D11.1.2 State of the Art on Security and Privacy Policies - EU Projects

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History

NB: a **status** is associated to each step of the document lifecycle:
- **Draft**: this version is under development by one or several partner(s);
- **Under review:** this version has been sent for review;
- **Issued**: this version of the document has been submitted to EC.

Version	Status	Date	Author	Main Changes
0.1	Under review	28/05/2013	UITP	First version compiled with inputs received from consortium partners
0.2	Under review	20/06/2013	UITP	Added links to annexes
1.0	Issued	21/06/2013	THALES	Minor editing further to MTRS3 review. Uploaded to Cooperation Tool and submitted to EC.

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1 Abstract & Purpose

1.1 Purpose of the Document

Deliverable D11.1 is dealing with the "State of the Art of Security and Privacy Policies" relevant for SECUR-ED. However, knowing the fact that in addition to Legislation, Research and Standardisation are the pillars used by the European institutions to promote common policies and measures, these topics have become the main subjects identified for research from the very beginning. Consequently, special sections within D11.1 have been dedicated to address these issues.

D11.1.2 is the second part of the master deliverable D11.1, and is focused on presenting the relevant EU Projects that touch upon the topics of both security in public transport and privacy and data protection. It summarizes European Projects developed at the European level in the field of Security through FP7, also recalling a few important FP6 projects which have been used as input for SECUR-ED. All relevant projects for SECUR-ED are highlighted accordingly.

Some duplication can be found with D11.1.1 which deals with the existing framework for privacy and security in both the EU and the EMS, and/or with D11.1.3, which deals with relevant standardisation initiatives at the EU and international levels. This is a voluntary decision to ease reading D11.1.2 a stand-alone document.

1.2 Methodology

As the master document had been considered too large to contain all sections in one corpus, the authors have decided to split the deliverable into three parts, each of them dealing with one of the key subjects identified at the beginning of the research.

In this case the information has been primarily collected through research from CORDIS[1], which hosts information about all projects funded by the EU through the FP7 programme. Other written sources were: EU policies and initiatives, documents of previous research projects, research projects, etc. Additional information had been gathered through the interaction with the SECUR-ED partners.

The review of the collected information had been done with the help of the project partners, who have indicated, to the best of their abilities, the relevance of each project regarding the SECUR-ED activities.

1.3 Structure of the Document

As a general introductory step, the entire document is presented in the **first chapter** so as to rapidly familiarize any reader with the information detailed in the next pages.

A **second chapter** is dedicated to the references and acronyms supporting the document.

The **third chapter** is the most important one, since it addresses the topic of document. Consequently, it is split in two subchapters, as follows:

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[1] http://cordis.europa.eu/home_en.html

- first subchapter presents the EU legislative framework that has enabled the development of EU FP7 projects in the field of security. Special attention is given to the EU-level initiative called the "EU Counter Terrorist Strategy", together with its Action Plan. This initiative provided a clear direction at the EU level concerning the development of security-focused projects meant to counteract the challenges posed by a series of threats. It also makes reference to the topic of standardisation, since the EU R&D projects and the development of standards are connected;

- second subchapter presents a list of the projects that have been deemed relevant to the scope of the SECUR-ED project. Most projects are FP7 projects, a few being from the FP6. The key aspects are highlighted. The most important and better known projects have been addressed in dedicated clauses. Additionally, there is a brief presentation of a security-focused report produced by the American Transit Cooperative Research Program.

A last chapter – **the fourth chapter** – presents succinctly the conclusions drawn from the document.

DISCLAIMER

The contents of this document reflect the views of the author and of the contributors listed earlier who are responsible for the information presented.

All opinions expressed are personal and do not necessarily reflect the official views or policies of any SECUR-ED partner or of any European Union (EU) institution, who assume no liability for the contents or use thereof.

However the document refers to the information available at the time it has been collected and readers are advised that, although the document accurately reflects the then status quo of the research, the documents mentioned may have been amended/repealed in the meantime, or may have simply become obsolete.

2 References

2.1 List of acronyms

ATM	Azienda Trasporti Milanesi
CBRN-E	Chemical, Biological, Radiological, Nuclear and high-yield Explosives
CCTV	Closed-Circuit Television
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
CI	Critical Infrastructure
CM	Crisis Management
CORDIS	Community Research and Development Information Service
COTS	Commercial Off-The-Shelf
DG	Directorate General (European Commission)
DSP	Digital signal processing
DVI	Disaster Victim Identification
EC	European Commission
EMC	Electromagnetic
EMS	EU member-states
ENISA	European Network and Information Security Agency
ESRIA	European Security Research and Innovation Agenda
ESRIF	European Security Research and Innovation Forum
ETSI	European Telecommunications Standards Institute
EU	European Union
EU&O	End Users and Operators
FP	Framework Programme (EC Research)
ICT	Information & Communication Technologies
K9	Police Canine Unit
MIMMS	Major Incident Medical Management and Support
OWL	Web Ontology Language
PMR	Professional Mobile Radio
POD	Probability of detection
PT	Public Transport
PTO	Public Transport Operator
PVACS	Physical Vulnerability Assessment of Critical Structure
RATP	Régie Autonome des Transports Parisiens (Paris, France)
RDF	Resource Description Framework (web)
R&D	Research and Development

STEEPV	Social, Technological, Economic, Environmental/Ecological, Political, and Value-based issues
TCRP	American Transit Cooperative Research Program
TETRA	Terrestrial Trunked Radio
UGT	Urban Guided Transport
USaR	Urban Search and Rescue operations
WiMAX	Worldwide Interoperability for Microwave Access
WP	Work Package or Working Party (depending on the context)
W3C	World Wide Web Consortium

2.2 Referenced documents

The following documents are referenced:

R[1]   European Union: Communication from the Commission, *A European Security Research and Innovation Agenda - Commission's initial position on ESRIF's key findings and recommendations*, 21 December 2009, COM(2009)691

R[2]   European Union: Council of the European Union, *The European Union Counter-Terrorism Strategy*, 30 November 2005, 14469/4/05 REV4

R[3]   European Union: *HORIZON 2020, The Framework Programme for Research and Innovation,*

http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

R[4]   European Union: Communication for the Commission, *Action Plan for an innovative and competitive Security Industry*, 26 July 2012, COM(2012) 417

R[5]   The American Transit Cooperative Research Program, http://www.tcrponline.org/

R[6]   CORDIS, The Community Research and Development Information Service, http://cordis.europa.eu/home_en.html

R[7]   ASPIS Project website, http://www.aspis-project.eu/

R[8]   MODSafe project website, www.modsafe.eu

R[9]   COUNTERACT project website:

http://www.transport-research.info/web/projects/project_details.cfm?id=36152

3 European Research Relevant to Public Transport Security and Privacy Matters

Note: This chapter, which can be read as a stand-alone review of the EU legislative framework concerning the EU R&D projects, is built on the wider analysis of EU security policies that has been done under clause 5.1 European Legislative Framework of D11.1.1 "State of the Art on Security and Privacy Policies - Legislation".

3.1 The European Legislative Framework

Although the EU does not have a clear mandate to propose legislation in the field of security, this being the playing field of the EU member-states (EMS), the EU institutions have adopted a number of measures and policies towards enhancing the EU security framework.

Various Directorate-Generals of the European Commission have recently created working groups or task forces, or have consulted experts in order to identify recommendations to better fight against terrorism and other major threats in Europe. A forum has been created in 2007, called European Security Research & Innovation Forum (ESRIF), which developed a European Security Research & Innovation Agenda (ESRIA)[2].

One such initiative is the **ESRIA Report** which highlighted the importance of an integrated approach to security in order to embrace, among others, interoperability, standardisation, certification, validation and the exchange of best practices. For more information please refer to D11.1.3 "State of the Art on Security and Privacy Policies – Standardisation".

On this basis, the European Commission intends to promote the development of a technical specification programme in the security domain which may apply to the transport sector. However the particular features of urban public transport do not support the concept and application of comprehensive mandatory specifications, particularly for operational aspects, and a voluntary approach to application is the preferred option .

As a substantiation of this EC policy aiming at the technical harmonisation of security measures, several R&D research project targeting public transport networks (all modes of transport) have been granted in the recent years, and a number of them have been used as a source of information for this project.

Yet most of the efforts channelled in the EU Security R&D projects have been the result of a complementary initiative taken by the European Commission that aimed at providing the EU and the EMS with enhanced tools able to mitigate the growing terrorist threats. This high EC-level initiative produced the EU Counter Terrorist Strategy, together with its Action Plan. It has given directions to other actions, the main ones being listed in the clauses below.

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[2] See the Communication from the Commission COM(2009)691 final dated 21.12.2009 at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0691:FIN:EN:PDF

3.1.1 The EU Counter-Terrorist Strategy and Action Plan

The **EU Counter-Terrorist Strategy** of 30 November 2005[3] was the continuation of the EU work started in the wake of the Madrid bombings. Its actions were centred on 4 main objectives:

- Prevention – prevent people from turning to terrorism;

- Protection – protect citizens and infrastructure and reduce the vulnerability to attack, including through improved security of borders, transport and critical infrastructure. Although the aviation and maritime sectors were seen as the main means of transport under threats, road and rail were also acknowledged as requiring enhanced security measures. Moreover, the document stated that "To support work in all of these fields, EU research and development policy including the European Commission's R&D programmes should continue to include security related research in the context of terrorism" (Point 17). Also, EU research efforts should contribute to developing methodologies for protecting crowded places and other soft targets from attacks (Point 19);

- Pursuit – pursue and investigate terrorists across borders and globally; to impede planning, travel, and communications of terrorists. Here, Point 27 mentions that one important step will be "developing and putting into practice the principle of availability of law enforcement information. In addition, the development of new IT systems [...] while safeguarding data protection, should provide improved access to those authorities responsible for internal security thereby widening the base of information at their disposal";

- Response – to manage and minimise the consequences of a terrorist attack, by improving capabilities to deal with: the aftermath; the co-ordination of the response; and the needs of victims.

The EU proposed to address these problems through a number of measures, the most important being:

- strengthening national capabilities - Using best practice, and sharing knowledge and experiences in order to improve national capabilities to prevent, protect against, pursue and respond to terrorism, including through improved collection and analysis of information and intelligence;

- facilitating EU cooperation - Working together to share information securely between Member States and Institutions. Establishing and evaluating mechanisms to facilitate cooperation including between police and judicial authorities, through legislation where necessary and appropriate.

This initiative was completed by a detailed **Action Plan** (29 March 2007)[4]. Starting from the directions outlined by the Strategy, the EU and the EMS tried to implement a set of measures that would reinforce the EU and national legal and political frameworks with a view of combating terrorism.

The sections relevant for the EU R&D security projects are presented in the following pages.

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[3] http://register.consilium.eu.int/pdf/en/05/st14/st14469-re04.en05.pdf

[4] http://register.consilium.europa.eu/pdf/en/07/st07/st07233-re01.en07.pdf

3.1.1.1 Protection

Under the "Protection" pillar, one important point mentioned was that of **EU research** level. Concerning the protection of other potential targets, such as crowded places and public transport, the Action Plan proposed to make use of EU research activity, and in particular the 6th and 7th R&D Programmes. FP6 developed a three-year program called Preparatory Action in Security Research (PASR 2004-2006), which laid the ground for the "European Security Research Programme" launched in 2007 as a part of FP7 (2007-2013) to support the implementation of Community policies and initiatives relevant to security such as the establishment of an area of freedom, security and justice, transport, etc. The Security theme received a clear mandate for delivering mission-oriented results to reduce security gaps. It is structured around four missions:

- security of the citizen (that includes the fight against terrorism and crime),

- security of infrastructures and utilities,

- intelligent surveillance and border security,

- restoring security and safety in case of crisis.

SECUR-ED project is financed by this programme under the security of infrastructures and utilities missions.

Concerning the security related research, the need to encourage it was emphasized for the following reasons:

- it helps to provide better security solutions;

- if properly design focused ("privacy by design") it helps to better protect fundamental rights; and

- it helps to reinforce the competitiveness.

The EC had also set up ESRIF (The European Security Research and Innovation Forum) in order to advise the security developments within FP7 and Horizon 2020 on the priorities for research in the future.

The Commission also published on 26 July 2012 a first **Communication on a Security Industrial Policy**, the "**Action Plan for an innovative and competitive Security Industry**"[5]. It is part of the EU 2020 flagship initiative "An Integrated Industrial Policy for the Globalisation Era Putting Competitiveness and Sustainability at Centre Stage" and this Action Plan is seen as the basis for an initiative boosting the EU Security Industry. This Communication sets out eight specific actions aimed at enhancing the competitiveness of the EU security industry. These activities include among others: the creation of EU wide standards for security technologies, the establishment of EU wide harmonised certification procedures for certain security technologies, the creation of "hybrid standards", standards that apply both to civil security and defence technologies, the extensive use of pre-commercial procurement for security research in Horizon 2020 and ensuring access to international markets.

It also takes into account the industry's strong societal dimensions, since security measures and technologies can have an impact on fundamental rights, and especially on privacy and

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[5] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0417:FIN:EN:PDF

personal data protection. The envisaged solutions comprise a wide array of options, from the concepts of "privacy by design" and "privacy by default" during the design phase, to the testing of the societal impact during the R&D phase, already addressed within the FP7 Security Theme.

Finally, it also gives emphasis to a better exploitation of synergies between civilian and defence orientated research.

More effort is expected to be channelled through the upcoming Research and Innovation Programme, called Horizon 2020.

3.1.1.2   Respond

The "Respond" pillar is also relevant for this research, since it comprises a number of actions within the scope of D11.1.2. Under the research headlines, FP7 includes Security as one of the research themes in order to develop the technologies and knowledge for building capabilities needed to guarantee the security of citizens against threats related risks such as terrorism and crime. It benefits from a budget of €1.4 billion for 2007-2013.

