The ePOOLICE Project: Environmental scanning against organised crime

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Abstract
ePOOLICE is the acronym for early Pursuit against Organised crime using environmental scanning, the Law and Intelligence systems. It is a project co-funded by the European Union (EU) under its seventh framework programme for research and development (FP7). The project has several objectives: the rapid identification of new organised crime threats, the identification of ‘weak signals’ by monitoring the external environment (political, economic, social, technological factors), as well as the identification of indicators. The project is based on several methodologies aided by the development of technological tools. It has been tested in several scenarios, especially in human trafficking and cocaine trafficking.

Key words:
Organised crime, environmental scanning, early warning, future trends

Introduction
ePOOLICE is the acronym for early Pursuit against Organised crime using environmental scanning, the Law and Intelligence systems. It is a project co-funded by the European Union (EU) under its seventh framework programme for research and development (FP7). More precisely, it was granted as a result of the fifth security research call of this programme (FP7-SEC-2012-1) as an answer to a topic included in the activity Security and society and within the area Foresight, scenarios and security as an evolving concept. The topic addressed by the ePOOLICE project was ‘developing an efficient and effective environmental scanning system as
part of the early warning system for the detection of emerging organised crime threats'. Therefore, this is the project’s main objective (3).

According to the EU request, the project’s objectives were:

- to conduct research into technologically-/actor-driven systems and tools which support environmental scanning to enable the rapid identification and qualification of new organised crime threats through the systematic monitoring of the external environment for the detection of ‘weak signals’ of upcoming opportunities and threats;
- to scan the environment to feed new and emerging threats into the serious and organised crime threat assessment processes;
- to identify a combination of technological resources and human actors in order to improve the process of detecting and selecting new OC threats that warrant EU level analysis and EU-wide responses;

in order to improve

- the process of detecting and selecting new organised crime threats at EU level;
- the effectiveness of the end-users (LEAs, criminological institutes and private businesses);
- the ability of strategic decision-makers to counterbalance detected upcoming threats before they materialise;
- the understanding of the technologies and trends, leading to the strategic planning into security issues of all stakeholders.

Methodological Approach

Environmental scanning (ES) is the main objective and subject of the ePOOLICE project, and therefore, an agreement regarding its definition and scope needed to be reached in order to achieve a common understanding among all parties within the project, so all efforts could be coordinated towards a common and successful goal.

After some internal discussion the agreed definition of environmental scanning (ES) to be used in the scope of the ePOOLICE project was adapted from Maree Conway from Thinking Futures, as follows: ‘the art of systematically exploring and interpreting the external environment to better understand the nature of trends and drivers of change and their likely future impact on Organised Crime’ (Conway 2016).

(3) Further information about the project can be retrieved from: https://www.epoolice.eu and http://cordis.europa.eu/project/rcn/106659_en.html
The environmental scanning fits into the strategy development and implementation cycle, which consists of scanning, thinking, making decisions and planning. Though all steps are interdependent, each one of them needs to be considered as a separate process. We understand environmental scanning as a systematic and formal process with two main objectives:

- Understanding the nature of change in the environment;
- Identifying opportunities, challenges and future developments.

Its main goal, however, is to provide an answer to the questions raised (i.e. what is happening and what could happen), through the determination of what we know and what we do not know about a concrete phenomenon, from a strategic perspective. The Pestle model has traditionally been a part of environmental scanning and monitoring activities in most organisations. It is a process of analysis that aims to study the political, social, economic, technological, legal and environmental issues affecting a sector or a field, configured as a first step in many future studies (Bensoussan and Fleisher, 2013). This method is sometimes called STEEP. It is a way to break the general environment into sub-categories or segments, aiding the following of an analytic process in which we can research each of the components of a phenomenon with strategic management purposes.

The process involves the understanding of each of the mentioned segments as well as their effects on the object of the study, answering the following questions: What are the current key events and trends in this segment? What evidence supports the existence of these trends? How have these trends evolved? What are the nature and degree of change on turbulence within trends? How do these trends affect organised crime? Pestle represents a ‘System of Systems Analysis’ approach (SoSA), also known as a ‘Federation of Systems’ (Svendsen, 2015).

