SCIENTIFIC NEWSLETTER ILEANET

The ILEAnet scientific newsletter provides scientific news in the security research area. Published every two months, it is intended to highlight and promote the scientific work in the field of technology, human and social sciences. The scientific coordination within the ILEAnet project is led by Professor Patrick Laclémence. In this issue, you will find:

PORTRAIT OF A PRACTITIONER ACTIVELY INVOLVED IN SECURITY RESEARCH

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KNOWLEDGE FACTORY DIGEST

Find here a selection of recent scientific and technical resources extracted from the Knowledge Factory on the main themes of the ILEAnet project

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Europol has rewarded the most innovative initiatives of the law enforcement community for the first time

By the ILEAnet Scientific Coordination Team

In 2021, during the annual European Police Chiefs Convention, Europol awarded its Excellence Award in Innovation. The event was a great success as more than 100 proposals were submitted by the European law enforcement community. Europol rewarded **the most innovative project and the most innovative operation**. The latter has been awarded to the multi-country and multi-organisation operation that disrupted **EMOTET** earlier this year. A fine example of cooperation and information sharing among law enforcement agencies! The most innovative project award has been given to **Fortnite undercover avatar.** In collaboration with a charity protecting children's rights, the French National Police created an online avatar in Fortnite (a popular videogame) to which children could report sexual abuse at home. Volunteers connected to the game during the lockdown (April-May 2020) to assist children asking for help. 1200 children used the avatar during the period and among them 30% were in a dire situation. The project confirmed that video games is an encouraging track to facilitate the voice of abused children and teenagers.

For further information: EUROPOL excellence award in innovation. 1/10/2021. Available at: https://www.europol.europa.eu/newsroom/news/europol-excellence-award-in-innovation

PORTRAIT OF A PRACTITIONER ACTIVELY INVOLVED IN SECURITY RESEARCH

LIEUTENANT COLONEL ZDENEK PETRIK

Member of the special CBRN team focused on investigating the illegal trade with CBRN materials or weapons, Counter Terrorism and Extremism Command Trafficking in Weapons and CBRN Materials Division, Police of the Czech Republic

PhD candidate with the Czech Technical University in Prague - Faculty of Biomedical Engineering

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The ILEAnet scientific coordination team met Zdenek Petrik. Mr Petrik works in the Counter Terrorism and Extremism Command Trafficking in Weapons and CBRN Materials Division, in the Police of the Czech Republic.

Can you tell us more about you?

I work in the Criminal Police and Investigation Service of the Czech Police. I am a member of the **special CBRN team** focused on **investigating the illegal trade with CBRN materials or weapons**.

What is your connection with the international projects and security research activities?

I have participated in **international investigations** related to my field of expertise (i.e. illegal medical and pharmaceutical products trade in EU) and several **EU projects**, such as the project called "All Together Against CBRN Terrorist Threats" between 2010 and 2013 and the European Operational Training for Investigations Against Pharmaceutical Crime called "TrainPharmCrime", run in Germany in 2013. Furthermore, I attend seminars, trainings and conferences on national and international levels. I recently attended two very helpful courses related to online Investigations and Cyberpatrol in Spain, organized by EMPACT Firearms in 2019.

Since 2020, I am preparing a **doctorate** with the Czech Technical University in Prague - Faculty of Biomedical Engineering. My topic of interest covers performance of police activities in potentially CBRN contaminated areas. My PhD work will enhance my theoretical as well as practical knowledge of the field and will make me connect with other experts. It is not always easy to manage my job and my research activity, but my work in a CBRN unit helps me to combine practice with theory in the course of real criminal cases.

One of your outstanding experiences is your participation in the QUINTETO exercise. Can you explain us what it is?