From what can be understood - taking a European Commission perspective - the EC put emphasis on security-related research focusing on security products because unlike the military domain, security does not have a tradition of forward planning for its future requirements from technology; due to its different nature, the market for internal security products in Europe remains highly fragmented; it would therefore help create a stronger European security industry if a dialogue on future technology needs in the field of internal security could be developed and expanded. The European Security Research and Innovation Forum (ESRIF)[6] was consequently set up in order to deliver a combined perspective of the EU security industry from various public and private stakeholders alike. This was done through the EU Security Research and Innovation Agenda (ESRIA). More information on this topic is presented in D11.1.3 "State of the Art on Security and Privacy Policies – Standardisation".

3.2 Relevant Security Projects

This chapter presents the numerous EU Security projects funded during the 7th Framework Program (FP7), as well as some others which have been produced before but which have been major inputs for SECUR-ED.

All the projects which have been identified are listed in an EXCEL file providing hyperlinks to most of them.

It was not in the scope of the project to look after the research projects developed at national level, however it has to be mentioned that SECUR-ED has made extensive use of a report produced under the American Transit Cooperative Research Program (TCRP)[7]: this Report 86 on "Public Transportation Security" has numerous volumes covering issues relevant to SECUR-ED:

- Volume 1 "Communication of Threats", 2002, relevant to SECUR-ED WP21 and WP31;

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[6]http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/crisis-and-terrorism/security-research/index_en.htm

[7] http://www.tcrponline.org/

- Volume 2 "K9 Units in Public Transportation: A Guide for Decision Makers", 2002, relevant to SECUR-ED WP31 and WP34;

- Volume 3 "Robotic Devices: A Guide for the Transit Environment", 2003, partly relevant to WP32;

- Volume 4 "Intrusion Detection for Public Transportation Facilities Handbook", 2003, relevant to WP32;

- Volume 5 "Security-Related Customer Communications and Training for Public Transportation Providers", 2004, relevant to WP38;

- Volume 6 "Applicability of Portable Explosive Detection Devices in Transit Environments", 2004, relevant to WP34;

- Volume 7 "Public Transportation Emergency Mobilization and Emergency Operations Guide", 2005, relevant to SECUR-ED WP31, WP37, WP44;

- Volume 8 "Continuity of Operations (COOP) Planning Guidelines for Transportation Agencies", 2005, relevant to SECUR-ED WP37;

- Volume 9 "Guidelines for Transportation Emergency Training Exercises", 2006, relevant to SECUR-ED WP38, WP45;

- Volume 10 "Hazard and Security Plan Workshop: Instructor Guide", 2006, relevant to WP31, WP38, WP52;

- Volume 13 "Public Transportation Passenger Security Inspections: A Guide for Policy Decision Makers", 2007, relevant to SECUR-ED WP31 and WP38.

Complementary to the information provided in these pages, UITP produced also an EXCEL file containing all the other identified security projects that have been analysed, but have not been considered as too relevant in the context of the SECUR-ED tasks.

It can be downloaded at:

SECUR_ED_D11_1_2_Appendix_EU_R&D_Projects.xls

SECURITY EU R&D PROJECTS WITH SECUR-ED RELEVANCE

All the information below has been gathered from the CORDIS website[8].

PROJECT ACRONYM & PROJECT TITLE	SECURITY AREA & PROJECT OBJECTIVE	PROJECT FEATURES	PARTNERS & COORDINATOR	REMARKS
ACRIMAS: Aftermath Crisis Management System-of-systems Demonstration	Restoring security and safety in case of crisis. Crisis management and preparation of a demonstration project	SA, €1.67M (EU: €1.11M) 2011-02-01 to 2012-05-31	Coordinator: FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V (DE) Partners from GR, IT, NL, FI, TR, BE, SE, DE, F, CZ (Research Institutes (including JRC), Suppliers)	ACRIMAS addressed crisis management as a system-of-systems integrating diverse organisations and components with different cultures, policies and assets, and various stakeholders and procurement schemes, and incorporating technology, procedures, organisational concepts, and human factors. It aimed at proposing a pragmatic CM integration process for a Demonstration Phase II implementation. ACRIMAS is based on wide multi-competence coverage, addressing organisational and legislative frameworks, situational awareness, decision support, logistics, communications, training and exercises, restoration of services and media involvement and following a practical, user-centric and scenario-based approach. It led to the validation of shared user needs and the definition of a demonstration and assessment method with associated metrics to define a continuous process of capability improvements enabling a gradual evolvement of CM capabilities, procedures, technologies, policies and standards through real field tests, facilitating European wide collaboration, cooperation and communication in CM and improving cross-fertilisation between MS organisations.
ADABTS: Automatic Detection of Abnormal Behaviour and Threats in crowded Spaces	Preparedness and planning, response. Early detection of abnormal behaviour	CP €4.48M (EU: €3.23M) 2009-08-01 to 2013-07-31	Coordinator: TOTALFORSVARETS FORSKNINGSINSTITUT (SE) Partners from NO, NL, BG, UK (Academics, ministries…)	A set of behaviour descriptors will be defined and models of threatening behaviour will be built. Algorithms will be developed that detect pre-defined threat behaviours and deviations from normal behaviour. For accurate and robust detection, data from audio and video sensors will be combined with context information. A real-time evaluation platform will be developed based on commercial heterogeneous hardware.

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[8] http://cordis.europa.eu/home_en.html

ADVISE: Advanced Video Surveillance archives search Engine for security applications	Security systems integration, interconnectivity and interoperability. Design and develop a unification framework for surveillance-footage archive systems	Focused research project €4.24M (EU: €2.99M) 2012-03-01 to 2015-02-28	Coordinator: ENGINEERING - INGEGNERIA INFORMATICA SPA (IT) Partners from UK, GR, ES, IT, BE (Research Institutes, Authorities, Security Agencies, Consultants)	ADVISE aims to design and develop a unification framework for surveillance-footage archive systems, in an effort to deal with the increasingly critical need to provide automated and smart surveillance solutions. The ADVISE system will be split into two major components: performing the semantically enriched, event based video analysis, which will offer efficient search capabilities into video archives and sophisticated result visualisation, taking into account the variety on the technical components of the surveillance systems, producing video repositories with different compression formats, indexing systems, data storage formats sources; addressing the legal, ethical and privacy constraints that apply to the exchange and processing of the surveillance data. Towards interoperability, the exchanged content and the associated metadata will be transformed into a common format. A Dedicated ADVISE Engine will be developed per peer authority in order to efficiently deal with each peer authorities technical and Legal/Ethical/Privacy specificities. The components of ADVISE will help the law enforcement authorities fight against crime and terrorism via efficient evidence mining into heterogeneous video archives.
AIRSECURE: Risk-based detection and protective filtration system for airports against airborne chemical, biological or radiological hazards	Security of infrastructures and utilities. Protection against airborne CBR materials	FP6 CRAFT project 1.45M€ (EU 0.77 M€) 2005-09-01 to 2007-10-31	Coordinator LIFA AIR LTD (FI) Partners from FI, NL, UK, IT, SP (Research Institutes, SMEs, Industry)	The AIRSECURE system improves the security of passengers and workers at airports against CBRN threat agents by a comprehensive approach including risk analysis for identifying the high-risk areas, novel protective filtration systems, proper air distribution, and detectors for early warnings of threat. The main idea of the AIRSECURE solution is to combine promising new filtration technologies for removal of both particulate and gaseous hazardous agents with a protective filtration unit. These distributed units can be flexibly and quickly installed in the supply air of the high-risk areas. The very low flow resistance of the filter allows its installation without extensive modifications to the ventilation systems. New developed particle detectors monitor the performance of the filtration system for maximum security. The optimum number and location of both particle and gas detectors and protective filtration systems are based on risk analysis. The secure air-filtration and advanced warning systems can deter the attacks, and reduce the effects of a CBRN agent release by removing the toxic agents from supply air of the building. **The project is very relevant for protection of PT infrastructures and occupants against CBRN agents dispersed in enclosed spaces.**

ARCHIMEDES: Support to security end users	Security Research coordination and structuring. Increase Security R&D uptakes	SA €1.54M (EU: €1.35M) 2012-01-01 to 2014-12-31	Coordinator: EUROPEAN ORGANISATION FOR SECURITYSCRL (BE) Partners from PO, BE, ES, FR, E, IT (Research Institutes, Ministries, Consultants)	Weak participation of end-users & operators (EU&O) in all the stages of security research is jeopardizing the competitiveness of new solutions & services and Europe's security. The objective of the project is to increase the R&T uptake. It will: Develop an Innovation Management methodology enabling EU&O to efficiently benefit from R&T results and promote a common innovation culture; Start a sustainable process for the EU&O driven definition of common operational needs & early R&T demands aligning EU research agendas with EU & EMS security policies; Enhance EU&O participation in all stages of EU research activities - agenda-setting, participation in projects, improvement of the legal and operational environment, definition of testing, validation and certification procedures, implementation; Promote security EU&O networking and a permanent public-private dialogue through the creation of a specific Security Forum linking existing networks. The project shall organise for specific EU&O sectors 10 roundtables held in different EU countries and three conferences and video/web conferences on specific topics. **Of these roundtables, three would be particularly relevant for the SECUR-ED project in terms of the core topic they will tackle: land transport (foreseen for 2013), critical infrastructures (foreseen for 2014), and civil protection and disaster management (foreseen for 2014). These RTs represent ideal opportunities for the SECUR-ED consortium to present its project results.** Validated findings will be provided as input to the EC Security Advisory Group for the planning of future security research activities, and possibly to the Security Research Programme Committee and other networks of stakeholders (ENISA, Frontex, Europol etc.).

ANVIL: Analysis of Civil Security Systems in Europe	Security and society. Improve Security situation in EU	SA €2.20M (EU: €2.01M) 2012-03-01 to 2014-02-28	Coordinator: RESEARCH MANAGEMENT AS (NO) Partners from UK, HR, NL, RS, SE, FR, PO, FI, IT, DE (Research Institutes, Foundation)	The project explores and compares relevant cultural phenomena and legal determinations of civil security across Europe. It starts by creating a framework to carry out a comparative analysis. It develops definitions of security effectiveness and efficiency that can be put into practice. It considers a representative sample of selected countries with diverse regional security architectures, in terms of sharing of responsibilities between public and private bodies and of citizens' awareness. It studies how the identified differences affect the effectiveness and efficiency of different kinds of security systems with regard to particular types of risks, crises and disasters, and countries and regions. It shall give specific advice, based on consensually agreed upon objective indicators and analysis, about what changes or modifications might result in improvements to the security situation in regions or countries where this is desired by EU policymakers, with the expected impact of giving the EU a clear view of which kind of systems could successfully enhance the security in certain regions, and of EU-added value to the debate concerning not one security fits all.
ARENA: Architecture for the Recognition of thrEats to mobile assets using Networks of multiple Affordable sensors	Security of infrastructures and utilities. Develop methods for automatic detection and recognition of threat	CP €4.86M (EU: €3.18M) 2011-05-16 to 2014-05-15	Coordinator: TOTALFORSVARETS FORSKNINGSINSTITUT (SE) Partners from UK, FR, NL, PO (Research Institutes, Consultants, Security Technology Manufacturers)	ARENA addresses the design of a flexible surveillance system for detection and recognition of threats towards deployment on mobile critical assets/platforms such as trucks, trains, vessels, and oil rigs (with the real demonstration focused on trucks, assessing the level of similarities between different cases and applications. The objective is to develop methods for automatic detection and recognition of threats, based on multisensory data analysis and enabling: - To robustly and autonomously detect threats to critical mobile assets in large unpredictable environments. - To reduce number and impact of false alarms towards optimized decision making. - To demonstrate automatic threat detection for the land case (truck). - To demonstrate an integrated, scalable and easy to deploy monitoring system. - To assess automated threat detection for the land case (train) and the maritime case (vessel, oil rig). - To evaluate detection performance and contribute to standards. - To respect and respond to social, legal and ethical issues arising through the design, implementation and deployment. The stakeholder group will play a pivotal role in the user requirements, threat analysis, scenario definition, evaluation and demonstration.

ASPIS: Autonomous Surveillance in Public transport Infrastructure Systems	Preparedness and planning. Development of a prototype surveillance system	CP €4.07M (EU: €2.61M) 2008-06-01 to 2012-10-31	Coordinator: THALES SECURITY SOLUTIONS & SERVICES SAS (FR) Partners from GR, PL, FR, BE (Academics, JRC, airport, shipping company, RATP…)	The project aimed at the development of a prototype surveillance system based on autonomous, smart monitoring devices that capture data only upon the occurrence of an incident, potentially dangerous for the passengers (like an explosion blast or the triggering of the fire detector). When triggered, these devices meant for the unattended surveillance of public transport and other public spaces provide a dedicated bi-directional communication channel between the emergency centre and the affected areas. The proposed system is modular both in terms of triggering and communication capabilities, so as to be of very wide applicability and utilise / complement any existing suitable infrastructure. **This project is regarded as very relevant for SECUR-ED.**
AVERT: Autonomous Vehicle Emergency Recovery Tool	Security of the Citizens. Deploy, extract and remove both blocking and suspect vehicles from vulnerable positions	Focused Research Project €3.69M (EU: €2.81M) 2012-01-01 to 2014-10-31	Coordinator: IDUS CONSULTANCY LTD (UK) Partners fromDE, CH, GR, UK (Research Institutes, Manufacturers, Consultants)	Vehicles provide an ideal delivery mechanism because they can be meticulously prepared well in advance of deployment and then brought in to the Area of Operations. Furthermore, a real and present danger comes from the threat of Chemical, Radiological, Biological and Nuclear (CRBN) contamination. The Autonomous Vehicle Emergency Recovery Tool (AVERT) shall provide a unique capability to Police and Armed Services to rapidly deploy, extract and remove both blocking and suspect vehicles from vulnerable positions such as enclosed infrastructure spaces, tunnels, low bridges as well as under-building and underground car parks. Vehicles can be removed from confined spaces with delicate handling, swiftly and in any direction to a safer disposal point to reduce or eliminate collateral damage to infrastructure and personnel. AVERT shall be commanded remotely and shall operate autonomously under its own power and sensor awareness, as a critical tool alongside existing technologies, thereby enhancing bomb disposal response speed and safety.

