



The European Union's Approach to Law Enforcement Training Needs Analysis: A Review of the CEPOL Model in the Context of Global Practices



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Abstract

Aim: The article aims to analyse the methodologies and practical applications of Training Needs Analysis (TNA) in law enforcement, with particular attention to the model developed by the European Union Agency for Law Enforcement Training (CEPOL). It seeks to determine how CEPOL's approach compares to other documented practices in terms of structure, foresight integration, and strategic coherence.

Methodology: The study is based on a systematic review of 406 academic and institutional publications published between 1966 and 2025. The analysis includes both quantitative and qualitative methods to assess general TNA approaches, security-sector-specific applications, and the role of foresight in anticipating training needs. Special attention is given to CEPOL's dual-layered model, comprising the EU Strategic Training Needs Assessment (EU-STNA) and the Operational Training Needs Analysis (OTNA).

Findings: The review identifies a shift towards competency-based and data-driven TNA practices worldwide, with a growing emphasis on digital skills and artificial intelligence. The CEPOL model is characterised as a mature,

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multi-stakeholder framework that effectively translates strategic EU security priorities into operational training. Despite its strengths, the analysis also highlights challenges in outreach and in measuring long-term training impact. **Value:** This study provides an up-to-date and comprehensive overview of international TNA practices, positioning CEPOL's methodology as a benchmark for structured and forward-looking law enforcement training. It contributes to the literature by mapping emerging trends and offering policy-relevant insights into professional development strategies within EU law enforcement.

Keywords: training needs analysis, law enforcement training, digital skills, CEPOL model

Introduction

The effective functioning of law enforcement agencies (LEAs) in the twenty-first century is contingent upon the continuous development of their personnel's skills and competencies. In an era of rapidly evolving security threats—from cybercrime to transnational organised crime and terrorism—the capacity of LEAs to adapt is paramount (Neyroud & Nogala, 2016). A foundational element of this adaptability is the implementation of robust and relevant training programmes. For training to be effective, however, it must be preceded by a systematic and accurate assessment of needs. A Training Needs Analysis (TNA) is the process that identifies the gap between current and desired knowledge, skills, and abilities, thereby ensuring that training interventions are targeted, efficient, and impactful (Moore & Dutton, 1978). Without a thorough TNA, training risks being misaligned with operational realities, leading to a waste of resources and a failure to address critical capability gaps (Ferreira & Abbad, 2013). This is particularly crucial in high-stakes fields like policing, where training deficiencies can have profound consequences for public safety and institutional legitimacy (Linetsky, 2018).

A significant trend in modern TNA is the move away from purely reactive models towards proactive, anticipatory approaches. This involves not just assessing current skill gaps but also forecasting future requirements through foresight exercises and scenario planning (Schafer & Boyd, 2007). Such foresight is vital for preparing law enforcement for the challenges of tomorrow, rather than simply reacting to the problems of yesterday.

The purpose of this study is to understand how the TNA model, developed and implemented by the European Union Agency for Law Enforcement Training

(CEPOL), compares with other approaches documented in academic and institutional literature. As an EU agency tasked with developing, implementing, and coordinating training for law enforcement officials, CEPOL has a unique mandate that necessitates a sophisticated approach to TNA (Hulme, et al., 2021). This article analyses a broad corpus of literature to contextualise CEPOL's model, evaluate its perceived effectiveness, and situate its role within the wider landscape of law enforcement education. By examining general TNA methodologies, foresight exercises, security-specific applications, and national practices, this study seeks to provide a comprehensive overview of the state of the art in law enforcement TNA and critically assess CEPOL's contribution to it.

Methodology

This review is based on a systematic analysis of a corpus of 406 academic and institutional publications related to law enforcement training and TNA, published between 1966 and 2025 (Arru, 2025). The Perplexity large language model supported the initial corpus summarisation and data extraction. At the same time, the analysis utilised the Gemini 2.5 large language model, which enabled the processing of a larger and more diverse set of documents than would be feasible through manual review alone. The user prompt specified that only articles relevant to TNA were included in the final dataset. The study protocol involved a qualitative analysis of the summaries and, where available, the full texts of the documents in the corpus to categorise them according to the analytical themes of this paper: general TNA approaches, foresight methodologies, JHA-specific applications, and national practices.