The fight against terrorism is one of the main priorities of the EU. The primary responsibility for fighting against the threat of terrorist attacks lies with the EU Member States, but terrorist attacks in recent
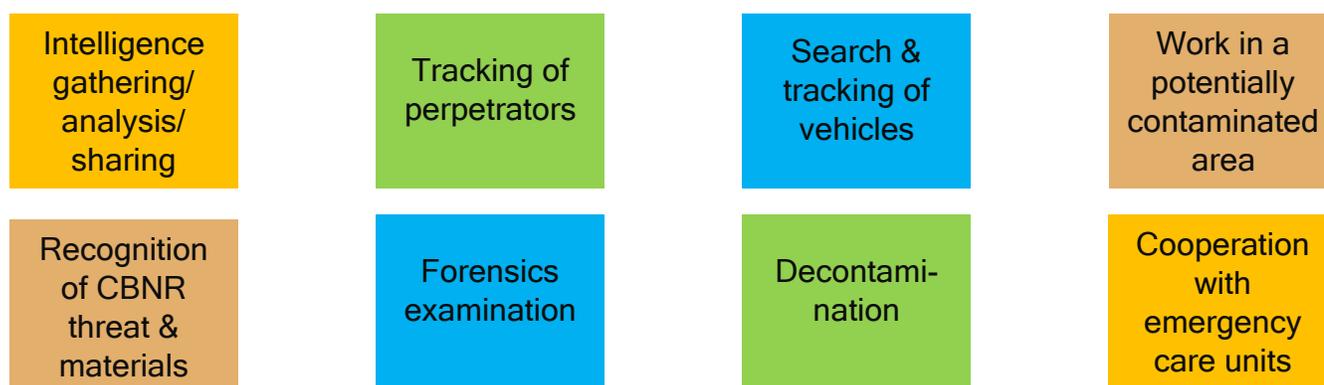
history show that security is also a matter of collective responsibility. The EU assists the Member States particularly in the field of **information sharing** and is currently **exploring ways to better collect, share and use information** in order to make these data available to Member States' security services through the relevant EU databases and to improve the criminal checking, investigation and prosecution process.

This is why the International Institute for Security and Crisis Management (ISEMI) has been designated by the European Commission as the main partner for the project **"Gap Analysis of CBRN Threat Detection and Organization of a Cross-Border Exercise"** in order to provide an overview of possible CBRN terrorist attack scenarios and to provide analysis in relation to detection capabilities. The project successfully created 74 **potential CBRN realistic terrorist attack scenarios** with worst-case impact, exploring various degrees of situation. One of these crisis scenarios was selected as the basis for a practical exercise called **QUINTETO**. The essence of this international exercise was to **practically test the international and cross-border intelligence sharing and response** of police agencies to **a highly probable terrorist threat using CBRN materials of unknown origin** (here a combination of chemical and radiological threats). QUINTETO was designed in two basic phases, namely the theoretical phase in the form of a staff (tabletop) exercise and, above all, the practical phase - a field exercise.

How was the practical exercise run?

The exercise itself involved 6 EU Member States (France, Germany, Belgium, Poland, the Czech Republic and Slovakia). Those countries were affected by recent terrorist threats and attacks or by highly organized criminal groups that smuggle or illegally handle and produce CBRN materials. During the exercise, several police tactics and interventions were tested and practiced (*see a non-exhaustive list in the scheme below*). 11 other countries were involved as observers.

Intelligence gathering/ analysis/ sharing	Tracking of perpetrators	Search & tracking of vehicles	Work in a potentially contaminated area
Recognition of CBNR threat & materials	Forensics examination	Decontami-nation	Cooperation with emergency care units

The main storyline starts with a fictitious Europol analysis in which the EU countries are now threatened by a fictitious terrorist organization, which has become increasingly important especially in two North African countries. Radicalized jihadists from this region, linked to various EU countries including Eastern Europe, have managed to build a strong base in the EU and are likely to mount terrorist attacks on the EU territory.
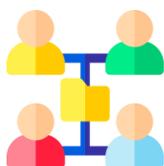
The theoretical part of the exercise took place through a **newly developed IT communication platform** called "SIENA X", which has been created in cooperation with ISEMI and DG HOME. This platform has been adapted for operational use in the field via any mobile phone, tablet or iPad and was tested for the first time.

