

# Innovations in Law Enforcement – Introduction to the Special Conference Edition

**Detlef Nogala**  
**Detlef Schröder**

European Agency for Law Enforcement Training, Budapest



Being no exception to any other walk of modern life, institutions established to enforce the law (the police, customs, judiciary and others), often find themselves subject to calls for more efficiency, efficacy and better performance, in particular, when misgivings about their capability for keeping public order or ensuring citizens' safety are entering the public and political agenda. Looking at Europe alone and focusing on the period after the collapse of the Sowjet empire, police organisations in many countries have witnessed several waves of reform – some fundamental, some fractional. For an observer it would look like that over the last three decades, at any moment, some kind of profound police reorganization is happening in at least one European country<sup>1</sup> - police reform as a permanent practice. When "police reform" can be understood as dealing with the rearrangement of organizational (or institutional) structures and often implies turning bigger political wheels, "innovation" in law enforcement comes across as the "little brother": more piecemeal, subtle, less orchestrated or steered politically, but by no means less fraught with consequences for law enforcement institutions, the officers on the ground, or for the citizens they are serving.

Within law enforcement, it is most likely the police owning the most vivid history of innovations – when

considering the developments and novelties in terms of strategy, tactics and equipment since the modest beginnings of modern formats of policing in the mid 19<sup>th</sup> century and onwards. However, in the academic and professional literature, the combination of the terms police/policing and "innovation" has caught attention comparatively sparsely, and only in the last two decades, most likely driven by the rise of new managerial mindsets and even more impactful, by technological progress, this has changed.

With this conceptual background in mind, the conference organisers<sup>2</sup> had put forward "Innovations in Law Enforcement" as the leitmotif for the 14th edition of the CEPOL Research and Science Conference. As is the tradition of this convention, practitioners in policing and other areas of law enforcement, trainers, educators and scientific scholars from Europe and beyond<sup>3</sup>, where invited to discuss and reflect on the implications for practice, education and civil society, innovations in law enforcement might yield in general terms as well as specifically: How would novel ideas, technologies,

<sup>1</sup> For a recent comparative examination of developments in Europe see Fyfe et al. (2013), Mesko et al. (2013), Caparini & Marenin (2004).

<sup>2</sup> The 2017 CEPOL Research and Science Conference was jointly organised by the European Union Agency for Law Enforcement Training and the Hungarian National University of Public Service, hosted at the university's premises in Budapest.

<sup>3</sup> Over 200 participants, mainly from Europe, but also from Canada, Hong Kong, Thailand, Ukraine and the United States, attended more than 80 presentations, including poster sessions and practical demonstrations of advanced training hard- and software.

concepts – as reaction to new forms of crime and deviance - form and shape law enforcement institutions, like police, customs, border guards, prosecution and courts, and their demands for training and education today and in the future?

In the open Call for Papers, contributors were invited to submit papers and presentations, preferably based on recent empirical research or academic study, addressing the following areas and aspects:

1. Which are the emerging innovations in society that are prompting a response from the law enforcement community, both in terms of adapting strategies and tactics, as well as the law enforcement educational requirements?
2. What are the expectable implications, benefits, risks or potential ramifications of introducing certain new technologies (gadgets or systems), organisational or operational concepts for doing law enforcement work in a new, innovative manner? Is it different for innovations that are driven or imposed by the outside environment as opposed to those that are emerging from “inside”? Where and when have law enforcement innovations failed and what lessons have been learned so far?
3. Which educational innovations will have significant impact on the training and education of law enforcement officials on the various levels of the organisations – and why?
4. Some innovations in law enforcement are received with great sympathy and endorsement, some with lesser enthusiasm by members of the civil society. What has to be considered in the management of the innovation process so a particular innovation is not perceived as ineffective, undue, unfair or even illegal? Are there innovative ways to manage potential disputes between “innovators” and “preservers”?

In order to cover all the relevant aspects and angles, the presenters were encouraged to examine particular innovations by taking the perspective of police or law enforcement officers, teachers, trainers, educators in the law enforcement education systems as well as those of the citizens, who will be subject to and beneficiaries of innovative law enforcement practices.

