VICTORIA

VIDEO ANALYSIS FOR INVESTIGATION OF CRIMINAL AND TERRORIST ACTIVITIES

VICTORIA FINAL INTERNATIONAL CONFERENCE

Improving Video Analysis for a Safer Europe

16-17-18 November 2020

Programme and abstract booklet


VIRTUAL FINAL INTERNATIONAL CONFERENCE
VICTORIA
VIDEO ANALYSIS FOR INVESTIGATION OF CRIMINAL AND TERRORIST ACTIVITIES
Improving Video Analysis for a Safer Europe
16th–18th November 2020
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VICTORIA has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 740754

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VICTORIA Project:

How can video analysis facilitate investigation of criminal and terrorist activities?

Video material collected and analysed by Law Enforcement Agencies (LEA) has become a critical component in legal investigations following major criminal acts and terrorist attacks. At the same time, the amount of video data available is continuously increasing with the rapid deployment of video equipment, surveillance cameras in public and private areas, body-worn cameras of police forces and smartphones or digital cameras used by bystanders.

In spite of this growth, the whole video investigation work is still mostly carried out manually by the LEA officers. These current practices are too resource intensive to handle the huge and steadily increasing volume of videos that need to be analysed. Consequently, post-event extraction of vital first clues from videos meet unreasonable delays.

The 3-year EU-funded project VICTORIA, launched on 1st May 2017 and encompassing 14 partners, has been addressing this need by exploring ways to deliver an ethical and legally compliant video analysis platform meant to accelerate the video analysis tasks of Law Enforcement Agencies.

"I believe that with the VAP we have developed a unique platform which is not only designed to support analytic tools from third parties but which is also 100 percent ethical & legally compliant and which will therefore optimize LEAs everyday work in the future. I am looking forward to the VAP live demonstration (…) during the VICTORIA Final Conference and to use this event to come together as European security research community to collaboratively discuss the future of innovation and industry for security."

Luc Sonke, VICTORIA's Coordinator

(IDEMIA, Identity & Security, France)

The Final International Conference that VICTORIA organises virtually from 16 to 18 November 2020 is an opportunity to present and showcase the outputs from 3 years of intensive research conducted by the VICTORIA partners. It will be opened by Andrea de Candido, Deputy Head of Unit for Innovation and Industry for Security at DG HOME.

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Key VICTORIA outputs presented at the Final Conference will include:

- Demonstration of the VICTORIA Video Analysis Platform (VAP) along with the algorithms developed during the life of the project
- Highlights from the Field Trials of the VAP at LEA Premises with feedback from LEAs on their experiences with the tool
- Presentation of the Project Challenges with a special focus on video- and audio data generation
- Introduction to the VICTORIA Video Analysis for Investigations (VAFI) Community
- Discussion on Video Analysis in the frame of EU Standards & Regulations

Restricted to LEAs and upon registration, a session organised by VICTORIA partners will demonstrate the VAP to police forces. An overview of some H2020 security projects will also be given by representatives of the ASGARD, ILEAnet, MAGNETO and SPIA-VA projects.

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VICTORIA partners

The VICTORIA consortium is composed of 14 partners from 7 countries (France, Austria, Germany, Spain, Belgium, United Kingdom and Romania).

They include 4 Law Enforcement Agencies (LEAs), 6 renowned research groups, 1 innovation management company, 1 SME and 2 industrial companies, world-leaders in security markets:

- Industries:
  - IDEMIA (IDEMIA)
  - THALES (THA)

- Academic partners:
  - Austrian Institute for Technology (AIT)
  - Université Paul Sabatier Toulouse III (IRIT)
  - Fraunhofer (FHG)
  - Universitat Politecnica de Valencia (UPV)
  - Katholieke Universiteit Leuven (KUL)
  - Universitat Konstanz (UKO)

- LEAs :
  - Ministère de l'Intérieur (FMI)
  - Home Office (UKH)
  - Ministerio del Interior (MIR)
  - Serviciul de Protectie si Paza (SPP)

- Private Companies
  - ARTTIC (ART)
  - Manzalab (MZL)

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Day 1: Monday 16 November

Time	Item	Speaker
10h00	Opening Words	Luc Sonke, VICTORIA Project Coordinator (IDEMIA, France)
10h30	European Commission Keynote	Andrea de Candido (Deputy Head of Unit, Innovation and Industry for Security, DG HOME – EU Commission, Belgium)
10h50	***COFFEE BREAK***	
ADDRESSING THE LAW ENFORCEMENT AGENCIES (LEAs)' NEEDS (Chairperson: Manuel Alvarez Fernandez, National Police, Ministry of Interior, Spain)		
11h00	Keynote: The Tools for LEAs today	Camille Antunes (EUROPOL, The Netherlands)
11h20	Live Demo of VICTORIA Video Analysis Platform (VAP)	Michael Dose and Ran Zhou (IDEMIA, Germany)
12h20	Highlights from VICTORIA Field Trials	Toby Nortcliffe (Home Office, UK)
12h40	***LUNCH BREAK***	
14h30	VAP presentation restricted to LEAs (compulsory registration)	

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Day 2: Tuesday 17 November

Time	Item	Speaker
VICTORIA's TECHNICAL CHALLENGES (Chairperson: Martin Boyer, AIT - Austria)		
9h30	4D (3D+time) Crime Scene Reconstruction within the VAP	Wolfgang Jentner (University of Konstanz, Germany) Thomas Pollok (Fraunhofer IOSB, Germany)
10h10	Audio Data Aspects of the VAP	Alexander Schindler (AIT, Austria) Florence Sedès (IRIT, France)
10h50	Technical Feedback: Lessons Learnt on Data Generation: - Video Footage Generation - Synthetic Video	Razvan Roman (SPP, Romania) Stéphanie Philippe (Manzalab, France)
11h10	***COFFEE BREAK***	
OVERVIEW OF SECURITY INITIATIVES (Chairperson: Dominique Wasquel, ARTTIC – France)		
11h20	Security-related Projects: - Pawel Rybicki (ILEAnet WP leader, EFIC, Poland) - Juan Arraiza Irujo (ASGARD, Vicomtech, Spain) - David Faure (MAGNETO, Thales TRT, France) - Bogdan Ionescu (SPIA-VA, University "Politehnica" of Bucharest, Romania	
TOWARDS A "VIDEO ANALYSIS for INVESTIGATION" (VAFI) COMMUNITY (Chairperson: Laure Dodin, ARTTIC – France)		
12h20	VAFI Community: Objectives and Legacy	Malek Baklouti (THALES, France)
12h40	VICTORIA Legacy: Exploitation Plan and Standardisation	Stéphane Ménoret and Cyril Bergeron (THALES, France)
13h00	***LUNCH BREAK***	

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Day 3: Wednesday 18 November