Scanning is the first step. It provides information about what is happening in the external environment, about what is changing, and about what issues require attention on a continuing basis. This information, after being evaluated and analysed, has a strategic purpose, as it contributes to creating the “big picture” of the criminal phenomenon that will finally will allow the adoption of strategic, tactical and operative decisions. To identify these options, a good knowledge about external drivers of change is needed. This implies the monitoring of events that can be grouped in trends, so that drivers, which move trends in certain directions, can be detected and the changes can be analysed. Major changes in the environment induce changes in crime, so it becomes essential for law enforcement agencies to scan this environment and to look for its evolution in order to be best prepared for the emerging organised crime threats.

Environmental scanning does not analyse known crime trends but non-criminal drivers of change, and looks for their potential impact in criminal trends in the future. This is the rea-
son to follow the Pestle (Politics, Economics, Social, Technological, Legal, and Environment) model to assess key variables that define the factors of change. Using a model such as Pestle provides a starting point for the ES. A Pestle analysis provides key information for risk analysis. Criminal phenomena are continuously evolving, and organised crime groups have the abilities to adapt their activities, objectives, modus operandi, detecting opportunities in the political, economic, social and technological landscape. For example, a Pestle approach is largely adopted by the FATF methodology for money laundering risk assessment, or researching on terrorism (Blanco and Cohen, 2014). A methodology that structures basic information and enables the application of SWOT analysis, risk analysis or trend analysis.

Accordingly, as stated in the ePOOLICE Description of Work (DoW), the ePOOLICE environmental scanning systems provides a systematic overview of the surrounding environment, so that ‘weak signals’ that may trigger a heavy and oriented situation awareness computation can be detected in order to better appreciate and anticipate the emerging organised crime. H. Igor Ansoff introduced the idea of ‘weak signals’ in his famous paper on strategy: ‘Managing Strategic Surprise by Response to Weak Signals’, published in 1975. Ansoff wrote: “We might call this graduated response through amplification and response to weak signals, in contrast to conventional strategic planning that depends on strong signals. Such a practical method for planning a graduated response can be developed. The first task is to explore the range of weak signals that can be typically expected from a strategic discontinuity” (Ansoff 1975: 23).

Ansoff defines weak signals as signals that have a higher degree of uncertainty based upon human assessment of uncertainty. The concept of weak signals entails that the weak signal is an antecedent to the event. However, factors that are not necessarily understood in a conditional or causal fashion can also be identified. Researchers have proposed different definitions for this concept. Ponomareva, J. V. and Sokolova, A. V. (2015) collect the existing definitions of weak signals (WS), and propose the following one: “[Weak signals are] events that characterise a high degree of uncertainty and lag time, there is at the start no complete and relevant information about their consequences, but they indicate future changes and can lead to serious transformations in the current social and economic situation; sometimes WS may be harbingers of disruptive events or witnesses to new possibilities”(p.4). Of course, following Hiltunen (2008), there are objective weak signals which can be applied in all areas and subjective weak signals which are more important for specific fields.

An example of this in the organised crime field could be the development of 3D printers, which could be used to produce firearms. We know that it is possible now to manufacture metal firearms, being more expensive to get the printer than to purchase a firearm in the dark market. So, from an early warning model, we can establish an indicator to monitor the cost of 3D printers. Ponomareva and Sokolova (2015) offer an example applied to bioprinting. Weak signals are the way in which we can improve present and future risk analysis, anticipating the alert about possible impacts, although in the present moment we cannot establish a high probability.
The ePOOLICE Project: Environmental scanning against organised crime

An environmental radar scans a virtual environment represented by huge volume of open source information describing: tangible and intangible resources (water, petrol, climate, culture, etc.); political, legal and social organisations; technological advances and innovation.

