European Commission

Advanced Tools for fighting Online illegal trafficking

D11.6 - Guidelines for curricula definition

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V0.4	30/09/2021	Final Draft	RISSC	Draft version ready for peer review and SAB assessment
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Definitions, Acronyms and Abbreviations

ACRONYMS / ABBREVIATIONS	DESCRIPTION
AI	Artificial Intelligence
AR	Augmented reality
EU	European Union
EU-STNA	EU-Strategic Training Needs Assessment
IALEIA	International Association of Law Enforcement Intelligence Analysts
ICTs	Information and Communication Technologies
ILOs	Intended Learning Outcomes
IOCTA	Internet Organised Crime Threat Assessment (EUROPOL)
IT	Information Technologies
KMP	Knowledge Management Process
KSBs	Knowledge, Skills and Behaviours
LEAs	Law Enforcement Agencies
LMS	Learning Management System
NPS	New Psychoactive Substances
OSINT	Open-Source INTelligence
ROI	Return on Investment
SOCTA	Serious and Organised Crime Threat Assessment (EUROPOL)
STM	Skill-Training Matrix
SWOT	Strengths, Weaknesses, Opportunities, Threats
THB	Trafficking in Human Beings
UC	Use Case
VR	Virtual reality
WP	Work Package

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Executive Summary

This report presents the *Guidelines for curricula development* designed by the ANITA project with the intent to contribute at promoting innovative educational paths, oriented primarily to LEAs and representatives from the public and private sectors, to increase awareness, knowledge and the exchange of good practices and relevant experiences about online illegal trafficking.

This essay is coherent with and grounded on the knowledge-based approach adopted by the ANITA project (WP2), the synergy between the scientific approach (led by criminology) and the development of advanced technological tools (the ANITA platform), the outputs and outcomes of the diverse activities implemented by the partners - with specific reference to training and demonstration in operational environment (WP11) - and the project's achievements and overall results.

In synthesis, the guidelines herewith proposed include a set of ideas and inputs to better adapt training to the informative changing needs of LEAs and other public and private stakeholders, while better balancing the 'technological factor' and the 'human factor'.

*The **ultimate aim** is to **maximise the impact** of the **ANITA platform** and to use its innovative **tools** not only for **investigation**, **monitoring** and **intelligence**, but also for **education** and **capacity building**, thus improving the sustainability and the exploitation of the results achieved by the project*

The ANITA platform is a novel user-centred investigation platform integrating advanced tools to discover relevant data sources disseminated on the Web (including the Surface Web, the Deep Web and the Dark Web) and analyse, enrich and correlate them to support investigations on illegal trafficking. It is investigation-based, where 'investigation' is an operative workspace in which users can manage information related to a specific case.

The ANITA platform can effectively contribute at the objective of moving towards a **competency-based capacity building approach** in the field of countering online illegal trafficking and potentially about the wider category of technology-related or facilitated crime. This objective is crucial because it ensures that each job role is delivered by an official, who has the required knowledge, skills and behaviours (KSBs) for that role.

Moreover, the ANITA platform does not provide just a set of advanced functionalities to support law enforcement agencies in investigating online illegal trafficking. Rather, if properly understood and implemented, it could be a powerful knowledge-management tool capable of innovating and fostering the LEAs efforts and activities against this composite criminal phenomenon.

In this context, a special attention is deserved to the **digital dimension**. First, the ANITA tools are accessible online; secondly, the improved confidence with and the greater acceptance towards distance learning are contributing to the general agreement on the importance of considering the Covid 19 crisis also as an opportunity and a chance to improve the actual context in the wake of the pandemic.

*The guidelines are designed around **three key factors**. Each of them is correlated with **a specific working-idea**. They represent the context in which the guidelines were conceived and developed*

They are as follows:

Factor 1 – contents
the capacity and possibility to further exploit the innovative features of the Anita platform – and more in general of the advanced technological tools used by LEAs at an operational level – also for training, capacity building and information-sharing

Factor 2 - learning environment
the capacity and possibility to promote remote training (or distance learning) while minimising those factors which are perceived as negative or limiting by the learners, with specific regards to law enforcement officials

Factor 3 – learners
the capacity and possibility to address the informative needs of LEAs but also of relevant public and private entities, in the framework of a multi-stakeholders learning model which could facilitate awareness-raising, dialogue and collaboration

One of the key considerations emerging from the assessment of the overall ANITA experience is that digitalised and remote trainings addressed to law enforcement agencies require both a new and innovative didactic concept and a ground-breaking learning paradigm.

In-person lessons are essential for their wide-ranging benefits but the Covid 19 pandemic is showing how distance learning could be also revolutionary and powerful. However, in order to work, the equilibrium among the three main components represented by educating, discussing and exchanging should be established, continuously monitored and regularly re-balance, if needed.

The recommendations and guidelines for curricula development designed in the framework of the ANITA project are intended primarily for the LEAs, which are the action's end-users. They could be used by the LEAs themselves while planning or organising internal training initiatives, but also by police academies, international organisations, Universities and research centres providing education for police officers and/or addressing issues of interest for the law enforcement sector.

In addition to LEAs, the most important stakeholders at a public and private level are also considered. In fact, innovative and cross-sectoral informative initiatives implemented by organisations other than the law enforcement agencies could significantly contribute at responding to the actual need for greater awareness, shared knowledge, mutual understanding and cooperation between the different and various actors involved in countering illegal trafficking, especially online.

The guidelines were imagined by proceeding from the general to the particular, starting from the intended overall goal, then considering the beneficiaries and the contents, and finally the fundamental interactions among them. On a first level, the conceptual framework sets the purposes of reference on which a set of general recommendations are grounded. On a second level, the operational framework defines the actions needed and it is at the basis of the proposed actionable recommendations. Finally, in order to provide concrete inputs, the specific guidelines are given so to promote and facilitate the designing of new learning paths by LEAs, Universities and public authorities.

Introduction

This report presents the *Guidelines for curricula development* designed by the ANITA project with the intent to contribute at promoting innovative educational paths, oriented primarily to LEAs and representatives from the public and private sectors, to increase awareness, knowledge and the exchange of good practices and relevant experiences about online illegal trafficking.

It builds upon:

- the findings achieved and the lessons learned in the field of the **criminological analysis** on the three main use-cases of interest for the ANITA project, concerning illicit drugs, New Psychoactive Substances (NPS) and medicines (use-case 1), firearms and weapons (use-case 2), and terrorist financing (use-case 3) (WP2)

- the activities implemented by the project and the feedbacks collected from the participating LEAs in the framework of the **demonstrations in relevant environment** (WP10)

- the **knowledge-based approach**, which is a distinguished feature of the ANITA project. It has permeated in each relevant phase to balance the two key components such as the research activities on the one hand and the technological development on the other

- the mapping of the **current practices** in the field of training for the LEAs and the assessment of the existing gaps between these practices and the **actual needs** according to the literature available on the topic, the information gathered within the consortium and the inputs collected from domain experts. For this purpose, an online *survey* about remote training, with both closed multiple choices questions and open questions, was disseminated to the project partners. In addition, *two focus groups* with experts from LEAs, European police academies and international organisations were organised[1]

- the analysis of the **impact of Covid 19 on education**, with specific regards to the law enforcement sector. In fact, the pandemic has deeply redesigned – and still it is redesigning - the approach and practices in the field. In particular, the extraordinary experience of the lengthy 'lockdown' months experimented in early 2020 by all the European Union countries has initially forced police academies, Universities and research centres to suspend training without offering an alternative. Then, they have revolutionised their approach and catalogue, moving from in-person sessions to remote activities, in the various forms of webinars, online courses etc, usually held on online communication platforms. However, this has not been an easy task and it is still in progress. The effects are interesting and multifaceted and are expected to persist on the medium and long term. A new room for debating on positive and negative experiences, advantages and difficulties, emerging needs and requirements, pioneering ideas and ground-breaking initiatives has opened. This report tries to systematise the most important argumentations which are of relevance for the ANITA project and to combine them with the direct experience of the consortium. In fact, among other problems, the

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[1] The first online focus group was held on April 30, 2021, with the participation of the Crime and Criminal Justice College of Policing (UK), the National Bureau of Investigation (Finland), the Police academy - Special Police Education (The Netherlands) and the Police of the Czech republic - National Drug Headquarters. The second online focus group was held on May 18, 2021, with the participation of INTERPOL, World Customs Organisation (WCO), Pompidou Group – Council of Europe, International Narcotics Control Board (INCB), United Nations Office on Drugs and Crime (UNODC), European Network of Forensic Science Institutes (ENFSI).

pandemic has totally annulled any possibility of organising in-person meetings for a long period of time, thus forcing the partners to revise the plans for both the training activities targeting the participating LEAs and the two-round sessions of pilots needed for testing and validating the ANITA platform by the LEAs themselves. The decision-making process was quite complicated because designing a remote online configuration for activities which were originally conceived as physically driven, has posed several difficulties and challenges. The entire consortium was called upon to share experiences, ideas and hints and this resulted in interesting inputs also for elaborating the guidelines.

A dedicated **conceptual framework** on which to ground the guidelines was developed with the intent to create coherence and continuity in particular between:

a) the knowledge-based approach adopted by the ANITA project and the synergy between the scientific and the technological factors

b) the diverse and various activities implemented and the collaboration among the partners, which have different skill, background and domains of knowledge

c) the project's achievements and overall results

Hence, the guidelines were not developed by considering training on online illegal trafficking as a generic service for police forces and other public and private stakeholders. In the same way, the guidelines do not set themselves the objective of responding to current problems related to the relationship between 'demand' and 'supply' of training.

*Rather, for the sake of this report, **the guidelines are designed with the intent to propose a set of innovative ideas and pioneering inputs to better adapt training to the informative changing needs of LEAs and other public and private stakeholders**, while better balancing the '**technological factor**' and the '**human factor**'*

*The ultimate aim is to **maximise the impact of the ANITA platform**, thus improving the sustainability and the exploitation of the results achieved by the project under **diverse domains, including training***

Within this conceptual framework, **three main key factors** were identified and for each of them a **guiding working-idea** was elaborated. The factors are as follows:

1. the **contents**

2. the **learning environment**, and

3. the **learners**.

They are schematised also in Figure 1 and the working-ideas are explained in detail below.
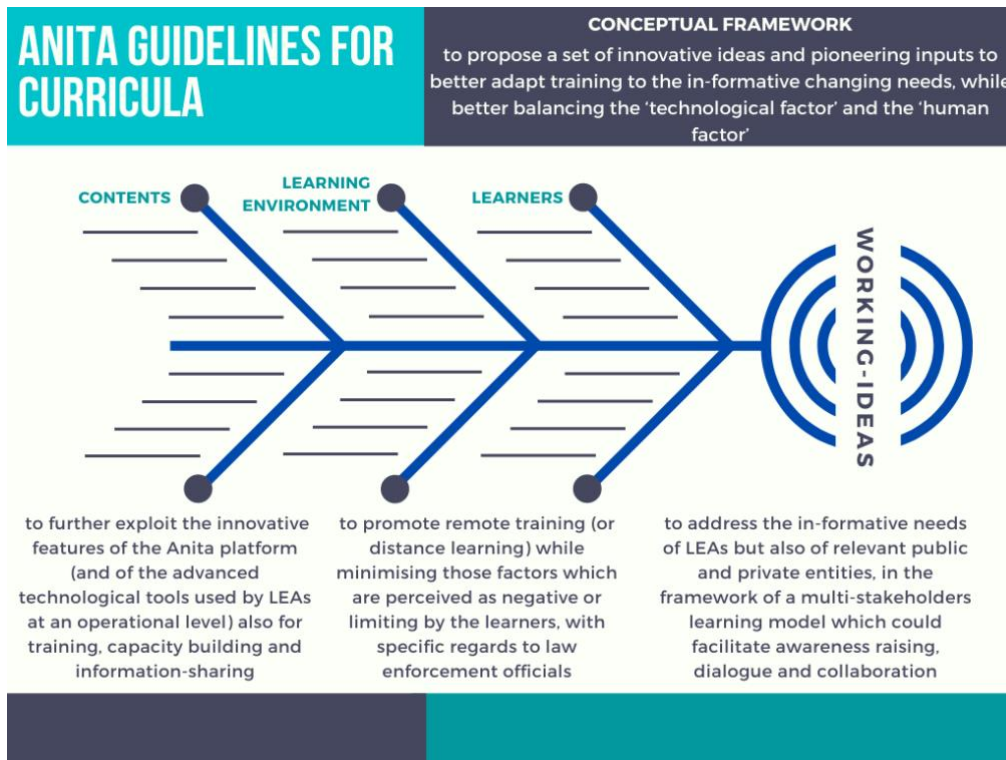
Figure 1 - ANITA Guidelines conceptual framework and working-ideas

1. CONTENTS **- THE CAPACITY AND POSSIBILITY TO FURTHER EXPLOIT THE INNOVATIVE FEATURES OF THE ANITA PLATFORM – AND MORE IN GENERAL OF THE ADVANCED TECHNOLOGICAL TOOLS USED BY LEAS AT AN OPERATIONAL LEVEL – ALSO FOR TRAINING, CAPACITY BUILDING AND INFORMATION-SHARING**

In general, these tools address the operational needs in the field of investigation, monitoring and intelligence. They require notable investments in terms of resources, time, skills and expertise (Finck, 2019); in some cases, efforts do not seem to have paid off if we consider the costs, the sustainability and rapid obsolescence of the products developed, the real contribution to understanding and countering the criminal ecosystems and the problems affecting the use in the real operational environments. Sometimes, the technological component even ends up dominating activities like deep understanding, critical reasoning and evaluation, which are intrinsically human and need to be further supported.

The ANITA experience is peculiar because it has adopted a knowledge-based approach during the technological development and it has showed that the platform is likely to have a great potential also for generating contents to be used for multi-stakeholders training and capacity building, and more in general for facilitating and promoting mutual understanding and dialogue, the exchange of information and practices, not considering cooperation at different levels. Accordingly, **the hypothesis explored for the sake of the present report is if and how the ANITA tools could contribute at enhancing the learning process about illegal trafficking manifestations and proliferation, triggers and trends, connections and interlinks by promoting critical reasoning and pioneering activities in the field of education.**

2. LEARNING ENVIRONMENT **- THE CAPACITY AND POSSIBILITY TO PROMOTE REMOTE TRAINING (OR DISTANCE LEARNING) WHILE MINIMISING THOSE FACTORS WHICH ARE PERCEIVED AS NEGATIVE OR LIMITING BY THE LEARNERS, WITH SPECIFIC REGARDS TO LAW ENFORCEMENT OFFICIALS**

The pandemic has determined a dramatic increase in the use of **online learning environments** also for **training** activities. **Remote**, **digitalised** and **blended[2] trainings** addressed to law enforcement agencies could be an asset, but a new and innovative **didactic concept** and a ground-breaking **learning paradigm** are needed. In fact, in-person lessons are essential for their wide-ranging benefits, but the Covid 19 pandemic is showing how distance learning could be also revolutionary and powerful. However, the equilibrium among the three main components represented by *educating*, *discussing* and *exchanging* should be established.

In addition, the attention towards creating **homogeneous groups of learners** and clearly set the **scope** of the trainings should be a priority to achieve the best results possible and to propose **innovative curricula**.

