



*Security Research Projects  
under the Horizon 2020 Programme for Research and Innovation*

# EU Research for a **SECURE** Society

*December 2015*

Migration and  
Home Affairs

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# INTRODUCTION



## **Investing in a future-bound security research to protect our society.**

The world faces complicated security challenges, such as economic, political, migratory and terrorist-related spill-overs. The global and the European security environment are increasingly interconnected by the spread of technology, mass communication and societal networks. The European Agendas on Security and on Migration provide guidance for Europe's investment in many areas today, to cope with the threats of irregular migration, terrorism, organised crime and cyber risks in the short and long-term. Creating a Europe that is more secure for its citizens and which enables its economy to safely function and thrive lies at the heart of Horizon 2020's "Secure Societies" research goals. Disasters can come in any shape or size, whether accidental, incidental (nature-caused) or intentional. Security research must take all of these into account by delivering the predictive, reactive and resilience-based capabilities to Europe's practitioners and society at large if adversity strikes.

Horizon 2020's security research focuses on a rich array of topics. Its projects are developing new crisis management tools for communicating interoperably across end-users and societal groups during crises and natural disasters. We also need to elaborate new approaches in the field of anti-radicalisation and cyber security. Other projects are investigating comprehensive ways to protect critical infrastructure. Some are devising new methods to detect and combat organised criminal or terrorist activity. Enhancing the surveillance of Europe's land and maritime borders against illicit movements of people and contraband is another security research goal, as is the development of capabilities to support the EU's external Common Security and Defence Policy objectives and the role of a global player in conflict prevention and peace building. Finally, H2020's security research pillars place great emphasis on the compatibility of research with strict ethical guidelines.

To shape the research projects, the Commission encourages sharing of knowledge, experience and best practices among practitioners, such as law enforcement authorities or forensic institutes, as well as academia, industry and decision-makers. At the same time, achieving the right relationship between security research actors and society is also important, therefore the Commission is engaged to creating social trust in research-based new security policies and innovative solutions. Moreover, the technologies and services that emerge from these research projects will boost Europe's economy and strengthen its competitive position in an expanding global security market.

This catalogue of security research projects supported by Horizon 2020 "Secure Societies" aims to play a central role in informing citizens and practitioners about the diversity, creativity and determination of the EU's security research effort. This first edition will be followed by an annual up-date in order to have a full picture of security research projects by the end of the 2014-20 programming period.

# INDEX

of working fields



Crisis Management



CBRN Risk  
Management



Critical Infrastructure  
Protection



Border Checks



Border Surveillance



Maritime Security



Integrated Border  
Management



Supply Chain Security



Law Enforcement  
Agencies





Forensic



Cybercrime



Radicalisation



Ethics and Justice



Counter-Explosive



Counter-Terrorism



Societal Aspect  
of Policing



Social Media



Conflict Prevention  
and Peace Building

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Security Research Projects could identify up to 3 working fields:

The names in **bold** indicate first choice of working field.

The names in regular indicate second choice of working field.

The names in *italic* indicate third choice of working field.



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# CRISIS MANAGEMENT

CARISMAND  
CUIDAR  
DARWIN  
EDUCEN  
EMYNOS  
EU-CIVCAP  
IECEU  
NEXES  
PANDEM  
SMR  
WOSCAP





Crisis Management



Ethics and Justice

# CARISMAND

Culture And RISkmanagement in Man-made And Natural Disasters

## Information

Grant Agreement N°  
653748

Total Cost

€3788526,25

EU Contribution

€3788526,25

Starting Date

01/10/2016

Duration

36 months

Topic

DRS-21-2014: Ethical/  
Societal Dimension topic 2:  
Better understanding the links  
between culture, risk perception  
and disaster management

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## Project objectives

Provide a broad multi-disciplinary overview of existing knowledge about cultural factors that shape and influence citizens' risk perceptions, emotions, and risk behavior in disasters and establish a sound theoretical basis for improving disaster policies and procedures.

Provide analysis on gaps between current legal frameworks, policies and practices across Europe regarding the inclusion of cultural aspects in the disaster management cycle.

Identify how disaster risk communication is embedded in culture and which cultural factors within organizations influence the effectiveness of professional management and response.

Explore how cultural aspects can strengthen the ability of citizens and communities to prepare for disaster situations, respond efficiently and accelerate recovery processes.

Analyse citizens' uptake/rejection of technologies in disaster management.

Develop an active feedback-loop between disaster management stakeholders and citizens.

Develop a toolkit for stakeholders.



CARISMAND

## Description of the work

As risks are not 'objective' but socially and culturally constructed, disaster management which is aware, respects, and makes use of local cultural aspects will be not only more effective but, at the same time, also improve the community's disaster coping capacities. CARISMAND will identify these factors, explore existing gaps and opportunities for improvement of disaster policies and procedures, and develop a comprehensive toolkit which will allow professional as well as voluntary disaster managers to adopt culturally-aware everyday practices. This goal will be achieved by approaching the links, and gaps, between disaster management, culture and risk perception from the broadest possible multi-disciplinary perspective and, simultaneously, developing a feedback-loop between disaster management stakeholders and citizens to establish, test, and refine proposed solutions for culturally-informed best practices in disaster management. Whilst experts from a variety of fields (in particular legal, IT, cognitive science, anthropology, psychology, sociology) will undertake a comprehensive collation of existing knowledge and structures, a number of Citizen Summits and Stakeholder Assemblies will be organised. Systematically, CARISMAND will use an approach that examines natural, man-made and technical disasters, placing at the center of attention specific aspects that affect culturally informed risk perceptions, e.g. whether disasters are caused intentionally or not, the different "visibility" of hazards, and various time scales of disasters such as slow/fast onset and short- and long-term effects. By organizing six Citizen Summits (two per disaster category per year in two separate locations) where such disaster risks are prevalent, and three Stakeholder Assemblies (one per year) where the results are discussed through a wide cross-sectional knowledge transfer between disaster managers from different locations and different cultural backgrounds.

## Expected results

- 1) Increased effectiveness of those who respond to disasters.
- 2) A more resilient society by ensuring that cities are better prepared for and able to recover from emergencies.
- 3) Better matching of needs of various cultures during disaster relief, thus improving reaction time and reducing fatalities.
- 4) Providing a framework for improving disasters' policies and practices by taking into consideration every disaster victim's cultural and personal uniqueness.

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## PARTNERS

Universita Ta Malta / UOM  
Law And Internet Foundation /LIF  
Laboratorio Di Scienze Della Cittadinanza / LSC  
Fondatsiya Libre / LIBRe  
Gottfried Wilhelm Leibniz Universitaet Hannover / LUH  
Euro-Mediterranean Seismological Centre / EMSC  
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Ministerio Da Justica / PJ  
Ayuntamiento De Valencia / PLV  
The Police And Crime Commissioner For South Yorkshire / SYP  
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Serviciul De Telecomunicatii Speciale / STS  
Fundatia Pentru Smurd / SMURD  
Provincie Groningen / PG  
Comune Di Firenze / CdF  
Nutcracker Research Limited / NUTC

## COUNTRY

Malta  
Bulgaria  
Italy  
Bulgaria  
Germany  
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Serbia  
Italy  
Portugal  
Spain  
The United Kingdom  
Italy  
Romania  
Romania  
Romania  
The Netherlands  
Italy  
The United Kingdom



Crisis Management



Ethics and Justice

# CUIDAR

Cultures of Disaster Resilience among children and young people

## Information

Grant Agreement N°  
653753

**Total Cost**

€ 2 009 653,5

**EU Contribution**

€ 2 009 653,5

**Starting Date**

01/07/2015

**Duration**

36 months

**End Date**

30/06/2018

**Topic**

DRS-21-2014 Ethical/

Societal Dimension topic 2:

Better understanding the links  
between culture, risk perception  
and disaster management.



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## Project objectives

CUIDAR objectives:

- To better understand the risk perception, disaster needs and capacities of children and young people in urban societies.
- To strengthen children's understanding of emergencies and the actions they can take to prepare themselves, their families and their communities.
- Increased awareness and understanding amongst disaster responders and policy makers of children and young people's needs in disasters.
- More effective communication between disaster responders and children and young people in urban contexts.
- Improved disaster management framework, policies and practices that take into account the particular needs of children and young people in urban disasters.





## Description of the work

The project will carry-out:

- A scoping review of existing research and disaster management policies and practices relating to children and young people.
- Dialogues with children and young people to understand their perceptions of risk, strengthen their resilience and empower them to communicate their perceptions, priorities and needs in disasters to disaster practitioners.
- Mutual learning exercises with children, young people and disaster practitioners to raise awareness and influence local disaster policies and plans to include the particular needs and capacities of children and young people.
- National level dialogues with policy makers to communicate the needs, priorities and capacities of children and young people in disasters and influence policy and practice.
- A European level dialogue to share learning from each country's initiatives.
- Development of a EU framework for engaging with children and young people in disasters.

## Expected results

- Increased effectiveness of disasters responders in relation to the role of children.
- Preparedness, response and recovery measures will be culturally sensitive to children and young people.
- More resilient cities drawing on the strengths as well as vulnerabilities of children.
- Improved response and recovery through development of local child-centered disaster management plans.
- Provision of a higher-level child-centered policy framework taking account of children's diverse perspectives.

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## PARTNERS

University of Thessaly / UTH  
 Save the Children Italy / Save the Children Italy  
 Save the Children UK / SaveUK  
 Open University of Catalonia / UOC  
 University of Lisbon / ICSUL

## COUNTRY

Greece  
 Italy  
 The United Kingdom  
 Spain  
 Portugal



Crisis Management



Critical Infrastructure  
Protection



Societal Aspects of  
Policing

## Information

Grant Agreement N°  
653289

Total Cost

€ 4 998 896,25

EU Contribution

€ 4 998 896,25

Starting Date

01/06/2015

Duration

36 months

End Date

31/05/2018

Topic

TOPIC DRS-7-2014: Crisis  
and disaster resilience –  
operationalising resilience  
concepts

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# DARWIN

Expect the unexpected and know how to respond



## Project objectives

The main objective and core result will be the development of European resilience guidelines. The sub-objectives are to:

- Make resilience guidelines available in a form that makes it easy for a particular infrastructure operator to apply them in practice
- Enable use of resilience guidelines in non-crisis situations, for learning and practical training
- Promote resilience guidelines in terms of “mechanics” of carrying out updates
- Establish a forum - the “Community of Resilience and Crisis Practitioners” that will bring together infrastructure operators, policy makers and other relevant key stakeholders
- Build on lessons learnt regarding resilience and identify criteria that provide indicators of what works well and what does not.
- Carry out two pilots - health care and air traffic management (ATM) – to demonstrate practical benefits
- Establish activities that will lead to project results being adapted in domains other than the two used in the pilots



## Description of the work

In recent years, crises and disasters (Eyjafjallajökull and Deepwater Horizon 2010, Fukushima Daiichi 2011) have made it obvious that a more resilient approach to preparing for and dealing with such events is needed. DARWIN will improve responses to expected and unexpected crises affecting critical infrastructure and social structures, as well as address the management of both man-made events (e.g. cyber-attacks) and natural events (e.g. earthquakes). The main objective of the project is the development of European resilience management guidelines. These will improve the ability of stakeholders to anticipate, monitor, respond, adapt, learn and evolve, to operate efficiently in the face of crises. To enable dynamic, user-friendly guidelines the project will adapt innovative tools (e.g. serious gaming, training packages), test and validate the guidelines, and establish knowledge about how organisations can implement guidelines to improve resilience. A multidisciplinary approach is applied, involving experts in the field of resilience, crisis and risk management, social media and service providers in the air traffic management and health care domains. To ensure transnational, cross-sector applicability, long-term relevance and uptake of project results, a Community of Crisis and Resilience Practitioners (CoCRP) will be established, including stakeholders and end-users from other domains and critical infrastructure and resilience experts. The CoCRP will be involved in an iterative evaluation process to provide feedback on the guidelines.

The target beneficiaries of DARWIN are crisis management actors and stakeholders responsible for public safety, such as critical infrastructure and service providers, which might be affected by a crisis, as well as the public and media.

## Expected results

- Catalogue of resilience concepts and requirements for guidelines
- Generic resilience management guidelines addressing the capacities to anticipate, monitor, respond and adapt, learn and evolve
- Process and storage which facilitate easy access and updates
- Tools for simulation, serious games, training modules
- Guidelines adapted to health care and air traffic management
- Community of Resilience and Crisis Practitioners (CoCRP) for advice on guidelines
- Pilot demonstration: ATM and health care

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## PARTNERS

Stiftelsen Sintef / SINTEF  
 Technische Universität Braunschweig / TUBS  
 C.C.I.C.C. Limited / CARR  
 Deep Blue Srl / DBL  
 Enav Spa / ENAV  
 Istituto Superiore Di Sanita / ISS  
 Totalforsvarets Forskningsinstitut / FOI  
 Ostergötlands Lan / KMC  
 Ben-Gurion University Of The Negev / BGU

## COUNTRY

Norway  
 Germany  
 Ireland  
 Italy  
 Italy  
 Italy  
 Sweden  
 Sweden  
 Israel



Crisis Management



Critical Infrastructure  
Protection

# EDUCEN

European Disaster in Urban Centers: A Culture Expert Network  
(3C – Cities, Cultures, Catastrophes)



## Information

Grant Agreement N°

653874

Total Cost

€ 1,741,905.00

EU Contribution

€ 1,644,671.25

Starting Date

01/05/2015

Duration

24 months

End Date

30/04/2017

Topic

DRS-21-2014 - Ethical/

Societal Dimension topic 2:

Better understanding the links  
between culture, risk perception  
and disaster management

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## Project objectives

We are building on existing European networks and developing actions to support culture and cultural diversity as reservoirs and resources that help people deal with disaster risk by increasing the effectiveness of urban disaster preparedness and response and by reducing the number of fatalities. The learning loops initiated in EDUCEN are captured in a multi-format State of the Art guidebook made freely available to all. Moreover, we set out to build a sufficient 'cultural capital' and means to keep the network going after this action.

## Description of the work

Tools and methods are invented and developed from which each of EDUCEN 'case study cities' can select to facilitate and support learning on disaster and culture; for example, a serious game, social mapping, and multi-stakeholder dialogues. Learning and replication between cities is facilitated by a transferability framework. Extensive process documentation facilitates this learning within and outside the consortium. A state of the art report, conceived as a modular 'living document' that can be translated and transformed in multiple formats for multiple audiences, integrates these learnings by theme. To attain this, we provide opportunities for stakeholders to meet, exchange, understand, and build on sociocultural networks ('soft infrastructure') and cultural capabilities to deal with disaster risk.

## Expected results

Our project will produce locally relevant support materials at a city level., and precipitate and facilitate the formation of a living network of experts on cultures in disasters encompassing community members and practitioners (communities of practice-CoP). There will be links between academia and practitioners to bridge gaps between research and practice.

### PARTNERS

Wageningen University / WUR  
I-Catalist S.L. / I-CATALIST  
Politecnico Di Milano / POLIMI  
Consiglio Nazionale Delle Ricerche / CNR  
Stowarzyszenie Centrum Rozwiazan Systemowych / CRS  
Confederacion Hidrografica Del Segura / SEGURA  
Stiftelsen The Stockholm Environment Institute / SEI  
Anaptyksiakh Boloy Anaptyksiakh Anonymh Etairia (Ae)  
(Volos Development Company) / ANEVO  
Arama Kurtarma Dernegi / AKUT  
Ministry Of Defence, Netherlands / NLDA

### COUNTRY

Netherlands  
Spain  
Italy  
Italy  
Poland  
Spain  
Sweden  
  
Greece  
Turkey  
Netherlands





Crisis Management



Social Media

## Information

Grant Agreement N°

653762

Total Cost

€ 4 130 493

EU Contribution

€ 4 130 493

Starting Date

01/09/2015

Duration

30 months

End Date

01/02/2018

Topic

DRS-19-2014:

Communication technologies  
and interoperability topic 2:  
Next generation emergency  
services

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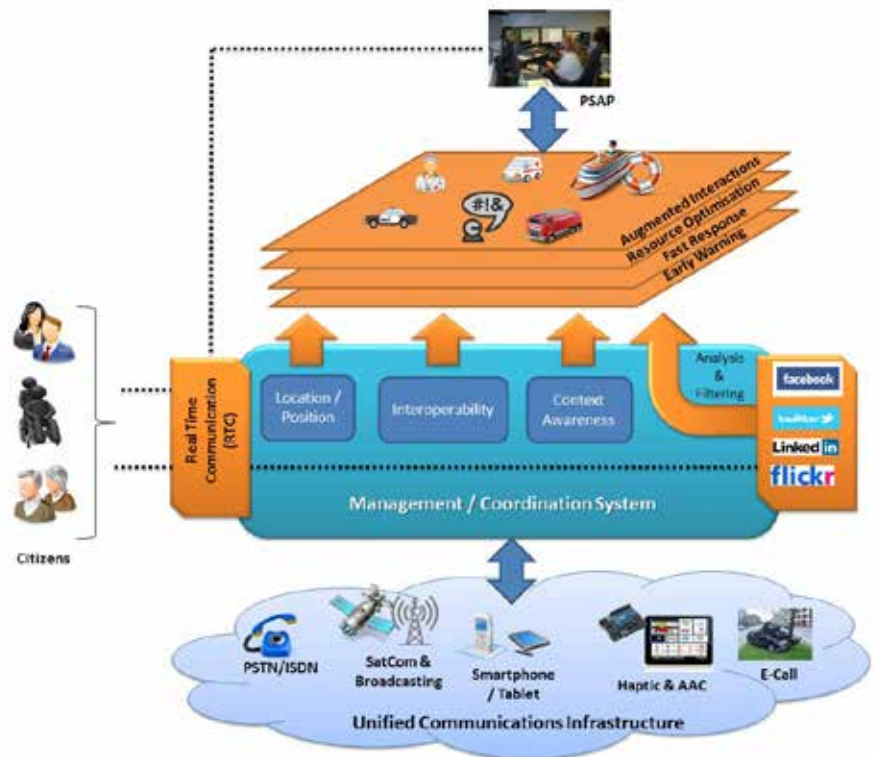
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# EMYNOS

nExt generation of eMmergency commuNicatiOnS



## Project objectives

The main objective of the EMYNOS project is the design and implementation of a next generation platform capable of accommodating rich-media emergency calls that combine voice, text, and video. This would constitute a powerful tool for coordinating communication among citizens, call centers and first responders.