The described ES concepts are directly related to the Europol definitions of Crime Enablers and Crime-Relevant Factors (CRF) in its SOCTA (2013) methodology and reports: ‘Crime enablers are a collection of “Crime-Relevant Factors” (CRF) that shape the nature, conduct and impact of serious and organised crime activities. CRF affect crime areas and the behaviour of both criminal actors and their victims. They include facilitating factors and vulnerabilities in society creating opportunities for crime or crime-fighting. They are the instruments by which serious and organised crime operates and are common to most areas and most groups. Certain enablers are particularly relevant for multiple crime areas and provide opportunities for different OCGs in their various activities. These horizontal crime enablers include the economic crisis, transportation and logistical hotspots, diaspora communities, corruption, legal business structures (LBS) and professional expertise, public attitudes and behaviour, risks and barriers of entry to criminal markets, the internet and ecommerce, legislation and cross-border opportunities, identity theft and document fraud and violence (…). CRF are facilitating factors and vulnerabilities in the environment that have an influence on current and future opportunities or barriers for OCGs and SOC areas. CRF are analysed via horizon scanning, which aims to identify future trends in society and future crime threats’ (Europol 2013:11)

The ePOOLICE project identifies these CFR through the use of environmental scanning, weak signals, and trend analysis.

Trend analysis aims to identify trends and to detail the forces that are influencing, in what direction and at what speed (i.e. the intensity of change). A trend is a pattern of observable change, a set of processes that are not easily changed and that will continue in the future. Trends are affected by drivers. A driver is an agent or a factor that guides a change. From each driver, it is possible to identify the indicators that help measure and assess its impact. This fosters a model to follow up on a matter that is also complemented with a determination of the effects on the phenomenon researches as well as their impact and probability of occurrence. The paper written by Blanco and Cohen (2014) on the future of the fight against terrorism in Europe is an example that is based on the model chosen by RAND Europe (2013) for the analysis of the future of society in Europe in 2030, and on Lia’s model (2005) to study the future of terrorism, as well as the models used by the Proteus program of the American intelligence services. A similar process was followed by Europol to point out the future drivers of organised crime (Europol, 2015). For example, when addressing cocaine trafficking, this was the preliminary approach developed during the ePOOLICE project, pointing out that each one of these key factors needed to be defined, specifying how they were operationalised in the context of cocaine trafficking. The proposed indicators are not the only existing ones, but reasons of efficiency in the project made it advisable to take
existing indexes of general acceptance, keeping in mind that sometimes perhaps these indexes could not be the best way to measure a specific variable.

- **Economic:** markets evolution (concentration, actors), prices, profits, drug demand, drug supply, economic crisis, inequality, poverty, economic freedom...
  - *Indicators:* Economic Freedom Index (The Heritage Foundation), Unemployment rates, Gini index, GDP ...

- **Political:** weak or failed states, corruption, geography (border control, mountains ...), judiciary system, armed conflicts, behaviour of elites, means shortage, political system, links with terrorism, violence ...
  - *Indicators:* Corruption Index (Transparency International), Democracy Index (EIU), Fragile States Index (FP) and its components, Global Peace Index, Global Terrorism Index, number of ..., % of ...

- **Social:** demography (age, sex, nationalities ...), migrations, education level, human development, unemployment, health system, urbanisation ...
  - *Indicators:* urbanisation trends, Human development index (UN) ...

- **Technological:** internet use for trafficking, drones (for transportation, for example through borders), deep web, Darknets, Black markets (Silk road) innovation, laboratories, online payments, bitcoin...
  - *Indicators:* internet penetration, number of users of applications, laboratories detected, amount of payments online ...

- **Legal:** legal system, judicial system, prison ...
  - *Indicators:* new legal frameworks alerts, number of prison population ...

- **Crime:** age, sex, nationalities, type of crime, day of the week, hour, place, modus operandi, means used, media seized ...
  - *Indicators:* a set of criminal statistics.