## **Innovation: notion and meaning of**

*„There are words and concepts – many words and concepts – that we use with no knowledge of their past. Such concepts are taken for granted and their meaning is rarely questioned. Innovation is such an anonymous concept“, (Godin 2015: 5).*

All discussions about “innovation(s)” need to be aware from the start about the semantical risk the term carries inherently, almost becoming a potential “false friend”<sup>4</sup> when used without caution or further specification in the dialogue between different professions and professional cultures. “Innovation” can signify a variety of entities and processes, and all depends if the term is used in a *descriptive*, *ascriptive* or even *prescriptive* manner:

Its original Latin root – “innovare” – literally means “to remake” or to “renew something” – and is purely descriptive, without implying any positive or negative connotation or statement about the outcome of this action. In this sense “to innovate” or “innovation” delineates little more than that something has changed or has been transformed. However, over the course of time, and specifically in contemporary public discourse, “innovation” is frequently used in an ascriptive way, that is becoming “loaded” with (predominantly positive) value and meaning: it implies that how something is changed is progressive and desirable.

Outside critical academic discourse, “innovation” can come across in its prescriptive guise, when it conveys a message or demand that something has to change in a certain way and towards a certain outcome.

All this is to say, that “innovation” is not a simple and neutral notion – it has changed its meaning over time and professional boundaries – and thus deserves reflection and qualification, in respect to context and intention. For example, to “invent” – to design or create something, that has not existed before - is not exactly the same as to innovate (although often mixed up); or, to do something different, even in a new way, does not necessarily and automatically imply that this way is the better one, or that the outcome is superior. But this is exactly the association most often evoked in unguarded casual talk: new is (always) better! Maybe it is not, or only under specific circumstances and in reference to specific objectives.

<sup>4</sup> See Wikipedia entry “False friend”.

In the modern classics of business and management sciences, the introduction of “innovation” as a theoretical notion and concept is often attributed to the Austrian economist and later Harvard-Professor Joseph Alois Schumpeter:

*“By innovations I understand (...) changes of the combinations of the factors of production. (...) They consist primarily in changes in methods of production and transportation, or in changes in industrial organization, or in the production of a new article, or in the opening up of new markets or of new sources of material”* (Schumpeter 1927 - cited in Disch 2016).

Schumpeter’s approach has been quite influential in forming and shaping the notion of innovation among economists and the managerial classes. Still relevant for the proper grasp of innovation in our contemporary discussion is his emphasis that innovation is a rather complex social complex and its success full of pre-conditions. There is a burgeoning specialized literature about innovation in the business and social sciences<sup>5</sup>, for which is no room to elaborate on in this introductory chapter. It should suffice to underline that “innovation” is a complex (social) concept, which deserves to be studied in detail and to being made use of in context and with proper caution.

5 For a discussion of Schumpeter’s original approach, see for example Borbély (2008) and a study of his concept’s reception in academic and business literature since its inception by Lazzarotti et al. (2011). Influential in managerial circles has been the now classical article by Peter F. Drucker (2002). Only recently innovation has become subject to a critical challenge by historians and social scientists, stressing the century long evolution of the term and morphing of its social public connotation to something diametrical meaning: “The “spirit” of innovation, what we would call today the culture of innovation, acquired new meaning and changed to become essentially positive in the last century and a half (...). A totally new representation of innovation developed, far different from the previous centuries. Innovation is no longer seen as subversive to the social order, but simply as opposed to traditional ways of doing things. The innovator is not a heretic. He is simply different from the masses or from his fellows. He may be a deviant, but in a sociological sense: an original, a marginal, a nonconformist, an unorthodox. He is also ingenious and creative. He is an experimenter, an entrepreneur, a leader; he is the agent of change” (Godin 2018: 5). For a thorough and detailed historical review see Godin & Vinck (2017) and, with a linguistic focus, Weber (2018).