Additionally, issues such as call routing/redirection to the closest-available call center, retrieval of the caller location, hoax calls prevention, support for people with disabilities, and integration of social media will be addressed.

## Description of the work

The actual emergency systems are based on old-fashioned telecommunication technologies that cannot cope with the new IP-based services that the European citizens use every day. Some of these limitations are summarised below:

- 1) There is no standard underlying technology for the separate emergency systems
- 2) There is no interconnection among the PSAPs (Public Safety Answering Points): this, unfortunately, limits the transfer of calls in case of congestion and network outage
- 3) Media limitation: currently only voice calls and sometimes SMS are accepted
- 4) No unified platform: currently emergency warning systems are completely separate from the 112 emergency centers
- 5) There are no advanced features, such as caller location
- 6) Emergency calls are unidirectional: they are established from the end-users towards the PSAP
- 7) There is no non-telecommunication platform as a backup in case the telecommunication infrastructure is not operational
- 8) The social media are not integrated: handling emergency situation should not only be the task of the rescue teams. Involving citizens especially through social media (twitter, Facebook, etc.) in monitoring events and sharing information will lead to a better management
- 9) The eCall (the emergency solution for vehicles in case of crash) technology is based on the GSM, which limits the amount of emergency data to be sent

The aim of the EMYNOS project is to design, specify and develop a next generation emergency framework that resolves the above mentioned limitations. EMYNOS innovations are: A) Caller Location retrieval compliant to IETF and ETSI; B) Support for persons with various categories of disabilities; C) eCall extensions including photos and videos; D) Exploit social media to support disaster management operations.

## Expected results

EMYNOS will enable users to make emergency calls across heterogeneous devices such as PCs, TV sets, mobile devices, AAC and haptic devices, using various mature technologies (Session Initiation Protocol, IP Multimedia Subsystem (IMS), WebRTC). The project will also demonstrate how the eCall concept can benefit from the IP technologies by allowing audio-video calls towards the emergency call centers and complementing location information, with photos and videos.

## PARTNERS

Fraunhofer Gesellschaft zur Förderung der angewandten  
Forschung e.V. / Fraunhofer  
Turksat / Turksat  
Technological Educational Institute of Crete / TEIC  
Navcert / Navcert  
Public Safety Communication Europe / PSCE  
The Special Telecommunications Service / STS  
Voztelecom / VOZ  
Harpo Sp. Z o.o. / Harpo  
Hellenic Open University / HOU  
Österreichisches Rotes Kreuz / ARC  
MCS Data Labs / MSC

## COUNTRY

Germany  
Turkey  
Greece  
Germany  
Belgium  
Romania  
Spain  
Poland  
Greece  
Austria  
Germany

# EU-CIVCAP

Preventing and responding to conflict: developing EU CIVILIAN CAPabilities for a sustainable peace

## Information

Grant Agreement N°  
653227

Total Cost  
€ 1 714 975

EU Contribution  
€ 1 714 974,5

Starting Date  
01/12/2015

Duration  
36 months

End Date  
30/11/2018

Topic  
BES-12-2014 - Conflict  
prevention and peace building  
topic 1: Enhancing the civilian  
conflict prevention and peace  
building capabilities of the EU

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## Project objectives

The goals of preventing the outbreak of conflict and promoting sustainable peace remain a fundamental challenge to policymakers and analysts alike. The European Union (EU) and its member states require an adequate set of capabilities if they are to address this challenge in a timely and effective manner. EU-CIVCAP will examine EU peacebuilding capabilities to identify 'the best civilian means to enhance these capabilities' and address existing shortfalls. More specifically, this project has identified three inter-related objectives:

- 1) To assess EU civilian capabilities for external conflict prevention and peace building.
- 2) To identify and document lessons learned and best practices in EU conflict prevention and peacebuilding.
- 3) To enhance future policy practice and research on EU conflict prevention and peacebuilding. The project will gather, synthesize, further develop and disseminate knowledge and learning on civilian conflict prevention and peacebuilding.

## Description of the work

EU-CIVCAP focuses on two key dimensions. First, the project analyzes the EU's peacebuilding activities through the entire conflict cycle to assess existing capabilities. Work packages (WP) 3 to 6 will carry out a capability-based analysis in different phases of the EU's engagement in conflict areas: from early warning and conflict analysis to early response, the execution of EU civilian and military missions and support for local capacity-building. EU-CIVCAP will include short-term stabilisation/conflict prevention initiatives and long-term peacebuilding measures. In addition to the conflict cycle, the project analyzes cross-cutting issues. WP 2-6 will focus on four key dilemmas that have been identified by policy-makers and experts alike: filling the early warning-response gap; combining short term vs. long term approaches to conflict prevention and peacebuilding; enhancing civil-military coordination in conflict prevention and peacebuilding; and ensuring local ownership. In terms of methodology, the EU-CIVCAP project uses a comparative approach; it evaluates the EU's record to date and compare it to that of other international actors (UN, OSCE). It also examines the EU's engagement in two key regions (the Western Balkans and the Horn of Africa). By analyzing and comparing the EU's implementation of conflict prevention and crisis management activities in these two regions important insights into the development of civilian capabilities for conflict prevention and peacebuilding and key operational challenges will be generated. The project seeks to offer policy-relevant advice and generate knowledge by engaging in different coordination and support activities, including the development of a catalogue of lessons learned and best practices reports, the creation of an expert network, engagement through social media, and the organisation of dissemination events in different formats in this area.

## Expected results

EU-CIVCAP will identify the best civilian means to enhance the EU's peacebuilding capabilities. In particular, expected results include:

- 1) the optimisation of existing capabilities, policies and procedures in the area of conflict prevention and peacebuilding.
- 2) policy advice on the exploitation of civilian-military synergies.
- 3) tailor-made support to policy knowledge needs on peacebuilding.
- 4) the optimisation of public spending on prevention and peacebuilding capabilities.

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## PARTNERS

University of Bristol / UBRIS  
Maastricht University / UMAAS  
Roskilde University / RUC  
University of Aberdeen / UABDN  
Istituto Affari Internazionali / IAI  
Centre for European Policy Studies / CEPS  
European Union Satellite Centre / EUSC  
European Peacebuilding Liaison Office / EPLO  
Belgrade Centre for Security Policy / BCSP  
Transparency Solutions / TS

## COUNTRY

The United Kingdom  
The Netherlands  
Denmark  
The United Kingdom  
Italy  
Belgium  
Spain  
Belgium  
Serbia  
The United Kingdom





Crisis Management

# IECEU

Improving the Effectiveness of Capabilities in EU Conflict Prevention

## Information

Grant Agreement N°  
653371

Total Cost

€ 2 081 110

EU Contribution

€ 2 081 112

Starting Date

01/05/2015

Duration

33 months

End Date

31/01/2018

Topic

BES-12-2014 Conflict

prevention and peace building

topic 1: Enhancing the civilian

conflict prevention and peace

building capabilities of the EU

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## Project objectives

IECEU analyzes and assesses best practices and lessons learned with a view to enhance the civilian conflict prevention and peacebuilding capabilities of the EU with a catalogue of practices, new solutions and approaches. Its three main goals are:

- 1) Analyzing and assessing the current situation of on-going and past missions and operations: to identify effectiveness of EU external actions and the impact in different levels areas
- 2) Learning from lessons provided by these missions and assessing the different options
- 3) Providing new solutions, approaches and recommendations for EU to guarantee long-term stability



## Description of the work

The EU is increasingly affected and challenged by geopolitical changes, increasing impact of conflict on civilians, globalized impact of local conflicts, technological developments and budgetary constraints. Challenges such as radicalisation, the growing potential for individuals to create large security threats and transnational criminality further complicate the security landscape of EU missions. With global interconnectedness, the repercussions of outside conflict are also seen within the EU, and may lead to societal and security challenges within the EU. The key issue for the EU is how to improve its conflict response capabilities to create more lasting impact on the ground and to use limited resources more effectively.

Comprehensive EU-security within the EU emphasizes the need for civilian-military synergies, which correspond more closely to challenges on the ground and the incorporation of very different perspectives, priorities and operational cultures.

## Expected results

- 1) Improving the EU capabilities with recommendations tested in policy level
- 2) Providing a set of new approaches, solutions and recommendations for EU to guarantee long-term stability

## PARTNERS

Saferglobe Finland Ry / SaferGlobe  
 Univerza V Ljubljani / UniLju  
 Ustanova-Center Za Evropsko Prihodnost / CEP  
 Royal Danish Defence College / RDDC  
 Edward M Kennedy Institute For Conflict Intervention,  
 National University Of Ireland Maynooth, / NUIM  
 Austria Institut Für Europa- Und Sicherheitspolitik / AIES  
 Enquiry / ENQUIRYA  
 National Defence University, The Finnish Defence Forces  
 International Centre / FINCENT  
 Crisis Management Centre Finland / CMC Finland

## COUNTRY

Finland  
 Slovenia  
 Slovenia  
 Denmark  
  
 Ireland  
 Austria  
 Netherlands  
  
 Finland  
 Finland



Crisis Management

# NEXES

NEXt generation Emergency Services

## Information

Grant Agreement N°  
653337

Total Cost

€ 5 761 083,75

EU Contribution

€ 5 760 836

Starting Date

01/05/2015

Duration

36 months

End Date

30/04/2018

Topic

DRS 19 – 2014: Communication  
technologies and interoperability

Topic 2: Next generation

emergency services



## Coordinator

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## Project objectives

NEXES has the following strategic goals:

- Develop and integrate IP-enabled communications into next generation emergency services to enhance situational awareness and interoperability;
- Develop innovative emergency Apps, specific for citizens and first responders;
- Produce recommendations and pan-European standards to leverage the adoption of IP-based next generation emergency systems;
- Develop the NEXES testing regime and validation framework to contribute to the standardisation effort of emergency products and services in Europe;
- Design NEXES to suit end-users needs, requirements and ambition, benefitting from the wide NEXES end-users community;
- Design NEXES according to the EU ethical and legal/regulatory framework, applying privacy-by-design principles;
- Incorporate existing ICT solutions and standardisation efforts in NEXES to promote interoperability;
- Develop campaigns of demonstration and wide dissemination reach across Europe and beyond.



## Description of the work

The NEXES RIA aims to research, test and validate the promising integration of IP-based communication technologies and interoperability into the next generation emergency services, so that they attain increased effectiveness and performance. NEXES proposes to overcome current limitations of emergency services by delivering the NEXES System and Apps, as well as NEXES recommendations, to build a paced pathway for emergency services to adopt IP-based technologies that meet the requirements and needs of PSAP operators, emergency response organisations, first responders and citizens in emergencies.

NEXES's approach is:

**Democratic** - NEXES delivers multiple IP-enabled communication channels between citizens and emergency services that enable the empowerment of citizens in the selection of their channel of choice to reach to emergency services;

**Universal** - NEXES supports Total Conversation (voice, real-time text, video and data) and rich emergency data exchange between citizens, PSAPs, EROs and FRs, contributing to enhance overall situational awareness and emergency services' interoperability;

**Inclusive** - NEXES provides IP communications channels that accommodate the needs of all citizens, including particular society groups, namely those experiencing physical disability or impairment and those with special needs, such as the elderly, early migrants and tourists.

NEXES innovates the approach to the dynamics between emergency services and citizens, allowing 1) the use of total conversation capabilities in emergencies, including social media, to the benefit of citizens, including those with disability or special needs 2) the exploitation of improved location information to rapidly and effectively identify and locate the caller and the incident site and 3) the leverage of Internet-enabled connectivity to enhance interoperability and shared awareness among emergency services, to the benefit of a more secure society.

## Expected results

- NEXES System and Apps - NEXES brings total conversation to enhance emergency services' situational awareness and interoperability and an ethically responsible end-to-end connection to citizens.
- NEXES Testbed - NEXES supports the validation of NEXES and other IP-compliant emergency systems, contributing to European standardization.
- NEXES Recommendations - NEXES offers a roadmap and guidelines to assist emergency services in the transition path towards the next generation emergency services.

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## PARTNERS

Acil Ambulans Hekimleri Dernegi  
(Ambulance and Emergency Physicians Association) / AAHD  
AIMTECH Consulting Limited / AIMTECH  
Azienda Regionale Emergenza Urgenza / AREU  
Ministero Dell'Interno - Corpo Nazionale dei Vigili del Fuoco / CNVVF  
Deveryware / DEVERYWARE  
European Union of the Deaf AISBL / EUD  
Institute of Communication and Computer Systems / ICCS  
Insta Defsec OY / IDS  
Omnitor AB / OMNITOR  
Orange Romania SA / ORO  
Poliisiammattikorkeakoulu (Police University College) / POLAMK  
Préfecture de Police / PP  
Teamnet International SA / TEAMNET  
Telekom Slovenije DD / TS  
Univerza v Ljubljani (University of Ljubljana) / UL  
Police and Crime Commissioner for West Yorkshire / WYP

## COUNTRY

Turkey  
The United Kingdom  
Italy  
Italy  
France  
Belgium  
Greece  
Finland  
Sweden  
Romania  
Finland  
France  
Romania  
Slovenia  
Slovenia  
The United Kingdom



Crisis Management

# PANDEM

Pandem Risk and Emergency Management

## Information

Grant Agreement N°

652868

Total Cost

€ 1 384 807,5

EU Contribution

€ 1 277 307,5

Starting Date

01/09/2015

Duration

18 months

End Date

28/02/2017

Topic

DRS-04-2014 - Crisis management topic 4: Feasibility study for strengthening capacity-building for health and security protection in case of large-scale pandemics – Phase I Demo

## Coordinator

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## Project objectives

Pandemics pose a greater health and security threat to mankind than ever before. The Ebola outbreak, the H1N1 pandemic, and most recently the Zika outbreak have demonstrated the vulnerabilities of human populations to these diseases. The overall objective of PANDEM is to reduce morbidity, mortality and economic damage from future pandemics by identifying improvement needs for technologies, systems and procedures.

The specific objectives are :

- 1) Assess current pandemic management tools, systems and practice in priority areas including risk assessment, surveillance, communication, and governance
- 2) Identify gaps and improvement needs through consultation with users and stakeholders
- 3) Identify and describe innovative solutions for capacity strengthening, efficient use of resources and better integration
- 4) Identify and describe demonstration concepts and future research and development needs to be integrated in a roadmap for the upcoming phase II demonstration project.



## Description of the work

PANDEM has brought together senior experts from the health, security, defence, communications, law, information technology, and emergency management fields. These experts will look at how service providers and policy-making organisations can work together more effectively to prepare for and respond to the next pandemic. PANDEM will review current best practices through literature reviews and case studies. The project will then identify gaps and improvement needs in consultation with users and stakeholders across the spectrum of pandemic risk and emergency management. An integrated solution specification will be developed and innovative concepts will be identified.

Particular attention will be given to enhancing collaboration between Member States on cross border risk assessment, response and recovery.

## Expected results

PANDEM will identify key innovations to improve pandemic preparedness at national, EU and global levels. This will reduce the health, socio-economic and security consequences of future pandemics. The project will determine critically important gaps in knowledge, capacity and capability at the national and EU level. The project will also identify candidate solutions to strengthen pandemic management which will be incorporated into a roadmap for a Phase II demonstration project.