The methodological approach used in ePOOLICE was based on the concepts established by Europol, with the framework of an environment scanning system:

Two ways of managing open sources to identify new trends were proposed:

- Semantic search in internet. The objective is not only to find information but also to interpret it in a way that could facilitate the work of security analysts.
- The establishment of an indicators system.
Semantic search

Semantic search seeks to improve search accuracy by understanding the searcher’s intent and the contextual meaning of terms as they appear in the searchable dataspace (series of databases), whether on the Web or within a closed system, in order to generate more relevant results. Semantic search systems take into consideration several points, including the contexts of search, location, intent, variation of words, synonyms, generalised and specialised queries, concepts matching and natural language queries to provide relevant search results (Tony, J., 2012). Semantic searches allow the direct classification of the collected information in order to match entities from other pieces of information. It uses several methodologies: concept mapping, graph patterns, logics, and fuzzy relations and fuzzy logics.

The first key step was the identification of key terms. A literature review facilitated several sources, like dictionaries and glossaries. It is very important to point out the use of slang, and the need to introduce these kind of specific terms to collect information and detect trends. For example, in regards to cocaine trafficking, we identified a broad selection of terms in slang and different languages: “24/7, aspirin, Charlie, Carrie, Otoban, Dinamite, BLO, Big C, Diablo, Dios, Devil’s Dandruff, Devil’s Drug, Devil’s Dick, Paradise, Polvere di stelle, Polvo Feliz, Polvo de Oro, Heaven Dust, Haven Dust, Happy Powder, Happy Trail, Dream, Beam, Soplo, Soddio, Angie, Gulosa, Ice, Icing, Flakes, Snow, Neive, Nieve, Snow White, Biancaneve, Bianca, Blanca,
Keywords are selected through the analysis of the concrete field, using taxonomies, dictionaries, semantic domains and specific terms. Keywords are clustered following the aim that ePOOLICE is pursuing. Keywords were selected through the analysis of specialised reports from United Nations (UNODC), EMCDDA, national security reports and dictionaries/glossaries, or slang dictionaries (4).

Talking about cocaine trafficking, main clusters, selected from different reports and dictionaries because of their frequency and relevance, could be:

- **Producer countries**: Colombia, Peru, Bolivia …
- **Origin countries**: Brazil, Venezuela, Caribbean Islands (Jamaica, Netherlands Antilles, Martinique) …
- **Transit countries**: Guinea Bissau, Mali, Cape Verde, Madeira, Azores, Canary Islands, Benin, Gambia, Ghana, Guinea, Nigeria, Sierra Leone, Mauritania, Togo, Algeria, Libya, Morocco, Black Sea, Baltic Sea, Balkans, Spain, Portugal, the Netherlands …
- **Destiny**: Portugal, Spain, France, the Netherlands, UK, Germany …
- **Roles**: international wholesaler, national wholesaler, retailer, boss, manager, partner, transporter, tester, money collector, mixer, storer, law enforcement official, courier, money deliverer, drug abuser, drug addict, drug baron, drug dealer, drug peddler, drug runner, drug smuggler, hitman (sicario), networks, drug treatment …
- **Groups**: narcos, Mafia, ‘Ndrangheta, cartels, FARC, AQIM, Galicia traffickers, Sinaloa Cartel, Zetas, Outlaw Motorcycle Gangs OMCGs, Hell Angels …
- **Drug trafficking activities**: Cultivation, production, dispensing, distribution, logistics, marketing, frauds obtaining prescription drugs, processing, importation, manufacturing, possession (for own use, with intent to sell), sale, supply, distribution, trade, payment, recruitment, transportation, consumption, drug flows …

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4 Some examples:
- Multilingual dictionary of narcotic drugs and psychotropic substances under international control
- Terminology and Information on Drugs
  https://www.unodc.org/documents/scientific/Terminology_and_Information_on_Drugs-3rdedition.pdf
- Demand Reduction. A Glossary of Terms
Other crimes: money laundering, other trafficking activities (weapons, human beings, other drugs, tobacco, medicines ...), extortion, kidnappings, smuggling, terrorism, fiscal fraud, corruption, counterfeit ...