Time	Item	Speaker
REGULATORY FRAMEWORK for VIDEO ANALYSIS IN THE EU		
10h00	Video Analysis and The Law: Lessons learned	Laurens Naudts (KU Leuven, Belgium)
11h30	Open Training Module to VICTORIA tools	Alfonso Climente (UPV, Spain)
WRAP-UP		
12h00	Closing Remarks	Luc Sonke (IDEMIA, France)
12h20	End of the Final International Conference	

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Day 1: Monday 16 November

- Opening Words

Luc Sonke

Dr Luc Sonke received his PhD in Mathematics on Theoretical Study, algorithmic and digital simulation of the Navier-Stokes equations in multiply-connex domains from the University of Paris-Sud Orsay with Summa cum laude and the congratulations of the jury. He has conducted numerous R&D projects related to a great number of computer science fields, including biometrics, cryptography, AI (CNN and GAN). He also conducted the implementation of several huge projects (more than 50M€) for Governments and international organizations all over the world (France, Morocco, Ivory Coast, Ethiopia, Singapore, Interpol). He is currently a Program Manager for IDEMIA Global R&D Department and is leading several European Commission collaborative projects and ANR (French National Agency for Research) collaborative projects.

- European Commission Keynote

Andrea de Candido

Mr Andrea DE CANDIDO works for the Directorate General for Migration and Home Affairs of the European Commission where he is the Acting Head of the "Innovation and Industry for Security" Unit which deals with Security Research and Industrial Policy. Among the responsibilities of the Unit is the definition of the Secure Societies part of the European Union Research & Innovation Framework Programme that enables cross border funding of research projects in the security dimension. Before joining DG HOME Mr De Candido had been briefly working for the Research & Innovation Directorate General of the European Commission and, before that, had spent 25 years in the Italian Army from which he retired in 2013 with the rank of Lt. Colonel.

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ADDRESSING THE LAW ENFORCEMENT AGENCIES (LEAS)' NEEDS

Manuel Alvarez Fernandez (Chairperson)

Manuel Alvarez Fernandez works at the Spanish National Police which is an armed institute of civil nature nearly two centuries of history (was funded is 1824). As a Law Enforcement Agency, it answers to Spanish Ministry of Interior. In the 1978 Constitution, where two basic missions are enshrined to Spanish National Police, to protect the free exercise of rights and freedoms and to guarantee Citizen Security. There are close to 70.000 police officers deployed throughout whole Spanish territory as well as other no police civil servants. With competences in public order, organized crime, fight against terrorism, Intelligence, Drug trafficking, People trafficking, CBRN, Cybercrime, Forensic Police and exclusive competences in people border control, ID cards and passports and private security, among others.

- Keynote: The Tools for LEAs Today

Camille Antunes

Abstract: The EU Internet Referral Unit (IRU) started its operations in July 2015 with a mandate to refer terrorist content to Online Service Providers (OSPs) and support member states in internet investigations. To support in internet investigations, the EU IRU provides analysis of Internet based communication data and social media information, which has created unprecedented challenges to law enforcement officers around EU. During IRU work routine, an increased volume of information needs to be processed, in a constantly changing landscape of fast technological developments. Moreover, the fusion of police information with internet-based information and e-evidence is required to support their investigations.

The media assessed by EU IRU come from multitude of different devices with differing systems, formats, players, and technology. They mainly come from open sources, which represent additional challenges, symptomatic of what is police work today. It requires scrutiny and the agency's ability to properly secure, catalogue, store, and maintain its evidentiary value and integrity, which is critical to LEA experts from all around EU and for the protection of citizens. Daily, EU IRU is assessing tens of video content produced by jihadi propagandists and daily we are facing the challenge to provide strategic and analytical assessments in compliance with the requirements for the integrity of the evidence. We also have to consider appropriate training for the experts and analysts. Lastly, to stay on top of the game and support at best the investigators, the challenges associated with the latest developments in terms of video technology have to be addressed.

In this context, solution like the Victoria platform– rigorous and ambitious- is encouraging and provides an evidence of what innovators involved in H2020 projects can achieve to help LEAs in their daily tasks.

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- Live Demo of VICTORIA Video Analysis Platform (VAP)

Michael Dose

Dr. Michael Dose received his PhD from the Ruhr-Universität Bochum (Germany), Institute of Neuroinformatics. Since 1995 he is working for IDEMIA Identity & Security Germany AG in the field of biometrics and video analysis. Michael Dose is in charge of funded research projects at IDEMIA Germany (EC-funded, National funded and formerly additionally US funded projects).

Ran Zhou

Ran Zhou (male) graduated at the university of Paderborn (Germany) with a computer science master degree in 2012. In the same year, he joined IDEMIA Identity & Security Germany AG and worked in the product integration team within the telecommunication domain. Since 2015 he is senior software engineer for the biometric software solutions and takes part in multiple EU-funded and National-funded projects. He is in charge of system integration and customer solution development within the VICTORIA project.

Abstract: The VAP live demonstration runs on the same VICTORIA cluster, on which all four LEAs have done the field test. It covers all integrated modules from the technical partners to show how could VAP help LEAs for investigation. The whole demonstration lasts about 1 hour.

- Highlights from VICTORIA Field Trials

Toby Nortcliffe

Toby Nortcliffe has been working for 15 years in the UK government as expert on issues regarding Image based evidence. More specifically, he has produced professional qualification for CCTV Image Analysts and provided CCTV-related operational support to major police investigations. He's been a National technical lead for Body Worn Video, publishing guidance on technical and data protection issues and running equipment trials for CT Specialist Firearms Officers. He also contributed to the revision of UK law regarding video interview of suspects and supported international war crimes investigation using this technique. In facial recognition, Toby has been responsible for the development of large datasets for testing algorithms on police evidence.

Abstract:

An explanation and brief history on the types of image based evidence encountered in police investigations. What the operational requirements are for video analysis technology that could bring potential benefits to the analysis and management of this data. Then focusing on feedback from the LEA trials with the VAP, in particular the analysis software such as face recognition as well as people and object detection. Finally an overview on

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the future of video analysis technology and its ever increasing importance for policing in the near future.