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## PARTNERS

Folkhälsomyndigheten / FoHM  
Totalforsvarets Forskningsinstitut / FOI  
IGS Strategic Communications Ltd / IGS  
London School Of Hygiene And Tropical Medicine / LSHTM  
Universite Catholique De Louvain / UCL  
World Health Organization / WHO

## COUNTRY

Sweden  
Sweden  
The United Kingdom  
The United Kingdom  
Switzerland  
Switzerland





Crisis Management



Critical Infrastructure  
Protection



Societal Aspects of  
Policing

# SMR

Smart Mature Resilience

## Information

Grant Agreement N°

653569

Total Cost

€ 4 641 233,25

EU Contribution

€ 4 641 233,25

Starting Date

01/06/2015

Duration

36 months

End Date

31/05/2018

Topic

TOPIC DRS-7-2014:

Crisis and disaster resilience

– operationalising resilience  
concepts



## Coordinator

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## Project objectives

The main objective of the SMR Project will be the development and validation of European Resilience Management Guidelines, using three pilot projects covering different security sectors in Critical Infrastructures, as well as climate change and social dynamics.





## Description of the work

SMR's Resilience Management Guideline will provide a robust shield against man-made and natural hazards, enabling societies to resist, absorb, accommodate and recover in a timely and efficient manner, as well as plan for the preservation and restoration of essential structures and functions. The majority of the citizens already live in cities, and the latter will continue to grow at the expense of rural areas. When man-made and natural disasters happen, cities will always be affected, even if a disaster's epicentre should occur in rural areas. Cities play a key role in Europe's resilience and they have the potential to become Europe's resilience backbone. Much has been done and is being done about city/urban resilience, but the dominant perspective in these approaches is looking at cities as isolated entities. SMR's goal is a holistic, multi-level governance perspective of European resilience, where cities are the vertebrae in a strong European resilience backbone. Our proposal builds upon the experience, insights and practice of on-going endeavours on urban/city resilience (including smart cities), but it approaches risk and resilience in an overall European perspective. We do not see cities as isolated entities, but rather as interconnected and interdependent units, in the similar situation of vertebrae as interconnected and interdependent parts of a backbone. Cities can be affected directly or indirectly by disasters. Indirect effects can arise from proximity, from interdependencies and cascading effects, or even from sharing the same class of major threats (e.g. Rotterdam and Vejle, where sea level rise is common hazard) and suggesting common approaches and collaborative arrangements.

## Expected results

A set of tools to operationalise SMR's Resilience Management Guideline:

- 1) a Resilience Maturity Model with resilience levels;
- 2) a Systemic Risk Assessment Questionnaire to assess the entity's risk and maturity level;
- 3) a portfolio of Resilience Building Policies to improve the entity's maturity level;
- 4) a System Dynamics Model to diagnose and monitor the entity's resilience trajectory;
- 5) a Resilience Engagement and Communication Tool to integrate the wider public in community resilience.

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## PARTNERS

TECNUN University of Navarra / Tecnun  
 CIEM University of Agder / CIEM  
 University of Strathclyde / Strath  
 Linköping University / LiU  
 ICLEI European Secretariat / ICLEI  
 City of Kristiansand / Kristiansand  
 City of Donostia / Donostia  
 City of Glasgow / Glasgow  
 City of Vejle / Vejle  
 City of Bristol / Bristol  
 City of Rome / Rome  
 City of Riga / Riga  
 DIN / DIN

## COUNTRY

Spain  
 Norway  
 The United Kingdom  
 Sweden  
 Germany  
 Norway  
 Spain  
 The United Kingdom  
 Denmark  
 The United Kingdom  
 Italy  
 Latvia  
 Germany

# WOSCAP

Whole-of-Society Conflict Prevention and Peacebuilding

## Information

Grant Agreement N°

653866

Total Cost

€ 2 018 034,75

EU Contribution

€ 1 990 114,25

Starting Date

01/06/2015

Duration

30 months

End Date

30/11/2017

Topic

BES-12-2014: Conflict prevention and peacebuilding topic 1: Enhancing the civilian conflict prevention and peace building capabilities of the EU



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## Coordinator

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## Project objectives

Overall objective: to enhance the EU's capabilities to implement conflict prevention and peacebuilding interventions through sustainable, comprehensive and innovative civilian means.

- 1) Review: To assess past and ongoing conflict prevention and peacebuilding initiatives of the EU and its partners.
- 2) Reflect: To create an evidence base of best practices and lessons learnt, to identify capability gaps in current EU and partner engagements, and to elaborate options for change and potential improvements in long-term civilian peacebuilding efforts.
- 3) Recommend: To complement and adjust existing capacities, policies, and initiatives for conflict prevention and peacebuilding, through an inclusive policy-practice dialogue and the development of policy recommendations.
- 4) Innovate: To make a significant contribution to civilian conflict prevention and peacebuilding, by identifying future research priorities, and enhancing the potential of information and communication technologies.

## Description of the work

WOSCAP assesses current capabilities, and identifies gaps, best practices, lessons learnt and research priorities. It focuses on practical approaches and tools that can enable the EU to make its interventions more coherent and sustainable. These include means of engagement and collaboration between different stakeholder groups; use of innovative tools and methods to facilitate such engagement; strategies that build on local capacities and priorities for conflict prevention; and actions that support capacity enhancement of the EU and its partners in this endeavour.

Each objective makes use of a specific approach:

**Review** focuses on three types of EU interventions: multi-track diplomacy, security sector reform, and governance reform. The assessment is based on field research in Georgia, Mali, Ukraine and Yemen, and desk reviews looking beyond these countries.

**Reflect** sets up a 'community of practice' providing forums for dialogue that bring together policymakers, civilian and military practitioners, academic experts and beneficiaries of EU interventions. These communities will validate and apply the evidence base by focusing on cross cutting themes: local ownership, gender, multi-stakeholder coherence, civil-military synergies and ICTs.

**Recommend** elaborates the project findings into a tailored set of recommendations for direct policy engagement and an international dissemination strategy.

**Innovate** will evaluate potential practices, processes and tools that support innovation and produce a forward-thinking research agenda and priorities. The project will elaborate a framework guide for ICT use in conflict prevention, with the participation of civilian and military technology experts.

## Expected results

- 1) An assessment of past and potential civilian conflict prevention and peacebuilding capabilities of the EU, validated and supported by stakeholder engagement and a community of practice.
- 2) A tailored set of recommendations on the policy priorities and information and communication technologies needed for effective civilian conflict prevention, functioning in synergy with military efforts, enhanced by policy engagement and an international dissemination strategy.

## PARTNERS

Stichting Global Partnership for the Prevention of Armed Conflict / GPPAC  
Universiteit Utrecht / UU  
London School of Economics and Political Science / LSE  
Association Groupe ESSEC / IRENE  
Berghof Foundation Operations GMBH / BF  
Universitat Autònoma de Barcelona / ECP  
Institut Svitovoi Politiki / IWP  
Political Development Forum / PDF  
Ivane Javakhishvili Tbilisi State University / TSU  
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## COUNTRY

The Netherlands  
The Netherlands  
The United Kingdom  
France  
Germany  
Spain  
Ukraine  
Yemen  
Georgia  
Mali

# CBRN RISK MANAGEMENT

TOXI-TRIAGE







CBRN Risk Management



Crisis Management



Forensic

## Information

**Grant Agreement N°**

653409

**Total Cost**

€ 12 906 481,75

**EU Contribution**

€ 11 966 510,5

**Starting Date**

01/09/2015

**Duration**

48 months

**End Date**

31/08/2019

**Topic**

DRS-02-2014 - Crisis management topic 2: Tools for detection, traceability, triage and individual monitoring of victims after a mass CBRNE contamination and/or exposure

## Coordinator

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# TOXI-TRIAGE

Integrated and adaptive responses to toxic emergencies for rapid triage : engineering the roadmap from casualty to patient to survivor.



## Project objectives

- Accelerated delivery of situational awareness
- Command and control with secure, dynamic and seamless communication
- Traceable point-of-care diagnostic tests with integrated casualty tracking
- Comprehensive field toolbox for CBRN threats for end users
- Protocol for the registration of biomarkers of injury from CBRN poisoning
- Establish a harmonised European framework for ethical and accountable civilian CBRN operations



## Description of the work

19 partners in four task forces will address end user specifications; design and delivery; test and validation; and impact. The approach defines a concept of operations that envisages accelerated delivery of situational awareness through an ensemble of embedded sensors, drones, standoff detectors (including cameras), artificial intelligence for processing sensor signals and web-traffic from social media, and centralised command and control. Wireless traceability of casualties provides dynamic mapping including medical care. Two field exercises are intended to test and verify the operational attributes of the systems, and three WPs focus on impact to deliver: Exploitation; Security and Ethics; and Effective Innovation Management.

Distinctive technological attributes of TOXI-triage include: rapid non-invasive assessment of exposure/injury through monitoring metabolic markers of injury, managing and exploiting the semantic web, traceability by design, aptamer-based bio-sensing, casualty-to-discharge system integration, and integrated environmental and stand-off hazard designation. This approach is rigorous with clinical trials to test systems in poisoning clinics and live agent tests in laboratories designated by the UN's OPCW.

Distinctive societal attributes of TOXI-triage include: addressing the needs of all vulnerable groups, optimising inter-cultural/ethnic messages and needs in CBRN response, and fostering economic impact by multiple-uses for all the project's systems. TOXI-triage intends that its outcomes will be used routinely in medical/environmental/urban and search and rescue emergencies. The benefits are intended to extend significantly further than enhanced CBRN resilience

## Expected results

- Traceability by design: end-to-end mapping of casualty and end-user journeys
- Environmental monitoring: detection of airborne and surface hazards from CBRN agents
- Evaluation of aptamer based biosensing
- Clinical studies: detection of deranged metabolism from CBRN injury with GC-MS and GC-IMS
- CBRN toolkit and data base
- Field trials
- Integrated approach to cross-cultural communication, security and ethics
- Managing and exploiting the semantic web
- Pathways to economic impact

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## PARTNERS

Helsingin Yliopisto (Uh/Verifin) / UH  
 University Of Edinburgh / UEDIN  
 National Technical University Of Athens / NTUA  
 Gottfried Wilhelm Leibniz Universitaet Hannover / LUH  
 Oslo University Hospital / OUH  
 University Of Paderborn / UPD  
 Prometech / PT  
 Gesellschaft Für Analytische Sensorsysteme / GAS  
 Airsense Analytics / AIR  
 Environics / EOY  
 Helmholtz Centre For Environmental Research / UFZ  
 Jyväskylän Yliopisto / JYU  
 Hasičky Zachranný Sbor Moravskoslezského Kraje / HZSMK  
 Mikkelin Kapunki / SSAV  
 T4i / T4i  
 Hellenic Ministry Of Defence / HMOD  
 ATOS / ATOS

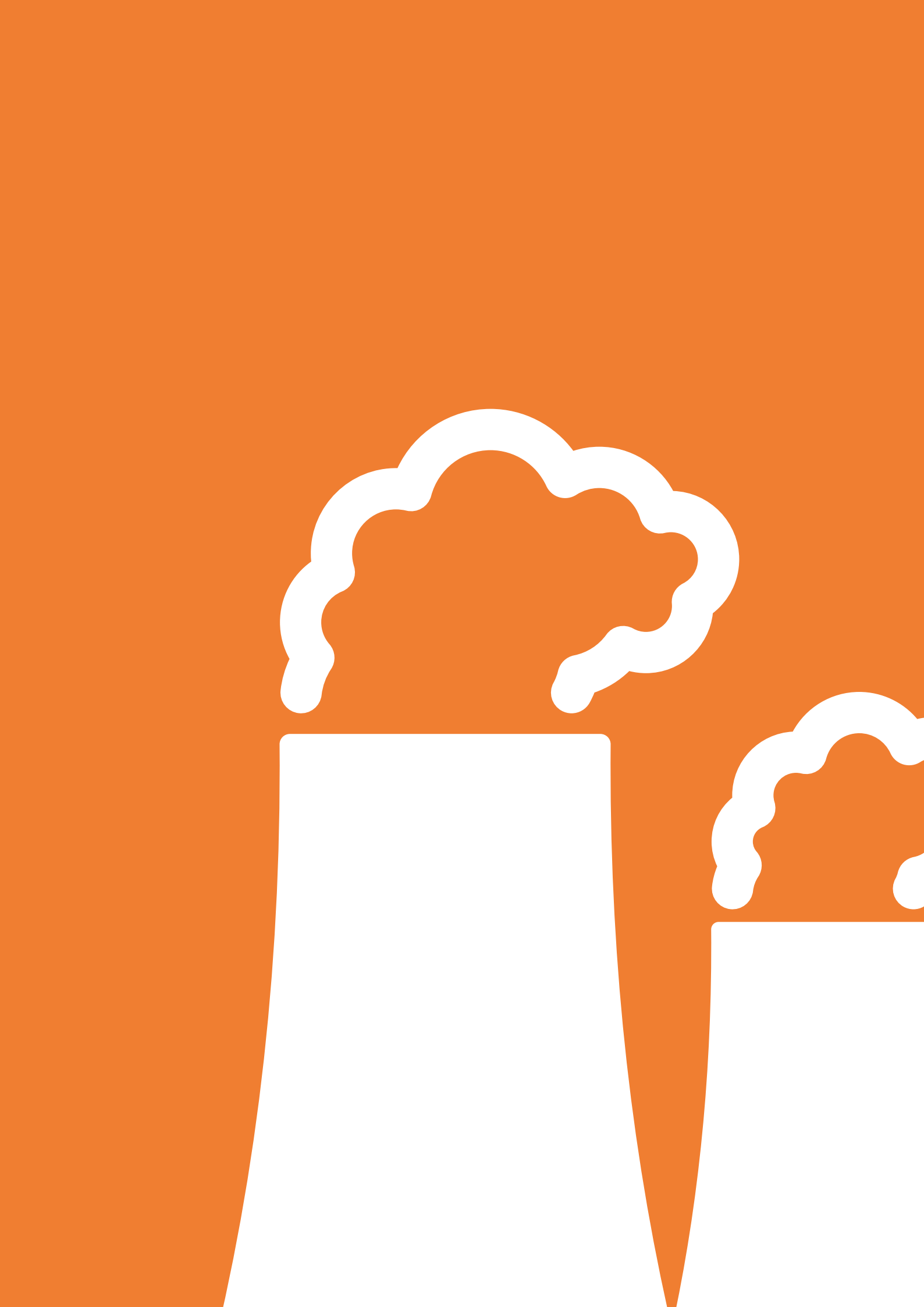
## COUNTRY

Finland  
 The United Kingdom  
 Greece  
 Germany  
 Norway  
 Germany  
 The Netherlands  
 Germany  
 Germany  
 Finland  
 Germany  
 Finland  
 The Czech Republic  
 Finland  
 The United Kingdom  
 Greece  
 Spain

# CRITICAL INFRASTRUCTURE PROTECTION

FLYSEC  
IMPROVER  
RESILENS  
RESOLUTE







# FLYSEC

Optimising time-to-FLY and enhancing airport SECurity

## Information

Grant Agreement N°  
653879

Total Cost  
€ 4 141 375

EU Contribution  
€ 4 089 500

Starting Date  
01/05/2015

Duration  
36 months

End Date  
01/05/2018

Topic  
DRS-16-2014 -  
Critical Infrastructure  
Protection topic 6: Improving  
the aviation security chain

## Coordinator

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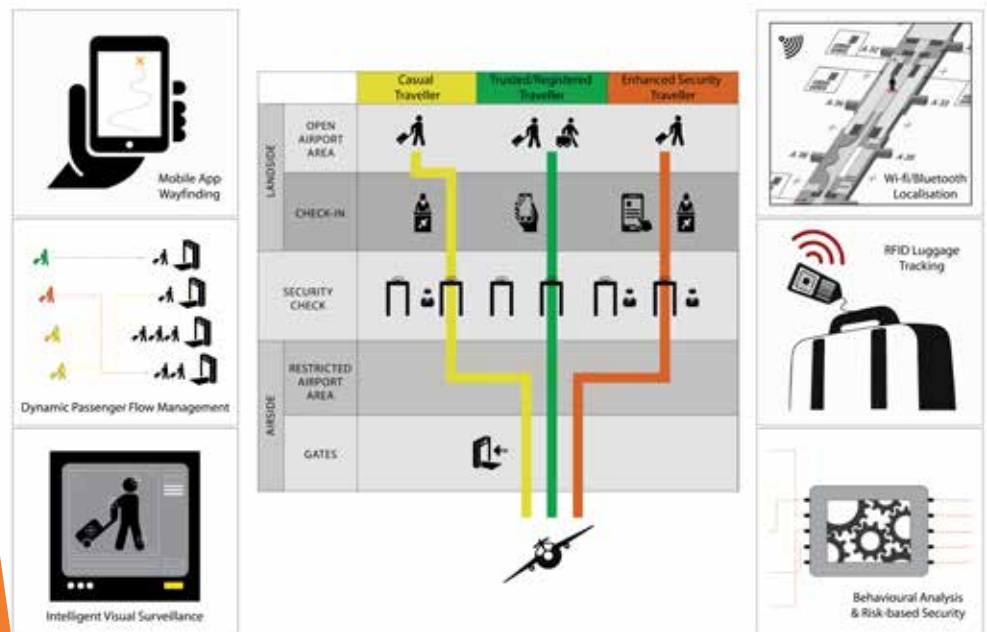
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## Project objectives

FLYSEC aims to develop and demonstrate an innovative, integrated, end-to-end airport security process for passengers, airports and airlines. Its primary goal is to enable a guided and streamlined procedure from the landside to airside and into the boarding gates, while offering an operationally validated innovative concept for end-to-end aviation security.

