to each type of information requirements. The contents and tools handled during the practical sessions provided information with already

filtered results, reducing the excessive number of sources to analyze. Along the daily practices (individually the first week and by group, the second one) it was found that the use of these tools and web pages, facilitates the obtaining of quality results in optimal time. The application of techniques of reliability discrimination of sources as well as the programming tasks methods with credible indicators applicable to any collection task is highly valued.

For all the above mentioned reasons, it is considered as a beneficial course and suitable for any component of the CoE, not only focused to intel analyst, but also to any other area (operations, logistics, EOD, etc. ...).



4TH NATO COMMANDER'S COUNTER MARAUDING TERRORIST ATTACK (CC-MTA) COURSE

The C-IED Ordnance School in Ireland, located in the Curragh Military Camp in Kildare Co. (Ireland), ran the 4th CC-MTAC (Commander's Counter Marauding Terrorist Attack Course) from 29th September to 4th of October 2019.

It is a Basic Course for Commanders, for the management of terrorist attacks type "Amok" (attack or kill with 'blind anger'), so the course try to study and understand how to improve and help the command with his/her first steps and decisions to be taken, after that terrorist attack had occurred, when the chaos and the impact is so harsh that people hardly can manage the situation as a consequence of high level of stress.



EOD UNMUM PILOT COURSE ON SPECIAL TRAINING MATERIALS OF EXPLOSIVE ORDNANCE DISPOSAL MANUAL

NATO C-IED CoE participated to United Nations Military Units Pilot Course on Special Training Materials of Explosive Ordnance Disposal Manual (UN EOD STM) in Kathmandu, Nepal from 16-24 October 2019. It was organized by the Integrated Training Service (ITS) and Office of the Military Affairs (OMA) of the Department of Peace Operations (DPO) in partnership with the Nepalese Army, Directorate of Peace Operations in Kathmandu/ Nepal, UNMAS, Canada, Ireland, US, and Switzerland.



SUPPORT TO DEVELOPMENT SPANISH TEO COURSE

Requested by the Spanish SO & Mountain School (EMMOE), the C-IED CoE has supported the workshop to prepare the curriculum of the Technical Exploitation Operations Course.

The workshop was held in Jaca (Spain) from 22nd to 23rd October with the participation of 8 members from all SOF in Spain, including the JSOF Command (MCOE), and 1 representative from the C-IED CoE.

During these days, the structure and the objectives of the course were discussed and modified to achieve the main purpose that is to train SOF to obtain the most relevant information in a hostile or non-permissive environment.

The TEO Course considers a variety of aspects of collection techniques used to gather information that can be analysed and turned into valuable intelligence.





DEFENCE CAPABILITY BUILDING

BASIC IED FIELD EXPLOITATION COURSE (BIFEC) FOR JAF IN HUNGARY

NATO C-IED CoE continued its efforts to provide with C-IED focused training for the Jordanian Security and Military Forces (JAF) under the umbrella of Jordanian DCB project, sponsored by NATO Emerging Security Challenges Division (NATO ESCD), Science for Peace and Security (SPS). In this framework, based on the Request for Support for the Hungarian Defence Forces (HDF), a two weeks BIFEC course had been organized and held at the HDF Non Commissioned Officer Academy (NCOA) within the period of 7-18 October 2019.

The event had been planned and organized by the C-IED CoE along and in close coordination with the C-IED training personnel of HDF NCOA.

The audience (12 PAX and 3 interpreters) was selected carefully from the Army, Police and civil intelligence agency, though the basic idea of using the inter-agency approach in the C-IED fight had been understood. Despite the fact of using interpreters, the training showed a very active picture, in which the audience expressed disciplined and focusing behavior.

The closing ceremony was held on the 18th October. According to the reports, given by the training team and also that was experienced, this course was a really successful training event.

IED BASIC SEARCH AND CLEARANCE & T3 COURSE FOR JORDAN ARMED FORCES

From the 06 to 31 October 2019 a Mobile Training Team (MTT) of six members coming from the NATO Counter IED Centre of Excellence (C-IED CoE), Ireland, Spain, and Greece were deployed to the Kingdom Of Jordan under the umbrella of the project “Comprehensive Package for strengthening Jordanian C-IED defense capabilities” sponsored by NATO Science for Peace and Security Program (SPS). The MTT delivered for four weeks, the first iteration of an Improvised Explosive Devices (IED) Basic Search and Clearance Course & T3 to a group of 12 Jordanian military personnel composed by Officers, Non-commissioned Officers (NCOs) and enlisted personnel with different backgrounds, with the purpose of introducing the training audience to NATO concepts related to the basic search and clearance of IEDs and teaching skills to become a Train the Trainers as a part of the fight against the IED threat.

During the course the attendees took theoretical and practical lessons that provided them with additional knowledge on the matter, thus improving their capability to fulfil their tasks in a demanding environment according to the challenges and problems of different clearance situations and to improve their skills as future Train the Trainers.

The course was also a good framework to exchange experiences between the MTT and the attendees and to get a better understanding of each other's procedures and techniques.

The MTT enjoyed cooperating with their Jordanian comrades during those four weeks and were impressed by their level of professionalism as well as their hospitality and friendship. This positive atmosphere facilitated the MTT's job and as a direct consequence the results of the course were exceptional.