3. LEARNERS **- THE CAPACITY AND POSSIBILITY TO ADDRESS THE INFORMATIVE NEEDS OF LEAS BUT ALSO OF RELEVANT PUBLIC AND PRIVATE ENTITIES, IN THE FRAMEWORK OF A MULTI-STAKEHOLDERS LEARNING MODEL WHICH COULD FACILITATE AWARENESS RAISING, DIALOGUE AND COLLABORATION**

A key element that emerged during the dialogue with the police forces and the partners of the ANITA project concerns the importance of raising awareness, creating shared knowledge and improving the exchange of experiences and practices among **LEAs**, but also with other **public** and **private stakeholders** (e.g., policy makers, national authorities, judges and prosecutors, other professionals and domain experts…). The need to promote a greater and joint understanding of online illegal trafficking by **multiple relevant actors** in the field is becoming pervasive to support law enforcement activities, to maximise the efforts and results and to improve the efficacy of prevention and counteraction initiatives in the field. Accordingly, the **multi-stakeholders learning model** is an asset and therefore it is integrated into the ANITA guidelines for curricula development.

In this framework, the importance of investing on **trained key figures**, namely qualified officers and professionals with expertise in illegal trafficking, is becoming of utmost importance. They can contribute at optimising the use of resources in administrations and enforcement units dealing with these types of crimes, further supporting dedicated team or taskforce and even liaising with public and private entities.

The dynamic and inventive combination of all the considerations related to these three main factors – CONTENTS, LEARNING ENVIRONMENT and LEARNERS – are at the basis of the present report. More in detail, the deliverable is organised as follows:

the **first part** focuses on understanding the needs and assessing the actual practices, also considering the impact of and lessons learned from the Covid 19 pandemic on training

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[2] Blended training – or blended learning - is the definition used to identify the combination of two training environments, namely traditional face-to-face classroom training and high-tech eLearning.

the **second part** explores the possibility to use advanced investigative and forensic technological platforms also for improving LEAs' knowledge on criminal phenomena dynamics and main trends and to build capacities. The specific case of the ANITA platform is discussed

finally, the **third part** illustrates the guidelines for developing advanced curricula for LEAs and relevant public and private stakeholders on online illegal trafficking elaborated in the framework of the project

The report also contains several tables, schemes and infographics because the visual organization and representation of the proposed approach, relevant contents and practical guidelines could facilitate the transferring and use of the results by the end-users and other organisations, thus contributing at the project sustainability.

1 Understanding the context

The Covid 19 has significantly redesigned the way in which education (intended here both as teaching and learning) is organised and delivered, at all levels. There is a sort of imaginary red line separating the approach and the activities 'before' and 'after' the Covid 19 and it is undeniable that technology has considerably conditioned and guided the change, thus contributing to a model increasingly oriented towards online/remote training. In fact, 'e-learning' and 'online learning' are among the most used words in the educational setting, along with 'digitalisation'. However, their meaning and scope have rapidly changed in the last couple of years.

'Before' the Covid 19, "the first generation of e-learning or Web-based learning programs focused on presenting physical classroom-based instructional content over the Internet. Furthermore, first generation e-learning (digitally delivered learning) programs tended to be a repetition or compilation of online versions of classroom-based courses" (Singh, 2003). However, quite soon this single model gave rise to the realisation that it could not be successful in terms of learning and performance. Multiple and diversified models were then designed so to address the various needs and requirements of the educational sector, while exploiting the increasing opportunities offered by emerging technologies.

In fact, new modes of learning, such as e-learning (electronic learning), b-learning (blended learning), m-learning (mobile learning) and u-learning (ubiquitous learning) have emerged.[3] As suggested by Lin (2007), they have contributed to a process enabling learning and training to become **digital**, **mobile** and **virtual**.

However, there has not been universal satisfaction just because of the integration of new technologies into teaching; so, the attention has been focused in particular on the fact that success in e-learning requires a systematic process of **analysing**, **planning**, **designing**, **implementing**, and **evaluating**, so that learning is accurately supported and not simply an alternative format to deliver training.[4]

The Covid 19 pandemic has pushed the process forward and it has speeded it up, while the attention towards the pedagogical component – along with the technological one – has increased. Many experiments and attempts have been done during the lockdown's months and now, **'after' the emergency phase of the Covid 19**, the approach to training seems to be radically changed.

Some experiences related to the law enforcement sector, but also to the ANITA consortium and to colleges, Universities and academies, are briefly described in this paragraph, so to outline the context for which the ANITA guidelines were conceived and developed.

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[3] H. Keser, Y. Ozden, A. Semerci, The Power of E-Learning: An Effective Solution for Turkish Police Management Training Courses, in S. Hai-Jew (edited by), Remote Workforce Training: Effective Technologies and Strategies, IGI Global, 2014, 112-132.
H. Lin, (2007). The ethics of instructional technology: Issues and coping strategies experienced by professional technologists in design and training situations in higher education. Educational Technology Research and Development, 55(5), 411–437.
[4] I. Kinchin, (2012), Avoiding technology-enhanced non-learning. British Journal of Educational Technology, 43: E43-E48.

1.1   The law enforcement sector and the Covid 19 legacy

There are numerous examples of how the European LEAs have more and more tried to cope with the constraints and limitations imposed by the recent lockdown's months, the persistent risks and threats for individual and public health[5] and the changing in crime patterns.

In the early phases of the pandemic, continuous training and static learning were almost suspended, while practical training and on-site teaching were limited to very urgent situations and addressed only to small groups of learners. Class-oriented training was not possible and gradually distance learning was promoted. Accordingly, the use of both dedicated Learning Management Systems (LMS) and digital equipment has considerably increased, so that they now are indispensable and widely used.

> *At present, the improved confidence with and the greater acceptance towards **distance learning** are contributing to the general agreement on the importance of considering the **Covid 19 crisis** also as an **opportunity** and a **chance** to improve the actual context in the wake of the pandemic*

As a matter of example, it seems that the European LEAs have appreciated the trainers' increased capacities in distance teaching and in drafting digital materials. There was a high level of satisfaction of the learners with reference for instance to "better visualisation", "more varied lessons", "more interdisciplinarial understanding", "better information handling" and "more interest in learning".[6]

However, the severe needs unveiled by both the pandemic and the massive push towards online learning with regards to law enforcement training at an European level are still actual and they mostly refer to the lack of solid online infrastructure and appropriate professional capacity to deliver ground-breaking e-learning activities.[7]

At an international level, the key role of technology in police training is also observed and acknowledged: "the belief is that even post-pandemic, there will be a significant enough backlog of training requiring classroom space that moving some training to virtual classrooms will continue to be a solution".[8] It is

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[5] They were discussed during the *CEPOL Research and Science Conference 2021. Pandemic Effects on Law Enforcement Training & Practice: Taking early stock from a research perspective*, 5 – 7 May 2021, online. The papers presented are available at the following URL: https://conference.cepol.europa.eu/cepol-online-conference-2021/schedule/ (Last visit on July 27, 2021).

[6] M. Fuchs, G. Enkling, A. Muff, *Challenges for the police training after COVID-19 – Seeing the crisis as a chance*, paper presented at the CEPOL Research and Science Conference 2021. Pandemic Effects on Law Enforcement Training & Practice: Taking early stock from a research perspective, 5 May 2021, online. The paper is available at the following URL: https://conference.cepol.europa.eu/cepol-online-conference-2021/talk/R9JRJU/ (Last visit on August 17, 2021).

[7] Hearing of the Executive Director of the EU Agency for Law Enforcement Training, Dr h. c. Detlef Schröder before the European Parliament Committee on Civil Liberties, Justice and Home Affairs (LIBE) on the impact that COVID-19 on law enforcement training needs. 27 October 2020. Available at https://multimedia.europarl.europa.eu/en/committee-on-civil-liberties-justice-and-home-affairs_20201027-1345-COMMITTEE-LIBE_vd (Last visit on September 14, 2021).

[8] Canadian Police Knowledge Network (CPKN) (2020), Training Response to Covid 19. Current trends and a look at the future of Technology-Enhanced Learning, p. 3. Available at https://www.cpkn.ca/en/news/virtual-classroom-research/ (Last visit on October 05, 2021).

suggested – and recommended – by police officers to integrated virtual classrooms into the LMS so to reduce the number of programs needed by students/learners to access as well as to provide seamless access to content, assignments and evaluations for hybrid training.[9]

At the same time, both trainers and learners are increasingly asking for training focusing on the correct and appropriate use of technologies applied to training. This need is even more pervasive if we consider that, on the medium term, other technologies – such as for example learning applications (including social learning platforms), micro learning, virtual reality, immersive learning technologies (AR/VR), gamification - are likely to be largely included in training for police officers.

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*In the law enforcemente sector, there is a perceptible need for distance learning to be practical, simple to use, effective and dynamic, capable of connecting not only devices but also people, intended as **learner-to-learner**, **learner-to-trainer** and **classroom-to-trainer***

In addition, there are other actual key-points to be considered, which are strictly related to students and future police officers, as well as to novice police officers:[10]

- the possible impact of distance learning on their socialisation capabilities and opportunities

- the possible impact of digital approach to police education on teamwork skills and on the mutual trust

- the possible impact of digital approach on conditioning police students/novice officers into the necessary ethical clues and professional attitudes virtually

Finally, the possible role of age, gender, ethnicity in the digital divide should be also assessed because these factors can concretely impact and hinder the efficacy of remote training.

From a more general standpoint, the law enforcement sector is debating also on some other open issues, such as:

- the real and actual learning needs and opportunities for police services

- the latest solutions for technology-enhanced training and other learning methods (also provided by industry, academia and experts), and

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[9] Ibidem

[10] These three points were addressed by Dr. Kimmo Himberg of the Police University College, Tampere (FI), during the CEPOL Research & Science Conference 2021. K. Himberg, *Covid 19: The legacy of the pandemic in police education*, paper presented at the CEPOL Research and Science Conference 2021. Pandemic Effects on Law Enforcement Training & Practice: Taking early stock from a research perspective, 5 May 2021, online. The paper is available at the following URL: https://conference.cepol.europa.eu/cepol-online-conference-2021/talk/Z9ADBX/ (Last visit on August 17, 2021).

- the priorities that should be considered while allocating resources and planning new interventions in the field[11]

- the need to avoid severe differences between the levels of readiness and responsiveness of LEAs towards technology-driven training

- the importance of reinforcing the security level/standards and the data protection systems of LMS

Furthermore, the **costs** of police training – which largely depend on the training methods adopted – are a key issue, too. Enabling police services to employ resources more effectively and efficiently should be considered a priority and this is related to reducing the **duplication of effort** (and cost) and to improving **transparency** and **accountability**. It is intended that the 'digital component' can play – and will keep on playing - a role under this respect because it can severely transform how training is delivered to police, thus redesigning (and reducing) the costs.

Finally, the **context** – e.g., crime patterns, emerging threats, security challenges… - in which LEAs are carrying out their duties should be better understood because it severely impacts on the educational needs and priorities. From this standpoint, a closer collaboration with experts, academia and research institutes could be a viable solution because they could identify best practices and develop training that is innovative and technological, support to design technology-enhanced training and other innovative learning solutions and they can provide the knowledge base (e.g., case studies, best practices, in-depth assessments…) which are essential to deal with new opportunities and challenges.

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[11] Canadian Police Knowledge Network (CPKN) (2013), Economics of Policing: Police Education and Learning Summit. Summary Report.
Canadian Police Knowledge Network (CPKN) (2021), Competency-based management framework for digital competencies in Canadian policing.

1.2   The ANITA consortium experience

From the very beginning of the COVID 19 pandemic, any possibility for the ANITA project of organising in-person meetings has been totally annulled and the consortium has been forced to revise the plans for both the training activities targeting the participating LEAs and the two-round sessions of pilots needed for testing and validating the ANITA platform by the LEAs themselves. The decision-making process has been quite complicated because designing a remote online configuration for physically driven activities has posed several difficulties and challenges. Hence, the entire consortium was called upon to share experiences, ideas and hints. An **online survey about remote training**, with both closed multiple choices questions and open questions, was disseminated to the project partners.

Table 1 below summarises the details about the sample and the main topics addressed while the key findings are briefly described in this paragraph.

Sample	23 people (15 men / 8 women), aged mostly between 30 and 50 years
Topics	(1) direct participation in remote training activities (e.g., number of times, type of entity organising the activities, topics covered, format, duration, overall experience, positive and negative aspects…),
	(2) experience with and evaluation of the online learning environments (considering in particular the possibility to interact with the trainers and the other participants, and the overall learning outcomes)
	(3) positive and negative implications of the dramatic increase in the use of online learning environments also for training activities imposed by the Covid 19
	(4) most important factors for a successful online training addressed in particular to LEAs
	(5) possible use of the ANITA platform by LEAs also for training activities

Table 1 - ANITA consortium survey: sample and topics

(1) Direct participation in remote training activities. In general, the respondents have a basic experience with remote training (they attended online training sessions on average between 1 to 5 times), with a higher frequency of participation by people aged between 30 and 40. The sessions were organised mostly by their own organisations or by Universities and research centres; in the specific case of the participating LEAs, the remote trainings were organised by other law enforcement agencies or by international organization (e.g., Europol, Interpol, Cepol…). The formats were quite diversified, ranging from structured courses to specific modules, lasting between 1 to 3 hours or half-day.

(2) Experience with and evaluation of the online training(s) attended and the online learning environment. The opinions are in general quite positive. As represented in Figure 2, the overall level of satisfaction with the online training(s) attended by the survey respondents is rated around 4 out of 5, from a 1 to 5 scale (1 being 'not at all satisfied' and 5 being 'very satisfied').
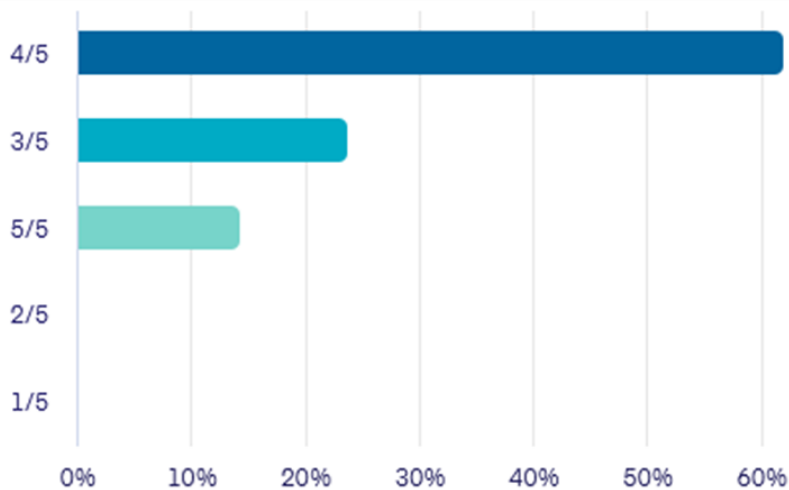
Figure 2 - ANITA internal survey. Overall level of satisfaction with the online training(s)

The same attitude can be found when evaluating the overall experience with the online learning environment, with the 60% of the respondents choosing 4 out of 5 and 25% opting for the maximum score available.

In general, the interaction with the trainer and the networking with the other participants in the framework of the online learning environment, as well as the learning outcomes achieved through it, obtained a good evaluation, too. However, in both cases the scores refer mostly to 4 out 5 and 3 out of 5, thus showing a sort of uncertainty. The respondents perceptible hesitation towards their actual level of satisfaction with distance learning is confirmed by the comments and opinions collected in the open questions, such as:

- *"interactions and exchanges with other participants are often difficult"*
- *"difficulties in interacting"*
- *"missing the spontaneous interaction in a group and missing the 'body language' of trainers and other participants"*
- *"with online learning you do not interact with the teacher, which makes it more difficult to ask additional questions. There is also no spontaneous consultation between colleagues"*
- *"limitation in discussions and interactions with trainer and other participants due to tool noise, network latency and not seeing others"*

Accordingly, these remarks confirm that interaction and networking play a pivotal role for learners and there are still weaknesses when training is delivered remotely.