## Innovation as a topic for law enforcement

The history of law enforcement in modern times<sup>6</sup> – that is from the mid 19th century onwards – could easily be written as an ongoing progression of innovations: either in organizational, technological or tactical terms – finding new organizational forms, adapting to and adopting new technologies and gadgets (in line with the major developments of modern civilization), differentiating, diversifying and finetuning its working methods:

- From the early metropolitan police offices to national and globally interlinked institutional networks;
- From telegraph to telephone to radio (Brown 2011) to social media as means for internal and external communication
- From the proverbial “Bobby-on-the-beat” to centrally dispatched fleets of patrol cars to Internet-squads;
- From an almost exclusive male workforce to mirroring the diversities of modern society;
- From military-style units to “Community” and “Intelligence-Led” Policing (Carter 2013);
- From Bertillonage to fingerprints, DNA and other biometric identification methods
- From Sherlock Holmes’ notebook and his power of combination to ubiquitous databases covering almost every aspect of (social) life to Compstat (Moore 2003) towards Artificial Intelligence-based applications (Interpol & UNICRI 2019).

This is of course only a incomplete selection of relevant developments - the full history of innovations in law enforcement is of course a long, uneven and multifaceted one, with im- and exports of new ideas, concepts, technologies and practices happening all over, shaping and forming the various police forces in specific

6 Such an assertion is grounded on two premises: read “law enforcement” as (state-organised) policing/police and look at the process from an overarching international perspective.

There are strong scholarly arguments to analyze and understand police forces and their development as country-specific entities, as the modern notion of police is inextricably jointed to the rise of the modern nation state. Such a claim can be uphold even against the early emergence of cross-border police cooperation networks like Interpol, or later Europol (see e.g. Deflem 2002).

ways and resulting in the kind of institutions, we are familiar with today.<sup>7</sup>

More often than not, police organisations have been under pressure to cope with increasing workloads and heightened expectations, as societies have become more complex and opportunities to commit offenses multiplied – modernisation becoming a constant imperative (Senior et al. 2007). Deploying scarce resources efficiently and effectively – this has always been a major occupation for police leadership and intensified in the 1990's along the rise of the notion of "New Public Management" – at least in Western countries (see Kennedy 1993; Cope et al. 1997; McLaughlin et al. 2002).

Police managers, urged to find new solutions to old and familiar policing problems, directed their attention inadvertently to attainable innovations – which also sparked a rise of interest in the study of police innovation since the turn of the millennium. When King (2000) made a study of various innovations in American policing, differentiating and looking at radical management (COP, POP), radical technical (e.g. AFIS, DNA, mobile phones), line technical (e.g. pepper spray, unmarked cars), administrative (e.g. hiring women, decentralisation) and programmatic (e.g. asset forfeiture, crime analysis and others), his main conclusion was that "(...) it is apparent that police organizational innovation is certainly not a unidimensional construct. Future studies of police innovation should address this finding by exploring their measures of innovation for multi-dimensionality concluded" (King 2000: 314).

While King can be taken as supportive of the position that innovation is a genuine social process, subsequent studies stressed out that "(...) improving police performance through innovation is often not straightforward. Police departments are highly resistant to change and police officers often experience difficulty in implementing new programs (...)" (Weisburd & Braga 2006: 339) and content that "...it is misleading to speak of innovations as though they are all identical. In the three case studies, we saw that each innovation took its own trajectory and involved various ingredients for its success" (Allen & Karanasios 2011: 96). Underlining what has stated before – that the term innovation shall be implemented with care and caution in particular in the context of

policing and other law enforcement, Willis & Mastrofski find: "(...) that one of the major challenges confronting police scholars is conceptualization. Not only must the term innovation be defined clearly and appropriately according to the context in which it is being used, but the multifaceted nature of many innovations requires that they be defined according to their relevant dimensions or attributes. Failure to do so hinders meaningful cross-study comparisons and the development of the field as a whole. Moreover, researchers should query rather than accept the popular view that innovations are socially desirable and superior to current practices. Doing so will contribute to more comprehensive and considered assessments of the identification, diffusion, adoption, and implementation of innovations" (2011: 43f). An interesting implementation of this recommendation is delivered by Okabe (2014), who, when comparing police innovation patterns in Japan and the United States, discovered significant differences between those countries. It is more likely than not, that any comparison between national systems will discover peculiarities and genuine patterns of which organisational or technical innovations have been taken up and successfully implemented full, to a certain degree or not at all<sup>8</sup>.