A4A: Alert for All	Restoring security and safety in case of crisis. Align alert procedures and processes	CP €4.88M (EU: €3.50M) 2011-03-16 to 2013-09-15	Coordinator: DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV (DE) Partners from DE, CH, GR, UK (Research Institutes, Consultants, Software Developers, Foundation)	Alert4All focuses on an extensive and interdisciplinary framework for crises management, covering all key enablers to improve the effectiveness of alert and communications towards the population. This improvement shall be measurable in terms of cost-benefit ratio, number of affected citizens timely reached by alerts, trust of citizens on alerts and intended vs. actual impact of alert strategies. Alert4All will provide solutions to align alert procedures and processes to contemporary crises (natural or man-made), available and emerging technologies, available information sources and trends in social behaviour and: -Develop a simulation tool that models the spreading of information and human behaviour according to key influencing factors such as crisis scenario, selected communications plans, social and cultural crowds; -Investigate the role of new media in the citizens' perception of the crisis and develop new media screening tools for authorities; -Develop an information management portal for authorities and first responders; -Propose new operational concepts (and training material) that allow cooperation between authorities and responders, overcoming regional and national barriers; -Design a communications system architecture and protocols allowing dissemination of alert messages over diverse communications means (terrestrial, satellite, new media); -Validate the concept in critical scenarios.
BESECU: Human behaviour in crisis situations: a cross cultural investigation to tailor security-related communication	Preparedness and planning, response. Investigation of cross-cultural and ethnic differences of human behaviour in crisis situations in order to better tailor security related communication, instructions and procedures	CP €2.7M (EU:€2.1M) 2008-05-01 to 2011-12-31	Coordinator: ERNST-MORITZ-ARNDT-UNIVERSITÄT GREIFSWALD (DE) Partners from DE, PL, CZ, ES, IT, UK, TR, SE (Universities, Emergency services)	The BESECU project report includes a brief summary of actions undertaken by the project. The report notes that based on reports of survivors, a standardised psychological instrument, the BeSeCu-S, was developed in order to assess responses on a cognitive, behavioural and emotional way in survivors of following crisis situations: domestic fire, fire in a public building, terrorist attacks, flood and earthquake on a cross-cultural level.

BIO-PROTECT: Ionisation-based detector of airborne bio-agents, viruses and toxins for fast-alert and identification	Security of the Citizens. Detection and identification of airborne bacteria, spores, viruses and toxins	CP €3.96M (EU: €3.13M) 2010-06-01 **to** 2013-05-31	Coordinator: LAGRANGE SARL (FR) Partners from DK, UK, DE, LV, FR, FI (Research Institutes, Manufacturers)	Biological agents and viruses terrorist attacks' success depends on concentrating a sufficient amount of pathogens in a defined area. Hence safeguarding a certain area demands the detection of pathogenous bacteria, spores and viruses in various matrices (e.g. Anthrax in flour or sugar) or suspicious aerosols by triggering a short-term alarm and its validation as well as the identification of the type of threat. The concept of BIO-PROTECT is the development of a fast-alert, easy-to-use device to be applied for detection and identification of airborne bacteria, spores, viruses and toxins. Its technology is based on bioaerosol detection by fluorescence, scattering and background aerosol measurement followed by ionization of air flow and analysis of the spectrum of relative speed of passage, which, in turns, enables identification of harmful biological agents. This device may also be used for controlling potential accidental release of bio-agents from biotechnology laboratories. **This project is regarded as slightly relevant for SECUR-ED as a capability.**
CBRNE: CBRNE related testing and certification facilities - a networking strategy to strengthen cooperation and knowledge exchange within Europe BRNEmap / Road-mapping study of CBRNE demonstrator	CBRNE. Develop Test Beds	CSA €0.83M (EU: €0.83M) 2009-02-01 **to** 2011-07-31	Coordinator: SEIBERSDORF LABOR GMBH (AT) Partners from FR, DE, SE, NL, CH (Ministries and Academics)	The project recommended that one system in the suggested demonstrator objects (Enabler) could be test beds. The Test bed is a virtual interconnection of test facilities and laboratories to support testing, exploration, and validation of new technologies as well as integrated solutions. The Test bed also enables users from different backgrounds to come together, explore potential solutions, share, and discuss organization insight across organizational and jurisdictional boundaries to enhance the development of a common information framework, and assist in the development of suitable standards. Follow-up project: SLAM (Standardisation of laboratory analytical methods) (started spring 2012)
CAST: Comparative assessment of security-centered training curricula for first responders on disaster management in the EU	Preparedness and planning, response. Restoring Security and Safety in case of crisis	CP €2.72M (EU: €1.97M) 2009-07-01 **to** 2011-06-30	Coordinator: UNIVERSITAET SALZBURG (AT) Partners from DE, AT, ES, SE, HU, CZ, UK (Ministries, Police and Academics)	The project developed a comparison of security-centred training course curricula on disaster management for first responders in EU member states, comparatively assessed with a specially developed matrix-based software: (1) for all EU member states (2) as derived from international best practices.

CIPRNet: Critical Infrastructure (1) Preparedness and Resilience Research Network	Critical infrastructure protection. Creation of an expert network	CP & Network of Excellence 2013-03-01 to 2017-02-28	Coordinator: FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V (DE) Partners including UIC	The objectives are to implement new capabilities for supporting more effective responses to disasters that affect or originate from multiple CI. In particular, create added-value decision-support capabilities for national and multi-nation emergency management and CI owners based on integrating technologies available at CIPRNet partners. Also to support the secure design of Next Generation Infrastructures, demonstrate timely, actionable, risk-informed CIP analyses and strategies for authorities (both nationally, cross-border, and EU-wide) and CI owners. **This Network of Experts is regarded as relevant for SECUR-ED. The project just started in March 2013.**
COPE: Common operational picture exploitation	Preparedness and planning, response. Achieve a step change in information flow	CP €3.89M (EU: €2.54M) 2008-02-01 to 2011-01-31	Coordinator: TECHNICAL RESEARCH CENTRE OF FINLAND (FI) Partners from RO, DE, PT, SE, UK, IE (Academics, Ministries and suppliers)	The project integrated COTS solutions and novel technologies to achieve a step change in information flow both from and to the first responders in order to increase situational awareness across agencies and at all levels of the command chain. A user-driven approach was taken to develop new technologies for supporting user information requirements at the scene of the event.
COUNTERACT (FP6): Cluster Of User Networks in Transport and Energy Relating to Anti-terrorist ACTivities	Preparedness and planning, response .Improve security against terrorist attacks aimed at public passenger transport, intermodal freight transport and energy production and transmission infrastructure	CA €3.48M (EU:€3.48M) 2006-06-09 to 2009-04-06	Coordinator: UITP (BE) Partners from SE, BE, UK, FR, NO, ES, IT, DE, NE, GR, CZ (Research Institutes and JRC, Ministries, Sector associations, Railway Undertaking, Consultants)	The project aimed at assessing and recommending feasible and cost-effective solutions for the improvement of security related to terrorist attacks in four key sectors of critical infrastructure: - Surface Passenger Transport - Freight Transport - Air Transport - Energy. Each of these sectors was represented by a thematic cluster comprising a network of Users and a number of Partners, one of which is a security company COUNTERACT reports for Surface Passenger Transport are available at: http://www.uitp.org/eupolicy/projects-details.cfm?id=433 The COUNTERACT Project produced a series of guidelines and recommendations to improve the security of public transport networks in Europe which have been largely shared by urban transport operators as follows: PT4: Guidelines for Conducting Risk Assessment in Public Transport Networks; PT5: Public Transport Security Planning, Organisation, Countermeasures and Operations Guidance; PT7: Potential terrorist action – decision-making; PT9: Anti-terrorism public awareness campaigns. **COUNTERACT is a major and very relevant input for SECUR-ED.**

CPSI: Changing perceptions of security and interventions	Preparedness and planning, response. Understanding factors that cause citizens' feeling of security and insecurity	CP €2.7M (EU:€2.2M) 2008-04-01 to 2010-03-31	Coordinator: NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPE LIJK ONDERZOEK - TNO (NL) Partners from NL, AU, UK, FR, SE, BE (Universities and ministries)	The goal of the project was to provide governments and related organizations with a methodology to increase insight into the determinants of actual and perceived security, and into which interventions are effective for increasing security. The deliverables represent practical and ready-to-use tools, which can be employed by policy makers and other end-users, to formulate policy regarding security. This project was a re-submittal of a proposal for PASR in 2006. It covered: a conceptual model of actual and perceived security and their determinants; a methodology to collect, quantify, organize, analyse and interpret security-related data; a data warehouse to store and extract for analysis data amassed using the methodology, and a validation study to test the model, methodology and data warehouse. The project deliverables can be used by end-users to assess security at the international, national and local levels and to draw conclusions regarding such issues as: What are the levels of actual and perceived security in specific locations? Which interventions work where? Which interventions should be implemented in which locations?
CREATIF: CBRNE related testing and certification facilities - A networking strategy to strengthen cooperation and knowledge exchange within Europe	CBRNE. Establishing a network of testing facilities for CBRNE detection	CA €0.83M (EU:€0.83M) 2009-02-01 to 2011-07-31	Coordinator: SEIBERSDORF LABOR GMBH (AT) Partners from DE, NL, SE, FR, CH (Research Institutes, Ministries/Public Authorities)	The project aimed at establishing a network of testing facilities for security related products and services focused to CBRNE detection. This network is dedicated to provide a communication platform for technology users and decision makers, providers and testers to discuss the future development of testing and to support user decisions and industry product / service developments. Topical workshops allowed to cover specific themes in the field of certification and testing of CBRNE detection equipment, including a careful examination of existing testing protocols and relevant standards and suggestions regarding harmonization of testing in the field of CBRNE detection both on a geographic scale within EU-27 and on a technical level (amending testing protocols by covering human factors and operational / scenario based testing). The project produced a roadmap for a European certification system for CBRNE detection products & services and a concept on the continuation of the CREATIF network as an autonomous body. CREATIF also suggested a generic strategy for expanding the network further to security related products & services. **The project is regarded in relation with SECUR-ED as relevant for CBRNE sensors and the protocols to test sensors.**

CRESCENDO: Coordination action on Risks, Evolution of threatS and context assessment by an Enlarged Network for r&D rOadmap	Preparedness and planning. Restoring Security and Safety in case of crisis	CSA €0.52M (EU: €0.50M) 2009-07-01 to 2011-06-30	Coordinator: COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES - CEA (FR) Partners from NL, AT, DE, IE, SE, TR, IT, GR, FR, NO, ES, FI, BE (Ministries, Academics, Suppliers…)	Building on the experience of the PASR SeNTRE and STACCATO, the project addressed the request of the users and the experts who attended these first workshops to continue working together and to enlarge their activities. They raised concerns on how to improve the innovation process, how to create a real European security market and how to strengthen European competitiveness by closing the loop between academia, industry, including SMEs and the users. CRESCENDO supported the work of the new European Security Research & Innovation Forum (ESRIF). **Although focusing on generic security research roadmap, the project is regarded as slightly relevant for SECUR-ED.**
CrisComScore: Developing a crisis communication scorecard	Preparedness and planning. Harmonise technical requirements for communication means	CP €1.01M (EU: €0.80M) 2008-02-01 to 2011-04-01	Coordinator: JYVAESKYLAEN YLIOPISTO (FI) Partners from IL, FI, NO, EE (Academics)	The project identified indicators for effective crisis communication provided in the form of a communication scorecard to enhance learning of governmental organisations aimed at continuous improvement. The scorecard is not filled with metrics but although it delivers score it has a qualitative approach using assessment. See www.crisiscommunication.fi The project calls for standards for technical requirements for communication means (similar alarm numbers, a similar meaning of sirens, a minimum capacity set of crisis call centres and crisis websites, an approach of inclusiveness so that e.g. blind people will be reached effectively by warning messages).

| CRISYS: Critical Response in Security and Safety Emergencies | Restoring security and safety in case of crisis. Improve operational capacities and capabilities of Member States | SA €0.81M (EU: €0.74M) 2011-02-01 to 2012-05-31 | Coordinator: EOS-EUROPEAN ORGANISATION FOR SECURITY SCRL (BE) Partners from IT, UK, FR, GR, PT, RO, FI, ES, NL (Research institutes, Manufacturing and software industry - including THALES, consultants, National agency for Energy Distribution) | The Lisbon Treaty increases the role of the EU to support Member States crisis management (CM) and allows for stronger coordinated activities outside the EU. CRISYS aimed at developing a strategic roadmap for full implementation of an integrated and scalable crisis management system and to provide a solid basis for the description of a full user driven demo programme. Uniquely CRISYS engaged users and suppliers in pursuit of practical outcomes that can be rapidly transferred into the operational environment. CRISYS capitalised on relevant projects in the domain, whilst forging solid networks and wide awareness with significant users, first responders, governments, suppliers and other bodies in the field of CM in order to:
 -Identify and analyse the state of the art in the current legacy environment of CM across the EU (policies, systems, societal)
 -Gather information from users with regard to their requirements on operational, procedural, regulatory, technological and standards issues
 -Place emphasis on the protection of the citizens by engaging and developing close contact with local and national administrations responsible for CM and with first responder organisations
 -Assess capacity and competency gaps in current and foreseen performance to recommend validated demonstration cases regarding user's requirements
 -Propose a strategic roadmap for the Phase2. This roadmap will be set in the context of current and future relevant factual and political trends, as well as economic and supply market issues
 -Ensure EU wide dissemination of information with these activities being supported by an enlarged User platform and other key EU and international stakeholders
 The Crisys project, which has been finalised, has produced as output a 'Roadmap on Critical Response in Security and Safety Emergencies' which could be relevant for the SECUR-ED project. The Roadmap can be found at: http://www.eos-eu.com/files/Documents/CRYSIS/CRISYS_deliverables/CRYSIS_D4_3_The_results_of_the_CRISYS_project.pdf |

CUSTOM: Drugs and Precursor Sensing by Complementing Low Cost Multiple Techniques	Drug precursors. Drug detection	CP €5.30M (EU: €3.49M) 2010-06-01 to 2013-05-31	Coordinator: SELEX SISTEMI INTEGRATI SPA (IT) Partners from FI, IT, FR, ES (Suppliers, consultants, Research institutes, Ministries, Foundations, National agencies)	The project focus is to screen and identify specific molecules for drug precursors detection even at very low concentration in lab testing by employing multiple techniques, integrating them in a complex system which employs them in a complimentary approach in order to identify an optimum trade-off between opposite requirements: compactness, simplicity, low cost vs. sensitivity low false alarm rate, selectivity, able to provide screening over a large number of compounds and to discriminate them with low false alarm (FA) and high probability of detection (POD) . Known techniques, as fluorescence are improved by mean of novel proteins, as antibodies to extend Probability of Detection (PoD). The techniques are: 1. A low cost, high data throughput sensing technique, based on UV-Vis-NIR fluorescence. Fluorescence is enhanced by development of Organic macro-molecules sensitive to specific classes of compounds of interest (ephedrine, pseudoephedrine, P2P,) in the domain of drug detection. The fluorescence analysis is based on an opto-chip which can incorporate an array of different properly engineered fluorescent chemical protein able to bind to the analytes with an immuno-type reaction. An array of classes of compounds can be thus very fast discriminated by one-shot measurement. 2. A high sensitivity and selectivity, but compact and low weight, spectroscopic sensing technique in MIR IR optical range, based on Laser Photo Acoustic Sensor. Detection of drug precursors based on spectroscopic techniques can guarantee a good selectivity, a low Probability of False Alarm and a suitable operation speed. The size of the photo-acoustic cell can be made as small as possible for a compact sensor and, depending on the performances, it can cost down to 1000.