The practical phase was implemented between 18 and 22 **March 2019**. The scenario started in Poland, where a car transporting radioactive isotopes going to Slovakia was stolen. A terrorist group planned to transport the radioactive sources to Western Europe through several routes with a strategy of changing cars and reloading the cargo to conceal their activity. On their route to the West they set-up several improvised laboratories in several countries to prepare the final attack. When the terrorists were crossing Slovakia, Czech Republic, Germany, Belgium, different police agencies (with Europol support) made all necessary efforts to track the suspects and follow them in order to discover their plot. Despite the huge effort of all the EU Member States (MS) forces that successfully monitored movement of the terrorist cell from Poland to France and arrested many of its members, another parallel terrorist cell prepared and successfully performed their plot with the chemical substance. Many police tactics and interventions were implemented until the final phase of the terrorist plot taking place in France, where different first responders deliver interventions against radioactive and chemical threats.

To what extent was the exercise implemented?

To be as realistic as possible, the exercise included the actual theft of radioisotopes, the movement of terrorists from one country to another, cross-border information sharing, the handling of radioactive sources, the preparation of chemical agents and explosives in laboratories, the attack on a bus with a chemical agent, and the subsequent response of the authorities concerned with the simulated attack. The exercise was enriched by including many realistic cross-country operations including social media response and relevant reactions of the national authorities.

Most of the members of the police authorities of the involved States (police patrols, traffic police, task forces, operational centers at all levels, etc...) had no prior warning of the exercise; they were deployed from their normal duties without any planning or preparation and carried out a realistic response as if they were dealing with a real terrorist attack. Their decision-making and actions, the way they received or communicated information, their cooperation with other security forces, were carefully recorded and then evaluated. Each country was free to decide on the deployment of forces and assets. In some scenarios, other relevant police units and other national partners such as chemical laboratories, fire brigades, civil protection, ambulance services, etc. were involved, depending on the needs of the countries and the evolution of the situation. The exercise allowed testing the cooperation and response of the police teams to unexpected situations.

The progress and development of the exercise in each state was also monitored by police specialists from the other concerned States. The aim was to compare the possibilities of intervention of the individual States and their response to the threats, to verify the practical transfer of operational information and to test the capabilities of the police officers and their reaction time to any terrorist event using CBRN materials.

What has been the impact of such an exercise on the capabilities of the Czech Police and the other EU LEAs?

The benefit of this exercise is mainly the **strengthening of the international cooperation between the EU Member States** (MS) in disclosing this type of criminal activity. The exercise has been a practical example of joint activities of the individual LEAs. In addition, it helped the Police of the Czech Republic cooperate with ISEMI seated in Slovakia, which has been actively dealing with international practical exercises in the field of fight against terrorism and CBRN threats.

In QUINTETO exercise, cross-border information sharing was crucial. How do you think Information sharing between EU Member States could be improved?

The exercise showed that **information sharing is the most important element in the interaction of LEAs**. During the exercise, the direct exchange of information took place at the Joint Centers of International Cooperation of the respective countries. In addition, a new IT communication platform was tested. This platform confirmed the necessity of having official international secured communication channels for LEAs such as SIENA or the activities of the National Contact Points for Terrorism on the national level and their related flexibility.

Finally, according to you, what would be the best way to make researchers and law enforcement practitioners better work together?

The QUINTETO exercise demonstrated the necessity of **practical exercises** at the level of LEAs as well as the scientific institutes, which were present during the exercise as observers and collected suggestions for improving the current technical means for the detection and identification of CBRN materials. Furthermore, new possibilities of decontamination of the intervening officers were tested and there was a **direct demonstration** of new detection means using aviation technology for detection of CBRN materials in an inaccessible area.