C-IED AWARENESS COURSE (CIAC) AT THE JORDANIAN (JOR) ARMED FORCES (JAF)

In 2017 and 2018 the C-IED CoE supported NATO SPS with a multi year DCB program for Jordan. This program was extended for one year in 2019. As part of this extension the C-IED CoE conducted a C-IED Awareness Course (CIAC) to Jordan security organizations (Armed Forces, Police, National Intel Service and crisis management centre) from 10 to 14 November 2019. The aim of this training was to provide basic C-IED awareness and support the JOR organizations in how to implement and coordinate C-IED in their organizations, based on the briefed NATO examples and doctrine. Due to the very participating interaction during the classes and the good results of the syndicate works this course can be considered as a good starting point for the preparation of future operational level DCB-projects.



EXERCISES

NORTHERN CHALLENGE EXERCISE

The C-IED CoE participated in Northern Challenge 2019 at the Icelandic Coast Guard facility in Keflavik, Iceland from 09-20 September 2019. Northern Challenge is an annual Explosive Ordnance Disposal (EOD) exercise within NATO, and incorporated 17 nations with 250 participants in total.

The training exercise is purely designed for the EOD operator, both land and maritime, and the teams completed over 315 land tasks and 100 maritime tasks, along with completing over 615 reports. Additionally, the supporting staff constructed over 590 improvised



explosive devices, established a J2/Weapons Intelligence Specialist (WIS) cell, and manned the Multinational EOD Coordination Center (MNEODCC).

This year, the CIED CoE provided advice in the MNEODCC and in the J2/WIS cell supporting Weapons Technical Intelligence (WTI). The MNEODCC was manned by all participating nations, two Battle Captains, and included 7 Mission Managers to help facilitate the operators' taskings. This included providing the teams with mission takings, tracking, and reporting.

ARDENT DEFENDER 2019 EXERCISE

C-IED CoE participated to the exercise Ardent Defender 2019 (EX AD 19) with two members of the Center from 30th September to 17 October 2019. EX AD series of exercises is an annual international exercise planned, organized and executed by the Canadian Joint Counter Explosive Task Force (CAN JCET TF). The main objective is to exercise the complete Cycle of Exploitation in a Joint Inter-Agency

Multi-National Public (JIMP) environment in order to manage an emerging complex threat. This year apart from focusing on the exploitation cycle and the holistic approach of the IED problem, our C-IED CoE undertook the responsibility to mentor a Defense Capacity Building Plan (DCB Plan) for the fictitious “Host Nation of Atropia” as one of the three main Lines of Effort (LoE) during the exercise.



CLOCKWORK ORANGE 2019 EXERCISE

From 28 October to 8 November NATO C-IED CoE supported the Royal Dutch Forces with subject matter expertise to their multinational training event named CLOCKWORK ORANGE. The 2019 iteration included units from USA, Nederland, Germany and Sweden. The focus of the event was technical exploitation and the final step in the development of the 108th Technical Exploitation Intelligence Company as a part of the Joint ISTAR battalion in the Dutch forces. Along with the Dutch efforts US Army Europe tested their concept with a soldier-manned equivalent to a level 2 exploitation facility with impressive results.

The training audience was presented to various objectives to exploit, testing their ability to

Clockwork Orange
2019



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adapt to the situation and to the threat. Several of the tasks were conducted by integrated units from different nations aiming to create a learning environment and to provide opportunities for cross-national training. The 2019 CLOCKWORK ORANGE included a complete set of technical exploitation capabilities enabling the participating units to follow the exploitation chain from collection to dissemination of the final report.

The scenario challenged the training audience with a transition from hybrid tactics to full combat against a fictitious peer to peer adversary. This transition fits right into the NATO alliance focus area and was the first step into the future of technical exploitation in a hybrid warfare scenario and was very appreciated by the participating nations.

INITIAL PLANNING CONFERENCE BISON COUNTER 2020

Further to previous Bison Counter Exercises in 2013 and 2016, Italy will host the EDA Counter Improvised Explosive Devices Joint and Combined Multinational Live Exercise (LIVEX) “Bison Counter (BC20)”. The exercise will take place in Sardinia Island’s Training Areas from 8 to 25 May 2020.

The aim of BC20 will be to apply the C-IED concept and C-IED enablers with a deployed multinational C-IED Task Force in a constantly evolving operational environment. Among other objectives, BC20 will cover aspects of the full C-IED cycle and threats, trends and related functions including military search, technical exploitation, EOD and IED Disposal, etc., as well as the intelligence and operations interface in a real, multi-dimension land/maritime & air scenario.

An Initial Planning Conference was held in Italy, to set up the basis of the exercise where one C-IED CoE delegated subject matter expert assisted and advised the planning process.

EVENTS

4TH C-IED TECHNOLOGY WORKSHOP

The 4th C-IED Technology Workshop was held in Hotel NH Ventas, Madrid from 1 to 3 October 2019 organized by the C-IED CoE. The aim of this workshop was to provide the C-IED Community of Interest a technological overview about the latest researches and developments both in international and national projects. This workshop was focused in the following topics: International initiatives in C-IED research and development, National and CoE initiatives in C-IED research and development, Technical Exploitation for Operational Needs, Advanced Standoff Detection Technologies, Future C-UAS Solutions for IED Incidents and IED Threat Mitigation-Current and Emerging Technologies.