FLYSEC will design a proactive risk-based system that responds to multiple operational objectives in a better way than the present system in that it will:

- 1) deal with a wider spectrum of threats in a dynamic and flexible way
- 2) screen people and goods with better ratios of effectiveness
- 3) detect with higher reliability suspicious behaviour and materials
- 4) make the process less offensive and more comfortable to the passengers
- 5) allow better management of security events (alert and crisis situations)
- 6) making it more cost-effective



## Description of the work

FLYSEC achieves its ambitious goals by integrating new technologies on video surveillance, intelligent remote image processing and biometrics combined with big data analysis, open-source intelligence and crowdsourcing. Re-purposing existing technologies is also one of FLYSEC's objectives, such as mobile application technologies for improved passenger experience and positive boarding applications (i.e. services to facilitate boarding and landside/airside way finding) as well as RFID for carry-on luggage tracking and quick unattended luggage handling.

FLYSEC will implement a seamless risk-based security process combining the aforementioned technologies with behavioural analysis and innovative cognitive algorithms. A key aspect in the design of FLYSEC risk-based security is applying ethical-by-design patterns, maximising the efficiency of security controls through passenger differentiation ranging from "unknown" to "known/registered", while remaining ethical and fair in the process and strictly avoiding any discrimination. Policy, regulatory and standardisation aspects will also be examined in the context of FLYSEC innovative security concept.

FLYSEC will validate the operational value of its solution through pilot test in real operational environment.

FLYSEC's overall security concept for airport security will be based on :

- 1) passenger facilitation
- 2) risk-based security
- 3) outcome focused results.

These core points are positioned within a social, political, legal and anthropological framework.

In the FLYSEC Secure Tunnels scenario the tunnel is implemented as a virtual path from the landside, through the security check and to the airside where technological components offer intelligence and risk-based security correlations through passive tracking and intelligent analysis.

## Expected results

- Innovative processes facilitating risk-based approach
- Deployment and integration of new technologies and re-purposing existing solutions towards a risk-based security paradigm shift
- Improvement of passenger facilitation and customer service, bringing security as a real service to the airport of tomorrow
- Achieving measurable throughput improvement and a whole new level of quality of service.

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## PARTNERS

National Centre for Scientific Research "Demokritos" / NCSR  
 Exodus Anonymos Etaireia Pliroforikis / EXUS AE  
 Elbit Systems Ltd / ESL  
 ICTS (UK) Ltd / ICTS  
 EMZA Visual Sense Ltd / EMZA  
 CG Smartech Ltd / C.G. - Smartech  
 European Aviation Security Center e.V. / EASC  
 Societe de l'Aeroport de Luxembourg SA / LuxAirport  
 Universite du Luxembourg / UL  
 Embry-Riddle Aeronautical University - Deutschland GmbH / ERAU  
 Epsilon International SA / EPSGR

## COUNTRY

Greece  
 Greece  
 Israel  
 The United Kingdom  
 Israel  
 Israel  
 Germany  
 Luxembourg  
 Luxembourg  
 Germany  
 Greece



Critical Infrastructure  
Protection



Crisis Management

# IMPROVER

Improved risk evaluation and implementation of resilience concepts to  
Critical Infrastructure

## Information

Grant Agreement N°  
653390

### Total Cost

€ 4 323 978,75

### EU Contribution

€ 4 323 978,75

### Starting Date

01/06/2015

### Duration

36 months

### End Date

31/05/2018

### Topic

DRS-07-2014:

Crises and disaster  
resilience – operationalizing  
resilience concepts



## Coordinator

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## Project objectives

IMPROVER aims to improve European critical infrastructure resilience to crises and disasters through the implementation of combinations of societal, organisational and technological resilience concepts to real life examples of pan-European significance, including cross-border examples. This implementation will be enabled through the development of a methodology based on risk evaluation techniques and informed by a review of the positive impact of different resilience concepts on critical infrastructures.

In order to achieve its overall objective, the project will also address four underlying objectives:

- 1) Improve our understanding of the application and interaction of different resilience concepts
- 2) Evaluate the baseline requirement of resilience of critical infrastructure
- 3) Develop a resilience management guideline
- 4) Perform a pilot implementation of the proposed methodology

## Description of the work

There are three stages necessary to achieve the projects objectives: first is a survey of available approaches for the definition, implementation and evaluation of resilience concepts to critical infrastructure. The second phase is an evaluation of promising available approaches and further development to improve their effectiveness, linking the developed approaches with EU risk assessment guidelines. The third stage is a demonstration of the methodologies, which are presented in the guideline, in operation.

The first stage required for the success of the project is achieved through completion of an international survey, including academic literature, previous EU and national research projects and ongoing activities, as well as international projects, reports and guidelines and including also multiple operator and associate partner workshops in various sectors and regions. The goal of the survey is to identify available approaches for defining, evaluating and implementing resilience concepts to critical infrastructure.

The second stage is achieved through an evaluation of multiple resilience concepts and their combined application to critical infrastructures. These infrastructures are represented through a number of living labs formed for the project. These living labs represent various sectors of critical infrastructure throughout Europe. Resilience concepts will be tested with a focus on a consequence-based approach - i.e. with the intention of disconnecting the effect from the cause, whether malicious or natural or technological, or complex - within these living labs.

Finally, in order to address the third stage required, the methodology will be demonstrated in a pilot implementation within two living labs during a resilience planning exercise within these living labs.

## Expected results

The expected results from the IMPROVER project are:

- The development of European Resilience Management Guideline and demonstration through pilot implementation
- More efficient uptake of risk assessments through the Member States and associated countries and critical infrastructure providers
- More effective and coherent crisis and disaster resilience management,
- Improved trainings for rescuers
- Improved population engagement

## PARTNERS

Dansk brand- og sikringsteknisk institut forening / DBI  
 Institut national de l'environnement et des risques / INERIS  
 SP Fire Research AS / SP FR AS  
 INOV Inesc Inovacao - instituto de novas tecnologias / INOV  
 University College London / UCL  
 Euro-Mediterranean Seismological Centre / EMSC  
 Universitetet i Tromsø / UiT  
 JRC - Joint research centre - European Commission / JRC  
 University of Sheffield / USFD

## COUNTRY

Denmark  
 France  
 Norway  
 Portugal  
 The United Kingdom  
 France  
 Norway  
 Belgium  
 The United Kingdom





Critical Infrastructure  
Protection



Crisis Management

## Information

Grant Agreement N°

653260

Total Cost

€ 4 091 842,50

EU Contribution

€ 4 091 842,50

Starting Date

01/05/2015

Duration

36 months

End Date

30/04/2018

Topic

Crisis management

topic 7: Crisis and Disaster

Resilience - Operationalizing

Resilience Concepts

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# RESILENS

Disaster-Resilience: Safeguarding and Securing Society, Including Adapting to Climate Change



## Project objectives

- Operationalise crisis and disaster resilience concepts for Critical Infrastructure (CI).
- Strengthen resilience management
- Fuse relevant concepts from multiple traditions
- Build on relevant European programs and projects
- Develop a European Resilience Management Guideline and Resilience Management tools
- Develop an integrated multi-agency CONcept of OPerationS (CONOPS) framework
- Provide a foundation for future regulatory standards for application across all CI sectors
- Increase societal resilience
- Increase the ability of economic and institutional systems to cope and respond in the event of a crisis
- Promote awareness of the importance of resilient CI
- Educate CI stakeholders in adopting organisational structures for integrated crisis management coordination
- Support the realisation that the citizen is as an active rather than a passive participant in crisis response
- Enhance safety of European citizens and support effective community response and recovery from crises

## Description of the work

The frequency and severity of the impacts of disaster and crises requires a focused approach to the protection of our critical infrastructure assets. The removal or suspension of critical infrastructure assets from normal service would significantly affect public safety, security, economic activity or environmental quality. The RESILENS project will advance traditional risk management practices to develop resilience measurements and enhancement methods. This will allow for a greater understanding of the elements of CI which are most vulnerable to disaster so that focused measures can be taken to increase the resilience of CI. RESILENS will develop a user-friendly, citizen centric European Resilience Management Guideline, founded in the principles of risk management and vulnerability reduction. It will be interactive to increase uptake, leading to clear, coherent and effective crises and disaster resilience management for Critical Infrastructure. This in turn will contribute to more resilient and secure economic and societal systems.

## Expected results

- The development of a European Resilience Management Guideline with demonstration and operationalisation through pilot implementation
- Development of a Resilience Management and Audit Toolkit
- More efficient uptake of risk assessments through Member States and Associated Countries, and CI providers
- More effective and coherent crises and disaster resilience management, including improved training for rescuers and population engagement (supported by the development of the RESILENS e-learning hub)

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## PARTNERS

University of Warwick / UoW  
 Fraunhofer-Gesellschaft Zur Foerderung Der Angewandten  
 Forschung E.V. / FhG  
 Trinity College Dublin / TCD  
 MTRS Solution and Services Ltd. / MTRS  
 Factor Social / FS  
 Skills for Justice Enterprises / SfJE  
 Bundesanstalt für Straßenwesen/ Federal Highway Research  
 Institute / BAST  
 EDP Distribuição / EDPD  
 Eastern and Midlands Regional Assembly / EMRA  
 Câmara Municipal de Lisboa, Lisbon City Council / CML  
 Irish Water / IW

## COUNTRY

United Kingdom  
 Germany  
  
 Ireland  
 Israel  
 Portugal  
 United Kingdom  
 Germany  
  
 Portugal  
 Ireland  
 Portugal  
 Irish Water



Critical Infrastructure  
Protection



Societal Aspects of  
Policing

## Information

Grant Agreement N°  
653460

Total Cost

€ 3 848 581,25

EU Contribution

€ 3 848 581,00

Starting Date

01/05/2015

End Date

30/04/2018

Topic

Crisis management  
topic 7: Crises and disaster  
resilience – operationalizing  
resilience concepts

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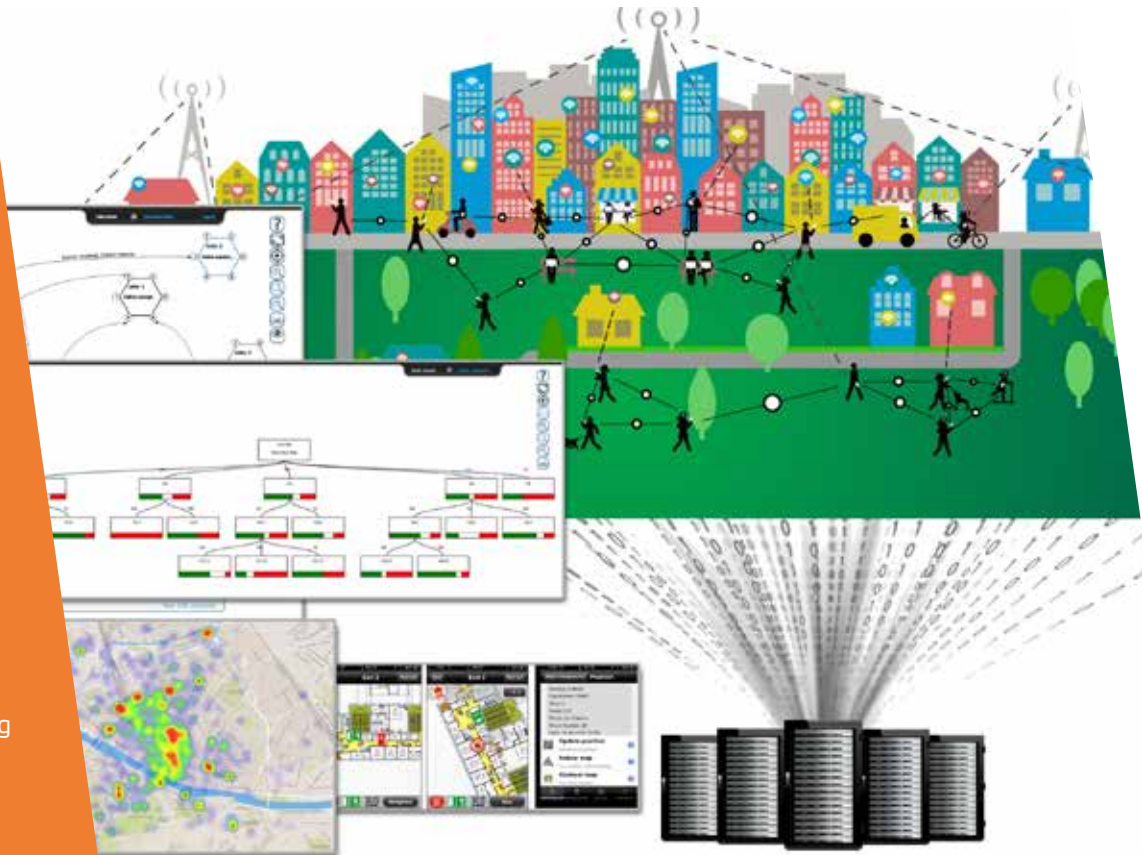
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# RESOLUTE

RESilience management guidelines and Operationalization appLied to Urban  
Transport Environment



## Project objectives

- Systematic review and assessment of state of the art resilience assessment and management concepts to develop a conceptual framework for creating/ maintaining Urban Transport Systems
- Develop European Resilience Management Guidelines (ERMG)
- Operationalise and validate the ERMG by implementing the RESOLUTE Collaborative Resilience Assessment and Management Support Systems for Urban Transport Systems
- Enhance resilience through improved support of human decision making processes, particularly by training professionals and civil users on ERMG
- Adoption of the ERMG at EU and Associated Countries level

## Description of the work

RESOLUTE aims to achieve sustained adaptability of UTS (Urban Transportation System) to enhance resilience. Its final is to adapt methods for the operationalisation of the European Resilience Management Guidelines and for their evaluation when addressing UTS as Critical Infrastructure. The resilience is considered an emergent property of a complex system and is about managing high variability in order to continuously pursue successful performance of a system. This requires two fundamental methodological stages:

(i) system analysis and understanding in support of the identification of critical functions and interdependencies through the use of tools like FRAM, RAG and Network analysis/science techniques that also permit to infer, model, simulate and predict possible events propagation, preventing/mitigating cascading behaviour in the Network-of-Networks or System-of-Systems; (ii) Big Data gathering, semantic processing and mining to connect data flows to the models. This analysis would provide the means to assess the levels of criticality of interdependencies at quantitative levels and seeks to enhance the capabilities of UTS to take the right decision at strategic, tactical and operational levels, with the aim of maintaining operations under continuously changing conditions. This is achieved through the implementation of the Collaborative Resilience Assessment and Management Support Systems that adopt a highly synergic approach towards the definition of a resilience model for the next-generation of collaborative emergency services and decision making processes. Within this framework, the RESOLUTE objective faces the challenge of relating dynamic and emergent system features, to a wide variety of human, technical and organizational elements that generate diversified operational needs.

## Expected results

- Reduce the risks and the time for citizens for taking the right decision
- Make the resilience assessment and management process easier and effective
- Establish coordination with all stakeholders involved in Urban Transport System resilience management
- Increase communication with citizens and authorities
- Implement the Collaborative Resilience Assessment and Management Support System
- Implement a Mobile emergency app
- Implement a game base training app

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## PARTNERS

University of Florence, DINFO, DISIT lab / UNIFI DINFO DISIT  
 Thales Italia / THALIT  
 ATTIKO Metro / ATTIKO  
 Comune di Firenze / CDF  
 Center for Research and Technologies Hellas / CERTH  
 Fraunhofer IAO / FHGIAO  
 Humanist VCE / HUMANIST  
 Swarco Mizar SPA / SWARCO MIZAR  
 ADI ISG / ADI ISG  
 Consorzio Milano Ricerche / CMR

## COUNTRY

Italy  
 Italy  
 Greece  
 Italy  
 Greece  
 Germany  
 France  
 Italy  
 Portugal  
 Italy

# BORDER CHECKS

BODEGA  
C-BORD







Border Checks



Ethics and Justice



Supply Chain Security

# BODEGA

Proactive Enhancement of Human Performance in Border Control

## Information

Grant Agreement N°

653676

Total Cost

€ 4 999 238,00

EU Contribution

€ 4 999 238,00

Starting Date

01/06/2015

Duration

36 months

End Date

31/05/2018

Topic

BES-14-2014

Ethical Societal Dimension

topic 1: Human factors in

border control



## Coordinator

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## Project objectives

- 1) Develop a round approach to incorporate ethical, societal and legal considerations into the set of human, organisational and technical factors to support the effectiveness of EU border control from different perspectives.
- 2) Construct a greater understanding of border guard's work and border control by adopting a long-term perspective and taking into account different end-users' needs and requirements for future Smart Borders.
- 3) Gather new information about psychological factors, which might affect border control efficiency and effectiveness by performing in-depth human factor analysis.
- 4) Co-design and develop new guidelines, recommendations and specifications, based on refined understanding of the border control contexts.
- 5) Develop and validate a toolbox with novel methods and methodologies.