DECOTESSC1: DEmonstration of COunterTErrorism System of- Systems against CBRNE phase 1	CBRNE counter terrorism. Prepare a future phase 2 of the demonstration project CBRNE counterterrorism	SA €1.59M (EU: €1.01M) 2010-04-01 to 2011-06-30	Coordinator: NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPE LIJK ONDERZOEK - TNO (NL) Partners fromFI, DE, AT, SE, FR, BE, ES (Research institutes including JRC)	The project proposed the creation of a comprehensive and effective/efficient CBRNE counterterrorism system both nationally and internationally, where resources can be pooled (given the low probability character of the threat) and where security-related countermeasures match or use solutions from the general security, safety, environment, health and/or defence domain. It was based on a thorough understanding of the system-of-systems structure, and proposed the requirements for an ideal system as well as a description of the current state-of-the art. A gap analysis revealed and ranked the differences between the current situation and the ideal situation. Also, in order to fill the gaps a strategic roadmap has been developed to guide the improvement cycle by proposing technological and organizational topics to be addressed and implemented in a future phase 2 of the demonstration project CBRNE counterterrorism. On top of the efforts of the Core Group, the project considered the needs of the various stakeholders (government representatives, local authorities, users with different think-tanks, universities, RTOs and industry (including SMEs)) by direct interaction, by involving the stakeholders into an Expert Group and by organizing workshops, a mid-term meeting and a final symposium. **From SECUR-ED point of view, the project is regarded as Generic, with a focus on Gaps and Roadmap for CBRNE demo.**
DEMASST – Phase I: Security of critical infrastructures related to mass transportation	Security of infrastructures and utilities. Input for the demonstration project SECUR-ED	SA €1.84M (EU: €0.96M) 2009-01-12 to 2010-05-11	Coordinator: TOTALFORSVARETS FORSKNINGSINSTITUT (SE) Partners from NO, FR, DE, ES, NL, FI, IT (Research institutes, Suppliers (Thales…), Foundation)	The project was a follow-up of SeNTRE and STACCATO. DEMAAST took on the dual challenges of analysis and networking necessary to define and achieve commitment for the strategic roadmap for the Phase 2 Demonstration project SECUR-ED. DEMASST developed a highly structured approach to the demonstration programme built on identifying the main security gaps and the most promising integrated solutions, utilising sufficiently mature technologies, for filling them. In the type of Concept Development & Experimentation approach proposed the experiments must be designed and analysed so as to be maximally informative, as to identify synergies between demo tasks and as to use less costly methods than full scale demonstration whenever that helps a broader awareness. DEMASST built a methodological infrastructure also putting innovation on top of the agenda. This approach has utility also beyond transportation. **This project is regarded as relevant for SECUR-ED as a preparatory action used for Phase 1. Its technological solutions, such as behaviour detection systems, can be used in later phases of SECUR-ED in order to identify suitable technological solutions for the demonstrator work packages.**

DETECTER: Detection technologies, terrorism, ethics and human rights	Security and Society. Increasing the compliance of counter-terrorism with human rights and ethical standards	CP €2.42M (EU: €1.87M) 2008-12-01 to 2012-01-31	Coordinator: UNIVERSITY OF BIRMINGHAM (UK) Partners fromUK, IT, NO, DK, SE, FI, CH (Research institutes, Human Rights centres)	DETECTER aimed at increasing the compliance of counter-terrorism with human rights and ethical standards in the rapidly changing field of detection technologies. The project addressed the increasingly international character of counter-terrorism, the increasing use of informal mechanisms for altering law-enforcement practice to meet the threat of terrorism, and the great variety of detection technologies and their uses. The partners agreed on the need for human rights standards to be informed by dialogue with both manufacturers of detection technology and law-enforcement officials directly involved with counter-terrorism who use this technology and influence the development of products. The project combined applied ethical and legal research with this dialogue in order to affect the design and use of products, to make ethical and legal research better informed, and to innovate conceptually in a field that is developing with great speed. **The project is regarded as relevant for SECUR-ED.**

| DIRAC: Rapid screening and identification of illegal Drugs by IR Absorption spectroscopy and gas Chromatography | Drug precursors.Drug detection | CP €4.26M (EU: €2.99M) 2010-06-01 to 2013-11-30 | Coordinator:CONSORZIO CREO-CENTRO RICERCHE ELETTRO OTTICHE (IT)Partners from BE, CH, IT, RO, FI (Research institutes, Investigation bureau, Ministries, suppliers) | The goal of this project is to develop an advanced sensor system, that combines miniaturized Gas Chromatography (GC) as its key chemical separation tool, and Hollow-Fiber-based Infra Red Absorption Spectroscopy (HF-IRAS) as its key analytical tool to recognize and detect illicit drugs, key precursors and potential derivatives.The DIRAC sensor is developed to be used on the field primarily by customs officers for controls at the EU external frontiers and by law enforcement personnel for intra-Community checks as a rugged and hand-portable unit. It shall perform rapid detection of key chemicals; reject interferents with minimal false positive alarm rate; perform advanced data analyses such as similarity evaluation between the chemical structures of the unknown sample with that of controlled/illicit substances. Currently, GC-IRAS (through FTIR implementation) is, together with GC-MS (Mass Spectrometry), the most powerful technique for the identification and quantification of amphetamines. However, so far GC-IRAS has been implemented only as bench-top instrumentation for forensic applications and bulk analysis down to milli- and micro-gram quantities. In DIRAC, the use of silicon-micromachined GC columns, solid state lasers, and hollow fibers IR, will allow to develop a GC-IRAS sensor that features hand-portability and prompt response for field operation and is capable to perform both bulk analysis and trace analysis with nano-gram sensitivity.The DIRAC sensor will further feature an advanced sampling device, that separates the analyte from larger amounts of interfering materials (dust, skin particles) by electrostatic charging; and an advanced silicon micro-machined pre-concentration device, capable to treat sequentially both volatile ATS substances and non volatile ammonium salts of the amphetamines. The main output of the DIRAC project will be a fully functional sensor prototype from sampling to read out. **The project is regarded as slightly relevant for SECUR-ED.** |

DITSEF: Digital and innovative technologies for security and efficiency of first responders operation	Restoring security and safety in case of crisis. Increasing effectiveness and safety of First Responders	FRP €4.18M (EU: €2.80M) 2010-01-01 to 2012-12-31	Coordinator: SAGEM DEFENSE SECURITE (FR) Partners from IT, CZ, FR, GR, NE, BG (Research Institutes, National Security Authorities, Security Industry)	DITSEF aims at increasing the effectiveness and safety of First Responders by optimal information gathering and sharing with their higher command levels. DITSEF will provide: self organising robust ad-hoc communications where the existing infrastructure may be compromised, allowing communication between the First Responders and between them and their command level; accurate novel 3D positioning in indoor environments; sensors that offer a reliable overview of the situation and of the potential threats (explosives, chemicals, fire, etc.); enhanced vision for the FR in visually-impaired conditions, through ingenious and unprecented HMIs consisting of sensors-based visual elements, showing spatial features and thermal imagery overlaid on the direct perception of the First Responder. Attention will be paid to standardisation issues. The operational value of the integrated solution will be demonstrated through users defined scenarios in a real operational environment. Five dedicated workshops involving end-users from both the Critical Infrastructures' domain and the First Responders' domain will allow the collection of users requirements, operational scenarios and the cross-fertilisation of information on operations and procedures of players from different states and domains; they will create awareness on project results and prepare their take-up. **The project is regarded as slightly relevant for SECUR-ED for some capabilities that can be used in mass transportation like indoor localisation.**
EMILI: Emergency management in large infrastructures	Security of infrastructures and utilities Energy/Transport communication grids, Supply chains. Improving data management and control systems of large infrastructures	CP €4M (EU: €3.1M) 2010-01-01 to 2012-12-31	Coordinator: FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V (DE) Partners from DE, RS, CH, ES, NL (Academics and consultants)	Project developing a new generation of data management and control systems for improving the security of large infrastructures (CIs) - like power grids and telecommunication - including appropriate simulation and training capabilities. It is dealing with ontologies (W3C standards for languages like RDF/S and OWL) and some relationships to domain standards (for instance CIM for power grids).

E-SPONDER: A holistic approach towards the first responder of the future	Preparedness and planning, response, recovery. Restoring Security and Safety in case of crisis	CP €12.92M (EU: €8.79M) 2010-07-01 to 2014-06-30	Coordinator: EXODUS A.E. (GR) Partners from NE, DE, CH, TW, FR, PL, GR, IT, ES (Research Institutes, Software developers, Electronic, Telecom and Defence industry)	The E-SPONDER project involves real-time data-centric technologies providing actionable information and communication support to first responders resulting in real time synchronization between First Responders on the ground (police, rescue, fire fighters) and out-of-theatre command and control centres (CC). The E-SPONDER project is based on the fusion of variable forms of field-derived data within a central system allowing to provide information analysis and decision support applications at designated CC locations in order to provide in situ support to first responders that operate in Critical Infrastructures. Statistics show that efficient emergency system can reduce accident losses to 6%, compared with situations without emergency system. E-SPONDER is targeting the following objectives: improvement of front end data collection technologies installed both on portable and fixed platforms, providing a flexible yet comprehensive coverage of the affected area; data fusion and analysis to provide real-time decision support; set up of easily accessible web-portals and ICT support to the First Responders. Once E-SPONDER elements are ready for deployment they will be integrated and extensively field tested. Opportunities for further standardisation (through ETSI EMTEL) shall be addressed.
ESS: Emergency support system	Preparedness and planning, response, recovery. Provide real-time decision support	CP €14.03M (EU: €9.14M) 2009-06-01 to 2015-05-31	Coordinator: VERINT SYSTEMS LTD (IL) Partners from FR, IT, DE, CZ, IL, ES, GR, UK, SE (Research Institutes, Consultants, Civil Protection, Aeronautics and Defence Industry, Telecom Industry)	The Emergency Support System (ESS) project involves real-time data-centric technologies providing actionable information and communication support to first responders resulting in real time synchronization between First Responders on the ground (police, rescue, fire fighters) and out-of-theatre command and control centres (CC). The ESS project is based on the fusion of variable forms of field-derived data within a central system allowing to provide information analysis and decision support applications at designated CC locations. ESS is targeting the following objectives: improvement of front end data collection technologies installed both on portable and fixed platforms, providing a flexible yet comprehensive coverage of the affected area; data fusion and analysis to provide real-time decision support; set up of easily accessible web-portals. ESS will be field tested in three different scenarios, including a stadium evacuation, a forest fire and toxic waste dump accidents.