The 4th C-IED Technology Workshop 2019 (TWS19) has gathered together more than 180 delegates coming from several national and international organizations, MoDs, Law Enforcement institutions, Research Centers, Industry and Academia in an open forum in order to provide an in-depth overview of the latest technologies supporting the C-IED fight, and to facilitate communication among participants trying to match current and potential operational needs with technological solutions.



COMMANDERS' AND STAFF HANDBOOK FOR COUNTERING IMPROVISED EXPLOSIVE DEVICES (C-IED) WRITING SESSION

From 18 to 20 November 2019, the C-IED CoE hosted the first review and writing session to revise the Commanders' and Staff Handbook for Countering Improvised Explosive Devices (C-IED). The group discussed and made recommendations to 70 Staff Functions contributing to C-IED, along with the specified task list and those individual purposes that align with each of the staff tasks.

The group also discussed the overall structure of the handbook. This included adding an Annex to capture the entire C-IED Enablers and their roles and functions within the overall C-IED approach, and breaking the handbook into a Planning and Execution Phase. Furthermore, additional acronyms and definitions were captured to fulfill C-IED related terminology.

Once the writing group and external participant changes have been made, the handbook will be redistributed throughout the community of interest and consolidated again in preparation for the next writing session. The tentative location and date for the next writing session is in Crete, Greece from 25-29 May 2020.





PROJECT

EXERTER END-USER WORKSHOP 2019

The C-IED CoE supported the annual end-user Workshop held in the Fraunhofer Ernst Mach Institute (EMI) facilities, in Freiburg (Germany) on 19 and 20 November. The workshop was organized by the EXERTER project network and the aim was the discussion of experiences, sharing knowledge and identifying research and capability gaps in a group consisting of selected end-users and consortium members.

As a framework for the discussion, the topic for this end-user workshop was 'Attacks on Public Transportation, aligned to historical events such as the Madrid train station bombing in 2004.

It was an excellent opportunity to improve as expertise in the explosives field the knowledge and the military and C-IED perspective to the researches and academia.

CONFERENCES, SEMINARS AND WORKING GROUPS

EUROPEAN EXTERNAL ACTION SERVICE REGIONAL SECURITY OFFICERS (RSO) SEMINAR

On 10 July 2019 an expert from C-IED CoE delivered a conference about IED Threat effects Mitigation on Infrastructures on European External Action Service. This presentation was included in the annual RSO Seminar held in Brussels in the premises of the EU council. This was the first interaction between both organizations and marked the starting point for a possible future and wider cooperation. For C-IED CoE, this type of event is an excellent opportunity to establish new relationships and explore additional venues of cooperation and support the building of EEAS capabilities.

NATO TECHNICAL EXPLOITATION COMMUNITY OF INTEREST MEETING.

The NATO Technical Exploitation Community of Interest meeting, was held at the French Pôle Interarmées Munitions et Explosifs (PIAM) in Montreuil Jugné, FRANCE from 25 to 27 June 2019.

This initiative of the "ESC" division aims to bring to the attention of NATO decision-makers transverse issues of technical exploitation (which go well beyond the framework of the C-IED).

Participants first and foremost contributed to a "writing session" on a NATO Technical Exploitation (TE) policy and composed a potential Program of Work.



SUBGROUP SCENARIO WRITING MEETING - SCI-321: UAV APPLICATIONS FOR MILITARY SEARCH

C-IED CoE participated the scenario writing subgroup meeting of the SCI-321 task group, titled "UAV Application for Military Search" was held at the AS Unit 11 Gncie Air Mobile facility in Arnhem, the Ministry of Defence in Utrecht, and TNO in Dan Haag, Netherlands on 15-17 July 2019. The objective of this three-year Task Group is to assess the potential, limitations and challenges of the use of UAVs for



the detection of targets in Military Search operations. A Cooperative Demonstration of Technology (CDT) in which defence R&D agencies, academia and industry will be invited to participate, can be foreseen as part of the assessment.

The subgroup meeting included 6 attendees from: C-IED CoE, FRA, NLD, and USA (telecom). All members focused on the building scenario during the meeting.

The four agreed upon scenarios in this RTG were route search (defensive), building search (defensive), working at heights (defensive which include under bridges, arena/venue rafters, etc.), and outdoor area search (offensive). C-IED CoE contributed to the working at heights and the building search scenarios. The C-IED CoE also helped revise and improve the other scenarios.

SUPER HIGH IMPROVISED EXPLOSIVE LOADING DEMONSTRATION (SHIELD)

On 13-15 August 2019, upon invitation of the Swedish Fortification Agency, two members of the C-IED CoE participated in a blast test demonstration, which is intended to evaluate effects on several type of Infrastructures of a very large blast.

The demonstration was included in the SHIELD activities held in a field range in Alvdalen- Sweden.

This activity was part of a long term (up to 2033) cooperative initiative involving agencies from five nations: Norway, Switzerland, Sweden, Germany and United States. Events like this bring excellent opportunities to network with organizations that are working on mitigation projects.

3RD ANNUAL AFRICA C-IED WORKING GROUP

The C-IED CoE participated in the 3rd Annual Africa C-IED Working Group in Nairobi, Kenya from 29 July – 1 August 2019. The working group conducted briefings and activities, lessons learned, and ways ahead for the participants.

There was intelligence and informational briefings and panel discussions that created a better understanding and situational awareness of the threats and patterns along with regional assessments on the continent. Additionally, there were discussions about the unique drivers of localized conflicts, and demonstrations were offered as training modules. For instance, there was a demonstration on different types of suicide vests and how to perform a Level 1 Exploitation by the Federal Bureau of Investigation. Moreover, the working group expanded the discussions from the tactical level to broader topics within the operational and strategic level.