## Description of the work

BODEGA will provide an understanding and model of the work of border guards in border control, in border checks and interaction with passengers and technologies in land, rail, sea and air borders. The specific angle to this investigation is human factors – the ergonomics of cognition, organisation, and arrangement of work as well as physical and technological conditions of border guard's work. Through controlled field studies, BODEGA will build a rigorous, deeply analyzed knowledge base of how different human factors play a role in border guard's work, either through facilitating or impeding it and taking physical and technology management as well as the societal environment into account. The two current control situations will be analyzed for each type of border: manual controls (controls performed by a border guard who interacts with various systems) and automated controls (travelers interact with the self-service system, while the ABC system is supervised by a border guard). BODEGA will analyze and validate this knowledge to produce a set of recommendations, guidelines and technical-software solutions in the form of an integrated toolbox. The key to BODEGA's success in constructing the toolbox for making EU border control more efficient, secure and with quality traveler experience is the human factors perspective to border control and border guard's work. Human factors and ergonomics research field include three sub-branches:

- 1) Physical ergonomics.
- 2) Cognitive ergonomics.
- 3) Organisational ergonomics.

## Expected results

BODEGA will investigate and model human factors in border control to provide innovative, ethically and societally compatible socio-technical solutions for enhancing border guards' performance of critical tasks, support border management decision-making, and optimise travelers' border crossing experience. BODEGA will develop a PROPER toolbox which integrates the results and solutions – methods, tools, guidelines and recommendations – to be easily adopted by stakeholders in border control.

## PARTNERS

Commissariat à l'énergie atomique et aux énergies alternatives / CEA  
 AIT Austrian Institute of Technology GmbH / AIT  
 University Of Namur / NAM  
 Atos Spain, S.A / ATOS  
 Thales Communications & Security / TCS  
 European Strategic Intelligence Company / CEIS  
 Zanasi & Partners / Z&P  
 International Union of Railways / UIC  
 Agenzia delle Dogane e dei Monopoli / ADM  
 Hellenic Police / HP  
 The Finnish Border Guard / FBG  
 Ubium / UBIUM  
 Happywise / HAPPYWISE  
 Kentro Meleton Asfaleias / KEMEA

## COUNTRY

France  
 Austria  
 Belgium  
 Spain  
 France  
 France  
 Italy  
 France  
 Italy  
 Greece  
 Finland  
 Finland  
 Finland  
 Greece



Border Checks



Supply Chain Security

# C-BORD

effective Container inspection at BORDER control points

## Information

Grant Agreement N°  
653323

### Total Cost

€ 11 826 452,50

### EU Contribution

€ 11 826 452,50

### Starting Date

01/06/2015

### Duration

42 month

### End Date

30/11/2018

### Topic

BES-09-2014: Supply  
Chain Security topic 2:  
Technologies for inspections  
of large volume freight

## Coordinator

Commissariat à l'énergie atomique  
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## Project objectives

The mission of C-BORD is to develop and test a comprehensive cost-effective TRL-7 solution for the generalised inspection of container and large-volume freight with non-intrusive inspection (NII) techniques, coping with a large range of container targets, including explosives, chemical warfare agents, illicit drugs, tobacco, stowaways and special nuclear material (SNM).

By developing, combining, trialling, and assessing complementary NII technologies in a comprehensive cost-effective solution, C-BORD pursues four aims in order to protect EU borders:

- Increase the efficiency in container non-intrusive inspection (NII).
- Reduce false negative and false positive alarms.
- Maximise effectiveness and reduce safety risks for customs agents when opening containers for inspection.
- Lay the groundwork for the standardisation of requirements and test procedures for evaporation based detection systems used to inspect large volume freight.



## Description of the work

C-BORD is developing five technology pillars within the C-BORD “Toolbox” to enable next generation container NII at EU sea and land borders: Advanced Radiation Management, Next Generation Cargo X-Ray, Tagged Neutron Inspection, Photofission, and Evaporation Based Detection.

C-BORD also aims to develop a unique graphical user interface (GUI), data fusion display, decision support software and common data format.

A general multi-disciplinary C-BORD Framework is elaborated for building comprehensive container inspection solutions, allowing stakeholders (customs officials, terminal operators, freight forwarders) to analyse needs for container NII, design integrated NII solutions, optimise the interdiction chain, and provide a systemic response to key functional, practical, logistical, safety and financial questions to support deployment.

Proof of capability will be shown through live field trials in three use cases (UC) under real conditions at different border control points

- UC “Fully automated seaport” at Rotterdam seaport:
- UC “Rapidly relocatable checkpoint for ports” at Gdańsk seaport
- UC “Mobile checkpoints” at Hungarian land border

The use cases represent a large range of real conditions and are planned to demonstrate the effectiveness of C-BORD solutions in meeting the needs of customs administrations with different types of border crossing point, modalities, cargo, threats, and operational needs. An assessment of the current characteristics of the integrated NII systems based on the different technologies will be compared with the defined requirements developed at the beginning of the project in cooperation with end users. This will be done by a comprehensive analysis of the different C-BORD NII technologies, the results of the performed test measurements, field validation trials, and end user input.

## Expected results

The C-BORD Toolbox of TRL-7 first- and second-line devices employing non-destructive passive and active techniques and the C-BORD Framework for building comprehensive container inspection solutions will provide improved means for overall border security protection at all EU borders. It will propose solutions adaptive to the respective contexts and requirements of customs administrations, from small land border crossings to the large fully automated terminal at the port of Rotterdam.

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## PARTNERS

Agenzia delle Dogane / ADM  
 ARTTIC SAS / ARTTIC  
 Hochschule Bonn-Rhein-Sieg / BRSU  
 Costruzioni Apparecchiature Elettroniche Nucleari C.A.E.N. SpA / CAEN  
 Commissariat à l'énergie atomique et aux Energies Alternatives / CEA  
 Ministerie van Financien Directoraat Generaal Belastingdienst / DCA  
 Chambre de commerce et d'industrie de région Paris Ile-de-France / ESIEE  
 Fraunhofer-Gesellschaft zur Förderung der angewandten  
 Forschung e.V. / Fraunhofer  
 Izba Celna w Gdyni / ICGdy  
 Joint Research Centre – European Commission / JRC  
 Magyar Tudományos Akadémia Energiatudományi  
 Kutatóközpont / MTAEK  
 Narodowe Centrum Badań Jądrowyc / NCBJ  
 Nemzeti Adó- és Vámhivatal / NTCA  
 Oslo Centre for Science in Society / OCSS  
 Smiths Heimann SAS / SmithsD  
 Symetrica Security Ltd. / SYM  
 The University of Manchester / UNIMAN  
 Università degli Studi di Padova / UNIPD

## COUNTRY

Italy  
 France  
 Germany  
 Italy  
 France  
 The Netherlands  
 France  
 Germany  
  
 Poland  
 Belgium  
 Hungary  
  
 Poland  
 Hungary  
 Norway  
 France  
 The United Kingdom  
 The United Kingdom  
 Italy



# LAW ENFORCEMENT AGENCIES

AUGGMED  
FORENSOR  
INSPEC<sup>2</sup>T  
LAW-TRAIN  
MICROMOLE  
TARGET





Law Enforcement  
Agencies



Counter-Terrorism

# AUGGMED

Automated Serious Game Scenario Generator for Mixed Reality Training

## Information

**Grant Agreement N°**

653590

**Total Cost**

€ 5 535 673,75

**EU Contribution**

€ 5 535 673,75

**Starting Date**

01/06/2015

**Duration**

36 months

**End Date**

31/05/2018

**Topic**

H2020-FCT-2014 : Law  
enforcement capabilities topic  
3: Pan European platform for  
serious gaming and training



## Coordinator

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## Project objectives

AUGGMED will develop a serious game platform to enable single and team-based training of law enforcement agencies to improve emotional management, analytical thinking, problem solving and decision making skills. The game scenarios will include advanced simulations of operational environments, agents, telecommunications and threats and will be delivered through virtual reality (VR) and mixed reality (MR) environments with multimodal interfaces. The platform will include tools for trainers enabling them to set learning objectives, monitor training sessions, modify scenarios and provide feedback in real-time, as well as evaluate trainee performance. The platform will be offered in affordable and cost-effective modes including low VR fidelity and interactivity through mobile devices, immersive multimodal VR and immersive multimodal MR.



## Description of the work

The AUGGMED platform will be implemented to provide single and team based training for various law enforcement agencies in response to attacks on Critical Infrastructure. The platform will incorporate geometries of critical infrastructure sites (such as airports, railways, and passenger port terminals) along with adaptive game scenarios for training delivered through different multi-modal interfaces and devices.

At the heart of the AUGGMED platform is the Automated Game Scenario Engine (AGSE) which defines the game logic for each training session based on the training objectives of individual trainees and teams. Trainers will be able to define an incident including location and type of threat. AGSE will create a terrorist-attack scenario taking into account the individual learning objectives and adapt scenario parameters in real-time to ensure that trainees engage in actions requiring demonstration of skills associated with the learning objectives.

The AUGGMED platform will include tools that will enable the trainer to define scenarios, monitor training sessions and provide feedback in real-time as well as evaluate the performance of individual trainees based on their learning objectives using appropriate metrics. AUGGMED will use the Unity3D engine to generate the virtual environments which is a well-established and powerful environment offering interoperability with other serious game engines. AUGGMED will develop new simulations of Environments, Threats (e.g., explosives, cyber-attacks, attacks using UAVs), and Agents (e.g., crowds, first responders, police units, intruders).

The platform will be developed and released in three modes offering an increasing level of immersion so as to provide a range of options from low cost portable solutions to high end fully immersive options with tactile feedback.

## Expected results

The AUGGMED consortium will use existing technologies in novel ways to improve the current VR/MR environments for serious game training of police forces, first responders and critical infrastructure operators. Innovative hardware will be developed to improve multimodal interactivity within the new VR/MR environment and will be evaluated by end-users and integrated into the current training curricula.

### PARTNERS

BMT Group Ltd / BMT  
The Univeristy of Greenwich / UOG  
Piraeus Port Authority / PPA  
Ferrocarrils de la Generalitat de Catalunya / FGC  
The Univeristy of Birmingham / UOB  
Geomobile / GEO  
Sistemes D'Emergencies Mediques / SEM  
Police and Crime Commissioner for West Yorkshire / WYP  
Sheffield Hallam University / SHU  
Israteam / IST  
Serco / SER  
Integration Power / IP  
Ministry of Citizens Protection / MCP  
Universidad Polit cnica de Madrid / UPM

### COUNTRY

The United Kingdom  
The United Kingdom  
Greece  
Spain  
The United Kingdom  
Germany  
Spain  
The United Kingdom  
The United Kingdom  
Israel  
Belgium  
Greece  
Greece  
Spain



Law Enforcement  
Agencies



Forensic



Border Surveillance

## Information

Grant Agreement N°  
653355

Total Cost

€ 4 914 262,5

EU Contribution

€ 4 043 546,25

Starting Date

01/09/2015

Duration

36 months

End Date

01/09/2018

Topic

FCT-05-2014: Law enforcement capabilities topic 1: Develop novel monitoring systems and miniaturised sensors that improve Law Enforcement Agencies' evidence-gathering abilities

## Coordinator

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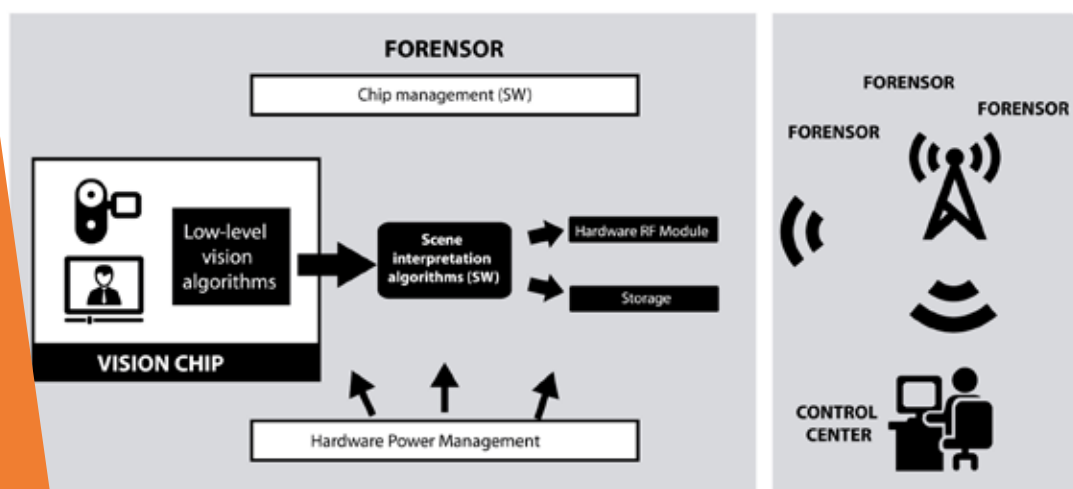
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# FORENSOR

Forensic evidence gathering autonomous sensor



## Project objectives

FORENSOR aims to design, develop and validate a novel, ultra-low-power, miniaturised, low-cost, wireless, autonomous sensor ("FORENSOR") for evidence gathering that is able to operate for up to two months without infrastructure. FORENSOR will be manageable, preserve the availability and integrity of the evidence collected, and comply with all legal and ethical standards, in particular those related to privacy and personal data protection. Secure and intelligent communications will allow for such sensors to join forces towards robust evidence management and real time monitoring and control operations. The combination of built-in intelligence with ultra-low power consumption will make this device a true breakthrough for combating crime.





## Description of the work

Covert evidence gathering has not seen major changes in decades. Law enforcement Agencies (LEAs) are still using conventional, manpower based techniques to gather forensic evidence. Concealed surveillance devices can provide irrefutable evidence, but current video surveillance systems are usually bulky and complicated. They are often used as simple video recorders, and require complex, expensive infrastructure to supply power, bandwidth, storage and illumination. Recent years have seen significant advances in the surveillance industry, but these were rarely focused on forensic applications. The imaging community is fixated on cameras for mobile phones, where the figures of merit are resolution, image quality, and low profile. A mobile phone with its camera on would consume its battery in under two hours. Industrial surveillance cameras are even more power hungry, while intelligent algorithms such as face detection often require extremely high processing power, such as backend server farms, and are not available in conventional surveillance systems. Here we propose to develop and validate a novel, ultra-low-power, intelligent, miniaturised, low-cost, wireless, autonomous sensor ("FORENSOR") for evidence gathering. Its ultra-sensitive camera and built-in intelligence will allow it to operate at remote locations, automatically identify pre-defined criminal events, and alert LEAs in real time while providing and storing the relevant video, location and timing evidence. FORENSOR will be able to operate for up to two months with no additional infrastructure. It will be manageable, preserve the availability and the integrity of the collected evidence, and comply with all legal and ethical standards, in particular those related to privacy and personal data protection. The combination of built-in intelligence with ultra-low power consumption could help LEAs take the next step in fighting severe crimes.

## Expected results

The FORENSOR project aims to develop an intelligent, autonomous, miniaturised sensor for evidence gathering, that will combine the following characteristics: autonomy by design, built in intelligence, operational adaptivity, remote management capabilities, secure communications, small form factor, admissibility in court of the collected evidence, legal and ethical compliance. A true breakthrough in combating crime.

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### PARTNERS

Jcp-Connect / JCP  
Stmicroelectronics Srl / STM  
Fondazione Bruno Kessler / FBK  
Emza Visual Sense Ltd / EMZA  
Synelixis Lyseis Pliroforikis Automatismou &  
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Vrije Universiteit Brussel / VUB  
Almaviva - The Italian Innovation Company Spa / ALMA  
Visionware - Sistemas De Informacao Sa / VIS  
Ayuntamiento De Valencia / PLV  
Ministério Da Justiça / MJ

### COUNTRY

France  
Italy  
Italy  
Israel  
  
Greece  
Belgium  
Italy  
Portugal  
Spain  
Portugal



Law Enforcement  
Agencies



Societal Aspects  
of Policing



Social Media

## Information

Grant Agreement N°

653749

Total Cost

€ 4 941 004

EU Contribution

€ 4 941 004

Starting Date

01/05/2015

Duration

36 months

End Date

30/04/2018

Topic

FCT-14-2014: Ethical/Societal  
Dimension Topic 2: Enhancing  
cooperation between law  
enforcement agencies and  
citizens - Community policing

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# INSPEC<sup>2</sup>T

Inspiring Citizen's Participation for Enhanced Community Policing Actions



## Project objectives

INSPEC<sup>2</sup>T aims to transform the opportunity of a seamless collaboration between citizens and LEAs inside a community to reality, through means and practices that can advance the meaning of community policing. More specifically, the project's objectives are to:

- 1) Strengthen community policing: concept for a sustainable CP value system
- 2) Engage and empower community: build trustworthy relationships between police departments and a motivated and skilled community
- 3) communicate to collaborate: accelerated communication and information sharing enabling collaboration as a default, and link to early identification of risks, better crime intelligence and co-creation for timely interventions.
- 4) Increased awareness & prevention: increased crime prevention thanks to early identification and timely intervention

The INSPEC<sup>2</sup>T vision is to develop a system for the facilitation of a safer community built on strong, trusting relationships with law enforcement agencies



## Description of the work

INSPEC²T will emphasize the use of social media and the development of an ICT platform (including mobile applications) that enables their use in community policing environments. INSPEC²T bases its conceptual foundations on EU crime prevention and Member States specific internal security policies, validated research results, and best practices from cooperation between police and local, regional and national communities. This is perceived as a way to apprehend special characteristics, particularities and determinants for trust between all stakeholders.