(3) Positive and negative implications of the dramatic increase in the use of online learning environments also for training activities imposed by the Covid 19. About the COVID-19 pandemic determining a dramatic increase in the use of online learning environments also for training activities, some positive and negative statements were provided in the questionnaire and the participants were asked to assign each statement with a 1 to 5 score, being (1) Strongly disagree (2) Disagree (3) Neither agree nor disagree (4) Agree (5) Strongly agree. Figure 3 shows the results with respect to positive statements.

The respondents mostly agree on the increased opportunities to participate in more trainings with respect to in-person sessions because there are no - or reduced - constraints related for example to travels, costs, the need to cope with other office priorities. It is easier also to cope with family issues… They also appreciate

the possibility to attend the courses at the time that is more convenient, especially in the case of asynchronous learning. Finally, there are increased opportunities to participate in more trainings, organised by diverse institutions and/or covering various issues.
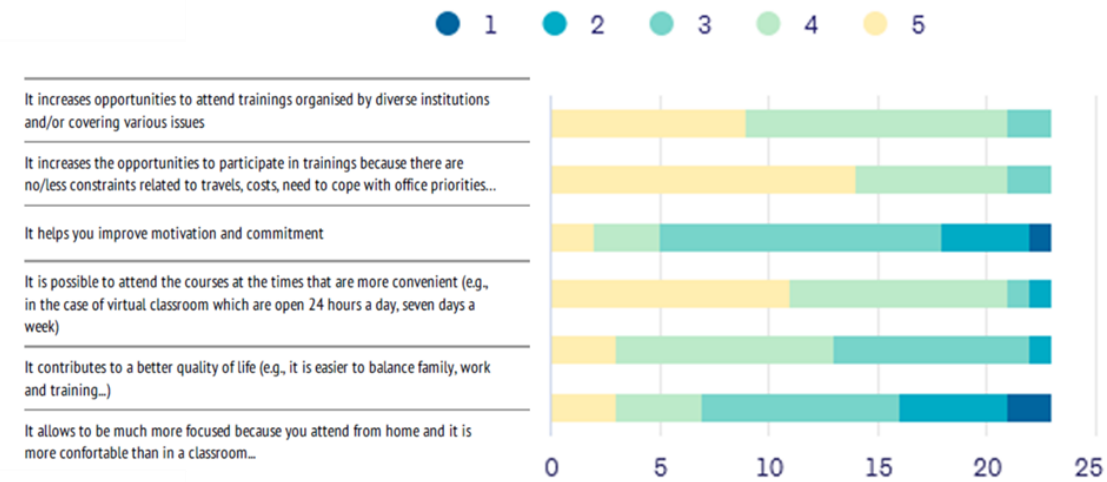
Figure 3 - POSITIVE statements related to the dramatic increase in the use of online learning environments also for training activities imposed by Covid 19. (1) Strongly disagree (2) Disagree (3) Neither agree nor disagree (4) Agree (5) Strongly agree

The negative statements chosen by the respondents are schematised in Figure 4. Interaction related issues are once again reiterated.
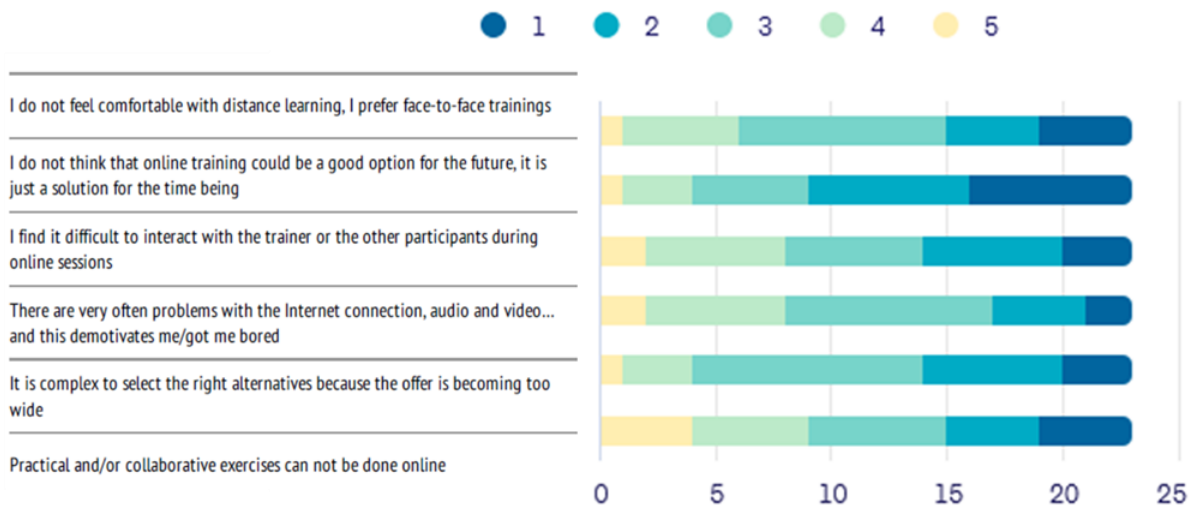
Figure 4 - NEGATIVE statements related to the dramatic increase in the use of online learning environments also for training activities imposed by Covid 19. (1) Strongly disagree (2) Disagree (3) Neither agree nor disagree (4) Agree (5) Strongly agree

The additional interesting issues which emerge from the answers are related respectively to:

- the difficulties of organising *practical and/or collaborative exercises* during remote training, and
- the *demotivation* or *annoyance* deriving from problems often related to the Internet connection, audio or video…

Both these aspects are truly relevant for the respondents; in particular, the LEAs participating in the ANITA consortium consider the practical activities a fundamental component of training to facilitate the learning process but also to support the exchange of experience and practices among the participants, networking and possible collaboration in the everyday activities.

(4) Most important factors for a successful online training addressed in particular to LEAs. As represented in Figure 5, it is interesting to observe that the "*participants skills and experience on the topic(s)*" is the most preferred option, so a homogeneous and harmonised group of learners is considered an asset for the law enforcement environment.

The "*participants good attitude towards technology*" is also important to minimise inactivity deriving from the lack of knowledge of online training platforms but also to enhance the use of innovative technologies and tools – like the ANITA ones, for example – also for capacity building.

The answers provided also evidence the importance of the contents covered (which have to be up-to-date and relevant), the balance between theory and practice and the interaction with the trainer and the other trainees. Surprisingly, the options suggesting the use of tools and the presence of skilled trainers were not largely selected maybe because they are already given for granted.
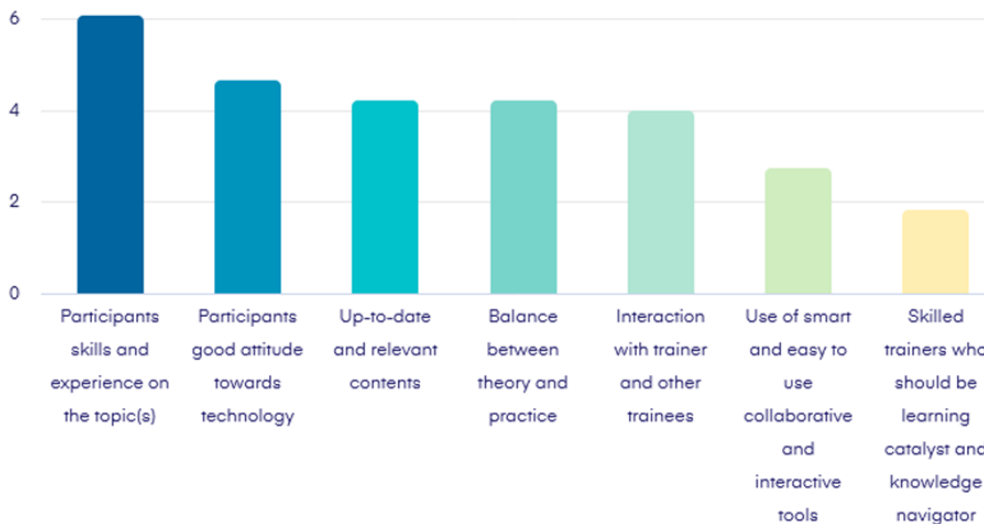
Figure 5 - The most important factors for a successful online training addressed in particular to LEAs

(5) Possible use of the ANITA platform by LEAs also for training activities. The possibility to use the ANITA platform also for training purposes is largely welcome by the respondents. It is self-evident that they have been actively involved in its designing and development, as well as in the testing and validation phases, so they are well-aware of its configuration, usefulness and potentiality.

As schematised in Figure 6, the support of **experts** in the field to develop relevant use-cases, scenarios and actionable knowledge is considered an asset and a requirement.
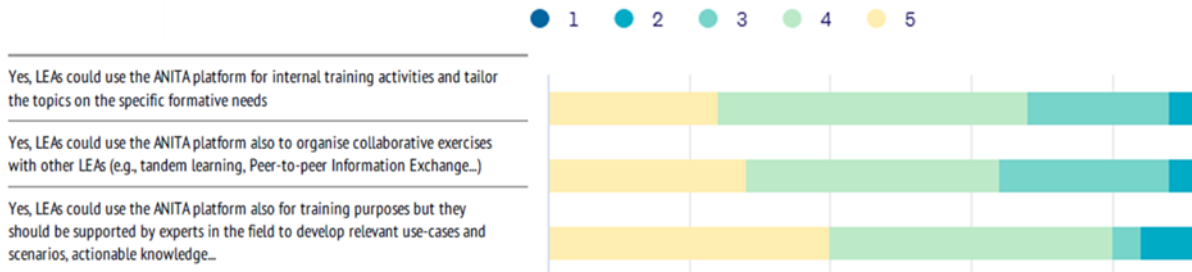
Figure 6 - Use of the ANITA platform by LEAs also for training activities. (1) Strongly disagree (2) Disagree (3) Neither agree nor disagree (4) Agree (5) Strongly agree

This shared indication of a specialised support to generate relevant educational material is probably connected to the **knowledge-based approach** experienced throughout the overall ANITA project, which has raised awareness about the importance of bridging the **'human factor'** and the **'technological factor'**.

In fact, the need for a redesigned role of technology (intended mostly as Artificial Intelligence and machine/deep learning) in the knowledge generation and learning process on criminal phenomena is becoming tangible. The development and use of promising tools to detect, collect and analyse big amounts of data have been the focus of several initiatives; however, in many cases, efforts do not seem to have paid off if we consider the costs, the sustainability and rapid obsolescence of the products developed and the real contribution to understanding the ecosystems of crime, especially online (Finck, 2019). Moreover, the technological component has ended up dominating activities like deep understanding, critical reasoning, assessment and evaluation, which are intrinsically human and should be further supported primarily through capacity building and empowerment.

> *The ANITA project subverted this general approach so that technology is at the service of the LEAs and not vice versa.*

Accordingly, it is not surprising that the respondents have oriented their preference also on the possibility to exploit the ANITA platform for **collaborative exercises** with other LEAs as well as to use the tools for internal training addressing the **specific informative needs** of the organisation and the participants. The capacity recognised to the ANITA platform to be flexible and effectively oriented towards the actual requirements of the law enforcement sector is highly appreciated. In particular, what emerged from the project activities is the need for ground-breaking ideas to strengthen the synergies between knowledge generation and multi-stakeholders actions against online illegal trafficking and illicit trade, with the support of advanced technologies. It is not only a matter of developing initiatives but of reinforcing them with adequate approaches, considering nature and granularity of the intervention and the global and local ecology of online criminal clusters.

1.3 The impact of Covid 19 on colleges, Universities and academies: emerging needs and future challenges

When the Covid 19 was declared a global pandemic in March 2020, the vast majority of schools, colleges and academies – police academies included - were closed globally to prevent or contain the spread of the virus. **Emergency remote teaching** has contributed to ensure the continuity of the educational activities and it has stimulated experts, policymakers, citizens, teachers and learners to assess the overall experience while searching for new solutions and a well-balanced approach between technology and education.

Some considerations about the increased use of distance learning, which are mostly related to colleges, Universities and academies, are schematised in table2. They are of particular interest because they can be easily transferred also to the law enforcement sector, so they are of interest for the ANITA project.[12]

The focus is on pros, cons and challenges, which are related in particular to:

a) technological

b) pedagogical, and

c) societal aspects

PROs	CONs	CHALLENGES
safeguarding health studying from anywhere, at any time possibility of saving significant amounts of money no commuting (environmental issues) flexibility to choose timesaving possibility to implement lifelong learning flexibility and effective source that allows students to become self-directed learners promoting responsibility and independence	exacerbating existing social and economic inequalities lack of resources, including access to educational technologies and the Internet problems related to school-provided IT systems, which are frequently too expensive, cumbersome and quickly out of date insufficient bandwidth, producing delays or connection failures during lessons and video conferences lack of physical spaces to carry out home-based learning losses in educational achievement, in particular for disadvantaged students disadvantages related to the inability to teach and learn practical and clinical work	reducing socially disadvantaged groups facing difficulties in meeting the basic conditions required by online learning using different modalities and media (e.g., TVs) for online/remote learning to avoid the problem of the digital divide investing in more adequate e-learning platforms to increase access to the Internet and developing an interactive learning approach providing resources (e.g., workshops or training) for teachers and students to improve their technological and pedagogical competencies in online learning producing engaging and powerful educational games and learning environments. Gamify education could be an asset

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[12] F. Ferri; P. Grifoni; T. Guzzo. Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. Societies 2020, 10, 86. https://doi.org/10.3390/soc10040086.

	lack of immediate feedback for students	training faculty and developing lesson plans with reduced cognitive load and increased interactivities
		making online learning a social and cognitive process, with a good level of interaction with the educator and the other learners
		re-designing the role of educator, whose role is more similar to the one played by a moderator and consultant
		optimising the digital content and the online lessons as well, so to avoid students watching online lessons for many hours
		ensuring an evaluation system
		ensuring that security, ethics, privacy and copyright related issues are properly managed

Table 2 - Key factors of online learning in colleges, Universities and academies

It is undeniable that academies are experiencing a range of impacts related to COVID-19. It is also unquestionable that they will have to assess and define their willingness to accept more online and alternative curriculum delivery strategies. This may also have an impact on training activities for police forces.

In fact, Universities and academies are closely linked to police authorities because of the current trend which is increasing the role of higher education institutions in the education system for training police officers.[13] There is greater attention towards the need of reorienting police training from focused practical knowledge, skills and abilities to including also critical thinking, in-depth analytical skills, professional self-regulation, communication skills or problem-based learning, so to empower police officers and support them in facing the new challenges posed by criminal phenomena.[14]

From this standpoint, the involvement of higher education institutions is considered an asset because they can offer high-standard courses and they can provide LEAs with the results achieved by the scientific community through research activities on several disciplines (e.g., penal law, criminology, forensic science, big data…). Moreover, they can contribute at achieving quality, standards, guidelines, and a general conceptual platform for improving basic and advanced police education and training. In other words, Universities and academies are asked to bridge the educational gap by providing law enforcement agencies with a problem-based learning framework, which could further contribute at developing interpersonal skills (including soft skills), engage in conflict resolution and apply decision making skills.

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[13] A. Berendieieva (2021). University education as a modern European trend of initial police training. JILC (Journal of International Legal Communication) 1(1), 246-253.