A quantitative analysis of the corpus was conducted to identify key trends. The publications were categorised by year, entry type, and geographical scope.

- **Distribution by Year:** The analysis shows a significant increase in publications on this topic over time. While only a handful of articles were published per year before 2015, the numbers surged from 2016 onwards, with over 100 articles appearing in both 2024 and 2025 alone. This suggests a rapidly growing academic and institutional interest in TNA within the law enforcement sector.
- **Distribution by Type:** The corpus is dominated by peer-reviewed articles (210), followed by PhD theses (60) and technical reports (52). This indicates a strong academic interest complemented by institutional and practical evaluations. Other types include book chapters, conference proceedings, and master's theses.

- **Geographical Distribution:** The majority of studies have a national focus (218), highlighting the context-specific nature of TNA. A substantial number of publications also cover European (68) and Global (43) perspectives, reflecting the transnational nature of modern security challenges.
- **Thematic Relevance:** The articles were categorised based on their relevance to the primary research questions of this study. Nearly all articles (402) discussed TNA methodologies. A large number also focused on identifying gaps in training (270) and offered key themes or recommendations (344).

The analysis that follows synthesises the findings from these 406 sources, structured according to the predefined analytical categories. Each section begins with a quantitative overview of the relevant literature, followed by a qualitative analysis that positions CEPOL's practices within the broader trends identified.

General Approaches to Training Needs Analysis

The literature reveals a variety of established and emerging approaches to TNA. Of the 406 articles in the corpus, 402 address TNA methodologies, underscoring the centrality of this topic. These can be broadly categorised into competency-based, task-based, and strategic approaches, often employing a mix of qualitative and quantitative methods.

Historically, TNA has been rooted in identifying performance gaps at the organisational, task, and individual levels. Early work critiqued the conventional reliance on performance appraisals, arguing they were insufficient for diagnosing precise development needs and advocated for an integrated approach using multiple levels of analysis and behavioural expectation scales (Leat, 1984). This multi-level framework—encompassing organisational, job, and individual analysis—has become a cornerstone of modern TNA, as scholars argue that TNA should be systematic, data-driven, and participatory (Clarke, 2003; Iqbal & Khan, 2011). The necessity of a structured approach is further emphasised by studies showing that its absence leads to ineffective training and misaligned priorities (Reed & Vakola, 2006).

Competency-based approaches have gained prominence, focusing on the knowledge, skills, and abilities (KSAs) required for specific roles and tasks. This approach is evident in the development of competency frameworks, which map the required skills for a given profession and serve as a basis for identifying training gaps (Hines et al., 2017; Alhajeri, 2022). For instance, the AI4GOV Canvas was developed to identify the specific competences needed for public

sector professionals working with AI, highlighting a structured approach to mapping complex, interdisciplinary skills (Misuraca, et al., 2025). This contrasts with more traditional task-based analyses, which focus on the specific duties of a job role and the training needed to perform them, such as the programme developed for DWI Law Enforcement (Carnahan, 1974). Methodologically, the literature documents a wide array of tools. Surveys and questionnaires are the most common instruments for gathering data on perceived needs and skills gaps (Gyeltshen et al., 2021; Kingshott et al., 2015). These are often supplemented with qualitative methods such as interviews and focus groups to provide deeper context (Raines & Merenda, 2023); (McGary, 2021). A consistent theme across the literature is the call for more participatory and collaborative TNA processes, involving stakeholders at all levels—from frontline officers to senior leadership and even external partners (Clarke, 2003; Bola, et al., 2024). This is seen as crucial for ensuring the relevance and acceptance of training programmes. The importance of such engagement is highlighted in a study on healthcare management, which found that customised programmes responsive to post-COVID-19 challenges improved workforce adaptability and effectiveness (Willie, 2023).

The CEPOL TNA Model: A Dual-Layered Strategic Framework

Within the European context, CEPOL's TNA model stands out for its structured and strategic nature. The corpus contains numerous documents that either detail or evaluate CEPOL's approach, including official reports and academic analyses (CEPOL, 2020) (Hulme, et al., 2021) (CEPOL, 2022).

CEPOL employs a two-tiered system for TNA, which effectively separates strategic foresight from operational planning. This dual-layered framework allows the agency to address both long-term, evolving security threats and the immediate, practical training needs of law enforcement officials on the ground.