Thank you very much Lieutenant Colonel Zdenek Petrik for your time and for this very interesting exchange! ILEAnet members can connect with Zdenek Petrik by email.

RESEARCHER'S TOOLBOX: "ASSESSMENT OF RESEARCHERS: WHAT SUSTAINABLE SOLUTIONS?"

In a society where innovation and technical progress depend on academic research, assessing the quality of the scientific research is crucial. "It is widely acknowledged that in the current academic landscape, **publishing** is the primary measure for assessing a researcher's value. This is manifested by associating individuals' academic performance with different types of metrics, typically the number of publications or citations (quantity) rather than with the content of their works (quality).[1]"
However, more and more voices, including in Europe, are calling for a reform of the research assessment tools, in particular for early career researchers. What are the usual techniques used to assess the work of a researcher and what changes are to be expected?

The importance of bibliometric indicators to assess researchers' work

Bibliometric indicators are classically used to evaluate **quantitatively** the impact of a publication. Some indicators such as the *impact factor* or the *h-index* are widely used in the evaluation process.

The **impact factor** is defined as the ratio between the number of citations received by a journal during a two-year period and the number of articles published in that journal during that same period. Hence, it measures the value of a scientific journal and not the quality of an article. *Nature* and *Science* have the highest impact factors.	The **h-index**, or Hirsch index, measures the impact of a particular scientist. The higher the number of cited publications, the higher the *h*-index, regardless of which journal the work was published in. To give an example, a scholar with an h-index of 3 has published 3 papers, each of which has been cited by others at least 3 times.

The use of those quantitative indicators implies that the excellence of researchers is calculated solely on the basis of the **number of publications**, the **number of citations**, or the **reputation of the journals** in which they publish, but they do not allow a complete or representative assessment of the work carried out.
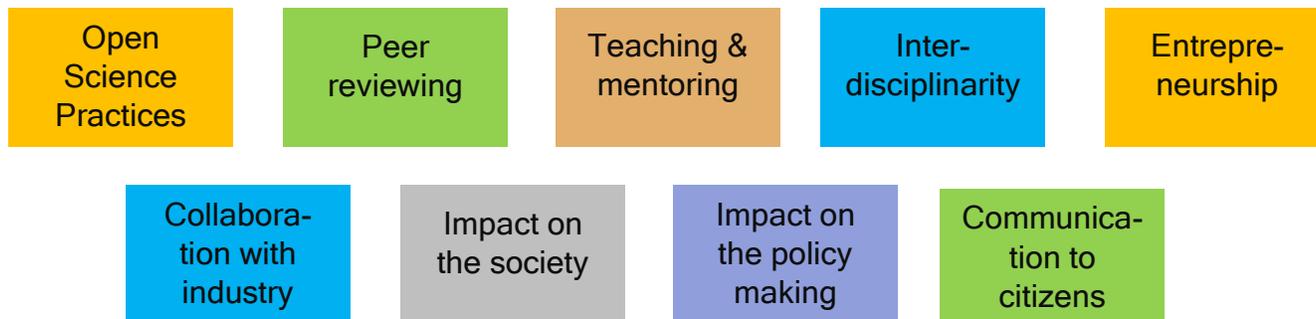
A wind of change

More and more research centres, research organisations and research funding agencies are thinking about changing the evaluation system for researchers focusing on (and rewarding) **intrinsic qualities**, the **diversity of tasks** carried out and the **impact** of the work done, and not relying only on how much and where researchers have published, which is intrinsically not favourable to **early career researchers**.

The topic was discussed during the *European Research & Innovation Days 2021*. During the event Giulia Malaguarnera, president of EURODOC (European Council of Doctoral Candidates and Junior Researchers) highlighted that "early-career researchers are locked in a **"publish or perish" system**".