INSPEC²T is focusing on a user-centric design and development approach, and has already mobilised and engaged a critical user group mass, in the EU and abroad. With special emphasis on social platforms, it consolidates and modernizes bi-directional communication of stakeholders, using multi-level anonymity flags and having a clear understanding of acceptability issues. Driven from accommodated transnational and multicultural best practices, it adheres to an approach where social, cultural, legal and ethical dimensions are embedded into core user centric design specifications and implementation procedures. INSPEC²T will be demonstrated and validated in 5 EU cities by a wide range of relevant stakeholders. INSPEC²T engagement and active participation is stimulated through fully dynamic, interactive and immersive training serious game applications that empower players to familiarise themselves with the system, gain an intuitive understanding of its functionalities, and motivate their engagement in community policing activities. Special focus will be given to community policing awareness raising activities for both police and citizens. The above activities and associated results, will provide a solid foundation for the evolution of the next generation community policing roadmap in Europe.

## Expected results

- Strengthened community policing principles through effective & efficient tools, procedures & approaches
- Early identification, timely intervention and enhanced crime reporting, identification of risks, unreported and undiscovered crime through the community
- Strengthened and accelerated communication between citizens and police
- Decrease feeling of insecurity
- Proactively target the user's needs and requirements, such as citizens and national/local law enforcement agencies

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## PARTNERS

Nederlandse Organisatie Voor Toegepast  
Natuurwetenschappelijk Onderzoek / TNO  
Deutsche Hochschule Der Polizei / DHPOL  
"Vienna Centre For Societal Security" / VICESSE  
"Fundacion Centro De Tecnologias De Interaccion  
Visual Y Comunicaciones" / VICOMTECH  
University Of Ulster / UU  
Intrasoft International Sa / INTRASOFT  
Cgi Nederland Bv / CGI  
"Advanced Intergrated Technology Solutions & Services Ltd" / ADITESS  
"Trilateral Research & Consulting Llp" / TRILATERAL  
Satways Ltd. / SATWAYS  
"Eticas Research And Consulting Sl" / ETICAS  
Exus Software Ltd / EXUS  
IMC Technologies SA / IMC  
Ayuntamiento De Valencia / PLV  
"The Chief Constable Of Lancashire Constabulary" / LC  
Ministerio Del Interior / GCIVIL  
Playgen Ltd / PLAYGEN

## COUNTRY

The Netherlands  
Germany  
Austria  
  
Spain  
The United Kingdom  
Luxembourg  
The Netherlands  
Cyprus  
The United Kingdom  
Greece  
Spain  
The United Kingdom  
Greece  
Spain  
The United Kingdom  
Spain  
The United Kingdom



Law Enforcement  
Agencies

# LAW-TRAIN

Mixed-reality environment for training teams in joint investigative interrogation-  
Intelligent interrogation training simulator

## Information

Grant Agreement N°  
653587

Total Cost

€ 5 095 687,5

EU Contribution

€ 5 095 687,5

Starting Date

01/05/2015

Duration

36 months

End Date

30/4/2018

Topic

FCT-07-2014:

Law enforcement capabilities  
topic 3: Pan European platform  
for serious gaming and training



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## Project objectives

LAW-TRAIN aims to develop and implement:

- A collaborative International Virtual Interrogation platform for training
- A Virtual Suspect that will play the role of the suspect
- Training tools for the trainer that generate new characters and scenarios easily
- An Intervention Agent that will provide real time feedback to the trainees.
- A methodology for joint cross-national multi-location investigative interrogations and its implementation
- Training curricula for joint cross-national criminal interrogations
- Interrogative scenarios for training
- Evaluation methodology for the LAW-TRAIN modules and for the entire system
- Extensive experiments with cross-nationality law-enforcement personnel
- Implement effective dissemination and exploitation plans enabling further development and exploitation of the System's ability to use the platform for other products and services.

## Description of the work

Initially, the integrated global view of the Collaborative Virtual Interrogation Game, the Virtual Suspect, and the Training Tools will be harmonised to provide each partner with a clear definition of the goals, schedule, interfaces, and to align the research goals. In parallel, the legal foundation, the methodology, and training curricula for conducting joint investigative interrogation by international teams, particularly in the context of organised drugs trafficking crimes, will be developed and specified. This methodology is the basis for the development of the game, Virtual Suspect, the Training Agent, and the testing and evaluation. The methodology is based on both the theory and practice in such interrogations. This will allow development of the serious virtual reality game. It will be integrated into the actual life and working environment of the trainees, bringing them to the interrogation room with the virtual suspect, and with the other investigative team members, much like real interaction.

The work proceeds with the development of innovative methodologies and algorithms for the four modules of the Virtual Suspect: 1) Database, 2) Psychological module, 3) Decision making module, and 4) Behavioural model. Their development integrates machine learning, expert extraction rules and virtual human technology.

Additional work is on tools that allow the trainer to create new scenarios and gaming setting. We also developed deep line diagnostics for both the trainer and the trainees, and an agent capable of providing the trainees with real-time comments. System integration, testing, and evaluation will be executed incrementally, and eventually the integrated LAW-Train system will be evaluated in a long study, in which the performance of the users, the improvement of their skills, and the satisfaction from the virtual suspect will be measured.

The results of the project are disseminated. An exploitation model will be developed and implemented.

## Expected results

Law-Train will increase skills on how to perform a multinational interrogation and how to detect and adequately respond to cross-cultural issues, between the interrogator and the suspect, and among the interrogators themselves. It will enhance knowledge and experience to conduct of joint interrogations with officers in other countries, and how to overcome gaps of culture, legislation, interrogation style, etc. The methodologies will impact training curricula and cross border collaborations.

## PARTNERS

Jcp-Connect / JCP  
 Stmicroelectronics Srl / STM  
 Fondazione Bruno Kessler / FBK  
 Emza Visual Sense Ltd / EMZA  
 Synelixis Lyseis Pliroforikis Automatismou &  
 Tilepikoinonion Monoprosopi Epe / SYN  
 Vrije Universiteit Brussel / VUB  
 Al maviva - The Italian Innovation Company Spa / ALMA  
 Visionware - Sistemas De Informacao Sa / VIS  
 Ayuntamiento De Valencia / PLV  
 Ministério Da Justiça / MJ

## COUNTRY

France  
 Italy  
 Italy  
 Israel  
  
 Greece  
 Belgium  
 Italy  
 Portugal  
 Spain  
 Portugal





Law Enforcement  
Agencies

# MICROMOLE

Sewage Monitoring System For Tracking Synthetic Drug Laboratories

## Information

Grant Agreement N°  
653626

**Total Cost**

€ 5 451 387,79

**EU Contribution**

€ 4 992 866,33

**Starting Date**

01/09/2015

**Duration**

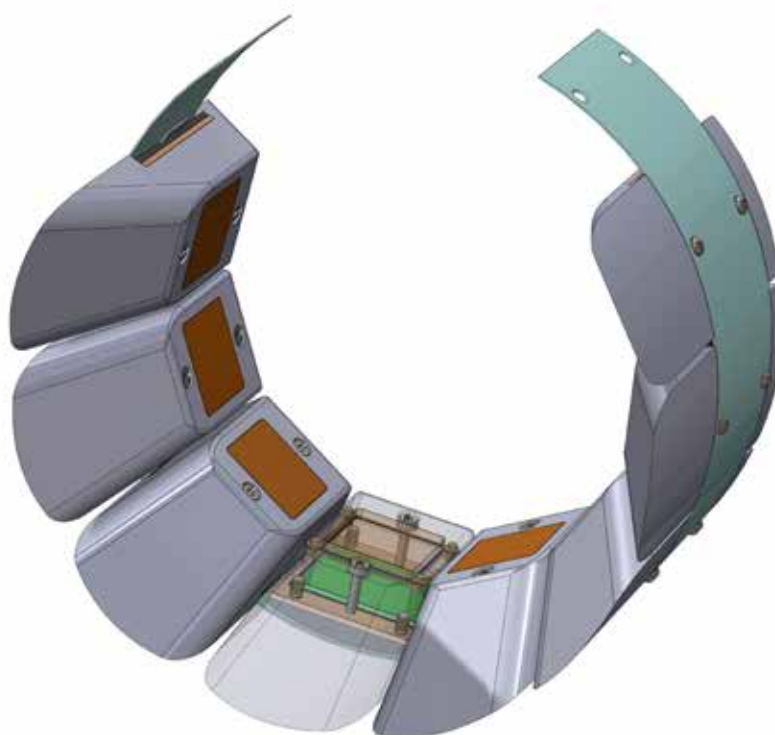
36 months

**End Date**

31/08/2018

**Topic**

FCT-05-2014 - Law enforcement capabilities topic 1: Develop novel monitoring systems and miniaturised sensors that improve Law Enforcement Agencies' evidence-gathering abilities



## Coordinator

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## Project objectives

The aim of this project is to design, develop and test a prototype of a system for legal recording, retrieving and monitoring operations of amphetamine-type stimulants (ATS) and ATS precursor laboratories in urban areas. The sensor system will be installed within the sewage system and will track waste associated to ATS production. Criminal investigators and forensic specialists will use the system in case of:

- 1) initial general suspicion of ATS production in a certain area, for locating laboratories by monitoring the sewage system for long time periods;
- 2) strong suspicions that in a well confined area ATS is being produced, for collecting material for forensic analysis and potential use in court, and for aiding in the planning of LEA raid operations.



## Description of the work

The main objective of this project is to design and develop an autarkic sensor system – namely the  $\mu$ Mole – for the sewage system to support criminal investigations of clandestine production of ATS and their precursors.

The sensor system shall be designed for the continuous examination of wastewater flow, and the device shall be able to collect wastewater in internal small tanks, so a forensic laboratory could further corroborate the findings of the sensor and use such samples as supporting evidence for criminal prosecution. The system should keep track of the location and place where each sample was taken, as to provide enough information about the chemical sample for its usage as legal evidence.

## Expected results

The  $\mu$ Mole prototype will contain the following features:

- 1) miniaturised system for 200mm sewage pipes,
- 2) robust housing taking into account sewage system environment,
- 3) minimised power consumption,
- 4) enhanced operation time supported by energy harvesting,
- 5) high-specificity electro-chemical sensors,
- 6) integrated micro-tanks for sample storage,
- 7) secure GSM and radio communications for remote monitoring.

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## PARTNERS

Warsaw University of Technology / WUT  
 Central Forensic Laboratory of the Police / CFLP  
 Federal Criminal Police Office / BKA  
 Blue Technologies / BTEC  
 CapSenze / CS  
 JGK Tech – Pipeferret / JGK  
 Fraunhofer Gesellschaft (IIS and IZM) / FhG  
 Tilburg University / TIL  
 Ghent University / UGENT  
 Université Claude Bernard Lyon 1 / UCBL  
 University of the Federal Armed Forces Munich / UNI-BWM

## COUNTRY

Poland  
 Poland  
 Germany  
 Poland  
 Sweden  
 Iceland  
 Germany  
 The Netherlands  
 Belgium  
 France  
 Germany



Law Enforcement  
Agencies



Crisis Management



Ethics and Justice

## Information

Grant Agreement N°

653350

Total Cost

€ 5 992 360

EU Contribution

€ 5 992 359,75

Starting Date

01/05/2015

Duration

36 months

End Date

30/04/2018

Topic

H2020-FCT-2014 Law

enforcement capabilities

topic 3: Pan European platform

for serious gaming and training

# TARGET

Training Augmented Reality Generalised Environment Toolkit



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## Project objectives

TARGET will design and develop a pan-European platform for hybrid serious gaming, including TC development tools, providing standard interfaces and effective mechanisms for integrating third party technologies and content, and supporting content and technology sharing, licensing and payment. TARGET will deliver technology components (augmented reality, competence assessment, decision support, non-linear simulation) by adapting, and improving existing, as well as developing, dedicated new components for the TARGET platform. Selected training use cases from fields such as CBRN response, hazmat accidents, mass collisions, cyber-attacks and challenging policing situations that will support the iterative trialing of progressive versions of the TARGET Platform.



## Description of the work

The project will develop a secure and moderated, online user platform for the creation, running and management of dynamic and non-linear mixed reality emergency management exercises. It will develop and integrate a web based exercise delivery system, offline and online augmented reality and virtual reality immersive capabilities, analytical modeling of explosive and hazardous material effects and an online management facility. This will be coordinated through the development of a high performance middleware communication solution. The project will also develop 6 multi-command level training exercises and their multimedia content, which will be delivered using the platform. These exercises and content will be maintained on the platform to provide post project example content. The training content will cover single and multi command level exercises, involving CBRN events, firearms events, cyber attacks and a large scale road traffic/multi hazard incident. The exercise content will include exercise inject behavior scripts, simulated TV news videos, 3D assets and scene models, and multi option dynamic effect models. The platform will additionally provide the capability for electronic stimulation involving emails and social media injection where required. Project work will include the capability to automatically generate 3D scene models from a bespoke developed UAV system, which will be supplemented by traditional manually developed models. A commerce system shall be developed for the online user platform, to provide a means to develop a pan European exercise market place for the post project delivery. The resulting platform will be capable of delivering a broad spectrum of pay-as-you-go incident command exercises to the European emergency management community, with example content available to help users develop their own specific exercise requirements.

## Expected results

TARGET will enable EU user organisations to deal with security challenges, develop richer training modules, better qualified staff, reduce costs, speed up new training, share best practices through an open community training platform, enable societal dialogue by communicating with citizens about serious gaming and strengthen the capabilities of SCA to deal with complex ethical issues.

## PARTNERS

ARTTIC / ARTTIC  
 VectorCommand Limited / VCL  
 ATRISc / ARTISc  
 Cleveland Fire Authority / CFB  
 Ecole Nationale Supérieure de Police / ENSP  
 International Security and Emergency Management Institute / ISEM  
 Fachhochschule der Polizei des Landes Brandenburg / FHPOLBB  
 Fraunhofer Institute for Transportation and  
 Infrastructure Systems / IVI  
 German Police University / DHPOL  
 Inconnect VOF / Inconnect  
 Institut de Seguretat Pública de Catalunya / ISPC  
 International Security Competence Centre G.m.b.H. / ISCC  
 Luxembourg Institute of Science and Technology / LIST  
 Ministerio del Interior - Guardia Civil / GUCI  
 Oslo Centre for Science in Society / OCSS  
 University of Luxembourg / UL

## COUNTRY

France  
 The United Kingdom  
 France  
 The United Kingdom  
 France  
 Slovakia  
 Germany  
  
 Germany  
 Germany  
 The Netherlands  
 Spain  
 Austria  
 Luxembourg  
 Spain  
 Norway  
 Luxembourg

# FORENSIC

NOSY







Forensic



Law Enforcement  
Agencies



Counter-Explosive

# NOSY

New Operational Sensing sYstem

## Information

**Grant Agreement N°**

653839

**Total Cost**

€ 5 373 061,25

**EU Contribution**

€ 4 198 684,63

**Starting Date**

01/09/2015

**Duration**

36 months

**End Date**

31/08/2018

**Topic**

FCT-05-2014 - Law enforcement capabilities topic 1: Develop novel monitoring systems and miniaturised sensors that improve Law Enforcement Agencies' evidence- gathering abilities

