FLASH REPORT 15

STRENGTHENING LEA CAPABILITIES: EU-FUNDED INNOVATION PROCUREMENT IN PUBLIC ORDER AND SUBSTANCE DETECTION

Main Authors

Marialuna De Tommaso, Silvio Sorace (ENG)

Guillaume Brumter; Vincent Perez de Leon-Huet (EOS)

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ENACT.
European Network Against Crime and Terrorism

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About ENACT

ENACT is a knowledge network focused on the fight against crime and terrorism (FCT). The network is funded under the Horizon Europe Framework Programme in Cluster 3 – Civil Security for Society. The project addresses the call topic HORIZON-CL3-2022-SSRI-01-02 'Knowledge Networks for Security Research & Innovation', aiming to collect, aggregate, process, disseminate and make the most of the existing knowledge in the FCT area.

The project aims to satisfy two major ambitions,

- Provide evidence-based support to the decision-makers in the EU research and innovation (R&I) ecosystem in the FCT domain, targeted explicitly at enabling more effective and efficient programming of EU-funded R&I for the fight against crime and terrorism.

- Act as a catalyst for the uptake of innovation by enhancing the visibility and reliability of innovative FCT security solutions.

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Executive Summary

Law Enforcement Agencies (LEAs) across Europe face increasingly complex challenges in safeguarding public order and security. Rapid technological change, the rise of new forms of crime, and heightened expectations from citizens demand innovative solutions that go beyond traditional procurement practices. Innovation procurement offers a structured pathway for public authorities to stimulate the development and adoption of cutting-edge technologies while ensuring compliance with legal frameworks and respect for ethical standards. By leveraging instruments such as **Coordination and Support Actions (CSA), Pre-Commercial Procurement (PCP), and Public Procurement of Innovative Solutions (PPI),** authorities can move from capacity building to prototype testing and ultimately to largescale deployment. This report focuses on two thematic areas of particular relevance to law enforcement: AI based monitoring of public order and security, and portable air scanning techniques for detecting unauthorized substances. It aims to provide a foundation for initiating innovation procurement in these domains, addressing legal, technical, and ethical aspects, and exploring the potential for a coordinated European effort under initiatives such as the Europol Innovation Lab.

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Scene Setter

European law enforcement agencies face increasingly complex threats that demand innovative, reliable, and ethically sound technologies. Two priority areas have emerged: **AI-based monitoring systems** capable of providing continuous situational awareness, and **Air-scanning techniques** designed to detect drugs, explosives, and other hazardous substances in real time.

AI monitoring solutions offer modular, scalable, and cost-effective platforms deployable across vehicles, drones, ships, and fixed installations. Their added value lies in enabling 24/7/365 surveillance, predictive analytics, and rapid response, while ensuring compliance with GDPR and proportionality principles. Ethical safeguards such as bias mitigation, transparency, and independent oversight are essential to maintain public trust.

Air-scanning technologies complement this by providing non-invasive, portable detection tools that enhance operational efficiency at borders, airports, prisons, and public events. Their strength is in delivering real-time alerts without intrusive searches, improving officer safety and evidentiary reliability. Legal frameworks ensure admissibility in court and proportional deployment, while ethical considerations emphasise safety, privacy, and transparency

Innovation procurement offers a structured pathway to stimulate the development and adoption of these technologies. Through **Coordination and Support Actions (CSA)**, public authorities can align needs and build capacity. **Pre-Commercial Procurement (PCP)** enables the testing and validation of prototypes, while **Public Procurement of Innovative Solutions (PPI)** ensures large-scale deployment of proven solutions. Together, these instruments form a continuum that reduces risk, accelerates innovation, and strengthens operational capacity.

The report addresses **legal, technical, and ethical aspects** of innovation procurement in these areas. Legal considerations include compliance with EU data protection and privacy regulations, procurement law, and intellectual property management. Technical aspects emphasise interoperability, modularity, cybersecurity, and ease of use. Ethical aspects highlight proportionality, transparency, and the protection of civil liberties.

A robust portfolio of EU-funded PCP (PPI and CSA) projects under **Horizon 2020 and Horizon Europe** already provides concrete solutions. These projects demonstrate the **added value of European cooperation**, delivering interoperable, legally compliant, and ethically responsible technologies that strengthen public security while safeguarding fundamental rights.

Together, AI monitoring and air scanning techniques illustrate how **innovation procurement can transform law enforcement capabilities,** ensuring that Europe remains at the forefront of secure, trustworthy, and citizen-focused policing.

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AI for 24/7/365 Monitoring of Public Order and Security

The growing complexity of threats to public safety requires tools capable of providing continuous and reliable monitoring. The use of Artificial Intelligence (AI) for 24/7/365 surveillance of public order represents one of the most promising areas of innovation for law enforcement. The technical objective is to develop modular, scalable, and cost-effective AI solutions that can be easily integrated across multiple operational platforms: ground vehicles, ships, drones, and fixed installations such as masts or towers.

From a technological perspective, these systems are evolving into **multi-layered ecosystems** that combine sensor fusion, edge computing, and cloud-based analytics. Cameras, acoustic sensors, thermal imaging, radar, and chemical detectors can be integrated to provide a holistic situational picture, while edge AI deployed directly on drones or patrol vehicles ensures real-time analysis even in environments with limited connectivity. Cloud platforms then aggregate and correlate data across regions, enabling predictive analytics and cross-border intelligence sharing. This architecture is reinforced by machine learning pipelines that allow continuous retraining of models, ensuring adaptability to new criminal tactics or emerging threats.