[14] S-M Christine, W Nancy (2016). Linking Educational Institutions with Police Officer Training Programs. Journal of Education and Learning. Vol. 10 (2) pp. 139-146.

In this respect, the decision whether or not to gradually increase the use of distance learning – and its various methods - will be crucial in the relationship and collaboration between Universities and LEAs.

Furthermore, also considering the comments and feedback from the ANITA end users, a greater interaction between the scientific community – *in primis* Universities and research/education institutions – and LEAs would be important to innovate the approach, the programs, the methods and to design a new learning paradigm.

1.4   Distance and blended learning for LEAs: a SWOT analysis

It is evident that the Covid 19 crisis has boosted the need for a sound transformation in the educational sector at all levels and the role of technology is increasingly pivotal.

In particular, as mentioned, remote training is becoming a crucial and fundamental option also for LEAs but, in order to become a viable alternative to in-person training, a greater balance between different aspects should be found in the next future.

Based on the ANITA findings and considering in specific the domain of online illegal trafficking, the most relevant ones seem to be related to:

- the **technological environment** to be used (which should be intuitive and allow for different types of activities)
- the **participants' skills** (which should be homogeneous and aligned)
- the capacity to provide **innovative contents** (which should address the LEAs requirements and should duly represent the latest criminal dynamics and trends, based on a sound knowledge-based and inter-disciplinary approach)
- the possibility to combine both **theory** and **practice** (which should be further enhanced by advanced technologies and innovative ideas also promoting collaboration among different organisations)

*In this respect, the possible **combined effect** of both **innovative user-centred platforms** – like the **ANITA** one – and **remote training** looks **promising**. An introductory analysis about this proposed synergy is herewith enclosed with the intent to contribute at the debate on the strengths, the weaknesses, the opportunities and the threats (SWOT analysis)*

About the **strengths**, it could be possible to develop innovative environments for learning purposes and to re-think the 'learning' concept so to make it more actual and pioneering. By using advanced tools (or platforms), it would be easier also to organise training on digital-related issues for law enforcement profiles which are not directly involved in IT-related crime but which need to have at least a basic understanding of the criminal dynamics and a good attitude towards the tools developed for/used by LEAs. This would facilitate training programmes promoting horizontal competences and it would contribute at improving communication and collaboration.

Furthermore, there could be room for a greater interaction between activities in operational environment, empowerment and capacity building. In the case of the ANITA platform, it is meant for investigative purposes but it is structured in a way that it can easily and promptly support also mock operations, joint exercises… Being an online tool, it would be possible even to involve more LEAs, from different countries, on a global scale.

Finally, it could be possible to improve the investigative skills on specific cases of interest for each learner (or homogeneous group of learners) as well as the capacity to assess interlinks between criminal phenomena. Training programs could be flexible and tailored on the specific needs and objectives of the trainees.

On the other hand, the **weaknesses** to be considered are the limited occasions - or in some cases the increased difficulties - to interact, to exchange views about personal experiences and good practices, and the reduced chances to do networking. Finding a viable way to promote interaction among distance-learners should be a priority in design learning.

The **opportunities** which could be already envisaged are related to the possibility to set pioneering and challenging learning objectives, to adapt the contents according for example to the participants' skills, the specific local/regional dimension or the type of criminal phenomena, as well as to develop self-learning thematic courses. The flexibility which is intrinsically embedded in the combination between both advanced tools – like the ANITA platform - and remote training could become an added value under many respects involving for example accessibility, contents, activities, materials, teaching methods.

From a wider standpoint, one of the greatest opportunities is the possibility and capacity to promote a shift from 'police training' to 'police education' [15] in the delicate area of cyber-investigations, which pose important legal and ethical issues. [16] In fact, cybercrime investigators and digital forensics professionals should legally and ethically investigate cybercrime, handle, analyse, process and interpret digital evidence, and report findings. However, while legal constraints are prescribed by national, regional, and international laws, ethical rules – if present - are often self-imposed, prescribed by public authorities and/or private professional organizations. Accordingly, there might be differences or discrepancies across the various jurisdictions. [17] Considering that cyberspace, cyber-investigations/policing and the use of advanced technologies (in particular AI) do pose severe challenges, it would be important to include these issues in a police-oriented education programme because it would contribute at building a culture of lawfulness by strengthening the ethical values and the ability to act upon them.

The main **threats** or risks could derive from the low participants' engagement caused by multiple factors such as the lack of awareness about the criminal phenomena investigated, the limited confidence or skills on the technologies used, the gaps related for example to age/generation, gender or bias, the difficulties related to interactions with the other participants and the trainers or even the problems posed by technical complications, such as the unstable Internet connection or the audio and video not working properly.

The consideration which is emerging from the assessment of the overall ANITA experience, which could also be read as a possible recommendation, is that digitalised and remote trainings addressed to law enforcement agencies require both a new and innovative **didactic concept** and a ground-breaking **learning paradigm**. [18]

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[15] S. Venukapalli, (2021) Police training to police education: a paradigm shift in police curriculum, Pro Edu. International Journal of Educational Sciences, No. 4, Year 3/2021, 71-84.

[16] K.C. Seigfried-Spellar; M. Rogers, D.M. Crimmins, "Development of A Professional Code of Ethics in Digital Forensics" (2017). Annual ADFSL Conference on Digital Forensics, Security and Law. 12. Available online: https://commons.erau.edu/adfsl/2017/papers/1.

[17] MEDIA4SEC (2019), Policing the Dark Web: Ethical and Legal Issues, by K. Hadjimatheou.

[18] These concepts are further explored in Chapter 3 - ANITA General recommendations and guidelines for curricula development.

In-person lessons are essential for their wide-ranging benefits but the Covid 19 pandemic is showing how distance learning could be also revolutionary and powerful. However, in order to work, the equilibrium among the three main components represented by **educating**, **discussing** and **exchanging** should be established, continuously monitored and regularly re-balance, if needed.

Based on the SWOT matrix's findings, in the framework of the ANITA project, some inputs and hints were discussed by the partners. They are listed below:

- distance learning addressed to LEAs should be designed around multiple and diversified options, so that each learner could find the best solution to feel motivated

- a variety of activities should be offered and they should be carried out mostly in small groups to facilitate active participation, interaction and exchanges

- trainers should also become facilitators, so to enhance the link between the content to be learnt, the learning process and the critical thinking

- while experimenting new solutions in the field of distance learning, synchronous and asynchronous services to support the trainees should be also improved

- feedback and evaluation should be regularly collected to keep on revising and adapting the activities to the real needs and expectations

Finally, as already mentioned, possible issues related to ethics, human rights protection and gender equality should be considered, adequately handled and regularly assessed.

2 Building capacities by using the ANITA platform

2.1 Overview of the ANITA platform

Before describing how the ANITA platform could be used for building capacities and designing new curricula, an outline of its configuration, available services and functioning is needed. [19]

> *The ANITA platform is a novel user-centred investigation platform integrating advanced tools to discover relevant data sources disseminated on the Web (including the Surface Web, the Deep Web and the Dark Web) and analyse, enrich and correlate them to support investigations on illegal trafficking.*

It is **investigation-based**, where 'investigation' is an operative workspace in which users can manage information related to a specific case.

There are two main user profiles corresponding to 'basic investigator', that can be assigned to one or more investigations, and to 'investigation manager', that can create a new investigation and add basic investigators to the investigation. The investigation manager has access also to administrative functionalities which are not available to a basic investigator. In addition, the user profile 'administrator' is related to a super-role having access to key services such as portal settings, system management and monitoring, user management and investigation management.

ANITA's primary goal is twofold: 1) to boost the LEA's investigation process in a layered juridical and ethical approach by significantly increase their operational capabilities through a set of innovative tools for efficiently addressing online illegal trafficking challenges 2) to facilitate the novice officers training process and to optimize the learning curve.

ANITA is based on four pivotal activities, namely:

1. 'Listening to the Web' – detecting, monitoring and collecting data and information

2. 'Analysis' – big data analysis and analytics development, with specific regards to entity recognition, topic extraction, classification clustering, summarisation, emotions recognition, stylometric analysis

3. 'Knowledge-management' – knowledge generation and reasoning, with the integration of human factor in the analysis loop and the possibility for Law Enforcement officials to validate new knowledge

4. 'Decision-making support' – modules integrated in the ANITA platform addressing the needs of the specific functional areas (investigation, source monitoring, text analysis, image and video analysis, audio analysis, knowledge browsing and validation, unconscious human feedback in the loop)

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[19] The ANITA system and its applications are described in detail in D9.10 – Novel applications for illegal trafficking and chain of custody – Final and in D9.11 – ANITA System – Final.

Concretely, the ANITA platform integrates a set of specific services, which can support LEAs in their tasks and activities. They are listed below:

- **Knowledge graph explorer**: it is the backbone repository of knowledge that has been validated by users and it provides information for performing reasoning processes and pattern identification. It provides information about the main elements of ANITA domain, such as resources, people, organizations, groups, events and relationships among them. It can be further improved by the user who can upload additional sources/data, in different formats.
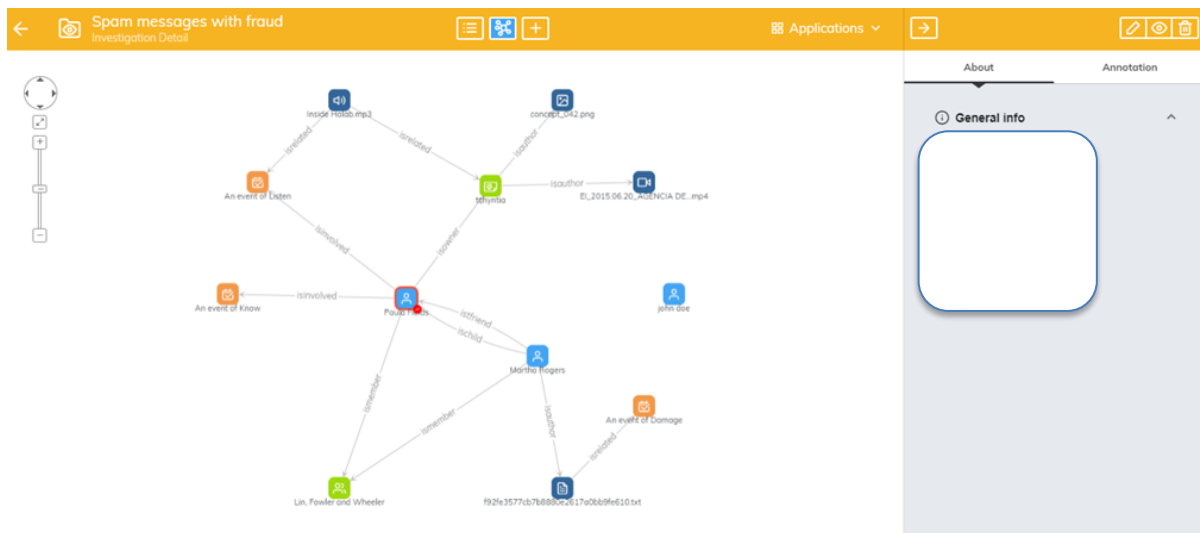
Figure 7 – ANITA - Knowledge graph of an investigation

- **Resources analysis**: it is the application for accessing, browsing and managing information stored in ANITA. Detailed views can be obtained for each kind of resources stored in ANITA, such as texts, videos, audio files, images.

Texts analysis is supported by translation, entity and relationship extraction, stylometric analysis.
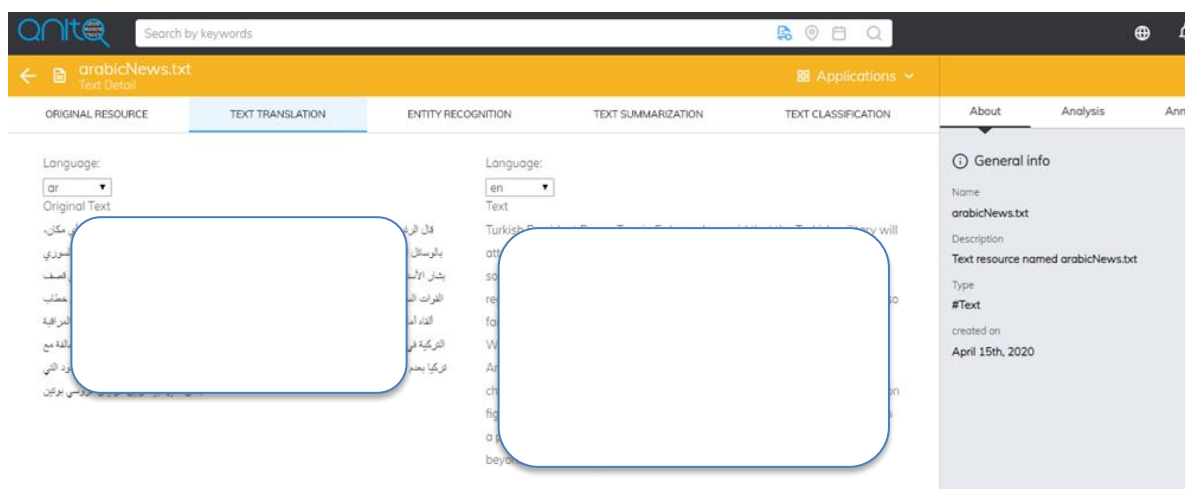

Figure 8 - ANITA - Text analysis - translation
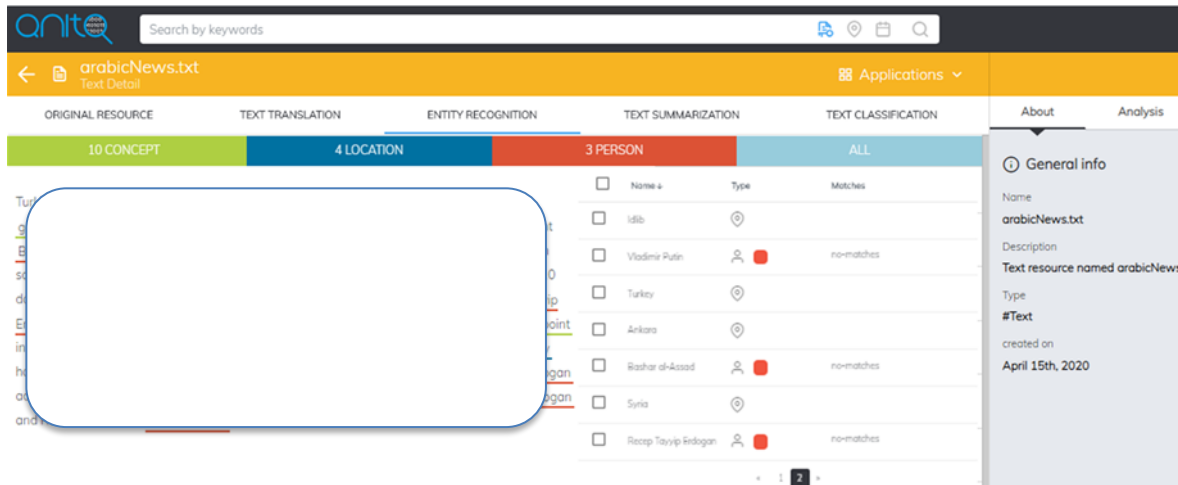
Figure 9 - ANITA - Text analysis - entity and relationship extraction
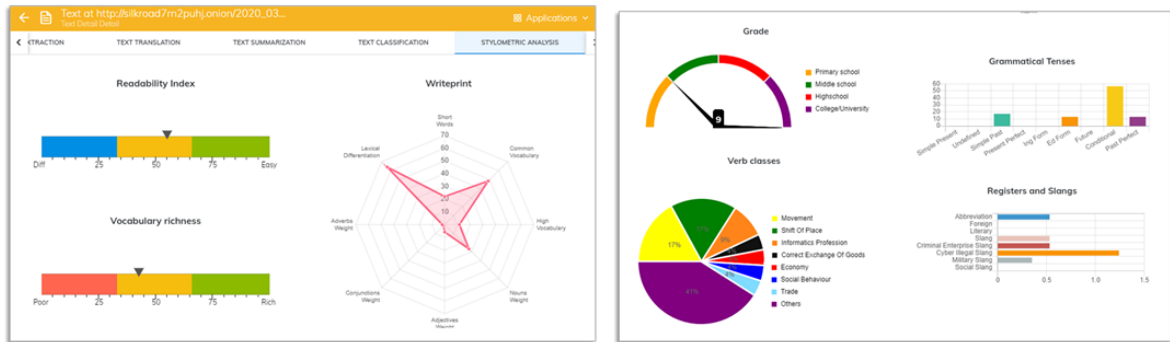
Figure 10 - ANITA - Text analysis - stylometric analysis