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**Lorenzo Fiore**

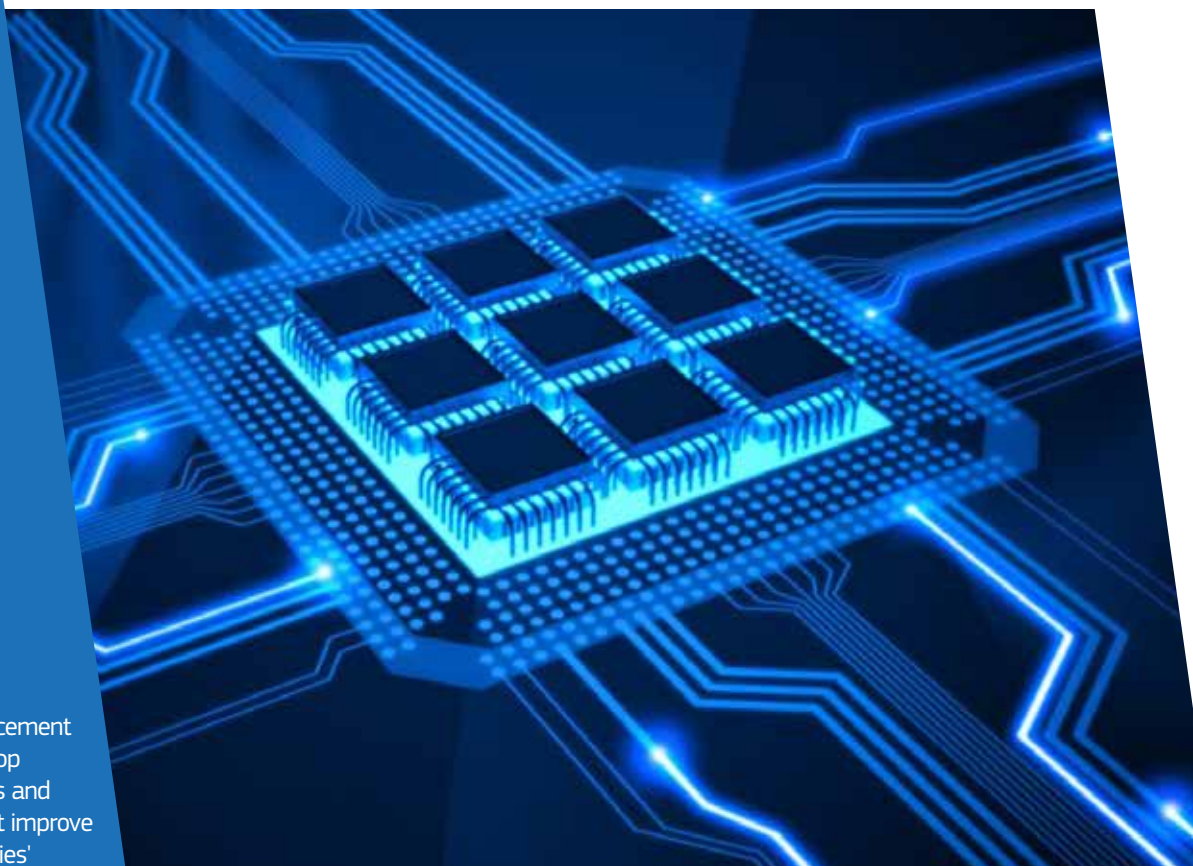
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E-mail: [fiore@sekur.it](mailto:fiore@sekur.it)

Website: [www.nosy-project.eu](http://www.nosy-project.eu)



## Project objectives

NOSY aims to develop a miniaturised yet highly sensitive platform for the detection of illicit or suspicious substances. Its enabling technology is an innovative microelectronics sensor that combines state of the art micro and nanotechnologies with advanced smart sensing materials. The new integrated microsensor will be the core technology used to develop three complete sensing devices for both stand alone and embedded monitoring of illicit or suspicious substances and their information for specific LEA (law enforcement agencies) use cases. A critical requirement is that the recorded or transmitted data be used as proof in court, so the device will include proofing from all types of external tampering. The platform will be completed with a monitoring station and communication infrastructure for LEA and forensic end users network integration.



## Description of the work

The technological challenge of this program is to unambiguously detect the smallest amount of a targeted illicit or suspicious substance, at the lowest energy consumption, and in the smallest mechanical form while providing performance advancements.

All performance and quality parameters of new solutions as outcomes of NOSY will be first tested in laboratory conditions to assess the proper functioning of each individual module. Then they will be integrated into subsystems or devices to be individually validated and subsequently tested in field environments to assess their sensing properties. Special care will be paid to verify effectiveness and reliability of the integration of individual system modules for performance, user's ease of use, and interoperability.

## Expected results

NOSY will deliver to LEAs a set of innovative devices to detect crime activity above illicit substances smuggling or the realisation of suspicious ones. These will be tested to guarantee a very low false positive or negative detection of the targeted compound, and will be subject to a certification process to guarantee compliancy to forensics requirements. Miniaturisation, low cost, ease of use, effectiveness, tamper-proofing and encryption will enable widespread use of the devices among LEAs.

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## PARTNERS

Aero Sekur Spa / ASKR  
Centre National de la Recherche Scientifique (CNRS) / CNRS  
Cranfield University / CU  
GMVIS Skysoft SA / GMV  
Istituto Affari Internazionali / IAI  
Ministere de l'Interieur (Institut de Recherche Criminelle de la Gendarmerie Nationale) / IRCGN  
Ministerio da Administracao Interna (Guarda Nacional Republicana) / GNR  
Ministero della Difesa (Raggruppamento Carabinieri Investigazioni Scientifiche) / RACIS  
RESI Informatica Srl / RESI  
Sensichips Srl / SCP  
Synectika Research and Consulting Ltd / SRC  
University of Leicester / ULEIC  
Xavitech AB / XVT

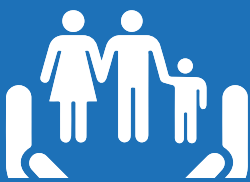
## COUNTRY

Italy  
France  
The United Kingdom  
Portugal  
Italy  
  
France  
  
Portugal  
  
Italy  
Italy  
Italy  
The United Kingdom  
The United Kingdom  
Sweden

# SOCIETAL ASPECTS OF POLICING

CITYCOP  
ICT4COP  
IMPACT  
MARGIN  
SEREN 3  
TRILLION  
UNITY





Societal Aspects of  
Policing



Law Enforcement  
Agencies



Ethics and Justice

# CITYCoP

Citizen Interaction Technologies Yield Community Policing



## Information

Grant Agreement N°  
653811

### Total Cost

€ 5 576 716,25

### EU Contribution

€ 5 576 716,25

### Starting Date

01/06/2015

### Duration

36 months

### End Date

31/05/2018

### Topic

FCT-14-2014: Ethical/Societal  
Dimension Topic 2: Enhancing  
cooperation between law  
enforcement agencies and  
citizens - Community policing

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## Project objectives

Analyze the social, cultural, legal and ethical issues that affect the building of trust in community policing through technology.

Identify and address previous failures/ limitations in the use of technology in community policing.

Understand how the use of technology in community policing models is received by law enforcement agencies (LEAs) and citizens in selected European cities.

Produce a uniquely European technical solution including a smartphone app and an on-line portal which are capable of being deployed in every European city while still retaining the 'local flavor'.

Develop a system for information sharing and trust building between citizens and LEAs and which pilots the system in four major cities.

Train LEAs and citizens through serious gaming to facilitate the right information sharing that allows LEAs to prevent, detect and prosecute criminal behavior efficiently.

Carry out a complete data protection and ethical audit of the system.

Develop a Toolkit that can be used by other cities.



## Description of the work

Theories underlying community policing received new impetus with the recent advent of smartphones and social media and especially user-generated content (UGC) where citizens engage in closer interaction with their local community and law enforcement agency (LEA). The years 2010-2014 have seen a rapid upsurge of smartphone apps aimed at improving crime reporting and other forms of UGC and interaction associated with community policing. Yet these apps are characterised by a predominantly Anglo-Saxon approach with the largest number originating in the USA, a few in Canada and Australia, with the UK apparently the only major EU state where there has been some take-up of these technologies. CITYCoP sets out to find out why the EU appears to be lagging behind although community policing is nominally a policy which has been put into action in a number of EU countries. It then goes on to develop a solution including a new smartphone app and on-line portal which are capable of being deployed in any European city while still retaining "local flavor" and diversity. These ICT solutions will also be designed from scratch to be fully compliant with strict privacy and data protection laws. A training scheme, including use of serious games, will be developed to assist training of officers and citizens in use of the app and portal. CITYCoP will benefit from a multidisciplinary approach that will include the sociology of community policing as well as cognitive science perspectives of the citizen's interaction with community and LEAs through technology. The partners in CITYCoP build on long years of successful collaboration in EU projects dealing with UGC, smart surveillance and privacy (CONSENT, SMART, RESPECT) positioning CITYCoP solutions to achieve integration into smart city eco-systems. CITYCoP will pilot deployments of multi-lingual smartphone apps, portals and serious games training packages in Bucharest, Lisbon, Florence, Sheffield.

## Expected results

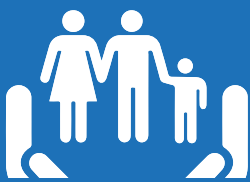
- 1) Reinforce trust in community policing by creating technological tools including apps which become a natural extension of the citizen's willingness to help maintain law and order within the local community
- 2) Test and create technological tools including on-line portals and smartphone apps which fully respect fundamental human rights and striking the right balance to greater security
- 3) Refine the information chain in community policing
- 4) Create solutions which are replicable across Europe

## PARTNERS

Universita Ta Malta / UOM  
Gottfried Wilhelm Leibniz Universitaet Hannover / LUH  
Laboratorio Di Scienze Della Cittadinanza / LSC  
Hoplite Software SI / HOPLITE  
Law And Internet Foundation / LIF  
Fraunhofer Gesellschaft Zur Forderung Der  
Angewandten Forschung Ev / Fraunhofer  
Univerzitet U Novom Sadu / UNS  
Nutcracker Research Limited / NUTC  
Consiglio Nazionale Delle Ricerche / CNR  
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Norges Teknisk-Naturvitenskapelige Universitet / NTNU  
The Police And Crime Commissioner For South Yorkshire / SYP  
Ministerio Da Administracao Interna / PSP  
Comune Di Firenze / CdF  
Ludwig Boltzmann Gesellschaft Osterreichische Vereinigung Zur  
Forderung Der Wissenschaftlichen Forschung / LBG  
Federation Autonome De La Fonction Publique  
Territoriale Et Des Etablissements Publics / FA-FTP  
Inspectoratul General Al Politiei Romane / GIRP  
Innenministerium Niedersachsen / LSMI

## COUNTRY

Malta  
Germany  
Italy  
Spain  
Bulgaria  
  
Germany  
Serbia  
The United Kingdom  
Italy  
Romania  
Romania  
Romania  
Belgium  
Norway  
The United Kingdom  
Portugal  
Italy  
  
Austria  
France  
  
Romania  
Germany



Societal Aspects of  
Policing



Law Enforcement  
Agencies

# ICT4COP

Community-Based Policing and Post-Conflict Police Reform

## Information

Grant Agreement N°

653909

Total Cost

€ 4 999 999

EU Contribution

€ 4 999 999

Starting Date

01/06/2015

Duration

60 months

End Date

31/05/2020

Topic

FCT-14-2014 - Ethical/Societal  
Dimension Topic 2: Enhancing  
cooperation between law  
enforcement agencies and  
citizens - Community policing



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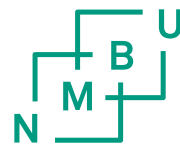
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## Project objectives

The overall objective of the project is to conduct integrated social and technical research on community-based policing (COP) and police reform in post-conflict countries. To do so, the project will create greater knowledge and awareness of the social, cultural, legal and ethical dimensions of COP in a selected number of post-conflict countries.



## Description of the work

Understanding human security is at the core of the research. Community-based policing has its promises, nevertheless it has its challenges while conventional forms of top-down institutional reform fail to be effective.

In-depth qualitative research will be conducted in Latin America, South-Eastern Europe, Africa, and South Asia, with studies in crosscutting themes such as youth and gender issues. A clear ambition for the project is to identify both differences and commonalities in community-oriented policing in post-conflict societies.

Understanding how information and communications technologies (ICTs) might contribute to increased human security is an important objective. In this endeavor, the challenges ICTs may pose in terms of the protection of the identity of vulnerable groups and individuals must be thoroughly understood.

Further, a wider network of international policing practitioners and experts are involved in the project as advisors. This will ensure that the practice of local and international policing is well understood in the research process, and results are easily shared in policing environments.

The project takes a qualitative and explorative approach. Researchers will conduct fieldwork in all regions, draw heavily on the expertise of the policing network, and collaborate closely with ICT partners. The core tenet of the exploratory research approach is “building knowledge together”, meaning that researchers and participants engage in conversations that bring about learning for both parties simultaneously.

## Expected results

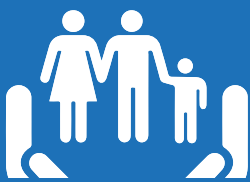
The project’s contribution is to help inform adequate, effective and efficient police responses to increasingly complex threats including transnational crime, trafficking, radicalisation and terrorism, both socially/ethically and technologically. With our integrated approach, we seek to open up an alternative framing for COP whereby police is conceptualised as an ICT-enabled service provider, accountable to not only the government but also the local communities that they serve.

## PARTNERS

Norwegian Ministry of Justice and Public Safety  
(Norwegian Police University College) / PHS  
University of Durham / DU  
Ruhr University Bochum / RUB  
Norwegian Institute of International Affairs / NUPI  
Jagiellonian University / UJ  
Social Impact Lab CIC / SimLAB  
Applied Intelligence Analytics Ltd. / AIA  
University of Bremen / UB  
Norwegian Institute of Regional and Urban Affairs / NIBR

## COUNTRY

Norway  
The United Kingdom  
Germany  
Norway  
Poland  
The United Kingdom  
Ireland  
Germany  
Norway



Societal Aspects of  
Policing



Crisis Management



Critical Infrastructure  
Protection

## Information

Grant Agreement N°  
653383

**Total Cost**

€ 1 398 912,5

**EU Contribution**

€ 1 398 912,5

**Starting Date**

01/05/2015

**Duration**

30 months

**End Date**

31/10/2017

**Topic**

DRS-21-2014 Ethical/Societal  
Dimension topic 2: Better  
understanding the links  
between culture, risk perception  
and disaster management

## Coordinator

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# IMPACT

Impact of Cultural aspects in the management of emergencies in public Transport



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## Project objectives

IMPACT aims to better understand the links between culture, risk perception and disaster management in transport hubs. The objectives of this CSA are to:

- Analyse how emotional, psychological, social and cultural needs, can affect the way certain urban communities prepare, respond, engage in restoration and recover from disaster.
- Anticipate problems and identifying solutions to cultural problems that may arise in the event of an emergency in urban areas, by providing an analysis of existing links between disaster and culture.
- Improve the effectiveness of those who respond to disasters by better meeting the needs of various cultures during disaster relief, thus improving reaction time and reducing fatalities.
- Increase hubs' preparedness for, and ability to, recover from emergencies.
- Provide a framework for improving disaster response policies and practices by taking into consideration every disaster victim's cultural and personal uniqueness.



## Description of the work

IMPACT is a CSA structured around four general principles:

- to be stakeholder-focused in all its phases;
- to provide supporting measures that could be easily generalised and reused;
- to advance the state of the art in cross-cultural research and improve emergency prevention and management across all European countries;
- to validate, disseminate and exploit its outcomes so as to benefit European institutions and public organisations.

To achieve these principles, the project is organised in 7 work packages (WPs):

WP1 Psycho-Social and Cross-cultural Theoretical Framework of Crowd Behavior and Management states the theoretical basis of the project, integrating cross-cultural socio-psychological studies with crowd analysis and management and operational requirements from the transport domain users.

WP2 Behavioral Modelling, Simulations and Results builds the models and software tools that will be used as a basis for the various Supporting Measures developed in: WP3 Cultural Risk Assessment, WP4 Cultural-based Emergency Communication Framework and WP5 Cultural-based Training Framework.

WP6 Coordination Initiatives is dedicated to coordination and networking activities with Stakeholders across Europe, to spread of best practices identified during the project and to assess and generalise the research results with them.

Finally, one package relates to Dissemination, Communication and Exploitation (WP7) and one is devoted to Project Management (WP8).

## Expected results

IMPACT will deliver the following outcomes for transport hubs: a cultural-based risk assessment methodology, agent-based models to simulate cultural behaviors and cultural-specific emergency management solutions, innovative communication strategies that takes into account socio-cultural factors, multi-cultural training material for transport operators and first responders, best practices and policy recommendations for policy makers, regulators, municipalities and transport operators.

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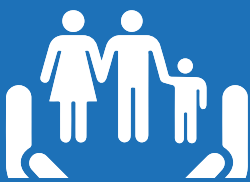
## PARTNERS

Proprs / PRO  
University of Leeds / UOL  
Stichting VU-VUMC / VU  
Visshe Uchilishte Mezhduranoden Kolezh / VUM  
Anadolu University / AU  
Urząd Morski w Gdyni / MOG  
Nuovo trasporto Viaggiatori SpA / NTV

## COUNTRY

United Kingdom  
United kingdom  
The Netherlands  
Bulgaria  
Turkey  
Poland  
Italy





Societal Aspects of  
Policing



Ethics and Justice

# MARGIN

Tackle Insecurity in Marginalized Areas

## Information

Grant Agreement N°

653004

Total Cost

€ 1 881 399,5

EU Contribution

€ 1 881 399,5

Starting Date

01/05/2015

Duration

24 months

End Date

30/04/2017

Topic

FCT-13-2014 Ethical/Societal  
Dimension Topic 1: Factors  
affecting (in-)security



## Coordinator

University of Barcelona

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## Project objectives

The MARGIN project's aim is to coordinate and support public intervention in the field of security by providing policy makers with high quality tools for creating and evaluating strategies targeted at the reduction of insecurity among different demographic groups. The project's specific objectives are to:

- 1) contrast objective and subjective measures of insecurity (i.e. compare police statistics with survey-based data),
- 2) develop and validate a thematic survey allowing for the assessment of the impact of demographic, socio-economic and socio-geographic variables on the perception of insecurity,
- 3) investigate the socio-cultural determinants of insecurity perception through the implementation of anthropological fieldwork in five EU countries, and
- 4) share best practices and outcomes in a final event with 100 key end-users.