9TH EU-US EXPLOSIVES EXPERTS SEMINAR

C-IED CoE was invited to attend 9th EU-US Explosives Experts Seminar which took place from 17-19 September in Brussels and to present a briefing in one of the three expert panels, Addressing Emerging Threat, with the topics UAS threat and C-UAS.



2ND 2019 CHIEF OF TRANSFORMATION WORKSHOP (COT WS)

From 18 to 20 of September the 2nd Chief of Transformation Workshop convened in The Netherlands. This ACT event was hosted by Command & Control Centre of Excellence which is located in Utrecht.

In this workshop the National Chiefs of Transformation representatives as well as 7NNN, CoE, ACT and other NATO representatives were informed about the agenda and content of the Chief of Transformation Conference, which will be held in Norfolk, 10-12 December. This Conference is the opportunity for National COTs to discuss and talk with SACT and other National COTs about their own topics and the topics which are prepared by the ACT COTC team and refined by this workshop.

The results of this workshop will be briefed to SACT, who will decide of implementing the suggestions to the next COTC.

This years' COTC will be the last one of its kind. Most likely this event will return in another format and with another name in 2020. The WS emphasized it will be of value to give some clarity about this in December.



COTC WS2, 18 - 20 September 2019, Kromhout Barracks Utrecht, the Netherlands
Hosted By NATO C2COE

7TH EXPLOSIVE ORDNANCE DISPOSAL (EOD) WORKSHOP

The C-IED CoE participated in the 7th Explosive Ordnance Disposal Workshop from 24-26 Sep 2019 in Trenčín, Slovakia. This event was organized and led by the NATO EOD Centre of Excellence.

The 7th EOD WS is a unique event which offers every participant the opportunity to share their experience directly with other specialists and subject matter experts (MILENG, EOD and Bomb technicians in particular), along with researchers



and industry representatives. During the meeting there was the opportunity to experience introduction and demonstrations of new developed field equipment, explosives and related procedures.

EUROPEAN GUARDIAN EXERCISE DISTINGUISHED VISITOR (DV) DAY

On 24 Sep 2019, C-IED CoE participated in European Guardian Exercise Distinguished Visitor (DV) Day in European Center for Manual Neutralisation Capabilities (ECMAN) premises at Austrian Logistics School in Vienna, upon invitation of ECMAN.

The event was started with ECMAN Director's presentation about the European Guardian Exercise, and later short live demo was conducted by Italian EOD team in the same venue. It was highlighted that there were three scenarios including Industrial Complex (Civilian Pallet Factory), Underground Traffic (Metro Station) and Critical Infrastructure (Oil Refinery).

According to these scenarios, in 50 different IED designs, 200 IED



were prepared to be manually neutralized by 23 EOD operators from Iceland, Germany, Italy, Sweden, USA, Austria, Czech Republic, and Finland.

Following the live demo, EOD teams from Iceland, Germany, US, SWE presented their back briefs and their manual neutralization efforts to the audience regarding specific IED types. This event was a really good opportunity to exchange information and share experience about manual neutralization techniques regarding IED devices and also to see some specific areas for collaboration with ECMAN.

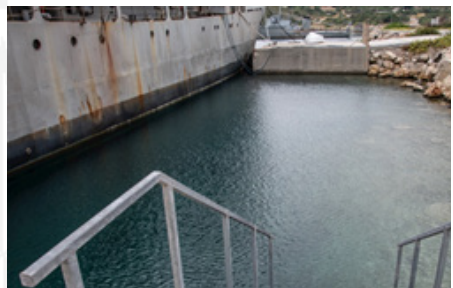
INDIVIDUAL TRAINING AND EDUCATION PROGRAM (ITEP) PLANNING BOARD (IPB) II – 2019 AND ANNUAL DISCIPLINE CONFERENCE (ADC) FOR THE EDUCATION, TRAINING, EXERCISE & EVALUATION (ETEE) DISCIPLINE

From 08 to 11 October 2019, the second Individual Training and Education Program (ITEP) Planning Board for 2019 as well as the Annual Discipline Conference for the Education, Training, Exercise & Evaluation (ETEE) discipline were hosted and held at the CIMIC CoE, The Hague. Participants from ACT, NATO HQ, CoEs and NATO training provider came together to share and discuss possibilities and needs within NATO Education and Individual Training Production Planning Process.

One of the main outcomes was the information regarding the developed and installed e-ITEP management system which will be published in version 4.0 by the end of 2019/beginning of 2020. With version 4.0 of e-ITEP, NATO's ETEE world will have one system in place that allowed the availability of all relevant information across Education & Individual Training as well as the disciplines in NATO.

SITE SURVEY NMIOTC (WEAPONS INTELLIGENCE SUPPLEMENT IN MARITIME ENVIRONMENT)

On 13-10 October 2019, upon invitation of the NATO Maritime Interdiction Operations Training Center - Greece, two members of the C-IED CoE participated in a site survey intended to assess the local conditions and available Infrastructures for the organization and conduct of the Weapons Intelligence supplement course in maritime environment. This is a course planned as a solution to fill the operational gap identified in the Annual Discipline Conference 2018 and it's planned for 2020.