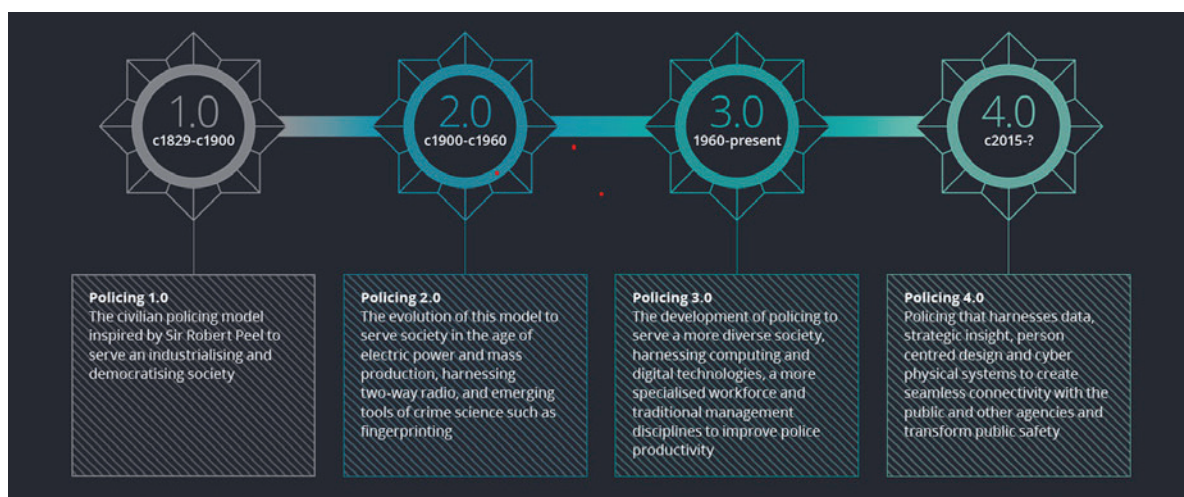
Innovations in law enforcement have a sell-by day – that is, their novelty can fade fast and yesterday's sensational new tool or organisational strategic change, is adopted and turned into today's normal way of doing things: the innovation no longer an innovation.<sup>9</sup>

It seems that it is rather the cumulative effect of various, mostly independent and asynchronous innovate initiatives taken in a range of dispersed offices, departments and leadership chairs, which have created a dynamic of change, that had, is about and will change the structure and appearance of the institutions law enforcement (in particular the police). While those innovations can take time to appear before the public eye, when seen under a historical perspective, the occasional short-time disruptive effect, morphs into a more evolutionary perspective, as suggested in publication considering the future of policing in the UK: moving towards a data-

7 In regard to the inventiveness of organising law enforcement structures in the particular European context, see the recently published authoritative work by Fijnaut (2019).

8 The diffusion of Community Policing in its various formats in Europe would be a case in point (EUCPN/CEPOL 2019, another the introduction of body-worn cameras or Tasers into the police forces of European countries another (internal CEPOL Survey 2019). For a theoretical reflection on the diffusion of innovations into law enforcement practice in the U.S., see DeGarmo 2012).

9 Sarre & Prenzler (2018) have provided their top-ten list of key developments in Australian policing, which at one point all had been innovations.



Source: Gash &amp; Hobbs (2018: 3)

and technology driven vision<sup>10</sup> for law enforcement – Policing version 4.0 (Gash & Hobbs 2018).

