

# C-IED CoE Newsletter



**Counter Improvised Explosive Devices  
Centre of Excellence**





*This publication is a product of the NATO C-IED Centre of Excellence. It does not necessarily reflect the policy or the opinion of the Centre nations or NATO. The Centre may not be held responsible for any loss or harm arising from the use of information contained in this publication and is not responsible for the content of the external sources, including external websites referenced in this publication.*

*Digital or hard copies of this publication may be produced for internal use within NATO and for personal or educational use when for nonprofit non-governmental and non-commercial purpose, provided that copies bear a full citation.*

*Unless other identified, the photographs shown in this Newsletter are the sole property of the C-IED CoE and the presentation copyrights owners have authorized its publication.*

## **Contact:**

Ctra. M-618 Colmenar Viejo- Torrelodones Km 14  
28240 Hoyo de Manzanares, Madrid (SPAIN)  
Phone: +34 91 856 10 48  
Fax: +34 91 85623 90  
Mail: [info@ciedcoe.org](mailto:info@ciedcoe.org)  
Web: [www.ciedcoe.org](http://www.ciedcoe.org)



## GENERALITIES

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.

# INDEX

- 
- 4** C-IED CoE Highlights
  - 5** Courses and Training
  - 12** Exercises
  - 14** Conferences, Seminars and Working Groups
  - 18** Projects
  - 20** Visits
  - 24** Upcoming Events 2022



Due to the Covid-19 pandemic many internal and external events, courses and seminars have been cancelled or conducted by Video Conference.

## C-IED COE HIGHLIGHTS

### Steering Committee 2021

On 16 to 17 November 2021 the Sponsor Nations held their annual C-IED COE Steering Committee meeting led by framework nation Spain. The meeting was an in-person meeting for the Chairman and the Nations. The Steering Committee approved the POW and Budget for 2022.



## COURSES AND TRAINING

### DOMEX COLLECTION AND PROCESSING IN SUPPORT TO ATTACK THE NETWORKS COURSE 21.2

The last iteration of the DOMEX Collection and Processing in Support to Attack the Networks Course in 2021 (iteration 21.2) took place from 16 to 27 August 2021, at the NCO Academy premises in Szentendre (Hungary), being the first implementation of this course in a C-IED CoE Sponsoring Nation other than Spain.

The two-weeks course covered overall DOMEX disciplines, including DOCEX, MEDEX and CELLEX, as well as UAV exploitation procedures, by lectures focused on scene analysis, forensics and collection, and processing of information gathered



from items. The second week of the course faced practical scenarios where the instructors supported attendees developing the skills needed as DOMEX specialists. Attendees run through different scenarios simulating a complete incident environment, conducting the scene investigation, processing the items collected and finalizing with a basic analysis to understand the complete process.

The support provided by HDF NCOA, USAREUR-AF and Spanish Guardia Civil have being highly appreciated and added value to fulfill the training requirements providing to the students skills in a high operational environment.

The program allows to develop national capabilities filling the existing training gaps across the NATO member countries and Partners.



## C-IED STAFF OFFICER COURSE (CSOC) 21.3

From 13-17 September, the C-IED Staff Officers Course (CSOC) 21.3 was conducted in the C-IED COE in Madrid. With twenty-two participants from BEL, CAN, CZE, ESP, GBR, GRC, NLD, TUR and also JFCN, from services of Navy, Marines, Air Force, Law Enforcement and Army as well, there was a lot of different experience in the class. This allowed the students to have good discussions, establishing a very active and interactive picture of the audience throughout the whole course, especially during the practical exercises.



## 5<sup>TH</sup> JDEAL SPECIAL TRAINING COURSE (JSTC) ON BASIC DOCEX

The Joint Deployable Exploitation and Analysis Laboratory (JDEAL), within its course calendar, organized the “5th JDEAL Special Training Course (JSTC) on Basic DOCEX” in Soesterberg (The Netherlands) from 20<sup>th</sup> to 23<sup>rd</sup> September 2021. The couple of instructors were from The Royal Netherlands Marechaussee “Identity Fraud and Documents Center of Expertise” (ECID).