Day 2: Tuesday 17 November

VICTORIA's TECHNICAL CHALLENGES

Martin Boyer (Chairperson)

Dipl.-Ing. (FH) Martin Boyer (male, AT) has been working at AIT Austrian Institute of Technology since 2011 as a Project Manager and Senior Research Engineer in the field of Sensing and Vision Solutions. His research interests lie in the areas of video analysis frameworks, SW architecture, code generation and VideoAnalytics-as-a-scalable-Service. His developments have been used in several projects, among others as a basis for video processing in EU projects (e.g. EU FP7 FastPass project, EU H2020 VICTORIA project) or national projects in security research (e.g. FLORIDA). He is a Certified Professional for Requirements Engineering (CPRE FL), certified Project Manager (IPMA Level D) and certified ScrumMaster. Currently Martin is leading the work package "Advanced Analytics Modules Development" of the H2020 project VICTORIA, which he also leads at AIT. Martin is also the coordinator of the Austrian national security research project defalsif-AI which addresses the problem of disinformation – colloquially known as "fake news" – in particular disinformation attacking democracy and the public trust in democracy and its institutions itself

- 4D (3D+time) Crime Scene Reconstruction within the VAP

Wolfgang Jentner

Wolfgang Jentner is a senior research associate and doctoral student in the Data Analysis and Visualization Group. He received his M.Sc. in Computer Science from the University of Konstanz with a focus on visual analytics in 2016, which includes data analysis and visualization techniques. His current research interests are structured data mining, data visualization, and the development of visual analytics techniques for sense making of automatically computed patterns. He is involved in several EU projects focused on criminal intelligence analysis and critical infrastructures such as VALCRI (EU-FP7), IN2DREAMS (H2020), VICTORIA (H2020), and ASGARD (H2020) as well as nationally funded projects such as FLORIDA (BMBF) and PEGASUS (BMBF). Wolfgang Jentner is a recurring speaker at seminars at various police forces and the Federal Office of Civil Protection and Disaster Assistance (BBK). Topics include artificial intelligence, machine learning and visual analytics in criminal intelligence analysis and disaster assistance.

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Thomas Pollok

Thomas Pollok is a research associate at Fraunhofer IOSB in the field of image-based real-time systems. He received the B.Sc. degree in computer science from the University of Applied Sciences, Karlsruhe, Germany in 2012 and his M.Sc. in computer science at the Berlin Institute of Technology, Berlin, Germany in 2016. His research interests are in the field of Computer Vision, especially, multi-camera calibration, 3D and 4D scene reconstruction and real-time systems. Currently he is working towards his PhD degree about 4D scene reconstruction with a focus on crime scene reconstruction from large image and video databases. He is involved with several projects in the field of civil security, like the EU project VICTORIA (H2020), as well as nationally funded projects such as FLORIDA (BMBF) and S2UCRE (BMBF).

Abstract: The VICTORIA 4D Crime Scene Reconstruction is an applicable approach to reconstruct a spatio-temporal (3D + time) scene purely based on video and imaging data. In case of a crime or terrorist attack, nowadays much video footage is available from surveillance and mobile cameras recorded by witnesses. While immediate results can be crucial for the prevention of further incidents, the investigation of such events is typically very costly due to the human resources and time that are needed to process the mass data for an investigation. The process is highly automatised, however, the user can interact with the tools to steer the process and optimize the results. The 4D reconstruction gives investigators an intuitive overview of all camera locations and their viewing directions. It provides investigators the ability to view the original video or image footage at any specific point in time. Combined with an innovative 4D interface, our resulting 4D reconstruction enables investigators to view a crime scene in a way that is similar to watching a video where one can freely navigate in space and time. Furthermore, our approach augments the scene with automatic detections and their trajectories and enrich the crime scene with annotations serving as clues. The user can even explore the scene in virtual reality where distances and angles can be seen at scale. During the VICTORIA project many additional use cases could be identified beyond the crime scene reconstruction for example, monitoring public spaces such as train stations and airports and mission planning for special police forces.

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- Audio Data Aspects of the VAP

Alexander Schindler

Alexander Schindler is a researcher in the field of multimedia retrieval focusing on multi-modal aspects of acoustic information. As a scientist at the Center for Safety and Security of the AIT Austrian Institute of Technology he is working Applied Artificial Intelligence methods for advanced audio indexing and retrieval as well as on machine learning tasks in general. He is also part of the Music Information Retrieval team at the department of Software Technology and Interactive Systems of the Vienna University of Technology where he participates in teaching and research. His research interests include information retrieval, specifically multi- and cross-modal retrieval of audio, image processing and machine learning with a focus on deep neural networks. He serves as reviewer for scientific journals and conferences, hosts scientific and public events within his field of research and has many years of experience in the field of Software Engineering in various companies as well as in international projects.

Florence Sèdes

Pr. Dr. Florence Sedes is a Professor of Computer Science at the University of Sciences, Toulouse 3, in the research area of data science. She is Vice President for Social Responsability of University Toulouse 3 Paul Sabatier. She has been active in database and information system research since her PhD in 1987. She has published over one hundred papers, books and book chapters since 2000 and advised more than 30 PhD. She has been leading international, European and national projects on personal (meta)data privacy and management, CCTV and forensic, IoT and security, geospatial and indoor/outdoor data, and social networks, with applications via deep/machine learning for alert, spam and rumors detection, social emotion and interaction,... She is involved in an international lab with Malaysia and participates to a "smart restaurant" platform about social interaction and health data analysis (projets "Health in the age of Data"). Her research interests include modelling, developing, evaluating, and characterizing (big) data systems and techniques from both problem-driven and technique-driven perspectives. She has been heavily involved in designing data sets and platforms in order to enable assessment of the various contributions, software and systems of our community. Pr. Sedes headed the French IFIP (International Federation for Information Processing) committee. She founded the "femmes&Informatique" group of the French Informatics Society, and the WIE French chapter of IEEE. She has been nominated to the National Council of Universities by the French Ministry of Higher Education and Research.

Abstract: In forensic investigation scenarios, audio analysis provides relevant information for a quick start of an investigation. Especially in terrorist attack scenarios, attacks usually generate a lot of noise, such as from firearms or explosions. By detecting such acoustic

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events in the VAP, investigators can directly select video files in which these events can be heard and jump directly to the location of the event. The acoustic similarity function of the VAP makes it easier to search for non-pre-defined acoustic events, on the one hand, and to search for videos that were recorded nearby but from different perspectives, on the other. Accordingly, audio-based video synchronization is used to temporarily align video files to examine different videos simultaneously. The IRIT partner proposed a new video corpus, made of 25 synchronized videos with audio tracks, that depicts the same scene from multiple viewpoints. This corpus was anonymized and published under the name Toulouse campus surveillance dataset (Tocada). The manual audiovisual annotation of this dataset leads us to formalize and publish a new method to process these annotations. Besides, different algorithms of audio event detection have been proposed, and tested on different dataset, including synthetic videos. The algorithm to detect vehicle from sound has been integrated to the Victoria framework.