## Conference Contributions

It is in the aforementioned context that the editors are proud to present in this fourth Special Conference Edition of the European Law Enforcement Research Bulletin<sup>11</sup> twenty-nine articles, which are based on original contributions made at the CEPOL Research and Science Conference in late 2017, covering a wide spectrum of law enforcement innovations and considering their various aspects<sup>12</sup>. As being demonstrated, “innovation” is not a trivial, straightforward topic – nor is it a simple task for the editors to sort and cluster the contributions in this collection for the reader – there are various ways to do it. In order to provide some structure and guidance through for the readers, we have divided the sections by bundling those papers:

<sup>10</sup> It shall come to no surprise that the occasional enthusiasm for new technology options for the purposes of policing and law enforcement, have been met with scholarly scepticism and put under analytical scrutiny (see e.g. Nogala (1995), Byrne & Marx 2011, Lum et al. 2017).

<sup>11</sup> Earlier Special Conference Editions were published under the previous title of the publication as “European Police Science and Research Bulletin”.

<sup>12</sup> A handful of other conference contributions have already been published in regular issues of the European Law Enforcement Research Bulletin, available at <https://bulletin.cepol.europa.eu>. Files of presentations given at the conference can be retrieved from the section of CEPOL’s website (<https://www.cepol.europa.eu/science-research/conferences>).

- reflecting the wider institutional context of innovation processes aimed at law enforcement and security (in the EU);
- tackling innovations that are driven by new technology, including critical perspectives
- reporting about the outcomes and findings of projects funded by the H2020 research programme;
- presenting innovation in regard to learning, training and education
- informing about innovation projects in national and regional contexts.

### Innovation: The Institutional Context

In her **Welcome Address** to the participants, *Anabela Gago* sat the stage of the conference as Head of Unit “Innovation and Industry for Security” at the EU Commission, by pointing out the key role education and research have in providing law enforcement officers with the competencies, they urgently need for successfully tackling the security threads, the Union’s citizens are faced with. In reference to the investments made in security research within the Horizon 2020 funding programme, she provides various examples of research projects, where academic scientists worked closely together with industry and law enforcement practitioners, delivering innovative and useful tools for doing law enforcement.

**Crime in the age of technology** is the topic of the contribution presented by *Oldrich Martinu and Gary McE-*



wen from Europol<sup>13</sup>, delivering a real-life perspective of emerging crime-threat scenarios, fostered by new technologies and already used by criminal elements. Various cyber-enabled and cyber-facilitated crimes are on top of their list of concerns, but also 3D-printing and drone technology. In the second part, they discuss aspects of the necessary law enforcement's response to those developments.

Illustrating an innovative approach to tackling new challenges from another Justice and Home Affairs Agency's point of view, Piotr Malinowski (Frontex) describes an **Application of modern technology for migration management**, stressing the crucial relevance of customer-orientation in development and service of such complex systems.

As it has been demonstrated in earlier paragraphs of this introduction, "innovation" is often framed in the academic literature as an organizational challenge or issue. The **Reflections on the triple helix as a vehicle to stimulate innovation in technology and security** brought down to paper by Marleen Easton from Ghent University, could be read as a supporting comment to Mrs. Gago's conference address: what would an optimised model for stimulating innovation in the field of internal security look like? Her answer in a nutshell is, for yielding better results out of the cooperation between the state, industry and academia, one have to move away from a state-centered towards a trilateral approach. How this works in practice is exemplified for the Belgian Innovation Centre for Security.

### **Innovation driven by technology**

The invention, introduction and implementation of new technologies has always had a decisive impact on how societies are organized and how people go on with their lives – our hypermodern times are inconceivable without looking at the key technologies which "changed the game". This is for sure the case for law enforcement, in particular for policing: technologies on various level of scale and scope of application have changed and transformed police work in general and the tools and instrument used by law enforcement officers in particular.

A good example of how even a small gadget can alter the way the "look and feel" of everyday-policing can change, is the recent wide-scale introduction of body-

worn cameras for police officers on the ground – a new kind of "eye of the law". In his paper **Opening up the black box: Understanding the impact of bodycams on policing**, Sander Flight wonders if these gadgets actually work – and his empirically informed answer is not a simplistic one, as this apparently depends immensely on the circumstances of how the device is implemented and what the actually invested expectations were.