SCI-298 TG ON IDENTIFICATION AND NEUTRALIZATION METHODS AND TECHNOLOGIES FOR C-IED

The NATO C-IED CoE hosted the 6th meeting of the SCI-298 Research Task Group (RTG), "Identification and Neutralization Methods and Technologies for C-IED," that was held from 08-09 October 2019. The meeting included a total of 8 participants representing 4 nations, NLD, USA, GER, AUS and 2 NATO Centres of Excellence (CoEs), Counter-IED (C-IED) CoE, and the Explosive Ordnance Disposal (EOD) CoE.

The purpose of the 6th RTG meeting was to review the five Identification and Neutralization scenarios identified at the 5th meeting, discuss respective IED identification and neutralization scenarios, targets, and performance analysis spreadsheets and utilize



the scale to score their applicability, and to outline the RTG final report structure and discuss a way-ahead for this research project.

During the meeting, the group focused on the Identification and Neutralization database scoring – linking technologies to specific IED signatures and threats. The technology was scored across six



qualifications for the likelihood of their applicability as (Impossible, Improbable, Uncertain, Fifty-fifty, Probable, Expected, and Certain) in relation to identification and neutralization of specific IED types. The two day event focused almost exclusively on this action. The 7th SCI-298 RTG meeting is tentatively scheduled for the May 2020 timeframe in Germany.

HUNGARIAN SENIOR LEADERSHIP SEMINAR

In accordance with the Program of Work 2019 of the C-IED CoE, a Senior Leadership Seminar (SLS) was conducted in Budapest, Hungary 17 October 2019. The delegation of three provided a series of presentations for the audience, that had been selected from the Hungarian Defence Forces (HDF) Headquarters J2 Department, HDF Non Commissioned Officer Academy (NCOA) C-IED Training Branch and also the Chief EOD officer of HDF was present. The content of seminar showed the audience that the threat caused by the use of improvised explosive devices, is still there. Moreover the delegation expressed the fact the threat has not been exclusively in distant places, it can “come to our streets”. At the end of the session, the participants agreed on maintaining close connections within this area as well, in order to build the necessary capability to address the threat.

NATO LESSONS LEARNED CONFERENCE (NLLC) 2019

From 14 to 16 October, a CIED CoE representative attended to the NATO Lessons Learned Conference (NLLC) 2019 hosted by the Joint Analysis and Lessons Learned Centre (JALLC) at the Nova School of Business and Economics in Lisbon / Carcavelos, Portugal.

This year's conference tackled Supreme Allied Commander Transformation's overarching theme: "Improving the NATO LL Capability in order to Enhance NATO's Warfighting Capability".

At the NLLC a variety of high level speakers from NATO, Nations, Partners and Academia presented different topics and offered the chance to share insights into the latest LL developments in NATO, engage with leadership perspectives on LL, learn from studies into what works and what doesn't work and how to incorporate best practices into your everyday work.





59TH NATO EXPLOSIVE ORDNANCE DISPOSAL WORKING GROUP

The C-IED CoE participated in the 59th NATO Explosive Ordnance Disposal (EOD) Inter-service Working Group in Kiel, Germany from 21-25 October 2019. The Working Group began with National Heads of Delegation introductions, followed by outstanding action items from the previous meeting, multiple liaison reports from the participating organizations, and concluded with separate panel discussions.

The four main panels for the working group included the Doctrine, Policy, and Philosophy (DPP) Panel, the Tactics, Techniques, and Procedure (TTP) Panel, Information Panel, and the EOD in the Maritime Environment (EME) Panel. The C-IED CoE participated in the DPP panel for two days and provided input to the Terms of Reference (ToR), and the way forward for AEODP-10 and AEODP-13. The conclusion of the working group focused on panel chairs discussing their panel outcomes and way ahead. The 60th NATO Explosive Ordnance Disposal (EOD) Inter-service Working Group will take place in Oslo, Norway from 4-8 May 2020.



EUROPEAN EODN CONFERENCES & TRAINING 2019

The EEODN (European EOD Network) was established in April 2008. Since then, EOD and CBRN experts have met twice a year (each time in a different member country) to discuss and understand the existing threats from the illicit use of explosives and CBRN agents, training the best practices and exchanging during the event technical and intelligence info on recent incidents.

In order to continue improving in those respects among the EU Members States, the EU agencies EUROPOL (European Union's Law Enforcement Agency) and CEPOL (European Union Agency for Law Enforcement Training) in a close cooperation with the Finnish Police – Special Intervention Unit/C-IED (TEPO), invited the EU Member States (members of EEODN), EEODN observers (Norway, Switzerland and Israel), third party countries and International Organizations/Agencies that were Competent Authorities in Explosive Ordnance Disposal (EOD/IEDD), CBRN Units and Bomb Data Centers (BDC), to take part the Conference and Training on CBRN and Explosives that took place in Finland as a host country.

9TH NATO HUMINT BEST PRACTICES/LESSONS LEARNED COMMUNITY OF INTEREST WORKSHOP

The CIED CoE participated in the 9th NATO HUMINT Best Practices/Lessons Learned Community of Interest Workshop that took place on 22-23 OCT 2019 in the NATO HUMINT CoE premises. J2X representatives from different NATO structures, Nations and cross domain Centres of Excellence attended the workshop. The CIED CoE supported the event providing a presentation regarding C-IED and HUMINT.