The European Union Strategic Training Needs Assessment (EU-STNA)

The EU-STNA is the macro-level, foresight component of CEPOL's model. Conducted every four years, it is a comprehensive, forward-looking exercise designed to identify the strategic training priorities for the entire EU law enforcement community (CEPOL, 2022). Its purpose is to anticipate future security challenges and map the corresponding capability gaps that need to be addressed through training. The EU-STNA is intrinsically linked to the EU's broader security architecture, drawing its priorities from the European Multidisciplinary

Platform Against Criminal Threats (EMPACT) Cycle for organised and serious international crime, as well as the corresponding operational action plans.

The methodology is highly collaborative, involving extensive consultation with EU Member States, JHA agencies (like Europol and Frontex), and other relevant stakeholders. This ensures that the identified strategic needs reflect a shared understanding of the threat landscape and enjoy broad support from both political and institutional stakeholders. The EU-STNA, therefore, functions as a high-level roadmap, answering the question of “what” needs to be addressed over the medium term to enhance the EU’s collective security.

Step 1. Mapping of EU security threats, sub-threats, and horizontal aspects. The methodology departs from desk research of policy and regulatory documents published in the last four years to extract threats, subthreats, and horizontal aspects that are relevant to be addressed within the EU. List of cc. 300 policy documents is provided by DG Home and Justice and Home affairs agencies and approved by DG Home. CEPOL conducts the analysis of the documents and organises the threats, subthreats, and horizontal aspects into thematic categories.

Step 2. Identification of capability challenges. The desk research continues with the identification of existing and potential capability challenges related to each security threat and horizontal aspect. Capability challenges are deficiencies related to the performance of law enforcement officials, i.e. related to their environment, awareness, knowledge, skills or responsibility and autonomy. The outcome of this step is a list of cc. 1500 capability challenges clustered into thematic categories.

Step 3. Identification of needs for EU-level training. Capability challenges are then discussed in focus group meetings, following a decision tree that assists the identification of training needs. Members of the focus groups are professionals working on the given area, namely representatives of DG Home, JHA agencies and Member States, either through EMPACT Groups or via direct nominations. The first question in the decision tree is to determine whether a capability challenge can be addressed by training or not. This data is collected via an online survey from members of the focus group to save time during the meeting, and to get familiarised with the language and approach of the EU-STNA. During the meeting, are discussed only capability challenges that can be addressed by training, i.e., are related to knowledge, skills, responsibility, and autonomy. Challenges related to the work environment are taken on board at a later stage, when drafting the report. Additionally, during the meetings, participants will discuss

whether EU- on national level training shall be the right answer to address each capability challenge. Training of law enforcement officials is a joint responsibility of MS and the EU; however, the EU should not take over tasks from its Members States without proper justification. Hence, this is a core step of the focus group: to capture those training needs where the EU has an added value to be the training provider. This typically happens in case of capability challenges of cross-border nature, where cooperation of law enforcement is essential.

As per Commission Communication on Establishing a European Law Enforcement Training Scheme (COM(2013) 172 final), awareness level training activities are to be organised on national level because such trainings are usually part of the initial training of law enforcement officials at the police academies. However, not all MS have the same capacities when addressing new security threats, hence often the EU steps in, as a provider of awareness level training especially in fast changing fields such as use of digital tools for investigations. Once EU-level training needs are identified, members of the focus group discuss further aspects of the need, such as the urgency, importance, target group and regional aspect of the training. As for urgency and importance, the EU-STNA uses 3-point Likert scales, within a year, 204 years or later and maintain current capacities, improve current capacities, and create new capabilities, respectively.

When defining the potential target groups(s) of training, experts bear in mind the broad definition of law enforcement stemming from CEPOL's legal mandate (Art. 2), encompassing "*staff of police, customs and other relevant services, as defined by individual Member States, that are responsible for, and staff of Union bodies that have tasks relating to, the following: (a) the prevention of and fight against serious crime affecting two or more Member States, terrorism and forms of crime that affect a common interest covered by a Union policy; or (b) crisis management and public order, in particular international policing of major events*". As the landscape of crime continues to evolve, with regional variations rather than homogeneously within Europe and beyond (SOCTA 2025) the final question for focus group participants is whether there is any specific geographical region within the EU that would benefit from training in the given area. Outcomes of the focus group meetings are the list of training needs under each category with the related features, such as urgency, importance, target group and regional dimension.