Equally important is the **human-machine teaming dimension**: AI systems are designed not to replace officers but to augment their situational awareness. Decision support dashboards and explainable alerts provide intuitive interfaces, allowing operators to understand how anomalies are detected and to act swiftly. Reliability is guaranteed through resilience and redundancy mechanisms, such as backup communication channels and self-healing software, which ensure uninterrupted operation. Finally, integration with robotics—ground robots and UAVs acting as mobile nodes—extends monitoring coverage to areas that are inaccessible or dangerous for human patrols.

In practical terms, these systems must therefore ensure:

- Interoperability with existing communication and command infrastructures.
- Advanced cybersecurity, protecting sensitive operational data from manipulation or intrusion.
- Operational reliability, with real-time detection of anomalies, threats, and criminal activity.
- Ease of maintenance and upgrades, reducing lifecycle costs and ensuring sustainability.

Legal and ethical considerations

The introduction of AI systems for continuous monitoring of public order must be carefully aligned with the European legal framework. Compliance with the General Data Protection Regulation (GDPR) is essential to ensure that the collection and processing of surveillance data respect privacy rights. Equally important is adherence to the principles of necessity and proportionality, which prevent excessive or unjustified surveillance practices. Public procurement processes must follow EU directives to guarantee transparency and fair competition, while clear agreements on intellectual property are required to define ownership of algorithms and datasets. These legal safeguards ensure that AI monitoring systems can be deployed in a way that is both effective and legitimate, supporting law enforcement without undermining fundamental rights.

From an ethical perspective, the deployment of AI monitoring technologies must balance operational effectiveness with respect for civil liberties. Bias mitigation is a critical priority, as algorithms must not produce discriminatory outcomes that could erode public trust. Transparency and accountability are equally important: systems should be explainable, allowing both officers and citizens to understand how decisions and alerts are generated. The protection of civil rights, including freedom of assembly and expression, must remain central to the design and use of these technologies. Finally, independent oversight mechanisms should be established to monitor the responsible use of AI, ensuring that innovation in public security is always accompanied by ethical safeguards.

EU Portfolio of AI solutions for Law enforcement

Over the past decade, the European Union has invested significantly in research and innovation projects under Horizon 2020 and Horizon Europe. These initiatives have generated a portfolio of solutions that directly support law enforcement agencies in adopting AI for continuous monitoring of public order and security. Each solution brings distinctive added value:

STARLIGHT is building European autonomy and resilience in AI, ensuring that police forces can rely on trustworthy and interoperable tools. Complementing this, **ALIGNER** provides a roadmap for responsible AI adoption, focusing on ethical and legal safeguards to maintain public trust.

Operational capabilities are enhanced by projects such as **AIDA**, which delivers advanced data analytics platforms to process massive volumes of investigative data, and **ROXANNE**, which applies AI to uncover hidden links in criminal networks. Predictive approaches are represented by **PREVISION**, enabling agencies to anticipate risks and allocate resources more effectively.

Other initiatives, such as **APPRAISE** and **IRIS**, focus on protecting soft targets from terrorism and strengthening incident reporting in smart city environments. Finally, innovation procurement projects like **SHIELD PCP**, **SALUS**, **PREVENT PCP**, **iProcureSecurity PCP**, and **INTERCEPT PCP** demonstrate how PCP can accelerate the development of crowd protection, IoT forensic tools, and safe remote vehicle stopping technologies

Together, these projects form a comprehensive ecosystem of AI solutions:

- They cover the **full spectrum** from predictive analytics to operational detection.
- They **balance innovation with ethics and legality**, ensuring compliance with EU values.
- They **demonstrate the power of PCP and PPI** to move from prototypes to scalable deployments.
- They r**educe fragmentation** by creating interoperable tools that can be shared across member states.

This portfolio illustrates the a**dded value of innovation procurement**: it not only delivers cutting-edge technology but also ensures that solutions are **aligned with operational needs**, **legally compliant, ethically sound**, and **scalable across Europe**.

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Air Scanning Techniques for Detection of Unauthorized Substances

Law enforcement agencies increasingly require portable and reliable detection technologies to identify drugs, explosives, and ammunition in operational contexts such as border checks, airport security, prison inspections, and public events. Air scanning techniques — based on trace detection, chemical sensing, and AI-enhanced analysis — allow officers to detect unauthorized substances in real time without invasive procedures. The technical objective is to develop modular, scalable, and cost-effective devices that can be seamlessly integrated into daily operations.

From a technological standpoint, these systems are evolving into multi-sensor platforms capable of combining chemical detectors, spectrometry, and advanced air-sampling units. Miniaturization enables officers to carry handheld or wearable devices, while portability ensures rapid deployment in dynamic environments such as checkpoints or mobile patrols. Real-time detection is achieved through sensitive trace analysis, often supported by AI algorithms running at the edge, which immediately process air samples and generate alerts without relying solely on central servers.

Equally crucial is their multisubstance capability: modern devices are designed to detect narcotics, explosives, and chemical agents simultaneously, reducing the need for multiple instruments. AI integration further enhances accuracy by filtering noise, reducing false positives, and continuously retraining models with new datasets to adapt to evolving threats. **Another defining feature is interoperability**, since detection devices must connect with existing communication systems, command platforms, and forensic databases to ensure that alerts are actionable and legally admissible.