- Technical Feedback: Lessons Learnt on Data Generation (Video Footage Generation and Synthetic Video)

Razvan Roman

The Protection and Guard Service (SPP) is a state body with functions in the field of national security, specialised in providing protection for the Romanian dignitaries, the foreign dignitaries during their stay in Romania, and their families, within its legal competence. It is part of the national defence system and through its specialised structures, has among other the following functions: organises and carries out activities in order to prevent and annihilate any action that might be a threat to the life, physical integrity, freedom of action and health of the persons whose protection is in its charge; carries out the guard and defence of these persons' headquarters and residences; organises and carries out, overtly or under cover, activities of gathering, checking and using the necessary intelligence, only with a view to completing its missions accordingly to the law; carries out exchange of intelligence and cooperates with intelligence services as well as with similar departments both within the country and abroad, in order to fulfil the specific missions stipulated by law; organises and conducts, during the missions of protection and guard, the activity of all the participating forces; intervenes, independently or in cooperation with other institutions designated by the law in order to prevent or counteract the actions that may endanger the life, physical integrity, health or freedom of action of the protected as well as the security of the guarded objectives. It also intervenes to capture or annihilate the terrorist and aggressive elements; carries out independently or in cooperation with other specialised institutions, actions of search, identification and annihilation of the suspect objects which can be dangerous for the protected persons or guarded objectives. SPP is involved in research activities at EU level, participating at this moment in 9 research projects under H2020 framework, in one of them being coordinator. At national level, SPP is involved in 2 security research projects, in close collaboration with Romanian universities and local SMEs.

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Stéphanie Phillipe

Stéphanie has worked in the academic world and within several start-ups and in a consulting firm to develop projects and collaboration on a national and European scale, coordinate international public or private partners, and search for complementary know-how and funding. She joined Manzalab 4 years ago where she is in charge of the management of R&D and innovation projects in which the company is involved as coordinator or partner.

Manzalab is a designer of digital experiments created in 2010, they have put the scientific rigor of neuroscience research and technological developments at the service of all kinds of creativity. At the forefront of Collaborative Virtual Reality, they design our experiences for PCs, tablets and cell phones as well as for virtual and augmented reality environments.

Abstract: Issue: the lack of representative video data including the ground truth (annotated events/persons/objects included in the video) is a roadblock for the development and the performance evaluation of video analytics in the field of legal investigation and leads to a lack of robustness of the developed analytics/ Strategy: we have investigated the possibility to create synthetic videos and use them to evaluate algorithms for video analysis. The purpose is to take advantage of video game development tools to create large number of videos (with different parameters) and create simultaneously the annotation data and the (ground truth)/ Main Achievements: in line with the production of real videos, we have developed a tool allowing to generate synthetic video of persons and cars which address several issues for the developers, mainly: (1) no real person, i.e. no personal data constraints, (2) possibility to set several parameters (e.g. weather, time of the day, number of characters, resolution, scenario…) to reproduce high variability and test algorithms in various conditions at low cost; (3) rely on ground truth automatically generated according to precisely defined requirements and not subjected to individual subjectivity. Two scenarios have been treated: "Downtown attack", with a focus of human and bags detection and tracking; and "Vehicle tracking" with a focus on detection, tracking and identification of different vehicles. Preliminary results allow to validate the proof of concept: the tools are able to generate the video dataset and the corresponding reliable ground truth and the algorithms can detect/track/identify some elements within the synthetic videos, as they would in real videos/ Perspectives:

Further improvements are required to develop the use of synthetic videos for research on videos analytics for legal investigations but it will open the door to the production of an infinity of variations, using the simulation models of the elements of the scenes. It will substantially reduce the cost and complications (logistics, issues related to the processing of personal data of persons appearing in the videos, impossibility to make corrections without shooting a scene again, etc.) related to the production of real videos with actors.

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OVERVIEW OF SECURITY INITIATIVES

Dominique Wasquel (Chairperson)

Dominique joined ARTTIC in 2003 and holds the position of Project Manager. Since then, she has supported numerous consortia with project management, communication and dissemination activities in EC-funded collaborative projects (FP6, FP7, H2020). In VICTORIA, Dominique leads the WP10 "Dissemination, standardisation & communication" activities and has recently taken over the administrative management tasks, working in tight collaboration with the Project Coordination Team. Before joining ARTTIC, Dominique worked for 9 years in the radio-communications industry, followed by 6 years for Reed Midem, a leading company in the organisation of international professional exhibitions and conferences. She has a Bachelor's degree in Economics and Languages (English and Chinese) from the University Paris V.

- Security-related projects

ILEAnet project: Pawel Rybicki

Paweł Rybicki is the President of the Management Board of the European Forensic Initiatives Centre (EFIC) Foundation, director of the Forensic Watch Programme. Currently, as of 2017, he is also the Leading Forensic Adviser at the National Prosecutor's Office in Warsaw, Poland. In the years 2003 – 2011 he managed the Central Forensic Laboratory of the Polish Police, first as Deputy Director and in the years 2007 – 2011 as the Director of the Laboratory. Author of the concept and initiator of the Research Institute – Central Forensic Laboratory of the Police, which he managed in the years 2011-2013. The promoter of standardization and quality management in forensic science. The initiator of the European Committee for standardization in forensic science, CEN Technical Committee 419 – "Forensic Science Processes", and its first chairman in the years 2012 – 2014. In 2011 – 2013 he was the chairman of the European Network of Forensic Science Institutes (ENFSI), and in 2011 he was simultaneously the chairman of the International Forensic Strategic Alliance (IFSA). In 2011, during the Polish Presidency of the European Council, he was the leading forensic science expert and spokesman of the Polish Forensic Initiative introducing to the European legislation the term "European Forensic Science Area". Author of several dozen publications in the area of forensic sciences. He is also an academic teacher at the Center for Forensic Science, University of Warsaw.

Abstract: The ILEAnet project's key objective is to develop a sustainable Law Enforcement Agency (LEA) practitioners' network, encouraging and organising the dialogue between those practitioners and the research community to make them aware of innovative solutions to help them in their work. Focusing on concrete results and adopting a LEA perspective to assess the relevance of security research projects' outputs – for instance

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through a specific TELOS questionnaire designed by one of ILEAnet's work packages- ILEAnet aims to play a facilitating role in the uptake process of these outputs in four priority areas (migration, serious organised crime, cybercrime and terrorism). Its activities range from the articulation of LEAs' operational needs to the identification of the solutions brought by research and innovation projects and the support to deployment-related activities. ILEAnet is also concerned with initiating research projects and helping inform a LEA-driven research agenda. ILEAnet held its third Public Workshop on 3-5 November 2020. The virtual event dealt with Innovative Technologies for Border Management and received the support and participation from Frontex.

ASGARD project: Juan Arraiza Irujo

Dr. Juan Arraiza (male) is Senior Programme Manager at Vicomtech. He holds a Computer Science degree and an MPhil in Software Engineering from Deusto University. He first worked at PricewaterhouseCoopers as a consultant (1999-2000) and then he moved to Thomson Reuters Aranzadi where he worked as software engineer, then as project manager, and finally as the manager of the Project Management Office (2000-2012). Juan is PMP certified since 2005 and holds a doctoral degree in Project Management from the Public University of Navarre (Spain). He is or has been coordinator of the H2020 GRACE and ASGARD projects and of the FP7 P-REACT project, as well as Technical Coordinator of the FP7 CAPER project. Besides, Juan is President of the European Anti-Cybercrime Technology Development Association (EACTDA).