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[1] Research Topic. Quality and Quantity in research Assessment: Examining the Merits of Metrics. Available at :
https://www.frontiersin.org/research-topics/20524/quality-and-quantity-in-research-assessment-examining-the-merits-of-metrics

Therefore, there is a willingness to reform research evaluation in order to assess researchers on a much broader analysis. Here are suggested criteria which could be taken into account in the evaluation system of researchers. Some are directly related to the research tasks performed, but non-academic experiences should be recognized as well.

Open Science Practices	Peer reviewing	Teaching & mentoring	Inter-disciplinarity	Entrepre-neurship

Collabora-tion with industry	Impact on the society	Impact on the policy making	Communica-tion to citizens

New criteria which could be considered to assess researchers' works

A need to develop new CVs?

Reforming the research assessment system would encourage more diverse career path and attract researchers from around the world. But it also implies changing the way researchers showcase their skills and experience. **Narrative CVs** are an alternative to classical resumes and several research centres and funding agencies are conducting pilots to test those new ways of introducing researchers' work and career. With new kinds of CVs, assessors also need to be trained and get used to this new value scale.

There are still **barriers to overcome**, especially the resistance to change and the fragmentation of the European landscape regarding that issue, but there is hope that things will change in the coming years. Researchers may learn a lot about researchers' evaluation from the industry or RTOs (Research & Technology Organisations) sectors as well.

Sources:

- Research Topic. Quality and Quantity in research Assessment : Examining the Merits of Metrics. Available at : https://www.frontiersin.org/research-topics/20524/quality-and-quantity-in-research-assessment-examining-the-merits-of-metrics
- Bibliometrics and Altmetrics: Measuring the Impact of Knowledge. This guide includes information on which of the databases contain citation measures that can be used to gage either an author, article or journal impact. 01/11/2021. Available at: https://lib.guides.umd.edu/bibliometrics/h-index
- DORA. Quality over quantity: How the Dutch Research Council is giving researchers the opportunity to showcase diverse types of talent. 11/ 2019. Available at: https://sfdora.org/2019/11/14/quality-over-quantity-how-the-dutch-research-council-is-giving-researchers-the-opportunity-to-showcase-diverse-types-of-talent/
- O'Neill Gareth, Malaguarnera Giulia, Thilly Ludovic, et al. European Research and Innovation Days. Building careers and being assessed: a challenge for young researchers? European

commission. 24/06/2020. Available at: https://research-innovation-days.ec.europa.eu/live-sessions. To watch the live session, click "Rewatch the live sessions", and choose "Live channel 5", and "Day 2"

- Science Europe. Position Statement and Recommendations on Research Assessment Processes: position statement. Science Europe. 07/2020. 28 pages. Available at: https://www.scienceeurope.org/our-priorities/research-assessment/research-assessment-processes/

- DORA. Science Foundation Ireland takes an iterative approach to develop a narrative CV. 11/2020. Available at: https://sfdora.org/2020/11/19/dora-funder-discussion-science-foundation-ireland-takes-an-iterative-approach-to-develop-a-narrative-cv/

- UK Reproducibility Network (UKRN). An enhanced narrative CV template for the research community. 04/2021. Available at: https://www.ukrn.org/2021/04/23/an-enhanced-narrative-cv-template-for-the-research-community/

- European association of research and technology organisations. RTOs - Research and Technology Organisations. Available at: https://www.earto.eu/about-rtos/

KNOWLEDGE FACTORY DIGEST

The ILEAnet scientific coordination team provides here a selection of recent scientific and technical resources related to the main themes of the ILEAnet project. Most resources are open access, except those marked with a closed padlock🔒 . Resources can be found in the ILEAnet Knowledge Factory. ILEAnet collects the most recent or relevant publications in the following areas, but does not necessarily endorse their contents.

If you want to share a publication, please contact us at ensp-ileanet@interieur.gouv.fr

Cybersecurity

CC Driver. R1 – Landscape Study of Cybercrime-as-a-Service. WP2 – Scoping Cybercriminality and Technical Capabilities. Grant agreement No 883543. 2020. 49 pages. Available at: https://37d0c11e-9fae-4847-b833-9e5070f85d82.filesusr.com/ugd/0ef83d_8e7cac0133ac485895e50bbd8e868a70.pdf
This report presents a landscape study of Cybercrime-as-a-Service and focuses on the range of activities, providers, prices and business models.