Step 4. Prioritisation of EU training needs. CEPOL reclusters the cc. 300 training needs identified in line with the Council conclusions on crime priorities, and the EMPACT General Multi-Annual Strategic Plan (G- MASP) and Common Horizontal Strategic Goals (CHSG). Member States will rank the final list main

thematic categories and the training needs within each of them. When formulating priorities for training, Member States consider national preferences from an EU perspective and indicate the official position of their country coordinated internally. Member States also estimate the number of law enforcement officials who need training in each training priority in the next EMPACT Cycle. The priority order is weighted (multiplied) by the coefficient equal to the proportion of each country's representation in the European Parliament. The final list of priorities therefore reflects the sum priority scores given by the Member States.

Step 5. Consolidation of the outcomes. CEPOL shares the prioritised list of training needs with EU-level training providers and DG Home for comments. In this phase training providers in the EU, such as Justice and Home Affairs agencies, the European Crime Prevention Network - EUCPN, the European Union Intellectual Property Office - EUIPO and other organisations indicate which needs they cover by training. CEPOL this way can identify the potential gaps and overlaps in training and drafts the EU-STNA Report. The Report goes through internal and external validation before being published at the beginning of the EMPACT Cycle.

Step 6. Implementation of the EU-STNA. When designing their training portfolio all training providers should ensure that strategic training priorities identified in the EU-STNA are reflected in their training portfolio. CEPOL, throughout the EMPACT Cycle, cross-checks whether the learning outcomes of training activities reflect the core capability gaps.

Step 7. Mid-term review of threat areas and training priorities. A due diligence check on threats and training priorities will be conducted during the second year of the EU-STNA Cycle, to identify any new capability challenges and related EU-level training needs based on recently released documents. This process, which includes data collection from Member States and relevant partners via an online survey, aims to complement the existing EU-STNA training needs without disrupting the original priorities, ensuring both flexibility and stability in training provision.

Step 8. Evaluation of the EU-STNA. Before launching the next EU-STNA cycle, an ex-post evaluation—conducted during the first half of Year 3—will assess both the impact and the implementation of the previous cycle to determine if adjustments to the methodology are needed. This evaluation relies on monitoring checklists completed after key steps of the process, documenting

challenges, deviations, and timing, and it is recommended that the evaluation be carried out by an external evaluator to ensure objectivity and transparency.

The Operational Training Needs Analysis (OTNA)

The OTNA is the micro-level, operational component that translates the strategic vision of the EU-STNA into a concrete portfolio of training activities (CEPOL, 2020). If the EU-STNA asks “what,” the OTNA answers “how,” “who,” and “when.” It is a shorter-cycle analysis, typically conducted for a specific crime area or topic identified as a priority by the EU-STNA.

The OTNA methodology was revised in 2020 to be more agile and user-friendly, and it follows a structured seven-step process:

Step 1. Preparation: Defining the scope and objectives of the specific OTNA. The process begins with a review of prior OTNA iterations, incorporating lessons learnt and best practices. CEPOL develops an implementation plan and disseminates foundational materials, including an introductory presentation and relevant EU-STNA extracts, to CEPOL National Units (CNUs). CEPOL establishes the OTNA Expert Group to ensure the professional quality of the process in cooperation with EMPACT Groups or CEPOL Knowledge Centres (CKCs).

Step 2. Introductory Survey: CEPOL circulates a structured introductory survey to CNUs to confirm participating institutions and contact points. This stage establishes the operational network through which data collection will proceed, ensuring that subsequent inputs are sourced from knowledgeable stakeholders.

Step 3. Questionnaire: In collaboration with the OTNA Expert Group, CEPOL designs a detailed online questionnaire targeting both EU-STNA aligned and emerging training needs. Questions elicit information on training urgency (via a five-level scale), required proficiency levels (mapped to European Qualification Framework standards), target audiences, and estimated trainee numbers. The tool balances closed and open-ended items to accommodate quantitative analysis and qualitative insight. The questionnaire is distributed to national experts to collect in-depth data on the required skills, target audiences, and existing gaps.

Step 4. Interviews and Analysis: To validate and deepen the survey findings, CEPOL conducts follow-up interviews with selected respondents. This triangulation enhances the reliability and granularity of the data.