In operational terms, these systems must therefore guarantee:

- Miniaturisation and portability, enabling officers to operate flexibly in diverse environments.
- Real-time detection, with immediate alerts on hazardous substances.
- Multisubstance capability, covering narcotics, explosives, and chemical agents.
- AI-driven analysis, reducing false positives and improving reliability.
- Interoperability with communication infrastructures and operational platforms

Legal and ethical considerations

The deployment of air scanning technologies must always be framed within the European and national legal context. A crucial aspect is the admissibility of detection results in judicial proceedings, which requires that the devices and their outputs meet evidentiary standards. Procurement processes must remain transparent and compliant with EU directives to guarantee fair competition and accountability. Furthermore, whenever these technologies collect or store information, strict adherence to GDPR provisions is necessary to safeguard personal data. Finally, operational guidelines should clearly define the circumstances under which officers are authorised to use scanning devices, ensuring that their application remains proportionate and justified.

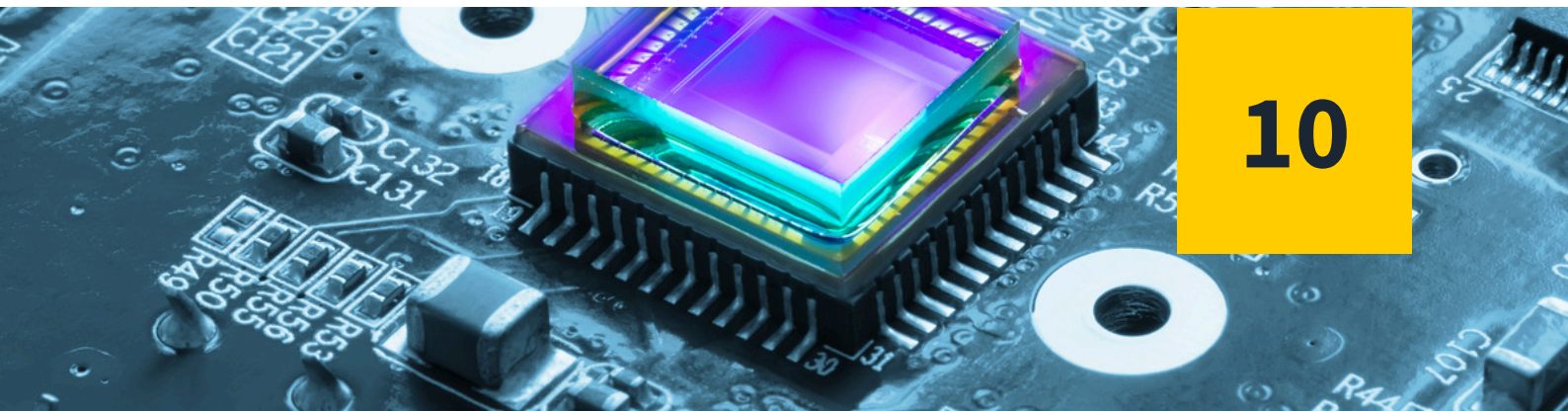
From an ethical perspective, air scanning technologies must be designed and deployed in ways that respect individual rights and public trust. Their non-invasive nature represents a significant advantage, as it reduces the need for physical searches and minimises intrusion into personal privacy. However, proportionality remains essential: the use of such devices should be limited to situations where operational needs justify their deployment. Safety is another critical dimension, as technologies must not expose officers or civilians to harmful emissions or risks. Transparency also plays a key role, since citizens should be informed about the presence and use of detection technologies in public spaces, reinforcing confidence in law enforcement practices.

EU portfolio of detection solutions

European innovation procurement has already produced a portfolio of projects that address the need for portable, reliable, and non-invasive detection technologies. These initiatives provide concrete solutions for law enforcement agencies, each with distinctive added value:

MELCHIOR pioneered infrasound interrogation methods to identify drugs and explosives at borders, offering non-invasive and efficient screening. **METEOR** developed portable air-sampling systems for customs and border authorities, capable of detecting trace amounts of hazardous substances in real time.

The **Odysseus** project created a collaborative detection hub that integrates multiple sensing technologies, ensuring interoperability across agencies. Similarly, **BAG-INTEL** applied AI to baggage inspection, automating the identification of suspicious items in airports and reducing manual workload.



More recently, PCP initiatives such as DrugDetect PCP and PREVENT PCP have focused on innovative procurement for drug detection in prisons and surveillance in public areas, while INTERCEPT PCP addresses the challenge of safely stopping vehicles through interoperable solutions.

Together, these projects form a comprehensive ecosystem of detection technologies:

- They **cover multiple operational contexts** — prisons, borders, airports, and public spaces.
- They **combine AI with advanced sensing**, enabling real-time alerts and reducing reliance on manual checks.
- They **demonstrate the value of PCP and PPI**, moving from prototypes to scalable deployments.
- They **strengthen European cooperation**, ensuring interoperability and shared standards across member states.

This portfolio illustrates the **added value of innovation procurement in detection technologies**: it delivers solutions that are **portable, safe, legally compliant, and directly usable by officers** in the field, while fostering European autonomy in security innovation.

Procurement Strategy for Security Innovation

Public procurement has become one of the most powerful instruments for shaping innovation in the European Union. In the field of civil security, innovation procurement allows law enforcement agencies and public authorities to act not only as end-users but also as drivers of technological development. By aggregating demand and setting functional requirements, procurers can steer industry towards solutions that directly respond to operational needs. This approach reduces fragmentation, accelerates the uptake of new technologies, and ensures that Europe maintains strategic autonomy in critical security domains.