Audio analysis is supported by services related to audio player, speech-to-text, text summarization, text classification and stylometric analysis.
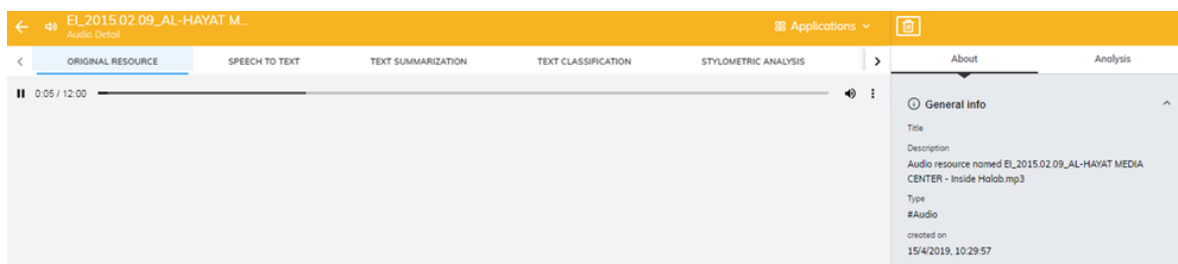
Figure 11 - ANITA audio analysis

Image analysis allows to collect relevant metadata (in particular, metadata related to publishing date, ingestion date, authorship, original URL and other information are shown on the right panel) and to perform the following analysis: Object detection, Concept detection, Object-based Visual indexing, Location-based Visual indexing

Video can be reproduced and metadata related to publishing date, ingestion date, authorship, original URL and other information can be extracted and displayed. The services provided by the platform are related Object detection, Concept detection, Speech to text.

- **Source monitoring**: this application allows user to schedule the periodic download of Surface and Dark websites (in terms of HTML pages) and related resources (images, videos, files, etc.)

- **User annotation**: the user can add personal notes to any element of the investigation. The annotations added by users on entities are also exploited by the search and retrieval mechanisms to provide better-quality results during searches

ANITA also provides users with advanced reasoning mechanisms, whose findings (called 'suggestions') should be validated by the user before being included in the knowledge graph.

It is also possible to use the dedicated **search bar** to perform specific searches within and without the platform; for example, considering external sources, it is possible to navigate on search engine as well as on a sample of social media.

One distinguished feature of ANITA is the **financial transaction browser** because it allows user to search information retrieved from the blockchain, starting from the identifier of a crypto address or a transaction. The browser allows exploring details of: **Crypto address** – information related to first and last activity, money balance, incoming and outcoming transactions and addresses with which it mostly exchanged transactions; **Clusters** – it refers to the set of crypto addresses that are part of the same wallet and provides same information retrieved for a crypto address, but computed over the entire address set; **Transactions** – information related to involved addresses (who sent and who received money), amount of exchanged money, time at which transaction was performed.

2.2 The ANITA case for innovation on illegal trafficking

*The ANITA platform does not provide just a set of advanced functionalities to support law enforcement agencies in investigating online illegal trafficking. Rather, if properly understood and implemented, it could be a powerful **knowledge-management tool** capable of innovating and fostering the LEAs efforts and activities against this composite criminal phenomenon*

In fact, ANITA contributes at adopting a **holistic approach** where the **synergy between the 'human factor' and the 'technological factor'** is crucial and **building capacities** becomes one of the fundamental components of a **wide**, **circular and knowledge-based model**.

As represented in Figure 12, the ANITA experience has demonstrated that there is need for a closer interaction between:

- the **domain knowledge** [in ANITA, it is provided by the continuous **criminological assessment**]

- the capacity to retrieve, collect, process and analyse a huge amount of updated **data and information** [in ANITA, it is provided by the **user-centred platform**], and

- the **empowerment** of police officers [in ANITA, it is provided by **trainings and capacity building**]

The interaction between these main factors should be considered fluid and constant, so to maximise their impact on LEAs' key activities - such as **investigations**, **intelligence** and **monitoring** – which are always evolving.
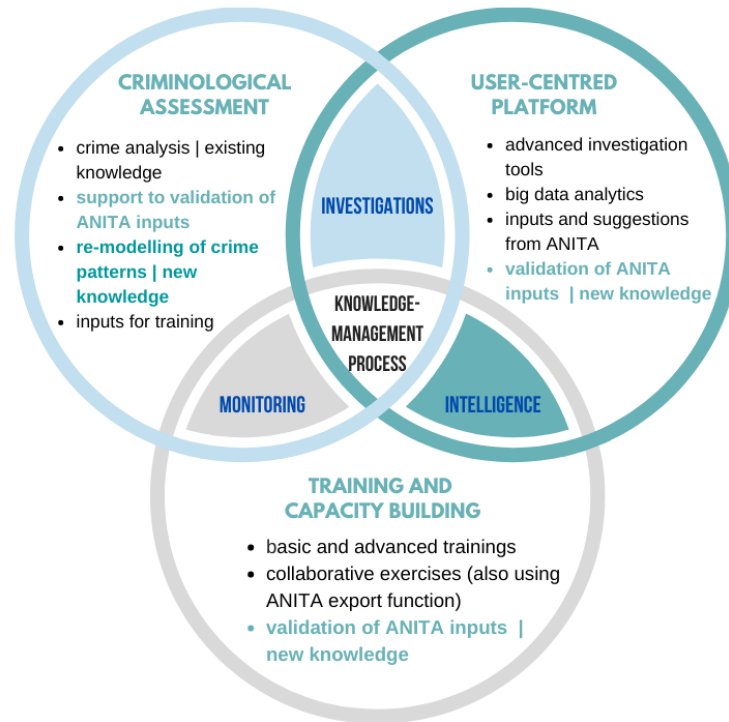
Figure 12 - The ANITA case for innovation on illegal trafficking

Operationally, the ANITA project suggests a **model**, which:

- maximises the **existing knowledge base** provided by the criminological assessment and the domain knowledge

- further enriches this knowledge base with the **new knowledge base** provided by the **suggestions and inputs from the tools**, and

- involves the police officers in the **validation phase**, which is needed to include the suggestions from the ANITA system in the platform's dataset and knowledge graph

This **validation process** is fundamental and it is in charge of the **platform's user**, who must have the proper skills to accept – or refuse – them. It is understood that the platform's user must have a sound inter-disciplinary knowledge to be able to properly use the tools and intercept the most relevant and interesting suggestions from the ANITA platform.

*It is a revolutionary way of integrating advanced and complex technologies in the framework of the law enforcement agencies, which can also contribute at overcoming the possible uncertainties related to the expected impact of the ANITA platform. In fact, even if some of the **tools** can partially replicate the functionalities already available to some LEAs, the possibility to have them **integrated into a unique dashboard** and **the ANITA ground-breaking vision and approach** are unique*

In the **ANITA vision** and proposed model, **capacity building** and **training activities** are crucial under many respects; mostly, they are not just limited for example to give the basic or advanced instructions about how to use the tools or to organise seminars on the criminal dynamics and modi operandi. They are one of the key components of a knowledge-based process, whose goal is the user's empowerment and professional growth, thanks to the joint integration of human and technological skills.

The scheme outlined in Figure 13 (below) illustrates a possible example of how training and capacity building could be implemented by LEAs in the framework of the ANITA platform's use and including key and pioneering issues and a trans-disciplinary approach could be strategic

Moreover, as suggested by the ANITA end-users (see Figure 6 - Use of the ANITA platform by LEAs also for training activities. (1) Strongly disagree (2) Disagree (3) Neither agree nor disagree (4) Agree (5) Strongly agree), the role of **experts** in the field – such as criminologists, analysts, practitioners… - is pivotal because they could:

- define and/or develop the methodology and design the process needed to implement a tailored knowledge management process, including the actions in the field of training and capacity building also considering the train-the-trainers programmes

- support LEAs to effectively understand, assess, manage and further exploit the feedback and inputs from the ANITA system

- develop the knowledge base of reference for the LEAs, considering the various background and areas of competence. In particular, two crucial LEAs' needs should be addressed: to improve the capabilities to *get* information, thus training in particular people with a technical background, and to further enhance the competences to *analyse* such information, thus training in particular the analysists[20]

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[20] This issue emerged and was debated also in the framework of the H2020 DANTE Project – Deliverable 2.2 - DANTE Guidelines for LEAs. The Deliverable is confidential.

- promote and facilitate a more fruitful dialogue and a greater collaboration between the technology providers and the LEAs. They can be a sort of 'facilitator', who can understand and 'speak the same language', thus minimising the risk of misunderstandings which could in turn impact on the use of the ANITA platform

Figure 13 – Building capacities by using the ANITA platform

As mentioned, the circular model proposed by the ANITA project assigns a pivotal role to training and capacity building. Based on the project experience, it is suggested and recommended to focus on four main areas, which should closely interact in a circular way:

1. **crime analysis and assessment** based on **existing knowledge** provided by the latest criminological assessment and a trans-disciplinary approach

2. **technical issues** related to building (or reinforcing) **operational skills** and covering a variety of diversified aspects, ranging for example from innovative investigation techniques and discovering and using relevant sources to how to properly use the technological tools and how to make sense out of the information retrieved, collected and further processed by the tools themselves

3. **feedback**, **suggestions** and **inputs** from the **ANITA tools**, which should be well-understood by the user who has to validate them and to properly use them in the daily activities

4. in-depth **analysis** and **exploitation** of **new knowledge** provided by the ANITA platform so to integrate and re-modelling the actual knowledge base and to assessing the ideas, hints and inputs for innovation and improvement in the area of investigation, intelligence, monitoring and forensic

This model is flexible and can easily address the diverse needs and requirements of the users also considering their **specific role (or tasks)** and/or the **level of expertise**. Both aspects are of utmost importance because they are two strategic factors when designing a learning path, its overall goals and specific objectives, its structure and organisational model.

Some examples describing the relevance and applicability of the ANITA circular model in the law enforcement environment, with a specific focus on training and capacity building, are herewith provided.

EXAMPLE *1* - POLICE TRAINERS

Police trainers (or training operators) could benefit of the proposed ANITA model under many respects; they could use the platform to build capacities in the framework of self-learning activities or while they are designing programmes and courses for the trainees. In particular, the possibility to extract and further work out relevant use-cases, horizontal scenarios or even early warning signs could be an asset to propose updated contents, to balance theory and practice, to organise collaborative exercises, to explore new teaching methods (such as gamifying), but also to find a new balance between frontal lessons and self-learning. In this way, the trainers can adopt a new approach when forming the class groups, they can better orient the activities according to the level and skills of each group of learners and they can tailor the learning experience on both the overall goal(s) and the specific objectives of each learner as well as of the whole group.

EXAMPLE *2* – NOVICE OFFICERS

In case of **novice officers**, the learning curve could be optimised by merging theoretical lessons, field exercises on the topics covered in the theoretical lessons and direct use of the ANITA system. In this way, it would be possible to support the officers to deal with more complex scenarios, tools and sources and to become more confident with various investigative techniques. An increasing level of complexity, depending on the achievements of specific skills, could be designed.

It could also be possible to collect, integrate and re-use knowledge from multiple expert officers under many respects: from the training sessions to the development of a recommendation functionality to transfer the acquired 'know-how' to the new officers. In this way, novice officers could be supported through multiple and complementary actions, which would better balance the 'human factor' and the 'technological factor'.

EXAMPLE *3* – CRIME ANALYSTS

Crime analysts identify patterns and gather helpful data for detecting and preventing crime. Their role in the LEA's internal knowledge management process is crucial and they represent a fundamental point of reference for investigators and officers but also for police managers who deal the administrative activities of coordinating, controlling and directing police resources, activities and personnel. In fact, crime analysts give insight about relevant criminal phenomena, trends and scenarios and about possible countermeasures to empower LEAs.

Due to the evolution of modern intelligence, there has been a growing need for data analysis and advanced tools. So, crime analysts should be continuously trained according to their level of expertise; moreover, staff rotation and replacement should be carefully planned and managed.

The ANITA platform could be easily used to address the specific needs of crime analysts with reference to online (and offline) illegal trafficking. Some examples of issues which could be included in trainings and/or capacity building activities, both theoretical and practical, are herewith provided. Of course, they could be tailored on the learners' level of expertise and they could be divided into basic and advanced initiatives:

- analytical techniques, such as identifying and describing crime patterns, trends and series

- forecasting future criminal occurrence

- relevant sources (social media included), databases and technologies relevant for intelligence field

- tactical, strategic and administrative crime analysis

- investigative case support

2.3 Towards competency-based capacity building: designing a curriculum for the ANITA platform

The ANITA platform can effectively contribute at the objective of moving towards a "competency-based capacity building approach"[21] in the field of countering online illegal trafficking and potentially about the wider category of technology-related or facilitated crime.

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*This objective is crucial because it ensures that each job role is delivered by an official, who has the required **knowledge**, **skills** and **behaviours** (KSBs) for that role*

Assessing the **internal competency framework** becomes the precondition for targeting the real and most actual informative needs, but also to ensure that the resources and efforts allocated on trainings and capacity building have a positive return on investment (ROI).

Competency is here intended – and should be intended - in its broadest meaning, thus encompassing the **integrated application** of **knowledge** and **skills**, but also **values**, **functional capacities**, **attitudes**, **experiences**, **responsibilities** and **personal traits** in order to perform a job (or a task) successfully.
This definition is coherent with the holistic and knowledge-based approach characterising the whole ANITA project, as well as with the multi and trans-disciplinary method used by the action.

The **expected outcome** of designing a competency-based capacity building is an enabled and facilitated continuous learning, based on the LEA's internal competency framework and driven by role-based knowledge and skills. In this way, it would be possible to improve the effort towards a more efficient administration of

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[21] Rao Shilohu, Learning Management System (LMS) for Police Training Academies and Institutes under Digital India Programme. White paper, 2018. Available online: https://www.semanticscholar.org/paper/Learning-Management-System-%28LMS%29-for-Police-and-by-Rao/b67437391fbbdd63ac952e9a284811bfee2a1eca. (Accessed 27/09/2021).

training, which could become more flexible and capable of addressing the learners' needs and providing regular content updates, at affordable costs.