| ETCETERA: Evaluation of critical and emerging technologies for the elaboration of a security research agenda | Security technologies. Critical and emerging technologies for a security research agenda | CP €2.00M (EU: €1.51M) 2011-10-01 to 2013-09-30 | Coordinator: Fraunhofer INT, Partners: FOI, TECNALIA, ISDEFE, UDE, AIT, CEA, TNO, VDI-TZ, MPH, ASTS, COMSEC, CSSC, SSBF | The ETCETERA project is a contribution to efficient security research planning on a European level. Its first aim is to identify Critical and Emerging Technologies relevant to security in the European context. The results will be condensed into recommendations for a European Security Research Agenda that deals with upcoming technological threats and opportunities. ETCETERA's Structure is separated into strands, one for Critical and the other for Emerging Technologies. These strands are separate but interrelated. Each strand is further divided into three Work Packages that will be carried through in a sequential manner. Two Consultation Campaigns will generate input from technical experts, end-users, and public authorities. Two kinds of objectives are pursued by the ETCETERA project: - Several qualified lists concerning Critical and Emerging Technologies and balanced research plans to deal with current and future needs will be delivered. - Novel approaches and methods for the evaluation of Critical and Emerging Technologies and for strategic security research planning will be developed and applied. **The project is regarded as relevant for SECUR-ED even if not centred on public transport, as it identifies emerging critical technologies for security.** |
| EUMASS: European Mass-Transit System Security Risk Assessment and Audit Methodology | Preparedness and planning, response | ??? 2009-05-01 to 2011-05-31 | Coordinator: D'Appolonia S.p.A. (DAPP) (IT) Partners: Ingeniería de Sistemas para la Defensa de España, S.A. (ISDEFE); Azienda Trasporti Milanesi (ATM); Consorzio Train (TRAIN) | The general objective of EUMASS - building up on the outcomes of COUNTERACT and the EURAM project - was the delivery of an unified and innovative solution for risk assessments that can be used by all European mass transit operators. The EUMASS approach process articulated on three main phases: - Initial Assessment Audit: to acquire and evaluate any information to be used for the risk assessment. - Semi-quantitative Assessment: to evaluate the security risk extent, identify mitigation actions and residual risk and also for identifying the most cost-effective countermeasures (people, procedures and equipment) to help decision-makers to prioritize resources.- System Monitoring Audit: as part of the Security Management Process to keep under control any change in the information acquired by the Assessment Audit providing a structured method to verify continuously the implementation of the selected countermeasures and to identify the relevant changes necessary to ensure the protection of the system. In addition, a software tool has been developed offering the possibility to the assessor to store and update results easily to support the entire risk analysis cycle by providing the following functionalities: knowledge base management, risk analysis scenario management, risk analysis calculation and evaluation, and auditing support management. This interactive and user-friendly IT tool was supported by means of test cases based on real scenarios |

				carried by ATM .
EU-SEC II: Coordinating National Research Programmes and Policies on Security at Major Events in Europe	Security Research coordination and structuring. Harmonization of national research policies	CA €2.83M (EU: €2.53M) 2008-07-01 to 2011-10-31	Coordinator: UNITED NATIONS INTERREGIONAL CRIME AND JUSTICE RESEARCH INSTITUTE (IT) Partners from FR,UK,NL,IT,PT,IE,FI,SE,MT,EE,LV,CY,DE,GR,RO,SL,HU,ES,AT,BG,DK,SK (Ministries, Police, Research Institutes)	The project EU-SEC II built upon the EU-SEC project. Making full use of the capabilities and experience of its Consortium Partners - governmental authorities from EU MS - and avoiding overlapping with ongoing activities, EU-SEC II aimed at responding to the dispersion of efforts and lack of coherence that hinder firstly the interaction between European technology research stakeholders and secondly the coordination between national and European efforts to achieve cost effective security solutions. The main goal was to contribute to the harmonization of national research policies and to the common understanding and identification of needs and priorities among its partners, which constitute the demand side of the EU technology market. EU-SEC II carried out networking activity and set up and implemented joint activities to identify common research policies in the field of security at Major Events.

FASTID: FAST and efficient international disaster victim IDentification	Preparedness and planning, response, recovery. Victim identification	CP €2.99M (EU: €2.27M) 2010-04-01 to 2013-03-31	Coordinator: THE INTERNATIONAL CRIMINAL POLICE ORGANIZATION (FR) Partners from DA, DE, UK (Police bodies, Research Institutes, Consultants, Software Developers)	The FASTID project objective is to develop an information management and decision support system for improved disaster victim identification (DVI), speeding up the correct identification of the injured and dead following disasters with multi-national victims Training methods for optimal DVI with the system will also be developed. The computer supported methodology will consist of a system to be used worldwide matching automatically missing persons and those discovered injured or dead, before the final confirmation by an expert. The system and training methods will incorporate full consideration of different national, religious and cultural considerations of how to deal with the injured and dead as well as how best to name different identifiers used to match missing and found persons. The system will support international information sharing and cooperative planning across organisations and nations, also dynamically in an ongoing crisis. It will provide improvement with respect to performance, reliability, speed and cost. The project has been initiated by INTERPOL and the German Federal Criminal Police Office after identifying PLASSDATA software as a good basis to start development. PLASSDATA develops the core DVI system and Research Institutes develop identification methods based on image retrieval and body modifications as well as international operational commonality. The results will be used by INTERPOL and as many of its 187 national member countries as possible. PLASSDATA foresees a return on its investment through the sales of DVI software and of other products based on the knowledge developed in the project for the DVI system including Rich Internet Application (RIA) software. **FASTID is regarded as relevant for SECUR-ED.**

FESTOS: Foresight of evolving security threats posed by emerging technologies	Preparedness and planning, response, recovery. Mitigating security threats of emerging technologies and new S&T knowledge	SA €0.97M (EU: €0.82M) 2009-03-01 to 2011-12-31	Coordinator: INTERDISCIPLINARY CENTER FOR TECHNOLOGICAL ANALYSIS AND FORECASTING (IL) Partners from DE, PL, FI, UK (Research Institutes and Consultants)	The FESTOS project aimed at identifying and assessing evolving security threats posed by abuse or inadequate use of emerging technologies and new S&T knowledge, and at proposing means to reduce their likelihood without hindering free generation and exchange of knowledge. The project scanned the unfolding technology landscape for potential security threats stemming from Robotics, Cognition, New Materials, Nano and Biotechnologies. FESTOS stimulated an "out of the box" anticipatory thinking and constructed threat scenarios analysing the impact of the identified threats on the background of envisioned security climates (societal context of security issues). Critical early-warning indicators have been identified and finally policy recommendations have been derived, aiming at novel means of preparedness. Adequate mix of foresight methods have been employed, e.g. horizon scanning, weak signals analysis, expert surveys, brainstorming, futures wheel, interactive scenario building, STEEPV analysis. Key European stakeholders are addressed in the project's dissemination plan.
FORESEC: Europe's evolving security: drivers, trends and scenarios	Restoring Security and Safety in case of crisis . Providing security responses with added-value and shared interest at European level	SA €0.94M (EU: €0.94M) 2008-02-01 to 2009-11-30	Coordinator: CRISIS MANAGEMENT INITIATIVE (FI) Partners from AT, BG, SE, UK, BE (National and International Research institutes, JRC)	The FORESEC support action focused on critical policy support and advice for security researchers and the community of official and non-official bodies involved in security, with a view to providing recommendations in the medium- to long-term timeframe on security responses in which there is particular added-value and shared interest to work at the European level. The project built a pan-European network around the European security foresight processes and initiated a societal debate on European security and security research. It enhanced the shared vision and facilitated the emergence of a coherent and holistic approach to current and future threats and challenges for European security and it produced results relevant for the broader security policy community and policy makers. FORESEC used participatory foresight methodology apt including the following elements: scanning, with a view to exploiting relevant elements, previous relevant work; creating and using participatory methods (an e-platform for exchange and interaction among stakeholders and experts in between face-to-face meetings, Delphi studies and focus groups where expert and non-expert opinions on a specific issue are collected and analysed); the development of descriptions of possible future crisis situations in order to anticipate and prepare for potential future scenarios; and the analysis of technological opportunities on the horizon with a view to analysing their impact for use in policy-making contexts. **The project is regarded as slightly relevant for SECUR-ED.**

FRESP: Advanced first response respiratory protection	CBRNE counter terrorism. Individual respiratory protection for first responders	CP €4.07M (EU: €3.03M) 2008-06-01 to 2012-05-31	Coordinator: ECOLE ROYALE MILITAIRE - KONINKLIJKE MILITAIRE SCHOOL (BE) Partners from UK, HU, GR, NL, ES (Research Institutes,Consultants, Suppliers)	In the current state of technology, individual respiratory protection for first responders consists primarily in a gas mask and an activated carbon filter. Filters protect either against chemical warfare agents, either against (a part of the) toxic industrial chemicals. The project developed an equipment - a hood with filter based on new nanoporous adsorbents- for use in a CBRN-environment by First Responders (Police, Emergency Services, Paramedics) under severe and wide-range environmental conditions. The requirements are situated in between Escape Hoods (with a very limited protection) and more elaborate full face masks. Standards partially used: EN403 and BS 8468 3-2 2009. **The project is regarded as slightly relevant for SECUR-ED.**
HIT-GATE: Heterogeneous Interoperable Transportable GATEway for First-Responders	Security systems integration, interconnectivity and interoperability. To develop a generic gateway that allows communications interoperability between first responders networks	Focused Research Project €5.05M (EU: €3.45M) 2012-02-01 to 2014-07-31	Coordinator: THALES COMMUNICATIONS & SECURITY SA (FR) Partners from UK, ES, NL, PT, PL, GR, SL (Research institutions, Defence industry and software developers)	The HIT-GATE Consortium goal is to develop a generic gateway that allows communications across networks currently used by first responders in Europe - using a large number of different and incompatible technologies and having invested in dedicated critical systems (to ensure high-availability and reliability). This includes dedicated networks of, among others, PMR (Professional Mobile Radio) and, more specifically, TETRA (TErrestrial Trunked RAdio). Moreover, with the fast development of communications technologies, new capabilities and opportunities are being adopted and exploited by early-adopters FRs, such as ad-hoc mesh broadband networks, able to provide and/or extend connectivity over affected areas (e.g., underground and destroyed area) and to deliver high data throughput (higher than 5Mbps). Therefore, to answer FRs needs, HIT-GATE will be developed to support a mix of technologies used today by organizations involved in Public-Safety, ranging from legacy-PMR, TETRA to next-generation networks. In this way, organizations may keep their existing systems and/or adopt novel technologies, since the proposed HIT-GATE solution is future proof and ensures communications interoperability between the networks (limited, of course, to the limitations in capabilities of each network). HIT-GATE will also enable communications across heterogeneous networks between first responders during operations. By connecting HIT-GATE to their networks, FRs may continue to use their current receiver equipments, communications base-stations and communications infrastructures.

IDETECT 4ALL: Novel intruder detection & authentication optical sensing technology	Security of air transport infrastructures and utilities . Detection and authentication of objects	CP €3.24M (EU: €2.30M) 2008-07-01 to 2011-06-30	Coordinator: INSTRO PRECISION LIMITED (UK) Partners from GR, BE, IL, ES, PT, RO (Airports, Cargo airlines, consultants, suppliers)	The project developed a novel photonic sensing technology based on an innovative approach using ultra low cost electro-optical components. This technology allows both detection and authentication of objects by a single sensor, which will dramatically improve the performance and reliability of the security system in Critical Infrastructures. This approach uses recently invented very advanced digital signal processing (DSP) techniques that enable distance measurement using continuous modulated light signals (invisible to humans) and requires far less optical power than existing laser scanning technologies. **The project is regarded as slightly relevant for SECUR-ED.**
IMCOSEC: Integrated approach to IMprove the supply chain for COntainer transport and integrated SECurity simultaneously	Supply chain. Improve the security of the supply chain for containers (maritime and inland/combined transport)	SA €1.14M (EU: €0.93M) 2010-04-01 to 2011-03-31	Coordinator: TSB INNOVATIONSAGENTUR BERLIN GMBH (DE) Partners from DE, IT, BE, FR, UK (International associations: UIRR, BICTI, Security consultants, Research institutions, operator)	The project developed a risk based approach to identify and characterize the security gaps, discussed preventive measures and produced a guiding concept for demonstrations in phase II. The results will be (have been?) discussed, reflected and validated by a series of international workshops with stakeholders and the projects Advisory Board involving additional stakeholders from private end-users and public end-users. **The project is regarded as slightly relevant for SECUR-ED.**
IMPACT (FP6): Innovative Measures for Protection Against CBRN Terrorism				http://ec.europa.eu/enterprise/policies/security/files/pasr_en.pdf

IMSK: Integrated mobile security kit	Security of the Citizens. Rapid deployment of equipment for security control	CP €23.5M (EU: €14.9M) 2009-01-01 to 2013-12-31	Coordinator: SAAB AKTIEBOLAG Partners from BE, FR, UK, IT, SL, DE, DK, SE, EE, FI (Research Institutes - including JRC, Ministries and Public authorities, Police forces, Defence industry - including THALES)	The Integrated Mobile Security Kit (IMSK) project will combine technologies for area surveillance; checkpoint control; CBRNE detection and support for VIP protection into a mobile system for rapid deployment at venues and sites (hotels, sport/festival arenas, etc) which temporarily need enhanced security. The IMSK accepts input from a wide range of sensor modules, either legacy systems or new devices brought in for a specific occasion. Sensor data are integrated through a (secure) communication module and a data management module and output to a command & control centre. An advanced man-machine interface uses intuitive symbols and a simulation platform for training. End-users define the overall system requirements, ensuring compatibility with pre-existing security systems and procedures. IMSK is compatible with new sensors for threat detection and validation, including cameras (visual & infra-red); radar; acoustic and vibration; x-ray and gamma radiation and CBRNE. Tracking of goods, vehicles and individuals will enhance situational awareness, and personal integrity will be maintained by the use of, for example, non-intrusive terahertz sensors. To ensure the use of appropriate technologies, police and counter-terrorist operatives from several EU nations have been involved in defining the project in relevant areas, and a close cooperation with end-users ensures compatibility with national requirements and appropriate interfaces with existing procedures. The effectiveness of IMSK will be verified through field trials. Through IMSK security of the citizen will be enhanced even in asymmetric situations. **Although not directly relevant for SECUR-ED (mobile security infrastructure), there are some SOA aspects in common.**

| INDECT: Intelligent information system supporting observation, searching and detection for security of citizens in urban environment | Security of the Citizens. Improve monitoring and surveillance systems | CP €14.98M (EU: €10.91M) 2009-03-01 to 2013-02-28 | Coordinator: AKADEMIA GÓRNICZO-HUTNICZA IM. STANISAAWA STASZICA W KRAKOWIE (PL) Partners from PL, AT, DE, UK, SL, ES, BG, HU, CZ, FR (Research Institutes, Ministry, Police) | The main objectives of the INDECT project are: to develop a platform for the registration and exchange of operational data, acquisition of multimedia content, intelligent processing of all information and automatic detection of threats and recognition of abnormal behaviour or violence; to develop the prototype of an integrated, network-centric system supporting the operational activities of police officers, providing techniques and tools for observation of various mobile objects; to develop a new type of search engine combining direct search of images and video based on watermarked contents, and the storage of metadata in the form of digital watermarks; to develop a set of techniques supporting surveillance of internet resources, analysis of the acquired information, and detection of criminal activities and threats.