5TH NATO C-IED SG

The 5th meeting of the C-IED Steering Group was held at the NATO HQ, in Brussels on 29-31 Oct 2019. The participants included 12 nations, Defense Threat Reduction Agency from USA, ACT, SHAPE I&E, NATO IS/ESCD, NATO IMS O&P, LANDCOM and C-IED CoE.

The SG was informed and updated about DCB projects, integration of C-IED across capability areas and in NATO EXC, the progress of Technical Exploitation and Battle Field Evidence institutionalization in NATO and C-IED efforts and activities within the nations.

Discussions mainly focused on: the way ahead for the revision of the C-IED AP and the update and revision of the C-IED Policy.

2ND TG MEETING, SCI-321: UAV APPLICATIONS FOR MILITARY SEARCH

NATO Science and Technology Organization SCI-321 conduct a three year Task Group (TG) with the title “UAV - application for military search”. The main purpose of the TG is to assess the potential, limitations and challenges of the use of UAV for detection of “Targets” in Military Search operation. C-IED CoE participated in the second meeting that took place on 30 – 31 October 2019 at FADA (Fundacion Andaluza Desarrollo Aeroespacial) / ATLAS (Air Traffic Laboratory for Advanced Systems) premises at the area of Jaen with one representative. The focus area of C-IED CoE participation was the process of the scenario script and providing the IED perspective and the challenges that rise for their detection in different areas of operations with a realistic approach.



INTERNATIONAL CONCEPT DEVELOPMENT AND EXPERIMENTATION CONFERENCE

The International Concept Development and Experimentation Conference took place in Madrid from 29 to 31 of October with the participation of 2 SME of the C-IED CoE.

This annual event has been organized by the SACT HQ, joining 250 expertise professional belonging to different Agencies, Industries, Universities and NATO Units. The structure of the whole conference was one day of general addresses by guest lecturers and the other two days, the attendants were divided into eight panels, representing different trending topics.

The intention was to share, analyze and promote technical experiments by specific forums attended by well versed people. The scope of this conference was that the speakers and the SMEs had the opportunity to interchange updated information and projects, sharing personal experiences, procedures, initiatives and challenges to face, during the panel sessions.

Finally, findings and proposals for the upcoming meeting raised commonly; besides, the networking opportunity was very active and successful, strengthening links and consolidating ties with very different professionals working in new technologies, big data development, artificial intelligence and new concept exploration.



FORENSIC COMPUTING FAIR IN SPAIN (FIFE '19)

C-IED CoE participated to the 2nd Edition of the FIFE, organized and moderated by "OnRetrieval" Company. The Fair was like the annual meeting point for manufacturers, Computer Forensic experts and police investigators from different countries.

The trends that have been observed in this 2019 edition of the FiFE are:

- To provide first responders with the necessary tools to be able to collect digital evidence in the forensic field without knowing a great deal of forensic technical knowledge.
- Provide forensic technicians and experts with tools to assist in the analysis and preparation of final reports using Artificial Intelligence techniques.



THE MINE DETECTION SYMPOSIUM 2019 AND THE 7TH MINE ACTION TECHNOLOGY WORKSHOP

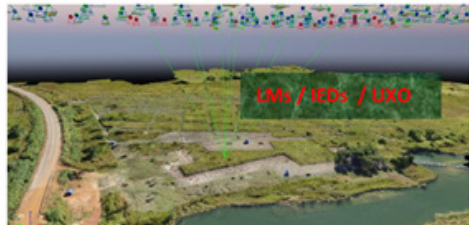
The Mine Detection Symposium 2019 hosted by the Urs Endress Foundation, was held on 5 and 6 November 2019 in Basel (Switzerland), presenting last research in Sensor Technologies (Ground Penetrating Radar (GPR), Synthetic Aperture Radar (SAR), thermal imaging, hyperspectral imaging, magnetometer, etc.) to detect landmines, IEDs and UXO using only Unmanned Aerial Systems.

Then, on 07 and 08 November 2019, in the same facility, the 7th Mine Action Technology Workshop was organized by the Genève International Centre for Humanitarian Demining (GIHC). It has focused on any kind of robotics (terrestrial and aerial), ongoing projects and solutions currently used in Mine Action (mapping, planning, detecting, neutralizing) by end users and practitioners (UNMAS, Mine Action Group, National. A total of 188 attendees

from more than 50 nations came from industry, academia, research centers, 71 institutions, including 32 speakers and 17 companies, as exhibitors.

The C-IED CoE briefed on the promising Research Project SAFEDRONE (UAV+GPR). Briefings of the SAFEDRONE project and another similar solution, the German-Swiss project FindMine were much appreciated by the audience raising some questions for real applications, although using detection systems mounted on UAV in different scenarios faces many challenges to overcome at short term. A integration of detection systems on UAVs (one, several, swarm,...) should be done.

Autonomous Systems, Robotics, Machine Learning, Artificial Intelligence



3RD SECUDRONE WORKSHOP

The C-IED CoE attended to the 3rd Technology Workshop SECUDRONE in Madrid from 11 to 12 November 2019, held by the Association for the Promotion of Strategic Technologies and Industries (APTIE). The aim was to promote the UAS & C-UAS knowledge and approach in the Spanish Col, including Military, Law Enforcement, Industry and final users. The workshop was mainly based on briefings but also a round table about legal issues and local police perspectives was discussed. It was an excellent opportunity to achieve a more in-depth knowledge about the different solutions to defeat the UAS threat and to know the current regulations in the EU that must be applied for the next year.