Drugs: Cocaine, crack cocaine, cocaine hydrochloride, cocaine base, coca leaves, cannabis resin, pure cocaine, Erythroxylum, cocaine paste, herbal cannabis, opium, heroin, crack, LSD, marijuana, hashish, synthetic drugs (amphetamine, methamphetamine, ecstasy), psychoactive substances ...

Precursors: pre-precursors, precursor chemicals, acetic anhydride, potassium permanganate, manganese dioxide, methyl ethyl ketone, acetone, toluene ...

Chemicals: laboratories, secondary extraction laboratories, HCl, HCl manufacturing, fertiliser, plastic, herbs, clothing, liquids, guano, beeswax, upholstery, polypropylene ...

Adulterants, cutting agents: anaesthetics lignocaine (lidocaine) and benzocaine; pain-killers such as phenacetin (a carcinogenic substance) and paracetamol; and other agents such as hydroxyzine, boric acid, glucose, manitol, lactose and caffeine, levamisole ...

Transport: Routes, Containers, couriers, mules, postal services, airports, digestive tract, ships, airplanes, aircraft, submarine ...

Police activities: Drug raid, squad, forensic science, asset confiscation, arrestees, entrapment, drugs seized, seizures, arrests, detentions, interceptions, wastewater analysis ...

With the technological opportunity to collect, classify and interpret information on the Internet, Guardia Civil and the University of Aalborg selected a representative case from the news that could be taken as an example. They analysed several pieces of information that could contain several of the key elements about cocaine trafficking: origin, destiny, location of the seizure, criminal group, concrete characteristics, kind of drug, weight or dates, showing that an intelligent entity extraction system can help to analyse this phenomenon.
The analysis of this piece of information allowed for 'translating' the meanings that a semantic system should search in the existing content on the internet. In this case:

**Figure 3 — Semantic Search Analysis (II)**
This system and the information in the web would allow to collect, classify and detect changes in patterns (strategic purposes), and to match data, for example if in another part of the world a package of cocaine marked with ‘00’ appeared (operational purposes).

After the definition of the semantic domain, a continuous process, the next step was the selection of sources, based on the experience of law enforcement agencies officers. Sources are evaluated, following the systems used in intelligence analysis, reliability of sources and credibility of information (Hibbs and Pherson, 2013).

**Indicators**

The identification of indicators, about the evolution of the cocaine trafficking landscape, was a key question during the project. An indicator must be **specific** (precise and unambiguous, so it’s clear what it is that you are aiming to achieve), **measurable** (there should be a clear and transparent measure of success), **relevant** (should reflect what the organisation is trying to achieve), **timed** (it should be clear when the target should be delivered), **appropriate** (to the subject at hand), **economic** (available at a reasonable cost), **adequate** (provide a sufficient basis to assess performance) and **monitorable** (amenable to independent validation).

Other methodologies have been applied during the project in order to complete the Environmental Scanning System: literature review, SWOT analysis, push and pull factors, expert panels and workshops, trend analysis, trend evaluation and future studies techniques. An ePOOLICE workshop on *Factors driving future crime* was held on 11-12 March 2015 in Las Palmas, Spain. The ePOOLICE partners Aalborg University, Isdefe and Guardia Civil organised the workshop. It was hosted by the Guardia Civil in the premises of the Centro de Coordinación Regional de Canarias (CCRC). The complete methodological approach from the project has been recently published (Larsen, Blanco, Pastor and Yager, 2017).

The next figure provides a simplified view of the driving factors in the context of the ePOOLICE system (for environmental scanning) and the methodological framework considered for applications of the ePOOLICE system, borrowing the Early Warning Triangle from Gilad (Gilad, 2003).
The ePOOLICE Solution System

The ePOOLICE project — in close collaboration with law enforcement partners, as well as criminological and legal experts — developed a prototype of an environmental scanning system through the implementation of solutions applying the technological advances and breakthroughs as provided by the RTD partners. The solutions were tested and evaluated through running realistic use case scenarios that were developed with the support of the end-user partners in the consortium. Three were the main scenarios chosen for such test as a proof of concept: cocaine trafficking, trafficking of human beings (THB) and copper theft.