While also innovating on the visual aspects of law enforcement work, the article **Automatic Weapon Detection in Social Media Image Data using a Two-Pass Convolutional Neural Network** by a group of authors from the *Munich Innovations Lab* ventures into the technologically advanced area of artificial intelligence- driven automated support for police analysts to find and identify objects like weapons in images distributed on social media.

The next two papers examine in more general terms, how advanced technology alters the ecology of police intelligence work: imposing new conditions, but opening new possibilities as well. The contribution by Akghar & Wells discusses the *Critical Success Factors for OSINT Driven Situational Awareness* - where OSINT stands for open-source intelligence - and how the material delivered via social media is creating completely new challenges – and chances – for investigative techniques. How advanced new technology – the "**T-factor**", as they call it – is affecting the so-called "intelligence cycle", in particular new requirements in regard to skills and learning settings for the analysts. is the subject of the paper submitted by Blanco, Cohen, Rubio & Brezo. They also examine the issue of "identity management" as a matter of professional protection for the analysts.

The internet is producing torrents of new data on a daily basis, literally creating gigantic hay-stacks, in which menacing "moving" needles have to be located and tracked by law enforcement bodies. According to *Lib-eratore, Quijano-Sanchez & Camacho-Collados*, technology is carrying its own innovative solution for policing in the form of applied data science. They exemplify their claim in presenting a study on **VeriPol, an Investigation Support Tool**, designed to help investigators to sort out false reports on violent robberies from the actual ones, in order to cope with the raising number of cases and efficient investment of scarce resources.

<sup>13</sup> See also, as an update, "Do criminals dream of electronic sheep?" (Europol 2019).

The risk of being at some point being overwhelmed by the flood of data generated by police organisations internally and by the internet-juggernaut externally, is the point of concern in the paper by *Casey, Burrell & Sumner* on **Decision Support Systems in Policing**. With reference to the body of research on decision making, they wonder if the technology under the label of “artificial intelligence” has actually advanced to the point, where these systems are now moving beyond the point of “just” supporting the decisions to be made by analysts and police officers. Their case in point argued for is the swiftly rising notion of *predictive policing*, one of the recent law enforcement innovations, which has attracted a lot of professional, scholarly and media attention. While predictive policing is seen by some with high anticipation as becoming a timely problem solver for law enforcement, others are less enthusiastic, of not outright skeptical. Two contributions explore this controversially discussed innovation from the empirical side: *Cyril Piotrowicz* has examined the **Perceptions of its Risks and Benefits by Police Trainees and Citizens** in France in a small survey study. He finds that his sample of French citizens want their police make use of it, even if they do not really grasp what it means and think it could be potentially dangerous. In contrast, the police trainees believe they understand the concept, but have doubts about its success and demand specific training for it. Results from an evaluation study on a pilot project in the German land of Baden-Württemberg about **Using Predictive Policing to Prevent Residential Burglary** is reported by *Dominik Gerstner*. A specific predictive policing market product was used and tested in urban and rural pilot areas. More remarkable than concluding that there were no clear conclusions to be made about the effectiveness of the software, is maybe his finding that the assessment and acceptance of the new innovative tool among police officers as either system users, management or first line officers was obviously heterogeneous, if not divisive.

The two articles rounding up the cluster of contributions looking at the technology driven aspects of innovations in law enforcement, are pouring cold water on the optimism and enthusiasm about the potential bright future of predictive policing from an academically informed theoretical observation point. *Lucia G. Pais* headlines her contribution as **Predictive Policing: Is it really an Innovation?** - and her finding is apparently trending towards the negative, based on three objections: suspicion about the epistemological roots of the mindset the concept of predictive policing

is built on, a lack of aptness of many police forces to adopt to methods based on scientific research, the reduction of (potential) offenders to mere data objects, missing out on their human agency and potential. A fundamentally critical position is also taken by Canadian Professor James Sheptycki, in his essay **Technology and Policing Practice**, which concludes this group of papers focusing on technology-driven innovations in law enforcement. Empirically intimately familiar with the history, structure and principles of operation of police forces internationally, he states his serious reservations against promised future technology-focused scenarios of almost total information awareness, better cost effectiveness or sustainable forms of automated policing. He suspects that such a model of future policing is drifting away from ideas of citizen centered philosophies of policing by consent, in line with democratic principles and being guided by values of social justice as well.