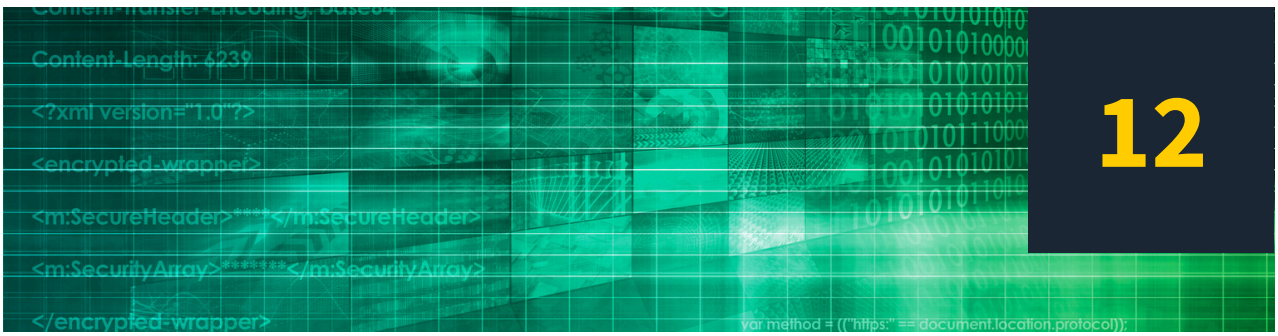
Three complementary instruments are at the heart of the EU's procurement strategy:

- **Pre-Commercial Procurement (PCP)**[1]: PCP is used to procure research and development services. It enables public buyers to compare alternative technological approaches, test prototypes in real operational environments, and filter out the most promising solutions. This process reduces risk by ensuring that only validated technologies progress to deployment. PCP has been widely applied in security projects such as **PREVENT PCP**[2], which focused on augmenting security in public transport and public areas, and **SHIELD4CROWD**[3], which prepared the ground for PCP in crowd management.

- **Public Procurement of Innovative Solutions (PPI)**[4]: PPI facilitates the large-scale diffusion of innovative solutions that are already close to market but not yet widely available. By acting as early adopters, public authorities create sufficient demand to incentivise industry to invest in commercialisation. This mechanism has been crucial in bridging the gap between research outcomes and market deployment, ensuring that innovative solutions reach operational maturity.

- **Coordination and Support Actions (CSA)**[5]: CSAs act as the strategic foundation for the procurement ecosystem. They do not fund the purchase of R&D or solutions directly but instead finance the coordination, networking, and capacity-building among public buyers. These actions are essential for identifying common needs, conducting market consultations, and harmonising legal frameworks across borders, effectively preparing the ground for future PCP and PPI initiatives.

Together, these instruments form a comprehensive innovation pipeline: **CSAs** build the necessary networks and strategies, **PCP** develops and tests prototypes, while PPI scales validated solutions across Europe. The transition from **Horizon 2020 (H2020) to Horizon Europe (HE)** represents a strategic shift in how the European Union leverages public demand to drive innovation. The following table provides a direct comparison of the number of projects, total costs, and EU contributions across three key instruments: **PCP** (Pre-Commercial Procurement), **PPI** (Public Procurement of Innovative Solutions), and **CSA** (Coordination and Support Actions).



	No. of Projects		Total Costs		EU Contribution		Key Programmes / Sectors	
	H2020	HE	H2020	HE	H2020	HE	H2020	HE
PCP	~50	~25–30	~€350M	€4M – €6M per project	~€245M	~€180 M	Health, ICT, Security, Transport	Health, Digital, Civil Security
PPI	~30	~15–20	~€220M	€2M – €5M per project	~€75M	~€85M	Energy, Health, Digital Infra	Climate, Energy, Health
CSA	~180+	~120+	~€250M	€0.5M – €2M per project	~€240M	~€210 M	Networking, Benchmarking , Strategy	ERA, Widening, Clusters

Table 1: Comparative breakdown of project volume, total costs, and EU contribution for PCP, PPI, and CSA instruments under Horizon 2020 and Horizon Europe (status as of 2026)

The data reveals a clear evolution in the European Commission's strategy to bridge the gap between research and market uptake. One of the most significant changes observed in Horizon Europe is the enhanced financial commitment toward the PCP instrument. By providing a more robust EU contribution relative to total project costs, the framework has effectively lowered the financial barriers for public procurers, resulting in high levels of investment even as the programme continues to mature. Similarly, there is a visible trend toward large-scale deployment through PPI. In the current framework, the EU contribution has already surpassed H2020 levels, indicating a stronger political will to see innovative solutions—particularly in Climate and Energy—actually implemented in public infrastructures. Supporting this entire ecosystem, CSAs continue to act as the strategic backbone, providing the necessary networking and benchmarking required to prepare the ground for complex, cross-border tenders. Finally, the transition from H2020's "Societal Challenges" to the Cluster-based approach of Horizon Europe shows a more targeted focus. We now see procurement efforts heavily concentrated in areas of strategic autonomy, such as Civil Security and Digital transition, ensuring that public purchasing power is directly aligned with the EU's long-term geopolitical and technological goals.