7TH SPANISH SYMPOSIUM ON “RESEARCH AND DEVELOPMENT (R&D) IN DEFENSE AND SECURITY 2019” (DESEI+D 2019)

The National Armaments Directorate of the Spanish Ministry of Defence has organized the 7th National Symposium on Research and Development (R&D) in Defense and Security 2019 (DESEI+D 2019). DESEI+D 2019 was held in the SP Naval NCOs School sited in San Fernando –Cádiz- (Spain). This Congress has been an excellent forum where all main ESP military and civilian stakeholders related with R&D issues in the Defence and Security field have had opportunities to present and discuss the

latest research made in some of the seven (7) areas related with defence and security as focused on: (1) Weapon systems and Ammunition; (2) Sensors and Electronic

**VII Congreso Nacional de I+D
en Defensa y Seguridad
19, 20 y 21 Noviembre de 2019**



Systems –radar, electromagnetic warfare, optronics; (3) Platforms (ground, naval, aerial, satellites); (4) Future Soldier Systems; (5) C-IED and CBRN; (6) Information systems and C4I; and (7) Society, Economics, Geopolitics, Psychology, Medical Support and Energy.

164 speakers came from military, R&D centers, Centers for Technological and Industrial Development, high technology laboratories, Academia, specialized Centers (C-IED CoE) and ESP Ministries as Defence; Science, Innovation and Universities; Internal Affairs and Industry & Commerce. Almost 600 delegates attended

DESEI+D 2019 and the C-IED CoE presented its two R&D ongoing projects: (1) “Protection of Infrastructures and Systems Against Explosions– Advanced Protective Coatings (PRINSE - APC)” and (2) “SAFEDRONE project: UAV mounted GPR imaging system for IEDs detection”. DESEI+D has become a mature Symposium for Defence & Security.



Escuela de Suboficiales de la Armada

THE 8TH NATO SET-238 RESEARCH TASK GROUP “SIDE-ATTACK THREAT DETECTION STRATEGIES, TECHNOLOGIES AND TECHNIQUES” MEETING

The 8th meeting of the SET-238 Research Task Group (RTG), “Side-Attack Threat Detection Strategies, Technologies and Techniques,” was held at the Netherlands Organization for applied Scientific Research Centre (TNO) located in The Hague (Netherlands) on 04-05 Dec 2019. Attendants came from several National Research Centres (DEU, NLD, USA, SWE) and the C-IED CoE.

In the meeting were presented final results found on several technologies tested and used to detect (EFPs) off-route as Ultra frequency Wide Band Synthetic Aperture Radar (SAR), Hyperspectral Imaging, Visible and Near Infrared, Polarimetric Long Wave InfraRed and Polarimetric Visible camera systems, Non-Linear Junction, UGV platforms with multi-camera head with sensors as stereo visual change detection system; DEMMO camera; Short Wave Infrared; Medium/Long M/LWIR and High Bandwidth Acoustic Detection and Imaging System.

Finally, the group agreed the outline for the Final Report to be presented to NATO Science and Technology Organization and discussed some topics for follow-on research task groups.

22ND C-IED WORKING GROUP

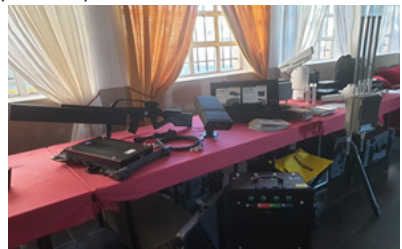
From the 10 to the 12 December 2019, the C-IED CoE hosted the 22nd C-IED Working Group in Cordoba, Spain. Chaired by the C-IED CoE's director and with the participation of 94 SMEs from 24 Nations (19 NATO and 5 NNN), this WG was the place for discussions, ideas exchanges and good networking.

The next CIED WG is tentatively scheduled from 23-25 June 2020 in Washington, D.C.



WORKSHOP WITH COMPANIES “7”. FORCE 2035 – C-RPAS

On 11 December 2019, C-IED CoE participated to “Workshop with companies “7”. Force 2035 – C-RPAS” event, which was held at the Conde de Gazola de Leon Base. There were 15 institutions, including companies and universities, which participated to this event. In the first part of the workshop, the Army authorities pointed out the importance of having protection mechanisms against “the omnipresent threat” of RPAS in all its dimensions. The second half of the



day corresponded to the presentations of educational and research companies and institutions.

This has been the seventh workshop of the series that the Army has carried out throughout 2019 with the aim of making known the equipment needs of the future Force 2035 and of which more than 80 companies have already participated.