ENISA, European Union agency for cybersecurity. ENISA Threat Landscape 2021: April 2020 to mid-July 2021. 10/2021. 116 pages. Available at: https://www.enisa.europa.eu/publications/enisa-threat-landscape-2021
This ninth edition of the ENISA Threat Landscape reports on the status of the cybersecurity threat landscape, identifies prime threats, major trends observed with respect to threats, threat actors and attack techniques, and also describes relevant mitigation measures.

Ilbiz Ethem, Kaunert Christian. Europol and cybercrime: Europol's sharing decryption platform. Journal of Contemporary European Studies 10/11/2021. Doi: https://doi.org/10.1080/14782804.2021.1995707
This article examines the resource sharing functionality of the decryption platform of Europol.

Terrorism

European Commission. EU quick guide to support the protection of places of worship. 05/2021. 21 pages. Available at: https://ec.europa.eu/home-affairs/whats-new/publications/eu-quick-guide-support-protection-places-worship_en
This guide aims at helping smaller and medium-sized places of worship to enhance awareness and security preparedness, by listing basic vulnerability assessment steps, without altering the nature and purpose of the space.

Shepherd Alistair JK. EU counterterrorism, collective securitization, and the internal-external security nexus. Global affairs 15/11/2021. Doi: https://doi.org/10.1080/23340460.2021.2001958
This article examines the ways and extent to which the EU's collective securitization of terrorism as a transboundary threat, and its counterterrorism responses, have blurred traditional distinctions between internal and external security, not just geographically but also institutionally and in capabilities.

Thorleifsson Cathrine, Düker Joey, Radicalisation Awareness Network, European Commission. Lone Actors in Digital Environments. European commission. 10/2021. 24 pages. Available at: https://ec.europa.eu/home-affairs/whats-new/publications/lone-actors-digital-environments-october-2021_en
While there have been numerous right-wing lone actor terrorists over the years, this paper looks at five specific cases of lone actors and their online posting behaviour prior to the attacks, to shed light on behaviours of lone actors in digital environments and the extent to which they were seemingly operating alone.

🔒 Vicente Alvaro. Social Ties and Jihadist Participation: A Mixed-Methods Approach to the Differential Recruitment of Radicalized Youth in Spain. Terrorism and Political Violence 10/11/2021. Doi: https://doi.org/10.1080/09546553.2021.1989415

Drawing on social network theory, the current study tests the effects of the type, number, and strength of interpersonal ties with jihadist activists in explaining the occurrence and absence of individual engagement in jihadist activities.

Organised crime

Dandurand Yvon, Jahn Jessica, Global initiative against transnational organized crime. The future of international cooperation against transnational organized crime. Global initiative against transnational organized crime. 10/2021. 18 pages. Available at:
https://globalinitiative.net/analysis/international-cooperation-organized-crime/
This paper identifies five scenarios for the future of international criminal justice cooperation based on observed trends and raises thought-provoking questions about possible outcomes and impacts on transnational organized crime.

Europol. IOCTA 2021: Internet Organised Crime Threat Assessment 2021. Europol. 11/2021. 45 pages. Available at: https://www.europol.europa.eu/activities-services/main-reports/internet-organised-crime-threat-assessment-iocta-2021
The IOCTA is Europol's flagship strategic product that provides a law enforcement focused assessment of evolving threats and key developments in the area of cybercrime.

Interpol. Assessing crimes against cultural property 2020: survey of Interpol member countries. Interpol 09/2021. 36 pages. Available at:
https://www.interpol.int/en/News-and-Events/News/2021/Cultural-property-crime-thrives-throughout-pandemic-says-new-INTERPOL-survey
The report - the first made publicly available - compiled the information supplied by 72 INTERPOL member countries on cultural property crimes, arrests and trafficking routes in 2020.