The main expected results of the INDECT project are: piloting installation of the monitoring and surveillance system in various points of city agglomeration and demonstration of the prototype of the system with 15 node stations; implementation of a distributed computer system that is capable of acquisition, storage and effective sharing on demand of the data as well as intelligent processing; construction of a family of prototypes of devices used for mobile object tracking; construction of a search engine for fast detection of persons and documents based on watermarking technology and utilising comprehensive research on watermarking technology used for semantic search; construction of agents assigned to continuous and automatic monitoring of public resources such as web sites, discussion forums, usenet groups, file servers, p2p networks as well as individual computer systems; building an Internet based intelligence gathering system, both active and passive, and demonstrating its efficiency in a measurable way. |

INDIGO: Innovative Training & Decision Support for Emergency operations	Restoring Security and Safety in case of crisis. Enhancing preparedness and homogenising operational management of complex crisis	CP €3.84M (EU: €2.79M) 2010-05-01 to 2013-04-30	Coordinator: DIGINEXT SARL (FR) Partners from NE, IT, BE, SE, FR (National and/or Defence Research Institutes, CEN)	The INDIGO project aims to research, develop and validate an innovative system integrating the latest advances in Virtual Reality, Simulation and Artificial Intelligence in order to homogenise and enhance both the operational preparedness and the management of an actual complex crisis. It will enable: The 3D interactive and realistic visualisation of the complete crisis environment, including data coming from the field, simulation results, and building interiors; The simulation of different evolving scenarios for planning, training, and anticipating future states and impending developments during operations, and analysing events after the crisis; The simultaneous training of decision makers, crisis managers as well as first responders and emergency field units that will be influenced by the simulated scenario and that will reciprocally influence its evolution; The simultaneous involvement of multiple participants, thanks to its distributed architecture, while offering a unique pictorial way of sharing and communicating complex knowledge across organisation boundaries. In addition, INDIGO will propose a European emergency symbology reference for 2D/3D maps. This will fill an important gap by offering a common visual reference that can be used across Europe to facilitate the immediate and general understanding of the situation, thus improving decision making across organisational boundaries. The definition of the functional specifications of the system will be driven by the analysis of the needs of real end-users participating in the project as partners or involved in the INDIGO User Group. These organisations will test and validate the outcomes of the project with real-world scenarios and multiple emergency organisations. By the end of the project a packaged system integrating all the proposed technologies will have been developed and provided to them under two versions for purpose of validation and refinement of needs and specifications. **The project is regarded as slightly relevant for SECUR-ED.**

INFRA: Innovative & novel first responders applications	Preparedness and planning, response. Research and develop novel technologies for personal digital support systems	Focused Research Project €3.81M (EU: €2.64M) 2009-04-01 to 2011-03-31	Coordinator: ATHENA GS3-SECURITY IMPLEMENTATIONS LTD (IL) Partners from GR, UK, NE, ES, IE, IL (Research Institutes, (National) Consultants, IT and Defence products suppliers)	The objective of INFRA was to research and develop novel technologies for personal digital support systems as part of an integral, secure emergency management system to support First Responders in crises occurring in various types of Critical Infrastructures (CI) under all circumstances. It focused on innovation at 2 levels: Create open standard based and integrated FR applications allowing full (voice and data) communication interoperability between all FR teams, their command posts and the CI site control centre; Provide practical and useful novel applications for FR teams based on Thermal imaging applications, Video annotation, Advanced fibre optic sensors, Indoor navigation system. The project outlined the requirements and technical specification of a product that was developed by Rinicom. **The project is regarded as slightly relevant for SECUR-ED.**

ISCAPS (FP6): Integrated Surveillance of Crowded Areas for Public Security	Security of infrastructures and utilities. Improve automated surveillance of crowded areas	Preparatory Action for Security Research (PASR2004) €2.31M (EU: €1.70M) 2005-02-01 to 2007-01-31	Coordinator: SAGEM DEFENSE SECURITE (FR) Partners from UK, FR, IT,ES, NL (Research institutes, suppliers, operators - SNCF)	The general objective of ISCAPS was to reduce the risks of malicious events by providing efficient, real-time, user-friendly, highly automated surveillance of crowded areas through industrial research in complementary technologies, bringing some existing technologies to maturity and demonstrating them in a real world environment. Crowded areas types were defined depending upon: crowd densities – ranging from isolated individuals to fairly crowded areas (using standard definitions of groups and crowds); control levels for managing the public area – gated (restricted) areas, channelled areas and open area. ISCAPS included several steps: 1. Scenarios & Requirements: Identification & analysis of potential threat scenarios, serving as the basis for the requirements of the application being developed. 2. Technology development: Development of the appropriate system solution (hardware, algorithms, application). 3. Integration & Demonstration. 4. Road map: Based on the results of the demonstration, determination of the areas where additional research efforts are needed. 5. In parallel: Analysis of the social, legal and ethical aspects associated to the project; dissemination of the results. Results and achievements have been as follows: A. Understanding and description of the different types of threats and definition of the corresponding suspicious behaviour. B. Design of a system architecture suited to address these threats, using breakthrough technologies. C. Knowledge of the difficulties to address to develop operational solutions, and of the areas where research efforts have to be increased. Definition of a roadmap. D. Development of a dialogue with the end-users facing these potential threats. E. Integration of privacy concerns in the design of solutions. F. Demonstration of a global multi-sensor integrated system for detection of abnormal behaviour in a crowd. **The project is regarded as very relevant for SECUR-ED.**

ISTIMES: Integrated system for transport infrastructures surveillance and monitoring by electromagnetic sensing	Security of infrastructures and utilities. Develop a high situation awareness allowing remote control	CP €4.37M (EU: €3.11M) 2009-07-01 to 2012-06-30	Coordinator: TECNOLOGIE PER LE OSSERVAZIONI DELLA TERRA ED I RISCHI NATURALI (IT) Partners from IT, CH, FR, RO, IL, SE, NO (Public authorities, research institutes, suppliers - Finmeccanica/Thales)	The aims of the project were to design, assess and promote an ICT-based system, exploiting a wide range of distributed and local sensors, static and mobile, for non-destructive electromagnetic monitoring, in order to develop a high situation awareness allowing remotely controlled monitoring and surveillance and real time data imaging of the critical transport infrastructures to improve decision support for emergency and disasters stakeholders. The system exploits an open network architecture that can be easily scaled up to allow the integration of additional sensors and interfacing with other networks. It is based on several independent non-invasive imaging technologies relying on heterogeneous state-of-the-art electromagnetic sensors and enabling a self-organizing, self-healing, ad-hoc networking of terrestrial sensors, supported by specific satellite measurements. Sensor cross validation, synergy and new data fusion and correlation schemes permit a multi-method, multi-resolution and multi-scale electromagnetic detection and monitoring of surface and subsurface changes of the infrastructure. The system has been tested on a highway-bridge and a railway tunnel. **The project is regarded as very relevant for SECUR-ED.**
NMFRDisaster: Identifying the needs of medical first responder in disasters	Preparedness and planning, response. Identify needs of Medical first responders	CA €0.82M (EU: €0.82M) 2008-05-01 to 2009-06-30	Coordinator: MAGEN DAVID ADOM (IL) Partners from IT, NE, CZ, ES, DK (and West Band and Gaza Strip) (Research Institutes, Civil Protection bodies, Foundations)	The project aimed at identifying the Needs of Medical First Responders in Disasters (NMFRDisaster) through a collaboration between medical first responders and research institutes in the following areas: 1) Training methodology and technology used to train medical first responders for disasters. 2) Understanding the human impact of disaster on first responders. 3) Ethical and legal issues influencing the medical response to disasters. 4) Personal Protective equipment used in Chemical and Biological incidents. 5) Use of blood and blood products in disasters. Preliminary research on existing know how was followed by a workshop where the FR needs have been identified and matched with existing knowledge and products, then setting the roadmap for future needed R&D. **The project is regarded as slightly relevant for SECUR-ED.**

MODSafe: Modular urban transport safety and security analysis	Safety and Security in Urban Guided Transport. UGT Safety and Security Technical Harmonisation	Focused Research Project, €5.18M (EU: €3.47M) 2008-09-01 to 2012-08-31	Coordinator: TÜV RHEINLAND INTERTRAFFIC GMBH (DE) Partners from HU, FR, DE, UK, ES, BE, IT, CA (Research Institutes, Consultants, Operators - and UITP, Suppliers - and UNIFE)	MODSAFE was a project dedicated to Safety and Security in the European Urban Guided Transport- UGT - sector (Light rails, Metros, Tramways). The sector is characterized by a highly diversified landscape of Safety Requirements, Safety Approval, Acceptance and Certification Schemes, and Security environment. A first task has been to survey and analyse the state-of-the-Art in either domain - Safety and Security. Then MODSAFE developed a number of analyses and produced recommendations for generic methods and tools to be used for harmonizing and simplifying the upgrade/modernization or new construction of UGT systems (Hazards and Threats Analysis, Risk Analysis, Glossaries, Existing means and technologies...). **The outcomes as regards Security have been an important input for SECUR-ED (see** http://www.modsafe.eu/**). The following MODSafe deliverables are used as input for the work done by the SECUR-ED partners: D8.1 Review of existing means and measures for Security Systems; D8.2 Regulations in force and technologies in service; D8.3 Security strategies in urban guided transport systems; D9.1 Hazard scenarios related to security aspects; D9.2 Threat scenarios in urban guided transport systems; D9.3 Security means and measures in urban guided transport systems. Regarding the research done in the present document, D8.2 has provided significant input about the EU legislative framework for both privacy and security fields, as well as the legislation in force in France, Germany and Spain.**
OPTIX: Optical technologies for the identification of explosives	Security of the Citizens.Detection of Explosives	CP €3.29M (EU: €2.49M)2008-11-01 to 2013-04-30	Coordinator: INDRA SISTEMAS S.A. (ES)Partners from AT, UK, IE, BE, SL, IT (Academics and Research Institutes, Police Authorities, Supply Industry)	More than 60% of the terrorist attacks are carried out by the use of Improvised Explosive Devices. OPTIX is developing a transportable system for the standoff detection and identification of explosives in real scenarios at distances of around 20 m (sensor to target), using alternative or simultaneous analysis of three different complementary optical technologies (LIBS, RAMAN, IR) and with the following characteristics: Standoff distance of at least 20 m; Detection of explosives in bulk, trace amounts and even liquids in certain conditions; Very fast detection and identification of explosives; Very high specificity for the identification of explosives; Large operational availability of the system: Fully automated decision system (no operator dependence). In order to be successful, OPTIX consortium has put a special effort in the involvement of end users in the system specifications and validation. **The project is regarded as slightly relevant for SECUR-ED.**

PANDORA: Advanced training environment for crisis scenarios	Preparedness and planning . Enable real individual training	Focused Research Project €4.00M (EU: €2.93M) 2010-01-01 to 2012-03-31	Coordinator: UNIVERSITY OF GREENWICH (UK) Partners from UK, SI, FR, IT (Research Institutes, Consultants, Foundations)	PANDORA aimed at bridging the gap between table-top exercises and real world simulation exercises, providing a near-real training environment at affordable cost. In a real-time, physics-based environment, PANDORA authentically simulates all the dynamic elements of the entire disaster environment. PANDORA emulates a complete crisis room: realistic 3D visuals and audio create a truly immersive, chaotic and stressful environment. PANDORA realistically responds to actions taken to enable real individual training value and the development of complete skill sets at all levels of response, from management and control to all the on-scene activities for emergency organizations. Furthermore, different crisis rooms are able to interact, thus recreating a near-real interconnected cross-borders environment. **The project is regarded as slightly relevant for SECUR-ED.**

PROTECTRAIL: The Railway-Industry Partnership for Integrated Security of Rail Transport	Security of infrastructures and utilities. Rail Security Management	CP €21.63M (EU: €13.12M) 2010-09-01 to 2014-02-28	Coordinator: ANSALDO STS S.P.A. (IT) Partners from IL, IT, FR, PL, BE, DE, LV, UK, NE, SL, TR (Research Institutes, Consultants, Supply Industry - including THALES and UNIFE, Railway Operators - including SNCF & UIC))	Facing the problem of enhancing the railway security with a systematic top-down approach (i.e. to search for an all-inclusive solution valid for all the conceivable threat scenarios) is judged by PROTECTRAIL members too ambitious: the PROTECTRAIL approach is therefore to split the problem of making the railway more secure into smaller asset-specific security problems (sub-missions) for which it is easier to reach satisfactory solutions applicable and usable in different threat scenarios. Sub-missions are: protection of signal and power distribution systems against any terrorism act, track clearance, clearance of trains before and after daily use, staff clearance, luggage clearance control, passenger clearance control, freight clearance control, tracking and monitoring of rolling stock carrying dangerous goods, protection of communication and information systems, stations, buildings and infrastructure protection. Each sub-mission is oriented to particularly significant areas of interest, resulting from risk analysis or from rail operator priorities. For each sub mission solutions shall be defined, researched and developed in terms of architectures, technology deployment, as well as the necessary procedures, organizations to manage the specific issue. The PROTECTRAIL challenge is therefore to make interoperable the single asset-specific solutions and to conceive and design a modular architectural framework where each asset-specific solution can be plugged, that is the basis to assure a streamlined process of federation, integration and interoperability of respective solutions. **The project is very relevant for SECUR-ED and developed in close cooperation. SNCF is involved in scenarios and economic approach, and there are common issues concerning interoperability of CCTV, and alert (CBRNE sensors) systems. The economic approach (WP59), which aims at defining the field of efficiency of different technologies and their associated costs, is being developed. The results of this WP (methodology, conclusions) may possibly be also used in SECUR-ED.**