Abstract: The main theme of the 2019 Security Research Event (SRE) was "Building Bridges: Promoting Market Uptake by Reinforcing Synergies Between Security Research and Other Funding Instruments". Market uptake of the results from security research projects has been an area of concern for a long time. When the ASGARD project was conceived back in 2014, the main goal of the project was "to support LEA Technological Autonomy, by building a sustainable, long-lasting community formed by LEAs, Researchers, and Industry that will create (at little or no cost to LEAs), maintain and evolve a best of class tool set for the extraction, fusion, exchange and analysis of Big Data including cyber-offenses data for forensic investigation". In this presentation we will describe how the project was designed with the aim of improving the efficiency of LEA, Industry and Researchers collaboration in Security Research projects. Open source model concepts and principles were adapted to the specific characteristics of security research projects. Fluid, frequent, and fruitful collaboration between all stakeholders, focused on short full-development cycles (of 6 months duration) and face-to-face "Hackathon"-like events were the backbone around which a new way of collaboration in security research projects has been implemented. This new approach, which is proving to be valid, will be presented in this presentation.

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MAGNETO project: David Faure

Dr David Faure is bid & project manager at Laboratory of Reasoning and Analysis in Complex Systems. He obtained his PhD in Machine Learning and Natural Language Processing in the Paris South University in 2000 and works for Thales Research & Technology France since 2001. Since, he participated to the introduction of model-based approach for HMI and disseminated this work into Thales through scientific meetings and patents and through the academic community with publications. Since 2002 he managed team' contributions into multiple national and European projects including the European lead of the UsiXML/ITEA project and the French lead of Reconsurve/ITEA project and is currently Scientific & Technical Coordinator of the H2020 FCT MAGNETO project.

Abstract: MAGNETO is concerned with developing technologies and solutions permitting LEAs to consistently process massive heterogeneous data in a more efficient manner with a view to effectively enabling their transformation into solid and court-proof evidence. In this presentation, the objectives and key outputs of the project will be explained.

SPIA-VA: Bogdan Ionescu

Pr. Dr. Bogdan Ionescu holds a double PhD in image/video processing from UPB and University of Savoie, France. He authored over 180 scientific publications. He serves/served as: reviewer for top tier journals, e.g., IEEE Transactions on Multimedia, IEEE Transactions on Image Processing, IEEE Transactions on Pattern Analysis and Machine Intelligence, ACM Computing Surveys, and conferences, e.g., ACM Multimedia, ACM Multimedia Systems Conference, IEEE International Conference on Multimedia & Expo, ACM International Conference on Multimedia Retrieval; associate editor for ACM Transactions on Multimedia Computing, Communications, and Applications; lead editor for the Springer books on Fusion in Computer Vision: Understanding Complex Visual Content and Human Perception of Visual Information: Psychological and Computational Perspectives; guest editor for journal special issues, e.g., with Elsevier Image and Vision Computing, Springer Multimedia Tools and Applications; conference committee chair, e.g., proceedings/publicity co-chair and area chair @ ACM Multimedia, general chair @ IEEE/ACM International Conference on Content-based Multimedia Indexing 2016, ACM International Conference on Multimedia Retrieval 2017, and CLEF Conference and Labs of the Evaluation Forum 2021; organizer/co-organizer of workshops, e.g., Information Fusion in Computer Vision for Concept Recognition @ European Conference on Computer Vision, Event-based Media Integration and Processing, and Human-Centered Event Understanding from Multimedia @ ACM Multimedia; lead organizer/co-organizer for several benchmark campaigns, e.g., MediaEval Retrieving Diverse Social Images, Violent Scenes Detection, Predicting Media Interestingness, and Predicting Media Memorability; lead organizer for ImageCLEF starting with 2017 and co-organizer of the Detection and Recognition of Hand Drawn Website UIs task; co-organizer of the Multimedia Information Processing for Personality and Social Networks Analysis challenge and workshop @ IAPR International Conference on Pattern Recognition. He contributed to over 28 national/international research grants, strategic programmes, and

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industry projects, out of which to 16 as principal investigator. He is senior member of IEEE and member of SPIE, ACM, EURASIP and GDR-ISIS.

Abstract: High expansion of urban population and infrastructure complemented by recent geopolitical world events, triggered an increasingly alarming number of threats. Law Enforcement Authorities are now challenged to redesign societal security concepts. Although current technological advances eased the information access, e.g., via video surveillance cameras, satellite data, drones, wearables, manual analysis of such big and diverse data to extract strategic knowledge is not a solution anymore. There is the critical need for automatic solutions. Artificial Intelligence (AI) and the breakthrough of Deep Neural Networks opened a new perspective for providing such solutions with a human-grade accuracy. Here, we provide a snapshot of our AI research for counter terrorism on automatic person and object identification, retrieval of speech intelligence, and dissimulated behavior analysis. The research was carried out during the UEFISCDI SPIA-VA research project at CAMPUS Research Center, University "Politehnica" of Bucharest (UPB), with the participation of UTI Grup and of the Military Equipment and Technologies Research Agency (ACTTM), having as public beneficiary the Protection Guard Service, Romania (SPP).

TOWARDS A "VIDEO ANALYSIS FOR INVESTIGATION" (VAFI) COMMUNITY

Laure Dodin (Chairperson)

Laure joined ARTTIC in April 2018 where her main experience has been with H2020 security- and crisis management-related projects such as ILEAnet, DRIVER, VICTORIA, ENTRANCE, … for which she organises and designs conferences and workshops, and carries out communication and dissemination activities, including exploitation plans. Prior to joining ARTTIC, Laure worked for 13 years as a researcher and as a consultant in the Department of Engineering of the University of Cambridge where she conducted analysis of regulatory and standardisation landscapes to assist organisations in structuring and planning their innovation strategy. She is a graduate from the Strasbourg Institute of Political Studies and holds a Master in EU law. She is a seasoned user of roadmap techniques and workshop facilitator.

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- VAFI Community: Objectives and Legacy

Malek Baklouti

Malek Baklouti is in charge of video activities in THALES SIX GTS France for the PRotection and Security Business Line (PRS) since 2018. She graduated from the Tunisian Polytechnic School with a Bachelor of Engineering in 2005. She received a M.S. degree in Applied Mathematics in 2006 and follow up my PhD program on robotics and Signal processing at Thales Training and Simulation in 2009. She has 10 years of experience in security systems for urban security and critical infrastructure. She held several positions as Software Engineering Manager (2012-2015) and Workpackage Manager (2015-2018). She had acquired expert knowledge on Video Surveillance field experience, project and workpackage management on complex project. She holds 2 patents and some scientific publication on the topic of video analysis and applications on video management systems.