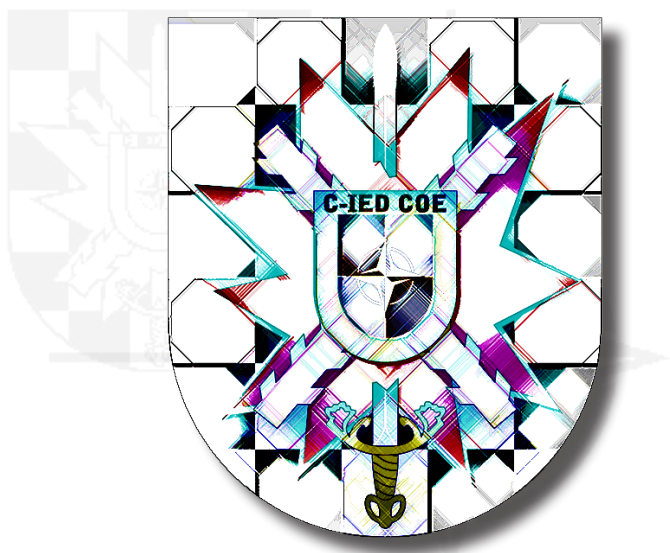


VISIT

SPANISH AMBASSADOR TO NATO'S VISIT

The Spanish representative to the North Atlantic Council, Ambassador Miguel Fernández-Palacios M., visited the C-IED CoE on Friday 13 December. For this occasion he was accompanied by the Spanish Chief of Defence Staff, General of the Army Fernando Alejandro Martínez. During this visit he was welcomed by the Director of the C-IED CoE and the Senior National Representatives and briefed about the Centre: What we do, how we do it and with whom. The briefing was followed by a tour through the Branches and facilities. Finally, the ambassador signed the Book of Honor and left after a successful visit.





UPCOMING EVENTS 2020

C-IED CoE courses planned for 2020 and 2021

This is the C-IED CoE planning for 2020 and 2021 with regard to courses approved by the Steering Committee on 06 November 2018. Below dates may change due to unforeseen reasons. No rights can be inferred according to this schedule.

	BEGIN		FINISH			
2020	FEBRUARY	26	FEBRUARY	27	ESP	Annual Discipline Conference
2020	MARCH	9	MARCH	13	ESP	Analyst Notebook User Course (ANUC) 20.1
2020	MARCH	23	MARCH	27	ESP	C-IED STAFF OFFICER COURSE 20.1
2020	APRIL	13	APRIL	24	ESP	AtN Operational Course (ATNOC) 20.1
2020	MAY	4	MAY	22	ROU (TBC)	NATO Weapons Intelligence Team Course (WIT) 20.1 (TBC)
2020	MAY	26	MAY	28	ESP	Inter-Agency Workshop 2020
2020	JUNE	8	JUNE	19	ESP	Document & Media Exploitation Course (DOMEX) 20.1
2020	JUNE	22	JUNE	26	ESP	C-IED STAFF OFFICER COURSE 20.2
2020	JULY	6	JULY	10	ESP	Analyst Notebook User Course (ANUC) 20.2
2020	SEPTEMBER	7	SEPTEMBER	25	HUN (TBC)	NATO Weapons Intelligence Team Course (WIT) 20.2 (TBC)
2020	OCTOBER	5	OCTOBER	9	ESP	Analyst Notebook User Course (ANUC) 20.3
2020	OCTOBER	19	OCTOBER	30	ESP	AtN Operational Course (ATNOC) 20.2
2020	NOVEMBER	17	NOVEMBER	18	ESP	STEERING COMMITTEE
2020	NOVEMBER	16	NOVEMBER	27	ESP	NATO Weapons Intelligence Team T3 Course (WIT)
2020	NOVEMBER	30	DECEMBER	4	ESP	C-IED STAFF OFFICER COURSE 20.3



	BEGIN		FINISH			
2021	MARCH		MARCH		ESP	Analyst Notebook User Course (ANUC) 21.1
2021	MARCH		MARCH		ESP	C-IED STAFF OFFICER COURSE 21.1
2021	APRIL		APRIL		ESP	AtN Operational Course (ATNOC) 21.1
2021	MAY		MAY		TBC	NATO Weapons Intelligence Team Course (WIT) 21.1
2021	JUNE		JUNE		ESP	LL WS 2021
2021	JUNE		JUNE		ESP	CIED DOMEX 21.1
2021	JUNE		JUNE		ESP	C-IED STAFF OFFICER COURSE 21.2
2021	JULY		JULY		ESP	Analyst Notebook User Course (ANUC) 21.2
2021	SEPTEMBER		SEPTEMBER		TBC	NATO Weapons Intelligence Team Course (WIT) 21.2
2021	OCTOBER		OCTOBER		ESP	Analyst Notebook User Course (ANUC) 21.3
2021	OCTOBER		OCTOBER		ESP	AtN Operational Course (ATNOC) 21.2
2021	OCTOBER		OCTOBER		ESP	C-IED COE Technical Workshop 2021
2021	NOVEMBER		NOVEMBER		ESP	NATO Weapons Intelligence Team Course (WIT) T3
2021	NOVEMBER		NOVEMBER		ESP	STEERING COMMITTEE
2021	NOVEMBER		NOVEMBER		ESP	C-IED STAFF OFFICER COURSE 21.3

The vision of the CoE plans to use a Comprehensive Approach to face up the challenge, with the support of not only military personnel, but also the contribution from law enforcement, police, intelligence community and civilians from research & technology industry and Academy. The synergy of all these elements will contribute to the identification of terrorist/insurgent networks.

The C-IED CoE is the natural venue for all C-IED issues in NATO arena. Its director chairs related working groups in NATO and the Centre cooperates with the European Defence Agency C-IED Project Team, in order to create synergies between both organizations.

The C-IED CoE mission is to provide subject matter expertise in order to support the Alliance, its Partners, and the International Community in the fight against IED and co-operate to increase security of Allied Nations and also all the troops deployed in theatres of operations, reducing or eliminating the threats from improvised explosive devices used or for use, in particular by terrorists or insurgents. Products and services are focused on the analysis of IED information, the investigation and development of new material and technology, and education and training.



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