## Description of the work

MARGIN's research design includes both qualitative and quantitative research methods aiming at achieving a comprehensive investigation of public and personal perceptions of insecurity. Its research will identify individual factors (gender, age, nationality, income, lifestyle), socio-cultural factors (actual crime rates and differences in perception among the five countries of the consortium) and situational factors (socio-economic features of neighbourhoods, urban layout, etc.) that could influence perceptions of insecurity. After reviewing the results of past and on-going research on the topic, the first phase is dedicated to collecting secondary data on: (1) crime and victimization, (2) demographic and socio-economic factors affecting insecurity perception and (3) neighbourhood characteristics that have been found to have an effect on individual and public perception of insecurity. The subsequent statistical analysis identified and defined a set of indicators assessing insecurity to be used as a consensual basis for discussion throughout the project activities. Based on the conclusion of the first phase a panel of international experts is currently designing a thematic survey to assess how demographic, socio-economic and socio-geographic variables influence public and personal perception of insecurity. Lastly, results from qualitative research, including in-depth interviews, participant observation and focus groups in five EU cities (Barcelona, Budapest, London, Milan and Paris) will be contrasted with quantitative data collected in order to identify potentially overlooked factors influencing insecurity perception.

## Expected results

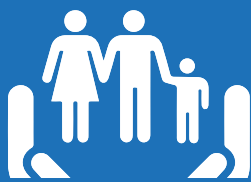
The main expected impact of the project should be a significant change in how data and statistics about security are understood and used by policy makers. It is also expected to generate a direct impact on public policies as the results provided could feed into current practices for insecurity assessment.

### PARTNERS

National Institute of Criminology / OKRI  
Università degli Studi di Milano-Bicocca / UNIMIB  
EuroCrime Research Training and Consultancy srl / ECR  
University College London / UCL  
Departament d'Interior – Generalitat de Catalunya / INT  
Institut national des hautes études de la sécurité  
et de la justice / INHESJ

### COUNTRY

Hungary  
Italy  
Italy  
The United Kingdom  
Spain  
  
France



Societal Aspects of  
Policing

# SEREN 3

SEcurity REsearch NCP network 3

## Information

Grant Agreement N°

653450

Total Cost

€ 1 995 451

EU Contribution

€ 1 995 451

Starting Date

01/05/2015

Duration

36 Months

End Date

30/04/2018

Topic

DRS - 08 -2014: Crisis  
management topic 8: Trans-  
national co-operation among  
National Contact Points (NCPs)  
for security

## Coordinator

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## Project objectives

SEREN 3's objective is to facilitate trans-national cooperation among national contact points (NCPs) in Secure Societies research to identify and share good practices, and raise the general standard of support to programme applicants across the EU and partner countries. The project's specific objectives are to:

- improve NCP capacities and knowledge through personalised programmes
- upgraded the tools used for assistance-delivery, improving the set of features available to users, and the efficacy of the assistance to NCPs
- provide the Secure Societies constituency with direct opportunities and possibilities for learning, training, and networking
- enlarge the composition of the Secure Societies constituency, linking the SEREN 3 network to new types of stakeholders

SEREN 3 is the continuation of the precedent network, SEREN 2, building on its experiences and achievements.

## Description of the work

NCPs play a key role in Horizon 2020 as providers of information and assistance to potential applicants and project beneficiaries. They are the main interface between the European R&I community for Member States, Associated Countries and Third Countries, and the European Commission. Each NCP's structure, working methods and funding is defined nationally, reflecting different traditions, working methodologies, research landscapes and funding schemes. Despite such heterogeneity, the various NCP systems must be able to ensure competence in the different thematic and horizontal priorities of the Secure Societies Work Programme, coherence of approach and a high level of service.

The project will focus on three main activities:

- 1) Capacity building of NCPs (training, fora, twinning activities)
- 2) Strengthening the participation of relevant stakeholders in Horizon 2020 funding opportunities (training for applicants, supporting documents, information material)
- 3) Networking opportunities across the Secure Societies constituency (brokerage events, partner search tool)

## Expected results

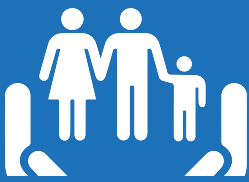
The expected results are to enhance access to Horizon 2020 calls, lower the entry barriers for newcomers and raise the average quality of proposals submitted by enabling NCPs to deliver better services to applicants across the EU and globally.

## PARTNERS

Dienst voor Wetenschappelijke en Technische Informatie  
 Service d'Information Scientifique et Technique / STIS  
 Council for Scientific and Industrial Research / CSIR  
 Centrum Vedecko Technickych Informacii Slovenskej Republiky / CVTISR  
 Research Promotion Foundation / RPF  
 Sihtasutus Eesti Teadusagentuur / ETAg  
 Foundation for Research and Technology Hellas / PRAXI Network/FORTH  
 Agence Bruxelloise pour L'Entreprise / impulse.brussel  
 Instytut Podstawowych Problemow Techniki Polskiej Akademii Nauk / IPPT PAN  
 Matimop, Israeli Industry Center For Research & Development / MATIMOP, ISERD  
 The Icelandic Centre For Research / RANNIS  
 Romanian Space Agency / ROSA  
 Rigas Tehniska Universitate / RTU  
 Technologicke Centrum Akademie Ved Ceske Republiky / TC AV CR  
 Turkiye Bilimsel ve Teknolojik Arastirma Kurumu / TUBITAK  
 Agencija za Mobilnost i Programe Evropske Unije / AMEUP  
 Centro Para el Desarrollo Tecnológico Industrial / CDTI

## COUNTRY

Belgium  
 South Africa  
 Slovakia  
 Cyprus  
 Estonia  
 Greece  
 Belgium  
 Poland  
 Israel  
 Iceland  
 Romania  
 Latvia  
 The Czech Republic  
 Turkey  
 Croatia  
 Spain



Societal Aspects of  
Policing



Social Media

# TRILLION

TRusted, Citizen -LEA collAboratlion over sOcial Networks



## Information

Grant Agreement N°

653256

Total Cost

€ 4 263 408

EU Contribution

€ 4 263 408

Starting Date

01/09/2015

Duration

36 months

End Date

31/08/2018

Topic

H2020-FCT-14-2014

Ethical/Societal Dimension Topic 2:  
Enhancing cooperation between  
law enforcement agencies and  
citizens - Community policing

## Coordinator

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## Project objectives

TRILLION will deliver an innovative socio-technical platform to foster effective collaboration between citizens and law-enforcement agencies. The objectives are to speed up the detection of critical security situations and improve the response, in terms of time, scope and efficiency.

To achieve this, TRILLION will provide multiple channels for incident discovery, prediction, reporting and interaction. Citizens will have the choice of using existing social networks or directly reporting incidents via native mobile applications. This multi-channel approach eases the real-time reporting of unfolding security situations, whilst the TRILLION platform provides a unique environment for law-enforcement agencies to detect incidents more efficiently and improve their response capacity to critical situations. TRILLION involves a full range of users, and includes gaming and training approaches in addition to two full rounds of pilots.



## Description of the work

Community policing promotes the implementation of bi-directional collaboration channels between citizens and law enforcement agencies (LEAs). By enhancing the discovery of relevant and up to date information, it speeds up the detection of risks, eases their prevention and builds a continuum of collaboration which motivates citizens and LEAs to work together. Over 36 months, TRILLION will deliver a fully-fledged platform to support the extensive collaboration between citizens and LEAs. The operational environment of the platform is not limited to an on-going crisis, but also extends to the period before it through early identification and prevention of emerging risks. TRILLION will provide a comprehensive service based platform and mobile applications that support the knowledge-based, real-time collaboration among law enforcement agents, first responders and citizens whilst ensuring that privacy and data protection are taken into account. The TRILLION consortium and supporting organisations include six citizen communities, six law enforcement stakeholders, three industrial players and five universities and research centers. Extensive trials will take place through pilots, early validations and serious game based training across Italy, Portugal, Sweden, the Netherlands and the United Kingdom, involving close to 2000 citizens and law enforcement agencies representatives.

## Expected results

TRILLION will deliver an integrated collaborative platform, native mobile applications and gaming based training processes. Through different collaboration and dissemination channels, TRILLION will also link to other projects and initiatives, aiming also to deliver, jointly, an enlarged community across Europe.

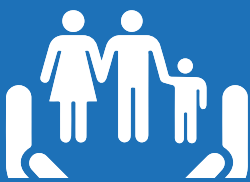
83

## PARTNERS

Engineering Ingegneria Informatica / ENG  
 Technological Educational Institute Of Piraeus / TEIP  
 Atos Spain Sa / ATOS  
 Ethniko Kentro Erevnaskai Technologikis Anaptyxis / CERTH  
 Inov Inesc Inovacao - Instituto De Novas Tecnologias / INOV  
 Mittuniversitetet / MiUN  
 University Of Greenwich / UoG  
 Xlab Razvoj Programske Opreme In Svetovanje Doo / XLAB  
 Stichting Dutch Institute For Technology, Safety & Security / DITSS  
 Royal United Services Institute For Defence  
 And Security Studies / RUSI  
 Città Di Lecce\*Comune Di Lecce / ML  
 Ministério Da Justiça / PJ

## COUNTRY

Italy  
 Greece  
 Spain  
 Greece  
 Portugal  
 Sweden  
 United Kingdom  
 Slovenia  
 Netherlands  
  
 United Kingdom  
 Italy  
 Portugal



Societal Aspects of  
Policing



Law Enforcement  
Agencies

# UNITY

Unity

## Information

**Grant Agreement N°**

653729

**Total Cost**

€ 4 538 120

**EU Contribution**

€ 4 538 120

**Starting Date**

01/05/2015

**Duration**

36 Months

**End Date**

30/04/2018

**Topic**

FCT-14-2014 - Ethical/Societal  
Dimension Topic 2: Enhancing  
cooperation between law  
enforcement agencies and  
citizens - Community policing

## Coordinator

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## Project objectives

The vision of Unity shall be achieved through the delivery of three key strategic objectives:

- 1) To capture best practices for cooperation between police and citizens.
- 2) To develop a communications technology to facilitate, strengthen, and accelerate the communication between citizens and police.
- 3) To design, develop, and deliver training for LEAs and awareness raising activities about CP.





## Description of the work

Unity aims to strengthen the connection between the police and the diverse communities they serve to maximise the safety and security of all citizens. The end-user focus of Unity shall identify best practices in community policing (CP) through primary and secondary research to enhance cooperation between law enforcement agencies (LEAs) and citizens through the development and live pilot demonstrations of technological tools in six EU member states that facilitate, strengthen, and accelerate communications. These tools will be amplified and supported by the design and delivery of CP training and awareness raising activities to LEAs, citizens, and community partners, including online virtual communities. Unity will provide LEAs with a new CP model and shared framework of governance and enabling tools and technology to support closer cooperation for greater, more effective, and efficient and more inclusive CP. The citizen-centred approach of Unity supports the combined protection, safety, security, and well-being of communities, but it will also support a more collective, shared ownership of large scale, collective risk. Coordinated by pioneers and practitioners in CP, Unity seeks new ways of working in which the police will serve as a catalyst for change within communities, helping the latter to become an integral part of the solution, and thereby sharing the ownership and delivery of a sustainable CP model which simultaneously embraces the benefits of technology while meeting diverse community needs. This new and sustainable citizen-centred CP model will have community trust and confidence at its heart, with the ability for two-way flows of information and communication to allow for greater understanding of the problems and issues faced by communities. By working with citizens and community stakeholders to arrive at a full understanding of their concerns, targeted interventions, and solutions can be agreed to keep local communities safe.

## Expected results

The outcome of the project contains different products and services (citizens' and LEAs' applications, a core backbone platform, data-driven analytics engine, control panels and tools, etc.) working together as a complex LEA-oriented system solution.

## PARTNERS

Serco / Serco  
 Erasmus University Rotterdam / EUR  
 Police University College Finland / PUCF  
 Sheffield Hallam University (Centre of Excellence in Terrorism, Resilience, Intelligence & Organised Crime Research (CENTRIC)) / SHU  
 University of Dundee / UoD  
 European Institute / EI  
 FHVR Fachbereich Polizei / FHVR  
 Rinicom / RINI  
 Treelogic / TREE  
 Croatian Police College / CPC  
 Belgian Police / BPo  
 Estonian Police and Boarder Guard / EPBG  
 St Kliment Ohridski University / UKIO  
 Edinburgh Napier University / ENU

## COUNTRY

Belgium  
 The Netherlands  
 Finland  
  
 The United Kingdom  
 The United Kingdom  
 Bulgaria  
 Germany  
 The United Kingdom  
 Spain  
 Croatia  
 Belgium  
 Estonia  
 Macedonia  
 The United Kingdom

# SOCIAL MEDIA

CITY.RISKS





Social Media

# CITY.RISKS

Avoiding and mitigating safety risks in urban environments

## Information

Grant Agreement N°  
653747

Total Cost  
€ 3 934 811

EU Contribution  
€ 3 934 811

Starting Date  
01/05/2015

Duration  
36 months

End Date  
30/04/2018

### Topic

FCT-10-2014 - Urban security  
topic 1: Innovative solutions  
to counter security challenges  
connected with large urban  
environment

## Coordinator

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Smart Phones • Augmented Reality • BLE Sensors • Machine Learning • Geo Data

## Project objectives

City.Risks aims at increasing the perception of security of citizens in cities by centralising information sharing and activating in a more transparent and sustainable way citizens' participation in communities, both to proactively protect them from falling victim to crimes and to provide more timely and effective response and assistance.

City.Risks will leverage a set of innovative technologies, city infrastructures, the internet and social media, but more importantly it will aim to make citizens' smartphones and tablets the modern tools for increasing their personal and collective sense of security.



## Description of the work

The project's goal will be achieved via the City.Risks platform and its accompanying tools, applications and services, providing a rich set of capabilities and features:

- Infrastructure for creating and managing user profiles, trusted networks and communities.
- Spatio-temporal aggregation, mining and summarisation of crime-related data, integrated and augmented with other relevant city information from city authorities and the Web;
- Advanced risk management, alerting and response algorithms and services. These will allow for early warning of citizens moving towards or within a high risk area, will propose safe routes for avoiding or evacuating such areas, will perform "matchmaking" of citizens to other nearby users that seek or can offer assistance, will offer "ride-sharing" recommendations among trusted users to enhance the perception of security while moving through the city, etc.
- Mobile application with augmented reality features. This will allow citizens to use their smart phones or tablets to visualise security-related information regarding their surroundings (e.g. historical crime statistics or any ongoing criminal activity), being also able to interact with the augmented objects (e.g., for tagging them).
- Mobile sensor devices for identifying and locating stolen objects.
- Operation center for risk management and response. This will be the command and control center that will allow the authorities to operate and manage the whole system, monitor ongoing activities and events, receive/send alerts, and select, configure and trigger response actions. It will also allow for receiving and acting upon streaming input from citizens acting as sensors/reporters located in the vicinity of an ongoing security threat.

## Expected results

- Studies for urban security challenges and factors of fear in urban environments
- The City.Risks platform and API
- An ecosystem of mobile services and applications that will transform the citizens' smart phones and tablets into primary tools for sharing safety critical information
- A new lightweight theft prevention and identification sensor
- Pilot trials in real-life scenarios and settings
- Business models, best practices and replication plans

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## PARTNERS

Space Hellas Sa / SPH  
 Fraunhofer Gesellschaft Zur Forderung Der Angewandten  
 Forschung Ev / FRAUNHOFER  
 Athena Research And Innovation Center In Information Communication  
 & Knowledge Technologies / ATH  
 "Synyo Gmbh" / SYNYO  
 Institute Of Communication And Computer Systems / ICCS  
 Freie Universitaet Berlin / FUB  
 Birkbeck College - University Of London / ICPR  
 Malmoe University / MLM  
 Roma Capitale / ROM  
 London Borough Of Waltham Forest / LBWF  
 G4S Security Solutions Eood / G4S  
 Comune Di Prato / PRT  
 Infili Technologies Private Company / INFT

## COUNTRY

Greece  
 Germany  
 Greece  
 Austria  
 Greece  
 Germany  
 The United Kingdom  
 Sweden  
 Italy  
 The United Kingdom  
 Bulgaria  
 Italy  
 Greece

European Commission

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*Security Research Projects  
under the Horizon 2020 Programme for Research and Innovation*

## **EU Research for a Secure Society**

Further information available at:

[http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/index\\_en.htm](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/index_en.htm)

[http://ec.europa.eu/dgs/home-affairs/financing/fundings/research-for-security/index\\_en.htm](http://ec.europa.eu/dgs/home-affairs/financing/fundings/research-for-security/index_en.htm)