The training consisted of a complete 4-day course with instruction

and practical exercises for the students. The training was designed to teach students to be aware of the existing personal documents types, the materials used to build it and the relative printing techniques.

With this course, the participants will be able to know and use the appropriate equipment to exploit personal identity documents, recognizing with a certain level of assurance if are originally issued, false or forged.



## ATTACK THE NETWORKS OPERATIONAL COURSE 21.2

The C-IED COE conducted in its premises another iteration of the ATNOC in the period of 18-29 Oct 2021 with 18 students from 8 nations. Supported by external C-IED Subject Matter Experts from U.S. Army Europe (USAREUR) and the DEU Mountain Troops, the C-IED COE could also count again on the support of the ESP Joint Special Operations Command (JSOC, MCOE) and Communications Division of NATO Rapid Deployable Corps (CommsDiv, NRDC, ESP). The ATNOC provides NATO Staff Officers/Senior Staff Assistants from C-IED/Intel/Ops/Plans or other Counter terrorism related disciplines, from tactical and operational level commands as well



as personnel of Law Enforcement and Intelligence Agencies with AtN related Situational Awareness. Emphasis concentrates on knowledge and skills to integrate and facilitate the comprehensive AtN approach across other HQ processes and disciplines (e.g. NATO OLPP, intelligence, targeting and exploitation processes) in order to recommend lethal and non-lethal ways to engage all networks (threat, neutral and friendly) and to assess on the engagement effects.



## 10<sup>TH</sup> JDEAL SPECIAL TRAINING COURSE (JSTC) ON ADVANCE DOCEX

The Joint Deployable Exploitation and Analysis Laboratory (JDEAL), within its course calendar, organized the “10th JDEAL Special Training Course (JSTC) on Advance DOCEX” in Soesterberg (The Netherlands) from 15 to 18 November 2021. International trainers were from The Royal Netherlands Marechaussee “Identity Fraud and Documents Center of Expertise” (ECID).

The Training consisted of a complete 4-day neutral course with instruction and practical exercises for the students. The training

was designed to teach students to be aware of the existing personal documents types, the materials used to build it and the relative printing techniques. Advanced tactical and technical documents profiling, look-a-like tests and group “carousel” was performed. The course also included security features on document exploitation.



### **ANALYST’S NOTEBOOK USERS COURSE 21.3**

Analyst’s Notebook® Users Course (ANUC) has been conducted at C-IED CoE premises in Hoyo de Manzanares (Madrid), from 29 November to 03 December 2021.

Nine students from four nations (Belgium, Czech Republic, Germany and Spain) and some Spanish organizations as Guardia Civil attended the course.

The aim of the course was to provide attendees with the theoretical and practical knowledge about the Analyst’s Notebook® Software and how to use it in an IED environment within military operations. Several case studies have been properly developed and different tasks, fully accomplished.

Logicalis, a private business and technology company, provided the instructor during the course. The software was initially developed by IBM i2 (9.2.3 version) for Law Enforcement organizations and adopted by NATO and a number of nations as a networks analysis tool in the military.



# C-IED CoE PARTICIPATION OR SUPPORTING IN COURSES:

## SUPPORT TO FIRST NATIONAL CZECH WEAPONS INTELLIGENCE TEAM COURSE

The first national CZE WIT Course took place between 18 October and 5 November in Bechyne, Czech Republic. The course had the support from C-IED CoE WIT Course Director and SMEs on the practical phase from 1-5 November 2021. The C-IED CoE SMEs mentoring the students through all the exercises battle rhythm focusing on the tactical assessments and the standardization of NATO WIT procedures. The course was hosted by the Technical Information Support Center from the 15th Engineer Regiment with a class composed by 12 students from EOD, MP and SF background.



## SUPPORT TO WIT SUPPLEMENT IN THE MARITIME ENVIRONMENT PILOT COURSE

The NMIOTC (NATO Maritime Interdiction Operational Training Center) facilitated the 2300 WIT SUP pilot course 26 of September -1 of October, at Souda Bay (GRE), with instructors from FBI and US Navy EXU 1. CIED COE supported the course in order to support the development of the capability of technical exploitation in the maritime environment from a C-IED perspective and to bridge the course to the regular WIT course CIED COE.