Migration

CEPOL, EASO, EIGE, *et al*. Joint report of the JHA agencies' network on the identification and protection of victims of human trafficking. 10/2021. 16 pages. Available at:
https://www.eulisa.europa.eu/Newsroom/News/Pages/EU-Agencies-present-first-full-overview-of-actions-to-detect-and-protect-victims-of-human-trafficking.aspx
The European Union agencies active in the field of Justice and Home Affairs have presented the first full overview of actions to help victims of trafficking in human beings. The report is a key building block of the EU Strategy on combatting Trafficking in Human Beings and serves as a key reference document for national authorities engaged in tackling human trafficking.

García-Carmona Marina, García-Quero Fernando, Guardiola Jorge, et al. Migration to the EU: a survey of firstline practitioners' perceptions during the COVID-19 pandemic. 2021. PERCEPTIONS project (Grant Agreement No 833870). 78 pages. Available at: https://project.perceptions.eu/wp-content/uploads/sites/24/2021/09/PERCEPTIONS-Report-A4-Migration-to-the-EU-A-survey-of-first-line-practitioners-perceptions-during-the-COVID-19-pandemic.pdf
This report presents the results from a survey of first-line practitioners working in the field of migration, launched by the PERCEPTIONS project at the end of 2020. It explores the perceptions of Europe first-line practitioners observe among migrants, how practitioners believe inaccurate information may influence migration, and the impacts of COVID-19 on the field of migration-related work.

Martinez-Zarzoso Inmaculada. Migration and Refugee Flows: New Insights. Politics and Governance 2021; 9(4): 2183-2463.
https://www.cogitatiopress.com/politicsandgovernance/issue/view/265
Politics and Governance *is an internationally peer-reviewed open access journal that publishes significant and cutting-edge research drawn from all areas of political science.*

You may also be interested in the following reports or articles:

🔒 Dragan Ana-Maria, Parrilla Marc, Feier Bodgan, et al. Analytical techniques for the detection of amphetamine-type substances in different matrices: A comprehensive review. TrAC Trends in Analytical Chemistry 12/2021; 145. Doi: https://doi.org/10.1016/j.trac.2021.116447
This current review focuses on contributions to amphetamine-type substances (ATS) analysis.

Europol, Eurojust, European judicial network. SIRIUS EU Digital Evidence Situation Report 3rd Annual Report 2021. Europol. 11/2021. 76 pages. Available at:
https://www.europol.europa.eu/publications-documents/sirius-eu-digital-evidence-situation-report-3rd-annual-report-2021
This report analyses the situation of the use of electronic evidence in criminal investigations in the EU in 2020 and the impact of pandemic to the work of judicial authorities, law enforcement and Online Service Providers in this area.

Kolencik Marian, ISEM Institute. CBRN-E crime and offenders' motives. What is it? Why people do it? Definitions on terms, legislation review end cases studies. ISEM Institute. 06/2021. 99 pages. Doi: 10.13140/RG.2.2.11835.34083
The article presents the results of a comparative study related to the definitions of CBRN-E and HazMat materials, threats, and incidents.

Taylor Josh. Why is Facebook shutting down its facial recognition system and deleting "faceprints"? The Guardian 03/11/2021. Available at:
https://www.theguardian.com/technology/2021/nov/03/why-is-facebook-shutting-down-its-facial-recognition-system-and-deleting-faceprints

Urquhart Lachlan, Miranda Diana. Policing faces: the present and future of intelligent facial surveillance. Information & Communications Technology Law 28/10/2021. Doi:
https://doi.org/10.1080/13600834.2021.1994220
This paper discusses the present and future uses of intelligent facial surveillance in law enforcement.

CONTACT

You wish to publish? You are a researcher and would like to share your profile? You would like to have information about the ILEAnet project and the scientific coordination? Do not hesitate to contact us!

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