## H2020 Research Projects

A major stimulus for triggering innovation is research – in particular the type of applied research, which is intended to solve a specific, practical problem that has been identified. As explicated in the **Welcome Address**, the Commission’s Horizon 2020-programme is a research fund, which identifies an array of urgent research tasks, of which some are very relevant for internal security and law enforcement. Those H2020 research programme projects deserve special attention, as they regularly bring together distinct cutting-edge knowledge of academic scientists with the hands-on experience and comprehension of strategic requirements of law enforcement practitioners. A selection of security-related H2020 research projects presented final or interim findings at the conference and provided a paper for this Bulletin. Their common nominator is that they are all seeking innovation effects by applying a combination of capabilities enabled by new technologies and fresh approaches<sup>14</sup>.

The **RAMSES** project addresses the rise of ransomware attacks on public and private computers, and intends to create countermeasures by building an internet-based forensic support platform for tracking the money flow

<sup>14</sup> More detailed information about the projects is available from their dedicated websites:  
 RAMSES: <https://ramses2020.eu/>  
 UNITY: <https://www.unity-project.eu/>  
 INSPECT: <http://site.inspect2t-project.eu/en/>  
 LAW-TRAIN: <http://www.law-train.eu/index.html>  
 TARGET: <http://www.target-h2020.eu/>

behind the dissemination and exploitation of mal- and ransomware by malicious hacker groups. Gaining better forensic evidence faster for criminal prosecution is the ultimate goal of this undertaking.

The **UNITY** and **INSPECT** projects are two consortiums striving to render new technologies useful for fostering connections between the police and the citizens in the spirit of Community Policing. Both projects emphasize the innovative role of internet-based social media for law enforcement in building mutually beneficial relationships with their communities and various community-cultures. Network platforms, mobile apps, even games and specific training tools are the deliverables to achieve these objectives.

Two other projects, **LAW-TRAIN** and **TARGET** are exploring the new possibilities of training law enforcement officers in innovative, ambitious ways, making use of cutting-edge augmented and virtual reality equipment and software. The consortium of LAW-TRAIN aims at building a “virtual platform” which will allow to train law enforcement officers in cross-border investigation cases in jointly interviewing suspects in a multilingual context. It also builds on artificial intelligence elements, by introducing a “virtual trainer” as an intelligent pedagogical agent, in order to ensure that all trainees are following the same methodology of interviewing. The ultimate goal is to foster cross-border law enforcement by facilitating innovative interview scenarios. Even more aspiring is the TARGET project consortium, which strives to bring serious gaming technology for law enforcement officers to a new level, developing it finally into a commercial tool, available at the market and offering flexibility to design a wide variety of training narratives and scenarios. Testing of six pilot scenarios are described in the paper.

Exploring and testing innovative approaches for training and educating law enforcement personnel or for new ways of how-to police and enforce the law, is by no means a prerogative of EU-funded research projects – similar intensive efforts are pursued also in the Member States of the EU, albeit with less emphasis and use of advanced technology.

### **Learning Innovation(s)**

Two papers in this chapter are dealing with innovative training projects from Finland. *Sirpa Virta & Harri Gustafsberg* take the International Performance Resilience and Efficiency Programme as an example,

to describe how **Innovation Management in Police Organisations** can be successful, when innovations resulting from research are properly transformed into new training formats. As a point of note, the iPREP training programme, developed and tested as an international research project, obviously took its initial course from a CEPOL seminar in 2013. The introduction, implementation and evaluating reception of a new **Executive Master of Business Administration in Policing** as a training programme in police leadership in the Finnish police is delineated in detail in *Tiina Koivuniemi's* paper.

Innovation in training is not happening just at the top level of law enforcement organisations. *Andrea Beinicke & Albin Muff* present findings of their study on the **Effectiveness of simulation-based learning in basic police training** in Bavaria, Germany – the introduction of unassuming role-play scenarios has yielded measurable positive effects on learning satisfaction of trainers and learners alike.