RAILPROTECT: Innovative Technologies for Safer and more Secure Land Mass-Transport Infrastructure under Terrorist Attacks	Security of infrastructures and utilities. Reducing the vulnerability of rail assets against explosions	PVACS End 2006 to May 2009	Coordinator: JOINT RESEARCH CENTER (EC) Partners from BE, FR, IT, UK (Research Institutes & EURNEX, Rail Associations-UIC, CER…, Rail Operators-RATP…)	RAILPROTECT, an activity under the action Physical Vulnerability Assessment of Critical Structure (PVACS) of DG ENTR, dealt with the security and safety of rail transport against terrorist attacks. The focus was placed on: predicting the effects of explosions in railway and metro stations and rolling stock and on assessing the vulnerability of such structures by calculating the behaviour of structures under a loading produced by air blast waves; enhancing the knowledge about the bubble model, which uses the release of the energy of a compressed bubble to simulate the explosion; comparing the results of this model with experimental results of an explosion in an urban environment. The same experiments were also calculated with a solid TNT model using finite elements. The pressure-time curve produced underestimates the experiment. Calculations with finite volumes show a much better representation of the behaviour of an air blast wave. The bubble model was therefore expanded also for finite volume calculations. **The project is regarded as slightly relevant for SECUR-ED.**
RESTRAIL: Reduction of Suicides and Trespasses on RAILway property	Preparedness and planning. Reduction of suicides and trespasses in railway properties and mitigation of their consequences	Focus Research Project, €3.87M (EU: €2.82M) 2011-10-01 to 2014-09-30	Coordinator: UNION INTERNATIONALE DES CHEMINS DE FER - UIC (FR) Partners from ES, UK, BE, FR, DE, FI, IT, SE, IL, N, PO, TR (Research Institutes, Foundations, Supply Industry, First Responders, IMs-Prorail & Infrabel, RUs-DB Germany & TCDD Turkey)	The aim of the RESTRAIL project is to reduce the occurrence of suicides and trespasses on railway property by providing the rail industry with an analysis of the current situation and identification of cost-effective prevention and mitigation measures: state of the art of relevant research findings (inside and outside Europe) combined with an analysis of factors (internal to railways or external such as media communication) influencing the occurrence of suicides and trespasses and their consequences, also considering hotspots and other high risk access points such as level crossings, station platform ends and bridges; assessing existing countermeasures (technical and soft) and developing new approaches particularly those involving soft measures; demonstrating some selected measures in order to evaluate the findings and finally develop recommendations and guidelines. The final outcome will be a toolkit, accessible through a user friendly interface (for consultation and continuous update) supporting the decision-makers in taking practical steps to reduce suicides and trespasses and to mitigate the consequences once an event occurs. **The project deliverables relevant to SECUR-ED include:** **- Incident management software specifications and prototype** **- Line restoration model (relevant to mainline, regional and suburban systems)** **- Reports over suicide and trespassing preventative measures (soft and hard)**

SAFE-COMMS: Counter-terrorism crisis communications strategies for recovery and continuity	Restoring Security and Safety in case of crisis . Definition of communications strategy to react after terror attacks	CP €1.40M (EU: €1.09M) 2009-04-01 to 2011-03-31	Coordinator: BAR ILAN UNIVERSITY (IL) Partners from UK, BG, GR, ES, DE (Research Institutes)	SAFE-COMMS aimed at providing effective comprehensive and flexible communication strategies for authorities to react after terror attacks in the form of a crisis communications manual, and series of training modules and complementary audio-visual material. Based on analysis of numerous real-world case studies and the unique requirements of recovery from terror attacks carefully the communications strategy targets three audiences: the media, the general public and internal employees of the authorities affected by the attack. **The project is regarded as slightly relevant for SECUR-ED.**
SAMURAI: Suspicious and abnormal behaviour monitoring using a network of cameras & sensors for situation awareness enhancement	Security of infrastructures and utilities. Early detection of abnormal situation	CP €3.72M (EU: €2.47M) 2009-06-01 to 2011-11-30	Coordinator: QUEEN MARY AND WESTFIELD COLLEGE, UNIVERSITY OF LONDON (UK) Partners from IT, PL, FR, EE, UK (Research institutes, Authority, Airport, supplier, consultant)	The aim of SAMURAI was to develop and integrate an innovative intelligent surveillance system for robust monitoring of both inside and surrounding areas of a critical public infrastructure site through three significant novelties: the use of networked heterogeneous sensors rather than CCTV cameras alone so that multiple complementary sources of information (including as well mobile wearable cameras with audio and positioning sensors) can be fused to create a visualisation of a more complete 'big picture" of a crowded public space (people, vehicle and luggage detection, tracking, type categorisation); developing a real-time adaptive behaviour profiling and abnormality detection system for alarm event alert and prediction with much reduced false alarm; in addition to CCTV cameras, take command input from control room operators and mobile sensory input for patrolling security staff enabling more effective control room operator queries. **The project is regarded as relevant for SECUR-ED.**

SAPIENT: Supporting fundamentAl rights, PrIvacy and Ethics in surveillaNce Technologies	Security and Society. Smart surveillance respecting the privacy of citizens	CP €1.54M (EU: €1.25M) 2011-02-01 to 2014-01-31	Coordinator: FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V (DE) Partners from UK,BE, CH, IT (Research Institutes, Consultants)	The project will specify for policy makers, technology developers and other stakeholders how and when smart surveillance should be used and the criteria to verify that surveillance systems respect the privacy of citizens. It will provide strategic knowledge on the state of the art of surveillance studies, emerging smart surveillance technologies and the adequacy of the existing legal framework. It will consider the discourse, ethics and politics of security and surveillance today and the extent to which the public has accepted the surveillance society. The consortium will develop scenarios around future smart surveillance systems - together with a Privacy Impact Assessment (PIA) framework - for discussion with focus groups of stakeholders aimed at providing a consolidated analysis of stakeholder views on the use of surveillance, its characteristics to be effective and scalable to rapidly adapt to changing situations and the aforementioned criteria. The consortium will field test the proposed PIA framework on three different surveillance projects, the first time this will happen at European level, and later derive lessons learned to refine its proposed methodology to be spelled out in a practical handbook presented at a final conference. During the project, the consortium will conduct four major policy briefings for policy-makers and other stakeholders. It will also dialogue with representatives from the Art 29 WP and data protection authorities from the Member States as well as academia, law enforcement authorities, civil society organisations and other stakeholders. **The project is regarded as slightly relevant for SECUR-ED.**

SAVASA: Standards Based Approach to Video Archive Search and Analysis	Security systems integration, interconnectivity and interoperability. Creation of a video archive search platform	Focus Research Project €4.06M (EU: €3.17M) 2011-12-01 to 2014-05-31	Coordinator: ANGEL IGLESIAS S.A. - IKUSI (ES) Partners from GR, IE, UK, IT, ES (Research Institutes, Public Authority -Ministry of Interior, Consultants, Supply Industry, Rail operators-RENFE)	The SAVASA project proposes the creation of a video archive search platform that allows authorised users to perform semantic queries over different, remote and non-interoperable video archives. This project will exploit the current trends in computer vision, video retrieval and semantic video analysis, also ensuring as a goal that its results are capable of deployment in distributed systems and as software services. However, technology for technologies sake is of little value. Therefore the involvement of ethicist, legal experts and, most importantly, those users who must operate Video Archive installations and services to meet the needs of law enforcement agencies and judicial authorities, as well as those of civil protection and day-to-day organisational needs, is required. The SAVASA consortium covers each of these roles. At its core, SAVASA will: - use existing reference technologies from the ICT field that have overcome the barrier of system interoperability/compatibility, i.e. between container and compression formats; - implement a prototype platform capable of demonstrating unified archive integration and an approach to common search and indexing; - provide a set of tailored video analytics and semantic analysis tools that will provide added value to end-users, but which can also function within a legal and ethical framework; - provide an analysis of existing technical barriers/requirements in the standardisation of technologies and procedures, via the validation testing of a prototype platform with end users; and - finally, implement a project structure that will ensure that RTD, Legal, Ethical and End User needs are properly balanced and addressed. **The project is relevant for SECUR-ED and used by SECUR-ED: an "End Users Advisory Group" has been created with the participation of SECUR-ED through e.g. some public transport operators like RATP in Paris and ATM in Milan (invited by INECO). The Advisory Group follows the work of the consortium, taking the necessary decisions with the partners to re-orientate their work.**

SECRET: SECurity of Railways against Electromagnetic aTtacks	Preparedness and planning. Protection of railways against electromagnetic attacks	Focus Research Project €4.26M (EU: €3.06M) 2012-08-01 to 2015-07-31	Coordinator: EUROPE RECHERCHE TRANSPORT (FR) Partners from FR, IT, BE, ES, DE (Research Institutes, Supply Industry, Rail operators-SNCF, Rail Association-UIC)	SECRET addresses the protection of railway infrastructure against ElectroMagnetic attacks. Objectives of SECRET are to: Identify the vulnerability points at different levels (from the electronic to the systemic vision); Identify EM attack scenarios and risk assessment (service degradation, potential accidents, economic impacts); Identify public equipment which can be used to generate EM attacks; Develop protection rules to strengthen the infrastructure (at electronic, architecture and systemic levels); Develop EM attack detection devices and processes; Develop resilient architecture able to adequately react in case of EM attack detection; Extract recommendations to ensure resiliency and contribute to standards. **This project is relevant to SECUR-ED.**
SECRICOM: Seamless communication for crisis management	Restoring Security and Safety in case of crisis. Enabling seamless and secure interoperability of radio communications systems	CP €12.42M (EU: €8.61M) 2008-09-01 to 2012-04-30	Coordinator: QINETIQ LIMITED (UK) Partners from DE, FR, AT, PL, SI, ES, LU, UK, GR (Research Institutes, Supply Industry)	SECRICOM project aimed at developing a pervasive and trusted communication infrastructure fulfilling requirements of EU crisis management users and ready for immediate application. This reference security platform has two essential ambitions: (A) Solve or mitigate problems of contemporary crisis communication infrastructures (Tetra, GSM, Citizen Band, IP) such as poor interoperability of specialized communication means, vulnerability against tapping and misuse, lack of possibilities to recover from failures, inability to use alternative data carrier and high deployment and operational costs. (B) Add new smart functions to existing services which will make the communication more effective and helpful for users. Smart functions will be provided by distributed IT systems based on an agents infrastructure. The SECRICOM solutions are based on four technological pillars: (1) Secure encrypted mobile communication on existing infrastructures (GSM, UMTS networks) secure push to talk systems. (2) Improved interoperability among various existing communicating systems, creating recoverable networks and seamless connectivity. (3) Introduction of distributed systems and the agent paradigm forming a smart negotiating system for parameterization and independent handling of requests suitable for rapid reaction use. (4) Security based on trusted hardware enhancing the confidentiality of data and the privacy of users. The SECRICOM will assure interface from systems currently deployed for crisis management to systems of new generation which will be defined in next decade such as SDR. Important impact is to enable seamless and secure interoperability of existing hundreds thousands radios already deployed to ensure the protection of invested resources and adaptivity to future development and emerging technologies.

| SECUREMETRO:
Inherently secure blast resistant and fire safe metro vehicles | Security of infrastructures and utilities.
Increased safety and security of metro vehicles from terrorist attacks by explosives and firebombs | Focus Research Project €3.77M (EU: €2.71M) 2010-01-01 to 2012-12-31 | Coordinator:
UNIVERSITY OF NEWCASTLE UPON TYNE (UK)
Partners from ES, FR, IT (Research Institutes, Foundations, Consultants, Supply Industry, Metro Operators- RATP & Metro Madrid) | The four SecureMetroproject objectives were:
- To increase metro vehicle resilience to terrorist bomb blast through selection of vehicle materials and structural design - enhancing the ability of a vehicle to remain on the track and keep moving so that underground rescue is not required & contribution to structural integrity standard EN12663;
- To increase security against a firebomb attack - design of fire barriers and fire suppression technology to prevent the spread of fire and fumes while also contributing to passenger safety from accidental or vandalism fires and contribution to standards compliance (prEN 45545 and TS 45545) for fire protection of railway vehicles.
- To increase resilience of vehicles and to reduce damage to adjacent vehicles and infrastructure for allowing the rail system to "bounce-back" to normal operation quickly.
- Thanks to the above, to reduce the attractiveness of metro systems as a target for attack through wide dissemination of the findings of SecureMetro, and promotion of transfer to high speed rail of the vehicle design and technology developed for metro systems.
This project is very relevant to SECUR-ED. |

SecureStation: Passenger station and terminal design for safety, security and resilience to terrorist attack	Security of infrastructures and utilities. To improve public transport passenger station and terminal resilience to terrorist attacks	Focus Research Project €3.12M (EU: €2.29M) 2011-06-01 to 2014-05-31	Coordinator: INGENIERA DE SISTEMAS PARA LA DEFENSA DE ESPANA SA-ISDEFE (ES) Partners from UK, ES, IL, IT, CH, RO (Research Institutes, Foundations, Consultants, Public Authority-CRTM Madrid, Metro Operator-ATM Milan)	The focus of the SECURESTATION project is producing the necessary tools to build safer and more secure passenger stations/terminals against terrorist bomb blast, CBRN attacks involving particle dispersion, and fire events, whilst providing maximum operating resilience. The four project objectives are: 1. To increase resilience of passenger stations and terminals through structural design, interior design, and building services design; 2. To ensure cost-effectiveness of countermeasures through the development and application of Risk Assessment Methodology (including simulation results) to prioritise actions taken in design and operation of passenger stations and terminals; 3. To deliver a Constructive Design Handbook addressing new build and retro-fit cases; 4. To create harmonization and the standardisation of risk assessment methodologies, technologies and design solutions thereby supporting wide application by the numerous EC public transport organisations and associated key stakeholders These two main outputs will be accompanied by dissemination activity at a transport security conference, and through an extensive End User group. **This project is very relevant to SECUR-ED. Relevant deliverables of the project to SECUR-ED include:** **- Risk assessment methodology, including XLS demo (quantitative methodology)** **- Constructive design handbook covering architectural design, hardening and security systems design guidelines** **- Simulation of blast, dispersion of toxic materials and fire**
SeRoN: Security of road transport networks	Energy/Transport communication grids. Improve planned protection measures for critical road transport infrastructures	Focus Research Project €2.94M (EU: €2.25M) 2009-11-01 to 2012-10-31	Coordinator: PTV PLANUNG TRANSPORT VERKEHR AG. (DE) Partners from DE, BE, DK, AT, UK, CH (Research Institutes and consultants)	The SeRoN project undertook a holistic approach both at individual infrastructure object and at road network level of TERN highways and TENT projects (and particularly bridges and tunnels). Its main objectives was to investigate the impacts of possible terrorist attacks on the transport network, in particular the resulting regional and supra-regional impacts on transport links and their economic impacts. It focused on the development of a methodology helping owners and operators to analyze critical road transport networks or parts hereof with regard to possible terrorist attacks. It evaluated planned protection measures for critical road transport infrastructures concerning their impact on security and cost-effectiveness. It gave recommendations concerning possible current and future threat situations and the related most effective security measures. **This project is relevant to SECUR-ED.**