Central to the solution was the development of an environmental knowledge repository (EKR) of all relevant information and knowledge, including scanned information and derived, learned or hypothesised knowledge, as well as the metadata needed for credibility and confidence assessment, traceability, and privacy protection management. For an effective and efficient utilisation, as well as for interoperability purposes, the repository applies a standard representation form for all information and knowledge.

For effective and efficient scanning of the raw information sources, the project developed intelligent environmental radar that utilises the knowledge repository for focusing the scanning.

Figure 4 — Driving Factors in the Context of the ePOOLICE System
The main solutions provided by the project are supporting:

- Detection of organised crime:
  - Detect the existence of criminal activities typically run by organised crime;
  - Discover organised crime and underlying criminal organisations as early as possible to prevent further formation of stronger, more resilient criminal systems.
- Prediction of the evolution of organised crime. This requires environmental scanning system for analysing and developing scenarios of possible threats in the future.

The environmental scanning system (prototype) developed during the ePOOLICE project provides a systematic overview of the surrounding environment to better appreciate, assess and anticipate an emerging crime, through the monitoring of the environment and the capture in real time of relevant information present in heterogeneous open sources, including analysis reports, governmental information, web, news, academia, non-governmental and international organisations, and subject matter experts.

The system supports:

- Different information sources;
- Multilingual support — with English and German demonstrated;

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**Figure 5 — The ePOOLICE System**
- The dissemination and exchange of information and knowledge of potential interest to the law enforcement agencies;
- The visualization of potentially emerging OC threats for OC threat assessment;
- The early warning with alerts in cases of detection of potentially emerging new OC threats;
- The storing and utilisation of hypothesis and notes from users;
- The utilisation of user feedback on findings for refinement of the system’s domain knowledge; analysis and decision-making in addressing emerging OC threats, considering the validity and the seriousness of the detected threats.

In addition, ePOOLICE refines a methodology — comprising legal, privacy and ethics aspects — to monitor heterogeneous information sources and to identify and prioritise indicators in order to outline a strategic early warning process. Thus, the monitoring system has knowledge about a number of organised crime types and their facilitators, identifying signatures and indicators.

Functionalities available to the end-users (analysts) are:

- browse, navigate, and zoom in the findings;
- select a geographical or/and temporal view for information of interest;
- refine the system’s knowledge of OC types, criminal hubs, modus operandi, indicators, signals, etc.;
- refine the set of relevant sources, their importance, and scanning frequency;
- provide additional knowledge, information, hypothesis, hunches, etc., to be properly utilised by the system;
- share and discuss findings with relevant colleagues in the police collaboration;
- perform ad hoc queries and analyses in the EKR as needed in an analysis case.

The system supports the above functionalities, and can further:

- use feedback from analysts to extract and propose new indicators/signals and adjust its warning/alert levels;
- propose new sources to be scanned;
- evaluate and estimate the importance and optimal scanning frequency of sources, based on usage behaviour monitoring and possibly explicit user feedback and inputs;
- use information/knowledge while considering quality issues (e.g. completeness, accuracy, reliability, etc.) and the nature of the knowledge (e.g. factual, belief, hypothesis, etc.) for reasoning properly in answering a user query/question;
- monitor the EKR use for privacy issues.

All information and knowledge in the EKR is highly tagged (e.g. kind of knowledge, source, registration time, credibility, importance, sensibility, etc.) as this is needed for its proper utilisation and for the traceability of findings. All accesses by human operators and analysts, as well as by subsystems, are logged as required or needed for documentation, e.g. in case of violation of privacy, and for tuning and optimising the system.