Abstract: The talk aims at presenting the target objectives of the VICTORIA online community of Video-Analysis-For-Investigation (VAFI). What led VICTORIA team to set up the VAFI community and what where the outcomes? After understanding the motivation behind this community, we will go through the different activities undertaken: where was the community hosted, the kind of content the community has featured and the value that the community expects to bring to the different stakeholders. More particularly, we will focus on the Marketplace, an interactive tool for the LEAs to help map out the available products and share feedbacks and reviews.

- VICTORIA Legacy: Standardisation and Exploitation Plan

Stéphane Ménoret

Stéphane is a senior software and system engineer with 25+ years of experience in embedded systems with new software and architecture development as well as advanced studies and project management. He has a background in computer science from the Conservatoire des Arts et Métiers (CNAM) in Paris and holds two master's degrees, one in networks and systems engineering and one in distributed systems, both from the Pierre & Marie Curie University (Paris 6). He worked first for ATOS ORIGIN on a software framework supporting network protocols. Then he moved to ALCATEL where he worked on new mobile phones and network routers products. Finally, he joined the THALES group. Since then he worked for Thales Research and Thales Communications and Security (now THALES SIX GTS France) as an R&D engineer, an architect and a projects manager. His main interests include real-time embedded systems and operating systems, open-source software, networking technologies, robotics. He is involved for the last five years on high-end UAVs development.

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Abstract: the presentation provides an overview of the analysis and the actions supporting exploitation of VICTORIA project outcomes

Cyril Bergeron

Cyril received the degree in electrical engineering from the École Supérieure d'Ingenieurs de Nice Sophia-Antipolis (Polytech'Nice), France, in 2001, and the Ph.D. degree from the Image and Signal Processing Department, Télécom ParisTech, Paris, France, in 2007. He joined Thales Communications and Security, Gennevilliers, France, in 2003. His current research interests include video compression(H.266/VVC, H.265/HEVC, VC-2, H.264 AVC/SVC/MVC, ...), Security & Privacy (Content Sensitive Encryption, Selective Encryption, CENC,...) , image coding (JPEG2000, HEIF) and joint source and channel decoding techniques (Unequal Error Protection, ...). He is also involved in different standardization activities : ISO/IEC JTC 1/SC 29 "MPEG" and "JPEG", ISO/IEC JTC 001/SC 27/WG 05 "Identity management and privacy technologies", ISO/TC 292/WG 06 "Protective security" and IEC/TC 79/WG 12 "Video Surveillance Systems (VSS)".

Abstract: One of the objectives of the project VICTORIA is to take into account the requirements of the LEAs and to define into a new international standard the interfaces preparing the interoperability between the LEA tools and the variety of existing and heterogeneous solutions of the CCTV market. This presentation provides an overview of the relevant standards in IEC/TC79 committee, and the different actions by the consortium to pave the way to a future new standard IEC 62676-2-11.

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Day 3: Wednesday 18 November

REGULATORY FRAMEWORK FOR VIDEO ANALYSIS IN THE EU

- Video Analysis and The Law: Lessons learned

Laurens Naudts

Laurens Naudts is a Doctoral Researcher and researcher in law at the KU Leuven Centre for IT & IP Law. His research interests focus on the interrelationship between artificial intelligence, ethics, justice, fairness and the law. Laurens' Ph.D. research reconsiders the concepts of equality and data protection within the context of machine learning and algorithmically guided decision-making. As a researcher, Laurens has also been actively involved in several national and EU funded (FP7 and H2020) research projects, including inter alia iLINC, Preemptive and VICTORIA.

Abstract: the use of (emerging) video analysis technologies for the investigation of criminal and terrorist activities poses distinct challenges to fundamental rights and values, such as the rights to privacy, data protection and equality and non-discrimination. These tools should therefore only be developed and deployed where the respect for the aforementioned societal and ethical values, and their manifestation in the law, can be safeguarded. The presentation will cover guidelines as to how rights and values affected can be taken into account during the design and development of video analysis techniques, as well as during the deployment thereof. Looking ahead, the presentation will conclude with policy recommendations in order to foster an environment where fundamental rights can be guaranteed within law enforcement and balanced with security needs.

- Open Training Module to VICTORIA tools

Alfonso Climente

Alfonso Climente Alarcón (Valencia, 1983). PhD. in Telecommunications Engineering. Telecommunications Engineer. Researcher in the Department of Communications at the Polytechnic University of Valencia (UPV) since 2007. He's a Teacher at the University Master in Cybersecurity and Cyberintelligence of the UPV. In the field of research, he's a member of the UPV's Distributed Real Time Systems Research Group. Engineer developer of the Cyber Common Operational Picture project, in collaboration with the Cyber Defense Joint Command (currently Cyberspace), whose first version of the situational cyber awareness application has been fully operational since 2017, and the CyCOP 2.0 version is currently under development.

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Previously also involved in the development of the information system for command and tactical control of the Army (Friendly Force Tracking System), SIMACET-FFT, operational since 2008, with three successive versions, the last in 2016. Participant in 4 European projects, funded by the European Commission and the European Defense Agency (FP7 and H2020), related to command and control systems and cybersecurity. Highlighting among the most recent in the field of counterterrorism is H2020 VICTORIA, located in the field of video analysis for the investigation of terrorist and criminal activities. He has worked on 2 projects for the U.S. Navy Office of Naval Research for 4 years and on other national research projects.

Abstract: VICTORIA Conference WP8 Training Presentation Abstract. During the H2020 VICTORIA project proposal writing, it was pointed out the importance of developing and implementing a training curriculum to ensure that the Law Enforcement Agencies (LEA) achieve the necessary expertise to use the in project developed video analysis platform (VAP). Moreover, to guarantee that all privacy aspects and ethical principles established by the European Union (EU) are followed, the curriculum had to include training of legal procedures and ethical rules. The training curriculum is developed following the current state of the art pedagogical research. Following these principles, the curriculum is divided into subjects each one with clear objectives and sub-objectives to be achieved. Following, activities and their respective evaluations methods are selected by analysing the sub/objectives. Finally, each subject has a designated expert (mentor) to solve possible questions. The training is available to all project related LEAs around the EU, each one with specific needs and characteristics. As such, the training is entirely online with auto-evaluation methods so that the knowledge can be gained following different schedules and pacing to suit the needs of each trainee. The well-known online learning platform Moodle hosts the VICTORIA course and its capabilities adjust perfectly to the flexible needs of the project. Additionally, two classroom training workshops were conducted during the duration of the project where several European LEAs were present. Here not only could they have face-to-face interaction with their mentors, but also these workshops brought the possibility to establish relationships with other LEAs and gather end-user collective knowledge on innovative uses of the VAP. In summary, the online training platform and the workshops received successful feedback from both the mentors and the LEAs.