The aim of the course was to educate and train NATO Nation and 7 NNN WIT personnel in NATO Tactics, Techniques and Procedures (TTPs) to conduct Level 1 – Field Exploitation tasks on board vessels and other maritime infrastructure, as well as in the Underwater Environment, in support of C-IED operations.

The maritime arena is a very challenging environment for the exploitation process, the course has initiated a development of the capability and there remains a need to develop TTPs, adapt current standards.

The maritime exploitation is an essential part of the development of the C-IED capability within the naval forces.





## VIRTUAL TRAINING EVENT FOR COUNTERING MARITIME HYBRID THREATS

In order to create a better understanding regarding hybrid threats in the maritime environment, the EU Hybrid COE with its community of interest on vulnerabilities and resilience carried out a virtual training event 16 and 22 of November 2021.

Scenarios used in the virtual training were based on the Hybrid COE handbook on maritime hybrid threats and the training was focused on the international law at sea for hybrid threat purposes. By utilizing the scenarios of the handbook, the training aimed to highlight some important vulnerabilities and find the right instrument to deal with them. The scenarios were presented by Professor Terry Gill and Doctor Valentin Schatz, both experts on international law. The following discussions on the scenarios dealt mainly with the legal measures available from an international legal perspective. The objective of the event was to inform participants of possible maritime hybrid scenarios in the current security environment and to foster decision makers' and maritime operators' understanding of the legal context based on international law. The training provide an opportunity to discuss and identify potential political and legal responses as well as mitigation tools

## EXERCISES

### ARDENT DEFENDER 2021

Exercise Ardent Defender 2021 (AD 21) is a Canadian Armed Forces Joint Counter Explosive Threat (CAF JCET) collective training event conducted annually under the direction of Joint Counter Explosive Threat Task Force (JCET TF). It took place from 27 Sept to 15 Oct at Borden CFB. The aim of Ex AD 21 is to confirm the complete span of CAF JCET capabilities within an operational context, while leveraging NATO and partner participation to ensure operational

interoperability and achieve CAF Defence Capacity Building goals. Ex AD practice the complete Counter Explosive Threat (CET) cycle to confirm CAF and partner nation's readiness in CET Lines of Efforts (LoEs). Participants are exposed to real world complex environments that challenge various skill and experience levels through an evolving multi-year scenario.

Exercise participants were EOD teams, Search teams, enhanced Field Exploitation Teams, and Level 2 Lab coming from CAN, USA, UK, FRA, AUS, GER, NLD, BEL, MEX, COL. Furthermore, there were three observer parties from Ecuador, Netherlands and South Korea.

## **STEADFAST JUPITER 2021**

STEADFAST JUPITER 2021 (ST JU21) is a SHAPE sponsored strategic-operational/tactical level Command Post/Computer Assisted Exercise (CPX/CAX) that was conducted from 19 to 28 of October in order to train and evaluate the NATO Response Force (NRF) 2022, Multinational Corps North-East (MNC NE) and Theatre Advisors in planning for, and conducting a pre-Article 5, Deterrence in up to Major Joint Operation (MJO) in the Northern part of NATO Strategic Direction East (NSD E). The main focus from CIED COE was to provide JWC OPFOR with relevant support in order to shape the existing focus areas from the Strategic Workshop into storylines IOT meet the training objectives in a fictitious but realistic scenario with the complete spectrum of C-IED challenges with a focus on ATN in a hybrid conflict.

## **IPC NEMO TRIALS 2022**

C-IED COE participated in the NEMO 22 IPC in order to identify possibilities to introduce maritime IED threat scenarios in the exercise.

Since the maritime C-IED force protection is under development and the exercise includes industry in the field of development, it would be an opportunity to verify the ability of existing systems against maritime IED threats.