Step 5. Analysis: Collected data are coded, analysed, and synthesised using tools such as Qualtrics. Training needs are clustered thematically, and topics rated for urgency and proficiency. Statistical methods—such as median analysis and urgency scoring—guide the prioritisation of topics. CEPOL also assesses gaps in the current training catalogue through peer reviews and participant feedback.

Step 6. OTNA Report: Findings are consolidated into an OTNA report. This document outlines the identified categories, urgency rankings, proficiency requirements, and recommended training formats (e.g., on-site vs. online). The report provides evidence for planning, resource allocation, and curriculum design.

Step 7. Portfolio Design: The final step involves the design of the training portfolio by CKCs or expert groups. Workshops are convened to define learning outcomes, instructional methods, and trainer profiles. Activities are tailored to identified urgency levels and functional target groups. The Executive Director formally approves the resulting training activities for inclusion in CEPOL's catalogue.

This structured, multi-stakeholder approach ensures that CEPOL's training offer is evidence-based and directly addresses the validated needs of EU law enforcement officials (CEPOL, 2020). The model is lauded in several evaluations for its relevance and coherence, effectively bridging the gap between strategic policy and operational training (Hulme, et al., 2021); (European Commission, 2022).

The Role of Foresight in TNA

At least nine articles in the corpus explicitly discuss the importance of foresight, forecasting, or anticipating future skills needs, signalling a significant trend in the evolution of TNA. Traditional TNA models have often been criticised for being reactive, addressing existing problems rather than preparing for future challenges (Ferreira & Abbad, 2013). The literature suggests a clear move towards more proactive, anticipatory approaches.

Schafer and Boyd (2007) advocate for 'futures thinking' and scenario planning as essential tools for police agencies to prepare for future challenges. However, they note that organisational inertia often hinders such forward-looking strategies. At the European level, the work of European Centre for the Development of Vocational Training - CEDEFOP has long emphasised the early identification and forecasting of skill requirements better to align education and training systems with labour market needs (Tessaring, 2003) (Schmidt, et al., 2003). The Austrian experience, for example, highlights that the effectiveness of forecasting

depends critically on how the results are communicated and embedded into institutional practices (Lassnig, 2006).

More recently, foresight has been framed in terms of formal competency models. Hines et al. (2017) developed a Foresight Competency Model that organisations can use to assess their capacity for futures thinking and identify areas for development. The increasing availability of large datasets has also enabled new data-informed foresight methodologies, using real-time data from online labour markets to monitor and anticipate skill demands (Stephany & Luckin, 2022).

In this context, CEPOL's EU-STNA serves as a practical, institutionalised foresight exercise for the European law enforcement sector. Its four-year cycle is explicitly designed to look beyond immediate needs and anticipate the skills and knowledge required to tackle emerging security threats. By aligning its strategic assessment with the EU Policy Cycle, CEPOL's TNA model is inherently forward-looking, positioning it at the forefront of the trends identified in the literature.

JHA-Specific and Security-Sector Applications of TNA

The corpus contains a wealth of information on TNA applications within specific security sectors. These studies demonstrate how TNA is adapted to address the unique challenges of different law enforcement domains, from cybercrime to counter-terrorism and border security.

Cybercrime and Digital Forensics have become a major focus of TNA in recent years. The literature highlights a pressing need for law enforcement to develop digital skills to cope with the increasing volume and complexity of electronic evidence (Coman & Alexa, 2022) (Council of Europe & INTERPOL, 2022). TNA in this area often involves gap analysis of technical competencies, with recommendations for specialised training in digital forensics, open-source intelligence (OSINT), and the use of new investigative tools (Dampier & Rayford, 2008) (Avgerinos et al., 2024). A recent trend is the need for training on the challenges posed by the Metaverse (Kyung-Shick et al., 2024).

Counter-terrorism is another area where TNA plays a critical role. Studies from Poland and Turkey, for example, compare training approaches and emphasise the need for practical, scenario-based learning and international cooperation to enhance operational readiness (Zengin & Beğsuel, 2023). The APPRAISE project, a European initiative, focuses on joint training for public and private security actors to mitigate terrorism risks against soft targets, using needs assessment surveys and stakeholder analysis to inform its scenario-based exercises (Morgado, et al., 2024).