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VICTORIA FINAL CONFERENCE'S RAPPORTEURS

A report compiling the content of this document and discussions raised during the event will be published after the event. The rapporteurs in charge of the report are:

Laurens Naudts: Rapporteur for non-scientific topics

Laurens Naudts is a Doctoral Researcher and researcher in law at the KU Leuven Centre for IT & IP Law. His research interests focus on the interrelationship between artificial intelligence, ethics, justice, fairness and the law. Laurens' Ph.D. research reconsiders the concepts of equality and data protection within the context of machine learning and algorithmically guided decision-making. As a researcher, Laurens has also been actively involved in several national and EU funded (FP7 and H2020) research projects, including inter alia iLINC, Preemptive and VICTORIA.

Akim Tidafi: Rapporteur for scientific topics

Akim has been a software architect for video solutions in THALES SIX GTS France for the Protection and Security Business Line (PRS) since 2014.

He has been working for Thales since 2002 in different domains as Military Intelligence and National Security. At first, as a software engineer and after as a technical leader/software architect since 2007. He has six years of experience in security systems for the Urban Security, Critical Infrastructure and Transportation on large projects. The surveillance and video analysis are central in the security systems built by Thales.

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RELATED PROJECTS

RED-Alert: Real-time Early Detection and Alert System for Online Terrorist Content based on Natural Language Processing, Social Network Analysis, Artificial Intelligence and Complex Event Processing

The RED-Alert project is a research and innovation project, funded by the European Union's Horizon 2020 programme, for the development of monitoring of the new content in social media and for the development of analysis tools for fighting on-line terrorism.

The RED-Alert project developed a real-time system able to facilitate the timely identification of terrorism-related content by summarizing data from social media and aimed to attain its main objectives:

1. Improve available building blocks (NLP, SNA, CEP) and combine them with artificial intelligence (AI) in order to support the language, usability and privacy-preserving requirements of the RED-Alert solution
2. Integrate all building blocks (NLP, SNA, CEP) in a holistic solution with real-time collaborative capabilities and create a baseline system (development environment) for current and future use
3. Involve law enforcement agencies in the specification and the demonstration of the REDAlert solution
4. Disseminate the project results in the scientific and law enforcement communities, prepare the exploitation of the RED-Alert solution and its individual modules

The RED-Alert system was successfully tested in the pilot environment of five LEA partners.

For further information and contact details please visit our project website: https://redalertproject.eu

Project Coordinator:

Software Imagination and Vision (SIMAVI) (www.simavi.ro) is a large software company with proven experience in the following fields of activity: R&D, Education & eTraining, eHealth, Security, eAgriculture, Customised Applications, ERP & BI, eCustoms, and Government with +1500 commercial clients and +300 succesful projects in Europe, Middle East, North Africa, CIS area. An organization built on an European model, with unique competence centers and internationally competitive specialists, Software Imagination and Vision is the Romanian software company that provides IT services directly to European Commission organization.

SIMAVI has also strong experience in R&D projects, having been involved as technological partner & integrator, as well as coordinator in over 35 Horizon 2020 projects from various domains: Technologies for prevention, investigation, and mitigation, Border Security, Cybersecurity, Critical Infrastructure, Energy & Smart cities, Health, Industry 4.0, Agriculture, eTraining & eContent, and Smart communities.

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

ASGARD: Analysis System for Gathered Raw Data.

ASGARD is a H2020 research project concerned with Forensics, Intelligence and Foresight, i.e. Intelligence led prevention and anticipation. It aims to make advances in the processing of seized data, availability of massive amounts of data and big data solutions and explores new areas of research.

The consortium encompasses LEA end-users and practitioners from the Research and Development community meant to "push" transfer of knowledge and innovation. In addition to traditional Use Cases and trials, in line with open source concepts and continuous integration approaches, ASGARD has used Hackathons to demonstrate its results. Its work plan has included Data Set, Data Analytics (multimodal/ multimedia), Data Mining and Visual Analytics together with rapid adoption/flexible deployment strategies. The licensing and IPR approach adopted by ASGARD has been coherent with LEAs' realities and ethical needs, with the project's embracing a comprehensive approach to privacy, ethics, societal impact and respect for fundamental rights.

ASGARD's overall objective is to enable its community of users to take advantage of the benefits of agile methodologies, technological trends and open source approaches that are currently exploited by the general ICT sector and organised crime and terrorism organisations, and leverage with them.

As ASGARD is coming to an end, outputs of the project will be presented at a final virtual event on November 25th, from 14:00 to 17:30 CET. Registrations to this event can be done here and the website of the project is at: http://asgard-project.eu/

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

MAGNETO: Multimedia Analysis and Correlation Engine for Organised Crime Prevention and Investigation

The technologies and solutions developed by MAGNETO are to permit LEAs to consistently process massive heterogeneous data in a more efficient manner, effectively enabling their transformation into solid and court-proof evidence.

MAGNETO's fundamental concept lies in establishing a perpetually self-improving crime prevention and investigation scheme, within which heterogeneous data flows are converted into knowledge bases according to a sophisticated representational model, which are then processed and fused using semantic technologies, the results and significance of which are visually represented by means of immersive HMIs that allow timely and accurate decision making, court-proof evidence extraction, and situational awareness.

MAGNETO is looking into a range of tools which will allow for automatic discovery of new, unsuspected relations within the large datasets. It focuses on five complementary use cases covering concrete needs experiencing by LEAs:

- Crime against persons and property
- Economic organized crime
- Prevention and investigation of terrorism
- Parallel illegal ecomic circuits of organised crime
- Identity crime

The project website is: http://www.magneto-h2020.eu/

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

CONNEXIONs: Inter**CON**nected **NEX**t-Generation **I**mmersive IoT Platform of Crime and Terrorism Detecti**ON**, Predicti**ON**, Investigati**ON**, and Preventi**ON** Services.

CONNEXIONs aims to develop and demonstrate a next-generation detection, prediction, prevention, and investigation platform by building upon the concepts of:

- Multidimensional integration and correlation of heterogeneous multimodal data, including (Surface/Deep/Dark) Web and social media multilingual and multimedia content, data acquired by Internet of Things (IoT) devices, police reports, and digital evidence obtained from seized devices and communication channels.
- Delivery of pertinent information to various stakeholders in an interactive manner tailored to their needs, including through immersive (augmented reality – AR and virtual reality – VR) environments.

CONNEXIONs aims to meaningfully enhance operational and (near) real-time situational awareness by encompassing the entire lifecycle of law enforcement operations, including:

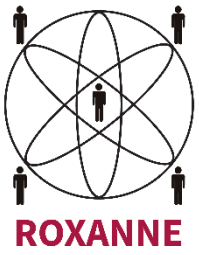
- Pre-occurrence prediction and prevention
- During-occurrence LEA operations
- Post-occurrence investigation

CONNEXIONs will be validated in field tests and demonstrations in 3 operational use cases:

- Counter-terrorism security in large scale public events
- Human trafficking investigations and mitigation
- Crime investigation and training through 3D scene reconstruction

For more information, please visit the Project website: https://www.connexions-project.eu/

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.