Strategy Applied to Thematic Areas

The procurement strategy for security innovation is not a generic framework but a tool that can be tailored to specific operational domains. For instance, in the field of **AI monitoring for public order**, PCP instruments allow law enforcement agencies to test multiple prototypes of edge-AI surveillance systems across diverse environments — from drones patrolling borders to fixed installations in urban areas. By comparing different technological approaches, agencies can identify solutions that guarantee interoperability, resilience, and compliance with GDPR. Once validated, PPI mechanisms can then scale these solutions across Member States, ensuring that AI monitoring becomes a standardised capability rather than a fragmented set of pilots.

Similarly, in the domain of **air-scanning for detection of unauthorised substances,** innovation procurement enables the development of portable multi-sensor devices that combine chemical detection with AI-driven analysis. Through PCP, prototypes can be trialled in airports, prisons, and public events, providing real-world feedback on usability, accuracy, and safety. PPI then ensures that the most effective devices are adopted at scale, creating a European standard for non-invasive detection technologies. This approach not only accelerates the deployment of advanced tools but also strengthens legal admissibility and public trust, since procurement embeds ethical and evidentiary safeguards from the outset.

By embedding the procurement strategy within thematic areas such as AI monitoring and air-scanning, the EU demonstrates how innovation policy translates into **operational capabilities**. This thematic application illustrates that procurement is not an abstract process but a driver of concrete solutions that enhance public safety while respecting European values.

Lessons Learned from the EU Portfolio

The EU's portfolio of projects demonstrates the tangible benefits of innovation procurement. **PREVENT PCP** showed how a consortium of public buyers from eight countries could jointly define requirements and test solutions for unattended baggage detection and crisis management. **INTERCEPT PCP**, launched under Horizon Europe, is pioneering interoperable solutions for the safe remote stopping of vehicles, a critical capability for law enforcement in high-risk scenarios. **DrugDetect PCP** illustrates how procurement can address specific operational challenges in correctional institutions, while **SALUS** highlights the role of IoT forensic tools in digital investigations.

The success of the EU's strategic investment is best demonstrated by the specific operational tools that have emerged from the **security and AI portfolios analysed in the preceding sections**. As summarised in **Table 2**, these projects have moved beyond theoretical research to deliver tangible, field-ready capabilities that directly support Law Enforcement Agencies (LEAs) across Europe.

Project	Principal Operational Tool / Outcome	Core Capability
PREVENT PCP	**AI-Video Analytics Suite**	Real-time tracking of unattended baggage and automated suspect re-identification across transit networks.
INTERCEPT PCP	**Digital "Kill-Switch" Protocol**	Standardized hardware/software interface for the safe, remote deceleration and stopping of non-cooperative vehicles.
DrugDetect PCP	**Trace Screening Sensors**	Portable, non-invasive scanners for detecting synthetic drugs and precursors through sealed surfaces and containers.
SALUS	**IoT Forensic Toolkit**	Unified platform for extracting and correlating data from smart devices to create secure, court-admissible evidence timelines.
STARLIGHT	**Trustworthy AI Repository**	A suite of European-autonomous AI tools designed to ensure police forces have resilient, interoperable, and ethically sound AI.
AIDA / ROXANNE	**Advanced Analytics Platforms**	AI-driven platforms capable of processing massive investigative datasets to uncover hidden links within criminal networks.
MELCHIOR	**Infrasound Interrogation Device**	A non-invasive screening tool using infrasound to identify hidden drugs and explosives at border checkpoints.
METEOR	**Portable Air-Sampling System**	Real-time detection of trace amounts of hazardous substances via high-sensitivity air quality sensors for customs.
BAG-INTEL	**AI Baggage Inspection Tool**	An automated identification system for suspicious items in airports, reducing manual workload through computer vision.

Table 2: Summary of high-impact security and detection solutions delivered to law enforcement through the EU's innovation procurement and AI portfolios

The operational outcomes summarised above confirm that the strategic deployment of innovation procurement:

- Stimulates competition among European suppliers.
- Ensures interoperability and cross-border usability of high-tech security tools.
- Embeds legal and ethical safeguards directly into the technological design (Privacy by Design).
- Provides crucial "first customer" references that strengthen the global competitiveness of the European security industry.

Ultimately, the results from the **aforementioned portfolios** illustrate the dual value of this approach: it not only delivers cutting-edge technology but also ensures that solutions are aligned with the practical needs of officers in the field, legally compliant, and ready for large-scale adoption across the Union.

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Strategic Recommendations

Looking forward, several strategic directions emerge to strengthen the role of procurement as a driver of innovation in civil security. These pillars ensure that the transition from research to field application is not only successful but also sustainable across the Union:

- Consolidation of efforts: To avoid isolated initiatives, the EU should promote a coherent ecosystem by establishing permanent coordination platforms and encouraging joint calls. This reduces duplication and creates economies of scale, making innovation more affordable.
- Common standards: Developing shared evaluation frameworks for technical performance, cybersecurity, and ethics (including GDPR) is vital. These benchmarks provide industry clarity and ensure that tools developed in one Member State are interoperable across all borders.
- Joint pilots: Expanding multi-state pilot projects allows Law Enforcement Agencies (LEAs) to validate technologies in diverse environments. These pilots build trust between agencies and provide industry with the feedback necessary to refine product usability.
- Digital sovereignty: Prioritising European suppliers and home-grown innovation reduces reliance on external providers in critical security domains, safeguarding sensitive data and stimulating the growth of the European industrial base.