# CONFERENCES, SEMINARS AND WORKING GROUPS

## DELIVERING NATO AIR & SPACE POWER AT THE SPEED OF RELEVANCE CONFERENCE

From 07 to 09 September 2021, the 17th Joint Air and Space Power Conference was held at the Congress Centre Essen (Germany). This conference explored how NATO can ensure that Air and Space Power is delivered at the “Speed of Relevance”. In five panels, participants discussed how Policy and Strategy enable rapid decisions at the appropriate level, how Emerging Technologies can be exploited for Dynamic Command and Control Synchronized Across all Domains, and how this task can be accomplished within the Electromagnetic Spectrum under the demanding conditions of Electronic Warfare and through securing Access to Space.



## EOD AND DEMINING SEMINAR IN SARAJEVO

Demining operations are still taking place in Bosnia and Herzegovina and neighboring nations. In order to review the current situation and the plan for the next few years to make Bosnia and Herzegovina a mine free country, the Demining and EOD seminar was held in Sarajevo 7-8 of September. Different humanitarian mine action organizations involved in the mine and UXO clearance in Bosnia-Herzegovina and the surrounding nations provided presentations of the different programs progress and challenges. C-IED COE was invited to the seminar in order to provide a brief about the activities and challenges.



## NATO TRAINING TECHNOLOGY CONFERENCE

From September 14 to September 16, NATO SACT HQ hosted the NATO Training Technology Conference in Virginia BEACH, VA (USA). This year, the Conference has adapted its delivery method because of COVID pandemic restrictions and plenary sessions were streamed and followed by over 170 online attendees from more than 30 different countries.

The 3-day event introduced topics related to COVID-19 and effects on learning, new technologies such as Artificial Intelligence or Virtual Reality and quality on e-learning or intellectual property rights subjects were also widely discussed.



## FEINDEF 2021

The International Defence and Security Exhibition - FEINDEF 2021 (Feria Internacional de Defensa y Seguridad) has been organized from 3 to 5 November with an aim to bring the global defense and security sector together with the entire Spanish defense community to innovate, partner, cooperate internationally and share knowledge, bringing together companies, organizations, universities and others as a global response to security challenges.

FEINDEF 21 has become one of the leading defense events in Europe with the other important such as DSEI in UK, ILA in Germany, Eurosatory and Le Bourget in France and IDEF in Türkiye. Moreover, 10 Spanish Ministries have supported this event.

FEINDEF 21 has provided a good knowledge of potential companies/speakers/technologies to feed the 5th C-IED Technology Workshop (TECHWS). IFEMA has been evaluated as a possible venue for TECHWS.

## 2021 MOUNTAIN WARFARE CENTER OF EXCELLENCE (MW COE) LESSONS LEARNED WORKSHOP

CIED COE took part from 22.-25. November 2021 in the Mountain Warfare Lessons Learned Workshop (MW LL WS) in Bled (SVN). With the support of the NATO Joint Analysis Lessons Learned Center Advisory and Training Team (JALLC ATT) from Lisbon during the MW LL WS, the 26 participants from national LL organizations and COEs provided relevant experiences, best practices and challenges in setting up and implementing of the NATO LL process.



NATO MW COE LL Workshop  
22 - 25 November 2021, Bled (SVN)

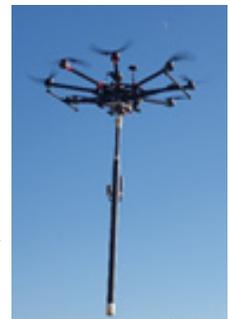
## NATO SCI-321 – UAV APPLICATIONS FOR MILITARY SEARCH – DEMONSTRATIONS AND TRIALS

C-IED COE participates actively to research and development projects related with C-IED activities. NATO SCI-321 is one of the promising Task Groups (TG) that gives the opportunity to take advantage of the new technologies in strong relation with the detection of hazards in different Areas of Operation with the use of Unmanned Aerial Vehicles (UAVs). The objectives of this TG are the assessment of the potential, limitations and challenges of the use of UAVs for the detection of targets in Military Search (MS) operations. The application of a small UAV as carrying platform for sensors will



increase the distance of the soldier to potential explosive threats and, thus, increase the safety of the soldier. It is also expected that the rate of advance of MS operations will increase by the use of UAVs.