Border Security also presents unique TNA challenges. The development of joint training systems for customs professionals at the EU's external borders, for instance, relies on a comparative analysis of national training frameworks to identify operational gaps and harmonise standards (Bakai, Dézsi & Szabó, 2024). The rise of distance learning for border guards has also necessitated TNAs focused on digital literacy and the effectiveness of online pedagogical models (Balendr et al., 2019).

In these specialised fields, TNA methodologies are often highly practical, and context driven. They frequently involve scenario-based assessments, simulations (VerPlanck, 2021), and gap analysis of specific technical skills. CEPOL's own TNA processes reflect this, with the EU-STNA identifying priority crime areas and the subsequent OTNAs delving into the specific training needs within those domains (CEPOL, 2022).

Documentation of Member State-Level Practices

While the corpus includes many articles with a 'National' scope (218), the documentation of specific, systematic TNA practices at the Member State level is often fragmented. Many national-level studies identify training needs in a particular area—such as leadership in the US (McGary, 2021) or fisheries crime in Namibia (Warikandwa, 2023) - but fewer describe the official, institutionalised TNA methodologies of a country's national police force or academy.

Some exceptions exist. The comparative study of police science programs in Italy and the United States by Landolfi (2022) highlights differing national approaches to integrating research and data into training assessment. The analysis of the Spanish National Police training system indicates a shift towards continuous and specialised training, shaped by evolving security challenges (Ramos et al., 2025). The German perspective, as outlined by Zeiser (Zeiser, 2016), emphasises modernisation and closer integration with practical police work, which implies a needs-driven approach.

The literature suggests that many national LEAs conduct TNAs, but these are often reactive, ad-hoc, or lack the systematic, evidence-based rigour of a model like CEPOL's OTNA (Belur, et al., 2019). There is often a disconnect between the identification of needs and the implementation of training, hindered by institutional inertia or resource constraints (Pozo et al., 2025). This highlights the significant "EU added value" of CEPOL, which provides a structured, transnational framework that complements and, in some cases, surpasses the TNA capabilities of individual Member States (Hulme, et al., 2021).

Conclusion

This systematic review of the literature on Training Needs Analysis in law enforcement reveals a field in transition. The traditional, often reactive, approaches to TNA are increasingly being challenged by more strategic, competency-based, and evidence-driven models that incorporate foresight. The analysis highlights the crucial role of TNA in ensuring the effectiveness and relevance of police training in a rapidly evolving world.

In this landscape, CEPOL's TNA methodology stands out as a benchmark for best practice. Its dual-layered system, combining the strategic, forward-looking vision of the EU-STNA with the detailed, operational focus of the OTNA, provides a comprehensive and coherent framework for identifying and addressing the training needs of law enforcement across the Union. The model's emphasis on multi-stakeholder collaboration, data-driven analysis, and alignment with strategic priorities is consistent with the key recommendations emerging from the broader academic and institutional literature.

The quality of CEPOL's training offering is generally perceived positively in the literature that evaluates it (Hulme, et al., 2021) (European Commission, 2022). The agency is seen as a crucial facilitator of cross-border cooperation and knowledge sharing, providing high-quality training that Member States would struggle to replicate on their own. The impact on the law enforcement community is significant, particularly in fostering a common European policing culture and enhancing interoperability among law enforcement agencies.

However, the literature also highlights persistent challenges for CEPOL. The agency's ability to reach its entire target audience across the EU is limited, and concerns have been raised about the quality assurance of outsourced training activities (Hulme, et al., 2021). Furthermore, like many training providers, CEPOL faces the challenge of demonstrating the long-term impact of its training on operational policing outcomes—a gap that the broader literature on training effectiveness also frequently identifies (Belur, et al., 2019).

In conclusion, CEPOL is a central and highly regarded actor in the European law enforcement training arena. Its TNA model, which successfully integrates strategic foresight with operational needs assessment, represents a sophisticated and effective approach to aligning training with the complex security challenges facing the EU. To maintain its position and enhance its impact, CEPOL must continue to address the challenges of reach and evaluation, further embedding a culture of continuous, evidence-based improvement in all its activities. The ongoing evolution of threats, particularly in the digital realm, will require CEPOL's TNA processes to be more agile and forward-looking than ever before.

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Ethics

The data will be made available on request.

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