The present section briefly schematises the main steps which could be easily followed to design an ANITA-based curriculum and to exploit the ANITA tools not only for investigations, but also to build competency and capacities on online illegal trafficking. Three examples are provided, one for each ANITA use case

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It is suggested to start by implementing a process divided into **three major phases**:

1) KNOWLEDGE-AREA GROUPING: defining the most relevant knowledge areas (or knowledge clusters) according to the participants' specific roles and level of expertise, also considering the gaps which need to be addressed and reduced

2) TRAINING IDENTIFICATION: based on the knowledge-area grouping, identification and listing of the unique trainings which are recommended in accordance with the internal competency framework

3) COMPETENCE AND SKILLS TRAINING MATRIX: designing of a competence and skills training matrix resulting from the mapping of the identified unique trainings with the various skills as mentioned in the internal competency framework

Then, the **work areas** should be also outlined. Within the ANITA project, **investigation**, **monitoring** and **intelligence** were considered of utmost importance, so the profiles of interest for this section are in particular:

- **investigators**

- **crime analysts**, and

- **training operators**

The **competency levels** should be defined. As a matter of example, based on the ANITA experience, three main competency levels - which can broadly be matched to **work levels** – could be appropriate. They are as follows:

- level 1 – practitioner

- level 2 – supervisor/middle manager

- level 3 – senior manager/executive

Finally, the various **levels of cognitive learning**[22] and their related **educational objectives**[23] should be considered and tailored on the different work areas and competency levels mentioned above. They could be as follows:

Cognitive learning	Educational objectives	Levels
1. Remembering	Recall or retrieve previous learned information Keywords: define, describe, identify, label, list, match, name, outline, recall, recognise, reproduce	
2. Understanding	Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words Keywords: comprehend, convert, distinguish, explain, generalise, give an example, infer, interpret, predict, rewrite, summarise	
3. Applying	Use a concept in a new situation or unprompted use of an abstraction. Appling what was learned in the classroom into novel situations in the workplace Keywords: change, compute, construct, demonstrate, discover, modify, operate, predict, relate, show, solve, use	1 – novice 2 – intermediate 3 – advanced 4 - accomplished
4. Analysing	Separating material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences. Keywords: analyse, break down, compare, contrast, deconstruct, differentiate, discriminate, distinguish, identify, illustrate, infer, outline, relate	
5. Evaluating	Make judgments about the value of ideas or materials. Keywords: appraise, compare, conclude, contrast, criticise, describe, discriminate, evaluate, explain, justify, relate, summarise, support	
6. Creating	Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure. Keywords: categorise, combine, devise, design, explain, generate, organise, plan, rearrange, reconstruct, relate	

Table 3 - Cognitive learning, educational objectives and levels

As mentioned, in line with the circular model already proposed (Figure 13) and considering the possible contribution of the ANITA platform, **three examples of basic curricula focusing on the project's three main uses cases are herewith provided**.

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[22] For the sake of this Deliverable, "level of learning" refers to the cognitive process and to the goals and competencies a learner can achieve.

[23] L.W., Anderson, D.R., Krathwohl, P.W., Airasian, K.A., Cruikshank, R.E., Mayer, P.R., Pintrich, J., Raths, M.C., Wittrock (2001). A Taxonomy for Learning, Teaching, and Assessing: A revision of Bloom's Taxonomy of Educational Objectives. New York: Pearson, Allyn & Bacon.

B.S., Bloom (Ed.), M.D., Engelhart, E.J., Furst, W.H., Hill, D.R., Krathwohl (1956). Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain. New York: David McKay Co Inc.

R., Clark, L., Chopeta (2004). Graphics for Learning : Proven Guidelines for Planning, Designing, and Evaluating Visuals in Training Materials . San Francisco: Jossey-Bass/Pfeiffer.

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*These examples could be used by **learning designers** and **trainers** as a starting point to develop an individual or collective competence and skill training matrix, which could be then used to design basic or advanced curricula, also involving the ANITA platform*

The training priorities and the core capability gaps of law enforcement officials elaborated by CEPOL in the EU Strategic training needs assessment - EU-STNA 2018-2021[24] are included in the knowledge clusters. Moreover, the following reports and official documents were also consulted to find the most actual issues and priorities: SOCTA 2021,[25] IOCTA 2020,[26] EMPACT 2022+,[27] EU Security Union Strategy,[28] EU Strategy to tackle Organised Crime 2021-2025,[29] and TE-SAT 2021.[30]

The findings of the H2020 DANTE Project,[31] with specific reference to D2.2 - DANTE Guidelines for LEAs. Training materials and curricula for LEAs, were also considered.

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[24] CEPOL (2018). EU Strategic training needs assessment (EU-STNA / 2018-2021). Available online: https://www.cepol.europa.eu/otna. (Accessed 22/09/2021).

[25] EUROPOL (2021), SOCTA 2021 - European Union serious and organised crime threat assessment, A corrupting influence: the infiltration and undermining of Europe's economy and society by organised crime, Publications Office of the European Union, Luxembourg.

[26] EUROPOL (2020), INTERNET ORGANISED CRIME THREAT ASSESSMENT (IOCTA) 2020, Publications Office of the European Union, Luxembourg.

[27] Council of the European Union, Council conclusions setting the EU's priorities for the fight against serious and organised crime for EMPACT 2022 – 2025, Brussels.

[28] European Commission, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the EU Security Union Strategy, Brussels, 24.7.2020. COM(2020) 605 final.

[29] European Commission, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the EU Strategy to tackle Organised Crime 2021-2025. Brussels, 14.4.2021. COM(2021) 170 final.

[30] EUROPOL (2021), TE-SAT - European Union Terrorism Situation and Trend report 2021, Publications Office of the European Union, Luxembourg.

[31] For more information about the project: https://www.h2020-dante.eu/.

EXAMPLE 1

Knowledge-area on drugs, including the production, trafficking and distribution of new psychoactive substances and synthetic drugs

(ANITA use case 1 | CEPOL STNA - thematic training area nr. 9)

Core capability gaps to be addressed by trainings (according to CEPOL STNA):

- Open-source intelligence, data collection, analysis and application
- Financial investigations, money flows, alternative banking, etc.
- Elements of cyber-investigations, darknet and e-evidence

Example of ANITA-related curricula:

Knowledge clusters	Suggested key issues for ANITA-aided training	ANITA contribution
1. EXISTING KNOWLEDGE	Categories and typologies of substances	o to explain and/or consolidate basic and/or advanced notions o to provide examples to be used to explain how the tools work o to translate key documents o to elaborate use cases and examples o to elaborate horizontal scenarios o to work on early warning signs o to set basic and/or complex exercises to be assessed at individual level o to set collective exercises to be solved in small groups o to implement knowledge-by-learning activities o to develop innovative teaching method, including simulation training o to foster interaction among learners o to support self-assessment and evaluation
	Identifying and profiling psychoactive substances and precursors	
	Online drug trafficking: general overview and criminological assessment	
	Online drug markets in Surface and Dark Web	
	Criminal modi operandi and human factor	
	Interlinks with other illegal trafficking activities	
	Interlinks with cybercrime	
	Financial investigations in drugs-related cases	
	Key operations/investigations at European and international levels	
2. OPERATIONAL SKILLS	Relevant sources and datasets about drug trafficking (direct and indirect crime indicators)	
	Data collection and assessment (methods, theories and practices)	
	Investigative techniques	
	Investigations on Darknets	
	OSINT / open-source intelligence	
	Forensic expertise	
	E-evidence	
	Simulations in operational setting	
	Collaborative exercises between groups of learners and possibly between LEAs	
3. INPUTS FROM ANITA	Artificial intelligence for the law enforcement sector	
	Assessing the suggestions from the tools	

	Making sense out of (big) data	
	Assessing early warnings on criminal trends/methods	
	How to use advanced tools in operational environment	
4. NEW KNOWLEDGE	Validating new knowledge	
	Re-modelling criminal scenarios and crime patterns	
	Advanced investigation techniques	
	Intelligence analysis	

EXAMPLE 2

Knowledge-area on Firearms. Illicit trafficking and distribution (focus on online framework)

(ANITA use case 2 | CEPOL STNA - thematic training area nr. 7)

Core capability gaps to be addressed by trainings (from CEPOL STNA):

- general aspects of firearms trafficking, detection methods and investigation techniques, including undercover operations
- new policy and operational developments including changed modi operandi and new EU legislative instruments
- false document detection
- open-source intelligence

Example of ANITA-related curricula:

Knowledge clusters	Suggested key issues for ANITA-aided training	ANITA contribution (in particular for learning designers and trainers)
1. EXISTING KNOWLEDGE	Categories and typologies of firearms and weapons (with reference also to the geographical areas of reference, the related legal issues and the geo-political framework)	o to explain and/or consolidate basic and/or advanced notions o to provide examples to be used to explain how the tools work o to elaborate use cases and examples o to elaborate horizontal scenarios o to work on early warning signs o to set basic and/or complex exercises to be assessed at individual level o to set collective exercises to be solved in small groups o to implement knowledge-by-learning activities o to develop innovative teaching method, including simulation training o to support self-assessment and evaluation
	Criminological assessment of criminal patterns, trafficking routes, modus operandi, criminal human factor and reasons. Focus on high-risk criminal networks	
	3D-printing and impact on firearms trafficking	
	Online firearms trafficking: general overview and criminological assessment	
	Online firearms markets in Surface and Dark Web	
	The role of social media and Dark Web forum in spreading narratives and disseminating manuals and tutorials about firearms	
	Interlinks with other illegal trafficking activities and with terrorism. The case of 'drugs for trafficking'	
	Interlinks with cybercrime	
	Financial investigations in firearms-related cases (including cryptocurrencies)	
	Production and provision of fraudulent and false documents	
	Key operations/investigations at European and international levels	

2. OPERATIONAL SKILLS	Relevant sources and datasets about firearms trafficking (direct and indirect crime indicators)
	Data collection and assessment (methods, theories and practices)
	Investigative techniques
	Tracing mechanisms
	Cryptocurrency investigations
	Detection methods for online retrieved images (including ANITA tools)
	Investigations on Surface and Darknets | How to use the ANITA tools to identify individual criminals involved in the illicit trafficking, distribution and use of firearms
	OSINT / open-source intelligence
	Forensic expertise
	E-evidence
	False documents analysis
	Simulations in operational setting
	Collaborative exercises between groups of learners and possibly between LEAs
3. INPUTS FROM ANITA	Artificial intelligence for the law enforcement sector
	Assessing the suggestions from the tools
	Making sense out of (big) data
	Assessing early warnings on criminal trends/methods
	How to use advanced tools in operational environment
4. NEW KNOWLEDGE	Validating new knowledge
	Re-modelling criminal scenarios and crime patterns
	Advanced investigation techniques
	Intelligence analysis
	Exchange of experiences

EXAMPLE 3

Use of the Internet for terrorism financing

(ANITA use case 3 | CEPOL STNA - thematic training area nr. 2, Counter-terrorism)

Core capability gaps to be addressed by trainings (from CEPOL STNA):

- combat and prevention in the shape of de-radicalisation
- investigations, encryption and e-evidence
- OSINT (use of modern resources and social network analysis)
- terrorism financing (modes of money flows and alternative banking systems, including hawala, role of charities; cryptocurrencies and new payment methods; money coming from other types of crime (THB, drug trafficking, cigarette smuggling) with the purpose of raising funds for terrorism (links to other serious crimes)

Example of ANITA-related curricula:

Knowledge clusters	Suggested key issues for ANITA-aided training	ANITA contribution
1. EXISTING KNOWLEDGE	Typologies of terrorism and main security challenges	o to explain and/or consolidate basic and/or advanced notions o to provide examples to be used to explain how the tools work o to translate key documents o to elaborate use cases and examples o to elaborate horizontal scenarios o to work on early warning signs o to set basic and/or complex exercises to be assessed at individual level o to set collective exercises to be solved in small groups o to implement knowledge-by-learning activities o to develop innovative teaching method, including simulation training o to foster interaction among learners o to support self-assessment and evaluation
	Links between terrorism and serious organised crime	
	Corruption as crime-enabler	
	Identifying and profiling terrorist groups and individuals	
	Interlinks with illegal trafficking in human beings, drugs and firearms	
	Online resources used for terrorists financing	
	Document fraud	
	Follow-the-money approach in the online framework	
	Financial investigations in terrorism-related cases	
	Key operations/investigations at European and international levels	
2. OPERATIONAL SKILLS	Relevant sources and datasets about terrorism (direct and indirect crime indicators)	
	Data collection and assessment (methods, theories and practices)	
	Investigative techniques	
	Investigating financial support and the use of cryptocurrency for terrorism financing	
	OSINT / open-source intelligence	
	Forensic expertise	
	E-evidence	

	Simulations in operational setting
	Collaborative exercises between groups of learners and possibly between LEAs
3. INPUTS FROM ANITA	Artificial intelligence for the law enforcement sector
	Assessing the suggestions from the tools
	Making sense out of (big) data
	Assessing early warnings on criminal trends/methods
	How to use advanced tools in operational environment
4. NEW KNOWLEDGE	Validating new knowledge
	Re-modelling criminal scenarios and crime patterns
	Advanced investigation techniques
	Intelligence analysis

3 ANITA General recommendations and guidelines for curricula development

The recommendations and guidelines for curricula development designed in the framework of the ANITA project are intended primarily for the **LEAs**, which are the action's end-users. They could be used by the LEAs themselves while planning or organising internal training initiatives, but also by police academies, international organisations, Universities and research centres providing education for police officers and/or addressing issues of interest for the law enforcement sector.

In addition to LEAs, the most important **stakeholders** at a **public** and **private** level are also considered, as schematised in Figure 14. In fact, innovative and cross-sectoral informative initiatives implemented by organisations other than the law enforcement agencies could significantly contribute at responding to the actual need for greater awareness, shared knowledge, mutual understanding and cooperation between the different and various actors involved in countering illegal trafficking, especially online.

*Accordingly, the ANITA recommendations and guidelines for curricula development are elaborated for a **wider scope** and **use** and they are grounded on a **multi-stakeholders approach***
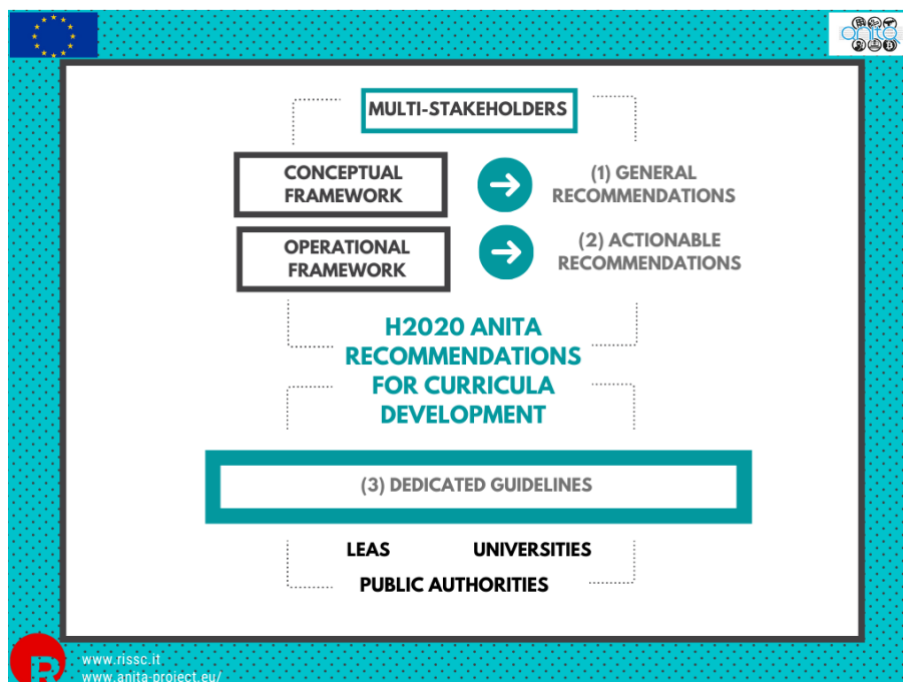

Figure 14 – Stakeholders of the ANITA recommendations and guidelines for curricula development

Figure 1Figure 15 illustrates the outline created for the ANITA recommendations and guidelines. In particular, they were imagined and are herewith presented by proceeding *from the general to the particular*, starting from the intended overall **goal**, then considering the **beneficiaries** and the **contents**, and finally the fundamental interactions among them.