The SCI-321 Task Group consists of representatives from defence R&D agencies and armed forces (military engineers) from CAN, DEU, ESP, FRA, GBR, NLD, SWE, TUR and USA, and the NATO C-IED Centre of Excellence. The TG will document the findings of the assessment in a report to be published by NATO STO. As part of its assessment, the SCI-321 Task Group conducted a 1-week demonstration



and trial, based on three scenarios: working at heights (bridge) scenario, route search scenario and area search scenario.

This demonstration and trial took place on 08-12 November 2021



at a site in Andalucía, Spain (ATLAS Flight Test Centre – Villacarrillo, Jaén), with four prior days for preparations 02-05 November 2021. For all the above mentioned, C IED COE participated actively to all the seven preparation meetings of the TG in order to contribute with experience and knowledge in the creation of realistic trials based on latest IED events in different conflict areas around the world.



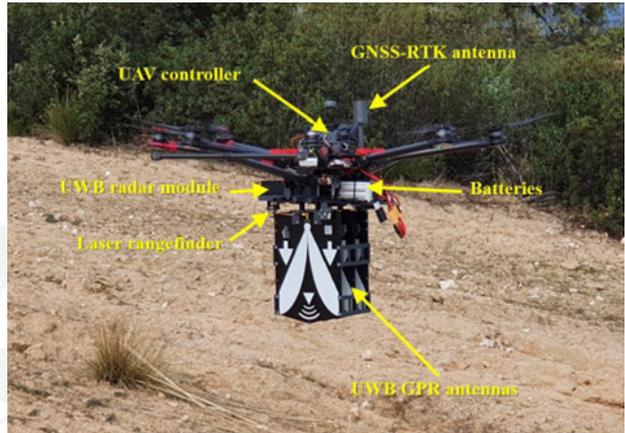
## PROJECTS

### SAFEDRONE PROJECT

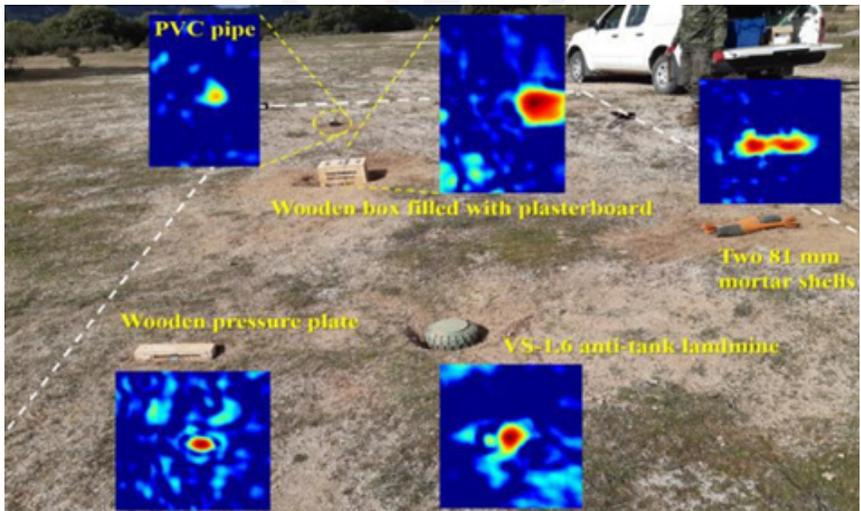
The two years of SAFEDRONE project (2020-2021) based in a two and half years of previous Academia research has supposed an important milestone for the development of high-resolution UAV-based GPR systems, paving the road towards their production in operational environments (e.g. in route clearance operations or landmine clearance campaigns).

Regarding SAFEDRONE project, the DL-GPR configuration in the first validation trials done in March 2021, showed a high probability of detection of targets whose size is larger than 10 cm, even when considering challenging operational conditions (steep dirt roads, very uneven ground). Main detection metrics obtained were: (1) 30% probability to detect very small targets buried at very low depth (< 5cm) as antipersonnel mines (<8.5cm diameter, volume < 500cm<sup>3</sup>), (2) 83% probability to detect all kind of buried IEDs and (3) 60% false alarm rate.