SGL for USaR: SGL for USaR / Second Generation Locator for Urban Search and Rescue operations	Restoring Security and Safety in case of crisis. Locating entrapped victims in collapsed buildings	CP €6.32M (EU: €4.86M) 2008-10-01 to 2012-10-31	Coordinator: NATIONAL TECHNICAL UNIVERSITY OF ATHENS (GR) Partners from FI, UK, AT, FR, DE, HU, IT, PT, GR, ES, BE (Research Institutes, First Responders, Supply Industry)	The project develops procedures and guidelines for use by first responders of the devices proposed by the project in the field (e.g. a new device called FIRST is an innovative portable device that combines audio, video and chemical signals for locating entrapped victims in collapsed buildings). It develops an open ICT platform for addressing mobility and time-critical requirements of USaR Operations. The project also focuses on medical issues and on the relevant ethical dilemmas. FIRST integrates five different location methods (five in one); a networked rapid casualty location system (REDS) equipped with wireless sensor probes; an advanced environmental simulator for training and testing search and rescue units, including canine teams; and a prototype mobile operational command and control platform. These solutions can be also applied in security applications and thus they can create additional commercial opportunities.
SICMA: Simulation of crisis management activities	Preparedness and planning . Improve computer assisted decision making for Health	CP €3.90M (EU: €2.57M) 2008-03-01 to 2010-08-31	Coordinator: SELEX SISTEMI INTEGRATI SPA (IT) Partners from IT, IL, DE, IE, DK, PL (Suppliers, Consultants, Research Institutes, Ministries, Foundations, National agencies)	The project focuses on computer assisted decision making for Health Service crisis managers. A de facto standard for such domain is MIMMS (Major Incident Medical Management and Support). It produces an integrated suite of modelling and analysis tools providing insights into the collective behaviour of the whole organisation in response to crisis scenarios in three phases: - preparation: assisting in the identification of the best way to employ available assets, the limits of the achievable response and the effectiveness of different inter/intra-services cooperation procedures; - implementation: providing a forecast of scenario evolution, proposing doctrine-based solutions and evaluating the effects of alternative decisions; - debriefing: evaluating the effectiveness of current doctrine/procedures, proposing and evaluating possible modifications for enhancing the overall efficiency of the organisation. **This project is slightly relevant to SECUR-ED, with a probable reference to CRISMA results in D23.4.**

STAR-TRANS: Strategic risk assessment and contingency planning in interconnected transport networks (Road)	Energy/transport communication grids. Develop a holistic risk assessment methodology for Critical Infrastructure	Focus Research Project €3.30M (EU: €2.11M) 2009-11-01 to 2012-04-30	Coordinator: INTRASOFT INTERNATIONAL SA (LU) Partners from IT, BE, UK, GR, DE, CY (Consultant, Local authority, Research institutes, Metropolitan police, association)	STAR-TRANS developed a holistic risk assessment methodology for Critical Infrastructure using a modelling formalism in which specification of the structure and associated assets of European transportation networks (nodes and links) as well as the specification of the dependency types between the assets of interconnected and interdependent transportation networks is facilitated. It applied it to a wide panel of international transportation infrastructures to analyse and assess common issues for risks, threats and vulnerabilities and identify possible interdependencies assessing the impact of failures on interconnected transportation infrastructures. The specialised software that has been developed offers important aids for decision-makers to determine priorities among multiple contingency alternatives by evaluating the consequences (cost, timing, resources, etc) of proposed actions, including the impact that a risk incident on an asset of a specific transportation network may have on the assets of other interconnected and interdependent transport networks. The project covered: a. Transportation Infrastructure Asset typology: hierarchically organized typology of transportation assets related to transportation security b. Strategic Transportation Security Risk Assessment Framework: generic risk assessment methodology adapted to the transportation security domain c. STAR-TRANS Modeling Language (STML): a specific-purpose high-level interface language whose design philosophy emphasizes in the description of the STAR-TRANS framework Standards used in the project: EGSA 87; ISO/IEC 31010:2009. **This project is slightly relevant to SECUR-ED.**

STRAW: Security technology active watch	Restoring Security and Safety in case of crisis. Providing a European Service of Technology Watch on Security Technologies	SA €1.34M (EU: €1.00M) 2008-10-01 to 2010-05-31	Coordinator: ATOS ORIGIN SOCIEDAD ANONIMA ESPANOLA (ES) Partners from ES,DE, IT, BE, FR, NO (Research Institutes, Aerospace and Defence Industries, Foundations)	STRAW aims at providing a European Service of Technology Watch on Security Technologies to ensure the awareness of underpinning technologies that make possible the implementation of civil security applications. STRAW aims at harmonizing two ongoing initiatives on technology taxonomy within EU, one from the industry and another from military community. Focus is on: - creation of a network of contact points responsible for managing data entries. - combination of the different entries using a Taxonomy Mix Approach. - performing of a segmentation of information receivers and customising the right information for each segment in order to forecast the likely security technology information to be used in the relevant areas. -delivering the information using the most efficient channels: Main output will be a web based IT system with a TW list and interface for data entry user requirements. - Setting up a panel of security experts to monitor the network implementation and advise the EC, MS etc. **This project is slightly relevant to SECUR-ED: the results of the project could be useful in detecting security technologies.**
SUBITO: Surveillance of unattended baggage and the identification and tracking of the owner	Security of infrastructures and utilities: Detection of Unattended Goods and of Owner	CP €3.90M (EU: €2.58M) 2009-01-01 to 2011-10-31	Coordinator: SELEX GALILEO LTD (UK) Partners from UK, IT, FR, AT, DE, FI (Research institutes, Sensor industry, End user)	The SUBITO programme focused on the automated real time detection of abandoned luggage or goods and the fast identification of the individual who left them and its subsequent path. It included an assessment of the situations faced in such scenarios, and the existing security equipment available that will support the automatic operation of such functionality. Automated processing has been developed to address the requirements, ultimately integrated to form part of a customer demonstration. **This project is very relevant to SECUR-ED.**

| SURVEILLE: Surveillance: Ethical Issues, Legal Limitations, and Efficiency | Security of infrastructures and utilities. Improve the deployment of surveillance systems | Focus Research Project €4.38M (EU: €3.38M) 2012-02-01 to 2015-04-30 | Coordinator: EUROPEAN UNIVERSITY INSTITUTE (IT) Partners from DE, BE, FR, SE, UK, NL (Univeristies & Research Institutes, Police) | SURVEILLE systematically reviews the impacts of different surveillance systems, and also helps manufacturers and end-users better to develop and deploy these systems. It is a multidisciplinary project combining law, ethics, sociology and technology analysis in a small number of highly collaborative, cross-cutting work packages. SURVEILLE assesses surveillance technology for its actual effectiveness in fighting crime and terrorism, for its social and economic costs, and will survey perceptions of surveillance in the general public and certain identified target groups. The investigation of societal and ethical aspects will focus on undesired side effects of surveillance systems. SURVEILLE addresses legal limitations on the use of surveillance technologies as well as ethical constraints. It includes analysis of the potential of 'privacy by design' and privacy-enhancing technologies in the context of surveillance systems. It interacts with technology developers and manufacturers through a systematically delivered advisory service. The issues raised in the advisory service will in turn inform emphases in research deliverables. SURVEILLE will provide an interface with law enforcement officials to seek their feedback as results emerge from the research. The project aims at wide dissemination, including amongst European and national decision-makers. It will also contribute in the field of training of judges, prosecutors and the police. Partners within the SURVEILLE consortium strongly represent academic, commercial, law-enforcement and community actors connected with surveillance. **This project is regarded as relevant to SECUR-ED.** |

TASS: Total Airport Security System	Airport Security. Create an entire airport security monitoring solution	CP €14.97M (EU: €8.99M) 2010-04-01 to 2014-03-31	Coordinator: VERINT SYSTEMS LTD (IL) Partners from SE, UK, IL, PT, IT, GR, FR, ES, IE (Research Institutes, Consultants, End Users Airports, Security Industry)	TASS is a multi-segment, multi-level intelligence and surveillance system, aimed at creating an entire airport security monitoring solution providing real-time accurate security overview and situational awareness to airport authorities. The TASS concept is based on integrating different types of selected real time sensors & sub-systems for data collection in a variety of modes, including fixed and mobile, all suitable for operation under any environmental conditions. TASS divides the airport security into six security control segments (environmental, cargo, people, airplanes, vehicle-fleet & facilities) each of them being monitored by various technologies that are fused together, creating a multisource labyrinth fusion logic enabling situational and security awareness of the airport anytime and anywhere. These fused control segments will be accessed through the TASS WEB-based portal by running a suite of applications making the airport security control centralized to all airport authorities with information shared and synchronized. The technologies will be tested at 3 airports including the hub airport Heathrow, an Israeli domestic airport and Athens airport. The main test at Heathrow airport involved scenarios including 2 connected to the 2012 Olympic Games in London. **This project is regarded as slightly relevant to SECUR-ED.**
TRIPS: Transport Infrastructure Protection System Security research	Security of infrastructures and utilities. Improved railway infrastructure surveillance and protection	PASR €2.50M (EU: € 1.72M) 2006-04-01 to 2007-10-31	Coordinator: ANSALDO TRASPORTI SISTEMI FERROVIARI SpA OPE/RES (IT) Partners from UK, DE, SE, IT, PL, FR, ES, NL, CZ, SL (Consultants, Defence Industry - including THALES, Operators-SNCF, Rail Association-UIC)	The project focused on railway tracks, railway infrastructure surveillance, detection of explosive inside carriage and coach or other non conventional threats, as well as a communication and protection system architecture design, in order: to qualify and quantify the security threats, vulnerabilities and risks to railway systems for a range of operating conditions; for the range of current and perceived future threats, to assess a range of passive and active sensor technologies operating within railway environments and railway operational timescales; to address issues of communications and systems infrastructure and architecture, particularly legacy systems, and their impact on delivering current and perceived future protection of railway systems; to consider innovative solutions for railway protection and to show proof of concept demonstrations (consideration of economics, political, social and human factors will be made); to define current limitations and provide a roadmap for future developments and research requirements. **This project is very relevant to SECUR-ED: this Preparatory Action has been the basis for the PROTECTRAIL project; it has introduced a first demonstrator for the railway security and the first concept of SOA architecture that have become the basis for the PROTECTRAIL architecture. It has also generated the first analysis of the security threats in the railway domain.**

| VANAHEIM: Video/Audio Networked surveillance system enhAncement through Human-cEntered adaptIve Monitoring | Security of infrastructures and utilities. Innovative Cognitive Systems and Robotics | CP €5.418M (EU: €3.72M) 2010-02-01 to 2013-07-31 | Coordinator: MULTITEL ASBL (BE) Partners from CH, AT, IT, FR (Research Institutes, Security Industry _ including THALES Operators (RATP, Torino)) | The aim of VANAHEIM is to study innovative surveillance components for autonomous monitoring of complex audio/video surveillance infrastructure, such as the ones prevalent in shopping malls or underground stations: 1.Scene activity modelling algorithms for automatic sensor selection in control room - Performing a sensor selection at the control room level to autonomously select the streams to display, building models to characterise the streams content, in terms of usual and unusual activities, including dealing with audio streams through the development of automatic audio/video components allowing to select the audio/video streams in control room. 2.Investigation of behavioural cues for human-centred monitoring and reporting (head pose, body shape) and social models (e.g. about space occupancy) to perform the live detection of well-defined scenarios of interest with three specific levels of monitoring - individuals, groups of people and crowd/people flow -, and development of a situational awareness reporting, translating the ongoing activities of people into meaningful user-oriented figures, through for example a map-based overlay of the approximate location/number/behaviour of people in the infrastructure. 3.Collective behaviour building and online learning from long-term analysis of passenger activities by combining cognitive science and ethological analysis to continuously analyze, learn and cluster information about users' locations, routes, activities, interactions with others passengers and/or equipments, and contextual data (time of day, density of people...). The target is a subsystem allowing the discovery of collective comprehensive daily routines with an evaluation/assessment by Turin and Paris transport operators (scalability, performance...). **This project is regarded as very relevant to SECUR-ED.** |

4 Conclusions

This research revealed that more than 200 European Projects have been granted by the European Commission under FP7 in the field of security, many of them also having significant privacy and data protection content. This document provides links to all of them. Only those known by the SECUR-ED partners and/or appearing as relevant have been described in D11.1.2 (which is complemented by an EXCEL file). The SECUR-ED project seeks not only to identify the relevant projects, but also to identify the contribution these projects can bring to both SECUR-ED and the public transportation sector in general. These aspects will be evaluated in the two forthcoming deliverables of WP11.

5 Annex

As part of the research made on the current State-of-the-Art regarding European RTD within task 1.1 of SECUR-ED WP11, and complementary to D11.1.2, UITP has produced an EXCEL file summarising the information on EU projects with potential relevance to security in public transport.

This EXCEL file can be downloaded at:
SECUR_ED_D11_1_2_Appendix_EU_R&D_Projects.xls

It is made of four sheets as follows:

- Sheet 1 Details of projects
- Sheet 2 Projects from Cordis
- Connected projects
- Partners-projects

Sheet 1 summarizes information on projects which for any reason have been regarded as relevant for SECUR-ED.

Sheet 2 presents a table proving hyperlinks to the Security projects recorded on CORDIS website, together with some comments from SECUR-ED partners.

The sheet "Connected projects" provides for each RTD security related projects involving SECUR-ED partners, the numbers of common partners.

The sheet Partners-Projects indicates for each SECUR-ED partner the security RTD projects in which that partner is involved.

- End of Document -