As anticipated in the Introduction, the intent is to propose a set of innovative ideas and pioneering inputs to better design learning and adapt training to the changing informative needs of LEAs and other public and private stakeholders, while balancing the 'technological factor' and the 'human factor'. In concrete:

1. on a first level, the **conceptual framework** sets the purposes of reference on which a set of **(1) general recommendations** are grounded

2. on a second level, the **operational framework** defines the actions needed and it is at the basis of the proposed **(2) actionable recommendations**

3. finally, in order to provide **concrete inputs**, the **(3) specific guidelines** are given so to promote and facilitate the designing of new learning paths by LEAs, Universities and public authorities.
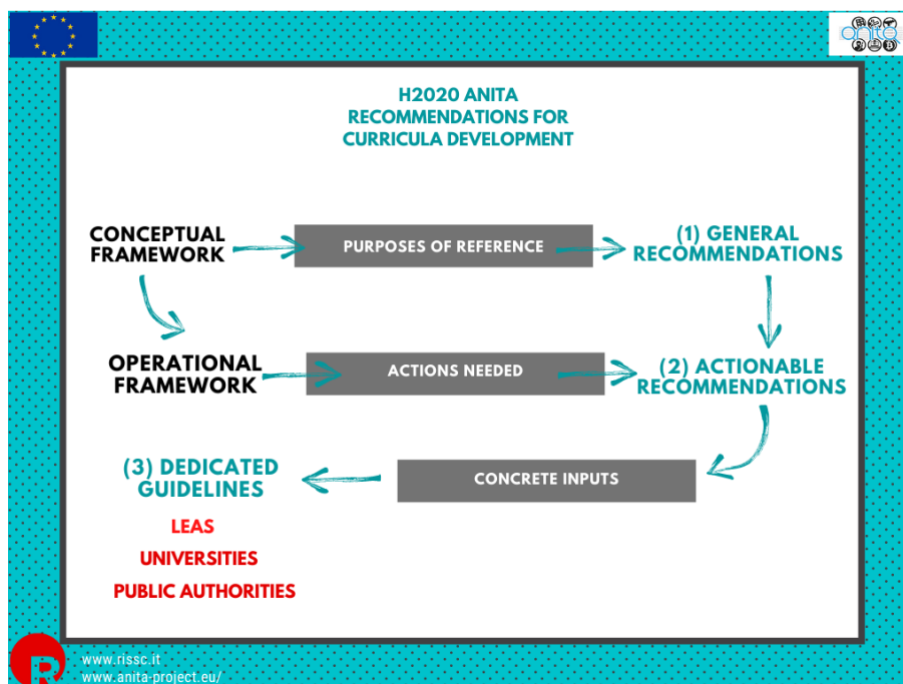

Figure 15 - Outline of the ANITA recommendations and guidelines for curricula development

Each layer is explained in the next paragraphs.

3.1   The conceptual framework and the general recommendations

The **conceptual framework** sets the purposes of reference on which the **general recommendations** are grounded. Accordingly, the conceptual framework and the general recommendations represent the **theoretical background** elaborated for the sake of the ANITA project.

As already explained, they will be further complemented and integrated by the dedicated guidelines targeting the specific stakeholders.

The ANITA conceptual framework herewith proposed is made of **four main goals**, which are schematised in Figure 16. For each of them, a general recommendation is provided.
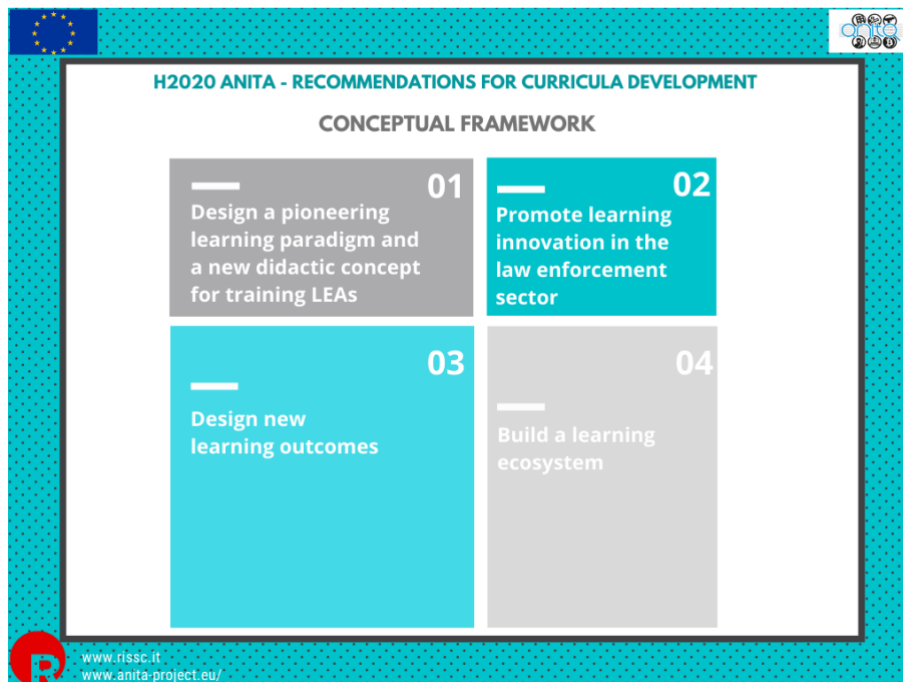

Figure 16 – Conceptual framework of the of the ANITA recommendations and guidelines for curricula development

1. Design a pioneering learning paradigm and a new didactic concept for training LEAs

The need for both a different learning process perspective (**learning paradigm**) and most adequate teaching techniques to effectively direct the learning of a group (**didactic concept**) is becoming pervasive for LEAs, and more in general for learners. This need is strictly connected to the pivotal role increasingly played by technologies, by digitalisation and by the mounting opportunities offered by remote learning. **Blended learning** is in fact an opportunity, which should be properly managed and implemented. There are the conditions for imaging and creating a context where teaching and learning could effectively be improved so to contribute at fostering the law enforcement sector as a whole, also by strengthening the synergy for example with operational activities, investigations, monitoring, intelligence, forensic….

> *It is recommended to start thinking about training as a **teaching-learning experience** and to lead this experience within the law enforcement sector towards its role, namely being the **engine of a forward-looking sustainable transformation**.*[32] *A **visionary** and **ground-breaking approach** is needed and it is becoming a priority in these difficult and changing times where the criminal patterns and trends are transforming rapidly*

2. Promote learning innovation in the law enforcement sector

Learning innovation means focusing on the overall process (and not only on the contents or the goals), so that the **general** and **specific learning objectives** and the **intended learning outcomes** (ILOs) could be defined (or re-defined) and tailored according to the evolving context of reference, the priorities and needs to which the training activities are addressed. In particular, the learners should play a more pivotal role in the sense that they could even design their learning outcomes, which the trainer will then support and observe through tailored assessment processes.[33]

> *It is recommended to fostering a **student-centred learning process**, supported also by the **digitalisation** of the learning process and a more **transdisciplinary mindset**. **Active learning** should be implemented so that the direct experience and the contents provided are integrated and equally important as the **expected learning outcomes** and the **assessment strategies***

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[32] S. Sancassani (2021). Designing Learning Innovation. The Netherlands: Pearson.
P. Ling & K. Fraser (2014). Pedagogies for Next Generation Learning Spaces, Theory, Context, Action. In K. Fraser (Ed.), The Future of Learning and Teaching in Next Generation Learning Spaces (Vol. 12, pp. 65-84). Bingley, UK: Emerald Group Publishing Limited.
S. Sancassani, F. Brambilla, P. Marenghi, S. Menon (2011). E-collaboration. Il senso della rete. Milano, Apogeo.
[33] J. Biggs, Enhancing teaching through constructive alignment, in Higher Education 32: 347-364, 1996, Kluwer Academic Publishers.

3. Design new learning outcomes

Focusing on designing new learning outcomes for the law enforcement sector is crucial to concretely innovate the way in which trainings are delivered, to improve the efficacy and effectiveness of the learning process and to foster the synergy with the activities implemented in the operational environment. **Training** should become a **ground-breaking** and more **powerful experience**.

This process should promote the centrality of the **learner** in defining the learning outcomes of interest and in creating meaning. The real objective should be allowing trainees to achieve a deeper and lasting **understanding** in their domain of interest and going in the direction of improving the key **transversal competences** represented by **collaboration**, **creativity**, **communication** and **critical thinking**.

In fact, they are fundamental to promote **applied knowledge**, namely, to support learners in assessing and finding **solutions** for new **problems** or situations without simply replicating the old decisional schemes, which may not be the proper option for countering evolving or emerging criminal phenomena.

The capacity to find innovative and proper solutions is an asset, which can be more easily improved in the framework of trainings delivered by **teachers** who become **'designers'** of wider and more structured learning experiences, which should be assessed and evaluated.

Formulating the intended learning outcomes should create coherence and continuity with the transformation of the knowledge, abilities and skills which is expected.

> *It is recommended to develop innovative **intended learning outcomes** which should be observable, coherent with the learner's expectations and requested performance, as well as in line with the **evolution of the (criminal) dynamics and trends** to be countered*

4. Build a learning ecosystem[34]

Learning is a peculiar experience shared among individuals, which is transformative of knowledge, abilities and skills, and finds its focus in the exchanges that are generated among individuals. Developing a user-centred approach while designing learning paths should be balanced not only on the single **individual**, but rather on the **group of individuals** sharing the **same learning experience**.

A proper **learning ecosystem** is a customised learning program that makes studying engaging, efficient, and effective while responding to relevant needs, strengths, and weaknesses.

Designing a learning experience for law enforcement is even more challenging because of several elements, such as: the complex and varied criminal phenomena law enforcement officials have to confront with on a daily basis, the specific tasks each official has to carry out, the transnational dimension of crime and the importance of collaborating with other agencies... Not considering that the Covid 19 pandemic is redesigning the way in which trainings are delivered to LEAs, moving to remote and digitalised learning environments and reshaping the concept of **interaction**, **collaborative exercises**, **networking** and **information-sharing**.

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[34] This definition is inspired by the Learning Innovation Network, which is a tool for designing teaching and learning experiences, developed by METID - Politecnico di Milano. This tool is for the teacher designer and is intended for designing learning innovation: through the deconstruction of the learning experience in its key components (individuals, channels, contents, activities, outside world) it stimulates observation and offers ideas for redesigning. More information about METID can be found at the following URL: https://www.metid.polimi.it/en/innovazione-didattica/.

Accordingly, a special attention towards learning ecosystem is needed and the connected pedagogical framework becomes of utmost importance, too.

*It is recommended to work on the various and different parts of the **learning experience**, to deconstruct, observe and assess them with greater awareness, so to finally integrate them in the best way possible. In order to innovate the learning design for law enforcement agencies, the learning experience should be considered as an **ecosystem**, which includes a network of different "**nodes**" (namely, the individuals, the channels, the contents, the activities, the outside world), to be carefully assessed*

INFOGRAPHIC

H2020 ANITA PROJECT
RECOMMENDATIONS AND GUIDELINES FOR CURRICULA DEVELOPMENT

CONCEPTUAL FRAMEWORK AND GENERAL RECOMMENDATIONS

1. DESIGN A PIONEERING LEARNING PARADIGM AND A NEW DIDACTIC CONCEPT FOR TRAINING LEAS

It is recommended to start thinking about training as a **teaching-learning experience** and to lead this experience within the law enforcement sector towards its role, namely being the engine of a forward-looking sustainable transformation. A visionary and ground-breakingapproach is needed and it is becoming a priority in these difficult and changing times

2. PROMOTE LEARNING INNOVATION

IIt is recommended to fostering a student-centred learning process, supported also by the digitalisation of the learning process and a more transdisciplinary mindset. Active learning should be implemented so that the direct experience and the contents provided are integrated and equally important as the expected learning outcomes and the assessment strategies

3. DESIGN NEW LEARNING OUTCOMES

It is recommended to develop innovative learning outcomes which should be observable, coherent with the learner's expectations and requested performance, as well as in line with the evolution of the criminal dynamics and trends to be countered.

4. BUILD A LEARNING INNOVATION NETWORK

It is recommended to work on the various and different parts of the learning experience, to deconstruct, observe and assess them with greater awareness, so to finally integrate them in the best way possible. To innovate the learning design for law enforcement agencies, the learning experience should be considered as an ecosystem, which includes a network of different "nodes" (namely, the individuals, the channels, the contents, the activities, the outside world), to be carefully assessed

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H2020 ANITA PROJECT
RECOMMENDATIONS AND GUIDELINES FOR CURRICULA DEVELOPMENT

1. DEFINE THE GOALS

Improve and expand the **learning outcomes** so to try to achieve better results and a greater **learning experience** for both learners and trainers

2. PROJECT THE TEACHING AND LEARNING EXPERIENCE

Constantly **monitor** the feedback and collect the input and hints so to **adjust**, **revise**, **adapt** and **improve** the teaching and learning experience offered

3. DESIGN THE PROCESS

Focus on **transferability** and **replicability** of the learning process so that the whole **law enforcement community** can benefit of the formative experience according to the specific role and needs

4. RE-DEFINE THE ROLE OF TRAINERS AND LEARNERS

FOR TRAINERS - in the context of student-centred processes, design **active learning**, exploit opportunities from **digitalisation** and **new technologies**, activate appropriate strategies to **assess** the **needs** and focus on building **transdisciplinary competencies.** Improve the process from **"speaker"** to **"training designer"** while balancing the learners' achievement of both **knowledge** and **competences** and more **complex skills** (including **critical thinking**)

FOR LEARNERS - improve the **mindset** so to be open-minded, available to learn from different disciplines, creative-thinking and ready to collaborate and communicate

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3.2 The operational framework and the actionable recommendations

The **operational framework** sets the **main areas of intervention** and the steps needed to effectively achieve the general purposes described in the previous paragraph. As already explained, the areas considered for the sake of this report are the **contents**, the **learning environment** and the **learners** (as represented in Figure 1).

Some **actionable recommendations** of reference are herewith provided[35] starting from the assumption that, as noted during the ANITA implementation, an effective, quality training program should be competency-oriented and designed to:

- increase the officer's (or the learner's in case of trainings addressed to public and private organisations) understanding of the dimensions and ramifications of the criminal phenomena (in the specific case of the ANITA project, the reference is to online illegal trafficking)

- instil operational skills by adopting a competency-based and multi-disciplinary approach, with a specific focus on the available sources, technologies/tools and techniques

- enhance the performance at a professional but also at a personal level

The inputs from European authorities' official documents have been also considered.[36]

Actionable recommendations

- To design curricula and develop contents targeting the specific training priorities and needs (in line also with the official documents at European and national level), the most recent developments and crime trends, and the know-how and competencies needed to positioning EU LEAs at the forefront of innovation

- To elaborate training paths which can contribute at expanding how officers are trained so to support them in facing the complexities of modern policing both offline and online

- To focus on both non-instructional performance factors and training needs so to ensure the highest performance adequacy

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[35] G.L. De Salvo, How to Develop an Effective International Police Training Course: A Basic Model for Police Trainers, 2012. The paper is available at the following URL: https://thewgsg.com/index.php/training-and-development-resources/ (accessed 2021/08/26).
D. M. Blumberg, M. D. Schlosser, K. Papazoglou, S. Creighton, C. Kaye, New Directions in Police Academy Training: A Call to Action, International Journal of Environmental Research and Public Health, 2019 Dec; 16(24): 4941. The paper is available at the following URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6950698/ (accessed 2021/08/26).