**ePoolice Implementation**

The project aimed (cf. FP7 call) ‘to conduct research into technologically-/actor-driven systems and tools which support environmental scanning’. Therefore, ePOOLICE was an end-user centric project that required a sound understanding of the needs of potential end-users — something which was critical for the success of the project. This understanding included the domain, the problem targeted, the user and stakeholder needs and requirements. The development of the system prototype was guided by the end-user needs and the ethical/legal issues through active participations of LEAs and application of use case scenarios providing a problem-oriented drive for the project and using privacy by design approach.

But ePOOLICE counted too on the involvement of other end-users and stakeholders. An *End user and Stakeholder Advisory Board* (EUSAB) was established at the very outset of the project in order to reinforce the involvement of the end-users to ensure that the work conducted in the framework of the project was consistently of the highest quality and that the practical needs of end-users were being addressed and maintained throughout the duration of the ePOOLICE project.

The consortium was comprised of strong and complementary partners with different profiles and backgrounds — the aforementioned five end-users, academia, R & D organisations, SMEs and large companies — as it is shown in the figure below:
The work in ePOOLICE was organised into nine different work packages, as shown in the following figure. This structure responded to the needs of the project, supported effective project coordination and represented a clear and efficient distribution and organisation of the consortium expertise.

Conclusion: Evaluation of ePoolice Results

The ePOOLICE project had a duration of 3 years. It started in January 2013 and finished in December 2015. In that latter month, the results of the ePOOLICE project were presented in a final workshop with end-users, held in ISDEFE premises in Madrid, where a demonstration of the developed prototype was carried out in front of 28 representatives from 17 different end-user organisations including Member States national LEAs and Europol, Interpol and Unicri.

Being a FP7 project, the results of ePOOLICE were also presented to and reviewed by the European Commission (EC), who were supported by an external reviewer on this task. It must be pointed out that, as the system is a prototype (TRL 6), it is not possible to be used directly by end-users and it is not in the market.
The feedback got from these review and evaluation sessions was mainly collected in two final reports, one prepared by the consortium as a deliverable of the project and another issued as result of the European Commission final review. The conclusions can be summarised as:

- Overall, it can be concluded that the end-users’ evaluation of the proposed environmental scanning system was positive. There was a great interest among end-users to further develop the system prototype into a useful product given that the system demonstrated was found good and interesting.

- For this further development a continuation of the project was proposed. Different options are being studied and a good choice seems to be that end-users and partners organise for further collaboration, e.g. through another comparable (R & D) security project. Seventeen letters of support from different end-users were received supporting this initiative for continuation.
In considering a second phase project, the possibility should be assessed to include together with the current ePOOLICE framework — environmental scanning for strategic use — also the support of investigative and operational use: social media analysis, information from Darknet, or virtual identities.

For the proper inclusion of social media analysis, especially for its usage in investigations, the ePOOLICE continuation should include a strong legal and ethical approach for its technological research and development process, with special care in the legal treatment of personal data. It may further include proposing a standard for privacy security in such systems, considering the results of the ethical research.

The second phase project should be specified to ensure that the objectives will be met at a given technology readiness level (TRL 8 or 9). This would involve piloting by the end-user, who have already expressed a clear an interest in it.

Considering all the above, ePOOLICE continuation possibilities are being explored within the EU H2020 projects (5). But key questions are waiting for an answer:

- What can ePOOLICE provide to the LEA community now? According to the call from the European Commission the system ePOOLICE is a prototype that should be developed for its implementation. But in this moment it offers a broad set of analysis, and deliverables, about environmental scanning methodologies and technologies involved. So, it could be considered a starting point for the debate, with scenarios and technologies tested and evaluated by the Commission.

- What other uses could the system have in criminal analysis? Although the tests were focused on human beings trafficking, cocaine trafficking and copper robbery, the ePOOLICE project offers the key elements to apply the methodological approach and the technologies developed to other criminal phenomena.

(5) How to get more information? The European Commission aims to go beyond the state of the art in matters related to security. The H2020 calls for research emphasise the need to take into account previous projects in order to avoid duplicating efforts. In these terms all the information that is not classified should be accessible for researchers and LEAs. Contact information: http://cordis.europa.eu/project/rcn/106659_es.html
References