After assessment of the final validation trials carried out at the beginning of October 2021, it can be concluded that SAFEDRONE detection capability in its DL-GPR configuration has improved in all metrics mentioned above. SAFEDRONE final detection capabilities reached can be summarized as follows: (1) 57% on detection of very low buried targets; (2) 91% probability to detect IEDs buried, either metallic, low metal content or non-metal as plastic or wooden objects and (3) 25% false alarm rate.



Therefore, results obtained by the SAFEDORNE R&D project can be considered very optimal in order to explore its potential and future way ahead.





## VISITS

### SWEDISH ARMED FORCES AND SWEDISH POLICE FORCES VISIT

A delegation led by the CDR Fredrik Preiholt CO SWENAVEOD 4 th Minewarfare Flotilla visited the C-IED COE on the 21st and 22nd of September.

The Director and the Senior National Representatives of the Sponsoring Nations welcomed the delegation.

During the visit, the Director provided an overview of the C-IED COE its purpose and organization and informed the delegation on the main activities carried out by the SMEs.

The delegation presented an update of their National bomb data Centre, and were briefed on CIED CoE R&D projects status, Technical exploitation in water environment, Threat dynamics by non state actors and an overview of joint multiagency CIED framework.

After the presentation, the delegation visited the laboratory of the Centre and H.E. Mr. Wolfgang Dold signed the Honor Visitor's book.



## AMBASSADOR OF THE FEDERAL REPUBLIC OF GERMANY'S VISIT

H.E. Mr. Wolfgang Dold, the Ambassador of the Federal Republic of Germany, Col (GS) Harald Wegener, Defense attaché, visited the C-IED COE on the 20th of October.

The aim of the visit was a brief on the CIED task and the range of services of the COE CIED.

The Director and the Senior National Representatives of the Sponsoring Nations welcomed the delegation.

During the visit, the Director provided an overview of the C-IED COE its purpose and organization and informed the delegation on the main activities carried out by the SMEs.

After the presentation, the delegation visited the laboratory of the Centre and H.E. Mr. Wolfgang Dold signed the Honor Visitor's book.





## AMBASSADOR OF HUNGARY'S VISIT

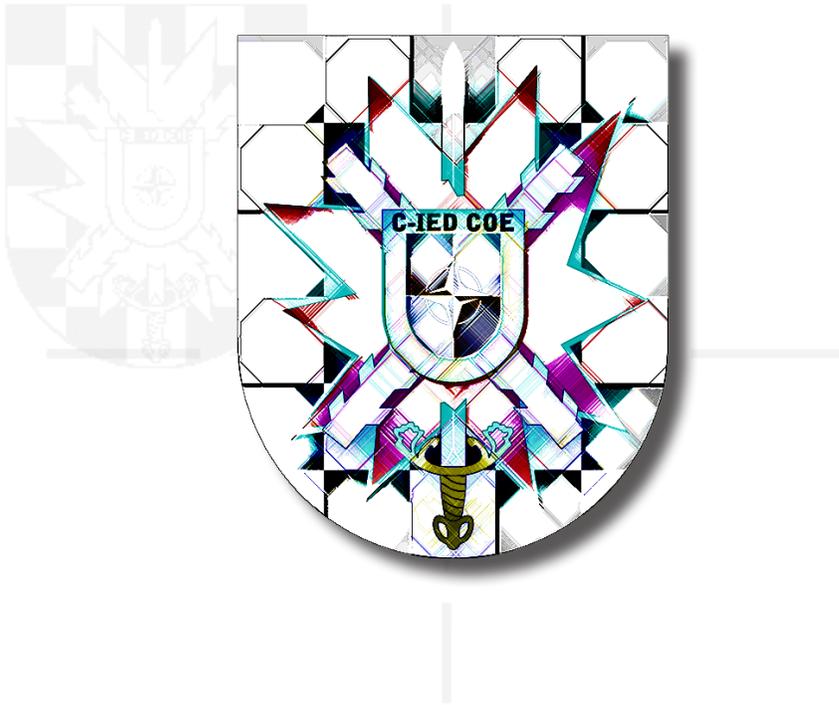
H.E. Mrs. Katalin Toth, the Ambassador of Hungary, COL Sándor Tilaji, Defence Attaché, visited the C-IED COE on the 24th of November.