Taken together, these strategic directions highlight how procurement can evolve from a procedural necessity into a genuine policy instrument for innovation. By consolidating efforts, harmonising standards, expanding joint pilots, and embedding digital sovereignty, the EU can ensure that security technologies are not only effective but also interoperable, ethically sound, and aligned with European values. In this way, procurement becomes the bridge between research and deployment, transforming innovation into operational reality across Member States.

How To Engage in Innovation Procurement

To translate Strategic Recommendations into operational reality, it is essential for public authorities and law enforcement agencies (LEAs) to understand how to access and manage these EU frameworks. Participation typically follows a structured lifecycle, and depending on the maturity of the technology needed, agencies can join as lead procurers (managing the tender) or consortium members through three main channels:

- **For R&D and Prototyping (PCP)**: Look for calls under Horizon Europe Cluster 3 (Civil Security for Society) that specifically mandate a PCP approach.
- **For Large-scale Deployment (PPI)**: Target calls that support the purchase of existing innovative solutions that require cross-border scale to be viable.
- **For Preparation (CSA)**: Participate in "Coordination and Support Actions" to join networks of public buyers, which is often the best first step to influence future tender requirements and share best practices.

The procurement process is generally divided into a clear, four-phase lifecycle. This journey ensures that the transition from identifying a strategic need to field-wide deployment is legally compliant, cost-effective, and operationally sound.

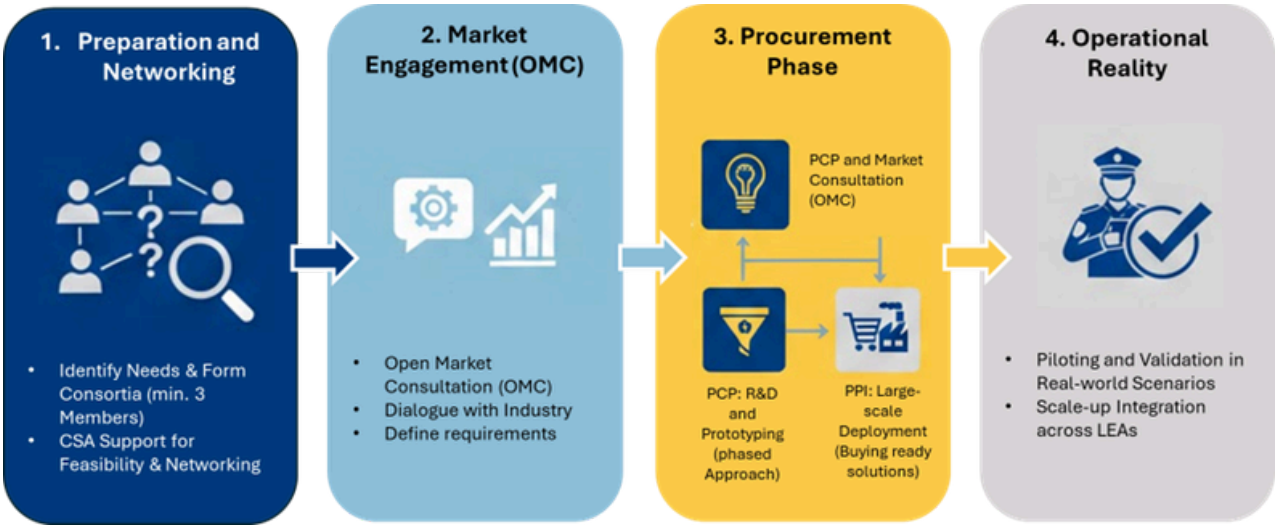

Figure 1: The Innovation Procurement Journey: from Need to Deployment

1. Preparation and Networking

The journey begins by identifying a specific operational gap. Agencies rarely act alone; the EU framework requires the formation of a consortium of at least three public buyers from different Member States. In this phase, Coordination and Support Actions (CSAs) provide the necessary financial and structural support to conduct feasibility studies and build the networking foundation required for a joint tender.

2. Market Engagement (Open Market Consultation - OMC)

Before a formal tender is launched, the consortium engages in a dialogue with the industry. The OMC is a critical step to:

- Inform the market about upcoming procurement needs and strategic objectives.
- Evaluate the current state-of-the-art technology and global market trends.
- Verify the non-existence of COTS (Commercial Off-the-Shelf) solutions, ensuring that the challenge cannot be met by existing products and thus justifying the need for Research and Development (R&D).
- Refine functional requirements based on realistic technical possibilities and industry feedback, balancing ambition with feasibility.

3. The Procurement Phase (PCP vs. PPI)

Depending on the maturity of the required solution, the process follows one of two paths:

- PCP: A phased, competitive R&D approach where multiple suppliers develop and test prototypes. Only the most successful solutions progress to the next stage.
- PPI: Used when solutions are near market. It allows for large-scale deployment by acting as a "first customer," incentivising the industry to commercialise ready-to-use tools.

4. Operational Reality

The final phase focuses on the transition to the field. Solutions are piloted and validated in real-world scenarios by the agencies that initiated the process. Following successful validation, the technologies are integrated and scaled up across LEAs, ensuring that the innovation becomes a permanent part of the European security infrastructure.