How improvement in qualifications for law enforcement training instructors can be achieved through EU-funded twinning projects – here between Lithuania and Croatia – is reported by *Žaneta Navickienė & Vidmantas Vadeikis* in their paper **Integrated concept for the training of trainers within police cooperation of the EU member states**.

### **Applied Innovation**

In this final cluster of conference contributions, the reader will find studies and reports on innovative projects, which are located in the specific national context of law enforcement institutions and processes, which nevertheless can serve though as potential examples and blueprints for triggering initiatives, aiming for innovation elsewhere in Europe.

*Erna Uricska & Katalin Molnár* inform about the format of **The Police Café** (an import from Belgium), and its introduction to Hungary, aimed at becoming an efficient method to facilitate and foster community policing-style dialogue between the police and citizens.

The issue of **Recording Hate Crime**, an offense which seems to rise in parallel with the increasing use of social media, has come lately under scientific scrutiny in Ireland. *Amanda Haynes & Jennifer Schweppe's* paper gives an account of the development, as they point out the



limited gain of technical innovation, when agreed definitions and proper training are neglected.

How even rather trivial innovative changes of internal formal procedures can have a significant positive effect on the workplace and speeding up of case-work is exemplified by *Damir Osterman & Damir Maracic* when they present the **Croatian Model of Telecommunication Information Requests Management (TIRM)**.

Evidence, that the introduction of new IT-technology and the accompanying European legislation into a law enforcement environment of candidate countries can be a real challenge, can be taken from the account *Kristina Doda & Aleksandar Vanchoski* are giving in their **Situational Analysis in Northern Macedonia, Montenegro and Serbia**.

Directions towards future desirable innovations in the law enforcement context are outlined and discussed in two contributions from Portugal. **Interoperability** for first responders to incidents is the subject of concern for *Felgueiras, Pais & Morgado* and their sketch of a research scenario for developing a new assessment tool. More than a research project is the ambition of *Nelson Macedo da Cruz* – his vision of the **MOLECULA** project aims to bring the investigation of tax, financial, and economic transnational organised crime in the European Union to a new level by taking advantage of new information flow architectures.

## In Conclusion

Reflecting academically on the origin, history and semantic meaning of the term “innovation” can open new perspectives and unsuspected insights, but innovation is happening constantly in all occupations of life – it is the fuel feeding modernization in general, and is driving forward developments in the policy area of law enforcement as well. As pointed out earlier: looking back at how ways, instruments and tools of modern policing have changed and advanced only in

the last few decades, the strong innovation dynamic in this field becomes more than evident. The presentations given at the CEPOL conference and the articles are helping to grasp the wide variety of promising initiatives, which are ongoing.

However, one can expect that innovation in law enforcement will be forced to speed up to a higher pace in the years to come – with technical innovations likely to have a decisive role again.

Law enforcement communities need to adjust to the challenges that will come with e.g. 5G, 6G telecommunication, “Internet of Things”, driverless cars, AI and drone technologies. Apart from other change-driving factors (e.g. ageing societies in Europe), these technologies are expected to transform significantly the daily life in our societies – the citizens have the rightful expectation that law enforcement is prepared to protect them even in such dynamic changing environments. There is little doubt, that indispensable innovations in law enforcement communities can and will only be successful in a very close cooperation of law enforcement communities, academics, industry and civil society across Europe.

We trust that this compilation of articles, originating in contributions made to the CEPOL Research and Science Conference in late 2017 in Budapest, is not just a documentation of the inspirational presentations on contemporary innovations in law enforcement given at this particular event, but that this publication itself might serve as a catalyst for fostering and facilitating a much needed further multi-disciplinary and multi-professional discussion on how to innovate law enforcement in Europe: not to do things just differently, but better, and with a better result.

The European Union Agency for Law Enforcement Training is committed to facilitate such much needed close cross-professional dialogue and cooperation with similar conference events like this in the future.

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