[36] EUROPOL (2021), Europol Programming Document 2021 – 2023.
Council of the European Union (2020), Embracing new and disruptive technologies in internal security and justice with an EU In To create contents based on/aiming at further promoting a common culture and values in the field of illegal trafficking (and in general about criminal phenomena).

- To enhance the availability and capacity of the executive team and management to intercept, assess and address the learning needs of the participants and the possible changes over time, so to adapt the teaching methods and the contents

- To improve flexibility and rapid risk management decision-making also in designing, planning and implementing training activities

- To promote a teaching culture

- To promote blended learning so to better combine the requirements and needs of the participants and to balance the use of in-person and remote training[37]

- To promote training addressing not only the operational capacities, but also the combination of physical, cognitive, emotional, and interpersonal skills

- To innovate and diversify the teaching model and methods so to better respond to contingency

- To promote inter-disciplinary and transdisciplinary learning

- To develop adequate methodologies and tools for assessing and monitoring the quality of learning

- To design new student appraisal practices jointly with evolving teaching methods

- To improve the use of digital interactive learning environments and management systems

- To further invest in ICTs and digital equipment/devices also for learning purposes

- To assess drivers to carefully decide when to offer distance learning or in-person training. They are not interchangeable and should not be considered as if they were so

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[37] According to the specific situation, the rotation among the six main blended learning models could be an option. They have been adapted to the law enforcement environment and they are herewith listed:
1) *Face-to-Face Driver Model*: the introduction of online modules is decided on a case-by-case basis, meaning only certain learners in a given class will participate in any form of blended learning. The decision is up to the trainer, also in accordance with the learners
2) *Rotation Model*: learners rotate between different stations on a fixed schedule, either working online or spending face-to-face time with the trainer
3) *Flex Model*: material is primarily delivered online. Trainers are physically available (online or in the room) to provide on-site support as needed but learning is primarily self-guided, as learners independently learn and practice new concepts in a digital environment
4) *Online lab model*: learners learn entirely online and they travel to a dedicated activity (e.g., seminar, course, workshop…) to complete their coursework. Trainers (or trainers collaborators) supervise the lab but in principle learners work at a pace which do not affect the learning environment of their colleagues
5) *Self-Blend Model*: learners have the opportunity to take classes beyond what is already offered by the organisation. While they attend the official courses (being they in presence or online), they also have the possibility to opt to supplement their learning through online courses offered remotely and on specific topics
6) *Online Driver Model*: a form of blended learning in which students work remotely and material is primarily delivered via an online platform (the opposite of nr.1 *Face-to-Face Driver Model).*
The description of the six models of blended learning most used in schools can be found here: https://www.dreambox.com/blog/6-models-blended-learning (accessed 2021/08/26).

Ethical issues

As stated by Rogerson, "in the digital age it is people who change things. It is people who make digital technology. It is people who use and abuse digital technology. The tension between use and abuse is where the ethical hotspots lie. Digital technology can add value to life, but it can also take value away from life. Some ethical hotspots may be obvious whilst others may not. All must be addressed so that the digital age is good for everyone as well as for the world at large. This can only be achieved through effective digital ethics education and awareness programmes".[38]

Within the law enforcement sector, the importance of ethical issues is even stronger than in other areas. In the specific case of ANITA, the platform and its integrated tools are so powerful that it is crucial that they are used in an ethic way. The project has devoted continuous attention and great efforts towards these aspects – it even included a dedicated WP (WP3 - Social, Ethical, Legal and Privacy issues of online sources analysis) – but it is important to further recommend that also training and capacity building actions acknowledge the relevance of keep on debating about them. Some hints are herewith provided:

- Educate users so that they can understand that they are the 'custodians' of a powerful technology and to mitigate possible lack of awareness or belief that ethical issues are outside their scope of responsibility

- Great attention should be devoted to capacity building initiatives focusing on digital ethics, which could be explained through the analysis of the social impacts of digital technologies. The message to be shared is that digital technology should always be "societally beneficial" (Rogerson, 2021)

- Capacity building and training initiatives focusing on the use of technological tools and platforms – like the ANITA one – should also include actions covering key issues such as ethics and morals, professionalism, duty to the citizenry, ethical dilemmas and the need to correctly choose the appropriate law enforcement response, complete and conduct a self-evaluation of personal unethical attitudes or behaviours

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[38] S. Rogerson (2021). Rebooting ethics education in the digital age. Academia Letters, Article 146.

3.3 The dedicated guidelines

3.3.1 Guidelines for LEAs

LEAs play a pivotal role in defining and promoting a new approach to training and to design innovative curricula. In line with both the conceptual and operational framework outlined in the previous paragraphs, the guidelines herewith provided focuses on the actions which should be implemented - or further reinforced - in order to pave the way to a new learning paradigm.

Accordingly, the ANITA project recommends to:

- promote and lead a culture of change so that LEAs can better deal with the complex changes which are involving modern societies and in particular EU Member States[39]

- insist on standards and benchmarks, and on the comprehensive integration of human rights, equality, ethics, accountability and critical feedback in the overall education process

- promote the role of training within a knowledge-driven virtuous circle between understanding, counteracting and cooperating, based on the equilibrium between technology and human factor

- increase a data-driven and evidence-based culture so to improve the capacity to generate actionable knowledge on illegal trafficking (and more in general on criminal phenomena) and to monitor, investigate, tackle and prevent crime (in particular IT-related crime)

- give priority to the diversification of the learning environments, so to encourage the use of blended learning and minimise those factors which are – or could be - perceived as limiting or even negative

- encourage the collaboration with domain experts so to facilitate the transferring of the newest actionable knowledge generated in particular by criminological research (e.g., through real-time data, inter-disciplinary methodologies and pioneering analytics tools) but also to increase the opportunities for the exchange of data, information, practices and experiences

- improve internal needs assessment with the intent to further enhance a competency-based training model designed around each learner (or groups of learners) according to the specific function, training needs and expected learning outcomes

- enhance EU LEAs capacity to target illegal trafficking (both online and online) by improving the understanding of all aspects of the phenomenon, with a specific focus on the Internet Darknets' cryptomarkets, the interlinks between the online and offline dimensions and the increasing role of cryptocurrencies

- promote in particular operational needs-based training, reinforce analysis training capabilities, further enhance practical activities and collaborative exercises among police officers in charge of different tasks (e.g., operational analysts, criminal intelligence analysts, criminal investigators, forensic investigators and computer crime investigators…) and regularly diversify the proposed

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[39] Fullan (2001) suggests focusing on five core competencies: attending to a broader moral purpose, keeping on top of the change process, cultivating relationships, sharing knowledge, and setting a vision and context for creating coherence in organizations.
M., Fullan, (2001), Leading in a Culture of Change. Josey-Bass, San Francisco.

activities (e.g., tandem learning, Peer-to-peer Information Exchange (PIE), storytelling, gaming solutions…)

- boost the use of advanced technological tools (like the ANITA platform) also for training and capacity building, so to improve and widen their use by law enforcement officials

- provide police officers with adequate trainings on the technologies used within the organisation and about the policy of use, also considering the seniority level

- focus on language skills (including English) and on those basic crucial competence which are needed by all law enforcement officials (especially by those involved in cross border cooperation also related to digital crime)

- deserve more attention to some aspects which emerged to be relevant according to the LEAs, such as the diversification of training levels (e.g., basic and specialised. For each level, introductory, intermediate, advanced), the creation of homogeneous groups, the organisation of regular (e.g., weekly) briefings, group leader coaching, dedicated introductory sessions for the upcoming module, feedback collection system, trainers' coordination, standardised learning materials…

- re-think the evaluation mechanisms and practices so as to benefit as much as possible from the feedback and comments of the participants in the training activities

- prioritise the definition of an innovative and more functional role for trainers, also revising and improving the train-the-trainer initiatives. Some inputs are as follows:

  o to qualify trainers with specific courses and materials, considering the various levels (e.g., basic, advanced…) and the various competences which are needed by (and should be transferred to) the police officers. Competencies in distance teaching and digital pedagogy, as well as about digital multiplier options and in generating actionable knowledge out of big data or advanced platforms (like ANITA), should be a priority

  o to qualify trainers with respect to security related issues (e.g., data security when using teaching material containing classified documents, IT security…) as well as to transversal critical topics related to legal and ethical issues, gender balance, digital divide…

  o to lay the ground for overcoming the trainer "speaker" paradigm and move to the trainer "designer" paradigm, where the teacher develops a learning experience, not just a lesson. The trainer should be able to propose (design) activities and initiatives to be developed by the single learner or in groups in line with the learning outcomes to be achieved

  o to support trainers in defining in the clearest way possible the intended learning outcomes of the learning experience offered

  o to support trainers in working on the concept of "transferable knowledge" so that the positive effects of the learning process could be maximised as much as possible within the law enforcement community of reference

  o to give trainers the skills to promote the student group leaders' concept because it could support motivation, cooperation and mutual support, thus also facilitating the learning dynamics

3.3.2 Guidelines for Universities and research centres (including domain experts)

The guidelines which follow are addressed to Universities and research centre (both public and private), but also to domain experts, who often collaborate with both LEAs and educational institutions.
They can play a more outstanding role as knowledge-providers - considering that they are engaged in research activities and training – but they can also provide inputs, hints, ideas and methods to support LEAs in their empowerment process.

Accordingly, the ANITA project recommends to:

- explore new ways to further reinforce the synergy between research, law enforcement and policy making so to further promote a sound knowledge-based virtuous circle linking these key areas in the prevention and fight against crime (with a focus on the challenges posed by online illegal trafficking)

- contribute at promoting a new training culture by elaborating and providing innovative methods, contents and curricula to cover both basic and advanced knowledge and to reach a consistent standard

- conduct more research on the outcomes of education linked to law enforcement practitioners' behaviour so to learn about the use and effectiveness of appropriate instructional design and teaching methods

- carefully consider and effectively address the possible bias and/or issues related to the digital divide also considering the role of age, gender, race and geographical area of reference

- support LEAs in dealing with the evolving legal and ethical issues

- provide LEAs with information and advanced methodologies (e.g., how to pinpoint key information/insight, to connect-the-dots, to assess actual or emerging scenarios and their magnitude, to develop horizontal analysis or to infer possible trends…) to empower them, so that the ability to understand and use advanced technologies could be considerably improved

- support LEAs in stepping up their pressure on digitally enabled illicit markets through innovative and real time contents, mechanisms, methods, practices and initiatives facilitating the exchange of operational information for capacity building among EU LEAs as well as with policy makers

- reinforce the collaboration with the private sector – in particular with the technology providers – so that the development of new technologies could be more effectively oriented towards the real needs of the law enforcement agencies, so to reduce duplications and contribute at a more effective use of resources

- support the definition and implementation of European (and national) high standards of training for law enforcement, so to contribute at reducing the gaps among the various regions and at increasing the capacity to address the LEAs' demand for quality training

- focus on trainers' formative needs so to contribute at educating qualified trainers (also considering online pedagogy and digital materials development), who could bridge the scientific and the law enforcement frameworks

- contribute at building competences on crime analysis with enhanced attention to quality output and control, standardisation, training and specialised analysis

- improve the involvement of domain experts to regularly assess and review the curricula for law enforcement for newness, accuracy, and comprehensiveness, applying the standards required for effective online and in-person training methods and providing inputs for any necessary course improvements

- find more space for developing digital curricula for LEAs, which could intercept the increasing LEAs' demand for basic and advanced training on multiple domains

3.3.3   Guidelines for public authorities

The guidelines which follow are addressed to public authorities, with specific regards to EU and national policy makers. The focus is on the priorities and criticalities emerged in the framework of the ANITA project and pointed out by the ANITA end-users, which are closely linked with promoting a new vision of training and learning design. Moreover, indirect factors (e.g., in the field of legal and ethical issues, data protection related problems, access to/use of new technologies…) are also considered because they are instrumental to the action of the police forces in the fight against crime and to their education.

Accordingly, the ANITA project recommends to:

- increase the capacity of the regulatory framework to support LEAs in intercepting and promptly responding to their changing needs, with a special focus on training and capacity building

- support LEAs in their internal and external process of organizational transformation. Internal factors include not only the organization's structure, but also individual officers' perception of their roles which could be reinforced among other thanks to tailored training and capacity building activities

- facilitate law enforcement organizations in overcoming the internal resistance which is quite often directed towards new technologies, data-driven strategies and research contribution[40]

- set the conditions and the criteria that LEAs could use to define a forward-looking strategy for adopting and implementing new technological innovations, which should make it easier to perform essential tasks, including training and capacity building

- support evidence-based research and informed decision-making about new technology so that technologies can be developed in a way that links them with departmental goals, organizational culture and policing strategies[41]

- promote the use of technologies and ensuring that policies are updated and consistent with legal requirements and industry practice

- insist on the assessment of data management and privacy related legal framework, with specific regards to those rules and/or procedures which could actually hinder or limit the scope and the results of innovative projects/actions in the field of crime monitoring and prevention (specifically in the digital environment). Law enforcement has experienced one of its largest transformational changes over the last decade which is related to an explosion of data deriving from sophisticated technologies. The need for an efficient and effective legal framework is pervasive because using data systems and technology is a necessity for law enforcement agencies in today's environment

- promote the use of technology also to transform EU LEAs' organisational culture.[42] Greater attention should be devoted on the possible role of modern technologies in increasing efficiency, transparency and accountability, providing communication capabilities, enhancing information-sharing practices,

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[40] In general, law enforcement personnel see the viability of the use of intelligence, but they are often reluctant to accept actionable information produced by non-sworn personnel or by technologies other than the ones they are used to.

[41] U.S. Department of Justice - Office of Community Oriented Policing Services (2019). *Law Enforcement Best Practices: Lessons Learned from the Field.* Washington DC.

[42] Strom, K. (2017), *Research on the Impact of Technology on Policing Strategy in the 21st Century, Final Report.*

improving informational and analytical capacities, facilitating the use of data systems and the access to near real-time information, obtaining more robust data for analysis and decision-making, improving productivity and cost-effectiveness, enhancing collaboration with other LEAs and with private partners

- (in relation to the previous point) define, monitor and regulate fundamental issues – for example at legal, ethical and societal level – to facilitate the use of innovative technologies by LEAs so that they could be compliant with the regulatory framework and they could improve their capacity to face criminal phenomena which are ever-changing and increasingly complex

- support a closer interaction between research, technology development and law enforcement, also through innovative funding programmes, leveraging the lessons learned and the experiences of the consortia already involved in successful actions and facilitating the exchange of experiences and critical feedback

- support actions contributing at developing scalable and sustainable methodological approach, which could be easily replicated to generate knowledge on other criminal phenomena. Structured, time series and cross-sectional data play a key role in generating operational knowledge for the LEAs and should be supported by adequate actions

- speed up and further support the definition and implementation of European and national training mandates and high standards of training for law enforcement

- contribute at defining the conditions and criteria for the establishment of qualified operators for the offer of training and educational services to the EU LEAs

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