ROXANNE: **R**eal time netw**O**rk, te**X**t, and speaker **AN**alytics for combating orga**N**ized crim**E.**

Discovering criminal networks and identifying their members is one of the primary aspects of LEAs' mission. ROXANNE - an EC FCT H2020 project contributes towards this goal by bridging the strengths of speech and language technologies (SLTs), visual analysis (VA) and network analysis (NA). ROXANNE aims achieve a significant increase in the speed of investigation processes and an improvement in identification of individuals by means of speech, in the scope of criminal cases where large amounts of lawfully intercepted communications (with multilingual attributes) are analysed.

ROXANNE collaborates with Law Enforcement Agencies (LEAs), industry and researchers to develop an advanced technical platform which uses new tools to uncover and track organized criminal networks, underpinned by a strong legal framework.

The project consortium comprises 24 European organisations from 16 countries while 11 of them are LEAs from 10 different countries.

More information on the Project Website: https://www.roxanne-euproject.org/

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

INFINITY: Immerse. Interact. Investigate

INFINITY's ambition is to become a flagship project against society's most pressing cybercriminal, terrorist and hybrid threats. Synthesising the latest innovations in virtual and augmented reality, artificial intelligence and machine learning with big data and visual analytics, Infinity will deliver an integrated solution that aims to revolutionise data-driven investigations. Bringing together a strong representation from national and supranational agencies with an end-user-driven design, it will directly address the core needs of contemporary law enforcement. Specifically, it will equip investigators and analysts with cutting edge tools to acquire, process, visualise and act upon the enormous quantities of data they are faced with every day.

Bolstered by cognitive research, automated systems and instinctive interfaces and controls, Infinity will be designed and developed to maximise the potential of individual investigators. On a collective level, the immersive collaborative environment offered by Infinity will enable co-located and remote LEA cooperation in ways that have not yet been realised. This end-to-end system for LEA operations will cover the full investigative cycle, including generating reports for decisionmakers and admissible evidence to demonstrate to juries and judges. Ultimately, the solutions offered by Infinity will propel LEAs ahead of traditional and evolving complex, hybrid and transnational threats and protect the societies they serve.

More information on the project and consortium can be found on the following link:
https://cordis.europa.eu/project/id/883293

Project Coordinator:

AIRBUS Defence and Space are the "System House" Business Unit within AIRBUS group. As such, ADS are in charge of designing and developing integrated systems for the customers. These large systems integrate products and systems from the group (including airborne and space-borne platforms) and from a large panel of associated partners, including numerous SMEs. The Integrated Systems Line of Business (CIS) within ADS provides fully-integrated modular solutions and services in order to minimise risk exposure in the areas of surveillance, Borders Security, population protection, infrastructure security, responses to emergencies and international reaction operations.

Contact: philippe.chrobocinski@airbus.com

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

DARLENE: Deep **A**ugmented **R**eality **L**aw **E**nforceme**N**t **E**cosystem

DARLENE aims to investigate means by which Augmented Reality (AR) can be deployed in real time to aid in Law Enforcement Agents decision-making by employing Augmented Reality capabilities and combining them with powerful Machine Learning algorithms, sensor information fusion techniques, 3D reconstruction, wearable technology and personalized context-aware recommendations to offer European in Law Enforcement Agents a proactive security solution which will provide an IoT level of Situational Awareness, detection and recognition, combining cutting edge technology and public security in all security verticals. It will enable Law Enforcement Agents to reduce and prevent crime, and to more quickly respond to crimes already in progress, by enabling them to sort through massive volumes of data to predict, anticipate and prevent criminal activities, make better informed tactical decisions and provide enhanced protection services for European citizens.

DARLENE will therefore develop practical and beneficial policing applications through the use of affordable, lightweight and inconspicuous Augmented Reality glasses. Such applications will capitalize on cutting edge research that will combine with AR Technology to create innovative methods for combating crime and even terrorist acts.

More information on the project at https://www.darleneproject.eu/

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

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CONFERENCE LOGISTICS

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VICTORIA COORDINATION TEAM

Luc Sonke: Project Coordinator

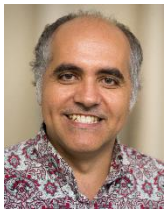
Dr Luc Sonke received his PhD in Mathematics on Theoretical Study, algorithmic and digital simulation of the Navier-Stokes equations in multiply-connex domains from the University of Paris-Sud Orsay with Summa cum laude and the congratulations of the jury. He has conducted numerous R&D projects related to a great number of computer science fields, including biometrics, cryptography, AI (CNN and GAN). He also conducted the implementation of several huge projects (more than 50M€) for Governments and international organizations all over the world (France, Morocco, Ivory Coast, Ethiopia, Singapore, Interpol). He is currently a Program Manager for IDEMIA Global R&D Department and is leading several European Commission collaborative projects and ANR (French National Agency for Research) collaborative projects.

Xavier Mamy: Technical coordinator

Xavier MAMY is graduated in Applied Physics (Master) and he holds a Specialist Postgraduate Diploma in Image/Signal Processing and Pattern Recognition from ENST (Telecom Paris). He has more than 15 years of experience, in the fields of software development, biometrics, and project management.

He is currently Project Manager for IDEMIA (Research and Technology Unit) and has already assumed the role of technical coordinator for the ANR (French National Agency for Research) collaborative project MOVEMENT and the H2020 European Commission project VICTORIA.

Carlos Triay: Project office senior consultant



Carlos Triay holds a Bachelor of Science degree and a Master of Mechanical and Aerospace Engineering degree, both from Cornell University, Ithaca, New York (USA). He has worked with ARTTIC in Paris since June 1996. He is experienced in working with large networks and projects with technical and scientific experts in the fields of security, aeronautics, rail, transportation, information and communication technologies, nuclear energy, health, nanotechnologies, high performance computing, e-learning, e-commerce, and smart cards.

He has been involved with the core team since the beginning in the set-up and preparation of project VICTORIA, and following its acceptance, in its follow-up. He has also been involved or is still involved in other EU H2020 security field projects such C-BORD, TARGET and TERRIFFIC.

The Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°740754.

Corina Marozzi: Communications manager

Corina Marozzi has been managing communications activities for cultural and scientific initiatives for more than eight years. From 2011 to 2019, she was responsible for an ambitious cultural patronage initiative at the French wine and spirit group Pernod Ricard. Since joining ARTTIC in 2019, she has most notably led the dissemination and communication work package in the final phase of the DRIVER+ project and supported project managers in the implementation of various communications activities for health, energy, transport and security projects.

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