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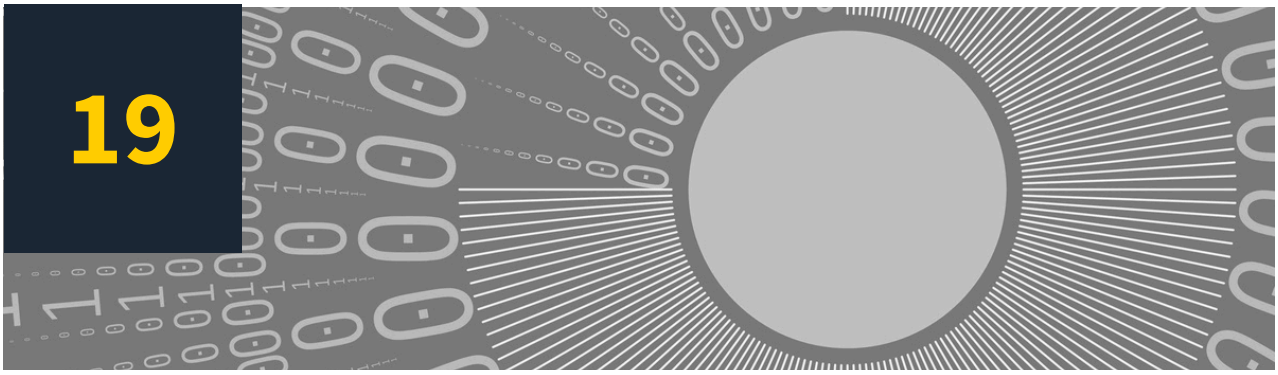

Conclusion and next steps

This report has outlined how innovation procurement can serve as a strategic instrument to strengthen law enforcement capabilities in two critical areas: AI-based monitoring of public order and security, and portable air-scanning techniques for detecting unauthorised substances. By leveraging the CSA–PCP–PPI continuum, public authorities can move from capacity building and prototype development to full-scale deployment of innovative solutions.

Legal, technical, and ethical considerations must remain central throughout this process. Compliance with EU regulations, interoperability of systems, and respect for civil liberties are essential to ensure that innovation procurement delivers both operational effectiveness and societal trust. Ethical safeguards, transparency, and accountability mechanisms will be key to maintaining legitimacy and public confidence.

Looking ahead, the challenge is to consolidate these efforts into a coherent European innovation ecosystem. This requires harmonised standards, shared testing environments, and coordinated pilots across member states. By pooling resources and knowledge, Europe can accelerate the transition from prototypes to scalable deployments, ensuring that law enforcement agencies are equipped with cutting-edge technologies while safeguarding fundamental rights. As detailed in the section 'How To Engage in Innovation Procurement', this transition is supported by a clear operational roadmap designed to guide agencies from the initial identification of needs to full-scale field integration.

In conclusion, AI monitoring and air-scanning techniques exemplify how Europe can leverage innovation procurement to reinforce public security. They show that technological progress, when guided by legal safeguards and ethical principles, can deliver solutions that are both effective and trustworthy. The next step is to transform this portfolio into a sustainable, interoperable, and citizen-focused security framework, positioning Europe at the forefront of responsible innovation in law enforcement.

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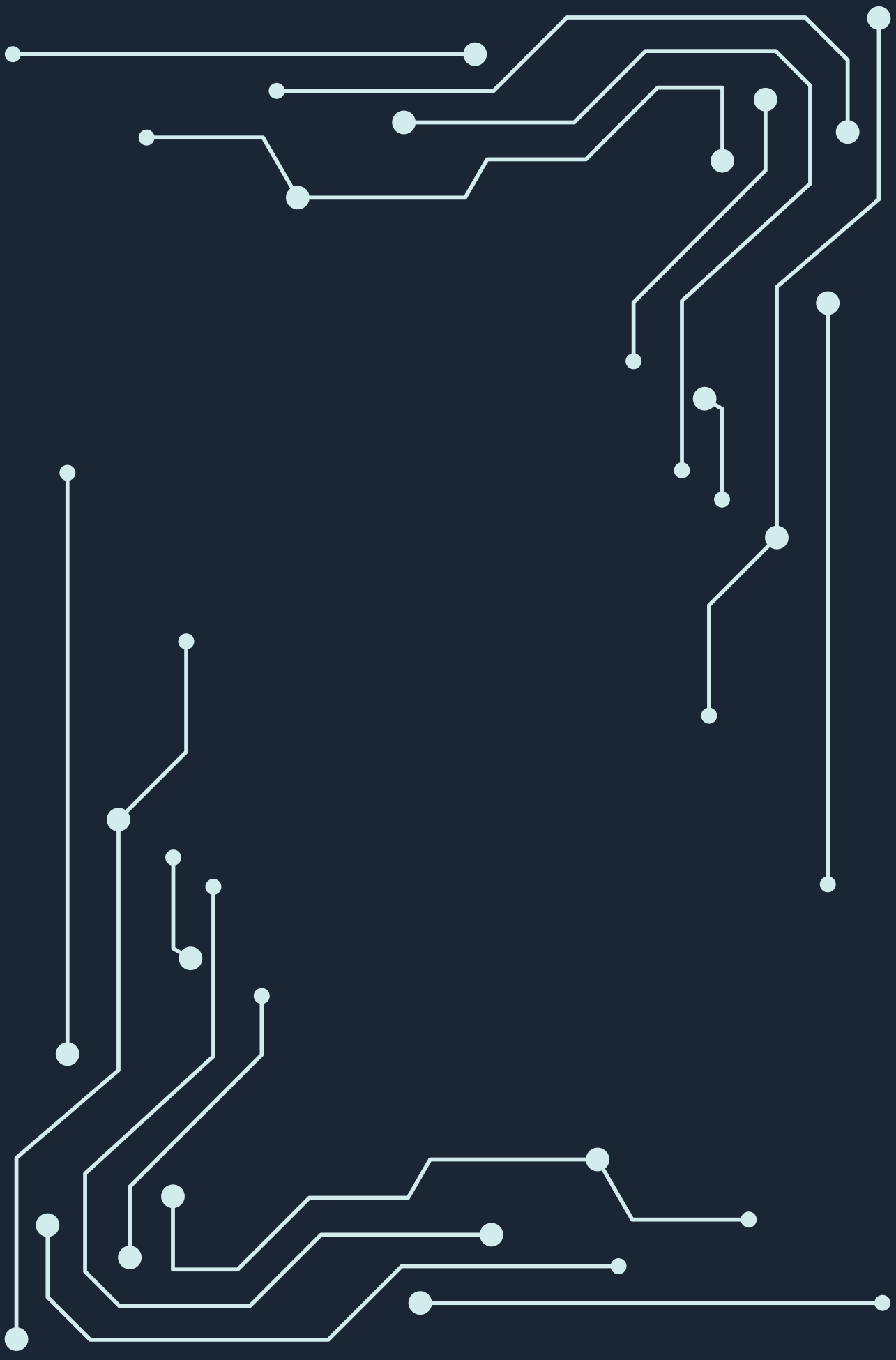
Annex 1: Overview of projects