The Director and the Senior National Representatives of the Sponsoring Nations welcomed the delegation.

During the visit, the Director provided an overview of the C-IED COE its purpose and organization and informed the delegation on the main activities carried out by the SMEs.

After the presentation, the delegation visited the laboratory of the Centre and H.E. Mrs. Katalin Toth signed the Honor Visitor's book.







# UPCOMING EVENTS 2021

## **C-IED COE courses planned for 2022**

This is the C-IED COE planning for 2022 with regard to courses approved by the Steering Committee on 16 November 2021. Below dates may change due to unforeseen reasons. No rights can be inferred according to this schedule.



	BEGIN	FINISH				
2022	FEBRUARY	7	FEBRUARY	11	ESP	Analyst Notebook User Course (ANUC) 22.1
2022	FEBRUARY	21	FEBRUARY	25	ESP	C-IED Staff Officer Course (CSOC) 22.1
2022	MARCH	2	MARCH	3	ESP	Annual Discipline Conference 2022
2022	MARCH	18 (TBC)	MARCH	18 (TBC)	ESP	C-IED COE Change of Command
2022	MARCH	22	MARCH	24	ESP	DOMEX instructors seminar
2022	MARCH	28	APRIL	8	ESP	ATN Operational Course (ATNOC) 22.1
2022	APRIL	18	APRIL	29	ESP	Document & Media Exploitation Course (DOMEX) 22.1
2022	APRIL	25	APRIL	29	ESP	Training Need Analysis WIT T3 course
2022	MAY	3	MAY	5	ESP	Inter-Agency Workshop (IAWS) 2022
2022	MAY	9 (TBC)	MAY	26 (TBC)	ROU (TBC)	NATO Weapons Intelligence Team Course (WIT) 22.1 (TBC)
2022	JUNE	6	JUNE	10	ESP	C-IED Staff Officer Course (CSOC) 22.2
2022	JUNE	27	JULY	1	ESP	Analyst Notebook User Course (ANUC) 22.2
2022	JULY	5	JULY	7	ESP	Technical Exploitation in Water Environment seminar (TEWE follow up)
2022	SEPTEMBER	5 (TBC)	SEPTEMBER	23 (TBC)	HUN (TBC)	NATO Weapons Intelligence Team Course (WIT) 22.2 (TBC)
2022	SEPTEMBER	20	SEPTEMBER	22	ESP	ATN approach to alternate threat scenarios seminar/workshop
2022	SEPTEMBER	26	SEPTEMBER	30	ESP	C-IED Staff Officer Course (CSOC) 22.3
2022	SEPTEMBER	26 (TBC)	OCTOBER	7 (TBC)	TBC	Document & Media Exploitation Course (DOMEX) 22.2
2022	OCTOBER	17	OCTOBER	21	ESP	Analyst Notebook User Course (ANUC) 22.3
2022	OCTOBER	25	OCTOBER	27	ESP	C-IED COE Technology Workshop 2022
2022	NOVEMBER	15	NOVEMBER	16	ESP	STEERING COMMITTEE 2022
2022	NOVEMBER	21	DECEMBER	2	ESP	ATN Operational Course (ATNOC) 22.2
2022	DECEMBER	12	DECEMBER	16	ESP	NATO Weapons Intelligence Team T3 Course (WIT)

NOTE:

1. This is the C-IED COE planning for 2022 with regard to courses and events. The dates and locations could be subject for changes, the C-IED COE cannot be held liable for any consequences of change of dates or locations.
2. The events indicated in red are identified as C-IED COE's DIAMOND EVENTS
3. The proper save the date and calling letter for each event will be released in advance.
4. The VNCF WIT-program 2022-2023 has not yet been approved by NATO HQ. In case there is no program, the mentioned courses will not be executed.



## For more information on CoE contact

Phone: +34 91 856 10 48

Fax: +34 91 85623 90

Mail: [info@ciedcoe.org](mailto:info@ciedcoe.org)

Web: [www.ciedcoe.org](http://www.ciedcoe.org)

**Counter Improvised Explosive Devices  
Centre of Excellence**