Framework	Grant Agreement	Acronym	Name	Funding Call	CORDIS Link	Start	End
H2020	101021797	**STARLIGHT**	Sustainable Autonomy and Resilience for LEAs using AI against High-level crime	H2020-SU-SEC-2020	STARLIGHT	2021	2025
H2020	101021687	**ALIGNER**	Aligning AI Roadmap for Policing	H2020-SU-SEC-2020	ALIGNER	2021	2024
H2020	883341	**AIDA**	Artificial Intelligence and Advanced Data Analytics for LEAs	H2020-SU-SEC-2019	AIDA	2020	2023
H2020	833635	**ROXANNE**	Real-time network, speech & text analytics for LEAs	H2020-SU-SEC-2018	ROXANNE	2019	2022
H2020	833115	**PREVISION**	Prediction and Visual Intelligence for Security	H2020-SU-SEC-2018	PREVISION	2019	2022
H2020	101021981	**APPRAISE**	AI-based Protection of Public Spaces	H2020-SU-SEC-2020	APPRAISE	2021	2024
H2020	101021727	**IRIS**	Incident Reporting and Incident Response System	H2020-SU-SEC-2020	IRIS	2021	2024
Horizon Europe	101225962	**SHIELD PCP**	Security Harmonized Innovation for Enhanced LEA Crowd Protection	HORIZON-CL3-2022-SSRI-01	SHIELD PCP	2023	2027
Horizon Europe	101225719	**SALUS**	Strengthening Law Enforcement with IoT Forensic Tools	HORIZON-CL3-2022-SSRI-01	SALUS	2023	2026
H2020 (PCP)	101020323	**PREVENT PCP**	Public Transport Security Innovation Procurement	H2020-SU-SEC-2019	PREVENT PCP	2021	2024
Horizon Europe (PCP)	101121281	**INTERCEPT PCP**	Innovation Procurement for Safe Remote Vehicle Stopping	HORIZON-CL3-2023-SSRI-01	INTERCEPT PCP	2024	2025

Framework	Grant Agreement	Acronym	Name	Funding Call	CORDIS Link	Start	End
H2020	785793	**MELCHIOR**	Infrasound Interrogation for Detection of Drugs & Explosives	H2020-SEC-2017	MELCHIOR	2018	2021
H2020	787002	**METEOR**	Portable Air-Sampling for Customs & Borders	H2020-SEC-2017	METEOR	2019	2022
H2020	787051	**ODYSSEUS**	Collaborative Detection Hub for Explosives & Drugs	H2020-SEC-2017	ODYSSEUS	2020	2023
H2020	786939	**BAG-INTEL**	Intelligent Baggage Inspection with AI	H2020-SEC-2017	BAG-INTEL	2019	2022
Horizon Europe (PCP)	101121282	**DrugDetect PCP**	PCP for Drug Detection in Correctional Institutions	HORIZON-CL3-2023-SSRI-01	DrugDetect PCP	2023	2027
H2020	101020415	**DARLENE**	Deep AR Law Enforcement Ecosystem	H2020-SU-SEC-2019	DARLENE	2020	2023
H2020	653587	**LAW-TRAIN**	Virtual Training for Cross-Border Police Interrogations	H2020-SEC-2014	LAW-TRAIN	2015	2018
H2020	700024	**TENSOR**	Intelligence Tools for Counter-Terrorism	H2020-SEC-2016	TENSOR	2016	2019
H2020	740787	**SIRIUS**	Digital Forensics and Investigation Support	H2020-SEC-2016	SIRIUS	2017	2020
H2020 (PCP)	740685	**iLEAD PCP**	Innovation Procurement for Future Law Enforcement Requirements	H2020-SEC-2016	iLEAD PCP	2017	2021
H2020 (PCP)	883345	**iProcureSecurity PCP**	Innovation Procurement for Next-Generation Emergency Medical Services	H2020-SU-SEC-2019	iProcureSecurity PCP	2020	2023



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